Bangor University

DOCTOR OF PHILOSOPHY

Offshore financial centres and bank efficiency

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Award date:
2006

Awarding institution:
University of Wales, Bangor

[Link to publication](#)

OFFSHORE FINANCIAL CENTRES AND BANK EFFICIENCY

By

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A thesis submitted in the candidature for the degree of Philosophiae Doctor
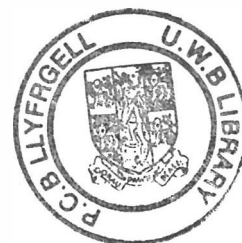
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July 2006

Dedication

I would like to dedicate this work to my dear wife Stephanie who supported me throughout the writing of this thesis.

Acknowledgements

While I can claim this work as my own, it would not have been feasible without the help or support of many people whom I wish to thank here.

First and foremost, I am greatly indebted to my main supervisor, Professor Philip Molyneux, who was always there when I needed his help. His advice and moral support, his thorough reviews of my work, have constantly accompanied the writing of my PhD. I also need to thank my other supervisor, Dr Yener Altunbas, for his advice, support and extraordinary availability. Many thanks also to Dr Jonathan Williams, who encouraged me to do a PhD, and gave me advice and supervision in the empirical part of my thesis. I must also mention the kindness and patience of the staff of SBARD.

My gratitude also goes to my friends Joseph, Tarik, and Kirsty, who beyond their moral support also occasionally provided me with food and shelter in Bangor.

Last but not least, I need to thank my dear wife Stephanie, for having supported me and corrected my English; and my parents, who gave me the means of pursuing my dream in this amazing country. I really had a great time in Wales.

As this piece of work (hopefully) seals the end of my long studies, I also keep a grateful thought for my past mentors, Dr Philippe le Guillou and Dr Michael Spencer, who gave me a taste for writing and academic research.

Abstract

This study investigates the role and nature of offshore financial centres (OFCs) and the performance of banks that operate in these jurisdictions. The major contribution of this study is that it provides (as far as we are aware) the first detailed empirical analysis not only of the evolution and characteristics of OFCs but also of the characteristics, performance and efficiency of banks that operate in OFCs. The first part of the study evaluates the factors leading to the emergence of offshore finance and details the characteristics of the countries involved in terms of their history, geography, culture and regulation. We also provide an extensive review of the main issues surrounding the development of private/offshore banking business. The second part of the study investigates the financial features of banks operating in OFCs. Overall, there are wide variations in the financial structure and performance of the banks both within and across jurisdictions. The study is completed by an assessment of the profit efficiency of these banks. Overall, it is found that profit efficiency has increased in most jurisdictions, and this appears to be related to competition in the financial sector and the economic development of the jurisdiction. There does not seem to be a relation between bank size and profit efficiency as some of the world's largest and smallest banks operating in OFCs are found to be among the most profit efficient operators.

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List of Abbreviations

AFP	Agence France Presse (news agency)
AML	Anti Money Laundering
BCBS	Basle Committee on Banking Supervision
BCCI	Bank of Credit and Commerce International
BIBF	Bangkok International Banking Facilities
BIS	Bank for International Settlements
BSX	Bermuda Stock Exchange
BVI	British Virgin Islands
CEPA	Centre for Efficiency and Productivity Analysis
CFATF	Caribbean Financial Action Task Force
CHF	Swiss Franc
CIA	Central Intelligence Agency
CIMA	Cayman Islands Monetary Authority
CIR	Cost Income Ratio
DEA	Data Envelopment Analysis
DFA	Distribution Free Approach
DISC	Domestic International Sales Corporation
DM	Deutsche Mark
DMU	Decision Making Unit
EC	European Community
ECCB	East Caribbean Central Bank
EU	European Union
FATF	Financial Action Task Force
FBC	Federal Banking Commission
FDH	Free Disposable Hull
FET	Frontier Efficiency Technique
FF	Fourier Flexible
FinCEN	Financial Crime Enforcement Network (US organisation)
FOC	Flag Of Convenience
FSA	Financial Services Authority
FSC	Foreign Sales Corporation
FSF	Financial Stability Forum
FTZ	Free Trade Zone
GBP	British Pound Sterling
GDP	Gross Domestic Product
HSBC	Hong Kong and Shanghai Banking Corporation
HNWI	High Net Worth Individuals
IBF	International Banking Facilities
IET	Interest Equalisation Tax
IFC	International Financial Centre
IMF	International Monetary Fund
IoMCI	Isle of Man &Channel Islands
IOSCO	International Organisation of Securities Commissions
IRS	Inland Revenue Service
IT	Information Technology
JOM	Japanese Offshore Market
KYC	Know Your Customer (law)
LSE	London Stock Exchange
M&A	Mergers and Acquisitions
MLRO	Money Laundering Reporting Officer
NASDAQ	National Association of Securities Dealers Automated Quotation
NIM	Net interest margin
OBU	Offshore Banking Unit
OECD	Organisation for Economic Cooperation and Development
OFC	Offshore Financial Centres
OPEC	Organization of Petroleum Exporting Countries
OXFAM	Oxford Committee for Famine Relief

ROA	Return on Assets
ROE	Return on Equity
SCP	Structure Conduct Performance
SFA	Stochastic Frontier Analysis
SIE	Small Island Economy
SO	Stationery Office
TFA	Thick Frontier Analysis
TNC	Trans National Companies
UBS	Union Bank of Switzerland
UNO	United Nations Organisation
US$	US Dollar
VAT	Value Added Tax
WTO	World Trade Organisation
WWII	World War II
ZAR	South African Rand (Currency)

MAPS

MAP 1: European OFCs represented in the study

Original from the University of Texas Austin – http://www.lib.utexas.edu/maps/world.html)
(Map modified by author)

MAP 2: Caribbean OFCs represented in the study

(Modified by author; original from the University of Texas Austin - http://www.lib.utexas.edu/maps/world.html)

MAP 3: Other OFCs represented in the study

(Modified by author; original from University of Texas Austin 2000 - http://www.lib.utexas.edu/maps/world.html); London (The City), New York (international banking facilities), Tokyo (Japanese offshore market) and Dublin (international financial services centre) are sometimes also listed as offshore financial centres, but were not considered relevant in our study.

1 Introduction

1.1 Background of the study

The main motivation for dedicating a study to offshore banking is the lack of research in the area, and the relative importance of this sector in the world economy (the size of offshore banking deposits were estimated at more than US$4.5 trillion in 1999[1]). The renowned secrecy of the offshore financial services environment makes it generally difficult to obtain information on offshore banking business and this is presumably why research is limited in this area. In general, offshore banks differ from their onshore counterparts as they typically:

- ❖ Have fewer customers[2];
- ❖ Have a relatively wealthy customer[3] base;
- ❖ Operate in favourable[4] regulatory environments;
- ❖ Emphasise secrecy and confidentiality in the conduct of business;
- ❖ Operate in low tax environments;
- ❖ Need strong market segmentation strategies[5] ; and
- ❖ Outsource a substantial part of their business activities[6].

While there is limited academic research concerning OFCs, they have aroused great interest from international organisations over the last two decades. The OECD has encouraged many countries (most of them OFCs) to abandon various features

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[1] Errico and Musalem (1999) 'Offshore banking: An analysis of Micro and Macro prudential issues', IMF working paper, January

[2] Bank of Bermuda has around 5,000 customers with assets of more than US$10 billion i.e. US$2 million per customer (Croft and Rigby, 2003 p25); Coutts advertises that it manages US$50 billion for 75,000 customers (i.e. US$666,000 per customer[Euromoney 2004]).

[3] Some only take customers having US$20 million in liquid assets (such as Goldman Sachs)

[4] Few constraints for banks, low tax and greater secrecy for the customers (this is to be discussed in chapter 3).

[5] Advanced client segmentation is considered critical in the wealth management sector (Euromoney 2004; Mercer Oliver Wyman (2005, p4).

[6] Mercer Oliver Wyman (2005) found that only 10% of the wealth management companies never resort to any form of outsourcing. Selling competitors' product (known as 'open architecture') enables an increase of the product offer. Successful wealth managers commonly resort to this method of product distribution.

(relating to secrecy and other regulations), that they considered to be damaging. The creation of the Financial Action Task Force (FATF) was one of the OECD's initiatives, that aims to establish global standards to prevent the use of the world financial system (and OFCs in particular) as centres where organised crime can conduct financial business. Another international organisation, the Financial Stability Forum (FSF) was established by the Bank for International Settlements (BIS) to investigate the impact of OFCs on global financial stability[7]. As a result of these and other initiatives (OXFAM, 2000[8]), more data about OFCs has become available, and OFCs have attracted increased attention in the media[9].

International pressures have forced many OFCs to change their regulations over recent years, thus eroding the traditional advantages of offshore banking. As a result, banks operating offshore are facing increased competition from banks onshore, particularly in the field of private banking. The increasingly competitive environment emphasises the role of efficiency[10] at the centre of the future evolution of the offshore banking sector.

1.2 Aims of the study

Although little academic work seems to have been dedicated to the study of offshore financial centres, two major studies stand out. Hampton (1993) focused on the reasons leading Small Island Economies (SIE) to turn to offshore finance, investigating whether Jersey's development as an offshore financial centre could be

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[7] For example, many experts came to the conclusion that the Asian crisis of 1998 partly rested on the flaws of the Bangkok International (often called "offshore") Banking Facilities. Errico and Musalem (1999) mentions that these offshore banking units were not allowed dealing in Thai Baht with Thai residents.

[8] See http://www.oxfam.org.uk/whatnew/press/tax.htm

[9] Major corporate scandals have also played a role (e.g. Parmalat, Tyco, Enron, the Erika oil spill)

[10] Thus, Mercer Oliver Wyman (2005) suggest that the wealth management industry (which represents a considerable part of the offshore banking industry) should make efforts to improve its efficiency as the industry seems to be building over capacity (p14).

copied by other SIEs. In addition, Hudson (1996) examined the role of the Bahamas and Cayman Islands within the process of globalisation. While the aforementioned authors examine important features of OFCs, there does not appear to have been a systematic study of the characteristics, and efficiency of offshore banks.

Unlike European banks, offshore banks are not localised in the same geographical area nor are they part of a common political entity. However, they share important features. First, they are typically located in small countries, often islands, where legislation has been developed with the clear aim of attracting expatriate business to develop their economies. Also, they share similar types of customers with common features. Typically, customers are High Net Worth Individuals (HNWI), or Trans National Companies (TNCs) that need to shelter funds for various reasons. Last but not least, offshore banks can be expected to have relatively low fixed costs as they typically do not have big branch networks and other infrastructure. These features make them special and worthy of a study as a group. The object of this study therefore, is to analyse the features and performance of offshore banks, hence the title "Offshore financial centres and bank efficiency". In so doing, we will establish the influence of the OFC environment on bank efficiency.

The main question we aim to answer is:

❖ How efficient are banks operating in offshore jurisdictions and what are the factors affecting their efficiency?

In order to answer this question, we will first have to answer the following questions:

❖ What is offshore finance and why does it exist?

❖ What is offshore banking and what are the factors affecting it?

❖ What are the main characteristics of offshore banks?

❖   What is the best way to evaluate offshore bank efficiency?

1.3 Structure of the study

The thesis is structured as follows:

❖ Chapter 2 deals with offshore finance and its development. We define 'offshore banking' and 'offshore finance' and we choose the jurisdictions to be considered relevant[11] for this study. We overview the history of offshore finance and see how it has evolved over time. We pay particular attention to the geographical, economical, social and political characteristics of OFCs.

❖ Having concluded that OFCs have evolved through regulatory developments, in Chapter 3 we examine in some detail the regulatory environment in OFCs. Indeed, it can reasonably be assumed that the regulatory environment that allows offshore banking to take place may also influence the characteristics of offshore banks. In particular, we look at the three main components of offshore banking regulation which includes tax regulation, bank secrecy laws and anti money laundering rules and legislation. Pressures from 'onshore' countries have forced most OFCs to modify their tax, bank secrecy and money laundering regulation. We will see how OFCs have adapted to their new environment and how this has affected offshore banks.

❖ Chapter 4 overviews the factors that make offshore banking special. In this chapter, we will look at the nature of the services provided by offshore banks, the markets they serve and some of their operational characteristics. We pay particular attention to the nature of their customers and what draws them towards offshore banking, and we discuss the main characteristics of offshore

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[11] For instance, one could ask whether Hong Kong, Luxembourg, Singapore and Switzerland should be included.

bank ownership. We also overview the trends affecting offshore banking and find out how offshore banks adapt to such developments.

❖ In Chapter 5, we examine the financial facets of offshore banking operations by examining a large sample of banks extracted from the BankScope database. The sample obtained contains essentially data from the world's largest offshore banking centres (Switzerland, Luxembourg, Singapore, Hong Kong) as well as from various smaller centres. The chapter analyses both the balance sheets and income statement features of banks, as well as bank history and ownership. It is found that banks operating in OFCs are often locally owned or owned by other banks from neighbouring countries. Interestingly, many offshore banking markets seem to be dominated by one local bank having a high market share. Overall, the financial features of banks that operate in OFCs vary greatly both within and between OFCs.

❖ Chapter 6 presents the main methodological approach used to investigate the efficiency of banks that operate in OFCs. Here, we wish to find out what bank efficiency is, how it can be measured, and what methods are available for evaluating and analysing bank efficiency. Two main families of techniques are available for measuring efficiency, and a choice is to be made between stochastic frontier analysis (SFA), a parametric technique, and data envelopment analysis (DEA), a non-parametric technique. SFA seemed to be the best choice, essentially because it provides a way to cope with randomness in a field in which randomness is to be expected. We analyse the 'alternative profit efficiency' of banks in OFCs. Data availability restricted the choice of inputs and outputs specified in our model. Given data availability problems, we chose as inputs the 'costs of funds' (interest expense divided by earning

assets) and 'costs of services' (overheads divided by total assets). The outputs chosen are 'net interest income' and 'net non-interest income'. A list of potential determinants is also introduced and discussed. The choice of the Fourier Flexible functional form for estimating the efficiency measures is also outlined in this chapter.

❖ Chapter 7 introduces the sample selected for the efficiency study and the results. Using stochastic frontier analysis, we estimate the profit efficiency of offshore banks using the alternative profit function. Efficiency is calculated both for a large sample (using observations from all the OFCs) and a reduced sample (from which banks from Switzerland, Hong Kong, Singapore and Luxembourg are excluded). Because of the large number of possible predictors and because of constraints imposed by missing data, efficiency estimates are first computed without any predictors. The estimates thus obtained are then regressed against the possible predictors, and the two best predictors (GDP per inhabitant and net interest margins) were then included in the preferred model. The efficiency estimates obtained with the preferred model are then analysed in detail. Using both samples, it is found that profit efficiency seems to have increased in almost all the OFCs overtime. The identity of the most profit efficient banks operating in OFCs includes both global institutions as well as some lesser known banks. This (together with other empirical findings) suggests that size is perhaps not a factor influencing bank profit efficiency in OFCs. Although using both sets of estimates, the results (in terms of coefficients and country rankings) coincide, differences in bank rankings and in the levels of efficiency are observed (when the four major OFCs are excluded, profit efficiency levels rise in all OFCs). This can

be attributed to the fact that by changing the structure of the sample so drastically (from 5224 observations with the whole sample down to 1703 observations when the four major OFCs are excluded), the shape of the efficient frontier may have changed, thus making banks appear more efficient. Efficiency appears to be essentially determined by the level of economic development (as measured by GDP or GDP per inhabitant) in the OFC as well as the competitive environment. Banks operating in developed OFCs where competition is greater appear to be more profit efficient.

❖ Chapter 8 concludes this thesis. We provide a summary of the main results and examine to what extent these results contribute to the existing literature. Finally, this chapter provides an overview of the main limitations of this thesis and presents a list of suggestions to guide further research.

2 Offshore finance and its development

The following chapter examines the development and main features of offshore finance. First, offshore finance will be defined and an overview of the characteristics of the main centres will be provided. Secondly, the history of offshore finance will be described and the reasons for the existence of OFCs will be explored. The chapter concludes with a detailed overview of the main characteristics of OFCs in economic, political, cultural, and geographical terms.

2.1 Offshore finance: an overview

The following section will define offshore finance and banking. It will examine the countries involved and the size of the offshore financial market. In particular, various definitions from multiple sources will be examined in order to develop a comprehensive picture and provide an overview of the activities involved in offshore finance.

2.1.1 What 'offshore' means

The word 'offshore' is found in several contexts[12] in the business literature, such as 'offshore banking', 'offshore business', 'offshore finance' and 'offshore financial centre' (OFC). Chambost (1999, p21) mentions that the adjective "offshore" was used in the American press as early as the 1930s to describe countries having a more favourable jurisdiction used by US firms to locate their exporting subsidiaries. It applied particularly to the tax havens of the Caribbean, being literally away from US shores. Hudson (1996) observed that the users of the facilities of the OFCs were essentially foreigners thus 'offshore' to the OFCs. Various definitions associate with

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[12] Koh (2003) even uses the notion of "offshore prison camp" to talk about Guantanamo prison. Guantanamo is an extra legal zone where US laws do not apply.

'offshore' with the meaning of 'low tax[13]', 'more favorable jurisdiction[14]', 'non resident[15]', or 'international[16]'.

McCarthy[17](1979) defines OFCs as "Cities, areas or countries which have made a conscious effort to attract offshore banking business, i.e. non resident foreign currency denominated business, by allowing relatively free entry and by adopting a flexible attitude where tax, levies and regulations are concerned" (p49). This definition thus puts banking at the centre of the offshore business.

The Financial Stability Forum[18] (FSF, 2002) emphasises the role of regulation as the key feature of offshore finance: "Any jurisdiction can be considered 'offshore' to the extent that it is perceived as having a more favourable economic regime than another, e.g., low corporate tax rates, light regulation, special facilities for company incorporation, or highly protective secrecy laws." Thus OFCs have favourable regulation meant to attract foreign business.

A set of characteristics may be a substitute to an all encompassing definition (Park, 1982; FSF, 2002). Thus according to Park (1982), what differentiates OFCs from domestic financial centres is the following set of characteristics:

➢ Business is essentially made in foreign currencies. Offshore transactions are not directly linked with the domestic banking system of the OFC;

➢ OFCs are generally free from the regulations, taxes and exchange controls applying to domestic financial markets.

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[13] The definitions of "offshore provided by the Dictionary of International Banking and Finance Terms (2001) and Reuters'(1982) clearly state that the "offshoreness" is a matter of low tax. Most other definitions also include the 'low tax' aspect.

[14] Offshore is where "the usual rules […] do not apply", See The Economist Lexicon online at http://www.economist.com. According to Holub (2003, pp246-254) offshore is about a "favourable regulatory environment".

[15] According to Errico and Musalem (1999, p5) "Offshore banking is the cross-border intermediation of funds and provision of services by banks residing in OFCs to non-residents". L'expansion (1995) translates "offshore" as "non-resident". See also IMF (2000, p2) and Roberts (1994) pxiii

[16] Mathis (1976) and Park (1982) treat OFCs and IFCs (International Financial Centres) as synonyms.

[17] Cited in Park and Essayad (1989, p49)

[18] Report of the working group on Offshore Financial Centres (2002, p9).

➤ Offshore financial centres are mainly serving non-resident clients.

The FSF[19](2002) provides an explicit account of the nature of 'attractive regulation':

➤ Low or no taxes on business or investment income & no withholding taxes;

➤ Light and flexible incorporation, licensing and supervisory regimes;

➤ Flexible use of trusts and other special corporate vehicles;

➤ No need for licensed legal entities to have a physical presence;

➤ Very high level of client confidentiality based on very strict secrecy laws; and

➤ Unavailability of similar incentives to residents.

As an addition to the previous definitions, Doggart (2002, p68) defines OFCs as jurisdictions encouraging non-resident corporate activity by making their legislation attractive to foreign investors. Hudson (1996) explains that 'Small Island Economies' (SIEs) having little development opportunities, may attract foreign business by using attractive regulation. Interestingly, no definition seems to restrict the meaning of "offshore" to "small island states". Offshoreness is a matter of regulation rather than geography.

Often, the words "tax haven" and "offshore financial centre" are used as synonyms. In general, there is a consensus that a tax haven is a jurisdiction foreigners or foreign entities can use to reduce their tax liability[20] (see Doggart, 2002; Chambost, 1999 and Hampton, 1993). The concept of "tax haven" is relative: a tax haven is simply a jurisdiction of lesser taxation than one's own. A jurisdiction can be a tax

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[19] Report of the working group on Offshore Financial Centres (2002, p9).
[20] The Collins Dictionary of Economics (1988) gives the following definition of a tax haven:
"A country that imposes low rates of personal and corporate taxes, and which as a consequence tends to attract the wealthy individuals and multinational firms seeking to minimize their taxation liabilities."

haven without being an OFC[21], but all OFCs have tax haven features. Thus the present work focuses on OFCs rather than tax havens.

2.1.2 What is offshore banking?

Offshore banking is one of the most essential activities in offshore finance (Chambost, 1999; Doggart, 2002). According to Kemp (1981, p623), "offshore banking" applies either to (1) banks that have located purposely in specific foreign jurisdictions, whose legislative and tax frameworks and regulatory authorities are less restrictive in comparison with their home-based operational environments, or to (2) specifically designed facilities of financial 'free' zones with their own separate customised legislative and tax regimes, available to domestic and /or foreign banks, which are exempt from all or specific regulatory controls and taxes on international banking activities that otherwise apply to the rest of the local economy. According to this definition an offshore bank is therefore a bank located in a jurisdiction meant to be attractive to expatriate banking business.

As a substitute for a definition, Hewson (1982) listed the features of offshore banking business (as in Roberts, 1994, p11):

➢ One transactor is always a bank;

➢ Most transactions are with residents of foreign countries[22];

➢ Transactions typically involve large amounts of money;

➢ Interest rates are usually completely free to move in response to demand and supply factors, especially in the interbank market;

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[21] Holub (2003, pp246-254) reports that Dominica, Grenada, Liberia, the Maldives, Montserrat and the US Virgin Islands do not host enough offshore financial activity to be identified by the FSF as OFCs even though they clearly were tax havens (p247). French Polynesia is a tax haven but is not an OFC, having no offshore financial activity.

[22] Renwick (2000, pp70-71) notes that offshore banks sometimes lend money in the countries where they operate when other institutions (such as the Inter-American Development Bank and the World Bank) don't. In so doing, they help the licensing country.

➤ The margin is usually set on the basis of an assessment of the creditworthiness (or the risk of default) of the borrower;

➤ Loan demands are often of such a magnitude that they must be 'syndicated'[23] (or funded by a number of banks) as a means of spreading the default risk;

➤ There is typically little or no direct government intervention or regulation of the offshore market itself.

Hewson's (1982) and Kemp's (1981) definitions (none of which mentions bank secrecy or low tax), apply mostly to offshore financial centres such as the City of London, and the International Banking Facilities in New York. By comparison, later definitions appear to associate offshore banking with private banking or retail banking conducted in a secretive and low tax environment. However, the idea of banking in a favourable environment and expatriate business remains essential (the deposits come from outside the jurisdiction and are lent outside of the jurisdiction)[24].

As a synthesis, one can consider that offshore banking is an activity in which a bank conducts business in an attractive regulatory environment (such as low tax and substantial bank secrecy laws) where it accepts foreign deposits in foreign currencies[25] and lends these deposits abroad. Thus, the bulk of the financial activity in OFCs is "offshore" on both sides of the balance sheet (IMF, 2000).

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[23] Borrowers in the Euro-Dollar market were often borrowing substantial amounts of money that few banks would be able to provide on their own. Syndicated loans allow several banks to come together to lend big amounts of money to a big borrower (Bell, 1973, p36).

[24] The Oxford Dictionary of Finance and Banking (1997) defines offshore banking as "the practice of offering financial services in locations that have attractive tax advantages to non-residents". Chang and Yang (in Park and Essayad, 1989, p145) define an Offshore Banking Centre as "A place where a deliberate attempt has been made to attract offshore banking business by minimisation of taxes and/or other restrictions of operations". The Dictionary of International Banking and Finance Terms (2001) defines offshore banking as "banking transactions that take place overseas". It also defines an Offshore Banking Unit as a "foreign bank that deals in Eurocurrency and foreign exchange settlements located in a tax favourable offshore banking centre".

[25] It is interesting to note, however, that many OFCs use a foreign/international currency as their currency: Luxembourg, Monaco, Andorra, San Marino use the Euro; The Isle of Man and the Channel Islands use the British Pound; Liechtenstein uses the Swiss Franc; in Panama the US Dollar is used as a second currency). Other OFCs have their currency pegged to the US$ such as Hong Kong and some Caribbean OFCs.

2.1.3 Identifying the OFCs

There is no definitive list of offshore financial centres since the identification of such centres depends on the chosen definition and whether one focuses on OFCs or tax havens[26]. The following list of OFCs was suggested by Ogley (1990) and Doggart (1990)[27]:

Andorra, Anguilla, Antigua, Bahamas, Bahrain, Barbados, Bermuda, British Virgin Isles, Brunei, Campione, Cayman Islands, Cook Islands, Costa Rica, Cyprus, Djibouti, French Polynesia, Gibraltar, Grenada, Guernsey, Hong Kong, Ireland (Dublin), Isle of Man, Jamaica, Jersey, Kuwait, Lebanon, Liberia, Liechtenstein, Luxembourg, Macau, Maldives, Malta, Melchizedek[28], Monaco, Montserrat, Nauru, Netherlands Antilles, Norfolk Islands, Qatar, Palau, Panama, San Marino, the Seychelles, Singapore, St Vincent, Switzerland, Tonga, Turks and Caicos islands, United States (New York), Uruguay, Vanuatu and Venezuela.

From this list, one can identify a great diversity of jurisdictions, most of which appear to be islands. The presence of the USA is explained by the existence of the International Banking Facilities (IBF) of New York (although IBFs are located in other U.S. cities as well), and the state of Delaware[29] which also grants attractive legal features. Similar facilities also exist in Tokyo and London. The only common feature of these jurisdictions is their ability to craft their own business law. The list undergoes constant changes as many small states have tried (and often failed) to develop a status

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[26] Thus some of the jurisdictions in Doggart and Ogley's list are tax havens but not OFCs: French Polynesia, Norfolk Islands and Campione offer low tax opportunities but they do not offer any specific offshore finance features (companies, banks, trusts etc...). New York may be considered an OFC (for the IBFs) but not a tax haven. Liberia may be a tax haven for its Flags Of Convenience but it is no OFC either.

[27] As cited in Palgrave Dictionary of Money and Finance vol III (1992, p 63).

[28] Amazingly, the list encompasses Melchizedek, an imaginary tax haven whose inventors were convicted in the USA (Chambost, 1999). See http://www.melchizedek.com.

[29] The laws of the small US state of Delaware govern more than half of all publicly owned companies in the USA. One specific feature of Delaware is that its laws are more favourable to firm managers than to shareholders. They make it difficult for shareholders to sue managers (The Economist, 2003, oct 25th p75).

as OFC for economic development purposes. Offshore banking licences, for instance, have been made available by recently independent poor and politically unstable countries such as Montenegro[30] or Anjouan[31]. Yet, these countries are rarely cited as OFCs, for their lack of success as OFCs (usually due to their instability).

The FSF[32] (2000, p11) stated that the status of a financial centre as onshore or offshore is not clear-cut. Thus, the following centres have both offshore and onshore financial centre characteristics: Hong Kong, Ireland (Dublin), Luxembourg, Malaysia (Labuan), Singapore and Switzerland (here however, London, New York and Tokyo are not mentioned). The 'pure' offshore centres in comparison, were identified as: Andorra, Anguilla, Antigua, Aruba, Bahamas, Bahrain, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Cook Islands, Costa Rica, Cyprus, Gibraltar, Guernsey, Isle of Man, Jersey, Lebanon, Liechtenstein, Macau, Malta, Marshall Islands, Mauritius, Monaco, Nauru, Netherlands Antilles, Nevis, Niue, Panama, St Kitts, Saint Lucia, St Vincent, Samoa, Seychelles, Turks and Caicos Islands and Vanuatu (FSF, 2000, p14). This list differs from the preceding as some countries mentioned by the FSF were not mentioned by Doggart and Ogley (Saint Lucia and Samoa for example) while others escape the FSF's list (in particular those with tax haven features but no OFC features such as Liberia or French Polynesia).

As noted earlier, the concept of tax haven is relative. A country with lower tax can be seen as a tax haven by a country having higher tax. Most governments in developed countries create tax haven 'lists' (Doggart, 2002). These lists are of limited interest for the present study as they would consider as a tax haven any country

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[30] See http://www.montenegro-banks.com and Levin (2001)

[31] Anjouan, one of the Comores islands (in the North of Madagascar) unilaterally declared its independence before being reintegrated in the mainland. In the meantime, it did sell some offshore banking licences. For further information see http://www.privacy-bulletin.com

[32] The FSF, Financial Stability Forum, is a think tank hosted by the Bank for International Settlements (BIS) to survey the impact of offshore finance on international financial stability.

having lower tax rates. Instead, the list developed by the FSF will be used as the basis of the present study. Having defined a list of countries involved in the offshore finance business, it is important to understand their impact on the world's economy.

2.1.4 Estimating the market size for offshore finance

The absence of reliable statistics concerning the amounts of money invested through OFCs makes it difficult to accurately estimate the extent of the market. However, several studies provide market size estimates.

The IMF[33] used BIS data[34] to estimate the size of the offshore banking market and found that "on balance sheet OFC cross-border assets" reached about US$ 4.6 trillion in June 1999 (representing 50 percent of total cross-border assets) including US$ 2.7 trillion accounted for by international financial centres (IFCs) like London, New York or Tokyo (this leaves approximately US$1.9 trillions for the other OFCs).

Few studies estimate the volume of business corresponding to other activities than offshore banking in OFCs. A Fitzrovia International study taking 4,816 offshore funds into account, estimated the offshore funds sector to reach about US$402.2 billion (Private Banker International, July 1996, p4). Luxembourg dominates the European market with around 79 % of all the assets under management, while Dublin has overtaken Jersey and Guernsey in this field. Burgess (2005), reports that the amount of money controlled by hedge funds, most of which are set-up offshore, reached about US$1 trillion[35]. In 2005, the number of offshore funds was estimated between 7,000 and 8,000 worldwide.

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[33] See http://www.imf.org/external/np/mae/oshore/2000/eng/back.htm#I see also Errico andMusalem (1999) http://www.imf.org/external/pubs/ft/wp/1999/wp9905.pdf. Estimate cited by Besson (2002)

[34] Data available at http://www.bis.org/publ/qcsv ; see also http://www.bis.org/publ/qcsv/anx11.csvfor the amounts of international debt securities issued by OFCs

[35] To be compared with about US$30 to US$40 trillion invested in mutual funds. The amounts in hedge funds appear to be increasing faster (Burgess, 2005).

About 680,000 offshore companies and 1,400,000 trusts are domiciled in more than 60 tax havens worldwide (Chambost, 1999). Chambost (1999) also reports that an estimated 55% of international transactions are routed through tax havens[36] (not inconsistent with the IMF study that found that 50% off balance sheet cross border assets were booked in OFCs).

The US State Department estimated that there were about 4,000 offshore banks in 1998[37]. The loss in tax income due to OFCs was estimated by the US Treasury at around US$70 billions per year in the mid 1990s (Begala, 2002; Parker and Burton, Dec. 2003, p17).

2.2 History of offshore finance

An overview of the history of international finance allows us to gain an understanding of why and how offshore finance first appeared. Many economists[38] do not differentiate 'international finance' and 'offshore finance', and include New York, London and Tokyo among the world's major OFCs. To a large extent, 'offshore finance' as we know it came about as a by-product of the post-war developments of international finance, and boomed with the process of globalisation. However, the very beginnings of offshore finance are older, and some countries started to be OFCs/tax havens well before WWII. Switzerland developed early[39] as a banking

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[36] If he included New York's IBF, London, and the JOM, this would be consistent with the IMF's estimates.

[37] US Department of State, March 2002 http://www.state.gov/g/inl/rls/nrcrpt/2001/rpt/8487.htm

[38] The IMF report estimating offshore finance to US$ 5 trillion included New York London and Tokyo.

[39] Chapter 5 will show that many Swiss banks were established in the 19th century. Fehrenbach (1966) explains that Switzerland had no natural resources and banking was a way to earn foreign exchange. In their origins, Swiss banks only took deposits. Swiss banks started to grant loans only in the mid 19th century. Already back in the 1960s, Swiss banks could even charge interest on foreign deposits. Fehrenbach (1966) suggests that with William Tell as a national hero (who led a revolt against foreign tax collectors), Switzerland had a vocation as a tax haven.

centre because of its political and monetary stability, strong currency[40], neutrality, bank secrecy, geographical location, simple legal system and good workforce. The origins of Geneva as a banking centre date as far back as the fourteenth century (Besson, 2002). Due to Switzerland's neutrality, it later became a refuge for wealthy people fleeing political turmoil (such as Voltaire, Lenin, Bakunin[41] and Freud). Among the first refugees were Protestants fleeing the wars of religion (Besson, 2002). In particular, when the Edict of Nantes (that allowed religious freedom) was revoked in 1685, most French bankers, almost all Protestant, moved their business to Switzerland (Fehrenbach, 1966, p54). Others followed: the French Gentry after the Revolution in 1789[42], the Russian Gentry in 1917, and individuals fleeing Fascism in the 1930s and during WWII. Bank secrecy, a very old Swiss business practice, came formally into law in 1936[43].

Chambost (1999) reports that the expression "offshore finance" appeared in the USA as early as the 1930s referring to US companies using Caribbean subsidiaries for tax minimisation purposes (the word 'offshore finance' only became popular after World War II, during the Bretton Woods period). The Netherlands Antilles and Aruba were among the pioneers of offshore companies. Dutch corporate headquarters were located there when the Netherlands were occupied during WWII (Doggart, 2002, p156). Both centres evolved as OFCs naturally after this period. Other jurisdictions

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[40] Fehrenbach (1966) reports, that in 1920, every country had put restrictions on foreign capital transactions except Switzerland. By 1920, inflation had taken a toll on the savings of French and German savers, but the Swiss Franc was still 'as good as gold'.

[41] In Ridley (1997) 'The Origins of Virtue', TSP publisher

[42] Many Geneva banks were founded at that time, receiving funds from the French gentry (Maude and Molyneux, 1996).

[43] There is controversy as to why Swiss bank secrecy came about in 1936. Swiss banking sources tend to report that these laws were enacted in order to protect Swiss bank employees and their customers from the Nazi police looking for funds detained by German customers to whom the death penalty applied if they were caught. Some other sources more critical of bank secrecy laws report that it was the discovery of Swiss bank documents (lists of customers including many notorious politicians and businessmen) by the French Police in Paris and their publication (and the consequences) thereof which led Swiss authorities to take such measures (Fehrenbach, 1966; Peillon and Montebourg, 2001).

became OFCs because people living there did not need to pay tax[44], while others received this status as a privilege[45]. However, the majority of the world's OFCs became OFCs in order to improve their economic activity[46], inspired by Switzerland's success. Luxembourg became a substantial offshore centre in Europe as a result of such a policy. The apparent prosperity of the countries encouraging offshore activity and the ease of entering the offshore finance market led many small countries (most notably small island economies) to enact laws encouraging offshore finance.

The emergence of the Eurocurrency[47] markets appears to be the main driver behind the expansion of offshore finance (Bell, 1973; Mathis, 1976; Hudson, 2000; Goldberg & Saunders, 1980; McKenzie, 1992; Roberts, 1994 pxiii). In the late 1940s, international exchanges were strongly regulated[48]. Following the Bretton Woods agreements, the dollar was convertible to gold at a fixed exchange rate[49] and other world currencies were convertible to dollars at a fixed exchange rate. Other measures aimed at keeping international financial transactions under control included: exchange controls, the supervision of credit and interest rates, fixed prices, and the differentiation between various forms of financial intermediation (Maillard, 1998). International financial transactions were therefore more strongly regulated, and the

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[44] Some countries living off a valuable natural resource did not need to have any tax. These zones became tax havens when this natural resource started to disappear. Nauru lived off its phosphates for a long time until it had to become a tax haven/OFC; Bahrain and the Emirates started their offshore banking activities to limit their reliance on the oil industry.

[45] The tax exempt status has sometimes been granted as reward. Thus, the Channel Islands were granted a special tax status for remaining loyal to England after the loss of Normandy. George III similarly made the Cayman Islands tax exempt in 1798, to reward the inhabitants who had rescued the victims of a shipwreck (APFN, 2003).

[46] The European Free Trade Zones are a prime example of such a policy; before that, many countries had already decided to enhance their development by becoming low tax jurisdictions.

[47] The prefix "Euro" was introduced in the 1950s when these markets emerged in Europe and London. What makes Eurodollar transactions special is the fact that they are not subject to US regulation and have no constraints in the country where they occur (Scott-Quinn, 1990, pxvii).

[48] The Allies signed the Bretton Woods agreements before the end of World War II in July 1944, in order to prevent another major economic crisis like that of 1929.

[49] Exchange rate: US$ 35 per ounce of gold. In 1945, the USA held 75% of the world's gold reserves.

dollar became essential to exchanges between developed countries[50]. When the Bretton Woods system collapsed because the amount of gold held by the US was insufficient to guarantee a fixed exchange rate, the dollar became 'as good as gold' and remained the reference currency for international exchanges (Maillard,1998).

McKenzie (1992), notes that the development of the Eurocurrency market has its roots in incomplete financial markets, and inefficient financial intermediation and securities markets. For Johns (1992), the emergence of offshore banking came from the need to finance international business activities in the 1960's. A world-wide lending and depositing service was needed, helping money movements and cash management. New financial regulations and tax laws, economic growth, the fear of inflation, unstable interest rates and exchange rates, improvements in banking and securities trading, led to a situation of imbalance in the supply and demand for international (mainly dollars) finance.

The expatriation of dollars from the USA came in several steps. At the start of the Cold War, the USA demanded the repayment of debts contracted by the USSR in WWII derived from unpaid arm sales. The USSR did not recognise the validity of these claims and transferred its US dollar deposits to London for fear of expropriation by the US government. Other communist countries followed, including China[51] (McKenzie, 1992; Clarke, 1967). These dollars deposits in London (forth known as Eurodollars) could be lent out and were not subject to reserve requirements and other regulations that were in place on dollar deposits in the US. The US authorities had no control over dollars held outside their jurisdiction, and European authorities were in no position to regulate a currency that was not theirs (Maillard, 1998). With the emergence of dollar deposits in Britain and other countries, emerged the opportunity

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[50] With the Marshall Plan, from 1947 to 1952, US$ 27 billion were lent and US$ 6 billion given as aid to Europe and Japan to help them rebuild their economies (Maillard, 1998).

[51] Clarke (1967) reports that Chinese deposits in London reached US$100 millions.

for investors to separate political and exchange rate risks. Up until 1957, British banks invested money in the USA, buying US bonds. In 1957, the Sterling crisis[52] led the Bank of England to limit the capacity of British banks to issue British Pound loans[53]. Unable to lend more British Pounds, British banks started to lend US Dollars in the UK and throughout the rest of Europe on a substantial scale in order to retain their position in world finance. While US banks were not allowed to pay interest on US Dollar deposits with a maturity of less than 30 days, London's banks exploited their right to do so (Bell, 1973, p29). The Eurocurrency market grew further with the reintroduction of exchange rate convertibility in 1958 (Clarke, 1967).

In order to improve its balance of payments, the US government introduced Foreign Direct Investment regulations and an Interest Equalisation Tax (IET), at the expense of financial market efficiency in 1965. The IET made it more expensive for foreigners to issue bonds in the US, and the FDI regulations restricted the amount of money US firms could lend abroad. US banks were also asked to keep their foreign credits under a certain ceiling. However, these restraints did not apply to US bank subsidiaries in Europe and the Caribbean which expanded their Eurodollar[54] loans further (McKenzie, 1992). In 1966, facing inflationary risks and being unable to increase taxes, the US government started to restrain the demand for money and introduced interest rate ceilings on deposits (regulation Q). This harmed US banks' competitiveness as rates on short-term bonds exceeded those that could be paid on bank deposits. However, efforts to limit capital expatriation had the opposite effect

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[52] Fehrenbach (1966) reports that the expression "gnomes of Zurich" was then used as a moniker for the Swiss bankers who were accused of short selling the British currency. He also mentions US animosity towards Swiss banks. This was because prior to 1957, it was possible for enemies of the US to buy US stocks via Swiss banks without the knowledge of the US authorities.
[53] Expectations of devaluation had encouraged people to increase their liabilities in British pounds.
[54] Following the definition of Scott-Quinn (1990, pxvii): "The Eurodollar market is a market in dollar deposits and credits, which exist outside the United States of America".

and deposits fled to places where regulation was more attractive, (i.e. offshore') such as London and the Caribbean (Goldberg & Saunders, 1980).

Large US banks opened subsidiaries in London and the Caribbean[55], where they could lend US Dollars at higher rates because of the absence of interest rate ceilings (Bell, 1973, p6 & 29; Mathis, 1976, p9; Hudson, 2000, p5; Goldberg & Saunders, 1980). The only requirement for a US bank to operate in the UK was the authorisation of the Bank of England, where regulation was less constraining (no reserves requirements, no interest ceilings, no capital requirements [Goldberg and Saunders, 1980]). Even after the removal of the aforementioned restrictions in 1974, the expansion of the Eurocurrency markets continued leading to the development of the Eurobond and other Euromarkets (Goldberg & Saunders, 1980). The development of the offshore markets for Dollars (and other currencies) helped to promote financial transactions in currencies outside the country of origin thus helping to boost OFC activity (McKenzie, 1992).

During the 1970s, new lending opportunities emerged in developing countries, while growth was losing pace in OECD countries. Facing a growing credit demand from sovereign states, banks developed syndicated lending in order to be able to lend large amounts to international borrowers while (in theory) keeping risk under control. Following the first oil crisis (1973), the capacity of many developing countries to pay their debts was questioned, while OPEC countries' wealth was increasing along with oil prices. At this time, OPEC dollars were deposited in European banks and lent to sovereign borrowers (particularly in developing countries). The growth of the syndicated lending business during the 1970s led to further expansion of the

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[55] According to Bell (1973, p29), it was cheaper to open a subsidiary in Nassau (Bahamas) or Georgetown (Cayman) than in London.

Eurocurrency market (McKenzie, 1992; Maillard, 1998). Eventually, business came to be conducted in other major currencies.

Before the 1980s there was relative independence between each country's domestic markets. During the 1970s, Eurocurrency and Eurobonds markets based in London were the major global markets in operation (Scott-Quinn, 1990, pxvii). In the beginning of the 1980s, onshore repatriation started with the creation of "onshore offshore" markets in New-York and Tokyo. George and Giddy (1983) mention that in order to allow US banks to serve the Eurocurrency market from the USA, the International Banking Facilities (IBFs) were opened in the USA (starting with New York) in 1981. These banks would accept time deposits from foreign customers and were free from reserve requirements and interest rates limitations and had no credit limitations for foreigners. The aim of the creation of the IBFs was to repatriate the legitimate offshore activity to New York, strengthening its position as an international financial centre. Yet, Caribbean OFCs survived New York's competition.

Chambost (1999) recalls that the liberalisation of finance in Europe was a relatively recent process since the directive liberalising the capital flows in Europe was signed in Luxembourg in June 1988. Since the 1980s, money can flow with little constraints among the worlds' main financial centres. The liberalisation efforts made by the onshore centres in the 1980s' essentially left to the OFCs the advantages of low tax and secrecy.

2.3 Why OFCs exist

There are approximately 60 OFCs in the world (see Appendix 1). The following section attempts to explain why so many countries decided to become

OFCs, why and how they attract foreign business and what are their relationships to other countries.

OFCs are all Small Island Economies or small countries. They are dependent on the rest of the world for their economic survival (Hampton, 1993). The inability to exploit economies of scale in small countries and the needs stemming of a modern way of life typically drive small countries towards specialisation in the production of a reduced set of goods or services which they can export to finance their imports. SIEs are often not well adapted to the production of manufactured products, and usually suffer from intense competition in a variety of areas such as in the production of agricultural goods (typically bananas or sugar). Given the high level of competition in the manufacturing/agricultural sectors, many small islands have turned to the services industry. Tourism and financial services are among the largest sources of revenues for many OFCs and often complement each other (Renwick, 2002, pp139-142). Most OFCs are small politically stable countries with the capacity to enact their own laws.

According to Eedes (2003, p129), the case of Barbados is typical. It is as dependent on its tourism industry as it is from its financial industry. Barbados is concerned with the same challenges as other small island states: "Among these, Barbados is limited by its size, remoteness from markets, vulnerability to exogenous economic and financial shocks, a highly limited internal market, a lack of natural resources, heavy dependence on imports and limited commodities, depletion of non-renewable resources, migration and its limited ability to reap the benefits of economies of scale" (Eedes, 2003, p129).

Many small countries have become rich through being OFCs (Switzerland, Singapore, Luxembourg, Bermuda, and Hong Kong) and their success has inspired many other small countries. The requirements for being an OFC are easily achievable:

good communication networks, good levels of economic freedom, good legal infrastructure and good political stability (Hampton, 1993; Hudson, 1996; Chambost, 1999; Doggart, 2002). An educated workforce and having features of an attractive (tourist) destination are also positive features.

In terms of ability to attract business, OFCs provide interesting features both for individuals (wealthy) and companies of virtually all sizes. The Financial Stability Forum (2000) provides a number of reasons (not all legitimate) why one would wish to use an OFC: "International companies, to maximise profits in low-tax regimes; international companies, to issue securitised products through special purpose vehicles; individuals and companies, to protect assets from potential claimants; investors to minimise income tax and withholding taxes and to avoid disclosing investment positions; financial institutions with affiliates in OFCs, to minimise income and to avoid regulatory requirements in the "onshore" jurisdiction in which they operate; financial institutions, to assist customers in minimising income and withholding tax; insurance companies, to accumulate reserves in low-tax jurisdictions and to conduct business in responsive regulatory environments; criminals and others, to launder proceeds from crime through banking systems without appropriate checks on the source of such funds and to use local secrecy legislation as a means of protection against enquiries from law enforcement and supervisory authorities (including foreign authorities), and/or to commit financial fraud (p10)". Errico & Musalem (1999, p6) note that investing through offshore financial centres is especially attractive for companies doing business with fast growing developing countries with ever regulated financial markets.

The possibility offered by OFCs to use offshore banks has attracted depositors willing to open accounts in foreign currencies (an interesting possibility for people

living in countries having a high risk of inflation). According to Maude and Molyneux (1996), the attraction of Switzerland as an international financial centre became stronger in the 1960s', when high inflation in the US pushed many investors to invest their reserves in currencies other than the dollar. When inflationary risks faded, people kept savings in offshore accounts as a guarantee against devaluations. Beyond inflationary risks, the lack of trust in one's banking system also drives funds offshore. For instance, many Russian people have been ruined by the Russian crisis in 1998 when banks lost much of their customers' deposits[56]. This risk remains important in many developing countries. Even for more developed countries, financial instability remains a hazard[57].

Along with safety from inflation, OFCs also enable investors to benefit from low tax rates. Individuals can deposit money in offshore banks to avoid tax on interest as well as using offshore trusts to make tax free donations[58] and avoid death duties. Offshore, investors can benefit from relatively low-risk low-yield investments, on which onshore tax systems would otherwise be penalising[59]. Low tax rates notably attract the location of corporate customers particularly those involved in international business.

Various authors[60] report that high tax rates onshore encourage capital to move offshore. Indeed, it appears that tax levels in most developed countries have kept increasing since 1965[61]. Such an increase in tax may have had the effect of increasing the incentive for using tax havens.

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[56] About the Russian crisis and its consequences for depositors see for instance BBC (2004) "Russian bank crisis panics public", July 8th; http://news.bbc.co.uk/1/hi/business/3877677.htm

[57] In the absence of a clearly defined exchange rate system, exchange rates tend to be very unstable, including exchange rates between major currencies (Soros, 2001).

[58] Taxed at up to 60% in France (http://www.leguideducontribuable.com/publications)

[59] The cumulated effects of an income tax beyond 50% of the income and a wealth tax up to 2% of the total wealth (as in France) can make low yield/low risk investments very unattractive.

[60] See for instance Maude and Molyneux (1996), Doggart (2002), Chambost (1999).

[61] See statistics at http://www.oecd.org/dataoecd/44/0/2086223.pdf

Along with low tax, secrecy[62] appears to be the fundamental incentive for using OFCs. Offshore secrecy advantages those who wish to keep a 'war chest' in a safe place to be able to face political or economical problems. One may also wish to keep a reserve of money offshore to shelter funds, before facing a divorce for example. Having wealth offshore is a way to limit the number of people knowing about one's assets. La Rochefoucault's said 'He whom you entrust a secret becomes the master of your freedom'[63]. One therefore accepts that ensuring greater secrecy maximises one's freedom.

Secrecy is of great importance to various tax minimisers and completes low-tax features. Most tax systems in developed countries calculate payable tax on income obtained worldwide. Therefore, a citizen having money in a tax haven and receiving an income on this money is supposed to disclose this income to the tax authorities of his home country. Secrecy laws in tax havens undermine considerably the onshore taxman's ability to ascertain income derived from offshore wealth.

Offshore finance tools can be used to exploit loopholes (FSF, 2000) in onshore regulation. For instance, L'Expansion (June 2003, p120) cited a case involving a low-cost air transport company. By law, air transportation companies are not allowed to receive public subsidies. In October 2002, the Chamber of Commerce of Montpellier (France) promised to pay €300,000 to a Manx company[64] if a low-cost company was able to channel 100,000 people to Montpellier per year for regional development purposes. Paying money directly to the low-cost company would have been a potentially illegal subsidy. Begala (2002, p122) reports that Harken (an oil company), used offshore subsidiaries so as to avoid liability from problems occurring while

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[62] See Chambost (1980) about bank secrecy
[63] Or "Celui à qui vous dites un secret devient maître de votre liberté " Francois de la Rochefoucault (1613-1680)
[64] It was assumed that the Manx company had been set up by the low cost company.

conducting operations in Bahrain. Franken (2003) also reports that in order to do business in Iran (under embargo), Halliburton set up a subsidiary with its head office in the Cayman Island (Halliburton Products and Services), to circumvent Federal law prohibiting business with this country.

OFCs are also of specific interest for people likely to become political refugees. From a political perspective, OFCs are usually small neutral countries, with stable democratic political systems. They are therefore assumed politically safe havens[65]. Since refugees may be prevented from taking any sort of wealth while leaving their country, already having wealth offshore appears to be a useful precaution for those under political scrutiny (Chambost, 1999; Doggart, 2001). Having money offshore makes expatriation easier. This may explain why so many (notorious) world leaders have been known to maintain offshore accounts.

Various sources (Doggart, 2002; Besson, 2002; Peillon and Montebourg, 2000-2002; Schneider, 2001) suggest that money generated in a legal fashion but not declared to the tax authorities is also sometimes deposited in tax havens[66]. The amounts involved are considerable as even well developed countries have substantial shadow economies, with funds destined for offshore bank accounts in some cases. The term 'shadow economy[67]' encompasses activities both legal and illegal conducted in an informal way. Governments try to limit the existence of these shadow economies because the money earned escapes tax[68], and persons involved in shadow

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[65] They are also usually very safe places with low crime levels. Singapore has a very good reputation for safety, but so do most other successful OFCs. Monaco is the country with the highest numbers of policemen per inhabitant in the world (Country Life Dec 2005, p22).
[66] Thus Besson (2002) mentions the case of an oyster producer from Brittany saved more than £100,000 in cash to transfer to Switzerland. Similarly, self employed or unemployed people may earn money and "forget" to declare this to the tax authorities. This counts as "shadow" economic activity.
[67] See http://www.imf.org/external/pubs/ft/issues/issues30/index.htm#1 (cited by Doggart, 2002, p6)

economies may defraud welfare systems (i.e. an unemployed person may earn additional undeclared income and keep state benefits).

The importance of shadow economies depend on the development of the country and its level of taxation. OECD countries are likely to have shadow economies representing 10-16% of their GDP (see table 2.3-1), while developing countries have much greater proportions in the shadow economy (more than 40% in Russia). Transition economies score between 20.7% and 34.9% (Ernste and Schneider, 2000). In OECD countries, size of the shadow economy is possibly related to high unemployment figures, labours costs and places with substantial tax burdens. Greater labour market constraints, inefficient application of regulations or corruption are also reflected in larger shadow economies (Ernste and Schneider, 2000; Doggart, 2002).

Interestingly, OFCs themselves often have very small shadow economies. According to Ernste and Schneider (2000) Mauritius (an OFC) had the smallest shadow economy in Africa (20% in 1990). In the Middle East/Asia area for 1990, the authors report that Cyprus, Hong Kong and Singapore had the lowest levels of shadow economy. Costa Rica had the smallest shadow economy in Central America (and the third lowest levels in Latin America; Costa Rica is sometimes considered as an OFC) in 1990-1993.

Table 2.3-2.3-1   Shadow economies as a proportion of GDP

	% of total GDP	
Years	av.94-95	av. 96-97
CANADA	14.8	14.9
FRANCE	14.5	14.8
GERMANY	13.5	14.8
ITALY	26.0	27.2
JAPAN	10.6	11.3
SPAIN	22.4	23.0
SWEDEN	18.6	19.5
SWITZERLAND	6.7	7.8
UK	12.5	13.0
USA	9.2	8.8
OECD average	16.0	16.9

Data from Schneider and Ernst (2000) IMF working Paper 00/26 p14

2.4   OFC characteristics

In order to examine OFC characteristics, various general features of OFCs will be identified and analysed. This will provide an account of the physical characteristics of the OFCs selected for the present study and will initially discuss the geographical, economic, socio-cultural and political characteristics of such centres.

While there are around 60 OFCs, information on many of the smaller jurisdictions is difficult to obtain. Also in later work in this thesis, we need to obtain data on banks operating in these jurisdictions. As such, we select a subset of OFCs to be discussed in the remainder of this chapter (and the modelling work conducted later in this thesis) and these include: Andorra, Anguilla, Antigua & Barbuda, Aruba, Bahamas, Bahrain, Barbados, Belize, Bermuda, Cayman Islands, Cyprus, Gibraltar, Grenada, Guernsey, Hong Kong, Isle of Man, Jersey, Lebanon, Liechtenstein, Luxembourg, Malaysia (Labuan), Malta, Mauritius, Monaco, Nauru, Netherlands Antilles, Panama, San Marino, Singapore, St. Kitts & Nevis, St. Vincent, Switzerland, Trinidad & Tobago, Vanuatu, Virgin Islands (British), Western Samoa[69].

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[69] See appendix 3. No bank data was available about the Turks and Caicos Islands.

2.4.1 Financial features of OFCs

Comparing OFCs in terms of size or importance, several main criteria are commonly used. The two most straightforward criteria are the number of banks and the total size of banking deposits. However this reveals little about the relative importance of the banking sector. Comparing the size of the banking sector relative to GDP, or to the number of inhabitants puts this in better proportion.

Basic statistics about offshore banking (as found in the literature from various sources) are displayed in table 2.4-1[70]. The total amounts of deposits in Panama and Monaco are comparable. However, with average deposits per inhabitants of US$764,000, there is no doubt that this money has not been produced by the local economy (80% of Monaco's residents are foreigners). In the case of Panama, the average of US$8,600 deposits per inhabitant does not appear obviously linked to expatriate wealth. These savings could very well have been generated by the local economy. The GDP multiple is a useful indicator of offshore activity and indicates the importance of OFC activity compared to the size of the local economy[71]. As a point of comparison, the USA had a GDP of approximately US$10 trillions and deposits of US$4 trillions in 2002 (Begala, 2002) which yields a ratio of 0.4 (Deposits/GDP). With 270 millions inhabitants this corresponds to US$14,800 per inhabitant. High GDP multiples (as in Cayman, Bahamas, Luxembourg) indicate that the amounts of deposits are too large to have been generated by the local economies and therefore must be offshore deposits.

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[70] This and following tables were constructed with data published by various sources (Chambost 2001 and Doggart 2001) or articles published in specialised journals, and from official websites (local central banks, embassies etc…). Very limited information was found for the following OFCs: Anguilla, Belize, Curacao, Grenada, StKitts & Nevis, Turks and Caicos, and West Samoa.

[71] Dietsch Lozano Vivas (2000, p985) found that the deposit density (in US$ per square km) could be an interesting indicator for Spanish and French banking. In the present case, this indicator may not be as useful in a study of OFCs as the money surveyed has no fixed home. This indicator was therefore not used.

The Bank for International Settlements (BIS) provides information about international banking, including most OFCs[72]. Table 2.4-2 shows the external deposits of banks located in various OFCs. Several facts are of specific interest:

❖ The total amount of offshore deposits doubled between 1995 and 2004 to reach US$4.2 trillion;

❖ Cayman overtook Switzerland in 2002;

❖ The 10 most important centres in 2004 are Cayman, Switzerland, Luxembourg, Hong Kong, Singapore, Jersey, Bahamas, Guernsey, Netherlands Antilles and Bermuda;

❖ Growth has accelerated after 2001 in several OFCs (Switzerland, Cayman, Luxembourg)

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[72] Concerning BIS data, it is important to note that the Isle of Man, Jersey and Guernsey would only represented from 2001 onwardsas they were part of the UK reporting area before. See: (http://www.bankofengland.co.uk/mfsd/ebb/031205/tableb.pdf)Various UK Crown dependencies (Presumably Anguilla, Antigua, Montserrat, British Virgin Islands) of the Caribbean are taken into account together as "West Indies UK".

Table 2.4-1   Features of OFC banking sectors (amounts of deposits are in USD Billions)

OFC	BANKs (Number)	DEPOSITS	DEPOSITS PER BANK	DEPOSITS/ GDP	DEPOSITS/ INHAB. (US$)
ANDORRA	7*	10***	1.43	8.3	111,111
ANTIGUA	40*			2.3	26,000
ARUBA	2 (LRA 2003)	1.04 (LRA, 2003)	0.5		5,200
BAHAMAS	183*	276 (2000)*	1.5	53.6	896,104
BAHARAIN	60 (1999)**	95*	1.58	9.5	144,729
BARBADOS	55*	32 (2000)*	0.58	7.8	119,403
BERMUDA	4 (LRA 2003)	<15 (LRA, 2003)	3.75	9.5	328,330
BRIT. VIRG. Isls	4**			3	49,000
CAYMAN Isls	694 (1997)**	782**	1.12	840.8	19,550,000
CYPRUS	29 (1999)*	31***		2	40,506
GIBRALTAR	19 (2001)*			3.1	57,733
GUERNSEY	77 (2002)*	108.8*	1.41	83.8	1,687,646
HONG KONG	290**	252***	3.32	1.3	34,082
ISLE of MAN	67 (1998)*	35.2*	0.52	25	473,786
JERSEY	79 (1999)*	184*	2.33	83.6	2,049,568
LABUAN	60 (2000)*	19*	0.31	n/a	270
LEBANON	98*	43***	0.44	2.4	12,373
LIECHTENSTEIN	11*	21***	1.91	27.4	636,364
LUXEMBOURG	197 (2001)*	500 (Murray, 2003)	2.25	30.5	1,520,362
MALTA	10*	8.8*	0.88	1.3	22,500
MAURITIUS	11 (2000)*				
MONACO	38 (1997)*	26 (1997)*	0.68	29.9	764,706
NAURU	Known to have licensed more than 400 offshore banks in the 1990s				
NETH. ANT.	33 (2000)*			2.9	32,700
PANAMA	25*	31 (2000)***	1.24	1.5	8,624
SAN MARINO	4	1.2 (1999)***	0.4	1.7	49,200
SINGAPORE	>200(Tan,2002)	203 (US Embassy)	1	1.2	29,514
SWITZERLAND	372 (1999)*	More than 1000*	2.7	4.8	139,470
VANUATU		3*		11.6	14,851

LRA=local regulatory authorities (central bank or relevant ministery); in italics estimations made with data from the BankScope sample used in later empirical work.
* Data from Doggart 2002.
** Data from Chambost 1999.
*** Data from BankScope sample used in the later empirical analysis.
**** Various internet sources.
Parker and Burton (Dec 2003, p17) evaluated the amount of offshore deposits held by banks in Hong Kong and Singapore together at US$500 billion in 2003.

Table 2.4-2   **External deposits of reporting banks vis-à-vis individual countries in Bn US$**

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
ANDORRA	8.7	8.6	7.6	8.3	6.8	6.4	6.0	6.0	6.0	5.6
ARUBA	1.7	1.5	0.7	0.8	0.8	1.1	0.9	0.9	0.8	0.9
BAHAMAS	131.1	127.2	153.3	152.6	202.4	238.7	235.5	220.2	244.2	234.1
BAHRAIN	18.3	19.3	19.4	28.2	23.7	23.7	29.4	20.2	22.2	22.3
BARBADOS	4.9	5.0	10.4	9.6	8.2	8.5	9.0	8.1	11.6	12.4
BELIZE	0.3	0.3	0.5	0.6	1.2	1.9	2.0	2.0	2.2	2.3
BERMUDA	19.0	20.2	20.2	18.3	20.7	21.7	27.8	43.5	53.4	65.6
CAYMAN	286.7	321.3	380.0	426.2	469.3	529.7	620.5	722.6	1006.0	1091.3
CYPRUS	7.0	6.4	7.3	7.0	7.8	9.0	10.0	10.7	14.3	15.5
GIBRALTAR	6.8	6.6	7.0	6.4	8.1	9.6	10.7	7.7	7.9	8.2
GRENADA	0.1	0.0	0.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1
GUERNSEY	No data available*						73.1	72.9	92.3	94.2
HONGKONG	332.9	284.3	297.8	288.4	315.0	333.8	297.1	272.5	312.8	313.9
ISLE of MAN	No data available*						32.9	36.3	45.8	47.2
JERSEY	No data available*						185.2	234.0	290.0	300.7
LEBANON	16.1	14.9	16.1	16.4	16.3	17.8	16.9	19.1	23.7	24.1
LIECHTENS.	12.8	14.6	15.1	18.3	18.6	21.2	20.1	20.2	21.7	19.3
LUX.	247.4	237.8	226.2	251.5	257.4	254.0	276.3	354.6	453.6	463.1
MALTA	2.8	2.6	2.4	2.9	2.6	2.7	3.2	3.9	4.6	4.3
MAURITIUS	0.9	1.0	0.9	1.4	1.7	2.3	2.9	3.3	3.9	5.2
MONACO	Not available									
NAURU	0.1	0.1	0.1	0.1	0.2	0.1	0.1	0.0	0.0	0.0
NETH. ANT.	61.8	70.1	76.8	85.1	88.0	77.1	68.2	88.7	100.4	94.8
PANAMA	56.7	40.5	38.5	36.9	38.8	40.5	40.5	40.7	42.5	42.3
SINGAPORE	170.8	177.8	221.3	248.6	250.0	274.8	277.1	291.2	301.7	301.3
St. VINCENT	1.0	0.4	0.5	0.6	0.9	1.0	0.8	0.9	0.9	0.8
SWITZ.	411.0	453.8	517.2	590.6	603.8	677.2	730.2	846.8	918.0	926.9
VANUATU	3.4	1.8	2.7	1.8	2.9	2.8	0.8	1.3	0.7	0.6
W.INDIES	38.5	31.7	38.3	44.5	48.0	61.6	66.8	70.9	81.7	101.4
Total	1842.6	1849.7	2062.2	2246.9	2395.1	2619.8	3047.2	3403.4	4066.8	4203.4

Constructed with data from http://www.bis.org/publ/qcsv (corresponds to BIS table 7A)
* Until 1999, no specific information was available for these centres

The following table (table 2.4-3) was constructed using BIS data selecting the most prominent OFCs. The most remarkable feature is the steady progression observable for the Cayman Islands, which represents the bulk of the exchanges observable in the field of international debt security issuance. It is followed by the four major OFCs of this study (Luxembourg, Hong Kong, Singapore Switzerland) as well as Bermuda and the Netherlands Antilles. However, all OFCs do not seem equally involved in debt security issuance. It is interesting to observe that there is a

significant positive correlation between international debt securities issuance and the level of deposits per inhabitant (correlation = 0.971, P value = 0.000).

Table 2.4-3   **International debt securities by residence of issuer (OFC issuers in BnUS$)**

	1987	1995	1996	1997	1998	1999	2000	2001	2002
CAYMAN	6.4	78.3	116.8	167.1	222.3	271.3	329.3	380.6	438.5
LUX.	5.5	32.1	40.4	40.7	49.0	58.2	70.8	101.8	125.5
NETH. ANT.	53.4	65.2	70.2	77.0	81.4	89.0	82.7	77.3	85.7
HONG KONG	5.9	16.8	17.9	22.9	23.2	29.3	28.7	30.7	39.2
SINGAPORE	0.7	1.1	1.6	2.9	4.7	7.0	9.2	16.5	17.4
BERMUDA	0.7	4.7	8.4	8.9	15.7	16.1	21.4	25.0	22.4
SWITZ.	0.6	3.6	4.9	7.4	10.7	12.9	16.3	13.2	16.2
WEST INDIES	0.4	2.2	4.0	5.8	8.0	8.6	7.1	9.4	9.3
LEBANON	-	0.3	0.8	2.1	3.6	4.7	6.4	8.8	14.5
ARUBA	-	5.7	9.7	12.5	15.2	19.4	17.8	16.2	13.5

http://www.bis.org/publ/qcsv/anx11.csv (BIS table 11); Only the main OFC issuers were included

Tables 2.4-4 and 2.4-5 show estimates concerning OFCs, which were made available by the US State Department. The US State Department's main concern is the use of OFCs for criminal activities. The data concerned does not necessarily concur with other sources. Differences can be explained by the fact that figures may correspond to different years (an overview of the CIA statistics about OFCs shows that in many OFCs, statistics are not necessarily available regularly). Interestingly, Bermuda is not considered as an offshore banking jurisdiction in spite of its high GDP multiple (9.5). One possible reason may be that Bermuda does not license shell banks. US State Department statistics also show that trusts are available in almost all OFCs, International Business corporations are also widely available, and the use of bearer shares is allowed in more than half the offshore centres. In addition, many centres also have offshore insurance business actively located in their jurisdictions. According to these estimates, there are approximately 1.7 million offshore companies in existence.

Interestingly, the most developed OFCs (in terms of total GDP or population) seem also to be those with the greatest numbers of offshore companies[73].

Table 2.4-4   OFC features (US State Department)

Jurisdictions	Offshore Banks	Trust & Managt.Comp.	IBCs/Exempt and/or Restr. Comp.	Bearer Shares	Asset Protection Trusts	Insurance and Re-insurance
ANGUILLA	2	Y	2,792	Y	Y	Y
ANTIGUA & B.	21	Y	12,000	Y	Y	Y
ARUBA	2	Y	4,000	Y	N	Y
BAHAMAS	Y	Y	100,000	N	Y	Y
BAHRAIN	48	Y	Y	N	N	N
BARBADOS	55	Y	4,000	N	Y	Y
BELIZE	2	Y	15,000	Y	Y	Y
BERMUDA	N	Y	12,000	N	Y	Y
CAYMAN	570	Y	45,000	Y	Y	Y
COOK Isls.	25	Y	1,200	Y	Y	Y
CYPRUS (Greek)	29	Y	52,000	N	Y	Y
CYPRUS (Turkish)	40	N	12		N	N
GIBRALTAR	21	Y	8,300	Y	Y	Y
GRENADA	16	Y	4,000	Y	Y	Y
GUERNSEY*	71	Y	7,500	N	N	Y
HONG KONG	Y	Y	474,500	N	N	Y
JERSEY*	Y	Y	20,000	N	N	Y
LIECHTENSTEIN*	17	Y	75,000	Y	N	Y
LUXEMBOURG*	200	Y	68,000	Y	N	Y
MAL. (LABUAN)	54	Y	2,300	N	Y	Y
MALTA	3	Y	417	N	N	Y
MAN Isl.*	Y	Y	24,300	Y	N	Y
MARSHALL Isls.	N	Y	4,000	Y	N	N
MAURITIUS	11	Y	10,700	Y	Y	
MONACO	N		Y		N	
NAURU	400	Y	Y	Y	N	Y
NETH ANT.	33	Y	20,000	Y	N	
PANAMA	34	Y	370,000		Y	Y
SAMOA	8	Y	4,551	Y	Y	Y
SINGAPORE	83	N	Y	N	N	Y
St. VINCENT	33	Y	10,135	Y	Y	Y
St. KITTS	1	Y	22,500	Y	Y	N
SWITZERLAND*	500	Y	Y	Y	N	
TURKS & C.	8	Y	13,000	Y	Y	Y
VANUATU	55	Y	2,500	Y	N	Y
VIRGIN Isls. B.	13	Y	360,000	Y	Y	Y

Data available through the US State Department Web page at
http://www.state.gov/g/inl/rls/nrcrpt/2001/rpt/8487.htm
*Jersey, Guernsey, the Isle of Man, Liechtenstein, Luxembourg and Switzerland allow their residents
to have access to OFC features normally reserved to non-residents; Y=Yes; N=No.

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[73] Correlation between the number of offshore companies and total GDP = 0,801, P value = 0.000;
correlation between the number of inhabitants and number of offshore companies = 0.917, P value =
0.000.

Table 2.4-5   Other factors

	Sells Economic Citizenship (N=no,Y=Yes, S=stopped)	Internet Gaming licenses available	Criminalized Drug Money Laundering (D) & Beyond Drugs (BD)	FATF Non cooperative countries	Membership in International Organizations (A,C,CE,F,O,OC, I, S)
ANGUILLA	N	N	BD		C, I*[1]
ANTIGUA & B.	N	Y	BD	R	C, OC
ARUBA	N	N	BD		C, F, O, I*
BAHAMAS	N	N	BD	RM	C, O,OC, I, S
BARBADOS	N	N	BD		C, O, OC, S
BELIZE	S	Y	BD	R	C, OC, S, I*
BERMUDA	N	N	BD	R	C, O
VIRGIN Isls. B.	N	N	BD	R	C
CAYMAN	N	N	BD	RM	C, O, I
GRENADA	S	Y	BD	NC	C, OC
NETH ANT.	N	Y	BD		C, F, O, I
PANAMA	N	N	BD	RM	C, O, OC, S
St.KITTS	Y	Y	BD	NC	C, OC
St. VINCENT	N	Y	BD	NC	C, OC
TURKS & C.	N	N	BD	R	C, I
CYPRUS (Greek)	N	N	BD	R	CE, O, S
CYPRUS (Turkish)	N	N	D		
GIBRALTAR	N	Y	BD	R	O, I
GUERNSEY*	N	N	BD	R	O, I, S
MAN Isl.*	N	N	BD	R	O, I, S
JERSEY*	N	N	BD	R	O, I, S
LIECHTENSTEIN*	N	N	BD	RM	CE
LUXEMBOURG*	N	N	BD		F, S
MALTA	N	N	BD	R	CE, O, S
MONACO	N	N	BD	R	
SWITZERLAND*	N	N	BD		F, S
BAHRAIN	N		BD		O, S
MAURITIUS	N	N	N	R	E, O, S
HONG KONG	N	N	BD		A, F, O, S
MALAYSIA (LAB.)	N	N	BD		A, I, O, S
SINGAPORE	N	N	BD		A, F,O, S
COOK Isls.	N	N	BD	NC	A
MARSHALL Isls.	N	N	BD	NC	
NAURU	Y	N	N	NC	
SAMOA	N	N	BD	R	A, I*
VANUATU	N	Y	BD	R	A, O

Data available through the US State department Web page at
http://www.state.gov/g/inl/rls/nrcrpt/2001/rpt/8487.htm
[1]A = Asia/Pacific Group; C = Caribbean Financial Action Task Force; CE = Council of Europe Select Committee on Money Laundering; E = Eastern and Southern Africa Anti-Money Laundering Group; F = Financial Action Task Force; I = Offshore Group of Insurance Supervisors (OGIS); I* = Observer to the OGIS; O = Offshore Group of Banking Supervisors; OC = OAS/Inter-American Drug Abuse Control Commission; S = International Organization of Security Commissioners. R=Country reviewed by the FATF; RM=Country listed as non cooperative but removed from the list for having complied; NC=non compliant.

Countries which sell citizenship, gaming licenses, have incomplete anti money laundering regulation and/or have been blacklisted by the FATF are typically the smaller less prosperous OFCs[74]. Offshore business activities are typically less developed in these OFCs[75].

2.4.2 Geographic and environmental factors

Table 2.4-6 displays the main geographical characteristics of OFCs, and of these 25 (out of 33) are islands. There are 12 Caribbean and European centres, four from Asia/Pacific, two Arab and Latin American countries and one located in the Indian Ocean. In fact, the most significant OFCs (in terms of offshore activities) are mainly located in three regions: the Caribbean, Europe, and Asia (Singapore & Hong Kong). OFCs are all small geographical entities. Panama and Switzerland are the two largest OFCs in terms of geographical area (there is also substantial variations in terms of size e.g. Panama is 42,800 times larger than Monaco in terms of geographical size).

Many OFCs are subjected to environmental problems or risks of natural catastrophes. Such problems are significant, because a natural catastrophe (as Montserrat's volcanic activity), can seriously damage economic activity, and puts the centre at a disadvantageous situation when negotiating treaties with onshore countries, as the former are potentially dependent on their help. Apart from the naturally adverse circumstances, various OFCs also suffer from man-made problems such as pollution and water-supply shortages (i.e. such problems are mentioned in the CIA Factbook for 19 OFCs). Various tropical OFCs are vulnerable to storms, while European OFCs tend to be spared natural disasters. However, these problems, which are a significant

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[74] The average GDP for countries listed in Tables 2.4-4 and 2.4-5 is US$15,860 per inhabitant but only US$7,977 in OFCs fulfilling these criteria.
[75] Average number of IBCs per OFC among all OFCs = 56,442 but only 10,640 in this sub-sample

feature of many OFCs, do not prevent various centres e.g. Cayman Islands, from

being successful as OFCs.

Table 2.4-6   Geographical and environmental features of OFCs

Country	Geo. area	Geo. Land size sq km	Island	Water supply /pollution problems	Natural hazards
ANDORRA	Europe	468	No		Avalanches
ANGUILLA	Caribbean	102	Yes	Yes	Storms&Hurricanes
ANTIGUA	Caribbean	442	Yes	Yes	Storms&Hurricanes
ARUBA	Caribbean	193	Yes		None
BAHAMAS	Caribbean	13,930.00	Yes		Storms&Hurricanes
BAHRAIN	Arab country	665	Yes		Drought
BARBADOS	Caribbean	430	Yes		Storms&Hurricanes
BELIZE	Caribbean	22,960.00	No	Yes	Storms&Hurricanes
BERMUDA	Caribbean	53.3	Yes	Yes	Storms&Hurricanes
B. VIRGIN I.	Caribbean	153	Yes	Yes	Storms&Hurricanes
CAYMAN	Caribbean	263	Yes	Yes	Storms&Hurricanes
CYPRUS	Europe	9,521.00	Yes	Yes	Drought/Earthquake
GIBRALTAR	Europe	6.5	No	Yes	None
GRENADA	Caribbean	344	Yes		Storms&Hurricanes
GUERNSEY	Europe	78	Yes		None
HONG KONG	Asia/Pacific	1,092.00	Partly	Yes	Typhoons
JERSEY	Europe	116	Yes		None
LABUAN	Asia/Pacific	92	Partly		Na
LEBANON	Arab country	10,400.00	No	Yes	Sandstorms
LIECHTENSTEIN	Europe	157	No		None
LUXEMBOURG	Europe	2,586.00	No	Yes	None
MALTA	Europe	316	Yes	Yes	None
MAN Isls	Europe	572	Yes		None
MAURITIUS	Africa	2,040.00	Yes	Yes	Cyclones
MONACO	Europe	1.8	No		None
NAURU	Asia/Pacific	21	Yes	Yes	Droughts
NETH. ANT.	Caribbean	960	Yes		None
PANAMA	Cent. America	77,080.00	No	Yes	Storms
SanMARINO	Europe	61	No		None
SINGAPORE	Asia/Pacific	697	Yes	Yes	None
StKITTS & N	Caribbean	261	Yes		Storms&Hurricanes
StVINCENT	Caribbean	388	Yes	Yes	Hurricanes&Vulcano
SWITZERLAND	Europe	41,288.00	No		Avalanches
VANUATU	Asia/Pacific	12,182.00	Yes		Cyclones

This table uses data from the CIA world fact book with the most recent data available in 2004

2.4.3 Economic indicators

As Table 2.4-7 shows, economic indicators vary substantially among OFCs (Switzerland's GDP represents more than 3000 times the GDP of the smallest OFC, Nauru). Switzerland is the largest OFC, followed by Hong Kong. The largest countries however are not necessarily the most substantial OFCs in terms of GDP, inhabitants and size. In every aspect, the Cayman Islands (total GDP, inhabitants, size) are very small in comparison with Switzerland, yet its offshore business is more developed (the nature of the OFC business in the two countries is, however, very different).

As mentioned earlier, many countries became OFCs for economic development purposes. For this reason, it is important to see how the development as an OFC relates to economic development in general. Based on the data available, a significant correlation[76] between an OFC's GDP per capita and its amount of deposits per inhabitant[77] can be ascertained. The positive correlation between deposits per inhabitant and GDP per inhabitant would be positive in any group of countries. However, the originality of the measure is that the money deposited was precisely not generated by the local economy. Hence, this measure tends to confirm that well developed offshore activity translates into higher income for the population. The existence of an offshore industry tends to create well paid employment in the country. Besides employment directly linked with banking and finance related activities there are other jobs created for those who serve the offshore market (including lawyers, accountants, advisers and so on).

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[76] The following correlations have been found for the OFCs for which sufficient data was available (Andorra, Antigua, Aruba, Bahamas, Bahrain, Barbados, Bermuda, Brit.Virg.Islands, Cayman Islands, Cyprus, Gibraltar, Guernsey, Hong Kong, Isle ofMan,Jersey, Labuan, Lebanon, Liechtenstein, Luxembourg, Malta, Monaco, Neth.Antilles, Panama, San Marino, Singapore, Switzerland, Vanuatu)
[77] Correlation between deposits per inhabitant and GDP per inhabitant (without Cayman)
Correlation of Deposits per inhabitant and GDP per inhabitant = 0.462, P-Value = 0.020

Table 2.4-7   GDP features of OFCs

Country	Total GDP in million US$	GDP per inhabitant in US$	Inhabitants
ANDORRA	1,200.00	18,000.00	90,000
ANGUILLA	104.00	8,600.00	12,446
ANTIGUA	717.00	10,541.00	65,000
BAHAMAS	5,154.00	17,012.00	308,000
BAHRAIN	10,053.00	15,084.00	656,397
BARBADOS	4,137.00	15,494.00	268,000
BELIZE	1,346.00	5,606.00	231,000
BERMUDA	2,200.00	34,800.00	63,960
B. VIRGIN I.	311.00	16,000.00	21,272
CAYMAN	930.00	24,475.00	40,000
CYPRUS	15,764.00	20,824.00	790,000
GIBRALTAR	500.00	17,500.00	27,714
GRENADA	743.00	7,580.00	94,000
GUERNSEY	1,300.00	20,000.00	64,587
HONG KONG	198,500.00	27,200.00	7,394,000
JERSEY	2,200.00	24,800.00	89,775
LABUAN	86.00	1,200.00	70,500
LEBANON	18,647.00	4,308.00	3,556,000
LIECHTENSTEIN	730.00	23,000.00	33,000
LUXEMBOURG	22,000.00	50,000.00	442,000
MALTA	6,736.00	17,273.00	392,000
MAN Isls	1,400.00	18,800.00	73,873
MAURITIUS	12,500.00	10,100.00	1,210,000
MONACO	870.00	26,364.00	34,000
NAURU	59.00	4,917.00	12,300
NETH. ANT.	2,400.00	11,400.00	214,250
PANAMA	17,137.00	6,000.00	2,899,000
SINGAPORE	112,400.00	25,200.00	4,608,000
StKITTS & N	339.00	8,700.00	38,700
StVINCENT	639.00	5,555.00	114,000
SWITZERLAND	207,000.00	28,769.00	7,170,000
TURKS	128.00	7,300.00	18,738
VANUATU	257.00	1,300.00	202,000
WEST SAMOA	1,000.00	5,600.00	178,173

Data from the CIA World Fact Book using the most recent data available in January 2004

Table 2.4-8   Reliance on Tourism

Country Name	1999 International Tourism Receipts in million Dollars	GDP per inhabitant (US$)	Inhabitants	Dollar receipts per inhabitant	Tourism receipts/GDP (Percentages)
ANDORRA	80% of GDP (CIA)	18,000	90,000		
ANGUILLA	56	8,600	12,446	4,499.44	52.32
ANTIGUA	291	10,541	65,000	4,476.92	42.47
ARUBA	782	11400	95,000	8,230.00	
BAHAMAS	1,503	17,012	308,000	4,879.87	28.68
BAHRAIN	408	15,084	656,397	621.58	4.12
BARBADOS	677	15,494	268,000	2,526.12	16.3
BELIZE	112	5,606	231,000	484.85	8.65
BERMUDA	480	34,800	63,960	7,504.69	21.57
CAYMAN	439	24,475	40,000	10,975.00	44.84
CYPRUS	1,878	20,824	790,000	2,377.22	11.42
GIBRALTAR	30% of GDP (CIA)	17,500	27,714		
GRENADA	63	7,580	94,000	670.21	8.84
GUERNSEY		20,000	64,587		
HONG KONG	7,210	27,200	7,394,000	975.11	3.58
JERSEY	24% of GDP (CIA)	24,800	89,775		
LEBANON	673	4,308	3,556,000	189.26	4.39
LIECHTENSTEIN		23,000	33,000		
LUXEMBOURG		50,000	442,000		
LABUAN		1,200	70,500		
MALTA	675	17,273	392,000	1,721.94	9.97
MAN Isle of	18,800	73,873			4.46
MAURITIUS	545	10,100	1,210,000	450.41	
MONACO		26,364	34,000		
NAURU		4,917	12,300		12.73
NETH. ANT.	311	11,400	214,250	1,451.58	3.09
PANAMA	538	6,000	2,899,000	185.58	
San MARINO					5.14
SINGAPORE	5,974	25,200	4,608,000	1,296.44	20.79
StKITTS & N	70	8,700	38,700	1,808.79	12.16
StVINCENT	77	5,555	114,000	675.44	3.75
SWITZERLAND	7,739	28,769	7,170,000	1,079.36	
VANUATU		1,300	202,000		
VIRG. Isls		16,000	21,272		4.21
WEST SAMOA	42	5,600	178,173	235.73	

Calculated from 2003 data from the World Tourism website and CIA World Fact Book.

Tourism and offshore finance often go hand in hand; Besson (2002) mentions

that the benefits of being a successful OFC include substantial tourism income. High

net worth individuals (HNWIs), (when they come to see their banker) spend nights in

luxury hotels, eat in good restaurants, purchase luxury goods, rent chauffeured limos and bodyguards[78]. There are great synergies between tourism and the offshore financial sector (see data in Table 2.4-8). There is a significant positive correlation[79] between the deposits per inhabitants and the tourism-derived income per inhabitant.

Population density may be the ultimate limit to economic development. The Economist (June 2004, p91) states that having had a very successful development as an OFC, Bermuda now has difficulties expanding any further as it has become too small for its level of activity in terms of space and workforce available[80].

2.4.4 Social and demographic indicators

Cultural heritage (see Table 2.4-9) plays a decisive role in the development of an OFC, and there is little doubt that the British tradition of free trade has helped many countries that were, or still are, under British influence to become OFCs. Having the English language as an official language in OFCs has certainly helped them to develop. English is used as a first (official) or second language in 26 of these countries. Spanish is also used in five OFCs, in four cases along with another language. Language can influence the market served by an OFC. This can be observed in Switzerland, where Lugano tends to attract Italian customers, Geneva the French customers, and Zurich tends to attract German clients (Fehrenbach, 1966, p12).

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[78] The list may also include companies renting jets and yachts, and art and antique dealers. In Zurich, the Banhofstrasse (where 20 banks of the sample have their headquarters including UBS, Citibank, Morgan Stanley, Julius Baer, Leu and Vontobel) is as famous for its banks as it is for its luxury shops.

[79] Calculated from data available for 14 OFCs; the correlation between 'deposits per inhabitant' and 'tourism receipts per inhabitant' is significant (0.765, P-Value = 0.001). If Cayman is excluded, one finds the following results: Correlation of Deposits per inhabitant and Dollar receipts per inhabitant = 0.575, P-Value = 0.040

[80] The Economist (2006, 25 March, p75) reports that Singapore is confronted with similar problems.

Table 2.4-9   Social and cultural indicators

OFC	Languages	Population	HDI index*	Main religion
ANDORRA	Spanish/French	90,000.00		Catholic
ANGUILLA	English	12,446.00		Protestant
ANTIGUA	English	65,000.00	0.8	Protestant
ARUBA	Dutch, English, Spanish	95,500.00		Catholic
BAHAMAS	English	308,000.00	0.83	Protestant
BAHRAIN	Arabic	656,397.00	0.83	Muslim (shia)
BARBADOS	English	268,000.00	0.87	Protestant
BELIZE	English/Spanish	231,000.00	0.78	Catholic
BERMUDA	English	63,960.00		Protestant
BRIT. VIRG. ISLs	English	21,272.00		Protestant
CAYMAN	English	40,000.00		Protestant
CYPRUS	Greek, English, Turk	790,000.00	0.88	Orthodox
GIBRALTAR	English, Spanish	27,714.00		Catholic
GRENADA	English	94,000.00	0.87	Catholic
GUERNSEY	English	64,587.00		Anglican
HONG KONG	English Chinese	7,303,334.00	0.87	Buddhist
JERSEY	English, French	89,775.00		Anglican
LABUAN	Malay	70,400.00		Muslim
LEBANON	Arabic, French	3,556,000.00	0.76	Muslim/Christian
LIECHTENSTEIN	German	33,000.00		Catholic
LUXEMBOURG	French, German	442,000.00	0.93	Catholic
MALTA	English, Italian	392,000.00	0.88	Catholic
MAN Isle of	English, Manx	73,873.00		Anglican
MAURITIUS	English	1,200,000.00		Hindu
MONACO	French	34,000.00		Catholic
NAURU	English	12,300.00		Protestant
NETH. ANT.	Dutch English Spanish	214,250.00		Catholic
PANAMA	Spanish	2,899,000.00	0.79	Catholic
San MARINO	Italian	27,730.00		Catholic
SINGAPORE	English	4,452,00.00		Buddhist
StKITTS & N	English	38,700.00		Anglican
StVINCENT	English	114,000.00	0.73	Anglican
SWITZERLAND	German, French Italian	7,170,000.00	0.93	Catholic
TRINIDAD	English	1,300,000.00		Catholic
VANUATU	English, French	202,000.00	0.54	Protestant
WEST SAMOA	English			Protestant

Most recent data available in 2003 from CIA World Fact book
*The human development index (HDI) index stands as a model for development in general (accounts for literacy, health, economic…). For comparison, in 2002, the index was 0.93 for the USA and 0.32 in Ethiopia.

Religion is also capable of influencing the OFC's customer base. The Christian faith is the main religion in 30 of the centers identified (15 Protestant

countries and 14 Catholic). Cyprus (Greek part) is known to attract Eastern European customers (Orthodox Christians) while Bahrain, Lebanon and Labuan attract essentially customers of the Muslim faith.

Human development indexes (where provided) have a tendency to be relatively high for successful OFCs, but unfortunately, these indexes are not available for all OFCs. Having the possibility to levy tax on a foreign tax base enables OFCs to levy more tax than their economic activity would normally allow. As a result, the quality of life can become very good (including some level of welfare state) in successful OFCs. This particularly applies to OFC/tax havens that allow the domiciliation of foreign nationals on their soil.

2.4.5 Political factors

From a political point of view, it is noticeable that the OFCs so far discussed have pluralistic regimes (less so in the cases of Singapore and Liechtenstein) but all have good law enforcement, which is crucial for ensuring economic freedom. Various political indicators for OFCs are displayed in Table 2.4-10.

The Heritage Foundation (2005) provides indexes[81] of economic freedom. Not all OFCs are represented, but those included usually rank relatively well. The index takes into account: economic freedom in terms of "trade policy, fiscal burden of government, government intervention in the economy, monetary policy, capital flows and foreign investment, banking and finance, wages and prices, property rights, regulation and informal (or black) market activity" (p1).

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[81] Available at http://www.heritage.org/research/features/index/downloads/PastScores.xls

Table 2.4-10   Political factors in OFCs

OFC	UNO SINCE	Government type	Head of state from	Independent	Past colonial power
ANDORRA	1993	Parliamentary democracy	France/Spain	1278	nil
ANGUILLA		Internal self government	UK	no	UK
ANTIGUA	1981	Internal self government	UK	no	UK
ARUBA		Parliamentary democracy	Netherlands	1986	Netherlands
BAHAMAS	1973	Parliamentary democracy	UK	1973	UK
BAHRAIN	1971	Constitutional Monarchy	Local	1971	UK
BARBADOS	1966	Parliamentary democracy	UK	1966	UK
BELIZE	1981	Parliamentary democracy	UK	1981	UK
BERMUDA		Internal self government	UK	no	UK
BRIT. VIRG. ISLs		Internal self government	UK	no	UK
CAYMAN		Internal self government	UK	no	UK
CYPRUS	1960	Parliamentary democracy	Local	1960	UK
GIBRALTAR		Internal self government	UK	no	UK
GRENADA	1974	Parliamentary democracy	UK	1974	UK
GUERNSEY		Internal self government	UK	no	UK
HONG KONG		Internal self government	China	no	UK
JERSEY		Internal self government	UK	no	UK
LABUAN		Special Economic Zone	Malaysia	no	UK
LEBANON	1945	Republic	Local	1943	France
LIECHTENSTEIN	1990	Constitutional Monarchy	Local	1806	Germany
LUXEMBOURG	1945	Parliamentary democracy	Local	1839	Netherlands
MALTA	1964	Republic	Local	1964	UK
MAN Isle of		Internal self government	UK	no	UK
MAURITIUS	1968	Parliamentary democracy	Local	1968	UK
MONACO	1993	Constitutional Monarchy	Local	1419	nil
NAURU	1999	Republic	Local	1968	Australia
NETH. ANT.		Parliamentary democracy	Netherlands	no	Netherlands
PANAMA	1945	Republic	Local	1903	Colombia
San MARINO		Republic	Local	301	nil
SINGAPORE	1965	Republic	Local	1965	Malaysia
StKITTS & N	1983	Parliamentary democracy	UK	1983	UK
StVINCENT	1980	Parliamentary democracy	UK	1979	UK
SWITZERLAND	2002	Parliamentary democracy	Local	1291	nil
TRINIDAD		Parliamentary democracy	Local	1962	UK
VANUATU	1981	Parliamentary democracy	Local	1980	UK/France
WEST SAMOA	1976	Constitutional Monarchy	Local	1962	N. Zealand

Most recent data available (2003) from the CIA World Fact book

Three of the OFCs, Hong Kong, Singapore and Luxembourg appear in the first

three places in the Heritage Foundation's economic freedom index. The UK ranks 7th

and Switzerland 12th on a par with the USA. Bahrain scores better than any other

country in the Middle East with Israel ranking second. Smaller OFCs are not

represented, but would most likely do well, as ensuring economic freedom is at the basis of the concept of being home to an OFC.

Twenty three of the OFCs identified in our sample are former (or present) British dependent territories. In fact 20 of the 36 OFCs have a foreign head of state (Queen Elizabeth II in 13 cases). Having a foreign head of state ensures a degree of political support from a more powerful country[82]. This alliance can be useful but usually involves a constraint on the citizens of the allied country to benefit from the OFCs' advantages (French citizens in Monaco must pay tax).

2.5 Conclusion

Offshore finance emerged from the possibility of attracting expatriate funds through favourable regulation. Early successful examples, such as Switzerland encouraged other smaller jurisdictions to follow and copy the profitable concept. Small countries became OFCs in order to provide employment to their citizens, either to work in the financial sector or indirectly, to serve expatriate workers or wealthy expatriates visiting or living in the OFC. The monetary amounts involved are considerable, and recent figures (BIS, 2004) suggest that the amounts deposited in OFCs exceed US$4 trillion (almost the amount of bank deposits in the USA). Regulation is a key factor in the success of an OFC's and various types of regulation, which allow offshore banks to exist in the first place, have an influence on the operational characteristics of these banks as well as other business conducted in OFCs.

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[82] Integrity stability and quality of service are cited as the most important features for OFCs and do add up (Chambost, 1999; Doggart, 2002; International Financial Law Review, 2000, p5).

3 Regulatory issues

Chapter 3 will describe and explore the regulatory features that make OFCs unique as well as considering the consequences of competitive regulation. As shown in the previous chapter, the main characteristic of OFCs as a group is their pursuit of a deliberate policy of creating an attractive regulatory environment for foreign business activities. This is achieved by imposing as few operating constraints as possible[83]. It is reasonable to assume that the regulatory environment influences the features of banking (and other business) conducted in OFCs. Consequently, it is necessary to explore the broad characteristics of OFC regulation before we examine the performance of banks operating in these centres.

This chapter will also investigate the nature and uses of various legal entities, which are made available offshore. Offshore banks form a part of these legal entities, and are considered comprehensively in the legal context that governs their course of business (see also chapter 4 'Features of Offshore Banks'). The tax environment and the principles along which they can be used by foreign investors will be defined, as well as secrecy regulations that influence offshore banking business. Furthermore, various anti-money laundering regulations and the way international organisations have influenced the crafting of offshore regulation will be explored.

3.1 Regulatory policy of OFCs

Most OFCs are small and politically stable entities, usually having few resources apart from tourism and limited alternative sources of income[84]. To ensure their prosperity, OFCs have developed and differentiated themselves through

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[83] Clarke (1967) "Even a few restrictions can hamstring the true functioning of an international centre as both New York and Paris, in their different ways, have discovered since the war" (p66).

[84] E.g. the steel industry in Luxembourg or phosphates in Nauru, agriculture in the Channel Islands, and fishing in the Isle of Man and Bahrain

regulation, making foreigners benefit from legal conditions usually unavailable to their own citizens, attracting both offshore financial service providers and their customers.

3.1.1 Offshore banking regulation and supervision

Prudential regulation is the cornerstone of banking regulation offshore as well as onshore. Various factors make bank regulation necessary. Banks funded with deposits are vulnerable to runs (when all the bank's depositors wish to withdraw their money at the same time) and the system in its entirety can be vulnerable to panics[85] (e.g. when trust in the country's financial infrastructure ceases). In general, regulation essentially aims at maintaining confidence in the banking system to avoid such problems (Battacharya & Thakor, 1993; Goddard et al, 2001). Solutions may involve introducing a deposit insurance scheme backed with a tight control over the banking system, eventually closing down banks that do not comply in order to avoid contamination (Cebenoyan et al, 1993)[86]. Another measure to prevent money from fleeing the country lies in suspending convertibility[87]. The amounts of capital and liquidity banks are supposed to keep can be regulated by law, thus limiting the amount of risk banks are able to take (Battacharya and Thakor, 1993).

Johns (1992) states that in order to attract offshore banking customers, minimal regulation is required in order to ensure solvency and to protect depositors. Otherwise, the OFCs reputation may suffer should a bank go bankrupt and its

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[85] OFCs are also vulnerable to panics. Examples include Lebanon during the civil war, Panama during the US intervention in 1989, and Bahrain during the first Gulf war in 1990.

[86] Thus according to Cebenoyan (1993) in 1989, the US authorities decided to shut the thrifts having insufficient capital. Shutting banks can also correspond to other needs such as protecting the deposit insurance funds and encourage efficiency.

[87] However, suspending convertibility or preventing money to leave the country are not solutions for OFCs as deposits are rarely held in the OFC's currency and as by definition, they must let money flow freely in and out of their territories.

customer's lose money. Moreover, when banking is not sufficiently regulated, the centre may even become attractive to tainted business. The authorities in charge of offshore banking must formulate regulation attractive enough for banking without permitting abuse. A classical example involves the reserve and capital requirements, which may be maintained at a lower level offshore. Interest rate and exchange controls are normally non-existent offshore and business regulation are also typically liberal. Diversification criteria are less restrictive and reporting requirements may even be non-existent.

Goddard et al (2001) state that various forms of bank regulation (structural regulation, conduct regulation and product regulation) also aim at increasing bank efficiency. Structural regulation separates banking activities (such as the former Glass Steagall Act in the US), or creates artificial entry barriers. Conduct regulation restricts the ways banks can operate, while product regulation concerns the products banks can sell. These forms of regulation appear in the requirements, set by OFCs for the establishment of offshore banks. Thus, regulation may specify whether a bank licence authorises the owner to operate in the OFC or strictly abroad, the nature of customers and services offered. Capital and cash requirements vary widely from OFC to OFC[88] and within OFCs from one type of bank licence to another. Naturally, banks are faced with the revocation of their licence if they should break the law (Chambost, 1999, p76)[89]. It is also worth noting that no company's name can include such words as "bank" or "insurance" in any jurisdiction, unless it buys a proper licence to carry out such business.

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[88] Thus Luxembourg as well as banks operating from the IBFs were originally exempt from capital requirements (Doggart, 2002, p81).
[89] Chambost (1999, p76) mentions that some OFCs are actively trying to sell offshore banking licences for shell banks (OFCs like Barbados and Cyprus), while the most established OFCs are more restrictive having had some problems with them in the past. All OFCs are not specialised in offshore banking, and many of them do not even offer offshore banking facilities, such as Bermuda, where bank secrecy does not exist and where the number of banks has for a long time been limited to 3.

Deposit insurance is an important feature of bank regulation in most developed countries. By contrast, few OFCs have deposit insurance schemes, as their imposition implies a tight control over the banking system, which OFCs often have neither the will nor the capacity to implement. According to an overview of the 'IMF assessment' documents available in February 2006 (covering 23 OFCs), very few OFCs had established deposit insurance schemes. In some cases, foreign branches may be covered by their home deposit insurance scheme (for example, US banks in Palau, accounting for 84% of the deposits of Palau, are FDIC insured [IMF, 2004]). Alternatively, large international banks may insure the deposits held in their offshore subsidiaries or branches. For instance, Abbey National Offshore informs its customers that their deposits are fully guaranteed by Abbey National PLC[90]. Luxembourg appears to be the only country with a compulsory deposit insurance scheme (in application of EC law about deposit insurance) covering accounts in all currencies (up to €15,000 until 31/12/99, €20,000 thereafter[91]). In Switzerland, voluntary deposit insurance schemes exist (banks may chose to join such schemes or not) and the majority of the deposits are insured (Birchler and Maeschler, 2002). Monaco (IMF, 2003) is covered as part of the French system (which only covers French currency deposits [FF or Euro][92]). In the Bahamas, deposit insurance is compulsory for Bahamian Dollar accounts up to B$50,000 (thus covering the local needs but not offshore business). Other countries have made steps towards the adoption of deposit insurance schemes. An informal scheme was started in Andorra in 1995. Hong Kong and Singapore also envisaged the introduction of deposit insurance schemes (see HKMA, 2002; Kiang, 2002).

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[90] http://www.investorsoffshore.com/html/features/feature_bankinga.html (April 2003)
[91] See http://www.bis.org/publ/bcbsc332.pdf
[92] See http://www.bis.org/publ/bcbsc332.pdf

Bank subsidiaries of onshore banks are supposed to be supervised both by the authorities of the OFC and the authorities controlling the main bank onshore[93]. The Basle Committee on Banking Supervision (BCBS) had to react after the Bank of Credit and Commerce International (BCCI) scandal and the failure of Barings both of which were due to poor supervision of foreign banking subsidiaries (Doggart, 2002, p78)[94]. The committee decided that banks should be supervised on a consolidated basis. Prime responsibility for supervision was given to the bank's home country authorities, with a possibility for the host country to restrict the subsidiary's activity should the parent's bank supervision be insufficient. On the OFC's point of view, poor supervision resulting in a banking failure may result in a loss of jobs and trust in the OFC's banking sector causing irreparable damage. For example, most offshore banks of the Cayman Islands are subsidiaries of large banks and are supervised both by home country regulators and the Caymanian authorities (Doggart, 2002, p81).

Several legal features included to make offshore regulation attractive to foreign business include (see IMF, 2000; BIS, 2000): low legal reserves requirements, allowing for greater leverage; low fees required to create a bank; little reporting requirements; low or no tax on banking business (yearly fee and low tax on profits); higher bank secrecy levels enforceable; low levels of taxation for its customers. Appendix 2 provides illustrations of such regulations. These characteristics have since then been altered by the implementation of the FATF's recommendation[95] on bank supervision. Errico and Musalem (1999, p26) thus note that offshore banks tend to

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[93] Or offshore if the subsidiary happens to be the offshore subsidiary of another offshore bank thus BluBank Panama, a subsidiary of Blubank established in 1995 in Nassau Bahamas, is regulated by 'The Central Bank of The Bahamas' and 'La Superintendencia de Bancos de Panamá' (http://www.interbankoverseas.com).

[94] Errico and Musalem (1999) mention several significant offshore bank failures: BCCI 1991, "Meridien Bank International (1995), the European Union Bank of Antigua (1997), and American Express Bank International (1997)".

[95] The financial action task force was created by the OECD to improve standards in the fight against financial crime and money laundering. It issued recommendations; see FATF 200 and FATF 2001.

have more freedom to manage their balance sheets as many OFCs impose no or very low reserve and liquidity requirements, lower restrictions concerning liability and asset concentration and capital adequacy. Consequently, offshore banks can use these features to appear more profitable than onshore banks. An onshore parent bank could establish a subsidiary offshore to boost its risk/return and, as it is ultimately responsible for its branches, the risk born by the offshore subsidiary is ultimately borne onshore, too.

Private banking tends to represent a sizeable share of the banking business conducted offshore. Maude and Molyneux (1996, p206) explain that private banking tends to be less regulated than the conventional loan and deposit business because it involves little lending (i.e. low credit risk). Furthermore, private banking business essentially involves fiduciary accounts (essentially off balance sheet, the customer bears the risks), with private banks' exposition to the market being limited.

One of the most common problems concerning offshore financial supervision in the OFCs is the lack of independence between the government and the financial regulatory authorities. Several studies[96] have underlined the risks of conflicts of interest in OFCs. Typically, these countries consist of a reduced population and therefore a reduced workforce. As a result, a small number of people tend to work in the financial sector, usually acquainted with one another. Political personalities often have a background in the financial sector, too. This situation may in some cases impair law enforcement.

One of the most essential features of OFCs is the lack of constraints on the flow of foreign currencies from one territory to another (the recourse to suspending convertibility is of no help with foreign deposits held in foreign currencies). As a

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[96] See all Stationery Office (2000) reports about the British Virgin Islands and Bermuda and most Peillon and Montebourg (2000-2002) reports.

result, money can flow freely from one OFC to the other. Consequently, the amount of money deposited in offshore banks is volatile. The governing bodies of OFCs, who are aware of this situation, aim at establishing a competitive and accommodating environment in order to attract onshore business. Capital can flee from onshore to offshore jurisdictions or from offshore to offshore jurisdictions (capital flight from offshore to onshore is rare[97]). Typically, capital flees high tax, changes in tax laws, and political turmoil[98]. These fund flows can either follow (or wait for) their owners in exile, or seek the highest yield available at any moment worldwide. It is therefore not surprising, that any change in the legal framework of a country, or a major political event affecting the country, can lead to substantial amounts of money leaving for a more favourable jurisdiction. Some interesting examples include:

- ❖ Deposits left Bahamian banks for Caymanian banks, when the Bahamas became independent from the UK (Hudson, 1996).

- ❖ Panama replaced Havana as a South American OFC after the Cuban revolution (Kaufmann, 2000).

- ❖ Beirut (Lebanon) succeeded Tangiers after independence from France as a financial centre for Arab countries (Kaufmann, 2000)

- ❖ Deposits left Lebanon for Bahrain during the Lebanese civil war

- ❖ Bahrain lost 50% of its deposits following the invasion of Kuwait (1990-1991) Chambost, 1999).

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[97] Some authorities of high tax countries (like Italy) have made tax amnesty proposals for people repatriating money from their offshore accounts. Some money has been repatriated, but the amounts concerned remain somewhat minor by comparison with the total amounts estimated to be domiciled offshore. New York took some business from Caribbean OFCs when the IBFs were set up (Hudson 1996).

[98] Like a revolution or a drastic change in the government of a country. Money fled France for Switzerland during the revolution of 1789, during the riots of 1968 and when the Left won the elections in 1981.

❖ When General Noriega was arrested, substantial funds flowed from Panamian banks, seeking shelter mainly in the British Virgin Islands (Euromoney 1992 p3).

❖ German savers transferred DM50 billions to German bank subsidiaries in Luxembourg in 1992 fearing the reintroduction of a withholding tax (Doggart, 2002, p150)[99].

❖ Concerns over the Chinese take-over of Hong Kong led to fund flows that benefited Bermuda and the Channel Islands (Euromoney, 1992).

❖ US former treasury secretary Paul O'Neill insisted that he did not want to see financial assistance for struggling Latin America end up in "Swiss bank accounts"[100].

❖ Political tensions led Arab money to leave the USA for Arab OFCs (UAE[101], Bahrain, Lebanon) after Sept 2001 due to political tensions (Euromoney, 2004, p97; The Banker, April 2003, pp171-172).

❖ More recently, deposits fled European OFCs for Dubai and Singapore as depositors wished to avoid the newly implemented withholding tax (Cooper, 2005, p6)

As the previous examples show, money can easily leave an OFC for another, and OFCs must make specific efforts to remain attractive to the international investor. There is a constant competition among OFCs worldwide to attract funds. Regulation is the one deciding factor OFCs can most easily adapt to remain attractive to their customers. This particularity of OFCs deserves specific attention.

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[99] According to L'Expansion (1995), the rise in taxes on financial profits can trigger capital flight. For example, when the German government decided to tax financial income at 25%, between 1992 and 1993 US$20 billion left Germany for Luxembourg, and at least 10 billion more left for the Channel Islands thus forcing the German government to reconsider its decision.

[100] Paul O'Neil's statement 28/07/02 is available on http://news.bbc.co.uk/1/hi/business/2167921.stm

[101] The UAE started to develop offshore banking activities in the late 1990s, too late to be part of the sample.

3.1.2   OFCs compete on regulation

As shown, OFCs are often or mostly poor or isolated jurisdictions taking advantage of their sovereignty by creating attractive regulatory environments (Hudson, 2000, p22; Godefroy and Lascoumes, 2004, p29). In order to maximise the effectiveness of their legal choices, OFC users are often consulted by OFC decision makers when new laws come into effect[102].

Because the requirements for becoming an OFC are essentially easy to imitate, barriers to entry in the OFC market are rather low and many small countries try to enter[103]. However, most of the factors determining the investor's choice are not modifiable, such as geographical[104] or socio-cultural factors. As regulation is the easiest factor to control, OFCs essentially compete on regulation. Often, they try to complement neighbouring OFCs rather than compete directly. Having a limited amount of resources they can devote to administration and control of the OFC, they have to choose the sectors in which they can specialise. OFCs with low population densities may be more keen to admit tax refugees (like Cyprus) while others with less space available are more restrictive (Channel Islands). The conditions for obtaining a bank licence also vary considerably from OFC to OFC. Nauru and Samoa are less restrictive than Cayman, itself is less restrictive than Switzerland[105]. Some OFCs such as Switzerland only offer real advantages to the banks' customers rather than the banks themselves.

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[102] See Eude in Country Life (2005, p32). The managing director of Monaco's Bankers' Association mentions such cooperation between the banking industry and the Monaco authorities in the 1970s.
[103] Recent OFCs trying to enter the offshore banking market include Hungary, Montenegro and Croatia in Europe; Ingushetia in former USSR; the Emirates in the Gulf.
[104] Lipper (OFID, 1997) notices that Luxembourg was benefiting from its geographical position, surrounded by high tax neighbours Belgium, France and Germany.
[105] See for example FATF or FSF reports and classifications

Regulation, however, cannot provide a competitive advantage by itself, because it can be easily copied. Many other OFCs have replicated the successful law of offshore companies enacted in the British Virgin Islands[106]. As a result, these laws tend to be very similar. Additionally, the recent need to respect minimal international standards reinforces this trend (such as the 40 FATF recommendations). Location, political stability, qualification of the workforce, appeal of the country and reputation, are probably much safer sources of competitive advantage. However, such factors take time and money to develop. Trying to attract customers using merely lax regulation can be dangerous, as it may attract tainted business which in turn, may result in onshore pressures or damaged reputation thereby loosing the interest of legitimate business.

Some OFCs are in direct competition. Well documented cases include Lebanon vs. Bahrain (Chambost, 1999), Bahrain vs. Dubai (Dudley, 2003), Cayman vs. Bahamas (Hudson, 1996) and Luxembourg vs. Dublin and the Channel islands in the field of fund management (Orton, 1997) [107], Switzerland vs. Luxembourg or Hong Kong vs. Singapore (AFP, 2002). OFCs must be able to adapt constantly to remain attractive.

The rivalry between Hong Kong, Singapore and more recently Shanghai is an interesting example. Competition is very strong because these OFCs serve the same geographical and socio-cultural area. In April 2002, Singapore decided to decrease its income tax rates for both people and companies from 26% and 24.4% respectively down to 20%, yet still above Hong Kong's rate of 15%. Both former British colonies

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[106] According to Chambost (1999, pXV), the 300,000 offshore companies domiciled in the BVI are the result of one lawyer's work. The cost of implementing it was small in comparison with the revenues obtained with it.

[107] Luxembourg seems to benefit from a first mover advantage over its newer rivals. In 1996, there were US$341 billion domiciled in Luxembourg vs. US$33.3 billion in Dublin which was in full expansion (Private Banker International, Dec. 1996, p4). Courtois (1999, p305) illustrates how Luxembourg positioned itself as a platform for pension funds.

are in fierce competition over being the leading local financial and business centre. Geography also makes a difference in terms of appeal. Hong Kong is better located to serve China, whereas Singapore is closer to south East Asia, a region with a large growth potential[108]. In the meantime, in China itself, Shanghai is becoming an important financial and economic centre competing with Hong Kong and Singapore (AFP, 2002).

Within the EU, Dedieu (2005, pp48-49) reports that Cyprus is in competition with Luxembourg. Due to the low level of corporate tax, 40,000 companies are booked in Cyprus. A substantial share of the business comes from Eastern Europe and Russia. Luxembourg H29 tax code article allowed wealthy people living in Luxembourg to hold shares in foreign companies while paying no tax on dividends and capital gains. This article was withdrawn following complaints from other EU member states and was replaced by other articles almost as attractive (such as the "societe d'investissement en capital risque" specially targeted at venture capital investments). Cyprus had to give up bank secrecy at least towards EU nationals as a condition to join the EU. In this rivalry, Luxembourg has the political advantage of being central to the EU as a founder member state and having been in the first to advance international banking expansion in the EU.

On this point, Dudley (Jan. 2003, pp103-104) notes that appropriate regulation will be key to help Dubai becoming a major financial centre. Bahrain, the world leader in Islamic finance (with its own rating agency), made efforts to reinforce the capacities of the Bahrain Monetary Agency. Dubai hired the services of Philip Thorpe, former head of the British FSA (Financial Services Authority), to regulate its financial centre in order to promote its competitive position.

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[108] The ASEAN treaty will lead to the creation of a major free trade zone, regrouping Brunei, Cambodia, Indonesia, Laos, Burma, Philippines, Singapore, Thailand and Vietnam, with some interesting development prospects.

Some OFCs sometimes issue controversial laws while trying to outflank their competitors. In 1995, The Seychelles issued a law promising wealthy investors immunity from prosecution for criminal offences and protection from seizure of their assets provided they did not commit acts of violence or become involved in drug trafficking while in the Seychelles. International protests led to the cancellation of this law (Doggart, 2002, p33).

Some OFCs successfully achieve specialisation such as Caribbean OFCs in hedge funds (Lipper, OFID, 1997), Switzerland in banking, or Bermuda in reinsurance (Stationery Office, 2000). Monaco has pursued efforts to home 'family offices'[109]. The following section will explore the legal entities that are present in OFCs alongside offshore banks.

3.1.3 Legal entities available offshore

The most significant feature of offshore regulation is the supply of specific legal entities for foreign users. These entities sometimes complement offshore banks (as trusts or offshore companies), and often, offshore banks hold the legal expertise to make these legal entities available to their customers.

3.1.3.1 Banks

Offshore banks, the topic of this thesis, are probably the most essential actors in offshore finance. They thrive on local regulation featuring low tax, little regulatory constraints and bank secrecy. In theory, they are supposed to be managed from the OFC itself. In practice, much of the essential bank management work tends to be outsourced to bigger financial centres. Their main characteristic is to accept funds from foreign customers in many currencies (not necessarily the currency of the OFC),

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[109] Monaco's tax regime favours wealth management as the management of people's private wealth is not considered a commercial activity (tax on profits derived of commercial activities is otherwise levied at a 33.33% rate). See Easun in Country Life (Dec. 2005, p28).

and to lend or invest these funds outside of the jurisdiction. Offshore banks will be discussed in detail in the next chapter.

3.1.3.2 Trusts

Offshore trusts play an important role in the field of tax avoidance/minimisation. Chambost (1999, p 607) notes that without trusts, tax havens would be almost impossible to use. According to Hampton (1993, p110), "*A trust is a legal entity developed from Anglo Saxon common law as a device that separates assets from their original owner. The original owner, the 'settler', gives over legal ownership to the trustees for the benefit of a third party, the 'beneficiary'*".

The trust is a legal act by which a "settler" transfers goods to a "trustee", so that the latter administers them or uses them in favor of one or several people, who are the real beneficiaries.

Three main types of trusts are present in Anglo Saxon law. The fixed interest trust: the rights of the beneficiary are defined in the constitutive act of the trust. The trustee is supposed to operate the transfers to the trustee in the way and at the time point defined in the Trust Deed; the discretionary trust: the trustee has the power to decide how the money will be attributed to the trustee; the accumulation trust: the income produced by wealth entrusted to an accumulation trust is tax free and is systematically reinvested to produce more wealth (Chambost, 1999).

Trusts are relatively easy to establish[110], and in many jurisdictions, a simple letter is sufficient. Since trusts can be set up in offshore jurisdictions while keeping the owner or beneficiary identities secret, the settlor can also be the beneficiary.

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[110] See OCRA's website at http://www.OCRA.com

Offshore trusts are essentially aimed at serving individuals rather than companies. Trusts can also be established offshore to serve good causes[111].

The main motivations for depositing money offshore are: asset protection, avoidance of inheritance tax, or the provision of a lump sum for retirement (Lacey, 1996). Offshore companies can use them to accumulate and reinvest profits in a low tax offshore environment. They are also useful in providing anonymity, thus helping avoiding taxes and death duties.

3.1.3.3 Offshore Corporations

According to the FSF (2000) offshore corporations, also called International Business Corporations are limited liability corporations registered in OFCs for the purpose of raising capital or operating a business (usually non resident business) allowing the owner to transfer money on and offshore while avoiding tax. Beyond low tax, other advantages include secrecy, low cost, low capital, and the possibility to conceal the true identity of the directors and owners thus not engaging their responsibility while making transactions.

They can be combined with other offshore structures[112] to increase identity protection of the beneficial owner (at least for the five years tax authorities usually have to prove a tax infraction[113] [Besson, 2002]). The conditions for set-up and upkeep of offshore companies vary substantially. Isle of Man companies cost £300 per year while the Swiss SA requires CHF50,000 of capital. All included, creating a company costs US$100,000 in Bahrain (Chambost, 1999, p197). The setting up of an

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[111] The Onassis foundation, based in Liechtenstein, funds health and education projects in Greece (Newsweek, 2004).
[112] See BBC (Oct. 31st 2003) and Baker and Glasser (2003) about the use of offshore legal entities by Yukos.
[113] Since banks and other financial institutions are supposed to keep records of the transactions for five years in most developed countries, if one forgets to pay tax, one's tax authorities can only prove the existence of the infraction for five years.

offshore corporation also necessitates significant consultant (e.g. lawyers or accountant) expenses.

Some OFCs (such as Montserrat and Turks and Caicos) offered the possibility to use bearer shares (physical certificates of ownership on which the name of the owner does not appear) for the ownership of offshore companies. These allowed the anonymous detention and transfer of property[114]. The owner of a bearer share may be the only person to be aware that he owns this share. OFCs with regulation that authorizes the issuance of bearer shares have had to modify these regulations under the pressure of international organizations[115]. Other companies licensed by OFCs include gaming companies like casinos[116].

3.1.3.4 Offshore export companies

Until 1984 US law allowed an interesting tax deferral process to US export companies, called Domestic International Sales Corporations (DISCs) (Doggart, 2002, p98). DISCS allowed companies to pay less tax on the profit made by exporting US products. Following GATT complaints, the USA had to replace the DISCs with a different kind of structure, the Foreign Sales Corporation (FSC), which still benefited from a lower tax rate. The FSCs can be launched from Guam, Northern Mariana Islands, Samoa, or US Virgin Islands, all under US protection. In May 2003 (AFP[117]), the World Trade Organisation (WTO) authorised the EU to enforce sanctions for

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[114] According to Small (1999) "Bearer shares are negotiable instruments with no record of ownership so that the title of the underlying entity is held essentially by anyone who possesses the bearer shares". The only way to identify the beneficiary owner of the bearer shares for banks is to keep them in custody for their customers.
See also the IRS web page http://www.irs.gov/businesses/small/article/0,,id=106572,00.html

[115] See var. Stationery Office reports, FATF recommendations

[116] Antigua, Barbuda, Palau, Vanuatu have been cited by the US state department for having sold gaming licences used for internet casinos. Such licences can be sold for up to US$100,000. The practice of selling such licences has come under criticism by international organisations. http://www.state.gov/g/inl/rls/nrcrpt/2001/rpt/8487.htm

[117] Agence France Presse news agency

US$4 billion per year[118] against the USA for its refusal to dismantle the FSCs. Various large companies, such as Microsoft and Boeing use FSCs for facilitating their export activity.

3.1.3.5 Offshore funds

An offshore fund is an investment fund domiciled in an OFC. The advantages of operating a fund in an offshore financial centre are linked with the lack of regulation concerning the minimum capital required for creating and operating the fund, along with tax advantages. They are typically not bound by the same reporting regulations as funds established onshore (Gabler Bank Lexicon, 2000, p986). These funds can also engage in investments or speculation usually considered too dangerous and therefore not allowed for onshore funds. Private Banker International (1996, p4), citing the results of a Fitzrovia study based on 4816 offshore funds, estimated funds under management offshore amounted to US$402 billion[119]. The Fitzrovia study mentions Luxembourg as the biggest European centre[120] for offshore funds, representing two thirds of European offshore funds, followed by Dublin and the Channel Islands. In 2001, Standard and Poors listed approximatly 7,000 offshore funds (Doggart, 2002, p73). More recent estimates provided by Burgess (2005), report that hedge funds (which are offshore funds) represent about US$1 trillion in total assets in 2005, and that there may be between 7,000 and 8,000 of them. Hedge funds are set up offshore to benefit from lesser regulatory constraints (usually tax requirements) or to avoid (albeit minimal) onshore regulations.

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[118] The highest penalty ever granted by the WTO

[119] This amount of money can be compared with the amounts of offshore deposits as estimated in chapter 2. The amount of money invested through offshore funds would represent about a fifth of the US$2 trillion of offshore bank deposits in 1996.

[120] Neocleous (2002) reports that in 1996, Luxembourg accounted for half of the world's offshore mutual funds.

The advantages for a resident investing in offshore funds can be substantial due to the absence of capital gains tax. This means that capital can be switched from one investment to another with limited cost. Tax may be payable when the shares in the fund are sold, but the money may be rolled up, switching investments for several years without tax. OFCs sometimes offer the possibility to publicly trade these offshore funds under certain conditions[121].

3.1.3.6 Reinsurance and captive insurance

Ayling[122] (1992) defined the process of reinsurance in the following way: "When individuals or organisations enter into arrangements by which liability for financial consequences or physical and/or legal losses are transferred to an insurance company, the process is called 'insurance'. When insurance companies transfer risk in a similar fashion, the process is called reinsurance" (pp327-328). They typically reinsure catastrophic risks (FSF, 2000). Johnston (2001) reckons that the insurance/reinsurance business is of prime importance for Bermuda, supplying the Island with jobs and income. According to L'Expansion (1995), Bermuda accounted for 50% of the North American reinsurance market[123].

By comparison, a captive insurance company is an insurance company which is owned by those it insures, thus helping them to save on their insurance premiums (see captive.com). According to Chambost (1999, p371), the use of captive insurance for big corporations is quite common: in 1998, 90% of the 500 largest US corporations used them. There are onshore captive insurance companies, but incorporating offshore has substantial advantages. Favourable regulation and low tax

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[121] Hedge funds can even list themselves for electronic trading on http://www. plusfunds.com on the Bermuda exchange. To be listed, the fund manager must disclose some information such as the structure of the fund and the nature of its assets, thus ensuring the quality of the funds traded.
[122] Definition published in the Palgrave dictionary of money and finance
[123] The Economist (June 2004, p91): ACE and XL Capital are the two most prominent Bermuda insurers.

make offshore captives more attractive. Owning a captive insurance offshore can help risk management and tax minimisation (FSF, 2000), but some companies such as Unilever, Philips and Lufthansa have decided to establish their captive in their home country. Chambost provides a list of the OFCs showing the number of captives they hosted in 1997 (Table 3.1-1).

Table 3.1-1   Classification of OFCs per number of captive insurance companies in 1997

Rank	OFC	Number of insurance companies (1997)	Number of insurance companies (2001)
1	**BERMUDA**	1,504	1,199
2	**CAYMAN**	450	613
3	**GUERNSEY**	320	383
4	**LUXEMBOURG**	250	316
5	**BARBADOS**	208	n/a
6	**ISLE of MAN**	164	165
7	**IRELAND**	146	251
8	**B.VIRGIN ISLANDS**	72	263

Data for 1997 from Chambost (1999, p371); data for 2001 from the IMF assessment reports for the corresponding OFCs. The figures concerning Luxembourg and Ireland in 2001 were estimated from the IMF OFC assessment 2006.

According to KPMG (2001), the main reason for using a captive insurance company is cost reduction. In a conventional insurance company, the amount of overhead and profits can reach up to 40% of the insurance premium. This cost may be substantially reduced by the use of a captive insurance company. The owner of an offshore captive insurance company also has the possibility of tax free investment of the money held in reserve by the insurance company and thus allowing him to reduce its insurance expenses in the long term. Beyond cost reduction, another incentive for using captive insurance companies is that insurance may be unavailable for insuring some very specific risks, thus encouraging companies to insure themselves.

According to Ball (1995), the frequency and cost of natural disasters has been increasing dramatically over the past decades. Facing a scarcity of insurers and very high premiums, many British and US companies decided to set up captives. Usually,

the premiums paid to these companies are tax deductible. The cost of insuring the risks, even though some reinsurance needs to be paid, is lower than the cost of conventional insurance. Doggart (2002, p88) notes that 31 oil companies created captive insurance firms in Bermuda to insure against oil spill related risks. US surgeons also own captive insurance companies in Bermuda or Cayman to insure themselves against malpractice lawsuits, which can be prohibitively expensive[124]. Setting up a captive is worth the cost when insurance premiums exceed about US$500,000 per year (Chambost, 1999, p80).

3.1.3.7 Flags Of Convenience and Free Trade Zones

Most OFCs also offer the possibility to register ships under Flags Of Convenience (FOCs), and most of the world's commercial fleets use them[125]. There are seven OFCs fleets among the world's 15 biggest commercial fleets with the two leaders being Liberia and Panama. FOC registration allows for anonymous ownership, low tax, lesser social and environmental constraints, and a low cost of registration. Israeli and South African vessels also have been using the neutrality and anonymity provided by FOCs when these countries were facing international sanctions (Doggart, 2002, p90).

Even countries without coast access (such as Bolivia) sell FOC registrations. Following the 11th of September terrorist attacks, the USA has pushed for the adoption of global standards (for limiting the risks of FOCs to be used for terrorist purposes), such as ownership transparency (The Economist, May 18th 2002, p87).

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[124] According to a report from the Connecticut general assembly :
http://www.cga.state.ct.us/2003/olrdata/ins/rpt/2003-R-0662.htm US surgeons often have very heavy malpractice insurance premiums (sometimes more than US$ 120,000 per year per surgeon). A group of surgeons (or a hospital or a surgery) may set up or join a captive offshore to pay lower insurance premiums. It takes five surgeons to exceed Chambost's US$500,000 of premiums per year; see also Courier International (July 2002, n.611, p14).
[125] In 2000, it about 64% of the world's commercial fleets was using FOCs (Doggart, 2002, p90). The latest data available in 2005 showed that Panama, the Bahamas, Singapore, Hong Kong, Malta and Cyprus rank among the world's 8 largest commercial fleets (World in Figures, 2006, p74).

Ships registered in countries unwilling to comply with greater transparency regulation could be banned from US ports. This happened to Panama registered boats in 1988 and 1989, when the US wished to put pressure on Panama (Doggart, 2002, p90). According to Besson (2002), one of the world's largest sailing boat, the Phocea (75 meters and four masts), is registered unto the Caymanian flag and is owned by a Channel Island-based company.

OFCs with access to the sea and deep sea harbours can also benefit from the expansion of international trade by setting-up free trade zones (FTZs). FTZs sometimes co-exist with OFCs, like in Panama (Colon FTZ) or Hong Kong. FTZs are places, usually harbours, where tax is kept at low (or zero) levels to encourage economic activity. Unlike OFCs though, FTZs are meant to foster trade and manufacturing activities. Various harbours or high unemployment zones have developed their economy by becoming FTZs. Ireland successfully started the first duty-free airport in Shannon in 1947, attracting both industrial and commercial activities. In 1991 the European Union allowed Madeira, the Azores, the Canary Islands, Ceuta and Melilla, to become FTZs for a limited period of twenty years. Nowadays, they are successfully exploited by companies for their low tax features. The low level of tax compensates for the higher expenses linked with their insular nature. Companies located in these places are often used in tax minimisation schemes. Unlike OFCs, FTZs rarely make their own regulations, being no jurisdictions as such.

3.1.3.8 Common features of offshore legal entities

All offshore legal entities exist in some form onshore as well. The differences lie in the ease of creating and operating these entities, the levels of taxation which are typically low, and the level of discretion which is typically high. As the low tax

features tend to be at the core of offshore business, it becomes important to investigate them further. This is the aim of the following section.

3.2 Tax features of OFCs

OFCs all grant some form of tax advantages to their users. It is important to differentiate between several important concepts associated with the exploitation of these tax advantages. Tax planning refers to the use of all means possible within the limits of the law to minimise tax (including the use of loopholes and offshore structures[126]) and is strictly legal and widely used. Tax evasion is the underreporting (intentionally or not) of items which should have been reported to the tax authorities or non-compliance with the procedures. It is an offence, but OFCs often stand accused of helping these sort of tax offences[127]. Tax fraud by contrast is the active deception of tax authorities by providing them with false information to pay less tax (Maude and Molyneux, 1996, p223). However, defining what constitutes fraud vary across jurisdictions (Brindle, 2002, p237).

The agents operating in offshore centres never forget to remind their customers of the limits of what they can expect from OFCs[128]. The wide representation offshore of major companies indicates that OFCs offer plenty of scope for tax minimisation. In some instances, however, OFCs are known to have been used for tax evasion purposes.

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[126] Regulation differs widely across countries, thus offering scope for international tax planning. (Maude and Molyneux, 1996, p82). This may involve the use of advantageous tax treaties. Mauritius, Ireland, Cyprus and Malta have developed network of tax treaties which can be used advantageously (Baker, 1997).
[127] See various documents Peillon and Montebourg (2001-2002), IMF, OECD
[128] i.e.: to state clearly who can pay less tax and in what circumstances

3.2.1   Corporate tax avoidance

Major companies reduce their tax liabilities by using loopholes involving tax havens (Johnson, 2002; Holub, 2003; Houlder, 2004; Citizens for Tax Justice, 2002). The use of loopholes aims at adhering to the letter of the law rather than to the spirit of the law (Holub, 2003, pp246-254). Big US corporations such as Boeing or Microsoft use Foreign Sales Corporations for paying less tax to the US government (thus benefiting from tax breaks on their income from exports). Other big companies are incorporated offshore[129]. Newscorp[130] is reported to use offshore structures to minimise its tax liabilities towards the British and US government. The Economist (March 20th 1999, p84) notes that one may assume that Newscorp uses loopholes to exploit drafting errors and ambiguities, which is entirely legal. One reason why many other international companies do not behave in the same way, is that the complex structures necessary to minimise tax using OFCs, put off financial analysts and institutional investors[131] (especially so since the Enron scandal). Most developed countries have laws preventing companies from transferring their income to tax havens, but closing loopholes takes a lot of time, and new laws potentially create more loopholes.

A Citizen for Tax Justice survey of 275 Fortune 500 companies found that on average these companies paid less than half the normal 35% tax on income, while 82

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[129] Larsen (2002) reports that Tyco was registered in Bermuda. Lamb, Conyers and Pearman (1999) report that the "amalgamation" law adopted by Bermuda in the 'Companies Act' in 1981 governs most public takeovers occurring in Hong Kong as 50% of the companies listed on the Hong Kong Stock Exchange are incorporated in Bermuda. It also offers the advantages of "decreased supervision; secrecy; decreased reporting requirements; and a lower level of protection for creditors, customers and shareholders" (Holub, 2003, p251).

[130] The Economist (March 20th 1999, p83) reports that Newscorp investments have earned a cumulated US$2 billion profit over the previous 11 years without paying British tax. Newscorp's accounts listed around 800 subsidiaries incorporated in Caribbean tax havens. The company's most profitable subsidiary was a company from Bermuda.

[131] The Economist (1999, p84), also mentions that Newscorp's share price performed poorly since the mid 1990s.

of them paid no tax at all[132]. Such large scale use of tax minimisation schemes seems partly due to the fact that risks of detection in cases of fraud are low, with low penalties (Houlder, 2004). While tax planning can be viewed as bad citizenry (Holub, 2003; Houlder, 2004), one can also argue that it is a matter of minimising costs for the benefit of the shareholders (Houlder, 2004). It is interesting to note that tax minimisation schemes do not always involve OFCs[133]. At this point, it is interesting to look at some concrete examples of OFC uses for minimising tax.

L'Entreprise (1994) proposes several ways for a company to minimise tax. This demonstrates that there are still possibilities for companies located in very restrictive countries like France, to use loopholes to minimise their tax liability in spite of stringent regulation. These tax strategies can usually be employed by most companies from developed countries involved in international business. Several factors allow for the use of these tax-minimisation strategies. Firstly, substantial differences in tax treatment exist across Europe and can be used to the advantage of the company. Secondly, some countries of the EU still offer specific tax minimisation possibilities to companies engaged in specific activities[134]. Finally, several 'EU tax havens' have been constituted for economic development purposes[135]. Tax minimisation by companies is based on the following simple principles.

Profits can be transferred to the subsidiary located in a lower-tax jurisdiction taking advantage of transfer prices. In the case of French companies, however, the company will have to prove to the tax authorities that there is an economic interest (non tax related) in doing so. The fairness of the transfer price in general, is assessed

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[132] See their web site http://www.cjt.org
[133] London (Fisher and Bewsey, 2000, p11) registered companies can be used for tax minimisation purposes. If a company is genuinely non-resident, its profits may not be assessable for UK corporation tax purposes.
[134] French authorities can use the article 209B of the tax code to impose tax on the profit of French companies realised in countries where the tax rate is 1/3 inferior to the tax payable in France.
[135] Madeira was granted a tax neutral status until 2001 with the consent of the EU.

with respect to market prices. This method is commonly used in international business. Instead of using transfer prices, one can use consulting fees, or royalties[136].

Lending money to a subsidiary instead of capitalising it is another common method. If the subsidiary does well, the debt can be integrated to the capital, but if the results are bad, the loan can be written off, with a tax deduction. However, if the tax authorities can demonstrate that the whole raison d'être of the project is to lessen the amount of taxes paid, the parent company may have to pay a penalty. Some tax authorities however insist that the loan must be granted at market price.

A French company receiving royalties from a foreign subsidiary (for example from the USA), would see the royalties taxed at 5% in the USA and then taxed in France. Since the relevant tax rate is 0% between the USA and the Netherlands and 0% between the Netherlands and France, this tax can be suppressed with a transit through the Netherlands. Using tax treaties this way seems to be one of the most common methods. Pender (2005) points out that international treaties meant to avoid double taxation of international companies can be exploited to pay very little tax. In March 2005, the UK government announced a plan to close such loopholes.

Domiciliation in a low tax jurisdiction is the last possibility. Of course, successful tax avoidance involves perfect knowledge of the relevant laws onshore and offshore. This is made difficult by the constant adaptation of onshore tax law to close the loopholes. Individuals can take advantage of OFCs to pay less tax using similar principles.

3.2.2   Individual tax avoidance

In most countries, direct taxation is defined as a function of the taxpayers' wealth or income and as a percentage of that wealth or income. Tax havens often offer

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[136] Info Entreprises (1997) 'Paradis Fiscaux: avantages et inconvenients', April p32

another arrangement such as a set amount of tax (also called "flat tax"), sometimes negotiated with the authorities, and which although high in absolute terms, only represents a small percentage of what would have been payable onshore. Between 6,000 and 10,000 people are paying the flat tax in Switzerland. To pay the flat tax, the amount of tax to be paid must already be substantial (typically above £100,000 per year). The amount of tax is negotiated with the tax authorities, and paid year after year, independently of the level of income received. Sportsmen and retired entrepreneurs are keen users of this arrangement (Besson, 2002). Thus, an estimated 100 billionaires (in CHF) are reputedly living in Switzerland, most of them foreigners. The top two wealthiest families in Switzerland are of Swedish origins and include the founders of Ikea and Tetra pack. There, 100 billionaires control an estimated €200 billions[137]. As it will be seen, there are several ways of avoiding taxes and often several jurisdictions must be used simultaneously for this purpose.[138]

Most developed countries enforce death duties and tax on transfers of money as gift. Tax levels usually vary depending on the nature of the relation between the people involved. In France for example, a gift in money is taxable at a 20% rate if it is made within a family in direct line (father to son), but tax reaches 60% of the amount, should the money be given to a totally unrelated person. The same applies to death duties. The amounts involved raise the incentive to avoid such tax. For this, wealth can be transferred offshore to a jurisdiction where there is no inheritance tax, and various mechanisms can help to minimise tax on inherited money[139]. Living in a tax

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[137] The list includes wealthy European entrepreneurs and their families. Mr Blocher, a prominent Swiss politician ranks 30th with a CHF 2 billion fortune AFP (2003, nov. 25th).

[138] Chambost (1999, p23), suggests residing in a tax haven such as Monaco (where there is no income tax), while receiving an income from a company incorporated in the Isle Of Man (where the corporate tax is very low) while banking in a third jurisdiction (Jersey). In such a scheme, three tax havens intervene, each being used for its speciality.

[139] This can be done perfectly legally by leaving the onshore jurisdiction to go live offshore, or by using other means involving the creation of trusts, for example. Money can also be entrusted to a banker offshore without the knowledge of the onshore tax authorities, and transmitted this way.

haven until one's death in order to transfer wealth free of tax, seems to be a solution of last resort.

Some tax havens enforce no income tax at all (like French Polynesia). Others have a low level of income tax independent of the income level, like in Jersey (20%). Other places (like the Canton of Vaud in Switzerland) offer the possibility to negotiate a set amount of tax with the tax authorities. Doggart (2002, p106) emphasises that in this respect, the UK has become a tax haven for very wealthy expatriates who can agree with the British Inland Revenue to pay a set level of tax. Tax laws vary considerably from country to country. According to US laws, US citizens are supposed to pay tax to the IRS wherever they live in the world, and on their total income. For French law, the country of residence is the dominant consideration. To avoid US citizens being taxed double when living in France, a tax agreement (tax treaty) has been stipulated between the USA and France.

All taxes do not have to be zero for a country to be a tax haven. A country can have no tax on the individual's income, but consumption tax may be very high to compensate. Some countries tax laws apply only to non-residents. Other tax havens grant privileges to specific categories of people: Ireland does not tax the income of writers and other artists.

Moving to a tax haven seems to be the simplest way of escaping high tax, and taking full advantage of all possibilities offered by OFCs. However, paying less tax is only one side of the medallion and ensuring quality of life offshore is paramount[140]. As tax havens are often small isolated communities, the cost of living can vary

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[140] If life expectancy is a proxy for life quality, OFCs rank high. Thus, in 13 OFCs, life expectancy exceeds that of the USA (77.9 years): Andorra (world record at 83.5 years), Hong Kong (82.2), Switzerland (81.1), Cayman (80), Singapore (79.4), Virgin Islands (79.3), Cyprus (79.2), Aruba Luxembourg and Malta (79.1), and the Channel Islands (79). See (World in figures, 2006, p78)

enormously (see Table 3.2-1). The frequent travels abroad, high cost of real estate[141], and expensive consumer goods (often imported in potentially difficult climatic conditions) are just a few of the potential hurdles (Doggart, 2002, p102; Chambost, 1999). More importantly, in order to benefit from low tax features, residency in the actual country is imperative[142].

Most tax havens have a double real estate market (local people/expatriates). In the market for the expatriates, houses are scarce and house prices are typically comparable to prices in prestigious locations onshore. Thus, there are only about 1,700 houses available to expatriates in Guernsey, and only 70 or 80 of them are likely to be available for sale at any one time. At the upper end of the market, prices in Guernsey are comparable to prices in Kent or Hampshire (Churchill, 2005, pp20-21).

Table 3.2-1   Retail price indexes (excluding housing) comparison onshore vs. offshore

Country and town	Retail Price Index
BAHAMAS (Nassau)	97
BARBADOS (Bridgetown)	104
BRIT. VIRG. Isls. (Road Town)	137
CYPRUS (Nicosia)	81
FRANCE (Paris)	91
MALTA (Valetta)	79
NETH ANTILLES (Curacao)	164
SWITZERLAND (Geneva)	102
TURKS & CAICOS (Grand Turk)	138
UK (London)	99

Source: as provided in Doggart, 2002, p113 (data available in UN Monthly Bulletin of Statistics)

Doggart (2002, p114) also suggests that since few non-tax haven countries effectively tax revenue from external investment income, it would sometimes be better to live in a non-tax haven, benefiting from advantageous treaties. Thus, in 2002, many wealthy foreigners lived in the UK for tax reasons. There was a loophole

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[141] The Economist (June 2004, p91) mentions that a one bedroom flat in Bermuda may cost as much as US$1,800 a month. See also Country Life (Dec. 2005) for an overview of the property market in Monaco (property prices reach £2000 per sq. foot).

[142] Hooper (2002) cites the case of a celebrity sportsman who was domiciled in Monaco for tax purposes. He was sued by the tax authorities of his country because he was in fact living in Munich.

allowing wealthy foreigners who had kept substantial ties with their country of origins, to pay no tax on their foreign income. Approximately 60,000 people were benefiting of this possibility in 2002. Closing the loophole would generate more tax income for the UK treasury, but there was a concern that wealthy people would leave the UK, thus damaging the economy of the country (Financial Times, Nov. 2002, p3). In fact, the efforts of tax evasion should in theory stop when the efforts of evading tax reaches the cost of evading tax. The cost of living in an OFC indirectly acts like a form of tax.

Other possibilities exist for individuals seeking to reduce their tax liability without moving offshore. For example, an individual can secretly set-up and own an offshore company in order to receive income on this company's account (Maude and Molyneux, 1996, p226). In a similar way, offshore products can be combined to serve the offshore bank customer. According to Chambost (1999) without trusts, offshore banks would be difficult to use. Combining several offshore legal entities can provide extra secrecy. Chambost (1980) calls them "instruments of indirect secrecy", in contrast to "direct secrecy" (i.e. numbered accounts, pseudonym accounts or bearer accounts). The principle is to put the account in the name of a trust or in the name of a company whose owners are kept secret. For an external inquirer, a complicated network of offshore companies can be difficult to understand or clarify. Complex structures can in this respect be used for gaining time. In the field of tax infractions, there usually is a limited time to prove the infraction. In France and Germany, the offenders cannot be pursued after five years. Banks are not required to hold the documents more than five years (Besson, 2002). However, relying on this five years

limit as sole base for not paying tax may be considered as tax evasion instead of avoidance[143].

Managing such structures is expensive as it implies the intervention of highly skilled lawyers and accountants. The complexity of the structure rises with the desire for secrecy and the amounts involved. The number of offshore companies is estimated by the United Nations to 3 million[144].

There is evidence that some people simply hide money in offshore accounts and do not declare the existence of their offshore accounts to their home tax authorities. Many countries have often considered it illegal for their citizens to own money abroad (particularly undisclosed money)[145]. While the mere ownership of an offshore account does not constitute an offence in most developed countries, forgetting to report the amounts of interest earned may qualify as tax evasion.

As it has been demonstrated, secrecy often helps to take advantage of the low tax levels available offshore and it also appears to be as important as the low tax levels offered by the OFCs; secrecy also appears as important as the low tax features of OFCs. The following section will therefore explore various aspects of offshore secrecy.

3.3   Secrecy features of OFCs

Financial secrecy is one of the most essential features of OFC regulation. Besides bank secrecy, which protects the identity of an account owner and the details of these accounts, offshore financial secrecy may also protect the identity of the

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[143] In fact, in a country like Germany, the five years would be counted from the following January1rst onwards (thus up to six years).

[144] For an example involving the use of networks of offshore companies by multinational companies doing business in countries having poor Transparency International ratings, see The Guardian (2003). Besson (2002) provides numerous example of use of tax havens by political personalities.

[145] In Nazi Germany, owning money abroad could be punished with the death penalty (Fehrenbach 1966; Chambost, 1999).

beneficiary of a trust, the owner of an offshore company or of a ship under FOC, of the shareholders or the managers of a company. Maude and Molyneux (1996) define financial secrecy as "the non-disclosure of financial information" (p207) and they describe it as particularly important in private banking[146]. There are economic justifications for keeping bank information secret (a firm having access to its competitor's banking information would have an unfair advantage), but there are private reasons, too. Some individuals prefer not to disclose their banking information even to their own friends or family members, no matter how innocuous the information. Knowing a person's bank detail can easily be used against this person's interests (Wadsley and Penn, 2000, p137)[147]. Secrecy was also inherent to Swiss banking when Swiss bankers sheltered the funds of wealthy French expatriates after the revolution (Maude and Molyneux, 1996, p207). The following section will explore bank secrecy regulations throughout several countries. Many OFCs of British influence have built their secrecy legislation on the pre-existing British laws on bank secrecy, while most other OFCs took inspiration from the Swiss model, eventually enhancing it for competitive purposes. This section will therefore explore the British and Swiss bank secrecy concepts, because these are the source of most other bank secrecy regulation.

3.3.1   The Swiss case

Switzerland was the first country to make a conscious effort to develop its concept of bank secrecy. Other countries copied this concept for the development of their offshore banking sectors[148]. Montmollin and Troyanov (2001, p72) explain that the Swiss are fundamentally attached to their right to bank secrecy. Two votes aimed

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[146] See the advertising of Citigroup in The Economist (June 12th 2004, p3). Among others, they have a subsidiary in Cayman serving HNWI. http://www.citigroup.com/citigroup/global/camerica.htm
[147] No celebrity would want to let its bank details available to the tabloid press.
[148] Famously, Lebanon, Liechtenstein and Luxembourg.

at the suppression of bank secrecy have already failed in 1984 and 1998. In March 2001 the Swiss refused by a 77% majority to join the European Union, which would have endangered their bank secrecy laws (Besson, 2002).

Swiss bank secrecy is partly of non-contractual nature and derives from the Swiss penal code CC article 28[149] as part of the personal rights published since December 1911 (Steiner and Pfenniger, 1998, p14). Thus, a person who would suffer a breach of bank confidentiality may be awarded damages on this basis (although no penal damages). More importantly, however, a bank that would lose a case of breach of secrecy in court would also lose business. This is a strong incentive to abide by the law (Steiner and Pfenniger, 1998, p15). Bank secrecy has a contractual nature too, and the Swiss Code of Obligations (CO art.398 March 1911) also demands that the banker works faithfully and diligently. The customer can decide what information must be kept secret and his bank acts on his behalf without disclosing his name (Chambost, 1999; Besson, 2002; Steiner Pfenniger, 1998).

However, the most notorious article protecting bank secrecy is BkL 47 (Swiss Federal Banking Law article 47), which makes the breach of bank secrecy a crime since 1934[150]. A breach by negligence of BkL 47 can be prosecuted without a complaint of the customer[151]. All bank personnel in contact with protected information have secrecy obligations, but so do civil servants having access to such

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[149] The Code Civil (CC) is the backbone of law in Switzerland.

[150] Swiss history teaches that this law was rendered necessary to protect the assets of the people prosecuted by the Nazis but some people argue it was enacted after the French police found a list of Swiss bank customers and disclosed it doing great damage to these customers. Peillon and Montebourg (2001) remind that in 1932, following a police intervention in a Swiss bank in Paris, a whole list of customers was found and disclosed during a parliament session. Mr Albertin, MP, used this list to embarrass some of his political opponents.

[151] This law applies to financial intermediaries (banks, exchange or security dealers etc…) licensed for business in Switzerland, either as Swiss entities or foreign branches. Of course, BkL 47 does not apply to foreign subsidiaries of Swiss banks.

information[152]. Even third parties of the banking relation are protected by BkL 47 (Steiner and Pfenniger, 1998, p14). Swiss law also includes a data protection act (like most other developed countries) since 1992. Customers have the right to know what information is detained about them, with some powers to control its uses.

The Federal Banking Commission[153] can take administrative sanctions to punish a breach of secrecy ranging from the dismissal of the incriminated person in the bank, up to bank licence withdrawal in extreme cases. The duty of confidence continues even once the commercial relation has been terminated, for a reasonably long time.

As in most other OFCs nowadays, bank secrecy law includes cases in which bank secrecy can be lifted. Thus, the duty of confidence can be released with the client's consent (express or implied) but if consent is a result of external pressures, the banker must then refer to instruction previously given by his customer. Consent can come from a person authorised by the customer. Should the customer sue his bank, he cannot oppose bank secrecy to the bank on the information it needs to disclose to defend itself (Steiner and Pfenniger, 1998, p50). However, banks can also appear in litigation as a third party. In this case, information remains protected, and only necessary information is disclosed. An arbitration court cannot have access to a customer's bank data without his explicit consent.

Swiss law also provides for the granting of Judicial Assistance in civil matters to the other countries who have signed the "Hague Treaty" in 1954 (a Treaty on the Law of Civil Procedure signed in The Hague in March 1954). The countries who did not sign this treaty must submit their demands to the Swiss cantons (semi autonomous districts) who can decide whether or not to grant assistance and apply coercive

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[152] such as people working for the Federal banking Commission, the Swiss National Bank and tax inspectors

[153] As in BkL art 23ter about breach of bank secrecy and FLES art35 para 3 about professional secrecy.

measures (p51). This assistance is usually refused in tax, military and political matters as well as when reciprocity is not granted or when it is contrary to Swiss policy. It is important to underline the exception made in tax matters. For assistance to be granted, the following points must be satisfied: Information transferred to foreign officials in criminal matters cannot be used in tax matters (speciality principle); the offence must be punishable both in Switzerland and in the foreign country (double criminality principle); Swiss authorities transfer information to foreign authorities only if they engage themselves to do the same (reciprocity principle).

Notorious examples of such cooperation include the freezing of the assets of former Congo ruler Mobutu after his death. Similarly, Switzerland also granted assistance to Nigeria to recover the funds held by former ruler Abacha after his demise (Montmollin and Troyanov, 2001, p72).

In debt and bankruptcy proceedings matters, the "Law on Debt and Bankruptcy" (as revised in 1997) applies. Bank secrecy cannot be used as protection from the execution officer. Foreign subsidiaries can in this case transmit information to the foreign head office without breach of BkL 47.

For Criminal proceedings, bank secrecy is guaranteed during preliminary investigations. If the bank has to testify in front of the judge, it must warn the judge if the answer may involve unconcerned third parties. The judge must then decide on the relevancy of information before it can be released. The judge can order the freezing of an account without the involved customer knowing about it. In criminal matters, Swiss authorities can grant judicial assistance to foreign authorities and bankers may have to testify and disclose documents to foreign courts[154]. Assistance is granted

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[154] Criminal matters is here understood in a broad sense and encompasses matters of interest to securities industry supervisory authorities abroad such as the French COB, the British FSA or the US SEC. Judicial assistance is usually granted to countries granting reciprocity (out of some rare

depending upon existing treaties. International assistance that does not concern tax offences and can be denied if Swiss economic interests are endangered. For criminal proceedings including tax fraud[155], the bank has to testify and thereby disclose information. In order not to provide help for tax evasion cases (which could be an involuntary omission), Swiss authorities answer foreign requests only if there already is a prima facie case and serious suspicion. Typical cases for cooperation include insider dealing and money laundering (Steiniger and Pfenniger, 1998).

This overview of Swiss bank secrecy shows a great variety of themes linked with bank secrecy and its treatment in the law. Other jurisdictions have often used the model of Swiss bank secrecy for inspiration in crafting their own laws, and similar themes are present in most OFCs (such as the cases in which secrecy can be lifted). British Common Law has also had influence on bank secrecy legislation in many OFCs, and this is discussed in the following section.

3.3.2   Secrecy in the common law

The British case of bank secrecy is particularly interesting because a substantial number of OFCs surveyed have a common law based system[156]. Many British Crown Dependencies (Channel Islands, Isle of Man and others[157]) or former

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exceptions like when the interests of a Swiss citizen abroad are at stake for example) provided the foreign country respects basic human rights.

[155] Traditionally, tax fraud was defined as: "an intentional deceit of the tax authorities by means of documents containing untrue information for the purpose of obtaining an illegal tax advantage (Steiner and Pfenniger, Jan 1998, p14).

[156] According to Wood (2003), the world's legal systems tend to stem from three main sources: the British common law system, the French Napoleonic Code, and the Roman Germanic system. Only 20 of the world's 310 jurisdictions are estimated to have not been influenced by these sources (Switzerland and the Netherlands belong to these exceptions). It was estimated that 145 jurisdictions were common law inspired, 80 are Napoleonic code inspired, while 30 were based on the Roman-Germanic system. Influence varies to certain degrees and is sometimes shared. In the Channel Islands, the Common law is associated with more ancient French medieval law. The British success in the field of commercial law can be explained by the influence of Adam Smith, and Victorian morality. One could also add the fact that British prosperity depended on free trade. As for the sources of law among OFCs, the Common law remains the basis in most former British crown dependencies, while Swiss law has inspired several OFCs.

[157] Such as Bahamas, Bermuda, British Virgin Islands, Cayman, Hong Kong and others.

colonies, now commonwealth members, have made bank secrecy as it is expressed in the British Common law the basis of their offshore banking development and enhanced it (sometimes drawing inspiration from Switzerland). It is important to note that the British version of bank secrecy was implemented in the UK in 1924, well before most British dependencies became OFCs and thus served as a basis for subsequent laws in these countries.

In the UK, the Tournier case[158] acted as a basis for the development of privacy laws in banking. As a result of these laws "subject to certain qualifications, a bank may not disclose to any other person any document or any other information it has obtained in the course of the relationship with a customer without the consent of the customer" (Wadsley and Penn, 2000, p137). British law prevents banking information to be transferred to non-bank subsidiaries or be used outside the bank.

In most OFCs inspired by common law, there are some exceptions to the application of the duty of confidentiality. These are cases where the law requires banks to disclose banking information, when there is customer consent (express or implied) or when it is in the bank's vital interests to do so. In the British interpretation, the duty of confidence is a contractual duty. Disclosure of bank details can be necessary when public interests are threatened, such as in criminal cases. Looking at accounts can provide simple reliable and direct evidence. This latter point seems particularly contentious when it comes to OFCs. Most OFCs only accept the disclosure of individual bank data only once the individual has been convicted. Thus, most OFCs (unlike the UK), make the use of banking data in the preliminary

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[158] In the Tournier case 1924, it was held that the bank owed its customers a legal duty of confidence, not merely a moral duty of confidence. The Tournier case saw a banker disclosing confidential information to his customer's employer (the customer was overdrawn), and the employee (Mr Tournier) was made redundant as a result of it.

enquiries impossible (see Peillon and Montebourg, 2000; Maillard, 1998), particularly when the request comes from foreign countries.

In some cases, bankers may be required to produce their books as evidence in court, even when they are not directly involved (Wadsley and Penn, 2000, p142). The court can decide whether or not to demand the disclosure of banking information, weighing confidentiality versus public interests. British courts can help foreign legal proceedings by having evidence disclosed (Wadsley and Penn 2000, p146). This help can be refused if granting it may damage British interests, if there is no confidence in foreign jurisdiction or if the case is abusive (frivolous or vexatious). The bank does not have to inform the incriminated customer whose information is being disclosed. Only direct evidence (and not information leading to the discovery of evidence) can be obtained in this way. This last concept led to substantial misunderstandings between onshore and offshore judicial authorities (British Crown dependencies are known to refuse to divulge information to British authorities). According to Maillard (1998), when asked for information about a customer's account, local authorities reply by asking the foreign judge for the very information he was asking them to provide in the first place. This state of affairs also puzzled French parliamentary authorities (see Peillon and Montebourg, 2000-2001).

3.3.3   Bank secrecy in practice

Most laws concerning bank secrecy in OFCs tend to be based either on Swiss law or on British common law. Variations in the application of bank secrecy include:

The possibility to open an account in the name of a legal entity whose owners' names are kept secret (as in most OFCs but particularly in the Channel Islands) which Chambost calls "indirect secrecy"; the possibility to open a bearer account such as in Austria or Malta; the imposition of very severe penalties for breaches of secrecy law

(5 years jail sentence in Cayman); the possibility of opening a pseudonym account or an account whose beneficial owner is identified with a seal or a second signature (as in Asian countries). In the Bahamas, bank secrecy prevents bank employees to call customers by their names while phoning them (Le Monde du Renseignement, 1999 n.364).

The existence of laws ensuring financial secrecy combines with other factors. Secrecy may be more strictly enforced by reinforcing penalties for the breach of bank secrecy. The number of cases in which bank secrecy may be lifted can also be restricted. Switzerland does not lift bank secrecy in tax enquiries. Until recently, Nauru had no laws punishing money laundering, and secrecy could not be lifted in such cases. The formalities to lift secrecy are rarely easy to accomplish. In extreme cases, the time allowed to prove an infraction may be restricted. In other cases, a foreign judge may have to prove that assets of criminal origins are indeed held offshore. Thus, information regarding assets held offshore may not be used as a proof as the base of a criminal enquiry. Even when a judge can prove that the proceeds of a crime are held offshore, this is of little use if the OFC concerned does not recognise the validity of foreign judgments and asks for the cases to be re-examined locally (Chambost [1999, p561] mentions that this was the case in St Kitts and Nevis). All of these factors are supplemented by the banks themselves or their customers, who can implement extra precautions to reinforce the level of secrecy.

Chambost (1980) explains that to minimise the risks of breach of secrecy, banks limit the number of employees knowing the customer's identity. When meeting low ranking employees, the customer may identify himself by an account number and his signature, which does not have to be his usual signature. He can also use a pseudonym. His real identity is only known by the bank's managers. Among other

procedures, the customer can ask the bank to receive no mail concerning his accounts.

When a customer wants to transfer cash on someone's account, he cannot do so with the sole name of the customer; the cashier would normally argue that time is needed to know if the person is indeed a customer. In between, the bank would contact the customer to ask whether the transfer should be accepted[159]. When doing transactions such as money transfers, the identity of the customer may not appear; instead, the bank would carry out the transaction in the name of "one of our customers" (Chambost, 1981; Besson, 2002). Keeping secrecy sometimes led Swiss bankers to go to France to post the mail for their French customers so as not to give away any indication of a relation between the customer and Switzerland (Besson, 2002; Fehrenbach, 1966, P47). Banks can even be designed to minimise the chances of having one customer encountering another one. They may feature backyard entrances, or open late at night, after business hours. The customer can ultimately decide on the amount of precautions he wishes to have enforced by putting his accounts in the name of offshore legal entities or using secrecy enhancing technologies[160]. He is the ultimate guardian of bank secrecy regarding his own affairs. In extreme cases, customers can even own their own 'captive' bank offshore. For this, the customer must have substantial resources, and comply with the offshore authorities' criteria to obtain an offshore account. Chambost calls captive banks the "Rolls Royces" of bank secrecy. However, following international pressures[161], the possibilities to open

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[159] This procedure is inherited from the 1930's, when the nazi police tried to find out if someone was or not a customer by depositing money on the person's account. If the money was accepted, it meant that the person had an account. This led to a toughening of Swiss laws. Franco's police in 1958 also managed to find Spanish money in Swiss banks by bribing employees (Fehrenbach, 1966, p278).

[160] Intelligence Online (2002, n.420), reports that offshore banks are increasingly offering encryption services to their customers seeking secrecy.

[161] The US administration discovered in 2001 that several major US banks had "correspondent banking" relationships with Nauruan "shell" banks whose activities had come under suspicion (Levin 2001).

captive banks (also called 'shell banks') have changed (see Appendix 6: comparative table of registration requirements and costs for captive banks)[162].

3.4 Anti-money laundering regulation

The existence of very strong financial secrecy laws in OFCs has long been controversial as they often stand accused of harbouring the proceeds of crime. In order to fend off illegitimate business, OFCs have all enacted some form of money laundering regulation (willingly or under the pressure of onshore countries as represented by the financial action task force FATF[163]). The following section will explore issues linked with anti-money laundering regulation and will show how OFCs have responded to this regulation.

Maude and Molyneux (1996) give the following definition of money laundering: "Money laundering is the cleansing of dirty money, or more formally, the process whereby the proceeds of crime are hidden and transformed by attempts to integrate them into the financial system in order to give them the appearance of legitimate funds" (p209).

Drug trade generates substantial amounts of cash[164] which must be recycled before they can be used in the legal economy. Large scale money laundering across countries can have very destabilising consequences[165] and globalisation made the

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[162] See also http://www.offshore-protection.com/bankFormations.html for recent (Oct 2005) details about captive bank licensing.

[163] The role and initiatives of the FATF, an organisation created by the OECD to improve anti-money laundering standards worldwide, will be discussed in details in section 3.5.1.

[164] In July 2001, 1.8 tons of cocaine with a street value of US$1.5 billion were intercepted in the Caribbean well concealed in the double hull of a small fishing vessel under Venezuelan flag, one of the greatest quantities of drugs ever intercepted (Marine Nationale, 2002, p44).

[165] Findlay M. (1998); According to OXFAM (2000) third world countries lose significant amounts of money to OFCs, thus hindering their development. They estimate the loss at US$50 billion a year. The use of tax havens by third world rulers for hiding the proceeds of corruption is also cited as a problem. The use of bribes to earn export contracts by big companies is in theory forbidden, yet it is very difficult to prevent (Intelligence Online 2001 n.408; Intelligence Online, 2000, n.391); Doggart (2002 p138) reported that even though bribes were illegal in the USA, US corporations doing business abroad

problem more acute (Findlay, 1998). Judges typically complain that it takes very little time to transfer money from one OFC to another one, but it is very difficult for a judge to trace any transaction when it crosses borders. Over the last ten years, most OFCs have enacted anti money laundering laws, sometimes under the influence of international pressures.

The US criminalised money laundering in 1986[166] and other developed countries also adopted similar laws in the following years such as the UK with the Criminal Justice Act 1988 (Santangello, 2000, p91; Wadsley and Penn, 2000, p155). Financial crime has become a substantial worry for OFC regulators, as the existence of money laundering tends to fend off legitimate activities. Some OFCs were both transit places for drugs, and places to launder the proceeds of the sales of drugs[167] (Doggart, 2002, p3). The US helped Caribbean countries to tackle this problem, but some suffer from a bad reputation like Panama, the Bahamas and the Turks and Caicos. In Europe, Gibraltar, Malta and Cyprus face similar difficulties. Even though it may be easier to launder money in large amounts onshore (despite anti money laundering regulation), small OFCs are easier targets for onshore regulators[168]. The IMF estimated the total amount of laundered money to be between 0.5 and 1.5 trillion dollars per year[169].

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were allowed to consider foreign bribes as tax deductible expenses if they used a CFC or DISC according to a tax reform from 1976.

[166] These laws have since been updated regularly. In the US, KYC regulation was issued in 1997 (Pope 1996, p9). See also Private Banker International (1996, p6) about such upgrades in the UK.

[167] Such as Caribbean OFCs and Gibraltar. See also the UK white paper mentioning this problem: Review of Financial Regulation in the Caribbean Overseas Territories and Bermuda in http://www.official-documents.co.uk

[168] Particularly when they do not enforce anti money laundering regulation

[169] See Euromoney Dec. 10 p10. Private Banker International (1996) reports that a FinCEN study had evaluated the total amounts of funds laundered each year in the US to US$300 billion.

While money can be laundered in any country[170], the use of OFCs by money launderers is well documented[171]. OFCs may be used at any point in the money laundering process usually to take advantage of financial secrecy laws (Fisher and Bewsey, 2000, p11; Cleghorn, Feb. 2001, p67-70). Illegitimate activities flourish in places least able to counter money laundering while having maximum secrecy features due to a process of regulatory arbitrage[172]. The use of offshore banks in the money laundering process, usually involves accepting deposits without enquiring about their origin. However, extreme cases may involve an accomplice within a bank, or even a captive bank owned by the money launderer. The Economist (Dec. 2001) reported that the Russian Mafia had used shell banks in the mid 1990s. When owning a shell bank, the money laundering process may involve back to back loans or loans to oneself. Page (2000, p24) reports that lawyers and accountants also play a crucial role in the money laundering process and that without specialist knowledge, money laundering would be very difficult. Tainted money can also be laundered as fake capital gains (on an artwork or on real estate) or as false income (from fake lawsuits, or casinos[173]).

Small (1999), notes that private banks are not exempt from money laundering risks and reports that older, well established banks have better anti money laundering procedures than the newer entrants. However, a private bank (or the company who owns it) could suffer long lasting consequences (e.g. loss of customers and business

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[170] Money is often laundered in the country where it has been obtained (Maillard, 1998). The report of the French parliament concerning the repression of money laundering criticised the French Justice for its lack of efficiency for repressing money laundering in France, saying that current laws still allow money laundering to take place (AFP, Apr. 12th 2002). One can also note that Guernsey did not allow BCCI to open a local subsidiary and that the Bahamas shut BCCI operations before most other European countries (Le Monde du Renseignement, 1999, n.364; Doggart, 2002, p77).

[171] Alternatively, gold can be used as a means of money laundering and private compensation "hawala" offers even less traceability than using offshore finance (Butterworth JIBFL, 1998, p317).

[172] Review of Financial Regulation in the Caribbean Overseas Territories and Bermuda in http://www.official-documents.co.uk

[173] Casinos (when improperly regulated) offer interesting opportunities for laundering money. They handle substantial amounts of cash, and one can justify having won a large amount through "luck".

partners) if it was found involved in a money laundering scandal (Maude and Molyneux, 1996, p210; Smith, 1997, p85)[174]. Recent advances in anti money laundering regulation have involved the implementation of a money laundering reporting officer (MLRO) in every bank to detect money laundering problems. Although software can also help detect these activities, it cannot replace a human factor, as money launderers tend to adapt very quickly (Cleghorn, 2001, p67-70; Small, 1999, p5). Preventing money laundering is very labour intensive[175]. Money laundering consists of a sequence of steps and may be detected at every step (Cleghorn, Feb. 2001, p67-70): In placement, when the money is turned from cash to electronic value; in layering, when the reasons for the transfer can be asked; in integration, when the relevancy of investment can be questioned. Money laundering activities can easily be hidden in the midst of international banking activities, particularly in places where there is a big volume of business (Maillard, 1998; Small, 1999, p6; Maude and Molyneux, 1996, p209). In a more problematic way, the implementation of new anti money laundering procedures forces banks to find a new balance between trusting the customer and preventing abuse (Bank Marketing International, May 2002, p14).

Swiss law provides a good example of anti money laundering regulation in an offshore context. It has a complete legal arsenal for the detection and repression of money laundering. According to De Montmollin (Oct. 1998), Switzerland's anti money laundering regulation essentially rests on four main laws: art.305 of the Penal

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[174] Yet, private banks may still come under investigation. Private Banker International (Sept. 1999, p3) and Intelligence Online (Nov. 2001) cite cases where major banks came under investigation.
[175] Tendler (2003) reports that the British anti money laundering authorities do not have the necessary capacity to treat all suspicion reports; often, the data is too outdated to start an enquiry. The NCIS receives about 100,000 reports for 2003. Howard (1998, p514) reports that the risk for employees not to detect an actual criminal operation therefore invites to over rather than under reporting (p517).

code (August 1990); CDB 92 (1992) a KYC law; the 1997 Money Laundering Act[176] and CDB 1998, a convention facilitating international cooperation in money laundering (ML) cases. (De Montmollin, 1998; Steiner and Pfenninger, 1998). Added to these laws are the guidelines of the Federal Banking Commission (FBC), a self regulatory body. The detail of these laws and guidelines are following the FATF's 40 recommendations[177] and go even further, probably due to Switzerland's participation in the FATF committee. The FATF recommendations aim at preventing problems of active or passive money laundering in financial institutions. Switzerland's articles 29-32 LBA and CDB 98 (due diligence) establish a protocol for cooperation with foreign authorities in money laundering matters. Cooperation is not as straightforward in other countries. In particular, British overseas territories tend to refuse the disclosure of any information until a defendant has been charged. Thus, bank data is unavailable to charge the defendant[178]. Moreover, a witness from overseas who would come to a British court could be prosecuted in his home country for having not respected the bank secrecy laws (MacDonald, 1998, p5).

It seems, however, that international pressures have resulted in having the OFCs enforce stronger anti money laundering regulation than what is usually found onshore. Most countries still blacklisted by the FATF in April 2002 consisted either of underdeveloped OFCs trying to attract customers by enforcing laxer regulation or non OFC countries such as Egypt or Russia[179]. Regulation applies to all the banks

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[176] Known as 'Loi sur le Blanchiment d'Argent' (LBA) in French.
[177] Notably, these recommendations include Know Your Customer (KYC) articles and articles explaining what procedures to implement to recognise money laundering operations.
[178] This specific point is also emphasised by Maillard (1998) and the various Peillon and Montebourg reports (2000-2002).
[179] List of FATF non-cooperative countries and territories as of April 25th 2002:
OFCs: Cook Islands, Dominica, Grenada, Lebanon, Marshall Islands, Nauru, Niue, Philippines, St Kitts and Nevis, St Vincent and Grenadines.
Non-OFCs: Egypt, Guatemala, Hungary, Indonesia, Israel, Myanmar, Nigeria, Russia, Ukraine.

operating within the OFC. In this area, the FATF and Caribbean FATF (CFATF)[180] recommendations tend to be enforced by all major OFCs. These recommendations tend to be a factor of homogeneity across all the jurisdictions (Maude and Molyneux, 1996). Anti money laundering regulation constantly needs adaptation to remain dissuasive towards criminals. The FATF noted that Internet banking and electronic cash were becoming new potential means of laundering money, their users being more or less able to remain anonymous while making quick transactions difficult to follow (Butterworths, July 1998, p317). Technological innovation also leads to regulatory adaptations.

The standards promoted by the FATF are now being enforced by almost all OFCs. This is the result of an international initiative to promote better anti money laundering standards. The following section will explain how such initiatives have modified the offshore banking regulation in the past years.

3.5 External influence on OFC regulation

The use of OFCs by onshore users is by no means marginal and is actually expected when it comes to doing international business (Godefroy and Lascoumes, 2004). Yet, OFCs sometimes have difficult relationships with their more powerful neighbours and must sometimes take their demands into account. While onshore tax regulation is regularly adapted to the challenges posed by tax havens[181], offshore regulation itself must be adapted to go on attracting foreign investors while complying with foreign constraints. The following section will explain what these international demands are and how pressure is exerted on OFCs and to what effect.

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[180] The CFATF was set up in 1990 by Caribbean OFCs and their neighbours in order to set up an approach to tackle money laundering.
[181] See for example Myron (2000) about the closure of loopholes by the US IRS

3.5.1   International organisations involved

The Financial Stability Forum[182] (FSF) was created by the G7[183] in 1999, and

is supported by a secretariat located by the Bank for International Settlements (BIS) in

Basel, Switzerland. The FSF was created to oversee the international financial system,

detect its weaknesses and find ways to address them (FSF, 2000, p11)[184]. It was felt

that problems arising in one OFC with improper supervision may contaminate the

whole banking system[185]. Precedents include the influence of Thailand's Bangkok

International Banking Facilities (BIBF) in the Asian crisis (Kaufmann 2000, p5) and

the failure of LTCM[186]. Sinuraya (1999) also reports that capital flight towards OFCs

worsened the Russian crisis. Confronted with these problems, the FSF tried to develop

international standards to enhance transparency, co-operation and supervision. The

FSF issued a report[187] surveying the impact of OFCs on financial stability in March

2000. It noted that to this date, while OFCs had not caused any systemic financial

crises, their growing importance in the global economy meant that systemic risks

could exist as OFCs could act as weakest links. OFCs also undermined the

implementation of global standards to improve financial stability. The FSF report also

recognised that all OFCs were not equally well supervised, and introduced a

classification of OFCs based on their supervisory quality. Burgess (2005) reports that

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[182] Financial Stability Forum in http://www.fsforum.org

[183] Group of the 7 most industrialised countries: USA, Japan, Germany, France, UK, Canada, Italy

[184] Questions concerning the influence of OFCs over financial stability started to arise in the 1960s following the devaluation of the British Pound, which had been partly attributed to Swiss bankers (Fehrenbach, 1966).

[185] Errico and Musalem (1999, p6) explain in particular that offshore banks can be more leveraged than onshore banks to appear more profitable. However, the failure of an offshore bank may contaminate other banks onshore.

[186] Long Term Capital Management, a hedge fund that had to be bailed out by the US New York Federal Reserve Bank to avoid systemic collapse. LTCM was registered in the Netherland Antilles (Besson, 2002). UBS had to write off US$700 million due to its exposure in LTCM Burgess (2005) reports that LTCM had borrowed more than 50 times its capital. See http://financialservices.house.gov/banking/10198hu.htm.

[187] The FSF report also mentions other international organisations working on OFCs. These include the Basel Committee on Banking Supervision (BCBS), International Association of Insurance Supervisors (IAIS), International Organisation of Securities and Commissions (IOSCO), United Nations (the UNO has set up its own anti money laundering group, the Global Program against Money Laundering (GPML), with the aim of helping tax havens working against Money Laundering), and the OECD.

the FSF was involved, along with other onshore authorities, in an effort to assess the risks posed by hedge funds, most of which are incorporated offshore.

The Financial Action Task Force (FATF) was set up by the OECD in Paris in 1989 to tackle financial crime[188]. This came after the adoption of money laundering regulations in the USA and in the UK. The FATF first focused on the proceeds of drugs trafficking, then on financial crime, to eventually encompass all crime in Sep. 2001[189]. The FATF in 2001 was composed of 29 countries and two international organisations[190], and brings together specialists in various fields. In 1990, the FATF issued 40 recommendations to counter money laundering, which it updated in 1996. These measures were meant to be applied worldwide. The FATF includes major OFCs such as Switzerland, Luxembourg, Hong Kong, and Singapore. The recommendations were meant to supplement the recommendations of the 1988 Vienna Convention of the United Nations against drug trafficking. Notably, the second recommendation states that secrecy laws should not inhibit the implementations of the other recommendations[191]. The report on non-co-operative territories of the FATF[192] noted that many OFCs have improper regulatory systems, and that often, customer identification procedures lack quality. These same OFCs however, offered enhanced bank secrecy and little constraints to their customers. Competition among OFCs leads to a reduction of regulation thereby making them

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[188] Private Banker International (1996) 'FATF issues new recommendations in fight against money laundering', Issue 96, July/August 1996, p1-2

[189] See Peillon and Montebourg (200-2002) and FATF (2001).in http://www1.oecd.org/fatf

[190] The country members of FATF are Argentina, Australia, Austria, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Greece, Hong-Kong, China, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, The Kingdom of the Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States. The European Commission and the Gulf Co-operation council are also included.

[191] For more details about the 40 recommendations, see http://www1.oecd.org/fatf/40Recs_en.htm

[192] FATF (2000) 'Report of the FATF on non-cooperative countries or territories', in http://www1.oecd.org/fatf/NCCT_en.htm#FATF statements

vulnerable to financial crime[193]. The list of non-cooperative territories issued by the FATF refers to countries refusing to implement the 40 recommendations[194].

The Caribbean FATF (CFATF) was set up in Aruba in May 1990 following a conference gathering representatives of Caribbean and Central American countries to set up an approach to tackle drug trafficking and money laundering specific to the need of OFCs. 19 recommendations were issued, complementary to FATF recommendations. In the Kingston declaration[195], Caribbean OFCs and central American countries, committed to fight money laundering and drug trafficking agreed on the signing and ratification of the 1988 UN convention against drug trafficking and on the enforcement of all FATF and CFATF recommendations[196]. Other nations supporting the CFATF are Canada, France, the Netherlands, the United Kingdom, and the United States along with several international and regional organisations.

While the FATF was established by the OECD to tackle money laundering, another OECD initiative was more specifically aimed at "unfair tax competition"[197]. In April 1998, the OECD agreed on several measures to tackle "harmful tax competition[198] and make offshore business more transparent. In June 2000, a report[199] was published by the OECD about competitive tax regimes engaging in "harmful tax

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[193] The FATF published a list of recommendations against the financing of terrorism in Oct. 2001. They mainly target Islamic charities channelling funds to terrorist organisations via tax havens. One can note that mainstream international financial centres are just as vulnerable to money laundering practices (The Economist, March 15th 2003, p85). This is because laundering large amounts of money is easier in large financial centres than in a small OFC (Int. Herald Tribune, March 15th 2003, p13).

[194] The list of 40 recommendations is several pages long and is available through the following link http://www1.oecd.org/fatf/40Recs_en.htm. The countries deemed non-cooperative had often some of the following banking regulatory features: little starting capital required; no booking formalities or a strict minimum; possibility of holding the shareholder meeting anywhere in the world; regulation allows the appointment of professional administrators; no compulsory regular auditing.

[195] Declaration signed in 1992 in Jamaica. See CFATF (1992) 'Kingston Declaration on Money Laundering' in http://www.cfatf.org

[196] See for example The Nassau Guardian (2002) "a/g Bethel", in http://www.bahamainfo.com/news_display.php?prid=3227andsrc=Nassau

[197] This OECD initiative followed another which was aimed at stopping bribery (Sinuraya, 1999).

[198] See Private Banker International (July 1998, p1)
Harmful tax competition comes from OFCs but also from some preferential tax regimes put in place by non-OFCs for various purposes. These include the US Foreign Sales Corporations among others.

[199] Report available from http://www.oecd.org/dataoecd/9/61/2090192.pdf

competition", which in addition to OFCs also mentioned major economies[200]. A list of tax havens engaging in unfair tax practices was established, and those refusing to change their tax policies were to face sanctions. The recommendations of the report were adopted by all member countries but Luxembourg and Switzerland.

Many other less notable initiatives have been implemented by international organisations. Thus, Sinuraya (1999) mentions that the IMF developed 'data dissemination standards', a 'code of good practice on fiscal transparency' and a 'code of transparency in monetary and Financial Policies' (p22). The IMF and the World Bank also regularly inspect banks in various jurisdictions to ensure that the Basle Core Principles for Effective Banking Supervision (developed under the auspices of the BIS by the BCBS) are properly adhered to. The BCBS also worked on a specific set of recommendations with the Offshore Group of Banking Supervisors. The International Organisation of Securities Commissions (IOSCO) set up principles of Securities regulations. The International Association of Insurance Supervisors (IAIS) has also been engaged in initiatives related to OFCs.

3.5.2   OFCs comply with international organisations

All these international organisations, backed by influential countries, have exerted pressure on OFCs to have their standards implemented. OFCs were forced to negotiate in order maintain their competitive position and to minimise the risks of onshore retaliation (Doggart, 2002, p137).

Intelligence Online (2002) reported that the European Union was exerting pressure on Switzerland to obtain either cooperation in tax matters or the imposition of a withholding tax on deposits from EU citizens. Sanctions could include preventing

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[200] The USA were mentioned about the FSCs and Australia for its Offshore Banking Units

Swiss banks from conducting business within the European Union[201]. A compromise could involve having Belgium, Luxembourg, Switzerland and Austria all applying a 35% withholding tax on interest income from foreign residents[202]. The agreement could be enforced by 2011 (Beck, 2004, p 13; Intelligence Online 2002; Houlder, 2005). Similarly, the EU wanted Cayman[203] to comply in the same way as the other five British crown dependencies. Cayman stated that it would accept if other OFCs complied too and if the British government recognised the Caymanian stock market (Parker, Feb. 3rd 2004, p6; Adams, Dec. 2003, p4; Parker and Burton, Dec 2003, p17). Efforts made by international organisations usually aim at improving regulatory situations without simply making funds leave (Gilbert, 2002; Forbes, 2002). France similarly pressed Monaco to step up cooperation, which soured the relations with Monegasque authorities (Euromoney, Dec., 2000). The USA forced Nauru to modify its captive banking laws (The Federal Register, 2003). Sanctions included preventing any sort of transactions between the USA and Nauru, and forcing US institutions having correspondent accounts with Nauruan banks to disclose account details.

Small island economies (SIEs) are not in a position of strength to negotiate. While they may be politically independent, they are economically reliant on bigger countries (they need to import everything). Moreover, Prestowitz (2003) mentions that SIEs were also campaigning for the endorsement of the Kyoto protocol by other

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[201] Switzerland depends on other European countries that represent 70% of its external trade. Switzerland is negotiating a deal with the European Union, which would get EU citizens who keep their savings in Switzerland to pay tax on their savings income there. This cannot be done without acceptance of the deal by other jurisdictions, such as US, Andorra, Liechtenstein, San Marino, and Monaco. However, the Swiss seem determined not negotiate on bank secrecy (Parker, 2004, p8).

[202] This agreement was subject to the cooperation of the other EU tax havens. However, Houlder (2005 p2) notes that this does not mean the end of offshore banking. First because this does not concern all tax havens and the Asian tax havens remain particularly out of reach. Thus, money may flow to Asian OFCs instead. Secondly, income from investments in trusts and companies still remain out of the scope of this new directive targeting interest income. European OFCs will rather levy the tax than undermine bank secrecy.

[203] In March 2003, Cayman deposits were estimated as high as US$943 billion. Cayman has to date 4,037 registered mutual funds. US$150 billion are estimated to be invested in Caymanian Hedge funds (Parker and Burton, Dec., 2003, p17).

nations. Their vulnerability to environmental problems in general (over fishing, water shortages, volcanoes, tsunamis, hurricanes…) reduces their bargaining power. Global warming and the ensuing increase in the Ocean levels could make several of these countries disappear forever[204]. Tuvalu, an archipelago in the Pacific Ocean, has recently been partly submerged by a high tide. Australia's SIE neighbours are not in a position to stand up to Australia either. While SIEs are trying to have the same standard of living as onshore, they also face significant pollution problems[205] that endanger their tourist industries (Greimel, 2004).

This lack of bargaining power of OFCs and the threat of sanctions typically make them comply[206]. To force OFCs to comply, onshore countries can also cease to allow offshore entities to do business onshore or terminate favourable tax treaties (Holub, 2003, pp246-254; Financial Times, Apr.16th 2002, p12). Since the first publishing of a list of 35 'harmful tax regimes' by the OECD in 2000, all but nine agreed to cooperate. FATF's blacklist of non-complying OFCs in money laundering matters have included 19 countries among which are Liechtenstein, the Marshall Islands, Nauru, Liberia and Niue. All but few OFCs initially accepted to comply, after having received various amounts of pressure from the OECD (AFP, March 9th 2002). The main justification for non compliance was usually that even important OECD countries did not apply these standards[207]. Few non compliant countries remained by

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[204] See CNN article (http://www.cnn.com/WORLD/9709/20/pacific.forum/) "Australia in hot water over global warming stance". According to this article, Nauru's population is in this case and finds itself (as a whole) in a situation to ask for the status of "ecological refugees" to the Australian government who did not ratify the Kyoto protocol.
[205] Greimel (2004) reports that in Caribbean countries, 90% of the sewage water is pumped into the sea untreated.
[206] Private Banker International (August 1996, p1-2)
[207] Neocleous (2002, p138) reports that the USA were not willing to participate in any international tax harmonisation plans. Still in 2002, US companies could benefit from tax breaks if they used FSCs in spite of the disapproval of the WTO. Doggart (2002, p155) noted that the US itself did not fully comply with all of the FATF's recommendations.

March 2002[208] and by 2005, all OFCs had complied (except Nauru; Myanmar and Nigeria, who are not OFCs, had still not complied either).

Compliance with OECD demands in the Bahamas was locally criticised for having resulted in job losses. The smallest funds and banks had to associate with bigger strategic partners abroad or face dissolution (Galanis, 2002). 55 out of 410 offshore banks and trust companies had their licences revoked, and offshore company registration fell by 70% (The Economist, March 9th 2002, p62). Yet overall, the Bahamas seemed to be benefiting from the efforts made since 1992 to improve its image. Tourism was doing well and the offshore finance industry showed US$350 billion of funds and banks assets (The Economist, March 9th 2002, p62). In fact, the Bahamas may have done better than any other Caribbean OFC because it was fully independent, and did not have to succumb to any pressure from the UK as was the case for British Crown Dependencies of the Caribbean (Le Monde du Renseignement, 1999, n.364). In some cases, OFCs simply withdrew from the offshore banking market, when there was little actual activity. Maltese bearer accounts were cancelled in 2003 and Malta has been withdrawing from the market since 1996[209]. Nauru also withdrew, while Vanuatu, Cayman, the Bahamas, and Grenada had to cancel many offshore bank licences. The OFCs blacklisted by the FATF increased their efforts to limit damages.

Compliance with international authorities can take various forms. Sometimes, this involves bilateral agreements between an OFC and a country onshore. Doggart (2002, p87) reports that in 2000, Luxembourg lifted its bank secrecy to help the US tax authorities. All Caribbean Island-states in a position to sign treaties have granted

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[208] Monaco, Liechtenstein, Andorra, Bahamas, Belize, the BVI, the Cook Islands, Gibraltar, Liberia, Marshall islands, Nauru, Niue, Panama, Western Samoa, US Virgin islands and Vanuatu. AFP, Sept.3rd, 2002.
[209] Information from the Central Bank of Malta (2003) quarterly reports.

significant power to the US authorities engaged in counter-narcotic operations, granting immunity to the US forces operating on their territories. As a result US officers sometimes enjoy even more power than local officers (Jeremie, 1999, p286).

Few OFCs are large enough to withstand international pressure. Apart from some of the largest OFCs, (Switzerland, Luxembourg, Bahamas, Bahrain), most OFCs owe their status to the protection of a bigger country (Chambost, 1999; Godefroy and Lascoumes, 2004, p21)[210]. Protection usually implies that the citizens of the bigger country may not have access to the advantages provided by the OFC (Chambost, 1999, p127). Chambost (1999) argues that large countries protect OFCs in order to improve their balance of payments for fear of seeing money leave their currency zone (as with France and Monaco). Some SIEs became OFCs on the recommendation of their protector (as was the case with some UK crown dependencies or US dependencies/protectorates)[211].

The international effort to improve regulatory quality in OFCs thus appears to be a relative success. Recently, the FATF noticed[212] that new methods of money laundering without the use of the financial system have become more common. This indicates that while the financial sector has become less vulnerable, the money laundering problem may have shifted to business areas where awareness of the problem remains low. Warwick-Ching (2006), observed that British taxpayers owning

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[210] These include: United Kingdom (Jersey, Guernsey, Sark, Alderney, Isle of Man, BVI, Cayman Islands, Bermuda, Montserrat), USA (Western Samoa, Porto Rico, Panama, Guam (OBUs), Marshall Islands, Northern Mariana Islands (FSCs), US Virgin Islands (FSCs)), France (Monaco, Nouvelle Caledonie, Saint Barthelemy, Polynesia), Switzerland (Liechtenstein), Netherlands (Netherlands Antilles, Aruba), China (Hong Kong), Greece (Cyprus), Spain (Canary, Ceuta, Meilila), Russia (Ingushetia), Malaysia (Labuan), Italy (Trieste, San Marino, Vatican, Campione).
[211] UK government White Paper (1999) "Partnership for Progress and Prosperity: Britain and the Overseas Territories" presented in the British parliament in March 1999 (Review of Financial Regulation in the Caribbean Overseas Territories and Bermuda in http://www.official-documents.co.uk). Begala (2002) explains that the Bush administration in the USA had a softer stance on OFCs than the Clinton government (Begala, 2002, p97).
[212] In Butterworths Journal of International Banking and Financial Law (1998), 'New report highlights money laundering trends', July/August, p317.

offshore accounts in the Channel Islands[213] had to disclose their offshore interest earnings to the Inland Revenue, as some UK banks were forced to disclose offshore account details. More recently, however, Budden and Cumbo (2006) note that the amounts of money channelled to onshore countries following the implementation of the withholding tax proved disappointingly low. They attribute this to the existence of new loopholes[214].

3.6 Conclusion

Attractive regulation is at the core of the OFC concept and typically includes strong secrecy features and low tax. Swiss regulation has served as a template from which many other OFCs have modeled their own regulations. This chapter has also discussed the competitive environment and other external factors faced by OFCs, and their need to be seen as law abiding in order to remain attractive to potential clients as well as providers of offshore financial services. Anti-money laundering regulation has become a key feature of OFC regulation, to a large extent as a result of international pressures. Such pressures are exerted by onshore countries through international organizations such as the FATF (promoting better anti money-laundering standards) and the FSF (promoting financial stability). As OFCs are frequently economically dependent entities, they usually have to adapt their laws in order to comply with the requests of the international organizations while remaining attractive to international business.

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[213] Warwick-Ching (2006) mentions an estimate according to which up to 3 million British people had offshore accounts. Only a fifth of those depositors fail to declare their offshore-interest income.

[214] Thus, while a withholding tax is supposed to be collected on the income from onshore accounts held by individuals, these withholding taxes can be avoided by putting the account under the name of a company or by resorting accounts that only pay interests after the closure of the account (Budden and Cumbo 2006).

4 Offshore banking and associated services

The previous chapters provided essential information concerning the offshore banking environment. The following chapter examines the main features of offshore banking. The first part of the chapter outlines the main types of customers that use OFCs, outlines the range of services available, and highlights the types of banks that provide these services. We will also look at the importance of market segmentation and outsourcing for offshore banks and see how they operate. The final part of the chapter provides an overview of the main trends animating the offshore banking sector.

4.1 The offshore banking market

The customer base for offshore banking services is essentially motivated by the favourable legal environment as detailed in the previous chapter. Similarly, some of the favourable legal features are rather aimed at attracting the banks themselves. The following section will examine the actors serving the offshore banking market: the customers, the banks, and the other service providers who work alongside banks.

4.1.1 The demand for offshore banking

This section will outline the essential characteristics of offshore bank customers, and particularly what differentiates them from ordinary bank customers. These differences can be viewed depending on the origins of the funds and the identity or way of life of their owners. However, all customers seem essentially drawn into the offshore banking market for two essential reasons, secrecy and low tax.

Wealthy individuals tend to be attracted towards tax havens when the benefits (lower tax) exceed the costs of going offshore (cost of legal advice, or cost of living offshore). The concept of 'wealthy people' - or 'high net worth individuals' HNWI -

is relative and varies from country to country (or bank to bank). According to the World Wealth Report (2004)[215], in 2003, there was 7.7 million millionaires worldwide (also called High Net Worth Individuals HNWI, having at least one million Dollars of liquid assets), controlling US$ 28.8 trillion. The study foresees a growth of the number of HNWI of 7% per year until 2008. By then millionaires are foreseen to control US$ 40 trillion. India and China were set to see their numbers of millionaires grow while European tax policies tend to hinder wealth accumulation. These people are the main market for offshore banking services. According to the report, in 2003 (p13), the use of OFCs depended on the investors' nationalities. Thus, HNWIs from the Middle East and Asia tended to invest half their assets offshore. It was also found that Latin American HNWIs commonly use Caribbean OFCs while North American investors rather used the tax minimisation devices available at home. In the meantime, European depositors were becoming less keen on using offshore facilities. The implementation of a withholding tax on the interest income of EU residents in Switzerland (which accounts for a third of the offshore market) and Luxembourg increasingly make them choose dividend bearing investments instead. A previous World Wealth Report (2000) estimated that 11% to 18% of the HNWI's assets were invested through tax havens (i.e. US$3 trillions to US$5 trillions), consistent with the IMF (1999) estimate of US$4.6trillions. Thus, wealthy individuals seem to make up the bulk of offshore banking customers. Asia is seen as a most promising private banking market (Winnett, 2003, pp2-3; The Economist, 2004, p83).

In terms of the population concerned, Beck (1996) reports that typical bank customers are older males who were attracted by OFCs due to having witnessed economic and political turmoil. Thus, offshore banks seem to be less appealing to

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32 A Cap Gemini/Ernst and Young survey

younger generations. To compensate, offshore banks are making an effort to appeal to the heirs of their current customers (Morgan Stanley Dean Witter, Feb. 8th 2000).

Using the services of offshore banks is perfectly legal for individuals who: inform their home tax authorities of the existence of offshore accounts and pay taxes accordingly; or who live in a tax haven or a country where the offshore wealth is not supposed to be taken into account for taxation purposes; or for individuals who live onshore but use legal loopholes to pay less tax. Attitudes towards offshore banking vary a lot from country to country. In some cases the mere detention of wealth in a foreign country may constitute an offence; in other countries the very political elite of the country has wealth offshore, which makes the ownership of offshore wealth by these countries' citizens perfectly legitimate.

Besides lower taxation, there are secrecy based motives for banking offshore: people who are likely to become refugees may have assets offshore to make exile easier[216]; others do so, in order to conceal the true nature of their wealth from potential heirs (Maude and Molyneux, 1996, p208); people fearing for their assets while facing the risk of bankruptcy or a divorce, may place assets offshore to limit the risk; people who do not want their bank details to be known to others (by tabloid reporters for example) may also want to bank offshore; governmental agencies like the CIA[217] have also used offshore accounts to finance covert operations (Chambost, 1999; FSF, 2000; Robert and Backes, 2001; Doggart, 2002).

Wealthy expatriates make a significant share of the offshore banking market (Sicat, 1984; Chambost, 1999; Doggart, 2002). While people living in tax havens are typical offshore bank customers, people who live away from their country of origin

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[216] Private Banker International reports (March 1997) that an estimated US$60 billion left Russia for offshore financial centres from 1992 to 1997. PBI attributes this outflow to political instability, rising crime and tax problems. Much of the money going offshore is legitimate money (p5).
[217] According to Robert and Backes (2001), its French equivalent the DGSE had an account in a big international clearing institution (Clearstream in Luxembourg). See also Lethier (2001).

may typically find themselves in situations in which they can benefit from loopholes allowing them to pay very little tax. Thus, celebrity billionaires[218], living in the UK, pay little tax to the UK authorities on their gains made outside of the UK.

Many companies find offshore banking attractive too[219]. Most large international companies tend to do their business in major international financial centres such as London, New York, Tokyo or Frankfurt. There is evidence that companies going abroad prefer to turn to the subsidiaries of their own home banks as these can offer advantageous conditions to their customers (Intelligence Online, n.391, 2000). Besides this, large international companies may have a variety of reasons for having an offshore account. Some companies facing restrictions in the amounts of capital they can take out of their home countries tend to keep their profits offshore to repatriate them later. In some highly competitive industries, extra secrecy is required and companies may seek this extra secrecy offshore. Other companies do so in order to pay "consulting fees" to the decision makers of countries having low 'Transparency International' ratings. Backes and Robert (2001) mention that many large non bank European companies had accounts within the major clearing bank 'Clearstream' in Luxembourg, thus enabling them to make very large transactions with perfect secrecy. Some companies are known to have used offshore accounts for illegitimate purposes such as Parmalat, the Italian dairy company which had an account in the Cayman Islands (Williams, 2003).

Besides the fully legitimate business, there are various shades of grey in offshore banking. Some offshore bank customers sometimes forget to report the

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[218] The Economist (Feb. 2002, p33), Davies (2002), Doggart (2002, p106) Ford (2004) and 'The Guardian' at (http://www.guardian.co.uk/uk_news/story/0,3604,925248,00.html) all give examples of famous foreign billionaires living in the UK while paying very little tax using offshore entities such as offshore companies and offshore shell/captive banks.
[219] Small (1999) notes that private banking not only serves wealthy people but also various legal entities such as trusts, companies, charities or mutual funds.

existence of their offshore wealth and of the related capital income to their home tax authorities thus possibly breaking the law. Although neither any OFC nor any bank actively encourages this behaviour, it does exist to some extent and is usually not deterred by offshore authorities. Thus, as it has been seen, Swiss authorities refuse to cooperate with other countries in tax evasion cases, and most OFC laws do not prevent tax evasion. One can note as well that having made a link between the existence of sizeable "shadow" economies in developed countries and OFCs, this means that some money earned legitimately yet undeclared to the home tax authorities may be deposited offshore, thus escaping the income tax up front.

Although neither any offshore bank nor any OFC should attempt to serve tainted customers (from drug barons to political leaders), these individuals certainly are notorious for using the services of offshore banks. The existence of money laundering problems in certain OFCs is what led the OECD to create the FATF. Moreover, various studies note that OFCs often represent an important entry point for tainted money into the international financial system[220]. Thus, the Russian central bank reported that substantial amounts of money (possibly of criminal origins) had fled to OFCs including Nauru (US$70 billions), Cyprus and possibly Switzerland [221] during the Russian crisis (Private Banker International, March 1997, p5; The Economist, 2001). Similarly, people with political responsibilities may receive "consultant" fees on their offshore bank accounts while negotiating with international

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[220] The reports of the French Parliament (Peillon and Montebourg, 2000-2002) were focusing on the money laundering issue (although the problem of tax evasion seemed to have been another background thought).

[221] Private Banker International (1997, pp5-9) note that Swiss banks tend to refuse Russian customers to avoid taking the risk to deal with tainted funds. Sinuraya (1999, pp89-94) confirms the links between Cyprus and the Russian tax minimisers. He reports that ca. 4,000 Russian companies were homed in Cyprus. He attributes this situation to the use of Cypriot companies in transfer pricing schemes to transfer money offshore.

companies[222]. Controversial political figures can also speculate on the events they make happen[223].

As it has been demonstrated, there is a vast array of people with a potential interest in using the services of an offshore bank. The existence of such a diverse customer base led to the existence of a great variety of banks serving the offshore banking market. The following sections will outline the categories of banks operating in the market.

4.1.2 Categories of banks serving the market

There is a great diversity of banks serving the offshore banking market. They essentially differ in terms of size, ownership structure and according to the markets they target.

At the top end, the offshore banking market is served by large banking institutions such as Credit Suisse and UBS[224] who also serve half of the Swiss domestic market and are therefore not strictly offshore banks, but who have substantial networks of subsidiaries offshore. Credit Suisse bought First Boston in 1988 to serve the investment banking market. Both are in competition against Morgan Stanley and Goldman Sachs who serve the upper end of the private banking market. Often, with families owning large stakes in quoted companies, there are cross selling opportunities between private banking and investment banking. This happens essentially when the family wants to make the company public and needs someone to

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[222] The Economist (Feb. 2nd 2002, p16) referring to Mr Mugabe, suggested that since international sanctions and embargos seemed to have no effect against authoritarian heads of states, preventing them from travelling abroad and freezing their offshore assets could be a good alternative.

[223] For examples of uses of OFCs by controversial political figures, see for example: Peillon, 2004, p21; Besson, 2002; Fehrenbach, 1966; Chambost, 1999; Santangello, 2000; Montmollin and Troyanov, 2001; The Sunday Times, Apr.13th 2003.

[224] See The Economist (Jan 19th 2002); The largest private banks are: 1. UBS with US$920 billion in client assets under management. 2. Merrill Lynch and Co was second with US$778 billion 3. Credit Suisse Group with US$405 billion 4. Citigroup Private Bank, Deutsche Bank AG, HSBC Hong Kong and DBS of Singapore compete for the fourth place. See http://www.weequalize.com/CC/bank.htm.

help them manage the resulting liquidities afterwards (Brown in Euromoney, 2004, p96; Wells, FT Magazine, 2004, p26).

Many of the banks operating in Offshore Financial Centres are subsidiaries of other banks (onshore or not). They can operate with their own bank licences, and usually employ a relatively small number of staff, as back office operations are usually outsourced to the parent bank. Yet, even if the parent company is located onshore, onshore authorities do not have access to the accounts of its offshore subsidiaries. In most jurisdictions, it is now required that these subsidiaries should be controlled both by the authorities of the OFC and by the authorities of the onshore mother company[225].

Ownership of offshore banks plays a great role in the definition of the banks' identities. Family ownership of private banks is common, and banks can be managed by inheritors of the founder. In Switzerland, this is the case of Bordier (founded in 1844), Julius Baer (Euromoney, 2004, p 64), Vontobel and many others. Small independent private banks can be run as partnerships, in which a small number of partners own the bank and respond for their customers' wealth on their own belongings (Besson, 2002). Offshore banks may also be owned by larger banks onshore. Some offshore banks are publicly traded such as Bank of Bermuda, which was quoted on the NASDAQ before being taken over by HSBC (The Banker, June 2004, p91) and Bank Butterfield of Bermuda quoted in London[226]. In small OFCs, however, state ownership is not rare. In such cases, however, the banks usually have a development purpose alongside their offshore activities and also serve the domestic market. Some local banks do not especially target offshore customers, but have the

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[225] In order to avoid a repetition of the BCCI case, in which neither authorities were responsible.
[226] In many countries (Switzerland, Hong Kong, Singapore, Bahrain or Mauritius), offshore banks are listed on the stocks markets.

capacity to do so if the opportunity arises. This is the case of the Swiss savings banks. Other banks, however, make clear that they do not want foreign customers.

Captive banks are also known as 'shell banks', 'booking subsidiary' or 'paper banks'[227]. As we noted previously, Chambost (1980) calls them 'the Rolls Royces of bank secrecy'. They are simply a mean to own a correspondent account in another bank[228] (or even an account in a clearing bank) and to have access to the international payment systems. Owning one means buying the appropriate licence from an OFC[229] first. Certain websites advertise such offshore bank licences[230]. A captive offshore bank is to a bank what a captive insurance is to an insurance company. It is owned by its customer(s). By lending money to its owner/customer, it can charge an interest and make a profit, tax free. The bank may also have access to the interbank market and may get a discount on loans. Getting a 0.25% discount on a US$10 million loan usually covers the costs of maintaining the captive offshore bank. Some individuals or companies may want to own their own bank for a variety of reasons such as benefiting from specific tax minimisation schemes[231]. Usually, obtaining a licence to operate a captive offshore bank[232] necessitates the following requirements: the captive bank must be backed by another bank; it must have a minimal amount of capital; it must respect the regulations of the jurisdiction licensing it; it must pay a yearly fee corresponding to its category; the activity of the bank must correspond to a normal

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[227] Chambost (1999, p318), however, has another definition for "paper banks". According to him, these are offshore companies, whose name includes the word "bank" or anything meant to make people think that the company is a bank when it isn't; to avoid abuse, most OFC prevent companies names from including certain names such as 'bank', 'insurance' among others (unless a proper bank licence is obtained).

[228] According to the Federal Register (2003) a correspondent account is "…an account established to receive deposits from, make payments on behalf of, a foreign financial institution, or handle other financial transactions related to such institutions" (p18920).

[229] Cayman, Vanuatu, Nauru and many other small OFCs have been issuing such licences.

[230] See http://www.montenegro-banks.com or http://www.offshoregoldcard.com/banksforsale.htm or even http://banking.8k.com/info/global2.htm.

[231] Davies, N (2002), 'How the richest man in Britain avoids tax', The Guardian, April 11th, p11-15: The wealthiest man in the UK (and Europe), Hans Rausing, is known to have his own bank in the Cayman Islands, which he uses for tax minimisation purposes.

[232] Chambost (1980, p81).

"offshore bank" activity if it is to keep its licence; it may have to supply a list of its future customers in order to obtain a licence; the banking activities must commence shortly after its creation and operate in the way it is supposed to. Usually, captive banks are managed from another financial centre. The possible illegal uses of captive banks (by money launderers[233] or fraudsters[234]), led the OECD to demand the cancellation of captive (shell) bank licences in most jurisdictions.

The BIS (2003) describes shell banks as banks having "no physical presence (i.e. meaningful mind and management) in the country where they are incorporated and are not affiliated to any financial services group that is subject to effective consolidated supervision"(p2). The licensing jurisdiction responsible for the supervision of these entities usually lacks the means of supervising entities managed from abroad, and the regulator in the country where the shell bank is actually managed is usually unaware of the situation. It was therefore recommended that onshore banks should refuse correspondent banking relationship with captive banks (BIS, 2003, p1)[235] and that captive banks should only be licensed by the OFC where their "mind and management" is located (BIS, 2003, p4). Shell banks could otherwise

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[233] In order to spend onshore money that has been deposited offshore on a captive bank account, the owner can borrow money from his offshore bank and not repay it, or use it as a guaranty in back to back loans, or pay back his debt at prohibitive interest rates in order to transfer money offshore; While acknowledging the risk of abuse, the FSF(2000) acknowledges a variety of reasons why one may want to open an offshore bank. A company doing international business may set up a captive bank to deal with foreign exchange operations or financing of its subsidiaries. A bank may want to have an offshore subsidiary to administer offshore funds and to benefit of a low capital tax, no withholding tax, no exchange controls and many other factors linked with regulation.

[234] Schneider (2001), author of a book explaining how to become very wealthy by establishing an offshore bank in FATF-blacklisted jurisdictions and includes his address in his book, offering the reader to contact him to become friends and own an offshore bank for only US$40,000. According to the US Department of Justice "Eric Witmeyer and his co-defendant Jerome Schneider were indicted by a Federal Grand Jury in San Francisco on December 19, 2002. They were charged with conspiracy and 22 counts of mail and wire fraud in connection with the marketing and sales to U.S. taxpayer investors of offshore international banks or corporations and causing those entities to be decontrolled which is a process used by the defendants to attempt to conceal the U.S. taxpayer's investor's ownership in the offshore bank or corporation" For more information:
http://www.US$oj.gov/usao/can/press/html/2003_01_17_witmeyer.html; See also
http://www.irs.gov/irs/article/0,,id=106478,00.html.

[235] Intelligence Online (2001 n. 2001032) mentions that the US Senate enquired about Nauru shell banks having correspondent banking relationships with US banks.

be established for the purpose of separating the risk of the offshore entity from that of the main bank. In fact, while some shell banks may be used by individuals, they seem to overwhelmingly be used by onshore banks as a means of conducting international business in a tax efficient way. The bulk[236] of captive 'shell bank' business appears to be interbank business (Dixon 2000).

While a very wealthy customer may 'own his own bank' by buying a licence, an alternative for 'having one's own bank' is to have a family office set up. A family office is a miniature private bank set up and managed by a larger bank to serve the needs of the wealthiest customers. These gather teams of lawyers, tax and investment advisers and provide the full range of wealth management and inheritance planning services (Euromoney, 2004).

Relatively small offshore banks may open representative offices (which are not operating with a banking licence and are therefore neither banks nor branches) to offer their services abroad. In these representative offices, prospective or current customers may receive various sorts of advice (legal or financial) and actual business is diverted to other parts of the bank.

4.1.3 Auxiliary service providers

Other service providers (lawyers, accountants and others) complete the services provided by banks in OFCs. The following section will discuss their importance to the market and their relation to banks.

Stanley (2000) observed that the vast majority of America's millionaires consult an attorney or accountant before they make critical decisions concerning the allocation of their assets. The wealthiest millionaires particularly use these services. More than 75% of the millionaires surveyed by Stanley (2000) considered the

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[236] For example, Dixon (2000) mentions that 85% of the cross border intermediation with the Bahamas seems to be interbank business.

investment advice received from their attorneys and accountants very useful. It seems therefore natural that people making investments offshore wish to consult an attorney or accountant. Their advice is also crucial to whoever wishes to settle down in a tax haven, e.g. concerning the legal consequences of doing so or more practical aspects such as the purchase of a house (Country Life, 2005).

Lawyers are essential to several aspects of offshore banking[237]. Lawyers and accountants intervene in the setting up of tax minimisation schemes. Lawyers, unlike accountants, have the advantage of being bound by professional secrecy in most countries. Besson (2002) reports that about 100,000 lawyers work in Switzerland to support the banking industry. The main roles of lawyers in OFCs include: to limit the risks taken by their customers while doing business offshore; to provide advice on tax minimisation structures; to open and manage accounts on behalf of their customers; to organise fund transfers from onshore to offshore and to create and manage legal offshore structures (accounts, trusts, companies)

Accountants are as involved in offshore business as lawyers. Granville (2001) notices that even though the tax rates of offshore companies are not very high and even though starting a trust seems cheap, these devices cannot be used without the expertise of accountants and lawyers looking for the appropriate loophole. According to Thompson (2002) accountants often act as administrators of trusts or funds and play a very important role in offshore banking.

Offshore structures can be bought "off the shelf" for tax minimisation purposes. OFC-related service providers advertise in weekly newspapers (like The

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[237] Edouard Chambost, author of several guide books about offshore finance is himself a lawyer operating in Switzerland.

Economist[238]) or over the Internet. Run by accountants and lawyers, they can set up trusts, banks and offshore companies in very little time. Some private banks also provide such services themselves for their customers. Other service providers work on a more limited scale on smaller market segments.

Transferring money offshore is an important element associated with doing business offshore. A direct transfer from a bank onshore to a bank offshore, although easy and fast, may cause problems (the banks' Money Laundering Reporting Officer may be required to freeze the operation and advise the tax authorities[239]). A money transfer offshore is therefore not completely like any other transfer towards another country. There are lawyers specialising in the field of fully legal offshore money transfers and who can prevent their customers from committing a faux pas.

Self employed financial advisers can also offer personalised services at much lower wealth levels than banks. Often, however, they work alongside banks and can even offer services similar to those provided by banks (Besson, 2002). Some Swiss banks started as non-bank wealth management companies who finally became large enough to obtain a bank licence (such as the Swiss bank 'Thaler'[240]).

4.2 Offshore banking services

Offshore banking customers are usually looking for lower tax or greater secrecy. This market is essentially centered on high net worth individuals (HNWIs) because they are the only people who can really benefit from the tax features of

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[238] See http://www.ocra.com specialised in trusts incorporations or http://www.laveco.com specialised in offshore companies. The SCF group (http://www.scfgroup.com) can set up banks and companies. http://www.global-money.com offers similar services.

[239] Money Laundering Reporting Officers working with onshore banks are typically asked to monitor transactions with listed tax havens. This obligation results of the implementation of the FATF's 40 recommendations.

[240] Thaler started as a wealth management company in 1982, obtained a bank license in 1989. http://www.banquethaler.ch/

offshore banks. While offshore banking is essentially a matter of private banking, there is also a retail/mass affluent market, and some very large banks such as Credit Suisse and UBS serve the whole market, from the retail to the top end of the market. This section will give an overview of the services provided by offshore banks.

The offshore banking market tends to be segmented into two main markets: retail/mass affluent and private banking (see Smith, 1997, p84). Sometimes, the mass affluent market is treated as a specific market (Besson, 2002). At the retail level, the degree of service offered is very basic and tends to remain a matter of taking deposits and offering a mean of payment[241]. The retail/mass affluent market concerns people who wish to have money offshore even though they do not have enough money to have access to private banking services. Tax advantages at this level may only concern people who would have accounts undeclared to their home tax authorities, but there are also many legitimate reasons for keeping an offshore account (declared to the home tax authorities). Typically, money has been kept offshore, when there is little trust in the country's home banking system or currency; an offshore account may also act as a safeguard against political or economic hazards. Banks serving this market offer their customer the possibility of choosing the currency (usually US$, £, €) and often require a minimal balance to open and maintain an account[242]. Interest paid usually depends of the total amount deposited in the account and is typically free of tax (although the owner may have to declare this income to his home tax authorities). Customers can have access to their offshore deposits with a credit/debit

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[241] Houlder (2005) noted that while one could use a credit or debit card drawing on an offshore account, onshore authorities could still find out the identities of the owners by making credit card companies divulge customer information. Such information was obtained by the US IRS in 1998 and 1999. The IRS concluded that there was about 2 million users of such credit cards in the USA at the time.

[242] At Jamal Bank in Lebanon, the minimum amount to open an account is US$1,500 or €1,500. See their web page at http://www.jammalbank.com. At NCB Cayman, the minimum amount is US$2,500 for a current account and US$10,000 for a term deposit account. See their web site at www.ncbcayman.com

card. However, tax authorities (such as the US IRS) may be alerted of the existence of a bank relationship by the use of a credit card onshore[243]. This may be a problem if the account is undeclared. While offshore banking starts at the retail banking level, some banks offer specific services for customers having a substantial amount of deposits without having access to the private banking market. This market is usually defined as the "mass affluent market" and starts at a level of wealth that depends on the bank in question. Financial World (2001, pII-XIV) reports that Datamonitor define the mass affluent customers as those into the £30,000 to £200,000 range. Commerzbank's definition of the Mass Affluent segment goes from €30,000 to €500,000 in liquid assets[244].

Offshore private banking is the provision of private banking services from an offshore location. Private banking involves the provision of all the services a bank can legally provide for its (wealthy) customers (Smith, 1997; Lee, 2004). Private banking services affect customers' wealth, income, and way of life (Smith, 1997, p84). Private banking is a low-risk business, generating essentially non interest income (Maude and Molyneux, 1996, p190). Usually, the non interest income consists of a fixed charge not determined by client usage of bank services and a variable charge depending on the amount of services use (Maude and Molyneux, 1996, p158). Some banks such as Lombard Malta[245] charge a 1% commission on cash withdrawals. The commission taken by the bank can represent 1% of the funds under management (Besson, 2002). Burgess (2005) reports that hedge fund administrators are typically rewarded with

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[243] see the IRS web page at: http://www.irs.ustreas.gov/newsroom/article/0,,id=105689,00.html
See also Kelleher (2006) about the crackdown on offshore card holders in the UK.
[244] It is important to note that only a small fraction of such an amount actually constitutes "offshore deposits". The bulk of the assets can be managed by the bank for a fee. Thus, Baer (1975, p30) notes that the amounts of deposits are far smaller than the amounts under management in Swiss private banks.
[245] See http://www.lombardmalta.com.

fees of at least 2% of the funds under management and a premium of at least 20% of profits realised.

The nature of the services provided varies from bank to bank but can typically be tailored to the needs of the customers[246]. In Switzerland, private banking usually starts for clients with CHF1 million; Credit Suisse had about 200,000 of these customers in 2002 (Besson 2002). Morgan Stanley Dean Witter (2000), notes that although private banking is being opened to a wider market, with banks starting to provide services from amounts as low as £30,000, the usual minimum is approximately US$500,000. At Pictet, CHF 1 million is regarded as the minimum to allow proper diversification of a portfolio, but the bulk of Pictet's customers own between CHF 2 and 5 million (Beck, Feb. 14th 2004, p 13). However, servicing private banking clients can also start at much higher levels: Coutts start at £500,000 (Bank Marketing International, April 2003, p11); Goldman Sachs Switzerland only accepts clients with US$20 million dollars to invest (Besson 2002). In the field of offshore banking, the services provided require a certain level of wealth to make up for the unavoidable lawyer/banking fees as offshore company/trust administration must be taken into account.

Typically, the amount of service offered depends on the amount of wealth the customer entrusts to his bank. Tax planning is one of the typical services provided by private banks, apart from wealth management. In this field, many private banks (such as Arner Bank, Graffenried[247] or Laiki[248] from Cyprus) offer legal entity administration services to their customers for tax planning purposes. To this effect,

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[246] The services proposed by Royal Bank of Scotland (RBS) International of Jersey include: "International trust company services; offshore company administration; tax advisory services; private health insurance; property management for clients purchasing property in foreign domiciles; a full range of banking products and a 24-hour telephone banking service" (Private Banker International, July 1997, p5).

[247] See http://www.graffenried.com for example of such services

[248] See their website at http://www.cypruspopularbank.com

the bank can also administer mutual funds, pension funds or offshore investment companies (e.g.Laiki in Cyprus). Tax planning must also take into consideration the specific situation (such as country of origin) and desires of the customer (Maude and Molyneux, 1996, p83). The trust management function may help for tax minimisation purposes, wealth transfers, and inheritances (Maude and Molyneux, 1996, p80).

Wealth management is a typical service of private banking, ranging from simple advice to full discretionary asset management, service which gives the banker some discretion in the way to invest his customers' assets. The asset manager must implement an asset allocation strategy or a long term structure for each portfolio. The portfolios have their assets distributed amongst different classes of assets depending on their risk/return characteristics. Quotas are established among asset classes or industry/country. These services are only available to the wealthiest clients (Maude and Molyneux, 1996, p87-89). Private banks also offer a variety of funds to their customers including funds managed by the private bank itself[249] and umbrella funds, which are funds of funds ultimately including hedge funds[250] or tax exempt offshore funds. Swiss private banks deal mostly with foreign customers and must also be able to offer some form of foreign exchange services. The private bank must combine the most sophisticated tools available with a personalised service in order to protect its customers' wealth against currency fluctuations. Smith (1997) explains that the asset manager must also consult his customer to know what proportion of the income he wishes to reinvest, to what extent to diversify internationally, and whether to diversify in non-financial assets. While these decisions are essentially a matter of customer preferences, political, economical and cultural factors also play an important role.

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[249] Also known as "fonds maison" in Switzerland.
[250] Burgess (2005) also notes that historically, hedge funds have been sold primarily to HNWIs.

The top end of the private banking market is occupied by banks like JP Morgan and Goldman Sachs who only accept customers with more than US$20 millions of assets. JP Morgan Private bank manages the fortunes of 14,000 customers, representing a total of US$224 billion[251]. The goal of the bank is to preserve the wealth of its customers (which is both in the interest of the bank and its customer). Customers, who live off their fixed assets, can usually spend between 3-4% of the value of their assets every year (FT magazine, Nov. 2004, p24; Le Point, 2003, pp92-93). Diversifying these fortunes is the cornerstone of good wealth management (see Appendix 5 for an illustration). However, an internal survey conducted at JP Morgan demonstrated that 60% of customers rely too much on one single share when investing in stocks[252]. Three quarters of the new entrants in the Forbes chart of the 400 wealthiest Americans in 2002 were customers of JP Morgan Private Bank (Le Point, 2003, pp92-93). At Pictet, customers owning more than CHF100 million may have a family office (Beck, 2004, Feb 14th, p 13).

Smith (1997), notes that wealth may be financial (currency bank balances, stocks and bonds), or real (objets d'art, real estate[253], precious stones, commodities). Private banks often play a role in the management of this 'real' wealth (p84) and offer alternative investments, such as derivatives trading and precious metals, such as gold (a 5000 year old investment[254]). Gold is traditionally bought as a protection against

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[251] This amount is very comparable to the amount managed by Julius Baer in March 2006 (CHF300 billion ie. US$230 billion). This amount appears very superior to the banks' own assets (about US$10 billion). See Julius Baer advertising in the Financial Times March 16th 2006, p18.
[252] This however may correspond to keeping a big stake in a company the customer originally owned. Lee (2004, p52) confirms this tendency to invest too much in one company.
[253] Offshore banks can also lend money to expatriates willing to buy a house offshore. See for instance the advertising by Ansbacher in Country Life (2005)
[254] Coincidentally, recent archaeological research concludes that the UK's oldest known goldsmith may have been a Swiss immigrant. See
http://www.bbc.co.uk/history/archaeology/king_stonehenge_07.shtml

inflation (Maude and Molyneux, 1996, p149)[255]. Works of art or antiques[256] can also be bought for investment purposes with banks offering their expertise (advice, search, buy and insure). Although such investment brings no yield it can be admired and used without losing value (Andrews [2001, p14] even mentions that antique furniture outperformed both the house prices and the FT 250 share index from 1969 to 2001). Moreover, their value is sometimes not taken into account (as in France) or can be underestimated for death duty purposes. Under certain circumstances, tax authorities may accept art works as payment for death duties. Works of art represent sizeable amounts of Europe's royal families' assets[257]. (Wells, 2004, p26). UBS even has a numismatics department for its wealthy collectors (Euromoney, 2004, p92). Yet, private banking sometimes goes beyond wealth management. An increasing number of private banks offer their services to multimillionaires' children[258] whom they hope to keep as customers in the long term (private banks are also often consulted on succession issues). Additional services offered by HSBC include etiquette courses. Pictet can also make travel and hotel arrangements, and can also engage art experts if necessary (Beck, Feb. 14th 2004, p13).

While most of these services remain reserved to the wealthiest customers, most offshore banking customers may have access to some form of home banking service, a recent innovation in the field of offshore banking. Home banking also called 'telebanking' is the conduct of banking operation over the phone or the

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[255] Gold is universally accepted, at all times, retains its value relatively well and is liquid. It also gains value in crisis situations, precisely when one needs to have money. The wealth deposited in Swiss banks before WWII was for a big share deposited in gold in Swiss banks' vaults. UBS and Credit Suisse sell gold ingots stamped with their name.
[256] Stanley (2000) mentions that millionaires tend to buy antique furniture so as to preserve their wealth.
[257] See appendix 4 'Repartition of the assets of Europe's royal families'
[258] Such services include lectures to help them dealing with their situation (psychological, sociological and legal aspects). JP Morgan, Citigroup and UBS are among the first banks to start such programmes. Only children of clients worth at least £60 millions are invited to take part in the course (Beck, Feb 14th 2004, p 13).

Internet. Home banking appeared in the 1990s and found its full expression in Internet banking. Banks invested in telebanking in order to reduce the cost of conducting business while making banking more convenient (Banking Ireland, 1996, p10). Following success onshore, banks made home banking available offshore. Barclays was one of the first banks to do so, targeting foreigners and expatriates (Private Banker International, April, 1996, p4). The Royal Bank of Canada[259] also established an early presence over the Internet, but without selling any services at first. Today, most offshore banks offer some sort of home banking service. While most offshore banks now have a website, offshore banks strictly selling their services over the Internet[260] remain rare. The possibility of offering a strictly Internet based private banking service has suffered particular setbacks. Vontobel famously stopped its online private banking initiative (to make its services available online), thus writing off a US$142 million investment (International Herald Tribune, 2001). JP Morgan also stopped the development of 'Morganonline' having found that very few HNWI were interested by a strictly internet-based service. It is estimated that 10% to 15% of Credit Suisse customers use the internet service regularly. Although private banking now implies some form of telebanking, face to face contact remains essential as it creates trust[261]. Moreover, people who need a private banker usually do not want to

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[259] Private Banker International (1996) 'Royal Bank posts offshore web site', April p13

[260] See http://www.swissnetbank.com Swissnetbank is a strictly online bank based in Zurich and licensed since 1995 (confidentiality, implicit tax advantages for foreigners, accounts in major currencies). It introduced emoney accounts in 2000. An account can be opened for 35 dollars or 50 Swiss Francs with no minimum balance from anywhere in the world. If the balance is under CHF 1000, a monthly charge of CHF 3 is levied. The contract contains a disclaimer covering the problems due to online banking in terms of safety and convenience. It recommends the use of an encryption software for extra privacy, still reminding the customers that the use of such systems may be restricted in some countries. It notes that even with such a device, one can prove the existence of a banking relationship. The contract also reminds the customer, that he must not use the services of the bank in countries where it would not be authorised to sell its services.

[261] Mercer Oliver Wyman (2005, p23) indicates that for 90% of European HNWI customers, face to face contact is essential.

manage their money alone either, limiting the usefulness of a telebanking only service (Morgan Stanley Dean Witter, Feb. 8th 2000).

In comparison with onshore bank websites, offshore bank websites always add substantial disclaimers to warn the customer about the precautions required for investing offshore. Such disclaimers typically advise the customer to contact a specialist to make sure he acts perfectly legally vis a vis his home tax authorities. Some disclaimers may also state that customers of certain countries cannot be served by the bank. These disclaimers have been known to be several pages long. HSBC Malta[262] issues a substantial statement explaining the conditions to which privacy is being applied. Ansbacher[263] in the Bahamas provides a similar advice, applicable to all its Caribbean and Channel Islands subsidiaries. The St Vincent private bank Triton Capital Bank[264] advises their potential customers that it does not have a deposit insurance scheme. Zurichinvest[265] notify potential customers that they do not market their services to American, Japanese or British people; seemingly targeting Swiss residents only (which must include wealthy expatriates living in Switzerland).

Having identified the services provided by the offshore banking market, it is imperative to establish how these services are being generated. The following section describes operational aspects of the offshore banking business.

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[262] See http://www.hsbcmalta.com, featuring a disclaimer displayed in the front page.
[263] See http://www.ansbacher .com "You are advised to consult your own tax advisors on the possible tax consequences under the laws of your country of citizenship, residence or domicile of utilizing any of the services available from Ansbacher" and in Country Life (2005) "This document [the ad] is not to be circulated where to do so would constitute an infringement of any local laws or regulations" (p22).
[264] See http://www.tritoncapitalbank.com/BankFAQ.asp
[265] See http://www.zurichinvest.ch. Other banks warn that they do not offer their services to people of certain nationalities. Thus, when Bank of Ireland launched its internet offshore subsidiary FSharp, it was made clear that it would avoid French , British and US customers to target customers of developing countries instead (Bank Marketing International, 2000, p12).

4.3 Adding value in offshore banking

Several aspects appear to be of particular importance when examining the process of value creation in offshore banking. First, because offshore banks (often private banks) operate in small countries where specialised knowledge is scarce, they usually have to resort to outsourcing. In extreme cases, offshore banks thus only act as brokers selling the services offered by larger banks onshore only. Therefore, the main way to add value in the offshore/private banking market seems to lie in the relationship bankers are able to create with their customers. This relationship, based on the specific features of a bank and its bankers can only be fully exploited through a high level of segmentation. As it will be seen, significant opportunities exist in this field.

4.3.1 The need for outsourcing

As it has been seen, many SIEs have turned to offshore finance because of their lack of a specialised workforce and the ensuing difficulty to exploit significant economies of scale[266]. The services provided in the field of private banking require a great level of expertise in order to satisfy a notoriously demanding customer base. As a result, only the largest banks in the largest OFCs are able to supply all services single-handedly. Onshore or offshore, for the smallest banks, outsourcing appears unavoidable. For example, a small bank can have its cheques cleared by a larger one, its data stored in the computer of another and hire the services of consultants to manage its portfolio of securities. Many offshore banks resort to correspondent banking[267], which allows them to sell high quality services produced by other banks.

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[266] See Hudson (1996) and Holmes (2002) for more about SIE's problems in terms of labour availability.
[267] Correspondent banking: "A system in which one bank acts as an agent for another bank in the provision of certain services, such as cheque collection ; often employed when one bank is unable to

The back office operations are therefore conducted in New York, London, Zurich, Luxembourg or another major financial centre domiciled where the local infrastructures are sufficient to meet the demand. Thus, Bank of Cyprus Private Banking[268] cooperates with larger banks such as UBS and Morgan Stanley Dean Witter among others in the area of wealth management. In a similar fashion, Federal Bank of the Middle East Cayman has an arrangement with Coutts Switzerland who manages its client's assets[269]. SunTrust Bank of Atlanta is planning to open a subsidiary in the Cayman Islands pending the US authorities' approval. The goal is to serve customers from South America living in the USA who desire to keep their money out of the range of the IRS. The personnel and operations support is intended to come from the Royal Bank of Canada which has substantial operations in the Cayman Islands (Private Banker International, Feb. 1997, p2). At an extreme level, a correspondent bank offshore may sell a variety of services produced by a bank onshore as if it were an unofficial subsidiary. When a bank does not have the necessary knowledge or resources to address some very specific demand, it often resorts to hiring experts. In fact, even the know-your-customer (KYC) function can be outsourced[270]. The Swiss bank Bordier uses external consultants to give investment advice in arts, tax and real estate (Euromoney, 2004, p92). Bank subsidiaries operating offshore typically have a substantial share of their operations conducted by their parent company onshore. This was supported by a 1995 Price Waterhouse survey which found that "84% of private banks were part of a larger group" (Maude and Molyneux, 1996, p26).

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provide such services for itself because of geographic limitations or cost considerations. A bank typically maintains balances on deposit with its correspondent bank, thereby exposing itself to some risk should the correspondent fail". Palgrave Dictionnary of Money and Finance (p486).

[268] See http://www.bankofcyprus.com

[269] See http://www.fbme.com/privatebanking.shtm.

[270] KYCOS (Know Your Customer Outsourced Services) is a company to which part of the KYC function can be outsourced. See their web page at http://www.kyc.com. They sell AML software, store data, cross check customer references with tainted personality database etc.

In a more recent development, Mortimer (2004, p98) reports that many private banks do not hesitate to sell their competitors' products to their customers instead of their home-made products if they think that the competitors' products are more adapted to the customer's needs. This concept is referred to as "open architecture". It is in fact a form of outsourcing. Mercer Oliver Wyman (2005, p41) indicates that banks certainly can profit from the concept of "open architecture". They further estimate that less than 10% of wealth management providers do all "in house", while 30% outsource substantial amounts of activity. In the extreme case, the wealth manager can act as an independent adviser selecting the best products available for his customer (p47).

4.3.2 The customer/banker relationship

A substantial share of the value added produced in private banking relies on the exploitation of the close relation established between the customer and his banker, a function which cannot be outsourced[271]. Private banking remains face to face business because only face to face contact creates and maintains trust (Bank Marketing International, Nov. 11th 1997, p11; Walsh, 2002, p8; Besson, 2002; Financial World, 2001, 'Executive summary', Dec., pXI). Most banks advertise the special relationship they are able to create and maintain with their customers[272]. It is not rare for private bankers to go visit their customers at home (Euromoney, 2004; Besson, 2002; Hudson, 2000). Private bankers are typically polyglot, and this reflects in the private offshore banks' websites, which can typically be viewed in several

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[271] Many authors such as Hudson (1996) and Besson (2002) confirm that the private banker should behave like his customer's friend. Many private banks advertise their friendly behaviour too such as Von Ernst (http://www.bve.mc/) on their website. The Lebanese bank FNB's motto is "Friends at your service" (Bank from Lebanon) web site: http://www.fnb.com.lb. According to the manager of Credit Suisse in North Asia "The relationship with your private banker should be very close to the relationship with your priest, your wife and your doctor" (The Economist, 2004, p84).

[272] See http://www.bve.mc/. They mention that when the bank was started in Bern in 1869 the creator of the bank Vinzenz Niklaus Von Ernst was the "friend and adviser" of his customers.

languages. The essential features of a quality service (a critical success factor) include high customisation of service, meeting the customer's needs in advance, maintaining a long-term relationship, and personal and confidential contact. Often, customers are more faithful to their advisor than to their bank (Chambost, 1980; Besson, 2002). Besson (2002) reports that when an advisor switches bank, he tends to take with him between 10% and 30% of his customers. Some banks (like the Swiss bank Bordier) pay their bankers based on customer retention (Euromoney, 2004, p92). Ideally, the private banker must combine strong people skills and technical knowledge (Lee, 2004, p45; Euromoney, 2004, p92).

According to Euromoney (2004, p5) however, there is a risk of conflicts of interests between the bank and its customers. Thus, long term relationships rest on objective advice. For this, the banker must eventually prioritize the interests of his customer at the expense of the banks' short term profitability, and prevent him from committing mistakes (Lee, 2004, p45). The relationship to the customer is meant to be profitable in the long term. For an investment in funds, the private banker is expected to enquire about the nature of the activities of the funds and its policies and monitor how these are being managed. More important than monitoring the funds is the assessment of the needs of the customer and the decision making concerning the allocation of the customer's assets. This involves understanding the customers' situation and expectations in terms of risks and returns.

Private bankers create value for their customers mainly in four ways: by mastering the risk management process; by providing better access to expertise and investment information; by lowering transaction costs; by managing the customers' wealth which, even for expert customers, remains time consuming. Customers are looking for yield, security, confidentiality and a high level of service (Smith, 1997).

The private banking market is highly competitive and the customers themselves are very demanding. While the relationship between the banker and the customer can be leveraged to create value added, there are other ways to adapt the bank's offer to the needs and desires of the customers. One important factor in which customer satisfaction can be maximised while avoiding direct confrontation with the competition is by finding a market niche on which to focus. As will be demonstrated, a vast array of possibilities exists to segment the market.

4.3.3 Market segmentation

The private banking market is a niche market and it is highly fragmented: the five largest private banks hold only 5% of global HNWI's assets (Morgan Stanley Dean Witter, Feb. 8th 2000). There are many ways to segment the offshore banking market (Euromoney, 2004, p61; Mercer Oliver Wyman, 2005, p15[273]). The most common way uses wealth as its criteria. However, many other factors can be taken into account, not only wealth based. It is necessary to have an overview of these criteria to understand how they can influence bank operations, profitability and market structure.

Social, cultural and political factors already offer a great possibility to define very significant segments. Avery (2004, p97) notes that the creation of a relation of trust is strongly influenced by cultural factors. Smith (1997) also reports that these factors affect the customer's attitude towards wealth and risk. The sharing of cultural factors makes private banking easier. Some banks open subsidiaries offshore so as to be able to offer their services offshore to their customers when these wish to go

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[273] Mercer Oliver Wyman (2005) cite the following criteria: geography, demographics, wealth, income, asset class holdings and preferences, domicile.

offshore. Bunadarbanki[274] is an Icelandic bank with a subsidiary in Luxembourg to serve customers from Nordic countries. The BAS[275] (Banque Alternative Suisse) is an alternative Swiss bank created in the 1980s by environmental and self-managed organisations and looks forward to serving customers sharing its political convictions. Faith is a major basis for segmentation. Islamic banks operate according to Islamic principles. These banks are typically located in Bahrain[276] and Labuan. In Switzerland, Leumi[277] (created in 1902) clearly targets wealthy Jewish expatriates. It claims to contribute to several Jewish and Israeli organisations and claims to employ many people from Jewish background in Geneva or Zurich. Their assets reach 80 billion CHF worldwide. It claims that Dr. Theodore Herzl himself had a role in the creation of the bank and claims to have played a major role in the creation of the Israeli state. Certain banks from Cyprus (Greek side) make specific efforts to target Christian orthodox customers (Slavs or Greeks).

The way in which wealth was created is also a common base for segmentation (Morgan Stanley Dean Witter, Feb. 8th 2000; Smith, 1997, p85). Thus 'Corporate wealth' may have been generated by people employed in upper management positions in a company (salaries, stock options and bonuses); 'Entrepreneurial wealth' is made

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[274] Consult their website at http://www.bibank.lu; Advertising safety, discretion and trustworthiness, the bank emphasises its capacity to maintain a long term business relationship with its customers. It proposes mainly private banking services. Bunadarbanki provides corporate banking services as well, still targeting mainly Nordic countries. In private banking, the bank offers services involving : security/ currency dealing, current account/fixed deposits, asset management, leveraged investments, credit cards, numbered accounts, establishment of Holding companies and Trusts, access to lawyers and other professionals, capital insurance.
[275] See http://www.bas-info.ch; It claims not to be seeking profit maximisation and to make just enough money to continue to operate. It claims its solidarity with its customers in the solving of problems. It promotes equal rights between men and women. It advocates transparency in the conduct of business, and finances philanthropic or environmentalist ventures in the third world.
[276] Such as the Arab Banking Corporation bank providing a wide array of financial services http://www.arabbanking.com; The Emirates now have a similar banking centre.
[277] See http://www.leumi.ch. Leumi is the world's 120th largest bank, Israel's second largest, and is still owned 35% by the Israeli state (The Banker, April 2003, pp26-27).

through operating and maybe selling one's own business[278]; 'Family wealth' is also called 'old wealth' and may have been obtained through an inheritance, sometimes over several generations. Family wealth can be interesting in that the banker can hope to keep doing business with his customers' children, maybe over several generations. Political wealth (money derived from the exercise of political power) usually goes offshore as an insurance against political risk (i.e. the loss of political power and expatriation).

The level of desired customer involvement in the management of their banking affairs can also be taken into account, particularly in the case of offshore banks with substantial telebanking operations. According to Financial World (2001, pVII), Charles Schwab produced the following segmentation: the "Self directed Investor" is confident with managing his own wealth, is price conscious and uses online services (25% of the market)[279]; "Comfort Seekers or validators" have some ideas concerning the way to invest their wealth but still resort to specialist advice to avoid making mistakes (50% of the market); "Delegators" tend to outsource their financial affairs and are the main segment for financial advisers (25% of the market) (Financial World 2001, pVII). This segmentation is interesting because the potential desire to manage ones' own affairs plays an important role in the level of service to be offered and in the way these services are offered. Self directed investors are certainly better customers for high quality internet services while delegators are certainly the main

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[278] Very present in the retail market, small entrepreneurs and self employed people can manage to save, over the years, substantial amounts of cash of undeclared money. These customers tend not to be demanding and usually do not qualify for top services. They tend to deposit several US$10,000 on an account as a nest egg to help them face difficult times and crisis situations (Besson 2002).

[279] Bill Gates himself is also convinced that there is a market for people willing to organise their banking activities on their own (Bank Marketing International, Nov 11th 1997, p11).

target of private banking services. Mercer Oliver Wyman (2005) considers this segmentation as the single most important form of segmentation in the industry[280].

Euromoney (2004, pp61-66)[281] listed more than 20 market segments in the private banking business alone. These segmentation criteria can be combined into as many niche markets. In terms of banking operations, focusing on a very specific market allows the bank to excel in a particular area, and thus protects itself from competition. In terms of market structure, the market can be highly fragmented, yet not completely competitive. Thus there are some possibilities for bank to make substantial profits in spite of great competition.

4.4   Trends affecting offshore banking

The analysis of the efficiency and performance of offshore banks conducted in later chapters focuses on the period 1995 to 2002. This section will discuss the most significant trends at work in offshore banking over this period.

Over the aforementioned period, the legal environment offshore became more constraining for banks and their customers. The pressures exerted by international organisations on OFCs led to the erosion of bank secrecy in many OFCs, either by sharing data with countries onshore, or by implementing withholding taxes (The Economist, Oct 5th 2002, p92). The opening of an offshore account has become more difficult and less attractive (International Herald Tribune, March 15th 2003, p13).

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[280] Thus, according to Mercer Oliver Wyman (2005, p18), "a sophisticated client 'buys' products and solutions; an unsophisticated client is 'sold' products and services".
[281] The market segments identified are: privacy and security, relationship management, servicing international clientele, technology, high net worth individuals, super affluent, ultra high net worth, ethical investments, equity portfolio management, for fixed income portfolio management, for real estate management, for tax guidance, art banking, corporate advisory services, family office services, hedge fund investment, inheritance advice, Islamic banking, collectible investments, offshore services, precious metals, clients with inherited family business, customers with inherited wealth, wealthy artists, wealthy bankers, corporate career individuals, wealthy entertainers, wealthy entrepreneurs, sportsmen, succession planning, trusts services (pp61-66). Bank Marketing International' (Feb. 2003, p6) also notes that there is a market in full expansion for wealthy women. Vontobel already has a specific set of services for them.

Over the last five years, international organisations have also managed to obtain a ban on certain practices. Most shell bank licences have since been revoked in almost all OFCs. Among others: Grenada shut 17[282] offshore banks in March 2001 (Lashmar, 2002; Doggart, 2002 p24); Nauru cancelled all its shell bank licences (Doggart, 2002, p80); Vanuatu cancelled 50 offshore banks licences (Doggart, 2002 p80); Cayman did the same by the end of 2001 (Doggart, 2002 p81); Antigua shut 75 of its 90 banks[283]. There have been other initiatives leading to greater control of offshore banking activities in the past for example when Panama revoked 230 of its 250 bank licences in a crackdown on money laundering in the 1970s (Doggart, 2002, p 82) or when British pressures led to the cancellation of 311 licences in Montserrat in 1990 (Chambost, 1999, p554).

While offshore regulation has become less attractive, other factors have also lessened the appeal of OFCs, particularly for the customers of developed countries[284]: In Europe, the lack of political and economic risks has lessened the incentive to keep funds offshore while incentives have been granted to those repatriating their funds onshore(e.g. tax amnesty[285]). Social and cultural changes onshore have also led people to favour after-tax performance rather than secrecy, eventually using tax friendly products[286]. Finally, the Holocaust/dormant accounts affair[287] also hurt Swiss banks' reputations. Thus, a study from Mercer Oliver Wyman (2005) found that wealth

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[282] 19 according to Besson (2002)

[283] See International Herald Tribune (2003)

[284] See Morgan Stanley Dean Witter, Feb. 8th 2000.

[285] Several countries have offered an amnesty for their citizens having money offshore and repatriating it to their home country. Thus, Italy repatriated 60 billion Euro, mainly from Switzerland (Economist, Oct 5th 2002, p92; Parker and Burton, Dec 2003, p17). Other countries have promised reduced penalties for those who repatriate their funds onshore: Spain, Germany and the USA (International Herald Tribune, March 15-16 2003, p13). See also Chaffin (2003) about the IRSs' Offshore Voluntary Compliance Initiative.

[286] Such as the PEA in France, a saving scheme destined to French taxpayers. The PEA plan that can receive up to € 100,000 to be invested in French shares granting a quasi exemption of income tax and capital gains tax.

[287] Fehrenbach (1966, p9) already mentions the holocaust dormant accounts affair. For more modern references, see http://www.dormantaccounts.ch/. See also http://www.wiesenthal.com and Private Banker International (March 1996, p1 and Oct. 1996, p1).

managers expect the onshore private banking market to be more dynamic than the offshore market (although 20% of respondents believed the opposite).

The combination of these tendencies has increased competition in offshore banking business. The deregulation of the banking market onshore also led to greater competition[288], indirectly leading many banks to enter the private banking market even though they are facing greater competition from the financial markets (Deutsche Bundesbank, 1998; Molyneux, 1990; Gillmore, 1999, p11; Heffernan, 1996). As a result, competition has increased in the private banking market, both onshore and offshore[289]. Many uncompetitive banks were shut, acquired or had to merge. Swiss banking has been particularly affected by this trend and banks have had to cut costs while fees and commissions were decreasing. Since 1990 the number of Swiss banks has fallen by 38 percent down to 369 by 2002 (Financial Times, Nov. 2002, p27; Beck, Feb. 14th 2004, p 13). Similarly, in Luxembourg the number of banks decreased from 215 in 1997 to 185 in 2001 (Murray, Sep. 3rd 2002, p4).

Social and cultural change among customers also makes competition more intense. In particular, customers become less reluctant to switch banks[290]. Because keeping a customer is typically cheaper than seeking a new customer, increased customer turnover can increase banking costs. (Bank Marketing International, 2003, p4). To limit bank turnover, banks had to find ways to differentiate their products looking for more profitable niches or by widening the range of products they offered (Bank Marketing International, 1997, p12; Bank Marketing International, July 2003,

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[288] Competitors also include non banking companies: Tesco, Virgin or Sainsbury in the UK, Carrefour (France), John Deere (USA), Volkswagen (Germany). Offshore, British Airways associated with Royal Bank of Canada to set up a subsidiary in Jersey to serve BA's affluent customers. The online bank, offers its services for customers able to deposit £10,000, (Bank Marketing International, 1999, p3)

[289] Morgan Stanley Dean Witter, Feb. 8th 2000.

[290] Kostolany (2001) says that one should never change one's banker. A Lloyds TSB estimates that 300,000 people get divorced each year while 760,000 switched banks in 2001 (Bank Marketing International, 2003, p4).

p4; Lee in Euromoney, 2004, p45). The competitive pressures and the need to serve the private banking market created opportunities for mergers and acquisitions involving private offshore banks. Some large banks used acquisitions to expand their offshore/private banking offer. Among others, HSBC bought Bank of Bermuda[291] to improve its private banking and fund administration offer. As it will be seen, however, other factors have led many offshore banks to seek expansion abroad.

Many offshore private banks are part of a greater network, or may have their own network of banks worldwide. International expansion can be justified by the need for diversification, and by the need to follow the customers when they wish to bank in another offshore centre due to unfavorable regulatory changes. Thus, several Swiss banks (including UBS and Julius Baer) decided to open subsidiaries in continental European countries to follow their customers (Smith, 1997; Beck, Feb. 14th 2004, p 13; Euromoney, 2004, p46; Targett, 2004). Swiss banks have also opened offices offshore in the Channel Islands (Private Banker International, April 1996, p5). Similarly, in January 2002, UBS announced it would increase its operations in the Bahamas (Caymannetnews, 2002). Besson (2002) confirms that Swiss banks are known to have opened subsidiaries in the Bahamas[292] where bank secrecy is more strictly enforced than in Switzerland. The following examples illustrate the expansion of offshore banks: the Gottardo Bank[293] was founded in 1957 in Lugano, opened a branch in Nassau in 1975, in Luxembourg in 1980 and Monaco in 1994 (Gottardo Bank has been owned by Swisslife since 2000); The Amer Bank and Trust[294] of the

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[291] See http://www.bankofbermuda.com; the deal added 5,000 clients to HSBC's customer base and US$21.7 billion of funds. This represents an average of US$4.34 million per customer. Bank of Bermuda was also a leading provider of captive insurance services and the largest Bermudian bank (Croft and Rigby, 2003).

[292] The 34 Swiss offshore banks present in the Bahamas often have Swiss managers. Many were set up to preserve secrecy levels for Swiss bank customers while Swiss secrecy was under threat (Le Monde du Renseignement, 1999, n.364).

[293] See http://www.gottardo.com.

[294] See http://www.arnerbank.ch

Bahamas is a subsidiary of Banca Amer S.A. a Swiss bank based in Lugano; The offshore banking division of HBOS (Halifax-Bank of Scotland) is spread over Jersey, the Isle of Man and Hong Kong (Holmes, 2002, p15); the Swiss bank Von Ernst is present in Liechtenstein and started an independent subsidiary in Monaco in 1997 (Von Ernst is owned by Coutts itself owned by Royal Bank of Scotland); Ansbacher operates in the Bahamas, British Virgin Islands, Cayman Islands, Channel Islands, Monaco, Switzerland and the United Kingdom; Bank of Butterfield (Bermuda) bought Leopold Joseph Holdings, a London private bank after it bought its Bahamian offshore bank subsidiary (Thorland Bank and Trust)[295], it also bought the Mutual Bank of the Caribbean from Barbados in 2003 and it is quoted on the LSE; Barclay offshore banking offers its services from Cayman, Bahamas, Barbados, BVI and Turks and Caicos[296].

The private banking market is growing. Morgan Stanley Dean Witter (Feb. 2000) foresaw that the private banking market onshore would grow faster than offshore. The driving forces behind this trend are the economic boom of the 1990s and the fact that decreasing birth rates mean that inherited wealth is less divided. Apparently, Luxembourg and Caribbean OFCs grew faster than Switzerland over the period of 1989-1997[297]. This factor also encouraged Swiss banks to expand to other OFCs. The Merrill Lynch Cap Gemini Ernst and Young World Wealth Report 2003 also foresaw a growth of the global market for private banking, particularly in Asia. The optimistic forecasts of market growth are one more factor having prompted the entrance of more institutions into this market. Private banks and offshore private banks in particular seem to have stepped up their marketing efforts to attract new customers. Some banks focus on families, hoping that business will be kept within the

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[295] See The Banker (June 2004, p91) and http://www.leopoldjoseph.com/majorShareholders.asp
[296] See http://www.caribbean.barclays.co.uk/offshore.html
[297] Cap Gemini study cited in Morgan Stanley Dean Witter Feb. 8th 2000

bank as wealth is being transmitted[298] to the next generation. Some banks have modified their positioning and made re-branding efforts. HSBC Republic was renamed HSBC Private Bank[299], and Bank of Bermuda became HSBC Bermuda after having been acquired (Bank Marketing International, Nov. 2003, p5).

This section overviewed the main factors leading to change in offshore banking. International pressures made the regulatory environment more constraining, forcing banks to create new products and better monitor their customers. Moreover, onshore customers appear less interested by offshore accounts, to a large extent because onshore countries have obtained more leverage on OFCs. These factors, added to the fact that onshore banks also expanded in the private banking market, led to more intense competition. Many offshore banks reacted by opening subsidiaries onshore in order to follow their customers, thus arriving in direct competition against onshore private banks.

4.5 Conclusion

Offshore banks serve foreign (usually expatriate) customers whose funds are invested outside of the jurisdiction in which they operate. The customers are usually HNWIs, attracted offshore by the promise of paying less tax. The customers however, differ widely in terms of characteristics and services required. This offers important segmentation possibilities for offshore banks, and appropriate segmentation appears to be a critical success factor. The banks serving the market range from small locally owned entities to large multinational financial institutions providing sophisticated services. Lawyers and accountants act as auxiliaries to the banks, and make it possible

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[298] Lombard Odier (2003) Advertising in the Financial Times, wed. Nov. 5th 2003:
"People say he has your eyes your smile, your character. For us, he has above all the profile of the man who might one day succeed you".
[299] This came three years after HSBC bought the Republic Bank of New York (Edmond Safra's former bank).

for offshore bank customers to exploit the loopholes allowing them to legally exploit the features of offshore banks. Many offshore banks need to resort to outsourcing and in extreme cases can act as brokers for services offered by other institutions. The customer/banker relationship is essential as a way to generate value, as it creates trust and cannot be outsourced. Banks are under constant pressures to adapt to changes in the regulatory framework of OFCs and face increased competition from onshore banks in the field of private banking and wealth management. As a result, many offshore banks have resorted to opening subsidiaries onshore to follow their customers when they repatriate their funds in their home countries.

5 Data selection and analysis

This chapter will form the first part of the empirical analysis in this thesis. The first part of the chapter outlines in detail the selection process used to obtain our sample of offshore banks. The sample covers 32 OFCs from 1995 to 2002 and is dominated by banks based in the four most developed OFCs (Luxembourg, Hong Kong, Singapore and Switzerland). These represent two thirds of the observations available, but more than 80% of the total assets of the banks in the sample. The largest banks in the sample almost all come from these four OFCs, however, in many centres there is a sizeable locally-owned offshore banking sector. The second part of this chapter examines the financial features of the chosen OFC banking sectors highlighting the differences from the main four OFCs and the other centres which are predominantly based on small island economies. The final part of the chapters describes in detail the balance sheet and income statement features of these banks.

5.1 Data selection

In order to construct an appropriate offshore bank sample, the following points need to be taken into consideration: the nature of information to be selected, type of banks to include, the possible consolidation of data, the most suitable currency and whether to adjust for inflation. Furthermore, unusual observations and outliers will be discussed. The number of eligible OFCs, to be included in an empirical study, will depend on data availability. Figure 5.1-1 illustrates this evaluation process used for the construction of the bank data set.

Figure 5.1-1   Decision process for the empirical survey

Selection of information from BankScope from BankScope	→	Choice of institutions to include	→	Select consolidated or unconsolidated data

Observe data sample and deal with unusual observations	←	Define approach dealing with unusual observations	←	Choose currency and whether to adjust for inflation or not

Display corrected data sample	→	Provide an overview of non-financial statement information (e.g. M&A activity)	→	Analyse financial statement information

5.1.1 Choice of the countries concerned

The OFCs to be selected for the study have already been discussed in Chapter Two. These countries must therefore have laws encouraging foreigners to deposit money in their jurisdiction by enforcing greater secrecy laws than onshore jurisdictions along with lower tax rates. This excludes the banks hosted in London, New York and other similar international financial centres.

The sample encompasses all countries known to host such banks for which sufficient data is available (less than 3 observations were available for Nauru and Labuan, and therefore, these jurisdictions were not included). The various lists of tax havens found[300] were reviewed and examined for those that permit or encourage offshore banking. All OFCs do not have an offshore banking industry and some OFCs were therefore not integrated in the sample. For example, Alderney, Liberia, Dominica, cited in the OECD's "harmful tax" list, were not included because they do not host offshore banking activities.

Hong Kong, Singapore, Switzerland and Luxembourg are included in the sample, even though they share several features that differentiate them from other OFCs. These four countries are not small island economies (SIEs), their standard of

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[300] Doggart (2002), Chambost (1999), the OECD (2000), the FATF (2001) and FSF (2000) lists were consulted.

regulation is high, and they are FATF members[301]. Operations in smaller OFCs[302] are often managed from one of these four centres. Banks in the aforementioned jurisdictions also benefit from a significant home market, as these countries have sizeable non-financial (and non-tourist) industries. The substantial number of banks operating in these OFCs also sets them apart.

The final list of countries for the sample includes all those that were found to host offshore banks, and that were represented in the BankScope database. A complete review of the OFCs taken in the sample and the reasons for their inclusion is available in the appendix (see appendix 3 'OFC selection').

5.1.2 Choice and source of data

Data is to be extracted from BankScope[303], a database including information on more than 10,000 banks worldwide from 1994 to 2002. The selected time span includes the years 1995 to 2002, as this period provides the most comprehensive information disclosed on offshore banks at the time of this study (2004-2005). Ideally, bank data must be sufficient to allow for a thorough study of the efficiency features of the offshore banking sector. Unfortunately, among all the OFCs originally considered to be part of the sample, some could not be represented due to a lack of data (such as Labuan and Nauru). At this point, the nature of the data to be extracted from BankScope needs to be established.

Non accounting information of a general nature (location, number of employees and branches, web site information and historical details) can provide useful background information. Historical details include the age of the bank (which one could expect to be a factor in private banking where a long history is usually

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[301] See FATF members at http://www1.OECD.org/fatf/members_en.htm
[302] Clearstream in Luxembourg can keep portfolios of securities for the account of offshore banks.
[303] BankScope is a banking database published by Buro Van Dijk/Fitch ratings in London.

considered to be an advantage) and details about the bank's possible merger and acquisition activities. The examination of the banks' websites (where available) also allows a better understanding of the nature of the services provided by the banks.

Accounting information constitutes the bulk of data to be used in our later analysis. The balance sheet of a bank provides an insight into its operations, identifying the source of funds and how these are being used. BankScope provides data in various formats. For our empirical research, we will use the detailed balance sheet format to construct the sample. The income statement supplies operational information concerning the cost, income and profitability features of the bank. Detailed income statement information is also obtained from BankScope.

5.1.1 Institutions to be selected

BankScope differentiates among various kinds of banking institutions[304], but there are no 'private bank' or 'offshore bank' categories. It is therefore important to overview the categories available to decide what banks should be part of the sample.

Previous studies about bank efficiency have not taken central banks into account[305]; they will not be taken into account in our study either, as their role is not to provide offshore banking services. However, some commercial banks whose secondary role is to act as a central bank will be included. All subsidiaries of foreign institutions are relevant to the present study and will be included in the sample. This specialization as such is not provided by BankScope itself, but has been used by previous researchers to distinguish between domestic and foreign banking operations. Presumably, subsidiaries of foreign banks operating in OFCs are likely to be involved

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[304] Specializations include Commercial Banks, Savings Banks, Cooperative Banks, Real Estate and Mortgage Banks, Medium and Long Term Credit Banks, Investment Banks and Securities Houses, Islamic Banks, Non-Banking Credit Institutions, Specialized Governmental Credit Institutions, Bank Holdings and Holding companies, Central Banks and Multi lateral Governmental Banks.
[305] The study of European banking by Casu (2000) excluded the subsidiaries of foreign banks, the specialized Financial Institutions, and the Central Banking Institutions. Al Jarrah (2003) while looking at Arab banking excluded foreign institutions and Central Banks from his sample.

in offshore banking. Commercial banks are in the banking business for profit. Thus, commercial banks located in OFCs must be involved in some sort of offshore business (taking foreign deposits and offering private banking services) if not exclusively. Commercial banks constitute the bulk of the sample. Investment banks and security houses operating in the selected OFCs have been included in the sample too. Usually, these banks undertake a wide range of investment services that tend to include private banking rather than investment banking when operating in OFCs[306].

Savings and cooperative banks based in OFCs are included, as they take foreign deposits. In fact, most savings banks and cooperative banks in the sample are from Switzerland and Luxembourg and these, as a rule, do take foreign deposits[307]. This has not always been so according to Baer (1975, p21) as savings banks and cooperative banks were originally meant to serve their local communities. This changed when Swiss commercial banks started taking deposits thus competing with savings and cooperative banks. The savings bank of Liechtenstein (Liechtensteinische Landesbank) also serves the offshore banking market and so does the 'Banque et Caisse d'Epargne de l'Etat' in Luxembourg. Swiss savings banks provide generally the same sort of services as other Swiss banks (International Savings Bank Institute 1990[308]).

The inclusion of the 'specialised governmental institutions' must be decided on a case by case basis. For example, the Swiss Cantonal banks tend to accept foreign deposits and offer private banking services to foreigners and can therefore be part of

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[306] The "investment bank" category tends to include the largest and most reputable private banks.

[307] The Raiffeisen banks (cooperative) from Switzerland, accept foreign customers (see www.raiffeisen.ch). They indicate that they do not accept orders by emails as these may not be secure enough and that the simple use of one email may make foreign authorities deduce the existence of relations between someone and the bank. However, they refuse UK or US customers. Baer (1975) explains that savings banks were allowed to enter this market when the Swiss government allowed private banks to enter the loans/deposits market.

[308] International Savings Banks Institute (1990).

the sample to be studied[309]. National Bank of Liechtenstein[310], also in this category, offers offshore banking services (secrecy, low tax and private banking) and will be included. In contrast, the Development Bank of Mauritius[311], another "specialised governmental institution", is devoted to regional development, and grants loans to the local industry, fisheries and agriculture and therefore, does not fit into the sample. BLADEX[312], a multilateral bank (multilateral governmental credit institution) ensuring the development of the Central America and Caribbean region, was removed from the sample as well as the Development Finance Corporation of Belize[313] (DFC) which fosters regional development and has no offshore features.

Bank holdings and holding companies, will be selected on a per country basis. No definition is provided by BankScope. However, on the basis of comparison of web site contents, it appears that when these are not located in Switzerland, Luxembourg Hong Kong or Singapore, they are likely to be commercial banks providing consolidated data and having networks of banks located in various OFCs. All "bank holding and holding companies" located in OFCs, other than Hong Kong, Luxembourg, Switzerland and Singapore were therefore included in the sample. Most bank holdings and holding companies for these latter countries were excluded from the sample as they undertake a broad range of domestic and offshore business and we cannot distinguish between these two activities.

There are 13 "non banking credit institutions"[314] located in the selected OFCs. They display high net interest margins[315]. As these institutions are not banks and are

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[309] Some cantonal banks international private banking is made available, to German speakers. Others translate their web sites in English or French. See http://www.zkb.ch/

[310] See http://www.llb.li

[311] See http://ncb.intnet.mu/moa/dbm.htm

[312] See http://www.blx.com

[313] See http://www.dfcbelize.org

[314] BankScope definition (2003): "This category comprises companies at the frontier of the banking industry. They do not collect individuals' deposits but might collect, as a minor source of funding, deposits from companies (i.e. their mother company or related companies). Their funding sources are

usually not involved in offshore banking as such (they are usually involved in domestic lending and mortgage credit provision), they are excluded from our sample.

5.1.2   Selection of the data

After selecting countries, data and banks to be included, it is important to determine the possible adjustment of data for inflation as well as choosing the most suitable currency.

5.1.2.1   The consolidation of data

Bank statements listed in BankScope can be selected on a consolidated[316] or unconsolidated basis. To avoid double counting (the consolidated account of a bank and the unconsolidated accounts of its subsidiaries) a choice has to be made.

Consolidated accounts provide an overview of the characteristics of a bank. The accounts of offshore banks can be expected to be prone to 'creative accounting' to some extent and observing a group as a whole may present a more accurate view of the bank's characteristics. There are ways in which banks having offshore subsidiaries may influence the accounts of their subsidiaries. For example, an onshore bank with subsidiaries in OFCs may choose to maximise these subsidiaries' profits in order to report more profit in a low tax country. Reporting losses offshore can also help show profits onshore. Transfer pricing strategies can allow such manipulations. Another advantage of consolidated data is its higher availability compared to unconsolidated statements. There are banks (such as Bermuda's) which disclose consolidated statements but do not disclose the details for their other offshore subsidiaries.

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the interbank market, borrowings, capital funds and endowment funds from their mother companies. Their main credit business is short term".

[315] The Net Interest Margin is the ratio of the net interest revenue to the total earnings assets.

[316] Consolidated Statement Definition: "The statement of a mother company integrating the statements of its subsidiaries; the method of integration may vary according to the importance of the interest owned by the mother in its daughters. In BankScope, such a statement has a consolidation code C2 (if the unconsolidated companion is available) or a consolidation code C1 (if the unconsolidated companion is not on the disc)" (Definition from BankScope, 2003).

Exclusively using unconsolidated data would exclude this data from the sample. However, there are arguments supporting the use of unconsolidated data. When data is taken on a consolidated basis, the sample may not be very representative of offshore activities as non-offshore data may be included in the accounts. For example, while taking consolidated data for a Lebanese bank, it may also include data from its Egyptian subsidiaries, not involved in the offshore banking business[317]. Moreover, many banks located in OFCs (and most banks located in OFCs for which data are available) are subsidiaries of large foreign (onshore or not) banks themselves. In fact, some OFCs (as in the Channel Islands) grant offshore banking licences only to the world's largest and most renowned banks. The accounts of the banks located in these OFCs are then only available on an unconsolidated[318] basis.

Thus, data should be taken unconsolidated whenever possible in order to have as much offshore bank specific information as possible. However, in the cases where unconsolidated data is not available, consolidated data will be relied upon. To this effect, data was first sampled on an unconsolidated[319] basis; to this, we added consolidated information from banks that did not provide unconsolidated data. As a result of this process, our sample mainly comprises unconsolidated bank accounting information.

5.1.2.2   Choice of currency

The accounts of most banks appear in the BankScope database either in the local currency or in US dollars. Using national currencies has certain advantages as translating data in a foreign currency (such as the dollar) poses certain problems.

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[317] As explained in chapter 4, many offshore banks confronted with a slowdown in the offshore market have started to expand onshore. For instance, Lebanese and Bahraini banks expand to other Arab countries, Luxembourg and Swiss banks expanded in onshore Europe (Germany, Italy).

[318] For Jersey on BankScope, one would find 29 banks taking unconsolidated statements, but 12 with consolidated statements.

[319] The unconsolidated samples from BankScope U1, U2 and U* have been included in the bank sample used for this study.

Thus, for a bank whose total assets do not change from one year to another (and doing business in its local currency), a strengthening of the local currency against the dollar, would be reflected as an increase in dollar-denominated total assets if data was observed in dollars. Arguably, this could mean that having the accounts in US dollars may introduce an artificial distortion due to currency depreciations or appreciations. Apart from this limitation, however, most empirical studies in banking tend to use a standard currency conversion, either in US dollars or Euro (such as Casu, 2000 or Al Jarrah, 2002). This choice seems particularly viable as the deposits in offshore banks usually comprise a substantial proportion of foreign currency deposits. Many jurisdictions even prevent their offshore banks to allow the opening of accounts in the local currency (such as the Bermuda Dollar[320]). The bulk of offshore deposits are, as a matter of fact, dollar deposits. Moreover, many OFCs have their currencies pegged to the dollar[321]. Therefore, transforming all the accounts of banks in this sample into dollars is probably the best choice in terms of creating a standardised (in currency terms) dataset. As in most studies involving cross country comparisons, [322] bank accounting information was adjusted for inflation using the IMF consumer price index provided by BankScope.

5.1.2.3 Dealing with unusual observations

The preliminary sample obtained thus far contains unusual observations[323] which will be removed from the sample before further analysis. Unusual observations are defined as observations situated at three standard deviations from the mean or

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[320] See http://www.bermuda-online.org/money.htm for details about the Bermuda Dollar. In most small OFCs the local currency cannot be used for offshore deposits either; unless the currency used is already an international currency. Thus in Liechtenstein, the currency is the Swiss Franc, in Monaco, Andorra and Luxembourg it is the Euro, and the British Pound in the Channel Islands and the Isle of Man.

[321] Among others, Chambost (1999) mentions the Bahamas, Bermuda, the Cayman Islands, Panama and Hong Kong.

[322] See for instance Casu (2000, p131).

[323] An observation is a series of data available for a given bank in a given year provided the banks shows total assets greater than US$1

more. Unusual observations are data not representative of the sample that can distort interpretation of the data analysed. However, most outliers found in the preliminary sample relate to start-ups or failed banks.

Unusual observations usually translate into unusual ratios[324] located at the tails of sample distributions. The decision to include or exclude data is reached through the elimination process described in Figure 5.1-2. The first step when an unusual observation is found is to identify whether the bank concerned actually undertakes offshore banking activity or not[325]. If the bank does not qualify as 'offshore', the observations concerning the bank are discarded. Thus, 20 banks were removed from the sample because they did not fulfil the sample criteria after examination. These were regional development banks or banks apparently not engaged into offshore banking. Others were in the "bank holding" category, and were located in Switzerland, Luxembourg, Hong Kong or Singapore. They do not seem to take any deposits, yet display abnormally large net interest margins.

Outliers can be more or less influential[326] (sometimes due to incorrect or missing data). If data appears to be missing or incorrect, linear extrapolation (i.e. deducting the 'logical' value of the missing or extraordinary data on the basis of other available data) will be applied. If possible, the restored data is kept[327]. If data cannot

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[324] Thus, a typing mistake may lead to a ratio being 10 times greater than normal.

[325] One can do so using the Internet, by checking whether the bank takes deposits from foreign residents.

[326] A 'very influential outlier' is a value, at least 10 times greater than the mean for the ratio in question. Less influential outliers are at least three standard deviations away from the average for various ratios in question. They must be examined but may still be kept if they make sense in the local context.

[327] This can occur in the case of an obvious typing mistake. In the case of Cassa di Risparmio della Respublica di San Marino, for the year 1995, total assets are given as US$412 million, when in 1996, they were above US$1.4 billion and increase slowly thereafter. In the meantime, the other items varied little between 1995 and the other years. It was assumed that there was a typing mistake and that total assets in the first year were US$1.412 millions instead. Similarly, the amounts of total "money market funding" were given as US$107 millions in 1995. However, by adding up the liability accounts, it appeared that there was US$1 billion missing. As in the following years the amounts of "money market funding" evolve about US$1 billion (in 1996 and 1997), it was concluded that there had been a typing mistake and that the amount of "money market funding" for 1995 was in fact US$1.107 billion.

be restored or comes from a bankrupt bank[328], the observation is discarded. Examining the data in its context provides further clues. If it seems to be at the high end of the local average, then it may be kept[329]. If the outlier comes from an entity that is not operating normally (i.e. if the bank is a start-up or a bankrupt bank) it can be eliminated. Thus, observations with extreme values concerning the first or last year of operations of 13 banks were discarded (in its first year of operations, a bank can display very high equity ratios because it has not taken any deposits). Following this logic, the ratios most able to reveal problematic cases (bank failures, start-ups, banks not operating normally) were checked for outliers.

The Return On Equity (ROE) is the most important measure of performance. ROEs are prone to significant variations from year to year. In 26 observations in the sample, one can observe ROEs of more than 100% per year; ROEs between 50% and 100% were observed in 105 cases. These observations were kept in the sample. However, seven observations displaying negative equity were taken out of the sample. Negative equity (although equity is not supposed to be negative) may be observed in the last year of operation of a bank that went bankrupt[330].

Banks having Net Interest Margins (NIMs) above 10% were dealt with depending on their specific context[331]. In countries where exceptionally high margins pertained for certain banks (Switzerland, Luxembourg), they were eliminated. In other

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[328] If a bank went bankrupt in 1998, observations would be kept until 1997. However, if (like the case in 1997-1998 for many banks in Singapore) a bank survives bankruptcy, no observation is withdrawn. Hence the low average ROEs for Singapore banks in 1998 (-18.55%). Excluding these observations would not show an objective picture of Singapore's OFC banking sector at the time. Svenska Handelsbanken Asia was eliminated from the sample on these grounds

[329] This is the case for Lebanese banks, for example. In 1997, in the Lebanese banking sector, Al Baraka displays a NIM of 12.5%; high by normal standards. It is the highest NIM in Lebanon for 1997. The data concerning the bank was kept in the sample, as many other Lebanese banks display such high NIMs. Second highest is at 11.38%, third highest at 10.01% etc.

[330] The Panamean bank 'Banco Disa', went bankrupt after having taken over a fund that made losses. It displayed a 3750% ROE under the effect of a loss and negative equity. For more information see: http://www.thepanamanews.com/pn/v_09/issue_09/business_briefs.html

[331] Thus, Woolwich Guernsey displayed NIMs consistently over 17% from 1998 to 2001. This subsidiary of Barclays was found to be involved in offshore banking; the bank was kept in the sample. See https://www.woolwichguernsey.co.gg/index.htm

countries where such cases seemed more commonplace such as in the Lebanon, they remained in the sample.

Figure 5.1-2   Dealing with unusual observations
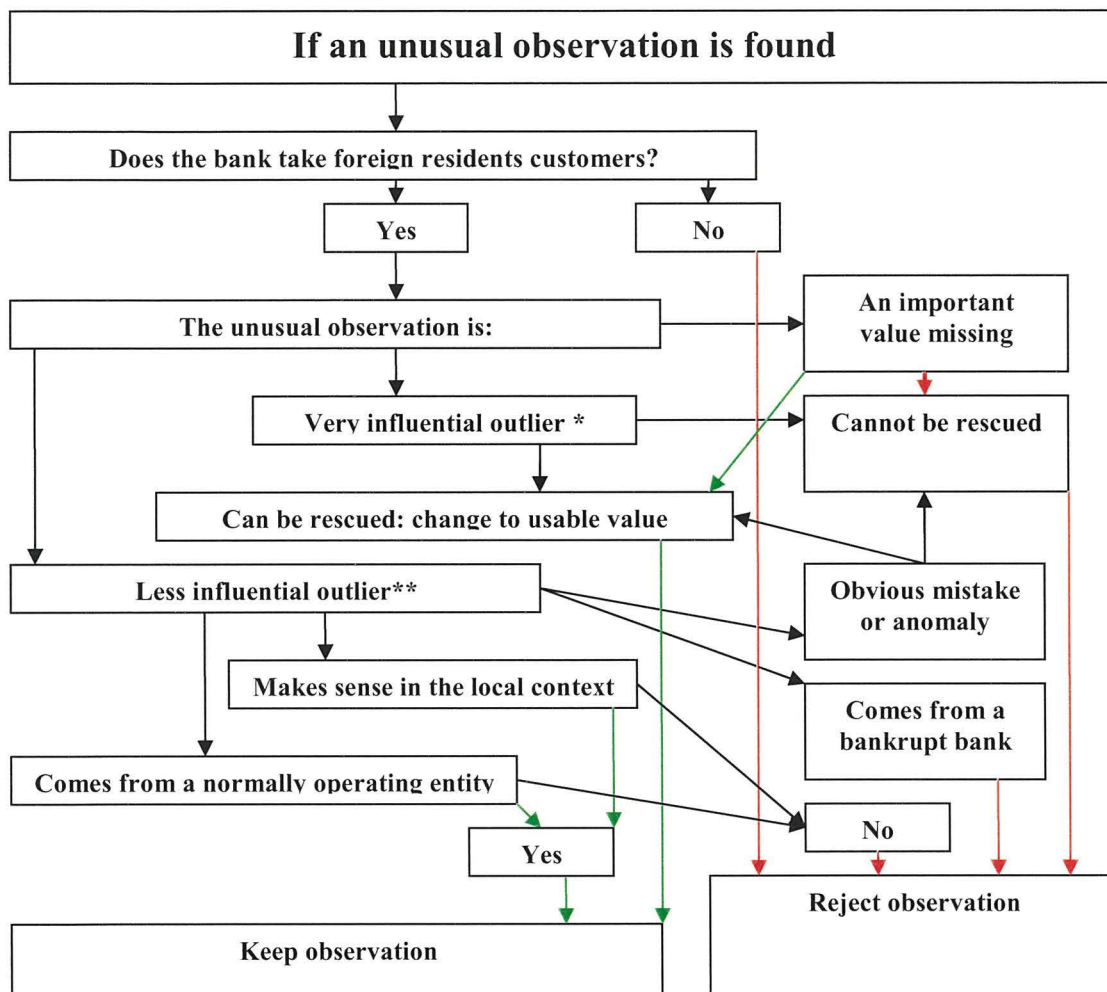
*The unusual observation is deemed "very influential" if it is more than 10 standard deviations away from the average value.
**The unusual observation is at least at 3 standard deviations from the average value

Overall, observations where the NIM exceeded 20% were systematically discarded[332]. High NIMs can be encountered in institutions serving the consumer

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[332] A 222.58% interest margin was found for a Panamian Bank in 2002 while previous NIMs stood between 0.99% and 0.79%. Although Net Interest Revenues had only slightly decreased over the past year, the amount of total earning assets had collapsed to US$3 million from US$1 billion in 2000 as the bank was being dismantled.

credit market[333], or in countries with high inflation rates and these institutions are probably not involved in offshore business[334].

The ratios reviewed so far allowed the elimination of most unusual observations, but other ratios have also been reviewed and no other observations were deleted on the basis of unusual ratios. The highest ROA (41%) was obtained for 'JPMorgan Flemming' in 1999[335]. The Equity/total assets ratios were also reviewed. They range between 0% (sometimes found in nearly bankrupt banks) and 100% (for banks starting operations). No observations were deleted from the sample on this basis. Conversely, the levels of net loans over total assets vary between 0% (typically for banks starting operating) and 100% (for banks having very fast growth). No bank data was deleted from the sample on this basis.

Altogether, 2.2% of the observations extracted from BankScope were discarded (i.e. 149 observations). 49 of these observations concern banks in Hong Kong and Singapore. This can be explained by the effects of the Asian crisis, which led many banks to display abnormal results (when they went bankrupt), as well as by the fact that institutions involved in consumer credit having high NIMs were withdrawn, and because banks displaying incomplete data were also removed from the sample.

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[333] In the case of JCG Finance in Hong Kong, the NIMs were consistently between 19.22% and 22.08%, but the bank was otherwise operating normally. It was discarded because it did not accept non resident customers. http://www.jcg.com.hk/holdings/en/index.htm.

[334] Offshore deposits are typically kept in currencies not subject to high levels of inflation.

[335] 1999 was a record year for this investment bank. The total assets of the bank went from US$ 8.9 billion in 1998 up to US$ 15.7 billion in 1999. The asset base looks volatile. It seems that the bank was not depending on deposit taking business, since it had no deposits between 1998 and 2002, and the deposits/TA ratio reached 6.8% at its highest in 1996. Many banks involved in private banking show similar results. A Swiss start-up bank 'Redsafe', has the lowest ratio -114.66%. It was involved in international portfolio management. It was thus retained in the dataset. Singapore banks in 1997/1998 also display very low ratios.

Having described the selection of the sample and how unusual and/or irrelevant observations were discarded, a detailed description of the sample content follows.

5.2   Overview of the sample

The final data sample selected for the study is not equally distributed across jurisdictions and four countries stand out as major banking centres. To facilitate our analysis, it helps to separate these four countries from the rest of the sample, thus dividing the sample in two groups. Switzerland, Luxembourg, Hong Kong and Singapore make up the main part of the sample. In terms of numbers of bank observations (on average, of the 810 observations available for every year, 525 observations concern these countries), and in terms of total assets (in yearly average terms), they represent US$ 2,194 billions out of a total sample average of US$ 2,509 billions. What unites these four OFCs (which we will call Group 1) is the fact that although they tend to figure consistently among the most prominent offshore banking centres, they are the most established and developed jurisdictions in the sample. It is likely that they would remain important financial centres even if they were to give up their offshore banking activities. The following section presents the main features of the offshore bank sample that will be used later in our empirical analysis.

5.2.1 Structure of the sample

Table 5.2-1 shows the total number of bank observations per country and per year. There are 6,486 observations, including 4,204 in Group 1 (Switzerland, Hong Kong, Singapore and Luxembourg) and 2,282 in Group 2 (other OFCs). There was only one bank observation for Nauru and two for Labuan, but the lack of financial details for the banks in question made them unusable; these two countries are

therefore not represented in the study. A variation in the number of observation available each year can be seen. Some of the smaller OFCs are only represented by very few banks. For some OFCs, like Bermuda, the sample represents 100% of the actual banking sector as Bermuda only has four banks. Other OFCs appear to be substantially underrepresented. Some OFCs do not require the banks they licence (usually captive banks) to publish their accounts. This may explain why only 28 of Cayman's banks (out of more than 500 actually licensed and 80 with a physical presence in the islands) are represented in our data sample.

While the countries in Group 1 account for most observations, they also account for the majority of banking assets in the sample. As Table 5.2-2 indicates, these countries accounted for 87% of all OFC banking sector assets in 2002. Most countries in our sample account for less than 1% of the total assets of the sample.

The number of observations available from the BankScope database indicates that many banks may be missing[336]. By comparing the amounts of bank deposits in the sample in a given year to the amounts of external deposits provided by the BIS (as introduced in chapter 2), it is possible to estimate how well an OFC is represented in our sample. This is shown in Table 5.2-3.

The figures in Table 5.2-3 vary widely depending on jurisdiction. Major OFCs like the Bahamas and Cayman are represented at less than 5%, while other OFCs like Cyprus exceed 300%. Figures above 100% indicate that the sample contains more deposits than just the offshore deposits and that therefore, either the sample contains both offshore deposits and domestic deposits in the local economy, or BIS figures are an underestimate of foreign currency deposit taking in the jurisdiction concerned.

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[336] The number of observations available indicates for example that few of the Caymanian or Bahamian banks are represented. This must be because the banks of these OFCs are essentially captive banks, whose accounts are kept secret. However, such banks mostly serve the international interbank market (Dixon, 2000) and are thus not relevant to the study.

Table 5.2-1   Number of bank observations per year and per OFC in the sample[337]

Country Name	1995	1996	1997	1998	1999	2000	2001	2002	Mean
Group 1									
HONG KONG	72	78	78	80	73	77	68	49	71.88
LUXEMBOURG	128	132	134	128	133	117	102	20	111.75
SINGAPORE	43	44	43	41	38	37	27	16	36.13
SWITZERLAND	341	348	363	347	314	316	303	114	305.75
Group 2									
ANDORRA	6	6	7	7	7	8	7	3	6.38
ANGUILLA	2	2	2	2	2	2	2	0	1.75
ANTIGUA and B.	4	4	5	5	6	6	5	1	4.50
ARUBA	2	2	2	3	2	2	2	0	1.88
BAHAMAS	8	14	18	30	32	28	14	6	18.75
BAHRAIN	14	14	14	16	18	17	17	8	14.75
BARBADOS	3	3	4	5	5	5	4	2	3.88
BELIZE	0	1	1	1	1	3	3	0	1.25
BERMUDA	4	5	5	4	5	6	6	4	4.88
CAYMAN Isls.	15	18	24	26	25	28	16	6	19.75
CYPRUS	13	13	17	18	16	15	15	5	14.00
GIBRALTAR	2	3	2	2	2	2	1	0	1.75
GRENADA	2	2	2	2	2	2	2	0	1.75
GUERNSEY	11	12	11	15	15	13	11	3	11.38
ISLE OF MAN	4	5	6	6	6	6	5	0	4.75
JERSEY	23	24	22	22	23	20	14	2	18.75
LEBANON	64	66	65	63	57	53	34	12	51.75
LIECHTENSTEIN	4	5	5	5	8	8	7	3	5.63
MALTA	8	8	8	9	8	8	6	3	7.25
MAURITIUS	7	8	9	7	8	9	6	4	7.25
MONACO	11	11	12	12	14	14	12	2	11.00
NETH. ANT.	3	3	6	8	8	7	4	4	5.38
PANAMA	58	66	63	57	51	64	62	59	60.00
SAN MARINO	1	1	2	2	3	3	1	1	1.75
ST. KITTS and N.	2	2	2	2	2	2	2	2	2.00
ST. VINCENT	0	0	1	1	1	1	1	0	0.63
VANUATU	0	1	1	0	0	0	0	0	0.25
VIRGIN Isls. B.	0	0	0	1	1	1	0	0	0.38
WEST. SAMOA	2	2	2	2	2	3	2	0	1.88

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[337] Observations for which the amount of total assets was greater than 0.

Table 5.2-2   Proportion of the total assets in the whole sample

Country Name	1995	1996	1997	1998	1999	2000	2001	2002
Group 1								
HONG KONG	13.57	13.1	12.69	11.09	11.13	14.07	15.3	20.79
LUXEMBOURG	20.17	19.19	18.92	16.28	17.41	16.89	17.22	9.18
SINGAPORE	6.84	6.93	7.03	6.05	5.55	6.21	5.63	7.82
SWITZERLAND	48.08	48.53	49.31	54.09	53.23	48.93	49.12	49.9
Group 2								
ANDORRA	0.58	0.55	0.54	0.44	0.41	0.42	0.35	0.3
ANGUILLA	0	0	0	0	0	0.01	0.01	
ANTIGUA and B.	0.01	0.01	0.03	0.03	0.04	0.05	0.05	0.01
ARUBA	0.02	0.02	0.02	0.02	0.02	0.02	0.02	
BAHAMAS	0.43	0.5	0.43	0.47	0.53	0.57	0.35	0.37
BAHRAIN	1.64	1.57	1.43	1.78	2	2.01	1.97	2.73
BARBADOS	0.03	0.03	0.03	0.1	0.15	0.16	0.2	0.43
BELIZE		0	0	0	0	0.01	0.02	
BERMUDA	0.89	1.11	1.16	0.87	0.77	1.05	0.88	1.19
CAYMAN Isls.	0.68	0.79	0.58	0.49	0.58	0.82	0.63	0.17
CYPRUS	0.7	0.77	0.85	0.81	0.89	1.2	1.28	1.34
GIBRALTAR	0.25	0.22	0.18	0.16	0.06	0.06	0.06	
GRENADA	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
GUERNSEY	0.27	0.32	0.31	0.47	0.5	0.36	0.29	0.05
ISLE OF MAN	0.2	0.26	0.26	0.54	0.48	0.45	0.42	
JERSEY	1.78	1.68	1.66	1.67	1.71	1.81	1.65	0.46
LEBANON	0.95	1.17	1.34	1.42	1.42	1.7	1.61	1.9
LIECHTENSTEIN	0.64	1.05	0.98	0.9	0.91	0.96	0.85	1.07
MALTA	0.32	0.32	0.31	0.3	0.29	0.32	0.3	0.41
MAURITIUS	0.13	0.13	0.13	0.13	0.16	0.16	0.14	0.15
MONACO	0.35	0.36	0.4	0.39	0.38	0.41	0.45	0.09
NETH. ANT.	0.17	0.17	0.22	0.45	0.34	0.12	0.19	0.34
PANAMA	1.22	1.14	1.03	0.86	0.84	1.02	0.95	1.23
SAN MARINO	0.04	0.08	0.14	0.12	0.14	0.15	0.06	0.07
ST. KITTS and N.	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
ST. VINCENT			0.01	0	0.01	0	0	
VANUATU		0	0					
VIRGIN Isls. B.				0.02	0.03	0.04		
WEST. SAMOA	0	0	0	0	0	0	0	
Total Assets Billions	1,855	2,063	2,332	2,683	2,916	2,960	3,085	2,177

<0.5%	<1%	<5%	<10%	>10%

A ratio of 300% indicates that the amount of domestic deposits represents twice the amount of offshore deposits. Ideally, adding the amounts of BIS external deposits to the amounts of domestic deposits would have created a benchmark, but unfortunately, the amounts of domestic deposits are typically unavailable. However, domestic deposits may still be foreign deposits in OFCs hosting "tax immigrants"

keeping deposits in their country of residence. Most OFCs are also tax havens and often allow wealthy people to settle while paying minimal amounts of tax.

Table 5.2-3   Size of offshore banking markets in the sample compared with BIS data[338]

	1995	1996	1997	1998	1999	2000	2001	2002	Mean
ANDORRA	111.41	117.95	148.93	127.26	152.36	167.11	155.81	90.63	133.93
ARUBA	16.66	20.27	48.42	55.21	59.76	38.54	48.63	0	35.94
BAHAMAS	4.78	6.67	5.63	6.66	5.77	5.57	3.73	2.76	5.2
BAHRAIN	127.52	127.96	130.53	133.61	193.06	194.78	158.35	231.83	162.21
BARBADOS	9.35	8.97	4.73	23.39	44.16	46.5	108.57	99.27	43.12
BELIZE		14.7	11.28	10.26	5.48	12.38	14.53		11.44
BERMUDA	66.22	88.95	108.32	110.08	94.24	126.87	76.82	52.21	90.46
CAYMAN	1.63	1.9	2.64	2.1	2.06	2.25	1.21	0.45	1.78
CYPRUS	160.73	215.3	226.23	261.28	272.36	322.33	318.81	235.2	251.53
GIBRALTAR	49.44	60.77	52.58	57.31	19.11	17.85	14.87		38.85
GRENADA	129.98			87.62	198.78	226.26	250.19		178.57
GUERNSEY							11.14	1.16	6.15
HONG KONG	54.05	69.69	73.26	79.64	79.99	89.53	118.05	128.76	86.62
ISLE of MAN							36.61		36.61
JERSEY							25.65	3.75	14.7
LEBANON	98.56	143.17	165.68	201.81	221.64	249.75	258.76	190.89	191.28
LIECHT.	69.12	117.24	114.8	97.99	111.75	103.79	100.27	86.59	100.19
LUX.	131.07	142.42	163.39	142.57	160.5	158.75	153.76	45.09	137.19
MALTA	190.06	226.85	267.28	243.49	281.15	298.88	251.67	199.7	244.89
MAURITIUS	161.42	151.17	186.42	132.5	126.54	140.41	104.74	85.23	136.05
MONACO									
NETH. ANT.	3.97	3.81	5.72	5.56	4.88	4.09	6.9	6.34	5.16
PANAMA	35.1	49.14	51.17	49.32	49.25	57.04	55.8	50.37	59.75
SINGAPORE	61.85	67.92	63.11	55.82	54.42	57.02	50.64	45.37	57.02
St. VINCENT	0	0	22.4	18.01	14.66	12	15.74	0	10.35
SWITZ.	137.75	145.8	146.15	161.42	176.91	141.77	135.92	77.39	140.39
VANUATU	0	4.13	3.01	0	0	0	0	0	0.89
W. INDIES	1.03	1.36	2.31	4	5.13	5.22	2.95	0.74	2.84

<10%	<25%	<50%	<100%	<150%	<200%	>200%

Having compared the data obtained in the sample to BIS estimates, it is interesting to see how the comparison provided in Table 5.2-3 compares with data supplied by various sources as shown in Table 5.2-4 (See Doggart, 2002; Chambost, 1999; or the respective OFC's regulatory authorities). The information supplied in

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[338] These are percentages. A figure below 100 means that the deposits as found in the sample represent less than 100% of the BIS "external deposits", a figure above 100 means that the deposits as found in the sample exceed BIS "external deposits".

both tables tends to coincide, but BIS information has the advantage of being more detailed and to be available for almost all years. The estimates shown in Table 5.2-4 were used in cases where BIS information was not available to estimate market size (as in Monaco).

Table 5.2-4   Size of offshore bank markets – sample compared to non-BIS data

	Deposits in bn US$ as found in the sample	Deposits according to various sources	sample/other sources
ANDORRA	7 banks on 7		100%
ANGUILLA (Stationery office 2000)	2 banks on 2		100%
ARUBA	0.44	1.04	42%
BAHAMAS (Higney 2003 p 25)	8.77	200	4.4%
BAHRAIN	46.55	95	49.00%
BARBADOS	9.77	32	30.53%
BERMUDA	21.35	15	[339]100%
CAYMAN ISLANDS	7.54	782	0.96%
CYPRUS	16 banks/29 (Doggart) in 1999		55%
GUERNSEY	8.15	108.8	7.49%
HONG KONG	77 banks on 154 or 263[340]		More than 29%
ISLE OF MAN	12.05	35.2	34.23%
JERSEY	47.50	184	25.82%
LEBANON	43.73	18	100%
LIECHTENSTEIN	7 banks on 11 (Doggart) in 1999		63.00%
LUXEMBOURG	433	500[341]	86.6%
MALTA	8.05	4.4	100%
MAURITIUS	6 banks on 11		54.54%
MONACO[342]	13.39	46	29.13%
NETHERLANDS ANTILLES	4 of the 33 banks		12.12%
PANAMA	25 (1995)	25.9 (1994)[343]	97%
SAN MARINO	3 banks out of 4[344]		75%
SINGAPORE[345]	183 (2000)	203 (2002)	90%
SWITZERLAND	1,066	1,000.00	100.00%
Virgin Isles (British)[346]	0.8	2.7	30%

[339] All 4 banks known to be in Bermuda (before deregulation) were present in the sample.

[340] Doggart (2002, p203) reports that there were 263 deposit-taking institutions licensed in 2000 including 154 fully licensed banks. More details were not available.

[341] EURO 540 billion of Assets in 1998 according to Murray (2002)

[342] Estimates published in Peillon and Montebourg (2000) about Monaco. The estimate for 1999 is FF331 billion, and the estimate for 1998 FF260.6 billion. The conversion in Euro was made at the starting rate of Euro 6.56/FF and at the rate of US$1.16/Euro. Conversion rates available at http://www.stox-office.com/histo.htm

[343] See http//www.fabamm.com/bank.htm

[344] The three banks already in the sample are mentioned along with a subsidiary of the Antonveneta group. Therefore, the sample includes three out of four banks.

[345] According to http://singapore.usembassy.gov/ep/2002/BankingMarch.2002.html total assets were US$203 billion

[346] Stationery Office (2000)

No data available for Antigua and Barbuda, Gibraltar, Grenada, West. Samoa, St Kitts and Nevis, St Vincent, Nauru, Vanuatu and Belize. The estimates were provided in Doggart (2002) except where otherwise stated.

Table 5.2-5   Market size estimates (Deposits in billion US$)

COUNTRY	1995	1996	1997	1998	1999	2000	2001	2002
ANDORRA	9.7	10.1	11.3	10.6	10.4	10.7	9.3	5.4
ANGUILLA	0.07	0.08	0.09	0.1	0.12	0.14	0.18	0.21
ANTIGUA and B.								
ARUBA	**1.7**	**1.5**	**0.7**	**0.8**	**0.8**	**1.1**	**0.9**	**0.9**
BAHAMAS	**131.1**	**127.2**	**153.3**	**152.6**	**202.4**	**238.7**	**235.5**	**220.2**
BAHRAIN	23.3	24.7	25.3	37.7	45.8	46.2	46.6	46.8
BARBADOS	**4.9**	**5**	**10.4**	**9.6**	**8.2**	**8.5**	**9.8**	**8.1**
BELIZE	**0.3**	**0.3**	**0.5**	**0.6**	**1.2**	**1.9**	**2**	**2**
BERMUDA	**19.0**	**20.2**	21.9	20.1	**20.7**	27.5	**27.8**	**43.5**
CAYMAN Isls.	**286.7**	**321.3**	**380**	**426.2**	**469.3**	**529.7**	**620.5**	**722.6**
CYPRUS	11.3	13.8	16.5	18.3	21.2	29.0	31.9	25.2
GIBRALTAR	**6.8**	**6.6**	**7**	**6.4**	**8.1**	**9.6**	**10.7**	**7.7**
GRENADA	0.1	0.1	0.2	**0.2**	0.2	0.2	0.3	0.0
GUERNSEY	*45.8*	*45.4*	*54.1*	*59.9*	*61.1*	*75.9*	**73.1**	**72.2**
HONG KONG	**333.0**	**284.0**	**298.0**	**288.0**	**315.0**	**334.0**	351.0	351.0
ISLE OF MAN	*30.1*	*31.6*	*34.4*	*34.5*	*33.9*	*33.7*	**32.9**	**36.3**
JERSEY	*103.7*	*106.3*	*124.6*	*139.4*	*150.3*	*165.9*	**185.2**	**234**
LEBANON	**16.1**	21.3	26.7	33.1	36.1	44.5	43.7	36.5
LIECHTENSTEIN	**12.8**	17.1	17.3	**18.3**	20.8	22.0	20.2	**20.2**
LUXEMBOURG	324.3	338.7	369.6	358.6	413.1	403.2	424.8	**354.6**
MALTA	5.3	5.9	6.4	7.1	7.3	8.1	8.1	7.8
MAURITIUS	1.5	1.5	1.7	1.9	2.2	3.2	3.0	**3.3**
MONACO	*28.4*	*33.9*	*38.6*	46.0	58.5	*69.0*	*75.1*	*59.2*
NETH. ANT.	**61.8**	**70.1**	**76.8**	**85.1**	**88**	**77.1**	**68.2**	**88.7**
PANAMA	**56.7**	**40.5**	**38.5**	**36.9**	**38.8**	**40.5**	**40.5**	**40.7**
SAN MARINO	*1.1*	*1.1*	*1.1*	*1.1*	1.2	*1.3*	*1.3*	*1.2*
SINGAPORE	**170.8**	**177.8**	**221.3**	**248.6**	**250**	**274.8**	**277.1**	**291.2**
ST. KITTS and N.								
ST. VINCENT	**1**	**0.4**	**0.5**	**0.6**	**0.9**	**1**	**0.8**	**0.9**
SWITZERLAND	566.2	661.7	755.9	953.3	1068.0	960.0	992.5	**847.0**
VANUATU	**3.4**	**1.8**	**2.7**	**1.8**	**2.9**	**2.8**	**0.8**	**1.3**
VIRGIN Isls., B.								
WEST. SAMOA								

Authors' estimates (2005); the amount of deposits selected here is the highest of the amount provided by the BIS or from the data found in BankScope.
In Bold, BIS data; in italics, author's estimates[347]; in normal font, deposits as found in the sample.

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[347] Market size is used to evaluate OFC's level of offshore activity and concentration ratios. Where information was available for one year but not for the others, the following procedure was applied to provide estimates for the other years: the weighted average growth of bank assets was determined from year to year from the sample's bank data. It is assumed that the growth rate of the deposits of the banks in the sample is representative of the growth rate of the deposits in the whole OFC. The weighted average grants more importance to larger banks. Observations concerning banks having acquired other banks were omitted. This procedure was applied to Monaco for which 1998 and 1999 data was available in Peillon and Montebourg (2002), to the Channel Islands and the Isle of Man for which BIS

For the purpose of this study, it is necessary to produce an estimate of the total amounts of deposits in the respective OFCs. Table 5.2-5 shows the estimated total market size in terms of bank deposits. The estimated market size used BIS data when the market deposit size is found to be greater than that calculated for our bank sample, alternatively, we use our own sample's data, when it the amount is greater than the corresponding BIS figures.

Table 5.2-6 shows the number of observations per country and bank type. The bulk of the sample consists of commercial banks (4316 observations) and investment banks/securities houses (1202 observations). There is no 'private bank' category; BankScope sorts them as either 'commercial banks' or 'investment banks/securities houses'. Other bank types are not equally well represented in other OFCs. Thus, most observations for 'savings banks', 'specialised governmental institutions' and 'cooperative banks' appear in Switzerland. Most observations for 'bank holding companies' concern Caribbean OFCs, Switzerland or Luxembourg (many other bank holding companies have been deleted from the sample during sample selection because they did not seem to operate like banks, having very large net interest margins among other extraordinary features). Most Islamic banks are located in Bahrain.

Examining the structural characteristics of the sample forms an important step towards understanding the features of offshore banking and the banks operating characteristics.

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data is available from 2000 onwards only, and to San Marino, for which the sample is almost complete in 1999 but not for other years.

Table 5.2-6   Number of observations (where Assets >0) per bank specialisation (1995-2002)

Type of bank observation per OFC	Commercial bank	Investment/private Bank	Savings bank	Specialised Gov.Credit Inst_	Bank Holding	Cooperative bank	Real Estate / Mortgage	Medium and Long Term Credit	Islamic bank
ANDORRA	51								
ANGUILLA	14								
ANTIGUA and B.	29	7							
ARUBA	2	13							
BAHAMAS	143		2						5
BAHRAIN	47	37							34
BARBADOS	26				5				
BELIZE	10								
BERMUDA	27	4			8				
CAYMAN Isls.	107	20			31				
CYPRUS	83	9	5			7		8	
GIBRALTAR	14								
GRENADA	14								
GUERNSEY	61	21	4		5				
HONG KONG	292	281						2	
ISLE OF MAN	38								
JERSEY	66	80	4						
LEBANON	395	4						10	5
LIECHTENST.	30	8		7					
LUXEMBOURG	776	39	15		26	21	10	7	
MALTA	52	6							
MAURITIUS	58								
MONACO	86	2							
NETH. ANT.	33	10							
PANAMA	433	5	9	13	12		8		
SAN MARINO	8		6						
SINGAPORE	120	158	3				8		
ST. KITTS and N	16								
ST. VINCENT	5								
SWITZERLAND	1263	498	347	191	41	62	37	7	
VANUATU	2								
VIRGIN Isles, B.					3				
WEST. SAMOA	15								
Total	4316	1202	395	211	131	90	63	34	44

5.2.2 Features of offshore banking – Sample Evidence

The issue of offshore bank ownership is particularly important and is likely to affect the efficiency characteristics of the banks of our sample. Former studies of bank

efficiency have made a distinction between state owned banks and others[348], but few banks in this sample appear state owned. Instead, this sample differentiates locally owned banks from others; and among foreign banks, distinctions are made according to the country of origin of the owner. Similarly, whether the owner is one of the world's largest banks can also be an influential factor. It is often reported that a substantial proportion of the banks operating in OFCs are subsidiaries of other banking groups (Maude and Molyneux, 1996, p26).

The question of the ownership of offshore banks is interesting because a bank owned by another large institution may act in order to maximize the profits of the whole group rather than its own. Thus, the country of origin of the offshore banks' owner may have repercussions on the way these banks do business. Bank operations may depend on whether the bank is locally owned or not. In some cases, the offshore bank may be local, and state or family owned (e.g. SBM Nedbank in Mauritius is partly state owned; many Swiss private banks are family owned such as Vontobel). Thus, the question of the country of origin does matter. An Internet search was conducted to acquire this information (this information was not systematically available on BankScope). The attribution of a 'country of origin' to an organization operating internationally by nature requires clarification. Thus, a banks' 'country of origin' was defined according to the following criteria:

o   Banks that were subsidiaries of other groups (banking or not) were attributed the nationality of origin of this group (in terms of headquarters or if not available place of quotation if the company was listed, or the nationality of the main owners)

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[348] See for instance Altunbas et al. (2001, pp926-954)

o   Banks owned by local people or quoted locally were considered "local banks"

o   Institutions that were in none of these cases were attributed the nationality of
         their owner when available.

o   In 30 cases (of about 1200 different banks in existence in the sample), the
         country of origin could not be established.

Figure 5.2-1   Repartition of the banks in the sample per country of origin
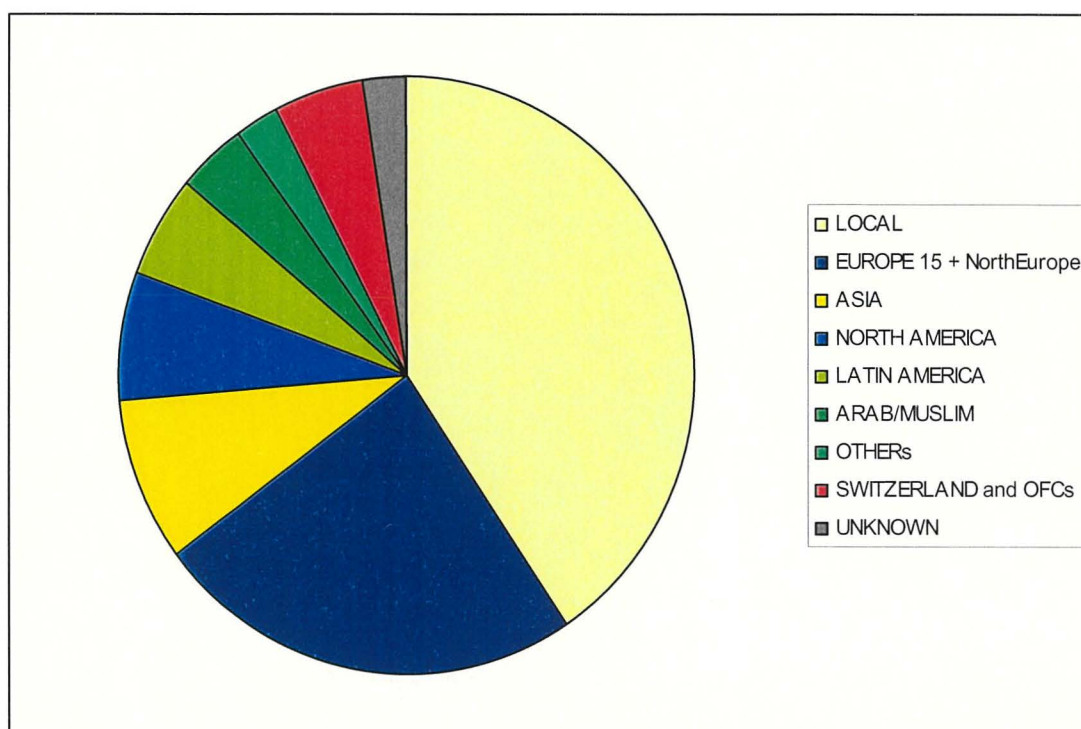
Switzerland represents 2/3 of the OFC observations; others represent notably Eastern Europe, other
Caribbean non-OFC, and African countries.

The results are displayed in Table 5.2-1. Thus, in 40.6% of the cases, banks
are locally owned banks, and in 24% of the cases, they are European-owned.
However, as it will be demonstrated (see Table 5.2-2), the breakup of these statistics
at the OFC level shows that bank origins depends greatly on the OFC considered.
19% of the banks in Luxembourg are of German origin (10% from France, 8.5% from
Italy, and 8.5% from Belgium). 6% of the banks in Switzerland are from Japan (the
largest foreign banking community in Switzerland), followed closely by the USA
(4%) and Germany (3.6%). 42% of the banks in Jersey are from the UK. Interestingly,

more than a quarter of the Caribbean OFCs are of Latin American origin (the World Wealth Report [2004, p15] mentions that Latin American HNWIs are the main HNWI users of Caribbean OFCs). Grosse and Goldberg (1991) and Fisher and Molyneux (1996) studied the determinants of foreign bank presence in the USA and London. They found that foreign bank presence seemed essentially linked to foreign trade and investment. Fisher and Molyneux (1996, p271) note that there is some correlation between country proximity and bank presence. In the case of OFCs, such factors as foreign investment or trade become irrelevant. Proximity seems to be the major factor at work here: Asian banks in Asian OFCs, Arab banks in Arab OFCs, European banks in European OFCs, South American banks in Caribbean OFCs[349].

Figure 5.2-2   Origin of the banks in the OFCs (% in the geographical Area)

| Area of Origin | Geographical area of presence of OFC | | | | |
	EUROPE	CARIBBEAN	ASIA/PACIFIC	ARAB	MAURITIUS
ARAB/MUSLIM	2.37	0.93	1.2	30.77	0
ASIA	6.01	3.24	32.53	0	27.27
EUROPE 15 and Scan.	30.45	17.59	16.27	6.59	9.09
LATIN AMERICA	0.7	27.31	0	0	0
LOCAL	47.07	22.69	29.52	51.65	45.45
NORTH AMERICA	4.89	12.96	10.84	3.3	0
OTHERS	2.93	0.93	3.01	0	18.18
SWITZ. AND OFCs	4.75	6.48	4.22	4.4	0
UNKNOWN	0.84	7.87	2.41	3.3	0

Mauritius is neither Asian nor Arab, it stands alone as an African OFC. It thus appeared in a category of its own.

0%	<5%	<10%	<20%	<30%	>30%

Using an Internet search, it was found that 205 of the banks in the sample (about 17.1% of the banks in the sample) are subsidiaries of the world's top 50 largest banks (in terms of assets, using BankScope). The real figure may be even higher, as the relationship between the offshore banks and their owners are not necessarily easy to unravel. The high proportion of subsidiaries of large banks for Jersey can be

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[349] Similarly, of the eight banks in Andorra, five are controlled by Spanish entities (IMF, Andorra Assessment, 2002).

explained by the fact that Jersey only grants banking licenses to the world's largest banks.

Table 5.2-7   Bank origins and concentration

Country Name	% local banks*	Average 1 bank concentration**	% of banks that are subsidiaries of the worlds' top 50 banks
ANDORRA	77.78	32.53	
ANGUILLA	100.00	na	
ANTIGUA andB.	71.43	na	
ARUBA	33.33	35.58	
BAHAMAS	2.70	1.41	16.22
BAHRAIN	40.91	58.62	4.55
BARBADOS	33.33	32.04	
BELIZE	66.67	7.64	
BERMUDA	44.44	37.37	22.22
CAYMAN Isls.	5.26	0.54	13.16
CYPRUS	30.00	42.36	10.00
GIBRALTAR	0.00	29.11	25.00
GRENADA	50.00	56.71	
GUERNSEY	5.88	4.12	17.65
HONG KONG	25.71	30.00	20.95
ISLE OF MAN	12.50	23.15	12.50
JERSEY	0.00	4.88	39.29
LEBANON	55.07	13.17	5.80
LIECHTENSTEIN	50.00	34.63	
LUXEMBOURG	7.89	8.95	25.00
MALTA	55.56	44.65	33.33
MAURITIUS	45.45	61.20	9.09
MONACO	12.50	4.15	25.00
NETH. ANT.	20.00	2.91	20.00
PANAMA	25.26	5.37	17.89
SAN MARINO	100.00	42.92	
SINGAPORE	36.84	15.93	26.32
ST. KITTS AND NEVIS	100.00	na	
ST. VINCENT	100.00	16.56	
SWITZERLAND	66.67	41.43	15.09
VANUATU	0.00	3.57	
VIRGIN Isls. BRITISH	0.00	na	
WESTERN SAMOA	33.33	na	

* % of local banks in numbers of banks
** Bank concentration is the average of all years for the concentration ratios (deposit of the largest bank divided by total deposits for the OFC) for all years.

| <10% | <20% | <30% | <40% | <50% | <80% | >80% |

Looking at the data collected so far, there appears to be a significant correlation between the proportion of local banks and the level of concentration (see Table 5.2-7): Correlation = 0.49, P value =0.022 (Based on 30 countries, excluding St

Vincent, St Kitts and Anguilla, which are countries with underdeveloped offshore banking sectors).

While offshore bank owners usually are financial institutions (usually banks), this is not always the case. Thus, 'ABB Export Bank' from Switzerland is a subsidiary of the ABB group from Sweden, which is a major competitor in the automation industry. 'Atlantic Asset Management'[350] in Switzerland appears to be owned by the DrOeteker group from Germany (food industry);'Credit Union Bank' from Switzerland is a subsidiary of the Fiat automotive group and is active in wealth management; Banque Galland and Cie from Switzerland is owned by the Johnson group (domestic cleaning products)[351]. Bank Galland and Atlantic Asset Management both sell their services to HNWI.

BankScope includes information on a variety of features of offshore banks that, as far as ascertainable, have not before been discussed in the literature. Such information includes historical details such as: date of creation of the bank, whether the bank has engaged in mergers and acquisitions (M and A), if the bank failed or even if the banks licence was revoked. Of course, this data cannot be expected to be comprehensive as basic information (date of creation) is available in only 744 cases for about 1193 banks.

Looking at the creation date of banks (see Table 5.2-8) can facilitate insight in the development of OFCs for banking. Switzerland stands out as having consistently maintained a high level of bank creations. The most populated places, including the four most developed OFCs (Switzerland, Luxembourg, Singapore and Hong Kong) have had banks earlier than others, most likely to serve their domestic markets. Other OFCs have developed in the 1960's and 1970's which confirms what was found in the

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[350] See http://www.atlanticbank.ch/english/last.html
[351] The Swiss banks Galland and Frank are part of the Johnson group. See http://www.franckgalland.com

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historical review in Chapter 1. Similarly, the development of Bahrain appears in the late 1970s and 1980s following the decline of Lebanon due to the civil war. Luxembourg's full expansion followed the downturn in its main industry, the steel sector in the 1960s. As for Monaco, the data available is consistent with Eude (2005)[352] mentioning that the banking activity in Monaco essentially took off in the mid 1970s following an appropriate governmental policy and a favourable economic environment.

Other information in the BankScope database reveals whether a bank has been involved in Mergers and Acquisitions (M&A) activities. Table 5.2-9 lists the number of records of M&A activity found in the bank histories. Interestingly, the vast majority of M&A activity occurred between 1998 and 2001, noticeably in Switzerland and Luxembourg. However, M&A activity can be observed in other OFCs around this period. This provides evidence of the M&A trend in banking in this period, well documented for onshore banks (Goddard et al, 2001, p20), also concerned offshore banks. Lebanon, Panama and Jersey are the three smaller OFCs that also included moderate M&A activity. Chand (2000 pp65-69) explains the mergers in Bahrain by the fact that Bahraini banks are relatively small and needed to become larger to face world competition. Fixler and Zieschang (1993) have explained that while mergers or acquisitions do not necessarily result in efficiency gains, the acquisition of a less efficient bank by a more efficient bank is susceptible to produce efficiencies as the least efficient bank adopts the practices of the more efficient entity.

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[352] See article by Eude J.C. (managing director of Monaco's banker association) published in Country Life (Dec. 2005, p32).

Table 5.2-8   Bank creations in OFCs

	before 1849	1850-1899	1900-1949	1950'	1960'	1970'	1980'	1990'	2000'	Total
ANDORRA			1	2						3
ANGUILLA						1	1			2
ANTIGUA&B				1			1	2		4
ARUBA					1		1			2
BAHAMAS					1	2	1	6		10
BAHRAIN				1		4	8			13
BARBADOS						1	1			2
BERMUDA		2			1		1			4
CAYMAN					1	4	2			7
CYPRUS		1	3	1	2	1	3	4		15
GIBRALTAR					1		1			2
GRENADA							1			1
GUERNSEY					3	3	1	3		10
HONG KONG		1	16	5	4	16	12	3		57
ISLE of MAN		1				3	1	1		5
JERSEY				1	7	9	3	1		21
LEBANON		2	11	10	24	7	8	4		66
LIECHT.		1		1				4		6
LUX.		3	7		9	46	39	26	2	132
MALTA			1		1	2		2		6
MAURITIUS			1			1	2	3		7
MONACO				2		1	3	2		8
NETH ANT.			1			2				3
PANAMA			1	1	5	7	8	5	1	28
SINGAPORE		1	6	6	4	11	9	3		40
S.MARINO		1	1							2
StVINCENT						1				1
SWITZ.	26	51	41	19	24	26	46	45	3	281
W. SAMOA				1		1				2
Total	26	63	90	51	88	149	153	114	6	740

Source: Author, compiled from BankScope information; Key: yellow = less than five; pink = less than ten; orange = less than twenty; red = more than twenty.

Table 5.2-10 reports the cases of bank closures mentioned in bank's histories. Several banks in the sample ceased their operations during the observation period (1995-2002). Switzerland witnessed the disappearance of 22 banks. 19 of the cases relate to Japanese banks, 17 to Swiss banks[353]. The most interesting feature of this Table 5.2-10 is that there is no trace of licence cancellations that occurred in the late 1990s in many OFCs following international pressures. The reason for this is

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[353] These banks, typically commercial banks, had on average US$200 millions of total assets, a 50% equity ratio, and on average a -1% ROE, and a cost income ratio of 110% on average. Thus, they did not seem to be operating normally.

probably that most bank licences cancelled concerned shell (or captive) banks, whose accounts are usually not publicly available and therefore likely to be underrepresented in the study.

Table 5.2-9   Banks involved in merger and acquisition activities in the sample[354]

	Until 1994	1995	1996	1997	1998	1999	2000	2001	2002	Total
ANDORRA	0	0	0	0	0	0	0	0	2	**2**
BAHRAIN	0	0	0	0	0	0	3	0	0	**3**
CYPRUS	1	0	0	0	0	0	0	0	0	**1**
GUERNSEY	0	0	0	0	1	0	0	1	0	**2**
HONG KONG	1	0	0	0	0	0	0	5	0	**6**
ISLE of MAN	0	0	0	0	1	1	1	0	0	**3**
JERSEY	0	0	0	0	3	1	1	3	0	**8**
LEBANON	0	0	0	3	4	5	2	0	4	**18**
LUX.	2	1	0	3	10	6	13	16	3	**54**
MALTA	0	0	0	0	0	0	0	3	0	**3**
MAURITIUS				1						
MONACO	0	0	0	0	0	0	0	2	0	**2**
PANAMA	0	0	0	0	1	7	3	2	0	**13**
SINGAPORE	0	1	0	0	7	5	0	1	2	**16**
SWITZ.	1	2	4	3	14	12	6	20	8	**70**
VANUATU	0	0	0	0	0	0	0	0	1	**1**
Total M&A	5	4	4	10	41	37	29	53	20	**203**

Colour key: yellow = less than five; pink = less than ten; orange = less than twenty; red = more than twenty.

Comparatively complete information of several OFCs allows for the consideration of various structural features of the respective markets and to highlight the importance of major operations. One way of doing this is by calculating industry concentration ratios. Concentration levels can have a potential influence over profitability or efficiency (Goddard, 2001, p2). Concentration levels are commonly measured by comparing the amounts of deposits (or total assets) of the biggest or three (or five) largest banks in the market to the total size of the market (see Goddard et al, 2001, p83). The Herfindahl Index, a very useful indicator of market structure, could not be computed for the OFCs of the sample as it requires virtually complete banking samples. However, the total size of market leaders seems typically available for most of the OFCs of the sample. Table 5.2-11 shows the deposit size of the largest

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[354] Yellow for 1-4 mergers, pink for 5-9, orange for 10-19, red for more than 20.

bank present in the sample compared with the estimated size of the market (deposits in the OFC as in Table 5)[355]. This technique is limited by its assumption that the largest bank in the OFC is represented in the sample, which is not necessarily the case. Therefore, the real one-bank concentration ratios may actually be higher than those shown in Table 5.2-11.

Table 5.2-10   Banks that were closed or had their licences revoked

	Before 1995	1995	1996	1997	1998	1999	2000	2001	2002	Total
HONG KONG					1	2	1		2	6
LUXEMBOURG					2	1	1	2		6
SINGAPORE					1	1	1	1		4
SWITZERLAND				6	9	4	2	1		22
CYPRUS								1		1
GIBRALTAR						1				1
JERSEY	1									1
MAURITIUS									1	1
PANAMA					2	1				3
										0
Total	2			6	15	9	6	5	3	41

Colour key: yellow = less than five; pink = less than ten; orange = less than twenty; red = more than twenty.

Overall, the most surprising feature of the one-bank concentration ratios is that in many cases, they seem relatively high. This is surprising as barriers to entry into offshore banking markets are expected to be relatively low. In other cases, OFCs such as the Cayman Islands, Bahamas, the Netherlands Antilles, Jersey, Guernsey, Luxembourg and Panama, the levels of concentration appear comparatively low. This may be due to the lack of data concerning these countries, yet apparently, the largest banks in these OFCs only seem to account for a small fraction of the total amount of deposits[356]. In 13 cases, average concentrations for all years reach or exceed 30%. For

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[355] To compute the concentration ratios in Jersey, Guernsey, Monaco, the Isle of Man and San Marion, the market size estimates provided earlier in table 5 have been used.

[356] According to Datamonitor, Scotiabank and First Caribbean are considered by their peers to be the two market leaders for the deposit taking market in the Caribbean (see http://www.market-research-report.com/datamonitor/DMFS1647.htm). On its web site, First Caribbean also claims to be the largest bank in the Caribbean (see web site at http://www.firstcaribbeanbank.com). With total assets of US$ 9 billion for its operations in 15 Caribbean countries (Anguilla, Antigua, The Bahamas, Barbados, Belize, The British Virgin Islands, The Cayman Islands, Dominica, Grenada, Jamaica, St Kitts and Nevis, St Lucia, St Maarten, St Vincent and the Grenadines and The Turks and Caicos Islands) it still

some of these OFCs, a possible explanation is that they may have licensed only a restricted number of banks (such as Bermuda where 4 banks only have been operating). For major OFCs (in terms of total amounts of deposits) for which sufficient data was available, concentration appears to have increased from 1995 to 2002 (all OFCs of Group 1) while falls in the level of concentration (for centres where sufficient data was available) seem to have occurred in smaller OFCs (Grenada, StVincent, Belize, Aruba, Gibraltar and Liechtenstein). One can assume that in mature OFCs, M&A activity led to increased concentration levels. By comparison, in developing OFCs, new banks are being created and the market grows as foreign banks import their customers thus leading to a decrease in concentration (as was the case when Swiss banks were opening subsidiaries in the Bahamas for their customers to preserve their level of bank secrecy while Swiss bank secrecy was being eroded - Le monde du Renseignement, 1999, n.364). Overall, the relatively high one-firm concentration ratio indicates that in many cases, a single bank tends to dominate the market. Table 5.2-12 provides a listing of the major offshore banks by asset size.

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has a very small market share (when compared to US$ 500billion+ in Cayman and US$ 200billion + in the Bahamas). Unfortunately, details about FirstCaribbean or the operations of Scotiabank in the Caribbean are not available for our sample. FirstCaribbean is partly owned by Barclays. Although the concentration ratio provided here is probably lower than what it should be, the "real" concentration ratio in the Cayman or Bahamas is probably relatively low (i.e. below 5%). Lack of details for Jersey and Guernsey do not allow publishing the "real" concentration ratios. However, Credit Suisse and UBS are considered to be two of the Channel Islands' largest banks (see http://www.jerseyfinance.je/content/1137/). According to our sample, Credit Suisse Guernsey has about US$ 2 billion of bank assets, well below Woolwich at about US$ 4 billion. Thus, the "real" concentration ratio in the Channel Islands may actually be very low in comparison with the concentration ratios in the other OFCs.

Table 5.2-11   Deposit size of the largest offshore bank – one bank concentration ratio (in %)

1 bank conc. Ratio	1995	1996	1997	1998	1999	2000	2001	2002
ANDORRA	28.5	29.98	29.28	31.14	31.67	32.16	31.51	46.03
ARUBA	15.77	19.18	45.26	41.09	48.22	35.13	44.38	
BAHAMAS	1.97	1.81	1.49	1.18	1.29	1.06	1.23	1.22
BAHRAIN	74.39	76.06	74.37	57.42	43.94	47.39	46.11	49.27
BARBADOS	6.6	5.92	3.07	18.29	37.88	39.69	51.43	93.46
BELIZE		14.7	11.28	10.26	5.48	5.7	6.05	0
BERMUDA	36.2	37.28	42.71	47.01	42.18	34.43	35.77	23.37
CAYMAN ISLs	0.52	0.58	0.57	0.56	0.69	0.7	0.53	0.15
CYPRUS	48.07	42.58	41.1	40.01	41.39	35.52	39.02	51.17
GIBRALTAR	36.25	41.41	38.31	38.92	17.69	16.34	14.87	
GRENADA	56.46			51.52	58.38	58.68	58.49	
GUERNSEY	3.54	3.51	4.1	5.82	5.5	5.31	4.54	0.64
HONG KONG	20.25	24.55	27.1	30.61	31.81	33.39	34.72	37.54
ISLE OF MAN	8.47	8.44	9.54	34.16	34.25	33.73	33.43	
JERSEY	5.38	5.39	5.61	5.18	4.9	4.72	4.3	3.56
LEBANON	11.34	13.42	13.05	12.46	12.61	11.82	13.05	17.62
LIECHT.	37.74	37.85	35.36	34.68	32.96	35.72	32.2	30.53
LUX.	7.06	7.04	6.85	8.25	8.26	8.55	11.4	14.17
MALTA	44.08	43.42	43.49	41.99	43.33	42.86	46.55	51.51
MAURITIUS	71.55	71.51	65.19	66.73	65.95	48.47	49.6	50.59
MONACO	6.23	4.95	4.98	4.68	3.25	3.01	3.73	2.4
NETH. ANT.	2.05	1.76	3.34	3.35	2.66	1.85	4.2	4.09
PANAMA	3.12	4.38	4.92	4.48	5.1	6.73	7.01	7.24
SAN MARINO	38.93	39	39.58	45.84	47.51	67.02	32.56	32.88
SINGAPORE	13.13	14.16	13.43	18.58	18.26	16.95	17.49	15.44
ST. VINCENT			22.4	18.01	14.66	12	15.74	
SWITZ.	23.85	22.78	24.7	54.46	53.6	47.72	48.48	55.87
VANUATU		4.13	3.01					
W. Indies UK	0.34	0.41	1.07	1.08	1.29	1.33	1.68	0.38

The deposits of the largest bank per year/OFC were compared to market size as defined earlier.

<10%	<20%	<30%	<40%	>40%

As it has been demonstrated earlier, high concentration ratios are found in OFCs with important domestic banking sectors. Comparing the concentration ratios to Table 5.2-8, it seems that OFCs with high concentration ratios often are those with the oldest banks. In particular, countries like Switzerland, Bermuda, Cyprus, Hong Kong, Liechtenstein, Malta, Mauritius, San Marino and Andorra all had banks before the 1950s. By comparison, the Cayman Islands, Bahamas, Monaco, Guernsey and Jersey, which have substantial offshore activity do not seem to have had home grown banks

before the 1950s; these OFCs show comparatively low concentration ratios. Although this observation should be the object of further investigations, it is possible to imagine that the countries deciding to start an offshore banking industry may have made an effort to favour their own banks in order to maximise job creation.

Table 5.2-12 lists the 30 largest banks in the sample per asset size in 2001 (the last year for which substantial amounts of data are available). The 30 largest banks in the sample are all domiciled in Switzerland, Hong Kong Singapore and Luxembourg, apart from one bank in Bahrain. About half of the banks are locally owned or listed banks (referred to as "local banks"). The others are mostly owned by EU banking institutions. UBS, Credit Suisse and HSBC are some of the world's largest financial institutions and their main OFC subsidiaries occupy the three first places[357].

BankScope also provides employee numbers. By dividing the unitary cost per employee by the GDP per inhabitant, one finds a GDP multiple showing how many times greater the cost of the average bank employee is in comparison with the GDP per inhabitant. Overall, based on 2903 observations, one finds an average value (across all years and all countries) of 3.55, indicating that the average employee costs 3.55 times the GDP per inhabitant. This suggests that banking jobs, on average are rather well remunerated and also again suggests the attractiveness of banking sector employment in OFCs.

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[357] The sample only takes into account the subsidiaries operating in OFCs. Thus, the assets of groups like UBS, HSBC and Credit Suisse are greatly superior to these figures when all their subsidiaries are taken into account. In the case of Credit Suisse, it is important to note that two of its subsidiaries are represented in the Table. Its US subsidiary had assets in excess of US$ 236 billion in 2002.

Table 5.2-12   The 30 largest banks of the sample in 2001

Bank Name	Specialisation	Country	Country of origin	US$ Billions
UBS AG	Commercial Bank	SWITZERLAND	LOCAL	741.69
HSBC (Hong Kong)	Commercial Bank	HONG KONG	UK	166.39
Credit Suisse First Boston	Investment Bank	SWITZERLAND	LOCAL	142.67
Credit Suisse	Commercial Bank	SWITZERLAND	LOCAL	95.51
Bank of China (Hong Kong) Limited	Commercial Bank	HONG KONG	CHINA	83.81
DBS Bank	Commercial Bank	SINGAPORE	LOCAL	62.91
Hang Seng Bank Ltd.	Commercial Bank	HONG KONG	LOCAL	57.26
Bank-Zürcher Kantonalbank	Spec. Gov. Cred. I.	SWITZERLAND	LOCAL	55.21
Deutsche Bank Luxembourg SA	Commercial Bank	LUXEMBOURG	GERMANY	51.30
Banque Générale du Lux.SA	Commercial Bank	LUXEMBOURG	BELGIUM	38.71
United Overseas Bank Limited UOB	Commercial Bank	SINGAPORE	LOCAL	37.57
Banque et Caisse d'Epargne de l'Etat	Savings Bank	LUXEMBOURG	LOCAL	37.41
HVB Banque Luxembourg	Commercial Bank	LUXEMBOURG	GERMANY	35.82
Overseas Chinese Banking Corp.	Commercial Bank	SINGAPORE	LOCAL	34.13
Dexia B.I.Lux. SA	Commercial Bank	LUXEMBOURG	BELGIUM	33.07
BNP Paribas Luxembourg	Commercial Bank	LUXEMBOURG	FRANCE	32.62
Credit Suisse Group	Bank Holding	SWITZERLAND	LOCAL	31.38
Arab Banking Corporation BSC	Commercial Bank	BAHRAIN	LOCAL	26.55
Sumitomo Mitsui Banking Corp.	Commercial Bank	SINGAPORE	JAPAN	25.07
Deutsche Securities Ltd	Investment Bank	HONG KONG	GERMANY	23.66
Norddeutsche Landesbank Lux. SA	Commercial Bank	LUXEMBOURG	GERMANY	22.95
HSBC Republic Bank (Suisse) SA	Commercial Bank	SWITZERLAND	UK	21.29
Banque Cantonale Vaudoise	Spec. Gov. Cred. I.	SWITZERLAND	LOCAL	21.17
BNP Paribas (Suisse) SA	Investment Bank	SWITZERLAND	FRANCE	20.90
Kredietbank S.A. KBL	Commercial Bank	LUXEMBOURG	BELGIUM	20.21
Bank of East Asia Ltd	Commercial Bank	HONG KONG	LOCAL	20.08
BANQUEMIGROS-Migrosbank AG	Commercial Bank	SWITZERLAND	LOCAL	16.85
Pfand. Schweiz. Kantonalbanken	Cooperative Bank	SWITZERLAND	LOCAL	16.30
DZ BANK International S.A.	Commercial Bank	LUXEMBOURG	GERMANY	15.59
Pfandbriefbank Sweiz.Hypo.	Mortgage bank	SWITZERLAND	LOCAL	15.49

The assets for UBS only concern the Swiss operations (the consolidated figure would be close to US$ 1 trillion). Similarly, the figure for HSBC only concerns the Hong Kong operations (total amount of assets worldwide would be much higher). Because the figures are taken unconsolidated, the three main operations of Credit Suisse in Switzerland appear in the Table (again, the total amounts of assets worldwide are much higher, particularly once the US operations are taken into account).

Table 5.2-13 displays some essential characteristics of offshore bank labour. First, the amount of data varies considerably from centre to centre (substantial information for Switzerland, nothing available for Cayman and Bahamas). Labour banking costs and GDP per inhabitants are positively correlated (correlation = 0.248, P Value = 0.000 using 2,754 observations), indicating that the cost of labour is more

expensive in the most developed OFCs. The other indicators vary considerably, but lack of data limit possible conclusions. The median numbers of employees tend to vary considerably from OFC to OFC (from 36 in St Kitts to 2237 in Bermuda). There appears to be some proportionality between the assets per employee and the labor costs per employees (higher levels of assets per employees appear to be reflected in higher costs per employee). Similarly, higher levels of assets per employee also go with higher levels of net income per employee (correlation coefficient: 0.408, P value 0.043). One finds a significant positive correlation coefficient (correlation coefficient 0.6, P value = 0.009) between the average level of expenses per employee and the average levels of non-interest income in total income. As it has been shown, private banking represents a major share of the offshore banking market. Private banks live essentially off non-interest income and must face higher labour expense as they must pay well qualified relationship managers.

Table 5.2-13   Employee and labour related statistics for OFCs

COUNTRY	Number of bank observations	Median number of employees	Average amounts (in US$1000) per employee for all years		
			Assets	Labour expenses	Net income per year
ANGUILLA	7	41	1,703		35.9
ANTIGUA & B.	28	56	3,084	12.9	26.8
BAHRAIN	38	211	7,475	89.8	173.1
BARBADOS	16	372	1,789		32.7
BELIZE	1	177	375	11.8	2.5
BERMUDA	17	2237	3,793	60.3	31.5
CYPRUS	35	561	4,474	69.2	168.9
GRENADA	14	151	878		15.4
GUERNSEY	6	47.5	14,063	90.7	97.5
HONG KONG	19	1160	4,615		28.8
ISLE OF MAN	16	72	13,205	40.9	70.7
JERSEY	1	475	2,897		32.6
LEBANON	247	160	2,327	25.4	31.6
LIECHTENST.	32	428.5	12,195	101.3	236.3
LUXEMBOURG	727	155.5	32,691	78.2	178.2
MALTA	42	121	3,242	24.5	34
MAURITIUS	25	99	11,219	11.8	591.8
MONACO	70	59	9,645	88	43.7
NETH. ANT.	15	260	6,165	54.3	27.5
PANAMA	19	406	2,621	23.5	33.9
SAN MARINO	11	94.5	15,559	57.6	208.1
SINGAPORE	59	78	16,439	52.5	-5.2
ST. KITTS & N.	14	36	1,958		37.2
ST. VINCENT	1	141	1,018		5.8
SWITZERLAND	1,446	262	8,437	102.5	120.4

As demonstrated, offshore banking provides OFCs with well remunerated jobs. In turn, bank employees pay tax to the local authorities, either directly (income tax) or indirectly (VAT). However, if low tax is the most important force behind offshore finance, it is interesting to investigate to what extent the banks themselves pay tax to the OFCs where they operate. Using income statement data, it is possible to compute the proportion of tax paid by banks (tax divided by income before tax). The

results are displayed in Table 5.2-14. The amounts of tax paid by banks operating in

OFCs are on average lower than onshore[358] but do not appear to be negligible.

Table 5.2-14   Average tax paid by banks (tax paid / income before tax – percentage)

Country Name	1995	1996	1997	1998	1999	2000	2001	2002	Mean
ANDORRA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ANGUILLA	13.62	9.51	9.20	10.70	12.08	12.36	9.02		10.93
ANTIGUA & B.	27.08	16.89	9.28	5.83	2.23	2.22	1.92	19.98	10.68
ARUBA	21.05	24.52	27.49	13.41	17.78	24.99	29.55		22.68
BAHAMAS	0.13	0.06	0.00	-2.05	-0.63	0.66	5.51	4.40	1.01
BAHRAIN	10.16	12.59	10.36	9.10	5.23	9.37	5.83	14.88	9.69
BARBADOS	66.69	29.83	3.31	11.87	2.80	5.15	8.37	4.83	16.61
BELIZE		0.00	0.00			1.85	1.46		0.83
BERMUDA	20.93	22.40	29.73	25.41	11.48	14.85	14.25	17.23	19.53
CAYMAN Isls.	4.87	3.47	3.96	5.39	1.90	1.56	0.00	0.00	2.64
CYPRUS	27.98	28.88	27.90	31.30	17.50	29.45	39.19	31.57	29.22
GIBRALTAR	2.62	2.45	1.07	2.29	5.44	4.00	4.17		3.15
GRENADA	31.80	24.04	16.49	17.05	17.55	13.27	14.12		19.19
GUERNSEY	1.61	4.90	5.91	8.00	8.50	8.53	7.89	11.74	7.14
HONG KONG	14.62	15.74	15.70	12.93	10.97	5.22	11.16	12.54	12.36
ISLE OF MAN	7.24	3.37	-20.20	21.38	5.76	18.40	26.99		8.99
JERSEY	19.71	15.52	19.45	16.96	17.48	14.07	11.14	21.43	16.97
LEBANON	10.96	10.22	9.87	9.48	15.62	15.35	15.80	16.72	13.00
LIECHTENSTEIN	4.53	6.41	7.19	3.11	5.04	6.63	4.76	6.29	5.50
LUXEMBOURG	33.40	34.13	29.99	18.69	28.29	25.04	22.61	20.10	26.53
MALTA	31.67	31.48	23.33	30.95	19.37	15.96	16.83	31.58	25.15
MAURITIUS	24.01	20.15	20.57	10.27	6.72	3.16	5.98	11.02	12.74
MONACO	9.98	15.64	15.05	12.41	12.20	11.08	8.01	4.76	11.14
NETH. ANT.	3.28	2.04	2.83	6.41	5.23	16.29	3.83	3.04	5.37
PANAMA	6.94	6.28	6.50	8.77	5.78	0.69	3.11	2.82	5.11
SAN MARINO	83.33	84.17	24.09	23.78	25.77	24.16	23.84	23.86	39.13
SINGAPORE	24.03	21.92	20.42	22.07	24.90	20.77	19.78	20.65	21.82
ST. KITTS & N.	21.82	38.18	35.73	27.18	28.99	27.23	26.38	28.93	29.30
ST. VINCENT			38.94	39.25	28.30	20.03	4.34		26.17
SWITZERLAND	15.98	15.56	13.41	9.40	11.43	11.67	14.07	9.14	12.58
VIRGIN Isls., B.				14.57	15.20	10.11			13.29
WEST. SAMOA	35.98	36.29	36.85	36.00	34.90	30.69	30.62		34.48
Mean	19.86	17.89	14.34	14.90	13.03	12.65	12.60	13.80	14.88

Tax paid can be less than zero when banks obtained tax refunds (after having paid too much tax) or
when they made losses and yet paid tax (licence renewal, etc…).

<0%	<10%	>10%	>15%	>20%	>30%	>50%
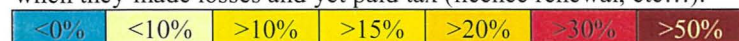
Tax rates vary widely. Tax levels as a percentage of net income may vary from

year to year as the composition of the income may also vary and as various

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[358] Using BankScope data, it appears that the following major banks paid the following levels of tax on
income: Mizuho 47.2% (Japan); BNP 26.8% (France); HSBC Holdings 24.2% (UK); Deutsche 50.4%
(Germany); ING 25% (Netherlands); Morgan Stanley 28.5% (USA).

components may be taxed differently. Thus, capital gains may not be taxed at the same rate as other forms of income. Moreover, these bank tax levels must include local taxes and probably licence renewal fees which are usually not dependent on earnings.

Few places are truly tax neutral for banks (such as Andorra), and tax neutrality is rather meant to apply to offshore bank customers than to the banks themselves. Negative tax rates can occur when a bank receives tax refunds from the state after having paid too much tax. The confiscatory tax rate displayed for San Marino may be explained by the fact that the bank concerned (Cassa di Risparmio) is the local savings bank, and is quasi state-owned and thus transfers its profits back to the state through tax. One of the most striking features of Table 5.2-14 is the tax rate for Switzerland, which appears comparatively lower than that of other major OFCs.

5.3   Financial characteristics

The use of non-financial data offers an interesting overview of the offshore banking sector. The next step is the exploration of the financial statements of the banks operating offshore, the following presents their balance sheet characteristics followed by an overview of banks' income statements.

5.3.1 Balance sheet characteristics

A detailed overview of offshore banks' balance sheets is essential to provide a better understanding of how they conduct their business. This section will overview the most significant characteristics of offshore banks' balance sheets.

In Figure 5.3-1, average bank size in the main OFCs (Switzerland, Hong Kong, Singapore and Luxembourg) appears similar. Bermuda also has a high average amount of assets per bank. This is due to the fact that while Bermuda has attracted

substantial amounts of deposits, it has licensed only four banks, leading to high average amounts of deposit per bank. At the other extreme, the least developed OFCs typically have the smallest banks.

Table 5.3-1 shows the average balance sheet structure in the OFCs of the sample banks by geographic origin. Several features are of particular interest. First, the level of equity can often appear to be below the Basle recommended 8% level in Bermuda, Monaco, Isle of Man and Gibraltar. Unfortunately, the total capital ratios (adjusted following the Basle criteria) are not available, thus limiting possible conclusions. In these four countries, assets tend to include greater proportions of "other earning assets". If these were bonds issued by AAA rated OECD countries, their equity ratios may not necessarily be below the Basle criteria. While OFCs have long exempted the banks they licence from minimum capital requirements, this changed under the effects of international pressures (FSF) inviting the OFCs to respect the Basle criteria over the last five years.

Figure 5.3-1   Mean bank size (total assets in US$ millions) per country
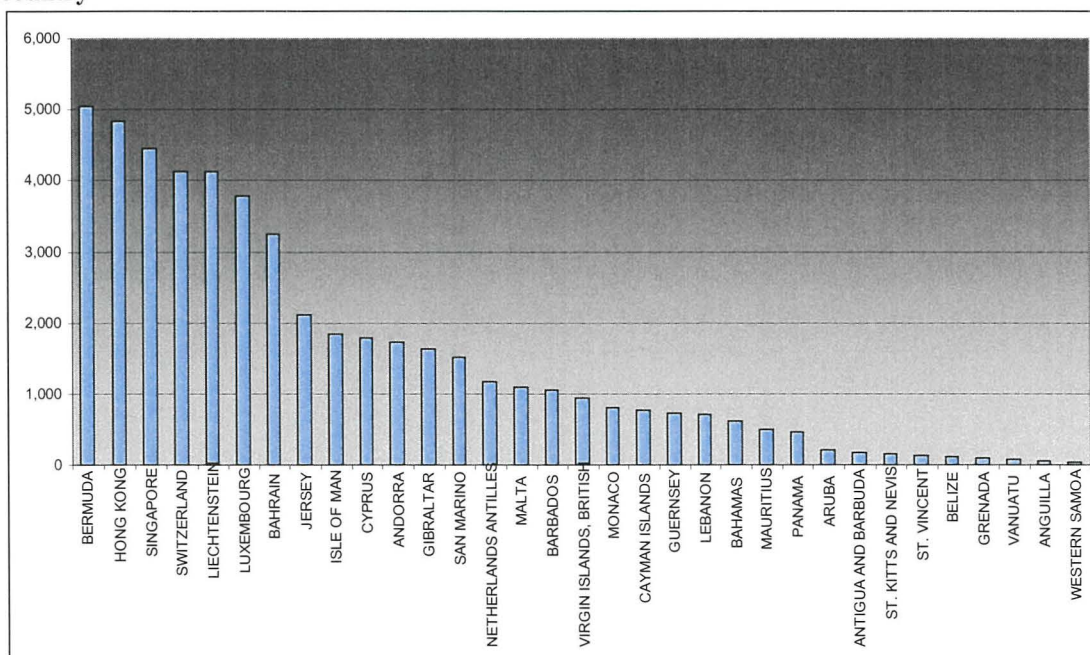
Another feature of bank balance sheet structures is that the levels of reserves are often low (except in Monaco, Switzerland and Bahrain). This could either indicate that the banks operating offshore have little lending risk, or that they inadequately cover their portfolios of loans. Customer and short term funding makes up the bulk of liabilities, indicating that in most OFCs, the activities are essentially financed by customer deposits. The greater use of 'other earning assets' than of loans could indicate that these banks are more likely to invest deposits in bonds than in loans. The absence of a local market in which to lend money may explain this situation.

The balance sheet structure of banks in Jersey, Guernsey and the Isle of Man, appear similar, with particularly high levels of customer and short term funding (more than 92%) and high levels of other earning assets.

Across OFCs, there is a significant negative correlation between the proportion of loans held in bank balance sheets and GDP per inhabitant[359]. Therefore, banks operating in the least developed OFCs hold a greater proportion of loans. In contrast, the proportion of 'other earnings assets' is higher in the most developed OFCs. A possible interpretation is that in the least developed OFCs, there is less offshore business and therefore, a greater proportion of bank deposits is lent in the local market.

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[359] Correlation coefficient = -0.505, P value = 0.006

Table 5.3-1   Balance sheet features of offshore banks (in percentages)

Area	OFC	ASSETS				LIABILITIES				
		Loans	Other Earning Assets	Fixed Assets	Non-Earning Assets	Cust. & Short Term Fund.	Other Fund.	Other (Non-Interest bearing)	Res-erves	Equity
Main OFCs	HONGKONG	48.98	41.03	2.06	7.92	77.52	3.78	8.55	0.00	10.14
	LUX.	21.18	74.39	0.38	4.05	82.57	8.65	4.66	0.00	4.12
	SINGAPORE	49.37	44.15	0.95	5.53	83.87	1.98	3.30	0.05	10.80
	SWITZ.	45.12	42.35	1.02	11.51	70.81	8.41	12.78	1.49	6.51
British depend. Europe	GIBRALTAR	34.26	61.98	0.21	3.55	85.59	2.30	6.67	0.00	5.44
	GUERNSEY	9.80	63.38	0.12	26.70	92.51	0.13	1.97	0.00	5.38
	ISLE OF M.	17.90	77.69	0.49	3.92	92.75	0.01	1.30	0.00	5.95
	JERSEY	24.31	70.67	0.42	4.61	92.25	0.22	2.55	0.00	4.99
Other Europ. OFCs	ANDORRA	15.45	78.98	2.20	3.36	87.84	0.02	1.91	0.91	9.32
	CYPRUS	51.08	44.10	1.70	3.11	86.91	2.40	3.04	0.09	7.56
	LIECHT.	28.01	66.88	1.24	3.87	75.92	8.41	4.21	0.00	11.46
	MALTA	47.55	47.91	1.42	3.11	87.82	2.55	2.74	0.00	6.88
	MONACO	13.74	83.49	0.75	2.02	90.84	1.18	1.68	2.18	4.12
	S. MARINO	17.30	74.33	0.96	7.41	81.48	0.00	7.34	0.28	10.91
Main Carib. OFCs	BAHAMAS	30.29	61.02	0.83	7.86	76.46	4.72	5.04	0.00	13.78
	BERMUDA	28.75	63.48	2.07	5.70	83.38	2.23	7.22	0.00	7.16
	CAYMAN	40.49	52.39	1.00	6.12	66.47	19.82	3.94	0.00	9.77
	VIRGIN Isls.	58.22	11.36	5.42	25.01	62.56	11.70	6.99	0.00	18.75
Other Caribb. OFCs	ANGUILLA	57.22	32.03	3.03	7.72	85.71	0.00	3.04	0.00	11.26
	ANTIGUA	29.48	56.97	1.74	11.81	87.33	1.96	1.87	0.00	8.84
	BARBADOS	44.78	46.34	2.09	6.80	86.63	1.79	2.34	0.00	9.24
	St.KITTS	57.20	33.36	2.95	6.49	79.16	0.00	9.34	0.00	11.50
	GRENADA	64.15	23.33	4.68	7.84	87.23	0.00	3.64	0.00	9.13
	St. VINCENT	64.18	21.80	5.20	8.82	89.68	2.11	1.58	0.00	6.62
Other OFCs	BAHRAIN	42.82	50.94	1.38	4.86	76.10	8.49	3.30	1.64	10.47
	LEBANON	29.23	56.36	2.21	12.20	88.79	1.01	3.36	0.00	6.85
	MAURITIUS	59.24	35.74	2.78	2.24	81.06	1.73	3.31	0.00	13.90
	VANUATU	85.84	2.41	1.15	10.59	91.74	0.00	2.20	0.00	6.06
	W. SAMOA	53.88	32.72	8.00	5.40	81.58	0.03	3.76	0.00	14.62
	NETH. ANT.	49.32	38.35	0.52	11.81	57.58	30.80	4.28	0.00	7.34
	PANAMA	58.20	34.61	1.69	5.50	82.19	5.25	3.81	0.78	7.97
	ARUBA	66.78	28.17	1.87	3.18	84.92	1.60	5.21	0.00	8.27
	BELIZE	67.79	18.08	3.89	10.25	86.37	0.10	2.43	0.00	11.11

ASSETS	<1%	<5%	<10%	<20%	<40%	<60%	>60%	
LIABILITIES	<1%	<5%	<10%	<20%	<70%	<80%	<90%	>90%

❖   'Fixed assets' is negatively correlated with GDP per inhabitant. The lower the GDP per inhabitant, the higher proportion of fixed assets[360].

❖   The proportion of equity and the proportion of other earning assets are significantly negatively correlated[361]. This reinforces the hypothesis that banks

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[360] Correlation coefficient = -0.520, P value = 0.005

undertaking non-credit activities (i.e. investing in lower-risk securities such as AAA rated bonds) need less equity.

Following the overview of the balance sheet characteristics of banks operating in OFCs, the features of the three key ratios describing the balance sheet will be described in greater details, namely the equity to assets ratio, the deposit to asset ratio and the loan to assets ratio.

Table 5.3-2 provides more details about the equity ratios of the banks concerned. Equity provides a capital buffer, to insure the bank against losses. Typically, minimal capital ratios are set by the regulator to limit bankruptcy risks[362]. Although in many OFCs equity ratios appear below the Basle 8% requirement (the aggregated average appears below 8% in 13 countries), it does not follow that the banks are under capitalised (unfortunately, the 'total risk-adjusted capital ratios' are unavailable in most OFCs). The equity levels vary substantially across jurisdictions, ranging from 4.56% in Monaco (the low proportion of loans suggests that the banks may be investing the deposits in bonds) to 26.56% in Bahrain (probably a feature of Islamic banking). While there are important differences in the equity ratio among centres, there are also important differences within these centres as illustrated by the high levels of dispersion in the equity ratios. Interestingly, market leaders consistently feature lower equity ratios than average. This result is consistent with the literature which suggests that because larger banks can manage risk better through diversification, they also tend to need less capital (i.e. larger banks have lower equity ratios; see Bessis 1998).

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[361] Correlation coefficient = -0.484, P value = 0.007
[362] The IMF Assessment of Andorra (2002), reports that the minimal capital ratio in Andorra was set at 10%. Thus, it can be observed that he sum of the Equity and reserves reach 10% of the banks' balance sheet.

Table 5.3-2   Equity ratio statistics (equity / total assets - percentages)

Country Name	Equity ratio all years				Equity ratio mkt leader	Difference (Leader – mean)
	Mean	St.Dev.	Aggr.[363]	Dispersion		
ANDORRA	8.96	3.87	9.33	43.17	9.91	0.95
ANGUILLA	11.20	1.75	11.26	15.59	9.98	-1.22
ANTIGUA AND B.	11.22	7.03	8.85	62.64	8.44	-2.79
ARUBA	14.92	11.02	8.27	73.89	6.31	-8.61
BAHAMAS	17.29	17.02	13.86	98.44	12.75	-4.54
BAHRAIN	26.56	21.03	11.05	79.18	8.48	-18.08
BARBADOS	11.45	3.53	9.22	30.83	8.18	-3.27
BELIZE	10.40	3.20	11.16	30.73	11.88	1.47
BERMUDA	7.41	2.96	7.33	40.00	4.99	-2.42
CAYMAN ISLANDS	15.89	14.94	9.93	94.03	5.85	-10.04
CYPRUS	9.17	10.47	7.56	114.12	6.58	-2.59
GIBRALTAR	5.29	0.78	5.46	14.70	5.66	0.38
GRENADA	9.38	1.57	9.13	16.77	7.93	-1.45
GUERNSEY	13.98	19.05	5.79	136.21	3.85	-10.13
HONG KONG	24.35	23.38	10.42	96.01	9.81	-14.54
ISLE OF MAN	7.11	7.40	5.95	104.18	7.10	-0.01
JERSEY	9.66	18.56	5.02	192.03	7.40	-2.26
LEBANON	12.19	11.19	6.94	91.86	5.49	-6.70
LIECHTENSTEIN	12.09	4.14	11.54	34.26	13.01	0.92
LUXEMBOURG	8.40	14.98	4.16	178.32	3.32	-5.08
MALTA	14.21	17.59	6.89	123.82	5.93	-8.28
MAURITIUS	14.38	14.77	14.11	102.67	10.45	-3.94
MONACO	4.56	2.09	4.13	45.78	3.87	-0.69
NETH. ANTILLES	9.95	7.98	8.09	80.22	8.67	-1.28
PANAMA	10.77	11.32	7.88	105.13	6.22	-4.55
SAN MARINO	10.85	5.59	10.92	51.47	13.82	2.97
SINGAPORE	20.32	22.11	11.07	108.82	11.26	-9.06
ST. KITTS AND N.	10.09	2.98	11.50	29.55	12.58	2.49
ST. VINCENT	6.56	1.11	6.62	16.88	6.56	0.00
SWITZERLAND	18.72	19.09	6.59	101.95	4.16	-14.56
VANUATU	6.04	0.86	6.06	14.21	6.04	0.00
VIRGIN ISLs BRIT.	19.64	4.60	18.75	23.45	19.64	0.00
WESTERN SAMOA	13.52	2.97	14.62	21.97	15.46	1.94

Dispersion = standard deviation / average

<50	<100	<150	<200

As Table 5.3-3 shows, a negative correlation can indeed be observed between the amounts of total assets and equity ratios, although the coefficient varies from

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[363] The aggregated average is the ratio computed for the banking sector as a whole (eg. the sum of the equity of all the banks divided by the sum of the liabilities of all the banks).

country to country. This is consistent with the literature (as in Bessis 1998) mentioning that smaller bank need higher equity ratios than larger banks (large banks need less equity because they can reduce risk through diversification). Because small banks are perceived as more risky, they must make up with higher equity ratios.

Table 5.3-3   Correlation between total assets and equity ratios

	Correlation	P value
BAHRAIN	-0.365,	0.000
GUERNSEY	-0.348,	0.001
LEBANON	-0.271,	0.000
CAYMAN	-0.244,	0.002
MONACO	-0.241,	0.024
JERSEY	-0.235,	0.004
PANAMA	-0.205,	0.000
SINGAPORE	-0.174,	0.003
HONG KONG	-0.160,	0.000
BAHAMAS	-0.157,	0.055
LUXEMBOURG	-0.152,	0.000
SWITZERLAND	-0.071,	0.000
WHOLE SAMPLE	-0.060,	0.000

The deposits ratio (Table 5.3-4) is another important defining feature of banks. The levels of dispersion in this ratio, however, is substantially lower than in any other table, overviewed in the study. With the exception of five OFCs (Belize, Cayman, Mauritius, Netherlands Antilles, San Marino) banks in many OFCs seem to rely to a large extent on deposits for funding.

In theory, banks take deposits and grant loans. As Table 5.3-5 demonstrates, the proportion of loans in assets can be relatively low in many OFCs (below 30% in Andorra, Bermuda, Guernsey, Jersey, Liechtenstein, Luxembourg, Monaco and San Marino). In the major OFCs, market leaders appear to grant less loans than their smaller competitors.

The following section will complete the overview of the offshore banking industry with a study of the banks' income statements characteristics.

Table 5.3-4   Deposit ratios (total deposits / total assets - percentages)

Country Name	Deposit ratio all years				Market leader	Difference
	Mean	St.Dev.	Aggr.	Dispersion		
ANDORRA	88.62	4.51	87.98	5.09	86.77	-1.85
ANGUILLA	85.73	2.33	85.71	2.72	87.45	1.73
ANTIGUA AND B.	78.99	19.8	85.39	25.07	87.15	8.15
ARUBA	72.65	21.62	84.92	29.76	88.4	15.76
BAHAMAS	78.37	19.53	79.48	24.92	80.85	2.48
BAHRAIN	61.63	23.52	77.63	38.17	81.97	20.34
BARBADOS	81.73	5.29	86.17	6.47	84.18	2.45
BELIZE	76.1	19.8	63.07	26.01	67.76	-8.34
BERMUDA	84.78	12.89	83.16	15.21	92.61	7.83
CAYMAN ISLs	70.23	23.81	51.77	33.91	60.16	-10.06
CYPRUS	78.81	23.25	83.43	29.51	88.82	10.02
GIBRALTAR	89.96	7.83	85.87	8.71	86.12	-3.84
GRENADA	87.13	1.24	87.23	1.43	88.03	0.9
GUERNSEY	87.14	16.84	91.67	19.32	94.37	7.23
HONG KONG	62.3	26.22	74.67	42.09	70.95	8.65
ISLE OF MAN	91.93	7.21	92.78	7.84	91.41	-0.52
JERSEY	88.01	19.33	91.66	21.97	88.29	0.28
LEBANON	82.09	12.93	86.74	15.75	91.11	9.02
LIECHTENSTEIN	78.78	7.38	76.5	9.36	69.7	-9.08
LUXEMBOURG	83.42	18.32	82.43	21.96	88.65	5.23
MALTA	81.25	19.98	87.77	24.59	90.03	8.79
MAURITIUS	67.04	29.73	61.62	44.34	85.17	18.13
MONACO	92.95	2.98	93.15	3.21	92.59	-0.36
NETH. ANTILLES	71.57	32.16	63.49	44.93	61	-10.57
PANAMA	79.07	17.46	80.02	22.08	80.23	1.16
SAN MARINO	30.33	12.81	30.36	42.25	33.87	3.55
SINGAPORE	73.28	24.04	83.17	32.81	81.07	7.79
ST. KITTS AND N.	82.66	6.2	79.16	7.51	76.9	-5.76
ST. VINCENT	89.79	1.98	89.68	2.21	89.79	0
SWITZERLAND	62.11	18.15	65.49	29.23	66.11	4
VANUATU	91.73	0.27	91.74	0.29	91.73	0
VIRGIN ISLs B.	61.51	5.2	62.56	8.45	61.51	0
WESTERN SAMOA	81.26	4.15	81.58	5.11	81.21	-0.04

Dispersion = standard deviation / average

Table 5.3-5   Loans to assets ratio (total loans / total assets)

Country Name	Loans/Total assets				Leader	Difference (Leader – mean)
	Mean	StDev.	Aggregated	Dispersion		
ANDORRA	19.02	14.37	15.45	75.56	13.88	-5.15
ANGUILLA	55.10	6.65	57.22	12.07	58.10	3.00
ANTIGUA AND B.	52.74	25.77	29.50	48.85	29.20	-23.54
ARUBA	69.05	6.89	66.78	9.98	66.16	-2.89
BAHAMAS	33.71	28.32	30.13	84.03	33.73	0.03
BAHRAIN	36.25	25.96	40.93	71.62	51.59	15.34
BARBADOS	48.85	17.72	45.38	36.26	44.99	-3.86
BELIZE	66.47	4.34	67.79	6.53	67.00	0.53
BERMUDA	26.60	23.52	27.69	88.43	13.16	-13.44
CAYMAN ISLANDS	36.51	27.68	39.28	75.82	30.26	-6.25
CYPRUS	49.24	21.54	50.82	43.75	59.44	10.20
GIBRALTAR	55.70	43.59	41.63	78.26	43.82	-11.88
GRENADA	64.10	4.33	64.15	6.76	63.07	-1.02
GUERNSEY	15.56	21.98	10.13	141.24	7.61	-7.95
HONG KONG	47.50	26.80	47.46	56.43	41.43	-6.07
ISLE OF MAN	32.04	40.87	20.43	127.55	14.10	-17.95
JERSEY	16.34	24.25	22.44	148.38	54.02	37.68
LEBANON	31.19	12.27	29.19	39.35	23.41	-7.78
LIECHTENSTEIN	23.32	8.47	28.11	36.31	28.39	5.07
LUXEMBOURG	20.04	17.80	21.00	88.83	17.31	-2.73
MALTA	40.90	26.94	47.55	65.88	36.95	-3.95
MAURITIUS	54.13	17.44	58.82	32.22	67.25	13.12
MONACO	15.11	11.97	13.96	79.25	12.48	-2.63
NETH. ANTILLES	43.97	21.07	49.42	47.93	47.91	3.95
PANAMA	58.25	22.11	57.91	37.96	48.70	-9.54
SAN MARINO	18.15	5.96	17.30	32.84	19.23	1.08
SINGAPORE	60.43	27.87	50.72	46.12	49.07	-11.36
ST. KITTS AND NEVIS	49.32	19.98	57.20	40.51	65.61	16.30
ST. VINCENT	64.20	5.37	64.18	8.37	64.20	0.00
SWITZERLAND	54.36	31.40	44.74	57.76	34.58	-19.78
VANUATU	85.78	2.30	85.84	2.68	85.78	0.00
VIRGIN ISLs BRITISH	58.01	1.29	58.22	2.23	58.01	0.00
WESTERN SAMOA	54.30	3.54	53.88	6.52	54.54	0.24

Dispersion = standard deviation / mean

<50	<100	<150

5.3.2 Income statement characteristics

Because banks operating offshore are essentially profit seeking entities, the overview of their income statement characteristics will start by the disclosure of their profitability characteristics. ROE decomposition will provide a guideline for this section as it will allow a general overview of banks income statements (from Hempel and Simonson 1999 p61):

> *ROE = Net Income / Equity = Leverage multiplier (LM) * Return on Assets (ROA)*
> *LM = Assets / Equity*
> *ROA = Net Income / Assets = Net Margin (NM) * Asset Utilisation (AU)*
> *NM(net margin) = Net Income (NI) / Revenues*
> *AU(asset utilisation) = Revenues / Assets*

The return on equity (ROE) and the return on assets (ROA) are commonly used to measure bank performance (see Molyneux, 1993, p256; Short, 1979, p210 and Hempel and Simonson, 1999[364]). Banks seem to grant more importance to the ROE as a measure of success than to the ROA, probably because the shareholders themselves use the ROE as a measure of success (Maude and Molyneux, 1996). However, because the ROA reflects the bank's ability to generate income without taking leverage into account, it is seen by many regulators as an alternative measure of performance (Hempel and Simonson, 1999, p63).

Table 5.3-7 displays statistics concerning the ROEs of offshore banks. These statistics include, for each country: the average value for all ROE observations (all years); the standard deviation of the ROEs; an aggregated average (total amount of profit divided by total equity – to be compared with the average[365]); the dispersion of the ROEs (standard deviation divided by average); the average ROE of the local market leader (a market leaders is the bank with the highest market share (in terms of

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[364] Hempel and Simonson (1999, p59) consider the ROE to implicitly measure a company's revenue generation capacity including its tax planning abilities (p61).
[365] The value displayed is the average of the aggregated averages for all years.

deposits) for a given jurisdiction on a given year), and the difference (in percentage points) between the ROE of the market leader and the average ROE for banks operating in the respective centres.

Previous banking literature has established a link between market share and profitability and between concentration and profitability (Goddard et al, 2001, pp34-39). It can be observed in Table 5.3-7 that market leaders consistently and significantly obtain higher ROEs than other banks in their jurisdictions[366]. In particular, market leaders having more than a 20% market share appear more profitable than average in their markets (except in Bahrain, Cyprus and the Isle of Man). Moreover, a positive correlation between size and profitability can be observed in several countries, although not necessarily the countries with the highest concentration ratios. Thus in Table 5.3-6, among the 11 OFCs, where a positive correlation appears between size and profitability, 8 have concentration ratios consistently below 15% (Bahamas, Belize, Guernsey, Jersey, Luxembourg, Monaco, Netherlands Antilles, and Panama).

Table 5.3-6   OFCs where a positive correlation between Asset size and ROE has been observed

	Correlation	P-Value
BAHAMAS	0.167	0.042
BARBADOS	0.399	0.024
BELIZE	0.921	0.001
GRENADA	0.827	0.000
GUERNSEY	0.482	0.000
JERSEY	0.240	0.005
LUXEMBOURG	0.107	0.001
MAURITIUS	0.446	0.000
MONACO	0.213	0.038
NETH. ANT.	0.443	0.021
PANAMA	0.152	0.002

For the countries where there was no correlation between asset size and ROE, no correlation was found either between Equity levels and ROE.

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[366] The low score for San Marino may be explained by the fact that the Cassa Di Risparmio, the market leader, is a public savings bank (quasi governmental institution) and therefore not necessarily profit orientated.

Table 5.3-7   Return on Equity (net income / equity - percentages)

Country Name	ROE all years				Av. ROE Mkt Leaders	Difference (Leader – mean)
	Mean	St.Dev.	Aggr.	Dispersion[367]		
ANDORRA	16.94	8.26	14.83	48.76	17.15	0.21
ANGUILLA	19.45	4.26	19.35	21.9	20.95	1.49
ANTIGUA & B.	3.43	55.78	8.05	1626.24	8.82	5.39
ARUBA	11.94	10.21	3.52	85.51		
BAHAMAS	22.11	19.9	20.39	90	30.08	7.97
BAHRAIN	8	12.01	8.37	150.13	5.78	-2.22
BARBADOS	10.94	11.73	11.97	107.22	17.49	6.55
BELIZE	23.81	18.56	22.93	77.95	27.42	3.61
BERMUDA	12.64	6.37	11.75	50.4	13.28	0.64
CAYMAN Isls.	14.37	12.97	12.48	90.26	11.23	-3.14
CYPRUS	11.2	24.51	9.28	218.84	10.98	-0.21
GIBRALTAR	17.24	8.77	18.6	50.87	19.98	2.74
GRENADA	16.85	4.27	16.84	25.34	19.94	3.09
GUERNSEY	14.42	9.11	13.83	63.18	23.43	9.01
HONG KONG	10.41	42.19	14.96	405.28	19.09	8.68
ISLE OF MAN	20.76	23.52	13.53	113.29	17.04	-3.72
JERSEY	16.63	10.72	17.41	64.46	25.1	8.48
LEBANON	13.45	28.26	16.05	210.11	22.75	9.3
LIECHTENSTEIN	14.27	9.48	15.31	66.43	19.37	5.09
LUXEMBOURG	11.63	13.75	13.3	118.23	16.13	4.5
MALTA	14.1	9.92	13.19	70.35	21.33	7.23
MAURITIUS	12.31	9.36	16.23	76.04	16.87	4.57
MONACO	8.92	8.43	8.93	94.51	13.26	4.34
NETH. ANT.	0.92	40.19	4.17	4368.48	25.05	24.13
PANAMA	13.91	25.99	13.37	186.84	24.48	10.58
SAN MARINO	13.79	7.45	12.01	54.02	11.51	-2.28
SINGAPORE	2.47	29.19	8.3	1181.78	9.19	6.72
ST. KITTS & N.	17.32	12.03	11.73	69.46	9.89	-7.43
ST. VINCENT	9.35	2.98	9.35	31.87	9.35	0
SWITZERLAND	9.53	15.32	9.72	160.76	9.78	0.25
VIRGIN Isls., B.	22.88	2.24	22.87	9.79	22.88	0
WEST. SAMOA	23.43	4.7	23.33	20.06	23.71	0.28
Sample	11.05	21.8	n/a	197.29	n/a	n/a

Dispersion = standard deviation / average

<50	<100	<150	<200	>200

The ROEs found, vary considerably from country to country. Singapore's relatively low returns is a consequence of the Asian crisis in 1997 as it substantially

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[367] Pale yellow: dispersion below 50%; yellow, below 100%; pale orange below 150%; orange below 200%; red above 200%. This legend applies to all the other Tables detailing the ratios

affected the income of Singaporean banks (many nearly went bankrupt during this period). In the other OFCs in Group 1 (Hong Kong, Luxembourg, Switzerland), average ROEs are relatively close ranging between 9.5% and 11.5%. In 21 OFCs, average ROEs are actually greater than in Luxembourg (which had the highest returns of any Group 1 centre). Thus, the banks located in the most developed OFCs do not appear to be the most profitable.

The ROE is derived as the product of the ROA and the Leverage multiplier. Table 5.3-8 displays statistics concerning ROAs. The highest dispersion levels are found in the most developed countries (Singapore, Hong Kong and Switzerland). ROA levels vary substantially from one OFC to another. In Monaco and the Netherlands Antilles a 0.37% ROA is observed, while in The Bahamas, the British Virgin Islands and Western Samoa, the ROA exceeds 3%. ROAs vary equally within jurisdictions (in 16 jurisdictions, ROA dispersion exceeds 100%). Where market leaders have below average ROEs, they tend to have lower ROAs too (except in Switzerland).

Table 5.3-9 discloses the characteristics of the banks' leverage multipliers. Average leverage ratios vary, from 5.27 (low leverage) in the British Virgin Islands to 27.9 in Luxembourg (high leverage). Leverage levels vary greatly within countries and across countries, but interestingly, the most leveraged banks are not the most profitable. Displaying total capital ratios could be an interesting complement to our analysis but unfortunately, the risk adjusted capital ratio is typically unavailable for the banks in this sample.

Notably, in all cases (apart of Bahrain), in OFCs where market leaders have below average ROEs, they also have less leverage. While offshore banks have long been exempt from minimal capital ratios (in most jurisdiction, notably the UK since

the 1950s), international pressure (essentially post sept. 2001) has made very high leverage ratios the exception. Monaco and Luxembourg appear to have the most leveraged banks.

Table 5.3-8   Return on Assets (net income / total assets - percentages)

Country Name	ROA all years				Av. ROA Mkt Leaders	Difference (Leader – mean)
	Mean	St.Dev.	Aggr.	Dispersion [368]		
ANDORRA	1.47	1.08	1.44	73.47	1.72	0.25
ANGUILLA	2.15	0.48	2.12	22.33	2.05	-0.09
ANTIGUA & B.	0.96	1.78	0.81	185.42	0.73	-0.23
ARUBA	1.85	0.53	0.28	28.65		
BAHAMAS	3.74	5.48	2.67	146.52	3.13	-0.61
BAHRAIN	2.31	3.66	0.96	158.44	0.5	-1.81
BARBADOS	1.08	0.9	1.11	83.33	1.14	0.06
BELIZE	2.47	2.47	2.56	100	3.43	0.96
BERMUDA	0.92	0.61	0.89	66.3	0.66	-0.25
CAYMAN Isls.	1.68	1.98	1.23	117.86	0.68	-1
CYPRUS	0.9	1.63	0.66	181.11	0.72	-0.18
GIBRALTAR	0.96	0.53	1.02	55.21	1.13	0.18
GRENADA	1.53	0.28	1.54	18.3	1.58	0.05
GUERNSEY	1.55	2.69	0.77	173.55	0.79	-0.75
HONG KONG	1.53	5.74	1.55	375.16	1.81	0.27
ISLE OF MAN	0.9	0.67	0.78	74.44	0.99	0.09
JERSEY	1.52	3.88	0.81	255.26	1.75	0.24
LEBANON	1.2	2.56	1.1	213.33	1.21	0.01
LIECHTENSTEIN	1.65	1.46	1.8	88.48	2.72	1.08
LUXEMBOURG	0.68	1.16	0.5	170.59	0.5	-0.18
MALTA	1.18	0.63	0.88	53.39	1.26	0.08
MAURITIUS	1.49	1.28	2.18	85.91	1.76	0.27
MONACO	0.37	0.41	0.38	110.81	0.49	0.12
NETH. ANT.	0.37	2.58	0.29	697.3	0.4	0.02
PANAMA	1.05	1.81	1.04	172.38	1.09	0.04
SAN MARINO	1.24	0.74	1.13	59.68	1.42	0.18
SINGAPORE	0.53	5.22	0.91	984.91	0.99	0.47
ST. KITTS & N.	1.5	0.71	1.32	47.33	1.2	-0.31
ST. VINCENT	0.62	0.23	0.62	37.1	0.62	0
SWITZERLAND	1.54	4.54	0.5	294.81	0.38	-1.16
VIRGIN Isls., B.	4.5	1.19	4.5	26.44	4.5	0
WEST. SAMOA	3.15	0.81	3.3	25.71	3.58	0.43

Dispersion = standard deviation / average

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[368] Pale yellow: dispersion below 50%; yellow, below 100%; pale orange below 150%; orange below 200%; red above 200%. This legend applies to all the other Tables detailing the ratios.

Table 5.3-9   Leverage multipliers (total assets / equity - percentages)

Country Name	Leverage multipliers all years				Av. LM Mkt Leaders	Difference (Leader – mean)
	Mean	St.Dev.	Aggr.	Dispersion[369]		
ANDORRA	12.86	4.71	10.88	36.63	10.33	-2.53
ANGUILLA	9.15	1.5	9.2	16.39	10.19	1.05
ANTIGUA & B	12.14	7.98	10.55	65.73	12.34	0.19
ARUBA	10.97	6.34	12.19	57.79	16.03	5.06
BAHAMAS	10.82	8.87	8.45	81.98	8.33	-2.49
BAHRAIN	6	3.7	8.96	61.67	11.82	5.82
BARBADOS	10.58	7.6	11.09	71.83	17.16	6.58
BELIZE	11.12	5.57	8.85	50.09	8.50	-2.62
BERMUDA	16.3	8.64	13.6	53.01	20.47	4.16
CAYMAN Isls.	11.63	11.91	10.63	102.41	31.01	19.37
CYPRUS	23.53	32.38	14.72	137.61	15.51	-8.02
GIBRALTAR	19.31	2.98	18.32	15.43	17.83	-1.48
GRENADA	10.94	1.79	10.93	16.36	12.62	1.68
GUERNSEY	17.77	11.79	16.98	66.35	29.43	11.66
HONG KONG	7.48	11.77	9.73	157.35	10.69	3.21
ISLE OF MAN	22.8	16.46	16.42	72.19	15.24	-7.56
JERSEY	24.7	14.73	19.35	59.64	14.28	-10.42
LEBANON	14.18	13.05	14.59	92.03	18.65	4.46
LIECHTENSTEIN	8.97	2.39	8.82	26.64	7.91	-1.06
LUXEMBOURG	27.92	17.87	24.18	64	31.68	3.76
MALTA	13.64	6.81	15.03	49.93	17.18	3.54
MAURITIUS	9.44	3.38	7.74	35.81	9.60	0.16
MONACO	26.8	15.57	22.95	58.1	26.34	-0.46
NETH. ANT.	15.95	14.19	16.2	88.96	2.86	-13.09
PANAMA	20.16	33.64	13.1	166.87	40.86	20.69
SAN MARINO	11.96	6.31	10.07	52.76	8.64	-3.31
SINGAPORE	10.91	11.67	9.05	106.97	9.16	-1.75
ST. KITTS & N.	10.77	3.19	8.66	29.62	8.13	-2.65
ST. VINCENT	15.63	2.78	15.63	17.79	15.63	0
SWITZERLAND	13.59	23.67	15.32	174.17	25.54	11.95
VANUATU	16.74	2.38	16.74	14.22	16.74	0
VIRGIN Isls., B.	5.27	1.15	5.27	21.82	5.27	0
WEST. SAMOA	7.74	1.7	7.11	21.96	6.72	-1.02
Sample	14.17	9.65	12.77	64.97		

Dispersion = standard deviation / average

For the average and standard deviation for the sample, only observations between 0 and 100 were taken into consideration; KBC International Finance of the Netherlands Antilles, was excluded of the sample for the constitution of this table (it had an abnormally high ratio of more than 2000). Interestingly, KBC also had total assets of more than US$ 5 billions for two years (1998, 1999). It also appeared to be market leader then.

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[369] Pale yellow: dispersion below 50%; yellow, below 100%; pale orange below 150%; orange below 200%; red above 200%. This legend applies to all the other Tables detailing the ratios.

The ROA itself can be decomposed as the product of the Net Margin (see Table 5.3-10) and Asset Utilisation (see Table 5.3-11), which is used as a measure of asset productivity. Interestingly[370], it appears that in all cases where the ROAs of market leaders were lower than average, the net margins were lower too. Here also, high levels of standard deviation and dispersion show that within the national markets, there are important discrepancies among banks. One explanation may be that banks operating essentially in loan and deposit business may have lower net margins than those concerned essentially with asset management and other private banking services. This can be tested by studying the correlation between the net margin and the proportion of income generated from non-interest sources. Indeed, there appears to be a negative correlation between those two factors[371]. Market leaders usually have lower levels of asset utilisation than other banks in the market. There are also substantial variations in the levels of Asset Utilisation across and within countries.

The decomposition of the ROE provides an interesting overview concerning the main profitability characteristics of the banks involved in offshore banking. In general, at all levels, it appears that there are important disparities between the OFCs and within the OFCs. The disparities within OFCs can be explained by the nature of the business conducted (deposit taking and wealth management are very different activities) and various environmental factors. However, these issues will be investigated more formally in the last chapter along with bank profit efficiency. The remainder of this section will focus in more detail on other income statement characteristics of the banks operating offshore.

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[370] No data available for Vanuatu in Table 4.
[371] When all 5822 observations for which data is available are used: correlation -0.067 P value 0.000; after the removal of the 423 observations for which one of the factors exceeds 100% or is below 0%, there is a correlation of -0.161 and a P value = 0.000.

Table 5.3-10   Net margins (net income / operating revenue - percentage)

Country Name	Net Margin all years				Av. NM Mkt Leaders	Difference (Leader – mean)
	Mean	St.Dev.	Aggr.	Dispersion[372]		
ANDORRA	19.54	27.18	26.73	139.1	26.92	7.38
ANGUILLA	24.78	4.04	25.01	16.3	24.75	-0.02
ANTIGUA & B.	12.24	31.4	6.74	256.54	6.78	-5.46
ARUBA	18.89	5.32	18.33	28.16		
BAHAMAS	29.1	19.6	29.59	67.35	26.75	-2.35
BAHRAIN	26.8	18.4	13.75	68.66	7.19	-19.61
BARBADOS	12.21	11.27	18.08	92.3	13.19	0.98
BELIZE	21.5	18.59	35.34	86.47	27.73	6.23
BERMUDA	16.41	30.28	10.67	184.52	9.66	-6.75
CAYMAN Isls.	20.6	24.87	15.47	120.73	13.14	-7.46
CYPRUS	9.46	18.71	8.93	197.78	8.54	-0.92
GIBRALTAR	16.8	8.19	16.24	48.75	18.05	1.24
GRENADA	16.15	2.5	16.43	15.48	15.47	-0.68
GUERNSEY*	43.1	30	32.21	69.61	167.52	3.48
HONG KONG	25.9	20.8	51.6	80.31	24.6	-1.3
ISLE OF MAN	10.76	7.83	29.65	72.77	13.29	2.53
JERSEY	20.5	36.69	12.38	178.98		
LEBANON	10.22	24.06	11.01	235.42	13.21	2.99
LIECHTENSTEIN	26.04	26.91	34.35	103.34	46.92	20.88
LUXEMBOURG	9.07	19.49	5.98	214.88	7.37	-1.7
MALTA	17.69	9.19	12.98	51.95	18.21	0.51
MAURITIUS	17.41	16.33	22.01	93.8	16	-1.41
MONACO	5.61	5.65	7.01	100.71	8.31	2.7
NETH. ANT.	19.35	83.57	6.86	431.89	12.18	-7.17
PANAMA	11	24.38	14.18	221.64	12.78	1.78
SAN MARINO	11.52	10.35	10.3	89.84	7.13	-4.38
SINGAPORE	21.75	177.96	15.97	818.21	26.12	4.37
ST. KITTS & N	25.19	11.1	54.64	44.07	23.42	-1.77
ST. VINCENT	7.29	2.95	7.37	40.47	7.29	0
SWITZERLAND	11.47	63.98	11.83	557.8	9.26	-2.21
VIRGIN Isls. B.	18.1	2.36	17.94	13.04	18.1	0
WEST. SAMOA	23.55	5.19	25.64	22.04	27.86	4.31
Sample	29.44	20.24		68.75		

Dispersion = standard deviation / average
*Owing to the effect of outliers, the results for Guernsey were recalculated eliminating all net margins <0 or >100% (26 observations out of 89 exceeded 100%); For Bahamas, 13 from 150 were excluded (<0 and >100); For Bahrain, observations below or above 100% were also excluded (11 out of 118); For Hong Kong, data below 0% or above 100% was also not taken into account (118 cases out of 487). Missing data is due to the lack information concerning the market leaders; In the case of Jersey, observations where no expenses were provided (75% of all cases!) were removed; no similar problem with other OFCs.

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[372] Pale yellow: dispersion below 50%; yellow, below 100%; pale orange below 150%; orange below 200%; red above 200%. This legend applies to all the other Tables detailing the ratios.

Table 5.3-11   Asset Utilisation (operating revenue / total assets)

Country Name	Asset Utilisation all years				Av. AU Mkt Leaders	Difference (Leader – mean)
	Mean	St.Dev.	Aggr.	Dispersion[373]		
ANDORRA	6.36	1.38	6.81	21.7	6.53	0.17
ANGUILLA	8.61	0.63	8.52	7.34	8.28	-0.34
ANTIGUA & B.	9.62	2.01	11.39	20.9	11.34	1.71
ARUBA	9.78	0.82	2.95	8.35		
BAHAMAS	8.81	5.44	10.16	61.82	9.3	0.49
BAHRAIN	7.74	3.95	6.76	50.97	6.56	-1.19
BARBADOS	10.2	1.52	6.08	14.88	9.48	-0.72
BELIZE	11.06	3.68	15.18	33.32	12.58	1.53
BERMUDA	6.43	4.36	8	67.81	6.37	-0.06
CAYMAN Isls.	9.77	6.44	8.27	65.99	5.14	-4.62
CYPRUS	15.09	11.15	8.98	73.9	8.19	-6.9
GIBRALTAR	5.42	0.89	2.41	16.42		
GRENADA	9.68	0.7	10.06	7.27	10.25	0.57
GUERNSEY	4.82	9.64	2.83	200.07	3.71	-1.11
HONG KONG	14.97	17.75	1.73	118.57		
ISLE OF MAN	6.3	1.43	7.94	22.61	6.11	-0.2
JERSEY	18.13	31.38	4.97	173.12		
LEBANON	10.45	2.06	12.54	19.72	9.15	-1.3
LIECHTENST.	6.44	1.93	5.88	29.88	6.3	-0.15
LUXEMBOURG	7.88	4.41	8.05	55.94	4.78	-3.11
MALTA	6.87	1.41	8.72	20.58	7	0.13
MAURITIUS	10.77	2.92	12.32	27.15	11.06	0.29
MONACO	6.73	1.79	6.17	26.6	5.88	-0.85
NETH. ANT.	7.44	4.85	9.53	65.27	5.34	-2.1
PANAMA	9.28	3.77	8.99	40.66	7.9	-1.38
SAN MARINO	5.81	1.51	5.75	25.95	6.18	0.38
SINGAPORE	7.27	14.61	5.76	200.96	3.29	-3.98
ST. KITTS & N.	7.34	1.03	2.46	14.05		
ST. VINCENT	8.51	0.86	8.53	10.1	8.51	0
SWITZERLAND	9	6.78	5.79	75.36	4.82	-4.18
VIRGIN Isls. B.	24.58	3.29	23.98	13.38	24.58	0
WEST.SAMOA	13.49	2.68	12.94		12.83	-0.66

Dispersion = standard deviation / average

The Net Interest Margin (NIM - See Table 5.3-12) is an interesting measure

because it is affected by the level of competition and can thus be used as a proxy for

the level of competition in a banking sector[374]. While the net interest margin has long

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[373] Pale yellow: dispersion below 50%; yellow, below 100%; pale orange below 150%; orange below 200%; red above 200%. This legend applies to all the other Tables detailing the ratios.
[374] The Net Interest margin is the ratio of the net interest income to the earning assets. The net interest income is defined as the difference between interest earned and interest paid (to depositors and others). Thus, when competition increases in a banking sector, depositors try to deposit their money at the

been the main source of income for banks in most banking systems, Goddard et al. (2001, p16) mention that European banks, confronted by a decrease in interest income, have made an effort to increase their levels of non-interest business.

The levels of NIMs appear to be lower in European OFCs, and higher in Caribbean OFCs. The high level of NIMs in some countries can be explained by the fact that some banks may be serving their domestic market along with offshore customers (as it has been shown earlier, this could be the case in countries like Grenada, Lebanon, Cyprus, Mauritius and Malta). Oligopoly situations in such countries may result in less competition[375], and thus higher NIMs. Another explanation to the higher NIMs observed for these countries is that they may be using a local currency subject to substantial inflation[376]. Yet another explanation is that the banks of these countries may be involved in currency lending involving higher risks (such as consumer credit). If the Net Interest Margin is a good proxy for competition, one can assume that competition is more intense in European OFCs than in Caribbean OFCs.

Market growth is also known to influence competition. Using the BIS data (external deposits), one can compute the average growth in the offshore market in each OFC. This value can then be correlated with NIMs. Using all countries of the sample for which enough data is available, a positive correlation between the average growth of the market (as average growth of 'BIS' external liabilities per year from 1995 to 2002) and the average NIM for the OFC (Correlation between average growth

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highest interest rates available while borrowers try to borrow at the lowest possible rate. Banking products being largely undifferentiated and easy to imitate, banks usually end competing on prices, thus reducing the net interest margins.

[375] This hypothesis can be supported by the fact that in these countries, the 1 bank concentration ratios previously discussed are among the highest in the sample (average 1 bank concentration all years : Cyprus 42%; Grenada 56.7%; Malta 44.6%; Mauritius 61.2%).

[376] The CIA World Fact book reported the following levels of inflation for 1998 for these countries (Grenada 3.2%; Lebanon 9%; Cyprus (Turkish part) 87.5%; Cyprus (Greek part) 3%; Mauritius 6.5%; Malta 2.3%).

of the market and average NIM = 0.488, P value = 0.008[377]) can be found. Thus, high net interest margins may be due to low levels in competition in fast growing markets.

Goddard et al. (2001, p16), state that interest margins have been decreasing in European banking. Observing time series data for this offshore bank sample, there is no obvious trend of a decrease in net interest margins (this applies to both simple averages and aggregated averages). Only in Luxembourg does there seem to be a decrease (from 0.79% in 1995 to 0.61% in 2000 considering the aggregated averages), as well as in Switzerland from 1995 to 1999 (1.24% in 1995 0.88% in 1999). However, in those two countries, the net interest margins have been slightly increasing since 1999. Only in Hong Kong (observing an aggregated average) is it possible to find a long-term fall in interest margins to (very) low levels (from 0.42% in 1995 down to 0.12% in 2002).

Offshore banks, as discussed in the previous chapter, tend to serve both the interest earning loan and deposit markets and the fee and commission generating private banking market. Table 5.3-13 displays the averages of the proportion of non-interest income as a share of total income of banks in this sample.

Countries where the average bank size is greatest tend to rely more on non-interest income (Switzerland, Luxembourg, Hong Kong, Singapore, Bahrain, and Bermuda). While some banks, in various centres, rely almost exclusively on non-interest income (Singapore at 70%), others display a negative ratio, due to paying more fees and income than they receive[378]. This is reflected by the high dispersion

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[377]. This value was found when correlating market growth with the aggregate average NIM. When the simple average NIM was used instead, correlation was found to be 0.346 with a P value of 0.071. However, when outliers Aruba and Grenada are excluded (those two countries also have the smallest amounts of deposits in the sample) this correlation coefficient increases to 0.665 with a P value of 0.000.

[378] The proportion of non-interest income was calculated as the sum of net fees plus net commissions plus net trading income plus other operating income. Some banks pay more commissions (and others) than they make. The histogram was realised with the 5709 observations available; data were the

levels. The following histogram will show the distribution of share of non-interest income for our sample of offshore banks (Figure 5.3-2).

Table 5.3-12   Net Interest Margins (net interest income / total earning assets - percentages)

Country Name	Net interest margins all years				Av. NIM Mkt Leader	Difference (Leader – mean)	Market Change % (95-02)[379]
	Mean	St.Dev.	Aggr.	Disp. 380			
ANDORRA	1.74	0.47	1.54	27.01	2.06	0.32	-43.9
ANGUILLA	4.1	1.13	4.07	27.56	3.93	-0.17	190
ANTIGUA & B.	2.55	3.42	0.82	134.12	-1.12	-3.68	na
ARUBA	6.03	0.82	0.9	13.60			-47.06
BAHAMAS	1.79	2.63	0.84	146.93	0.36	-1.43	67.96
BAHRAIN	2.27	2.06	1.85	90.75	1.83	-0.44	100.68
BARBADOS	4.8	1.2	3.99	25.00	3.86	-0.94	65.31
BELIZE	6.85	2.44	6.89	35.62	7.2	0.35	566.67
BERMUDA	2.34	1.84	2.57	78.63	1.42	-0.92	128.95
CAYMAN Isls.	3.46	3.17	2.61	91.62	0.87	-2.6	152.04
CYPRUS	3.81	2.91	2.04	76.38	2.29	-1.52	123.69
GIBRALTAR	1.39	0.48	1.44	34.53	1.55		13.24
GRENADA	5.54	0.67	5.65	12.09	6.13	0.59	-100
GUERNSEY	2.08	3.33	1.22	160.10	8.05	5.97	57.64
HONG KONG	3.76	3.28	0.31	87.23			5.41
ISLE OF MAN	1.23	0.66	0.61	53.66	1.62	0.39	20.76
JERSEY	1.64	2.03	0.12	123.78			125.63
LEBANON	4.25	2.47	2.99	58.12	2.4	-1.85	126.46
LIECHTENSTEIN	1.23	0.27	1.2	21.95	1.15	-0.08	57.81
LUXEMBOURG	0.96	0.82	0.69	85.42	0.66	-0.3	9.36
MALTA	2.32	0.82	2.25	35.34	2.33	0.02	46.35
MAURITIUS	3.14	1.12	3.32	35.67	3.23	0.1	127.14
MONACO	0.87	0.38	0.88	43.68	1.03	0.17	108.74
NETH. ANT.	2.02	2.76	0.51	136.63	0.43	-1.59	43.53
PANAMA	2.73	1.57	2.18	57.51	1.86	-0.87	-28.22
SAN MARINO	2.46	1.57	2.24	63.82	3.05	0.59	12.36
SINGAPORE	2.27	1.56	1.89	68.72	1.8	-0.47	70.49
ST. KITTS & N.	4.41	0.98	1.05	22.22	3.37		na
ST. VINCENT	3.51	0.37	3.51	10.54	3.51	0	-10
SWITZERLAND	1.88	0.98	1.09	52.13	0.94	-0.94	49.6
VIRGIN Isls., B.	11.95	2.02	11.95	16.90	5.32	0.33	na
WEST. SAMOA	4.98	1.81	4.99	36.35			na

proportion of non-interest income was below 0 or greater than 1 was not used (159 0bservations not used).
[379] Market change is computed as (deposits in the OFC in 2002-deposits in the OFC in 1995)/(deposits in the OFC in 1995) and expressed as a percentage.
[380] Pale yellow: dispersion below 50%; yellow, below 100%; pale orange below 150%; orange below 200%; red above 200%. This legend applies to all the other Tables detailing the ratios.

Table 5.3-13   Non-interest income ratio (non-interest income / operating income)

Country Name	Share of non-interest income				Average Mkt Leaders	Difference (Leader – mean)
	Mean	St.Dev.	Aggr.	Dispersion[381]		
ANDORRA	41.91	14.99	39.72	35.77	33.99	-7.92
ANGUILLA	32	19.83	32.16	61.97	32.11	0.11
ANTIGUA & B.	49.59	58.74	87.41	118.45	119.28*	69.69
ARUBA	22.27	9.22	23.07	41.40		
BAHAMAS	53.09	86.72	86.63	163.35	57.2	4.1
BAHRAIN	51.41	36.67	42.93	71.33	40.18	-11.24
BARBADOS	25.42	16.15	25.7	63.53	20.01	-5.41
BELIZE	15.51	13.31	22.47	85.82	10.24	-5.27
BERMUDA	46.29	20.99	47.43	45.34	60.95	14.66
CAYMAN Isls.	20.12	27.72	22.07	137.77	23.5	3.38
CYPRUS	28.88	28.08	39.37	97.23	41.06	12.17
GIBRALTAR	23.79	22.42	18.51	94.24	14.32	-9.46
GRENADA	20.75	6.23	21.52	30.02	22.8	2.05
GUERNSEY	42.32	26.03	46.11	61.51	23.57	-18.75
HONG KONG	63.51	46.22	3.46	72.78		
ISLE OF MAN	26.7	23.81	21.99	89.18	19.96	-6.75
JERSEY	56.28	25.79	53.5	45.82		
LEBANON	24.76	12.95	21.82	52.30	24.54	-0.22
LIECHTENSTEIN	66.61	13.27	65.04	19.92	72.66	6.05
LUXEMBOURG	45.73	42.67	50.01	93.31	51.44	5.71
MALTA	27.43	11.9	28.46	43.38	25.37	-2.06
MAURITIUS	30.3	14.05	34.98	46.37	38.88	8.58
MONACO	55.96	19.61	56.75	35.04	50.24	5.72
NETH. ANT.	17.57	27.28	22.91	155.26	33.72	-16.15
PANAMA	26.21	28.63	31.98	109.23	50.94	-24.74
SAN MARINO	32.16	10.75	31.68	33.43	32.45	-0.29
SINGAPORE	70.2	45.85	58.59	65.31	82.08	-11.88
ST. KITTS & N.	20.08	9.52	20.52	47.41	0	20.08
ST. VINCENT	30.69	3.87	30.69	12.61	30.69	0
SWITZERLAND	51.02	41.65	63.71	81.63	66.82	-15.8
VIRGIN Isls., B.	52.84	3.49	52.84	6.60	52.84	0
WEST. SAMOA	58.51	8.12	56.21	13.88	54.16	4.35

The local market leader, Stanford International Bank, actually pays more interests than it receives, because it is essentially involved in asset management, deposit taking appears as a marginal activity. Hence, the ratio above 100%.

[381] Pale yellow: dispersion below 50%; yellow, below 100%; pale orange below 150%; orange below 200%; red above 200%. This legend applies to all the other Tables detailing the ratios.

Figure 5.3-2   Count of observations per reliance on non-interest income
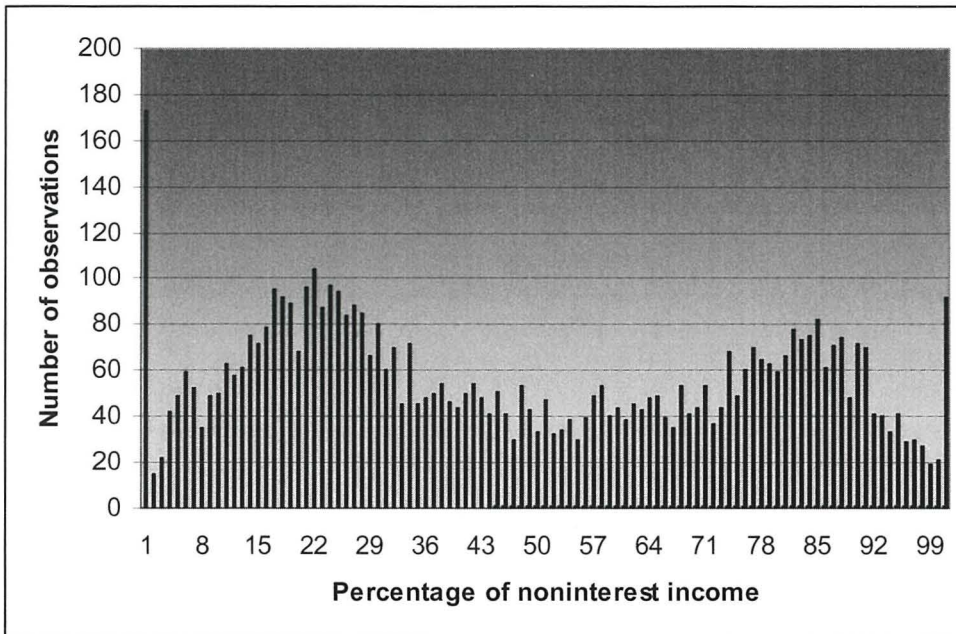
The histogram (figure 5.3-2) has three main intriguing features: all levels of non-interest income are represented from 0% to 100%; the data shows two peaks; and a substantial number of observations are at the extremes of the distribution (100% or 0%). One hypothesis of this study states that banks serving the offshore market may take deposits but may also sell all sorts of services alongside for a fee, including private banking. Thus, observations located at the extremes may belong to banks specialised either in wealth management and doing very little conventional banking business, while others operate strictly by taking deposits and granting loans and are therefore dependent on net interest margins. However, even a bank having 0% of non-interest income may earn commissions and fees. However, these gains in commissions and fees may be outweighed by the fees and commissions paid by the bank itself. The two peaks observed require further investigation.

Figure 5.3-3   Count of average non-interest income (excluding Swiss banks)
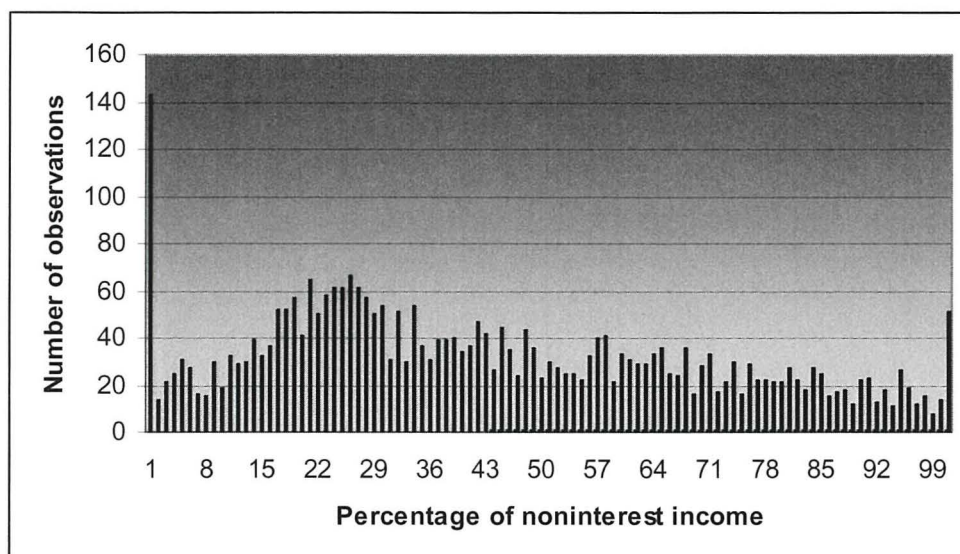
Figure 5.3-3 is essentially similar to Figure 5.3-2 except that Swiss banks have been omitted. It appears the 'two humps' phenomenon was essentially due to the particular characteristics of Swiss banking.

Table 5.3-14   Reliance on non-interest income of Swiss banks (Calculated from sample)

Specialisation (General)	Average percentage of non-interest income/total income %
Bank Holding & Holding Company	66.60
Commercial Bank	54.28
Cooperative Bank	29.85
Investment Bank/Securities House	77.88
Medium & Long Term Credit Bank	57.81
Real Estate / Mortgage Bank	15.79
Savings Bank	17.32
Specialised Gov. Credit Inst.	30.57

Table 5.3-14 shows the average levels of non-interest income for different categories of Swiss banks. The peaks centred on 25% of non-interest income level appear to be due to the presence of Swiss savings banks and Real Estate and Mortgage banks. In contrast, banks classified as 'investment bank/security houses', (the category encompassing most specialised Swiss private banks[382]) have a much

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[382] 13 Swiss banks classified in this category include the word 'private' or 'privee' in their names. When the name of the Swiss 'investment bank /security houses' does not include the word 'private

higher proportion of non-interest income at 77.9%. This is probably because private banking essentially generates non-interest income.

However, in Figure 5.3-3, the peaks located at the extremes of the figure show that there seems to be a substantial numbers of banks relying solely on one source of income. If one excludes Swiss bank observations, there are 3279 cases in which the proportion of non-interest income can be computed. In 313 cases, the proportion of non-interest income is below 5% of operating income, and in 85 cases, the proportion of non-interest income is above 95%. Overall, out of Switzerland, offshore banking seems to be a matter of both deposit taking and other activities, but 12% of the banks (out of Switzerland) appear to be fully specialised.

The production of high value added services yielding non-interest income (such as private banking) is also reputed to be more labour intensive. To check this, computing the correlation coefficient between the proportion of non-interest income and the unitary labour cost (personnel expenses divided by number of employees) shows a significant positive correlation (0.43, P value =0.000[383]). Thus, banks relying more on non-interest income appear to face higher labour costs per employee. This could be because private banks depend on relationship managers who need to be highly skilled to provide a broad range of banking and investment advice. These skills are typically more expensive to acquire than standard deposit taking and lending skills. The high proportion of non-interest income in bank holding companies could also be due to transfer pricing issues.

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banking' in French, English, German or Italian, it may include some great name of private banking such as 'Rothschild', 'Baer', 'Von Ernst' or 'Sarasin'.

[383] Again, all observations where the proportion of non-interest income was below 0% or above 100% were taken out of the sample to this effect and thus 5307 observations were used). Using the same data, one finds a correlation of 0.059 P Value 0.000 between the proportion of non-interest income and the cost income ratio. This may suggest that the production of non-interest income may be slightly more cost intensive. One also finds a negative correlation between the level of non-interest income in a bank and the variation of its net -interest margin over the previous year

One of the main goals of the present work is to assess the efficiency of banks operating in OFCs. The last ratio to be assessed here is the cost income ratio, often used as a crude measure of bank efficiency (Goddard et al 2001, p14). Hempel and Simonson (1999, p79) use the ratio of the non-interest expense by interest plus non-interest income. Doing this amounts to considering the non-interest expense as an input and the interest and non-interest income as outputs. The smaller the value is, the greater the bank's efficiency level. Table 5.3-15 displays cost-income ratio (CIR) statistics.

Mercer Oliver Wyman (2005) reported that the average cost income ratio for a sample of wealth management institutions surveyed is typically around 60%. The cost income ratio for the offshore bank sample here stands at 60.3% and is therefore consistent with the aforementioned study (average of all 5705 observations available in the sample). Looking at Table 5.3-15, there are significant disparities within and across countries (as in most other Tables). Interestingly, the highest standard deviations across cost income ratios are to be found in the four main OFCs. One important feature of Table 5.3-15 is that market leaders seem to consistently have lower cost income ratios than other banks in the same markets (in 20 cases, the market leader has a lower than average cost income ratio; in seven cases, the market leader has a higher than average cost income ratio). This would suggest that overall, market leaders may be more efficient (in terms of cost control) than the other banks in the market. However, in some cases, market leaders actually have higher cost income ratios. One would expect that greater competition encourages greater efficiency. Thus, a bank enjoying a larger market share would have less incentive to be more efficient. This can be investigated, by looking at the relationship between the difference

(market leader CIR – average CIR) and the leader's market share for the best represented countries (at least 40% on average) for which there is sufficient data.

Table 5.3-15   Cost income ratios (overheads / net operating income – percentage)

Country Name	Cost income ratio				Av. CIR Mkt Leaders	Difference (Leader – mean)
	Mean	St.Dev.	Aggr.	Dispersion[384]		
ANDORRA	52.31	55.74	35.56	106.56	29.22	-23.09
ANGUILLA	47.59	5.65	47.63	11.87	48.98	1.40
ANTIGUA & B.	82.82	24.53	80.09	29.62	80.05	-2.76
ARUBA	53.75	9.68	53.01	18.01		
BAHAMAS	44.93	28.94	41.08	64.41	35.49	-9.44
BAHRAIN	40.25	78.80	53.48	195.78	61.32	21.07
BARBADOS	73.73	13.76	72.36	18.66	64.49	-9.24
BELIZE	57.31	20.52	44.79	35.81	33.33	-23.98
BERMUDA	72.05	13.57	75.09	18.83	78.70	6.65
CAYMAN Isls.	47.29	36.44	52.40	77.06	34.21	-13.07
CYPRUS	66.67	23.04	61.93	34.56	62.96	-3.71
GIBRALTAR	32.54	23.21	26.30	71.33	19.43	-13.11
GRENADA	64.23	5.97	66.06	9.29	67.84	3.61
GUERNSEY	49.96	21.27	48.24	42.57	28.54	-21.43
HONG KONG	50.28	86.05	69.20	171.14	28.29	-21.99
ISLE OF MAN	60.16	23.34	33.20	38.80	28.47	-31.69
JERSEY	61.95	56.35	43.07	90.96		
LEBANON	69.99	41.74	54.00	59.64	45.58	-24.41
LIECHTENSTEIN	61.40	23.49	60.42	38.26	68.03	6.63
LUXEMBOURG	50.51	121.12	48.28	239.79	37.60	-12.91
MALTA	49.07	23.20	54.55	47.28	42.71	-6.36
MAURITIUS	40.86	22.19	34.18	54.31	47.07	6.21
MONACO	74.17	18.60	71.91	25.08	69.42	-4.75
NETH. ANT.	52.77	38.59	40.74	73.12	36.36	-16.41
PANAMA	59.34	47.64	59.06	80.28	54.40	-4.93
SAN MARINO	35.51	18.71	38.73	52.69	36.75	1.24
SINGAPORE	66.27	138.15	36.60	208.47	37.14	-29.13
ST. KITTS & N.	45.84	10.09	39.74	22.01		
ST. VINCENT	70.73	12.05	70.73	17.04	70.73	0.00
SWITZERLAND	66.63	115.72	64.08	173.68	66.34	-0.29
VIRGIN Isls.	59.19	2.77	59.19	4.68	59.19	0.00
WEST. SAMOA	48.70	9.74	46.33	20.00	43.20	-5.50

Dispersion = standard deviation / mean; Exprinter international Bank (a private bank) from the Netherlands Antilles was removed from the sample because it displayed negative cost income ratios.

The correlation found between the difference (leader – mean) and concentration is 0.6 (P Value =0.002). Thus, the higher the market share, the less

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[384] Pale yellow: dispersion below 50%; yellow, below 100%; pale orange below 150%; orange below 200%; red above 200%. This legend applies to all the other Tables detailing the ratios

efficient the bank. Indeed, in Bahrain, Bermuda, Grenada, Liechtenstein, Mauritius and San Marino, market leaders have higher than average cost income ratios and relatively high market shares (see Table 5.2-11).

As the cost income ratio is found by dividing non-interest expense by the sum of net interest income and net non-interest income, it is interesting to look for a relation between the cost income ratio and the level of non-interest income of banks. Overall, using 5314 observations (discarding 438 observations where the ratios were below zero or above one), one finds little relationship (a correlation coefficient of 0.056, P value = 0.000 between the cost income ratio and the percentage of non-interest income). However, there appear to be significant differences from country to country and across bank specialisations. Table 5.3-16 lists the correlation coefficients found in countries where they were significant. Thus, there are important disparities across countries. While the correlation is positive in Switzerland and Luxembourg, it is negative in Singapore and Hong Kong (this may be due to the impact of the Asian crisis). In many countries there is a significant correlation, but it may be either negative or positive.

Table 5.3-16   Correlation between non-interest income and cost income ratio (per country)

	Correlation	P Value
SWITZERLAND	0.133	0.000
LUXEMBOURG	0.321	0.000
SINGAPORE	-0.632	0.000
HONG KONG	-0.389	0.000
BERMUDA	-0.362	0.042
CYPRUS	-0.441	0.000
GUERNSEY	0.486	0.000
ISLE of MAN	0.670	0.003
LEBANON	0.292	0.000
MALTA	0.555	0.000
MAURITIUS	0.364	0.002
PANAMA	0.153	0.003
SAN MARINO	-0.540	0.045
St VINCENT	0.946	0.015

Table 11 was constructed using 5314 observations, only countries where the P-values was significant were displayed. The same data was used for Table 12.

Table 5.3-17 lists the bank categories where a significant correlation appears between the percentage of non-interest income and the CIR. Thus, the correlation is negative in the case of bank holdings and investment banks, while it is positive for cooperative banks, savings banks and commercial banks.

Table 5.3-17 Correlation between non-interest income and cost income ratio (per bank type)

	Correlation	P Value
Commercial banks	0.091	0.000
Bank holding	-0.229	0.023
Cooperative banks	0.52	0.000
Investment banks	-0.1	0.002
Savings banks	0.17	0.001
Swiss commercial banks	0.16	0.000

Correlation coefficients per bank type (where significant)

While the cost income ratio provides indications as to bank's efficiency levels, it does not say much about the factors affecting these efficiency levels. Goddard et al (2001, p14) mentions that bank efficiency levels may be affected both by endogenous factors (such as human resources, operational features and marketing policies) and exogenous factors (environmental factors that the bank cannot influence). The next chapter will devise a way to estimate the efficiency levels in offshore banking and to assess the factors influencing offshore bank efficiency.

5.4 Conclusion

In this chapter, the sample of banks operating in OFCs to be used in the efficiency analysis (in Chapter 6) is selected and analysed. The sample covered 32 OFCs from 1995 to 2002 and included 6,486 observations. The sample was dominated by the four most developed OFCs. These represent two thirds of the observations available, but more than 80% of the total assets of the banks in the sample. The largest banks in the sample almost all came from these four OFCs.

Foreign-based offshore banks tend to originate from neighbouring countries, but in many OFCs, there is also a sizeable locally-owned offshore banking sector. Tax rates (tax paid compared with income before tax) appear lower than onshore but do not appear to be insignificant. Financial ratios show high levels of dispersion both across and within OFCs. Capital ratios do not appear particularly low. The average ROE for the sample stands at 11%. While deposit taking appears as a primary source of funds, lending (as reflected by mean loan to asset ratios per OFC) does not appear to be particularly developed. Net interest margins are positively related to (deposits) market growth, possibly indicating that in a growing market, lower competition allows higher net interest margins. The fact that offshore banking seems to be in large part a matter of private banking attracted our attention to the role of non-interest income. The level of OFC bank labour costs also appear to be related to the level of non-interest income, suggesting that private banking (and other asset management business) incurs higher labour expenses.

6 Measuring offshore bank efficiency

On the basis of the background information provided in the previous chapter, this chapter focuses on the methodological approaches used to evaluate the efficiency characteristics of offshore banks. First, we examine why it is important to study bank efficiency, what the main efficiency concepts are, and the methods employed for their measurement. Because efficiency is defined in terms of input use and output production, we then present an overview of definitions of the bank production process highlighting our own preferred choice of inputs and outputs for OFC banks. The chapter then discusses the merits of various frontier efficiency techniques. This allows us to select the most appropriate modelling approach for estimating efficiency in offshore banking.

6.1 Theoretical background

This first section will explain why efficiency is important as a measure of bank performance, and what it consists of. The section will demonstrate the role efficiency plays in assessing bank performance.

6.1.1 Why study bank efficiency

Over the last two decades, a substantial amount of research has been conducted in the field of bank efficiency. Numerous studies[385] have been undertaken, focusing on banks operating in specific regions such as Western Europe (Casu 2000; Altunbas et al 2001), or Eastern Europe (Weill 2003a) or different types of banks (such as Murray and White, 1983).

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[385] Berger and Humphrey (1997) overviewed and compared the findings of 130 such studies.

The necessity of bank efficiency studies has been stressed by Berger et al (1993): "In a world in which the structures of financial services industries are changing rapidly, it is important to determine the cost and revenue efficiency of the evolving financial institutions. If these institutions are becoming more efficient, then we might expect improved profitability, greater amounts of funds intermediated, better prices and service quality for customers, and greater safety and soundness if some of the efficiency savings are applied towards improving capital buffers that absorb risk. Of course, the converse applies if the evolution results in less efficient intermediaries, with the additional danger of taxpayer-financed industry bailouts if substantial losses are sustained" (p22).

Thus, efficiency studies can have political or regulatory repercussions on a political or regulatory point of view, particularly in the crafting of antitrust and merger regulation (Berger and Mester, 1997, p897; Kwast, 1993, pp457-458; Kwast, Beighley and McCall, 1975 pp449-467; Molyneux and Forbes, 1995, pp155-158). According to Mester (1987) "The presence of scale economies would imply that smaller firms or entering firms that operate at a small scale would be at a cost disadvantage compared with larger, established firms. A finding of economies of scope (i.e. economies of joint production) would imply that firms that were specialised would be at a cost disadvantage and that regulations that restrict the outputs a firm is allowed to produce may lead to inefficient production" (p423). Murray and White (1983), for example, studied the issue of economies of scale and scope in British Columbia credit unions. They found evidence of economies of scope in this industry and concluded that legislation should allow Credit Unions to grow and diversify to keep their costs down. Mitchell and Onvural (1996), note that the issue of bank efficiency is also important to the public whose trust in the banking system has

been shaken by several bank failures. Given the academic and policy interests in the area of banking sector efficiency, this chapter will examine the main issues associated with the measurement of bank efficiency, and will be used to decide which concepts and methods will be applied to the study of efficiency in offshore banking.

6.1.2 Efficiency as a measure of performance

Profitability ratios (ROA, ROE) are usually employed to assess firm performance. However, these measures do not indicate how efficient firms are, that is, how well the bank performs with resources employed in comparison to other banks. Indeed, a profitable company can owe its profitability to favourable environmental conditions and thus earn money without being very well managed (i.e. inefficient). In this case, there is an opportunity cost, as the bank could be more profitable if it was more efficient. Also the opposite may apply when poor profitability stems from non-managerial factors such as a weak operating environment. Emrouznejad (2002) suggests a model to represent the relations between firms' efficiency and profitability. His model uses a matrix featuring four cases (see Figure 6.1-1): the 'star', the 'dog', the 'question mark', and the 'sleeper'. The star is characterised by high profitability and high efficiency, making it an example of good practice (although it may operate in a favourable environment too); the 'sleeper' is profitable yet not efficient enough, as its profitability may be due to a good environment. It is doing well, but not as good as it could if it was more efficient; the question mark could be both more efficient and more profitable; the 'dog' is efficiently operated, but does not have a favourable environment, hence the poor profitability. In a stalemate, it may become necessary to divest from the 'dog' to put resources to better use.

Figure 6.1-1   The efficiency/profitability matrix

	Sleeper	**Star**
PROFITABILITY		
	Question Mark	**Dog**
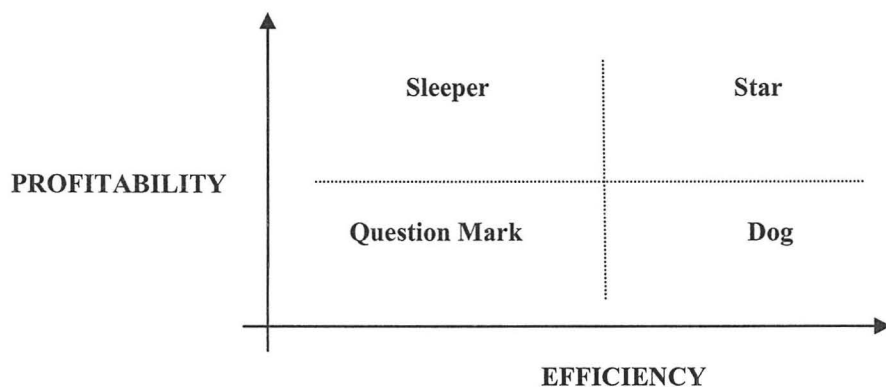
EFFICIENCY

Source: Emrouznejad (2002) see http://www.emrouznejad.co.uk

There are several forms of efficiency and ways to measure them. An outline will be given in the following section.

6.1.3   Forms of bank efficiency

Productive efficiency in banking can be defined as the sum of two components: a technical (or physical) component, and an economic component. According to Goddard et al (2001) "the purely technical component refers to the ability to avoid waste by producing as much output as input usage allows, or by using as little input as output production requires [...] Economic efficiency refers to the ability to select the optimal set of inputs to obtain a given level of output in the light of prevailing input prices" (p106). The following figure (Figure 6.1-2) illustrates the concept of technical and economic efficiency as developed by Farrell (1957).

Figure 6.1-2   An illustration of Farrell measure of technical efficiency (Farrell, 1957, p245)

...consider, for the sake of simplicity, a firm employing two factors of production to produce a single product, under the conditions of constant return to scale. Suppose that the efficient production frontier is known; that is the output that a perfectly efficient firm could obtain from any given combination of inputs. In the diagram above, the point P represents the inputs of the two factors, per unit of output that the firm is observed to use. The isoquant SS' represents the various combinations of the two factors that a perfectly efficient firm might use to produce unit output. Now, the point Q represents an efficient firm using the two factors in the same ratio as P. It can be seen that it produces the same output as P using only a fraction OQ/OP as much of each factor. It could also be thought of as producing OP/OQ times as much output from the same inputs. It thus seems natural to define OQ/OP as the <u>technical efficiency</u> of the firm P. This ratio... takes the value of unity (or 100 per cent) for a perfectly efficient firm, and will become indefinitely small if the amounts of input per unit output become indefinitely large.

However, one needs also a measure of the extent to which a firm uses the various factors of production in the best proportions, in view of their prices. In the diagram above, if AA' has a slope equal to the ratio of the best prices of the two factors, Q' and not Q is the optimal method of production; for although both points represent 100 per cent technical efficiency, the cost of production at Q' will only be a fraction OR/OQ of those at Q. It is natural to define this ratio as the price efficiency of Q.

If the observed firm were perfectly efficient, both technically and in respect of their prices, its cost would be a fraction OR/OP of what they in fact are. It is convenient to call this ratio <u>overall efficiency</u> of the firm, and one may note that it is equal to the product of the technical and price efficiencies.

6.1.3.1 Technical efficiency

Technical efficiency, also called X-efficiency (Leibenstein, 1966, 1980) is a form of efficiency that can be attributed neither to scale (level of output) nor to scope (output mix) effects (Berger et al, 1993). Berger et al (1993) defines X-efficiencies as "deviations from the efficient frontier"(p222). X-efficiencies come from better management practices resulting in lower costs or higher income. Recent research seems to conclude that X efficiencies dominate economies of scale and scope in

banking, and the biggest firms in the industry are usually found to be more X efficient than their smaller competitors, thus making up for possible diseconomies of scale (Goddard et al, 2001, p139). Indeed, Berger et al (1993, pp221-249) observed that even though researchers have typically focused more on the search for scale and scope efficiencies than for X-efficiencies, X-efficiencies appeared to be more significant. In a later review article, Berger and Humphrey (1997) reached the same conclusion. This means that managerial ability plays a more important role in explaining bank efficiency than the scale or scope of operations (economies of scale and scope account for around 5% of total costs but X-efficiencies accounted for up to 20% of total costs[386]). Berger and Humphrey's (1997) overview of previous bank efficiency research led them to the conclusion that the average cost curve of banking industries must be U shaped and relatively flat, medium sized firms being slightly more scale efficient than the largest or smallest bank, but there is no consensus regarding the most efficient scale of production. In addition, there is also no consensus as for the best method for estimating X-efficiencies. One major difficulty is to make the distinction between differences in X-efficiencies and random error, which may result in some institutions having temporarily high or low costs. Berger et al (1993) found that larger banks were usually more X-efficient than their smaller counterparts, thus possibly offsetting diseconomies of scale.

This has been confirmed by Altunbas et al (2001), in a study that used the Fourier flexible function and stochastic cost frontier methodology on European banking. Scale economies were found to represent from 5 to 7% of costs, well below X inefficiencies that represented around 20 to 25% of total costs. At this point, it becomes important to introduce the concept of economies of scale.

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[386] Berger and Humphrey (1997), reporting earlier work. See Berger et al 1993.

6.1.3.2 Economies of scale

The presence of economies of scale in an industry gives firms with a greater output a cost advantage over firms having a smaller output. According to a definition by Hunter and Timme (1986) "Economies of scale are said to exist when an equiproportional increase in all inputs results in a greater than proportional increase in output, or equivalently, when an increase in output at constant input prices leads to a less than proportional increase in total costs. Thus, average costs decline as output expands" (p152). This concept is best shown graphically, as in Figure 6.1-3.

Figure 6.1-3   Economies of scale
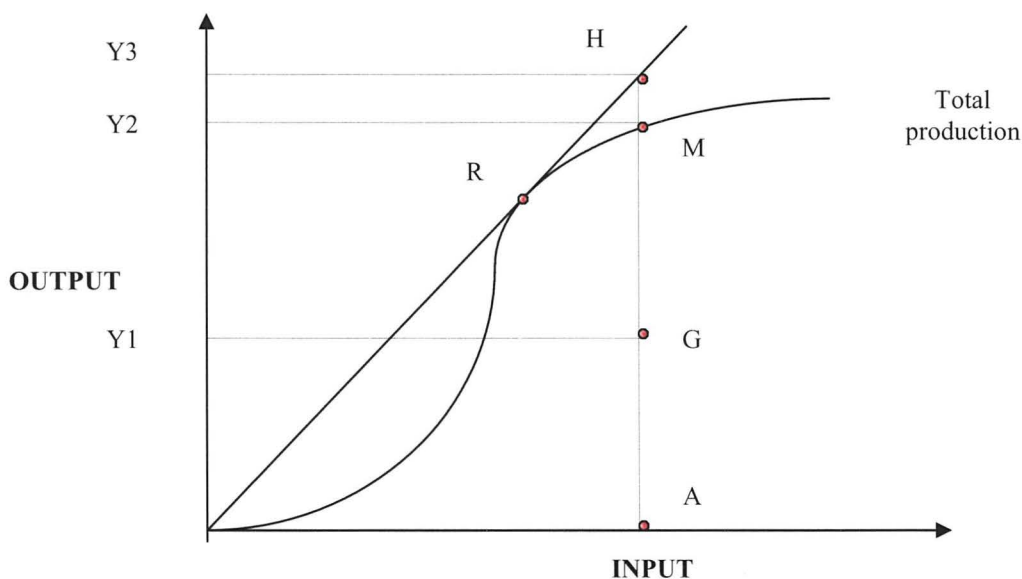
Source: Evanoff and Israelevich (1991, p15).

Figure 6.1-3 shows the case of a simple production process in which one output is produced with one input, when returns to scale are not constant. Up to point R, there are increasing returns to scale, in R constant returns to scale, and decreasing returns to scale beyond. The firm at point G is technically inefficient because it under uses its inputs. If it was technically efficient, its total product would be that produced by firm M with the same amount of input Y2. If there were no diseconomies of scale, the firm could be producing an amount Y3 of output. The amount Y3-Y2 is lost to diseconomies of scale.

Figure 6.1-4   Economies of scale
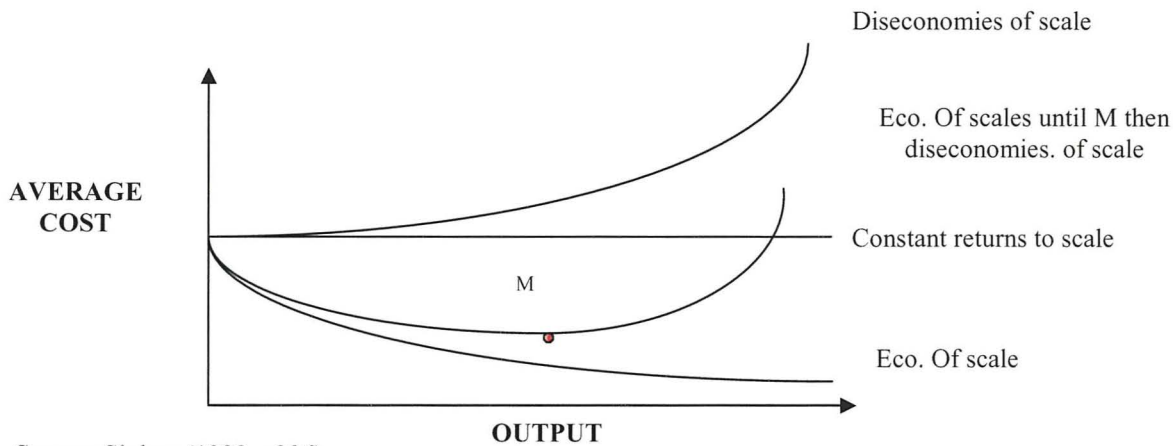
Source: Sinkey (1992, p306).

One can also study the presence of economies of scale by plotting the total output against the average cost of the product per unit of output as shown in Figure 6.1-4. If the average cost decreases when the total output increases, there are economies of scale. If the average price decreases up to a point and then increases again, there are economies of scale up to an optimal point (M) and then diseconomies of scale beyond. If the average cost remains the same independently of the level of output, there are constant returns to scale. If the average price increases constantly with the output, there are diseconomies of scale.

Humphrey (1985) notes a difference between branch and firm scale economies. In the case of the branch, increasing output means selling more services at the branch level. For large banking organisations, firm scale economies can differ in nature from branch (plant) scale economies. The banking firm itself can either add new services or add new branches and this can have a different impact on scale economies. The study of scale economies at the branch level assumes that output increases with no addition of branches, whereas at the firm level, it is assumed that the increase in output follows with a greater number of branches. The concept of economies of scale is usually associated with the concept of economies of scope, where cost reductions arise from the joint production of the output.

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Mercer Oliver Wyman (2005, p5) reckon that there are economies of scale in the field of wealth management. Thus, banks which are too small to directly benefit from economies of scale may either become part of a larger group to benefit from indirect economies of scale. Thus, the large bank may channel customers to its wealth management subsidiary and also allow it to benefit from its larger infrastructure (more products on offer, advanced IT infrastructure etc…). The other way to benefit from economies of scale is through outsourcing or selling competitors' products (i.e. "open architecture").

6.1.3.3 Economies of scope

If the cost of producing services A and B together is lesser than the sum of producing services A and B separately, there are economies of scope. More formally, Molyneux et al (1996)[387] note that if one considers two outputs, Q_1 and Q_2 with their separate cost functions $TC(Q_1)$ $TC(Q_2)$, if the joint cost of producing Q_1 and Q_2 is expressed by $TC(Q_1, Q_2)$, then economies of scope exist if (TC =Total Cost):

$$TC(Q_1, Q_2) < TC(Q_1) + TC(Q_2)$$

If this inequality is reversed, then there are diseconomies of scope. As a consequence, the degree of economies of scope can be measured as:

$$SCOPE = [TC(Q_1) + TC(Q_2) - TC(Q_1, Q_2)] / TC(Q_1, Q_2)$$

Gilligan Smirlock and Marshall (1984) and Gilligan and Smirlock (1984) found evidence of scope economies in banking considering the production of two outputs. Scope economies found ranged between 17% and 42% of total costs. Lawrence and Shay (1986) considered the production of three bank outputs but did not find much evidence of scope economies in banking firms. In other studies of economies of scope, no significant cost complementarities were found (such as in

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[387] Following Panzar and Willig (1975, 1981).

Murray and White, 1983, about Canadian Credit Unions or LeCompte and Smith, 1985, and Mester, 1987, about Savings and Loans institutions). Goldberg et al (1991) did not find any significant cost complementarities in the securities industry either.

In Benelux countries, many banks and insurance companies have merged to achieve economies of scope. Banks have the wide distribution networks insurers need, and selling insurance provides the non-interest income sought after in a competitive context where interest margins are excessively squeezed[388]. As a result between 1994 and 2000, the proportion of life insurance sold through banks increased from 20% to 40% (Murray, Sep. 3rd 2002, p4). This behaviour of Benelux banks may be justified by the existence of economies of scope in their markets (i.e. selling banking and insurance together is cheaper than selling those services separately. Banks selling both have a cost advantage). The last important concept to overview here is the concept of technical efficiency, which can be assessed when time series information on banks is available.

6.1.3.4 Technical progress

Technological progress can be measured along with economies of scale and scope once a production function has been defined. Technological progress embodies the efficiency gains obtained through the use of new technologies (particularly in terms of Information Technologies [IT]). The implementation of new technologies can reduce administrative costs, improve money flows (e.g. electronic treatment of cheques) and improve the decision making process, all of which translate into better cost efficiency. Technological change over a period can be measured by the variation in the position of the production function over that period while input prices and regulatory effects are kept constant (Mansfield, 1996, p264; Goddard et al, 2001

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[388] In banking, deregulation in the US and UE was followed by greater competition that resulted in lower interest margins (Goddard et al, 2001). This forced banks to try to increase their non-interest income from alternative sources such as private banking (Murphy, July 2000, p8).

pp163-165; Altunbas et al, 2001, pp1931-1955). Hunter and Timme (1986) note that technical change can be linked to economies of scale too, as the newest pieces of hardware may be too expensive for small entities to afford (p153). Thus, several technological change studies found larger banks to have been first to benefit from greater efficiency due to technological change (Hunter and Timme, 1991; McKillop et al, 1996; Maudos et al, 1996; Altunbas, 1999).

The existence of technical progress manifests itself by regular decreases in costs: Hunter and Timme (1991) found that US banks reduced their costs by 1% per annum on average from 1980 to 1986; Humphrey (1993) found similar results; Maudos et al (1996) found that operating costs fell 1.93% per annum in Spanish banking; Lang and Welzel (1996) found that costs fell by about 2.5% per year in German banks and that smaller banks were the greatest beneficiaries; Altunbas et al. (1999) measured the impact of technological change in 15 European countries from 1989 to 1996 and found cost reductions of 3.6% per year on average (banks operating in the largest economies were particularly benefiting from this effect). Beard et al (1997) conclude that even technological innovations able to significantly reduce costs are adopted very slowly (p723).

It is possible to study technical change in the field of offshore banking, but regulation in offshore banking markets tends to change very often, making the constant regulation assumption difficult to account for. The following section will discuss the main methods used to assess efficiency in banking.

6.1.4 Ratios vs. frontier methods

There are several possibilities to assess efficiency in banking. Some simple techniques involve the use of ratios and indexes (Caves et al., 1982). Ratios, however, tend to provide an incomplete picture of the production process as they do not help to

differentiate among the various sources of efficiency discussed above and fail to provide a model for the production process as a whole. Thus, Farrell (1957, pp253-281) noted that the average productivity of labour was a poor measure of efficiency as it does not take into consideration other inputs in the production process.

Berger et al (1993) summarise the limits of studies using simple financial ratios to examine bank efficiency as follows: "Financial ratios may be misleading indicators of efficiency because they do not control for product mix or input prices, implicitly, studies using a cost-to-asset ratio assume that all the assets are equally costly to produce and all locations have equal costs of doing business" (pp221-249). This makes Frontier Efficiency Techniques (FET) the method of choice for bank efficiency studies.

FETs are considered superior to simple ratio surveys in many ways. They allow control of product mix or input prices (Berger et al, 1993); they allow the decomposition of efficiency in technical efficiency or economies of scale or scope (Berger et al, 1993, p233); they take several inputs and several outputs into account at the same time (Thanassoulis, 2001); they remove the differences in input prices and exogenous market factors (Bauer et al, 1998). Most recent studies of bank efficiency have thus relied on FETs to survey the efficiency of financial intermediaries. Berger & Humphrey (1997) surveyed 130 such studies, but many more have been conducted. For the present study, the use of a FET thus appears to be the most adapted choice. The question is therefore to find out which method should be selected.

6.1.5 Choice of a method

Various techniques exist for the study of efficiency in banking and therefore, several choices will have to be made to select the most suitable technique for the current study. Efficiency can be assessed using statistical methods (Index Numbers,

Anova, T-test etc...) or one of two families of FET: parametric models (SFA, TFA or DFA), and non-parametric models (DEA or FDH). The use of a Frontier Model requires an understanding of the production process of banks and a choice concerning the inputs and outputs to be selected in the model. The type of function (either a cost, production or profit function) and the appropriate functional form (e.g. translog) are then selected to model the input/output relationship. Before discussing these models in details and choosing the most appropriate one, the inputs and outputs must be selected as these can influence the choice of FET. Figure 6.1-5 sums up the decision making process concerning the choice of a method for studying bank efficiency.

Figure 6.1-5   Choosing an empirical method for assessing bank efficiency

EMPIRICAL METHODS TO STUDY BANK EFFICIENCY

FRONTIER EFICIENCY TECHNIQUES (Requires a preliminary definition of the production process and the inputs and outputs to use)

STATISTICAL TECHNIQUES (Ratios, T-test, Anova…)

PARAMETRIC	NON-PARAMETRIC (DEA or FDH)

Select the efficiency concept to study (e.g. alternative profit efficiency)

Choose functional form (e.g. Fourier Flexible)

Choose parametric method (e.g. SFA)

Source: author, based on various sources

6.2 Choice of inputs and outputs

The choice of bank inputs and outputs is subject to the researcher's goal (Sealey and Lindley, 1977). In the present case, the goal is to assess how efficient banks serving the offshore banking market are, at producing offshore banking services. This is achieved by measuring the efficiency of a production process by comparing the amount of input it uses to the amount of output it produces. Any study of bank efficiency must therefore start with a choice of inputs and outputs to model the production process. As a preliminary for a study of offshore bank efficiency, a definition of the production process of offshore banks, must be decided before deciding which inputs and outputs to use in order to model this production process.

6.2.1 Defining the production process

According to Benston, Hanweck and Humphrey[389] (1982) definitions of bank output are subjective and little consensus exists: "Economists who are concerned with economy-wide (macro) issues tend to view the bank's output deposits (in US$) or loans. Monetary economists see banks as producers of money-demand deposits. Others see banks as producing loans, with demand and time deposits being analogous to raw materials" (p214). Thus, the definition for banking business depends on the goal pursued in studying bank efficiency. While investigating the raison d'être of offshore banks, it can be assumed that offshore banks are set up for profitability reasons. The current study is therefore aiming at determining how good offshore banks are at generating profits. Nevertheless, looking at previously used definitions of banks' inputs and outputs can help find a definition specific to the research goal pursued here.

For Campbell & Kracaw (1980), financial intermediaries create value by making financial markets more efficient and by producing information concerning the value of investments. This definition is quite familiar when it comes to financial intermediaries in general. However, this definition is of little help in the present context because it is too general.

Most of the work previously undertaken in the bank efficiency field rests on definitions of banking such as 'a bank is an institution whose current operations consist in granting loans and receiving deposits from the public' (Freixas and Rochet, 1997, p15[390]). Bank activities are typically described as: offering access to payment systems, transforming assets, managing risks, processing information and monitoring borrowers (Freixas and Rochet, 1997, p15).

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[389] In Aly et al (1990)
[390] In Goddard et al (2001, p101)

While looking at offshore banks, this definition is made incomplete by the fact that it does not take private banking (managing investments on behalf of their wealthy customers) into account. This is problematic as private banking is at the core of offshore banking business. However, offshore banks also offer access to a payment system (worldwide, without constraints and with discretion), take deposits (more or less of this activity depending on the bank), transform assets (e.g. deposits into loans at least to some extent), manage risks (on and off balance sheet), process information and monitor borrowers (worldwide, with risk and return optimisation as a sole constraint).

Bencivenga & Smith (1991, pp195-209) have provided more specific details in the following list of activities performed by banks: "banks accept deposits from and lend to large numbers of agents. The law of large numbers operates to make withdrawal demand fairly predictable; banks hold liquid reserves against predictable withdrawal demand; banks issue liabilities that are more liquid than their primary assets; banks eliminate (or reduce) the need for self-financing of investments. In particular, by providing liquidity, banks permit risk-adverse savers to hold bank deposits rather than liquid (but unproductive) assets. The funds banks obtain are then available for investment in productive capital" (p195).

Offshore banks provide all these services, but again, this definition does not take the private banking business into account. Using such a definition to study offshore banks, one would find a bank using resources to produce private banking services to be less efficient than if it was devoting its resources strictly to non-interest business. To avoid this, a new definition must be crafted to take into account the non-interest business side of offshore banks such as: offshore banks primarily take deposits from non residents and lend money abroad, offer a means of payment, while

providing investment and other services they can legally provide for a fee or a commission. Therefore, a model reflecting these production processes must be determined.

6.2.2 Production vs. intermediation approach

The identification of the outputs and inputs of financial intermediaries has always been somewhat problematic. In this context, two main approaches have emerged, the "intermediation approach" and the "production approach"[391], which have served as a basis for most bank efficiency studies using FETs.

According to Karapakis et al. (1994) "the production approach measures outputs by the number of accounts and considers only operating costs. The production approach considers banks as firms using capital and labour to produce deposits and loans accounts. In contrast, the 'intermediation approach' asserts that banks collect deposits and purchased funds, with the assistance of labour and capital, and intermediate these funds into loans and other assets. It measures outputs by the dollar value of accounts and considers both operating and interests costs. Conceptually, the latter approach seems more appropriate when the sample contains large banks, which fund a larger share of their assets from non-deposit sources" (Karapakis et al., 1994, p880). Thus, the intermediation approach sees banks as firms intermediating funds between savers and investors (Humphrey, 1985, p104)[392].

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[391] Leightner and Lovell (1998, p121) mention that the "Intermediation approach" is also known as the "asset approach" and that the "production approach" is also known as the value "added approach".

[392] Isik and Hassan (2002, p13) thus list the inputs and outputs in the intermediation approach: "…[they] use three inputs 1) labour: the number of full time employees on the payroll 2) capital, the book value of premises and fixed assets and 3) loanable funds: the sums of deposits and non-deposit funds. [and the following outputs] 1) short-term and 2)long-term loans: the loans with less than and more than a year maturity, respectively 3) risk-adjusted off-balance sheet items: guarantees and warranties (letters of guarantee, bank acceptance, letters of credit, guaranteed pre-financing endorsements and others), commitments, foreign exchange and interest rates transactions as well as other off-balance sheet activities and 4) other earnings assets: loans to special sectors (directed and specialised loans) inter-banks funds sold and investment securities (treasury and other securities)".

Both approaches have their strengths and weaknesses. The production approach may be best suited to study the efficiency of bank branches since they process customer information for the institution without being involved in the funding and investment decision. When surveying an institution as a whole, however, the intermediation approach appears preferable because it takes interest expenses into account and is better suited to survey the relation between frontier efficiency and profitability since minimisation of total costs (rather than just production costs) is needed to maximise profits (Berger and Humphrey, 1997)[393].

Other less common approaches have been developed (Casu, 2000): in the 'asset approach' proposed by Sealey and Lindley (1977), banks are intermediaries between depositors and creditors, and the output is expressed in terms of loans and other assets; in the 'value added approach' proposed by Berger and Humphrey (1992) the factors having the greatest added value are used as outputs. Deposits and loans can then both be considered outputs in this approach. In the 'user cost approach' proposed by Hancock (1985), input or output classification is made depending on the contribution to bank revenue.

6.2.3 An approach adapted to offshore banking

After reviewing the various approaches developed for the study of bank efficiency, the most suitable approach to the study of offshore bank efficiency must be selected.

Choosing the production approach and considering the deposit and loan accounts (whose numbers and amounts are unavailable for offshore banks) as the output for computing bank efficiency with capital and labour as an input is

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[393] For example, Altunbas et al (2001) used the intermediation approach for their study of European banking. They took labour, physical capital and deposits as inputs and total loans, total securities and off-balance sheet items as outputs. They also include the level of equity capital to adjust for risk.

problematic. For example, if two banks use the same amount of capital and labour but are focusing on different activities (one on private banking with little loan and deposit business and the other focusing on the loan and deposit business), the bank involved in private banking will necessarily seem less efficient. The efficiency measure should not be a measure of how much loan and deposit business offshore banks have. Similarly, the asset approach is not satisfying either, for the same reason (only taking into account the loan and deposit business). The value added approach has potential, but in the present case, total funds under management would have to be included, yet typically, these amounts are not disclosed. The user cost approach is flawed in the same way. The intermediation approach, also fails to take into account the existence of the private banking business.

Private banking is not easy to trace in the bank accounts (it is essentially an off-balance sheet activity), except in the shape of fees and commissions reported in the income statements. One can therefore assume that the more private banking a bank undertakes, the higher its fee and commission income should be. On the other hand, the more it restricts its activities to the retail and mass affluent markets the greater its interest based revenues should be. Therefore it is feasible to use net non-interest income and interest income as proxies for offshore bank output. As far as input use is concerned, serving the offshore banking market requires the same basic inputs as in standard commercial banking, but in different quantities. In the course of its production process the bank uses manpower, office space, IT and other resources all reflected in the operating costs. The bank also needs financial capital to cover potential losses and ensure the safety of the banking operations. In this context, two studies are of particular interest for the input and outputs they used in some form of intermediation approach.

Goldberg et al (1991), used labour costs and rental space costs as inputs in a cost function to study economies of scale and scope in the securities industry. They used various sorts of non-interest income (revenue from brokerage operations, revenue from underwriting and capital, revenue from account supervision) as outputs. Leightner and Lovell (1998) also used "net interest income" and "net non-interest income" as outputs in their study about Thai banking, while using "personnel expense", "premise and equipment expense", "provision for possible loan loss" as inputs. About this approach, they added that "in contrast to using quantity-based outputs, using income-based outputs produces an analysis which is closer to the profit-maximising goal of banks" (p123). The approaches used by Goldberg et al (1991) and Leightner and Lovell (1998) seem to be the most adapted to a study of offshore banking. Thus, offshore banks use labour and other resources (marketing, IT, outsourcing costs,) to produce either banking services or private banking services in varying quantities. The input mix and output mix will vary depending on the main focus of the bank's business (deposit taking or private banking).

While taking net interest income and net non-interest income as in those studies does not pose any particular problem and accounts for the two main business activities of offshore banks, the input side appears more problematic, particularly because in the present sample of offshore banks, the cost of premises and details of labour costs are not available for all banks. Selecting labour costs would reduce the size of the usable sample to 1308 observations for the OFCs outside Hong Kong, Switzerland, Luxembourg and Singapore (Group 2). Using overheads instead of labour costs could account for both labour costs and costs of premises involved in the production of banking services and would leave 2036 usable observations for the

OFCs of Group 2 instead. Costs of deposits will also be included as an input as a particular cost incurred in the production of interest income.

Now that the production process has been defined and that the inputs and outputs have been selected, we need to choose the most suitable method for the estimation of efficiency in offshore banking.

6.3 Choice of a frontier model

Studies in the field of bank efficiency have been focusing on the search for a best practice frontier for more than 20 years. These methods aim at obtaining a theoretical "best practice" frontier for a given banking sector. With a best practice frontier, for each bank, it is possible to compute the ratio of its actual efficiency to the efficiency that a perfectly efficient bank operating at the frontier would display (Coelli, 1996). Five main techniques of frontier efficiency estimation have been in use over the last twenty years: parametric techniques such as Stochastic Frontier Analysis (SFA), Distribution Free Approach (DFA) and Thick Frontier Approach (TFA) and non-parametric techniques such as Data Envelopment Analysis (DEA) and Free Disposable Hull (FDH).

Both families of techniques have their strength and weaknesses. As Berger and Mester (1997) note, while parametric models allow for the study of cost or profit efficiency, nonparametric models are more useful for the estimation of "technical efficiency" or the efficiency of the production process. It is important to carefully choose what method to employ, as the choice of method can have an impact on the results. Thus, when EFA, TFA or DFA is applied, average inefficiencies found typically represent between 20-25% of costs, whereas with the DEA, there is more

dispersion with results ranging between 10% and 50% of total costs (see Berger et al, 1993; Berger and Humphrey, 1997; Goddard et al, 2001).

6.3.1 Non-parametric models (DEA, FDH)

Data Envelopment Analysis (DEA) is one of the most used methods for assessing efficiency in the banking sector. Among the studies surveyed by Berger and Humphrey (1997), 58 used DEA as a main or secondary method for investigating financial firm efficiency, while only five studies used the Free Disposable Hull approach (FDH). FDH is as a special case of DEA and both use linear programming techniques to estimate efficiency scores. None of these methods require the specification of an underlying cost or profit functional form (as is the case in the parametric approach).

6.3.1.1   DEA

Farrell (1957) developed the DEA concept to help economic theorists and policy makers elaborate the efficient production features of firms. Charnes Cooper and Rhodes (1978) enhanced the concept by designing it as a linear programming problem. According to a definition by Berger and Humphrey (1997) "DEA is a linear programming technique where the set of best-practice frontier observations are those for which no other decision making unit or linear combination of units has as much or more of every outputs (given inputs) or as little or less of every input (given outputs). The DEA frontier is formed as the piecewise linear combination that connects the set of these best-practice observations, yielding a convex production possibility set" (p5).

DEA works as a benchmarking tool to compare the efficiency of organisations producing the same types of outputs with the same type of resources (Thanassoulis, 2001). The process starts with the choice of the "unit of assessment", an entity to be compared to other entities of the same type, also called "Decision Making Units"

(DMUs), and with a decision to define the inputs used and the output produced. The goal is to estimate the potential for a unit to produce more using the same outputs, or to produce the same outputs with fewer inputs. Emrouznejad (2001) provides an interesting illustration of the way in which DEA works (see Figure 6.3-1).

Although relatively straightforward to estimate, DEA has some important limitations. Sturrock (1957) commenting on Farrell's work, points out that linking the best results poses problems, as businesses have good and bad years, and thus may have results exceptionally above or below average at some point. These results do not correspond to a good level of efficiency but to an exceptional situation. To make the model more practical Sturrock (1957) suggests taking the average of the best 10 or 20% as a benchmark.

The fact that random error is not taken into account usually results in substantial dispersion in the efficiency estimates by comparison with parametric models. Colwell and Davis (1992) notes that DEA estimates can be unduly influenced by outliers because variations due to random factors are accounted for as inefficiency (a company having a very favourable environment will therefore be measured as more efficient). Not allowing for random error appears to be the DEA's main flaw.

6.3.1.2 Free Disposable Hull (FDH)

The Free Disposable Hull approach (FDH) was introduced by Deprins et al (1984). According to Berger and Humphrey (1997) FDH represents a special case of DEA in which the points on lines connecting the DEA vertices are not taken in the frontier. FDH abandons the hypothesis of a convex production possibility set. Its use in the field of bank efficiency has been quite marginal. FDH has been far less used for the study of bank efficiency than SFA or DEA.

Emrouznejad (1995) see http://www.deazone.com/tutorial/graphical.htm

Figure [6.3-1] shows a set of units P1, P2... P6 with each unit consuming the same amount of a single resource and producing different amounts of outputs, y1 and y2as shown. For a given amount of resource input, units providing greater amounts of the outputs will be the efficient ones. Applying the DEA approach to this set of units will identify units P1, P2, P3 and P4 as efficient and they provide an envelope round the entire data set units P5 and P6 are within this envelope and are inefficient. The data envelope has been notionally extended to the axes by the lines P1y2' and P4y1' to enclose the data set. For unit P5 the peer group consists of the units P1 and P2 and a set of targets for P5 is provided at P5'. These targets are obtained by a pro rata increase in the outputs of unit P5. Clearly there are other possible targets for P5 and for example if the output level Y2 could not be increased for P5 then a target P5'' could be set which would rely entirely on increasing output y1. For unit P6 the pro rata increase leads to the set of targets P6'. However P6' is clearly dominated by P4 which produces the same amount of output y1 but more output y2. In this case the pro rata increase needs to be supplemented by a further increase in the output of y2 to provide an efficient target. Returning to unit P5 the set of targets P5 can be obtained from a weighted average of the peer units P1 and P2. Thus P5 can be thought of as a composite unit made up of a weighted average of the peer units and this composite unit provides a target for the inefficient unit.

Figure 6.3-1   The data envelope in DEA (Emrouznejad, 1995)[394]

[394] see http://www.deazone.com/tutorial/graphical.htm
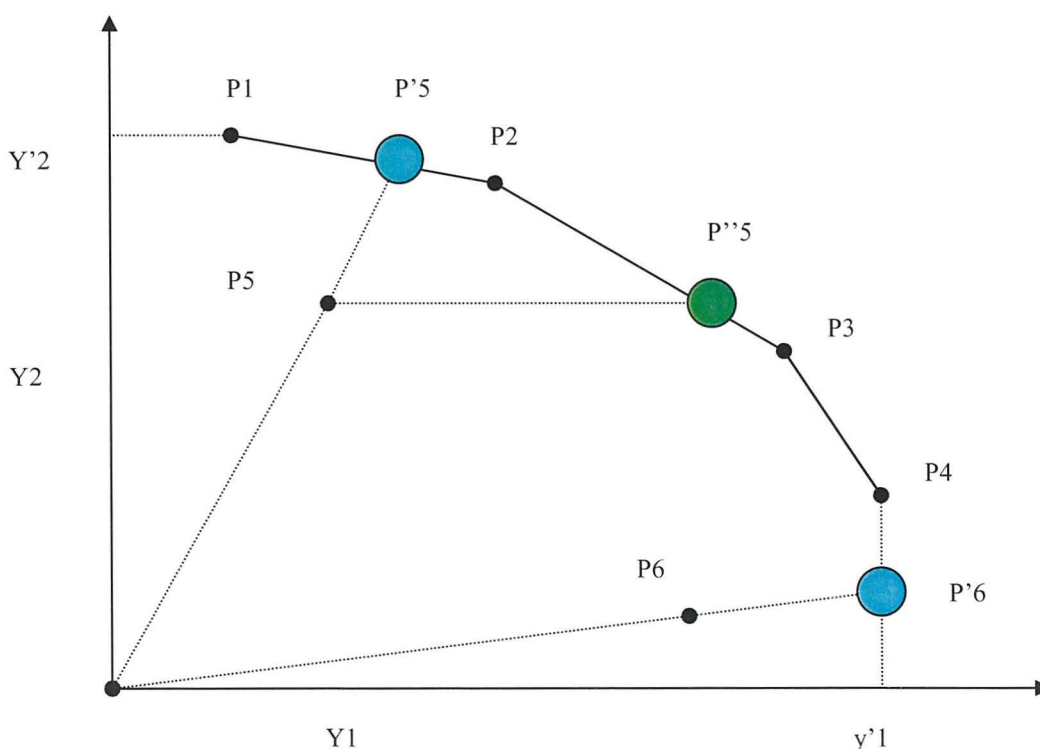
6.3.2 Parametric models (SFA,DFA,TFA)

The Stochastic Frontier Approach (SFA), Distribution Free Approach (DFA) and Thick Frontier Approach (TFA), are parametric approaches. The main characteristic of parametric approaches is that they aim to fit a specific functional form to the efficient frontier.

Parametric models are similar to non-linear forms of regression analysis, with the main difference being that whereas the regression function is being fitted to the mean of the data, in the case of parametric frontier models, the function is fitted to the best practice frontier. These techniques consider that deviations from the frontier thus defined are either due to inefficiencies or to random variations due to sampling errors, or uncontrollable factors beyond the control of the firms' managers and thus not due to inefficiencies as such. These methods differ in the way they differentiate random noise from inefficiency. As Berger and Mester (1997) stress, it is important to first choose the efficiency concept before choosing the parametric approach. In order to choose a parametric approach it is necessary to:

i.   Find the relevant efficiency concept (e.g. cost or alternative profit efficiency)

ii.   Choose the functional form to be used (e.g. Translog or Fourier Flexible)

iii. Choose a method to differentiate random error and inefficiency (SFA, DFA, TFA)

The following sections will now introduce various efficiency concepts, and various non-parametric approaches.

6.3.2.1   Choice of the efficiency concept

Berger and Mester (1997, pp896-897) examined why bank efficiency studies differed in their results when focusing on the same banking market. They tackled the

problem by applying several methods and concepts to the US banking market. The three concepts surveyed were: cost efficiency, standard profit efficiency and alternative profit efficiency. The methods used were DFA and SFA (Fourier Flexible vs. Translog). They found that the choice of the concept of efficiency seemed to be the most important factor explaining the differences in measured efficiency, while the method used was of lesser importance. However, they stressed that every concept provided specific information. Berger and Mester (1997) define these concepts in the following ways: Cost efficiency measures "how close a banks' cost is to what a best-practice banks' cost would be for producing the same output bundle under the same conditions" (p898); the standard profit efficiency measures "how close a bank is to producing the maximum possible profit given a particular level of input prices and output prices (and other variables)" (p900); and the alternative profit efficiency measures "how close a bank comes to earning maximum profits given its output levels rather than its output prices" (p901). Thus, it is critical to choose the right concept of efficiency according to the assumptions[395] underlying these concept and according to what is being measured (Färe et al, 1990; Mullineaux, 1978).

The profit function differs essentially from the cost function in that it specifies variable profits rather than variable costs and considers variable output prices as given. Therefore, the profit dependent variable takes revenues into account that can be earned by varying inputs or outputs. As output prices are exogenous, it allows for inefficiencies in the choice of outputs (Berger and Mester, 1997; Berger and Humphrey 1997). The concept of "alternative profit efficiency" can be used when some of the assumptions underlying the two other concepts are not met, such as (Berger and Mester, 1997, p902):

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[395] According to Mullineaux (1978), the assumptions for the profit function are: "(1) firms are profit maximising; (2) firms are price takers in both output and variable input markets: and (3) the production function is concave" (p260). Färe et al (1990) note that all firms are not necessarily profit maximising.

(i)   There are substantial unmeasured differences in the quality of banking services

(ii)   Every output scale and product mix is not achievable

(iii) Output markets are not perfectly competitive, and banks have some market power

(iv)   Output prices are not accurately measured, so they do not provide accurate guides to opportunities to earn revenues and profits in the standard profit function.

The alternative profits approach also has the advantage of taking into account the fact that higher quality output can generate more income. Thus, it can be used for highly segmented markets where customers pay for higher quality, where a cost function would rate a bank as inefficient just because its costs are higher, irrespective of the fact that these higher costs may be compensated by higher revenues[396].

The alternative profit efficiency approach is also the most appropriate choice in cases where banks have some market power in the setting of output prices[397]. It measures banks' abilities to optimise their prices and service quality and how able they are to maintain prices low for a given output level. It also takes into account bank's ability to exploit market power, which makes it very different from other efficiency concepts (Berger and Mester, 1997). The main efficiency concepts are summarised in the following box diagram.

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[396] Berger and Mester (1997) note that differences in output quality may also be partially captured in the standard profit function. However, since it holds output prices fixed, the standard profit function is less able to account for differences in revenue that compensate for differences in product quality, since these revenue differences may be partly reflected in measured prices. Berger et al. (1997a) found that both standard and alternative profit efficiency helped control for differences in service quality in property-liability insurance industry (p902). See also Berger et al (1997).

[397] Berger and Mester (1997, p903) "Under conditions of market power, it may be appropriate to consider output levels as relatively fixed in the short run and allow for efficiency differences in the setting of prices and service quality. That is, an optimising bank will set each of its prices at the point where the market just clears for its output and choice of service quality. Such a bank will also choose an optimising service quality niche".

Cost efficiency

According to Berger and Mester (1997 p898), a cost function can be expressed as: $C = C(w, y, z, v, u_C, \varepsilon_C)$ (1)

Where C measures variable costs, w is the vector of prices of variables inputs, y is the vector of quantities of variable outputs, z indicates the quantities of any fixed netputs (inputs or outputs) [...] v is a set of environmental or market variables that may affect performance, u_C denotes an inefficiency factor that may rise costs above the best-practice level, and ε_C denotes the random error that incorporates measurement error and luck that may temporarily give banks high or low costs [...] To simplify the measurement of efficiency, the inefficiency and random terms u_C and ε_C are assumed to be multiplicatively separable from the rest of the cost function and both sides of (1) are represented in natural logs" (p898).

$$\text{Ln } C = f(w, y, z, v) + \ln u_C + \ln \varepsilon_C \text{ (2)}$$

"Where f denotes some functional form. The term $\ln u_C + \ln \varepsilon_C$, is treated as a composite error term, and the various X-efficiency measurement techniques [...] differ in how they distinguish the inefficiency term, $\ln u_C$, from the random error term, $\ln \varepsilon_C$. We define the cost efficiency of bank b as the estimated cost needed to produce bank b's output vector if the bank were as efficient as the best-practice bank in the sample facing the same exogenous variables (w, y, z, v) divided by the actual cost of bank b, adjusted for random error, i.e.,

$$\text{Cost EFF}^b = \frac{\hat{C}^{\min}}{\hat{C}^b} = \frac{\exp[\hat{f}(w^b, y^b, z^b, v^b)] \times \exp[\ln \hat{u}_C^{\min}]}{\exp[\hat{f}(w^b, y^b, z^b, v^b)] \times \exp[\ln \hat{u}_C^b]} = \frac{\hat{u}_C^{\min}}{\hat{u}_C^b} \text{ (3)}$$

Where $\hat{u}_C^{\min}$ is the minimum $\hat{u}_C^b$ across all banks in the sample" (pp898-899). Thus, if Cost EFF is 0.8 for a bank, it means that it is 80% efficient and consequently wastes 20% of its costs by comparison with another bank operating in the same conditions. This ratio ranges between 0 and 1 and reaches 1 for the best practice banks.

Standard profit Efficiency

The standard profit function in log form is:

$$\ln(\pi + \theta) = f(w, y, z, v) + \ln u_\pi - \ln \varepsilon_\pi \text{ (4)}$$

where π is the variable profits of the firm, which includes all the interest and fee income earned on the variable outputs minus the variable costs, C, used in the cost function; θ is a constant added to every firm's profits so that the natural log is taken of a positive number ; p is the vector of prices of the variable outputs; $\ln \varepsilon_\pi$ represents random error; and $\ln u_\pi$ represents inefficiency that reduces profits. We define standard profit efficiency as the ratio of the predicted actual profits to the predicted maximum profits that could be earned if the bank was as efficient as the most efficient bank in the sample, net of random error, or the proportion of maximum profits that are actually earned:

$$\text{Std } \pi \text{ EFF}^b = \frac{\hat{\pi}^b}{\hat{\pi}^{\max}} = \frac{\{\exp[\hat{f}(w^b, p^b, z^b, v^b)] \times \exp[\ln \hat{u}_\pi^b]\} - \theta}{\{\exp[\hat{f}(w^b, p^b, z^b, v^b)] \times \exp[\ln \hat{u}_\pi^{\max}]\} - \theta} \text{ (5)}$$

where $\hat{u}_\pi^{\max}$ is the maximum value of $\hat{u}_\pi^b$ in the sample[398]" (pp899-900). A standard profit efficiency of 0.8 means that the bank loses 20% of its potential profits to inefficiency. However, profit efficiency can be negative as profits can be negative.

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[398] The profit efficiency does not simplify to a ratio of u_π' as in the case of cost efficiency because the addition of θ to the dependent variable before taking logs means that the efficiency factor is not exactly multiplicatively separable in the profit function. A bank's efficiency will vary somewhat with the values of the exogenous variables. In this study, the efficiency estimates will be derived from averaging the values of the numerator and denominator in (5) over the sample period before dividing to measure the average efficiency of the bank over the period.

Alternative profit Efficiency

The alternative profit function in log form is:

$$\ln(\pi + \theta) = f(w, y, z, v) + \ln u_{a\pi} - \ln \varepsilon_{a\pi} \qquad (6)$$

Which is identical to the standard profit function in (3) except that y replaces p in the function, f, yielding different values for the inefficiency and random error terms, $\ln u_{a\pi}$ and $\ln \varepsilon_{a\pi}$, respectively. As with standard profit efficiency, alternative profit efficiency is the ratio of predicted actual profits to the predicted maximum profits for a best practice bank:

$$\text{Alt } \pi \text{ EFF}^b = \frac{a\hat{\pi}^b}{a\hat{\pi}^{\max}} = \frac{\{\exp[\hat{f}(w^b, y^b, z^b, v^b)] \times \exp[\ln \hat{u}_{a\pi}^b]\} - \theta}{\{\exp[\hat{f}(w^b, y^b, z^b, v^b)] \times \exp[\ln \hat{u}_{a\pi}^{\max}]\} - \theta'} \qquad (7)$$

In the case where output price data contains inaccuracies, "the predicted part of the standard profit function f in (4) would explain less of the variance of profits and yield more error in the estimation of the efficiency term $\ln u_\pi$. In this event, it may be appropriate to try specifying other variables in the profit function that might yield a better fit, such as the output quantity vector, y, as in the alternative profit function" (p904). Berger and Mester (1997) also argue that the alternative profit function may be better in cases in which there are large discrepancies among the banks of the sample as it reduces the scale bias present in the standard profit efficiency measure.

Berger and Mester (1997) compared the difference in efficiency measured applying three different efficiency concepts to the same set of data. They found that standard and alternative profit efficiency were positively and significantly correlated with each other. However, cost efficiency was uncorrelated with profit efficiency and negatively correlated with alternative profit efficiency. They also found all three efficiency measures to be significantly and positively correlated with the ROE and ROA of the banks observed. Thus, banks which are cost efficient are not necessarily

profit efficient, but in general, the more efficient a bank is, and the more profitable it is[399].

6.3.2.2   Choice of a functional form for parametric methods

In the case of parametric methods, it becomes necessary to decide the functional form f to use to estimate the efficient frontier. Early bank efficiency studies relied on Cobb Douglas functions (see Bell and Murphy, 1968). The Cobb Douglas function typically expresses the production of one output (Q) as a function of two inputs (Usually labour 'L' and capital 'K'). The function takes the following form (Mansfield, 1996, p249):

$$Q = aL^b K^c \ (Equation\ 1)$$

In this situation, the marginal productivity of labour can be expressed as:

$$\frac{\partial Q}{\partial L} = baL^{b-1} K^C \ (Equation\ 2)$$

By expressing equation 1 in logged form, one obtains:

$$\log Q = \log a + b \log L + c \log K \ (Equation\ 3)$$

The coefficients b and c can be determined using regression techniques. Estimating returns to scale: if $b+c > 1$, then there are increasing returns to scale. If $b+c = 1$ there are constant returns to scale, and if $b + c < 1$, there are decreasing returns to scale. The main limitation of this approach is that it cannot estimate U shaped production/cost relationships. Due to these limitations of the Cobb Douglas approach, the literature adopted the Translog Cost function.

Murray and White (1983) for instance, used a Translog cost function to study the existence of economies of scale and scope in British Columbia credit Unions. They found that the Translog cost function was more appropriate than a Cobb

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[399] Altunbas Evans and Molyneux (2001) apply the three concepts in an efficiency study of the German banking market viewing the impact of ownership on efficiency.

Douglas function. The latter can only produce monotonically increasing or decreasing average cost curves, and returns to scale have to be assumed constant with these functions and allows for entering "various outputs as separate variables" (p889).

The Translog functional form has been a common choice in later banking efficiency literature, but studies like those of McAllister and McManus (1993) and Mitchell and Onvural (1996) suggest that other functions may provide a better fit to the data. A successful solution has been to add several 'Fourier' trigonometric terms to the translog, in order to be able to model any cost or profit function. The Fourier Flexible (FF) has been satisfyingly used in several studies of the US[400] and European (such as Altunbas et al 2001a) banking sectors. The translog represents a special case (as it is in fact nested) within the FF.

6.3.2.3 Stochastic Frontier Approach

The Stochastic Frontier Approach (SFA, also called the Economic Frontier Approach or EFA) "specifies a functional form for the cost, profit or production relationship among inputs, outputs and environmental factors and allows for random error" (Berger and Humphrey 1997, p6). The SFA was developed independently by Aigner, Lovell and Schmidt (1977) and Meeusen and Van den Broeck (1977) and has often been used in the field of bank efficiency studies, e.g. 23 of the 130 studies investigated by Berger and Humphrey (1997) used the SFA.

With this approach, a bank is regarded as inefficient if its costs are higher than what the cost function predicts (for a given input/output combination), or if its profits are lower than what the profit function predicts (for a given input/output combination), after adjustment for random error. In the case of the cost frontier, a cost function is estimated with a composite error term, made of a two sided error term

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[400] Berger and Humphrey (1997) mention the following attempts: Berger Cummins and Weiss (1996); Berger and DeYoung (1996); Berger Leusner and Mingo (1996), Berger and Mester (1997).

representing random fluctuation and a one sided error term representing inefficiency. Following Aigner et al (1977), the stochastic cost function is:

$$TC = TC(y_i, w_i) + \varepsilon_i$$

Where TC is the observed total cost, y_i a vector of output and w_i an input-price vector. The error of the cost function is $\varepsilon = u + v$, where u and v are independently distributed; u is assumed to follow a half normal distribution and $u = N(0, \sigma_u^2)$ is a positive disturbance capturing the effects of inefficiency; v is assumed to be distributed as two-sided normal with zero mean and variance, with σ_v^2 capturing the effects of statistical noise.

The random error term v stands for random uncontrollable factors while u stands for individual firm deviations caused by managerial factors like technical and allocative inefficiency. This method makes it possible to focus on controllable factors in an efficiency study, thus excluding exogenous events affecting financial institutions (See Cebenoyan et al, 1993).

Aigner, Lovell and Schmidt (1977,) justify this separation of the error term of the cost function as follows: "The economic logic behind this specification is that the production process is subject to two economically distinguishable random disturbances, with different characteristics. We believe that there is ample precedent in the literature for such a point of view although our interpretation is clearly new. And from a practical standpoint, such a distinction greatly facilitates the estimation and interpretation of a frontier. The non-positive disturbance u_i reflects the fact that each firms' output must lie on or below the frontier. Any such deviation is the result of factors under the firm's control, such as technical and economic inefficiency, the will and effort of the producer and its employees, and perhaps such factors as

defective and damaged products. But the frontier can vary itself randomly across firms or over time for the same firm. On this interpretation, the frontier is stochastic, with random disturbances $v_i >=<0$ being the result of favourable as well as unfavourable external events such as luck, climate, topography and machine performance. Errors of observation and measurement on y constitute another source of $v_i >=<0$" (pp24-25).

The fact that SFA takes the stochastic properties of the data into consideration is its main advantage over non-parametric models as nonparametric models are unable to cope with statistical noise. Some developments in the field of non-parametric models have aimed at addressing this limitation (Karapakis et al, 1994).

6.3.2.4 Distribution Free Approach (DFA)

DFA is similar to the previously discussed SFA approach, except in the way random errors are treated. In this approach, it is assumed that efficiency differences remain stable over time while random errors average over time (Berger et al, 1993). As a result, the efficiency score obtained, measures the efficiency of firms over entire time periods. This method has the advantage of imposing no parametric structure for measuring inefficiency (Gardener and Grace, 1993). DFA was used in 19 of the 130 studies investigated by Berger and Humphrey (1997), and Berger and Mester (1997) prefer using DFA rather than SFA as they find that the assumption according to which inefficiencies are half normally distributed often does not seem to hold. The constraint for using DFA is that panel data must be available.

Berger and Mester (1997) describe the method as follows: "[DFA] assumes that there is a core efficiency or average efficiency for each firm over time. The core inefficiency is distinguished from random error (and any temporary fluctuations in efficiency) by assuming that core inefficiency is persistent over time, while random

errors tend to average out over time. In particular, a cost or profit function is estimated for each period of a panel data set. The residual in each separate regression is composed of both inefficiency, $\ln u$, and random error, $\ln \varepsilon$, but the random component, $\ln \varepsilon$, is assumed to average out over time, so that the average of a bank's residuals from all of the regressions, $\ln \hat{u}$, will be an estimate of the inefficiency term $\ln u$. For banks with very low or very high $\ln \hat{u}$, an adjustment (called truncation) is made to assign less extreme values of $\ln \hat{u}$ to these banks, since extreme values may indicate that random error, $\ln \varepsilon$, has not been completely purged by averaging. The resulting $\ln \hat{u}$ for each bank is used to compute its core efficiency" (p907).

6.3.2.5 Thick Frontier Approach

The Thick Frontier Approach was introduced by Berger and Humphrey (1991, 1992) based on the SFA. According to Berger et al (1993), "The thick frontier approach (TFA) assumes that deviations from predicted costs within the lowest average-cost quartile of banks in a size class represent random error, while deviations in predicted costs between the highest and the lowest quartiles represent X inefficiencies" (p228).

TFA was used in 15 of the 130 studies investigated by Berger and Humphrey (1997). The main attraction of TFA is the removal of a possible influence of outliers, although its main drawback is that it does not permit to attribute a specific efficiency score for a company in a particular year, making it unsuitable for firm-level benchmarking purposes. However, it can be used for investigating the efficiency of entire banking sectors over time (Al Jarrah, 2002). It is therefore unsuitable for the purposes of the present study of offshore bank efficiency as we wish to identify individual efficiency measures for banks on a year by year basis.

6.3.2.6 One step vs. the two step model

An interesting feature of the bank efficiency literature is that researchers have for some time estimated stochastic frontiers to predict the efficiency of banks, and then regressed these efficiency scores against predictors to explain the differences in efficiency levels. However, it has since been demonstrated that it is possible to obtain better results in a one stage process in which the predictors are included in the estimable model (Coelli, 1996; Kumbhakar and Lovell, 2000; Berger and Mester, 1997). Wang and Schmidt (2001) compared the one step and two step models, building on previous work[401] and found that the two step model was substantially biased. For this reason, they also advocated the use of a one step model.

According to Kumbhakar and Lovell (2000) "If efficiency varies, through producers or through time, it is natural to seek determinants of efficiency variation" (p10). Approaches such as those suggested by Reifschneider and Stevenson (1991) and Battese and Coelli (1995)[402] have incorporated explanatory variables in the inefficiency error component. Reifschneider and Stevenson (1991) justify the one step model in the following way: "If the occurrence of inefficiency is not totally random, then it should be possible to identify factors that contribute to the existence of inefficiency" (p715). In parametric models, the error term ε is decomposed into $u + v$, where u represents inefficiency and v random error. U is further decomposed into two components, one that can be predicted by a set of predictors and one which cannot be explained. In a two step model, factors that would have been explainable are discarded as part of the error term. Thus, a one step model is likely to provide more accurate results (Reifschneider and Stevenson, 1991; Coelli, 1996; Berger and Mester, 1997).

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[401] Such as Caudill and Ford (1993)
[402] Battese and Coelli (1995)

When using a parametric technique to assess offshore bank efficiency and to find the determinants of offshore bank efficiency, a one step parametric technique is the method of choice. The following part of this chapter assesses the merits of the respective concepts and methods overviewed previously in order to decide on the most appropriate method for the present study on offshore bank efficiency.

6.4 Measuring efficiency in offshore banking

The following sections will examine the method most suitable for studying efficiency in offshore banking after first having assessed the merits of the various techniques previously described.

6.4.1 Choosing a FET

Berger and Humphrey (1997) provide a summary of the advantages and disadvantages of both parametric and nonparametric types of efficiency measurement techniques. The main flaw of parametric techniques is to presuppose the general shape of the frontier by choosing a particular functional form. Thus, with the wrong type of function, specification error can be mistaken for inefficiency. Several studies have underlined the limits of the translog as a functional form[403] which forces the frontier to be symmetrical and U shaped. Nonparametric methods have the advantage of being less constraining in terms of structure as they do not imply the use of a functional form. The biggest flaw of nonparametric methods however, is that they do not take the effects of random error (i.e. data collection mistakes, measurement error, environmental factors) into account. Thus, nonparametric models do not make any distinctions between inefficiencies and random error (Berger and Mester, 1997; Berger and Humphrey, 1997). The data sample available for offshore banks is likely

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[403] See McAllister and McManus (1993) and Mitchell and Onvural (1996) cited in Berger and Humphrey (1997)

to contain substantial outliers (the high levels of standard deviation and dispersion found in chapter 5 in the balance sheet and income statement ratios for offshore banks indicates this possibility). It is vital to acknowledge the potential effects of external factors on the present sample. From this point of view, a parametric method would be of clear advantage. As the present study aims to find the determinants of offshore bank efficiency, a one step parametric model is advantageous as it includes various control and environmental variables in the estimation, which will help to account for variation in bank efficiency estimates. Recent parametric techniques have relied on the 'Fourier flexible functional form' adding Fourier trigonometric terms to a standard translog function[404]. This method helps to define frontiers in order to have a better fit to the data and has been widely used in recent bank efficiency research. Using the Fourier Flexible form would reduce the problems linked with the choice of a functional form.

According to Berger and Mester (1997), unlike nonparametric techniques, parametric techniques also have the advantage of taking pricing effects into account. Instead, nonparametric methods focus on technical efficiency, i.e. the effects of using more inputs than necessary or producing less output than possible. Nonparametric methods are not able to account for either allocative inefficiency coming from producing with the wrong mix of inputs, or for producing the wrong mix of outputs as such comparisons are not possible without knowledge of the relative prices of inputs and outputs. It is not possible to know whether the output produced is optimal without information concerning its value. Nonparametric techniques are therefore more appropriate for assessing technological optimisation rather than economic optimisation. In the case of offshore banking, this issue is of particular importance as

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[404] Berger and Humphrey (1997) mention the following attempts: Berger Cummins and Weiss (1996); Berger and DeYoung (1996); Berger Leusner and Mingo (1996); Berger and Mester (1997).

there can be a high degree of specialisation. In extreme cases, some offshore banks are strictly in the loans and deposits business while others work strictly with wealth management and barely take deposits nor grant loans. The present study is more concerned with economic optimisation (i.e. maximising profit) than with the concept of technical efficiency (i.e. production optimisation). This aspect would further advocate the use of a parametric technique. The use of a parametric technique therefore appears to be the most relevant method.

A choice must be made among the three parametric techniques already described. The efficiency measuring technique cannot be TFA because TFA does not allow to pinpoint an efficiency score for individual bank observations. The DFA approach is also unsuitable as it requires a relatively complete set of panel data. Unfortunately in the present case, few banks display complete data for the whole period. Choosing DFA would significantly reduce the number of bank observations available. As a consequence, SFA is the most appropriate methodological choice to adopt under the circumstances. SFA also appears to be the most used parametric technique to date.

The next step is to determine the optimum efficiency concept. Working on the assumption that offshore banks are profit maximising entities, the relevant concept would appear to be profit efficiency or alternative profit efficiency rather than the concept of cost efficiency. The concept of alternative profit efficiency may be particularly interesting for the following reasons. First, it takes output quality into account in a banking industry (essentially private banking) where extra quality can be produced (eventually at a higher cost) and delivered (eventually at a higher price), to maximise profits[405]. It also takes into account firm's abilities to exploit market power

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[405] According to Berger and Mester (1997, p908), output quality may be measured without using the alternative profit function, using variables reflecting output quality such as nonperforming loans or

(a bank is considered efficient in this concept if it takes advantage of its market power), in an industry where the existence of some market power may exist[406]. One more argument in favour of the use of an alternative profit function in the current case is the fact that this concept appears to be more suitable when there are significant discrepancies among the firms of the sample in terms of size which clearly is the case with the present sample of offshore banks (the largest bank is two million times larger than the smallest[407]).

Having chosen a parametric technique with an alternative profit function, it is now necessary to define the functional form.

6.4.2 Choice of functional form

As previously discussed, the main drawback of parametric models is the need for assumptions to be made concerning the shape of the frontier in order to choose a functional form. The use of the translog, which assumes that the frontier is U shaped, has been criticized in studies such as Mitchell & Onvural (1996), and McAllister & McManus (1993). McAllister & McManus (1993), note that the Translog is particularly ill-suited when the observations include substantial differences in bank sizes (which is the case for banks serving the offshore banking market). The use of the Fourier Flexible functional form in recent research (introduced by Gallant 1981) is seen as a way to address this problem. More recently, Berger and Mester (1997)

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loan losses. However, such variables may have endogenous causes (such as bad management) or exogenous causes (such as an economic crisis). In the case of offshore banks, loan quality may reflect only one part of the output (it says nothing of the non-interest business) and the influence of external shocks may be made difficult to account for because the links between a bank and the crisis that affected it may not be straightforward (a bank in an OFC may be affected by a crisis in a distant country). The alternative profit function seems the best way to account for output quality.

[406] E.g. the market shares of UBS and Credit Suisse in Switzerland, HSBC in Hong Kong, DBS in Singapore, the Isle of Man Bank in the Isle of Man and other 'local champions'. See Chapter 6, the largest banks operating in many OFCs have market shares exceeding 30%.

[407] The smallest bank, AB International Finance had total Assets of US$440,000 when it began operating. UBS had up to US$816 billion of assets in 2002.

report that the addition of the Fourier terms allow for a better fit of data for heterogeneous samples in comparison with the translog.

According to Mitchell and Onvural (1996) a Fourier series (a linear combination of sine and cosine functions) can be used to exactly represent any well-behaved multivariate function f(x) (cf. Dym and McKean 1972 ch.1). This is possible because the sine and cosine functions are mutually orthogonal and function space spanning. This allows the researcher unaware of the true form of a function to use Fourier series in order to avoid misspecifications. However, making an exact representation of a function may require a Fourier series with an infinite number of trigonometric terms. However, the coefficients of these terms can only be estimated in a data set with an infinite number of observations. The researcher must select a restricted number of terms to represent the function.

Given the aforementioned discussion, it was decided to adopt the 'alternative profit' function using the 'Fourier Flexible specification' (see Equation 1). Bank outputs are defined simply as 'net interest income' and 'net non interest income', while the inputs are 'the price of funds' (to account for the most important input in the loan/deposit activity) and 'price of labor and others'[408].

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[408] As a substantial amount of data is missing for the bank labor costs (particularly in small OFCs), bank overhead costs are used instead as a proxy to combine labor and non-financial capital costs.

Equation 1: Alternative profit function to be estimated in the study

Model based on Berger and Mester (1997, pp914-915)

Symbol	Definition
Dependent variables	
θ	The absolute value of the lowest value observed for profits (to add to π to avoid taking a ln of a negative figure when π is negative)
π	Variable profits, includes revenues from loans and securities less variable costs
Variable input prices	
p_1	Price of funds (Interest expense/earning assets)
p_2	Price of labour and others (overheads/assets)
Variable output quantities (cost and alternative profit functions only)	
y_1	Net interest income (Interest income – interest expenses)
y_2	Net non-interest income (sum of net trading income, net commission income, net fee income and other operating income)
Environmental variables (example of selection)	
NIM	Net interest margin as a proxy for competitive pressure (net interest income / earning assets)
GDP	GDP per inhabitant (logged) as a proxy for economic development

$$\ln[(\pi + \theta)/p_2] = \alpha + \beta_1 \ln(p_1/p_2) + \frac{1}{2}\beta_2 \ln(p_1/p_2)^2 + \sum_{k=1}^{2}\psi_k \ln(y_k) + \frac{1}{2}\sum_{k=1}^{2}\sum_{m=1}^{2}\chi_{km}\ln(y_k)\ln(y_m) + \sum_{k=1}^{2}\eta_k \ln(p_1/p_2)\ln(y_k) + \sum_{n=1}^{2}[a_n \cos(x_n) + b_n \sin(x_n)]$$

$$+ \sum_{n=1}^{2}\sum_{q=1}^{2}[c_{nq}\cos(x_n + x_q) + d_{nq}\sin(x_n + x_q)] + \lambda_1 \cos(2x_1 + x_2) + \lambda_2 \sin(2x_1 + x_2) + \lambda_3 \cos(x_1 + 2x_2) + \lambda_4 \sin(x_1 + 2x_2) + \delta_1(NIM) + \delta_2(GDP) + \ln(U_{it} - V_{it})$$

Where U_{it} is the technical inefficiency effect of firm *i* at time *t* and where V_{it} is the random variable and with NIM and GDP defined as in Equation 1.

$\delta_0, \delta_1, \delta_2$ ... are parameters to be estimated

Equation 2: Technical inefficiency effect model

$$U_{it} = \delta_0 + \delta_1 NIM + \delta_2 GDP + V_{it}$$

6.5 Conclusion

Following a review of the empirical literature on modelling bank efficiency, we chose to estimate alternative profit efficiency for our sample of offshore banks. This concept appears to be the most appropriate, because unlike the concepts of cost and standard profit efficiency, it does not require the assumptions of perfect competition and also can account for variation in product quality. The SFA method appears to be better suited as it also allows for random variations and enables us to estimate efficiency and find the determinants of efficiency in one step. The function chosen is the Fourier Flexible, which alleviates the need to presume the shape of the frontier. Our input and output choices were constrained by data availability and labour costs could not be used as such because of lack of available data. Instead, inputs were specified as price of funds (interest expenses/earning assets) and price of labour and others (overheads/assets), and outputs were specified as net interest income and net non-interest income. Chapter 7 will now present the results of the efficiency study.

7 Results

This chapter presents the results of the empirical analysis on offshore bank efficiency. The first part of the chapter outlines the estimation procedure and discusses the sample to be used. The following section reports the first set of alternative profit efficiency estimates derived from a model that does not include predictor variables. The results obtained are then correlated with potential control / environmental predictors in order to find the most appropriate predictors, which are then included in a one-stage estimation as suggested in Battese and Coelli (1995). We then select a 'preferred' model to obtain alternative profit efficiency estimates for offshore banks and these are reported and analysed on a centre by centre basis.

Efficiency estimates were derived from both the complete (including banks in all the OFCs available) and a smaller sample that excluded banks from the four largest OFCs (Switzerland, Luxembourg, Singapore and Hong Kong). Using the full sample, banks in the sample are found to be 69% (alternative) profit efficient on average, but when we exclude the four main OFCs, average efficiency increases to 81%. This seems to be because the removal of banks from the four major OFCs (on average the most profit efficient banks) changes the shape of the efficient frontier and thus the efficiency scores. The main finding is that, overall, banks located in the most developed OFCs (in terms of GDP per inhabitant) appear to be more profit efficient than those located in the least developed centres.

7.1 Alternative profit efficiency estimation process

Following from chapter 6, we decided to use the SFA approach and the Fourier Flexible functional form to estimate alternative profit efficiency for our sample of

offshore banks. One of the reasons for using SFA rather than DEA was that SFA is a two-step technique that allows for more precision in the measurement of the factors affecting bank efficiency. This approach has been suggested by Battese and Coelli (1995). The function, whose parameters are to be estimated are shown in the last section of chapter 6.

While the final model is meant to include several external (control / environmental) regressors, it is difficult to select the relevant regressors by trial and error as many of the possible predictors can be missing for a number of years or for several OFCs, and the Frontier program cannot run with missing observations. For example, the amount of offshore deposits may be considered a relevant external variable to be included in the one step estimation but these data are unavailable for many major OFCs for certain years (1995 to 2000 for the Isle of Man and Channel Islands, for example). Were the amounts of offshore deposits to be used as predictors, this would lead to the exclusion of important year/country observations.

For this reason, the approach taken in this thesis is to start by estimating a reduced model first, excluding any potential regressors; then to examine the relationship between the profit efficiency derived from this model with potential regressors (as is often done in the two-step modelling approach). The regressors that appear to be most highly related to the profit efficiency estimates derived from the aforementioned approach allows us to select key control/environmental variables that can then be integrated into a one-step SFA estimate of offshore bank alternative profit efficiency. Several models can thus be tested featuring various combinations of the most appropriate predictors. The final set of results obtained can then be analysed and discussed.

The computer program to be used to estimate the alternative profit function is Frontier version 4.1[409]. Frontier Version 4.1 was designed to calculate maximum likelihood estimates of cost and production functions. The alternative profit function can be estimated using Frontier 4.1 as it is fundamentally similar to the production function.

Frontier 4.1 offers a choice of two specifications, the Battese and Coelli (1992) model and the Battese and Coelli (1995) technical inefficiency effects model. In the Battese and Coelli (1992) specification, the firm effects are assumed to follow a truncated or half-normal distribution and are allowed to vary systematically over time. The program accepts unbalanced panel data (Coelli, 1996, p3). One major limitation of the 1992 specification is that it does not allow efficiency ranking variations overtime. This is particularly problematic given that there is a good case for investigating efficiency rankings vary overtime. Thus, a bank may become more or less efficient than its competitors while being involved in Mergers and Acquisitions activity, or through other events. The Battese and Coelli (1995) technical inefficiency effects model in contrast, allows a firm rank to change and is therefore our chosen modelling approach.

7.2 Characteristics of the sample

The data on offshore banks outlined in Chapter 5 used a pre-selected sample from BankScope. Not all of this data can be used for the efficiency study owing to constraints imposed by the model chosen. Moreover, to guarantee some homogeneity within the sample, the observations where the estimated "prices" were more than three standard deviations away for the mean of the prices were discarded (this procedure is

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[409] See CEPA working paper at http://www.une.edu.au/econometrics/cepa.htm

undertaken in various efficiency studies using frontier efficiency techniques[410]). The data selection process is illustrated by Figure 7.2-1.

Table 7.2-1 displays the available numbers of observations per country and per year. Banks whose net interest income or net non-interest income were negative were not included in the sample.

Figure 7.2-1   Data selection process

5571 observations extracted from database with sufficient information	**5568** observations left after removing 3 observations with negative prices
5224 observations left after removing 129 observations at more than 3 standard deviations of the mean	**5353** observations left after eliminating 215 observations with either negative net interest income or net non-interest income
Model 1 5224 estimates	**1704** observations left after removing observations from the 4 major OFCs (3520 observations taken out)
Model 2 1703 estimates	**1703** observations left after taking out 1 observation with prices at more than 3 standard deviations of the mean

As a result of the data selection process, all the OFCs are not equally well represented. In particular, banks from Jersey and Guernsey are relatively underrepresented, either because of a lack of the necessary details to compute input prices, or because one of the two outputs was zero or negative. In 22 of the OFCs, more than 70% of the observations originally available could be used for the efficiency study.

Table 7.2-2 and 7.2-3 display the descriptive statistics of the data used to estimate alternative profit efficiency using the Battese and Coelli (1995) model. So as to always take the logarithm of a positive number and because profits can be negative (a loss), θ is added to the response variable. θ corresponds to the greatest loss observed in the sample + 1. The greatest loss found was the basis for θ. The greatest loss observed in Table 7.2-2 (whole sample) was US$902.4 millions and was incurred by

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[410] As in Isik et al (2003)

the second largest bank of the sample, Credit Suisse First Boston, in 1996 (during a merger). The maximum profit (US$6.8 billions) was observed for the largest bank of the sample, UBS in 2000.

Table 7.2-1   Data sample – number of banks[411]

Country Name	1995	1996	1997	1998	1999	2000	2001	2002	Total	% original data *
ANDORRA	4	5	6	5	5	6	5	3	39	76.47
ANGUILLA	2	2	2	2	2	2	2		14	100.00
ANTIGUA & B.	4	4	4	4	4	5	4	1	30	83.33
ARUBA	1	1	1	2	1	1	1		8	53.33
BAHAMAS	6	10	13	20	22	22	11	5	109	72.67
BAHRAIN	12	14	11	14	14	13	12	6	96	81.36
BARBADOS	3	3	4	5	5	5	4	2	31	100.00
BELIZE		1	1			3	3		8	80.00
BERMUDA	3	4	4	4	5	5	5	4	34	87.18
CAYMAN Isls	13	17	21	25	22	25	15	5	143	90.51
CYPRUS	7	7	10	10	12	11	11	5	73	65.18
GIBRALTAR	1	2	2	2	2	2	1		12	85.71
GRENADA	2	2	2	2	2	2	2		14	100.00
GUERNSEY	1	1	1	2	2	3	3	1	14	15.38
HONG KONG	18	24	33	35	36	38	33	20	232	40.34
ISLE OF MAN	2	3	3	3	3	4	4		22	57.89
JERSEY	3	4	2	3	3	2	2		19	12.67
LEBANON	54	59	60	57	54	51	33	12	380	91.79
LIECHTENST.	3	4	5	5	8	8	7	3	43	95.56
LUX.	124	125	122	115	117	104	94	19	820	91.72
MALTA	8	8	8	9	8	8	6	3	58	100.00
MAURITIUS	4	5	6	5	5	6	4	2	37	63.79
MONACO	11	11	11	12	14	14	12	2	87	98.86
NETH. ANT.	1	1	3	4	5	4	2	1	21	48.84
PANAMA	16	35	37	52	50	62	58	55	365	76.04
SAN MARINO	1	1	2	2	3	3	1	1	14	100.00
SINGAPORE	12	12	33	30	33	32	23	12	192	66.4
ST. KITTS & N	1	1	1	1	1	1	1	2	9	56.25
ST. VINCENT			1	1	1	1	1		5	100.00
SWITZ.	317	323	345	325	292	295	277	103	2277	93.09
VIRGIN Isls B.				1	1	1			3	100.00
W. SAMOA	2	2	2	2	2	3	2		15	100.00

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[411] The total number of efficiency observations is compared with the total number of observations used for the efficiency study in chapter 5. For example, 76.47% of the observations originally available for Andorra have been used in the efficiency study. All in all, 5224 efficiency estimates have been computed.

Table 7.2-2   **Characteristics of the data used for the alternative profit efficiency estimation (full sample)**

	Mean	Min.	Max.	StDev
Ln ($\pi+\theta$)/input 2)*	17.780	4.033	23.215	1.063
Ln (output 1)	9.776	1.000	17.881	2.098
Ln (output 2)	9.238	1.000	17.398	2.488
Ln (input 1/ input 2)	0.578	-7.031	6.635	1.514
(LN (output 1))^2	49.991	0.500	159.872	19.807
Ln(output 1)*Ln (output 2)	92.848	1.000	289.244	38.795
(Ln (output 2))^2	45.762	0.500	151.346	20.713
(Ln(input 1/ input 2))^2	2.625	0.000	49.435	3.969
Ln(input 1/ input 2)* Ln (output 1)	6.282	-85.398	63.503	14.745
Ln(input 1/ input 2)* Ln (output 2)	4.532	-78.062	58.632	14.632
Cos(X1)	-0.840	-1.000	0.809	0.315
Sin(X1)	-0.099	-1.000	1.000	0.430
Cos(X2)	-0.771	-1.000	0.809	0.363
Sin(X2)	-0.058	-1.000	1.000	0.520
Cos(X1+X1)	0.611	-1.000	1.000	0.478
Sin(X1+X1)	0.118	-1.000	1.000	0.620
Cos(X1+X2)	0.536	-1.000	1.000	0.544
Sin(X1+X2)	0.084	-1.000	1.000	0.640
Cos (X2+X2)	0.453	-1.000	1.000	0.529
Sin(X2+X2)	0.126	-1.000	1.000	0.707
Cos (2*X1+X2)	-0.350	-1.000	1.000	0.639
Sin(2*X1+X2)	-0.047	-1.000	1.000	0.684
Cos(X1+2*X2)	-0.279	-1.000	1.000	0.654
Sin(X1+2*X2)	-0.070	-1.000	1.000	0.700
Additional statistics				
π (net profit after tax in US$ millions)	30.215	-902.406	6813.585	218.915
Price of funds	0.040	**0.000	0.190	0.026
Price of labour and others	0.028	**0.000	0.169	0.029
Net interest income (millions us$)	102.863	0.001	21,453.025	836.987
Net Noninterest income (millions US$)	45.679	0.001	13,230.869	415.142

*θ=902407, the absolute value of the greatest loss observed, added to the profit so as not to take the log of a negative value; π= net profit after tax; Output 1=net interest income; output 2 =net non-interest income; input 1 = price of funds (=interest expense/earning assets); input 2 =price of other services (=overhead/total assets). **The lowest price observed was observed for Bank of Canada Asia in Singapore in 1996 and was 0.00002 and thus rounded to zero. The lowest cost of labour and others was found for Crediop Cayman in 2000 (0.00007).

The greatest loss observed in Table 7.2-3 (sample without the four major OFCs) was (US$88 million) and was observed for Cyprus Popular Bank in 2002. The greatest profit (US$865 millions) was found for LGT Liechtenstein in 1998.

Table 7.2-3   Characteristics of the data used for the AP efficiency estimation (without 4 largest OFCs)

	Mean	Min.	Max.	StDev
Ln ($\pi + \theta$)/input 2)*	15.564	3.692	20.931	1.028
Ln (output 1)	9.903	1.000	14.058	1.516
Ln (output 2)	8.625	1.000	14.265	2.609
Ln (input 1/ input 2)	1.050	-7.031	6.635	1.050
(LN (output 1))^2	50.187	0.500	98.819	15.069
Ln(output 1)*Ln (output 2)	87.602	5.673	190.971	35.499
(Ln (output 2))^2	40.597	0.500	101.750	18.968
(Ln(input 1/ input 2))^2	2.205	0.000	49.435	3.977
Ln(input 1/ input 2)* Ln (output 1)	10.482	-56.805	63.503	10.174
Ln(input 1/ input 2)* Ln (output 2)	8.443	-58.838	58.632	8.474
Cos(X1)	-0.520	-1.000	0.809	0.425
Sin(X1)	-0.670	-1.000	0.981	0.317
Cos(X2)	-0.586	-1.000	0.809	0.517
Sin(X2)	-0.363	-1.000	0.989	0.507
Cos(X1+X1)	-0.098	-1.000	1.000	0.643
Sin(X1+X1)	0.520	-1.000	1.000	0.554
Cos(X1+X2)	0.067	-1.000	1.000	0.675
Sin(X1+X2)	0.427	-1.000	1.000	0.599
Cos (X2+X2)	0.222	-1.000	1.000	0.668
Sin(X2+X2)	0.399	-1.000	1.000	0.588
Cos (2*X1+X2)	0.087	-1.000	1.000	0.654
Sin(2*X1+X2)	-0.201	-1.000	1.000	0.724
Cos(X1+2*X2)	0.015	-1.000	1.000	0.665
Sin(X1+2*X2)	-0.276	-1.000	1.000	0.695
Additional statistics				
π (net profit after tax in US$ millions)	14.402	-87.960	865.301	36.699
Price of funds	0.056	0.000	0.190	0.027
Price of labour and others	0.024	0.000	0.168	0.018
Net interest income (millions us$)	23.060	0.001	469.000	49.570
Net Noninterest income (millions US$)	15.186	0.001	576.868	42.979

*θ=87960, the absolute value of the greatest loss observed, added to the profit so as not to take the log of a negative value; π= net profit after tax; Output 1=net interest income; output 2 =net non-interest income; input 1 = price of funds (=interest expense/earning assets); input 2 =price of other services (=overhead/total assets).

The following section discloses the results obtained with the reduced models. The efficiency estimates were correlated against a set of potential predictors in the subsequent section.

7.3 Estimates obtained with the reduced models

The reduced models do not include any other variables than the variables introduced in Table 7.2-2 (that is, they exclude possible determinants of bank efficiency). They are therefore intermediary results, a first step in our analysis.

Table 7.3-1   Parameters obtained from the reduced AP efficiency model using the whole sample

	Prameter	Coefficient	Standard error	T ratio
Constant	α	20.394	2.114	9.648
Ln (input 1/ input 2)	$\beta 1$	0.523	0.031	16.817
(Ln(input 1/ input 2))^2	$\beta 2$	0.07	0.002	30.934
Ln(Output 1)	ψ1	0.04	0.507	0.078
Ln (output 2)	ψ2	-1.224	0.534	-2.291
(LN (output 1))^2	χ1	0.013	0.054	0.243
Ln(output 1)*Ln (output 2)	χ2	-0.008	0.003	-2.69
(Ln (output 2))^2	χ3	0.154	0.059	2.59
Ln(input 1/ input 2)* Ln (output 1)	η1	-0.02	0.003	-5.76
Ln(input 1/ input 2)* Ln (output 2)	η2	0.021	0.003	7.717
Cos(X1)	a1	0.553	1.095	0.505
Sin(X1)	b1	0.088	0.25	0.352
Cos(X2)	a2	-2.391	1.136	-2.104
Sin(X2)	b2	0.869	0.309	2.812
Cos(X1+X1)	c1	0.224	0.155	1.447
Sin(X1+X1)	d1	-0.061	0.084	-0.724
Cos(X1+X2)	c2	0.284	0.066	4.318
Sin(X1+X2)	d2	0.138	0.088	1.569
Cos (X2+X2)	c3	-0.606	0.168	-3.604
Sin(X2+X2)	d3	0.07	0.089	0.792
Cos (2*X1+X2)	$\lambda 1$	0.26	0.042	6.196
Sin(2*X1+X2)	$\lambda 2$	0.04	0.041	0.968
Cos(X1+2*X2)	$\lambda 3$	-0.199	0.042	-4.753
Sin(X1+2*X2)	$\lambda 4$	-0.045	0.041	-1.094
Sigma squared		0.404	0.014	28.974
Gamma		0.548	0.028	19.821

Log Likelihood function: -3899.4; LR test of the one-sided error: 142.12; mean efficiency 0.7164

The alternative profit efficiency measures obtained from both sets of estimates appear rather similar as shown in Tables 7.3-2 and 7.3-3. One apparent difference however, is that in table 7.2-2, the coefficient found for output 1 is insignificant whereas in Table 7.2.2, it is both positive and significant.

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Table 7.3-2 Parameters obtained from the reduced AP efficiency model excluding the four major OFCs

	Parameter	Coefficient	Standard error	T ratio
Constant	α	12	5.333	2.25
Ln (input 1/ input 2)	$\beta1$	0.368	0.089	4.154
(Ln(input 1/ input 2))^2	$\beta2$	0.076	0.006	12.544
Ln (output 1)	ψ1	6.823	1.769	3.856
Ln (output 2)	ψ2	-5.013	1.528	-3.28
(LN (output 1))^2	χ1	-0.912	0.232	-3.935
Ln(output 1)*Ln (output 2)	χ2	0.01	0.012	0.804
(Ln (output 2))^2	χ3	0.631	0.199	3.179
Ln(input 1/ input 2)* Ln (output 1)	η1	0.013	0.011	1.182
Ln(input 1/ input 2)* Ln (output 2)	η2	0.013	0.005	2.396
Cos(X1)	a1	11.162	2.856	3.908
Sin(X1)	b1	0.837	0.652	1.283
Cos(X2)	a2	-7.515	2.552	-2.945
Sin(X2)	b2	-1.181	0.527	-2.241
Cos(X1+X1)	c1	1.357	0.359	3.784
Sin(X1+X1)	d1	0.502	0.239	2.101
Cos(X1+X2)	c2	0.389	0.262	1.484
Sin(X1+X2)	d2	-0.132	0.209	-0.63
Cos (X2+X2)	c3	-1.161	0.348	-3.336
Sin(X2+X2)	d3	-0.715	0.225	-3.179
Cos (2*X1+X2)	$\lambda1$	0.244	0.107	2.279
Sin(2*X1+X2)	$\lambda2$	0.198	0.11	1.801
Cos(X1+2*X2)	$\lambda3$	-0.023	0.088	-0.256
Sin(X1+2*X2)	$\lambda4$	-0.322	0.094	-3.431
Sigma squared		0.459	0.025	18.032
Gamma		0.531	0.041	12.944

Log Likelihood function: -1388.72; LR test of the one-sided error: 70.42; mean efficiency 0.7082

The rank order correlation (Spearman ρ) between the efficiency estimates obtained using the two sets of estimates (with and without the four major OFCs[412]) is high and significant (correlation = 0.903, P value = 0). The coefficients found in tables 7.3-1 and 7.3-2 may differ in terms of sign (i.e. *χ1, χ2, η1, b2, d1, d2, d3)*, but tend not to be significant in both tables when that is the case. Differences in terms of signs could

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[412] 1703 observations for which two efficiency estimates were calculated using the full sample and the reduced sample.

signs could possibly be attributed to the composition of the samples in terms of countries of origin[413].

Table 7.3-3   Alternative profit (AP) efficiency measures derived from the reduced model

Country Name	Whole sample			Sample without 4 largest OFCs		
	Mean	StDev	Disp	Mean	StDev	Disp
ANDORRA	0.77	0.03	0.04	0.78	0.03	0.04
ANGUILLA	0.71	0.04	0.05	0.77	0.01	0.02
ANTIGUA & B.	0.63	0.05	0.08	0.70	0.06	0.09
ARUBA	0.66	0.03	0.05	0.73	0.03	0.04
BAHAMAS	0.70	0.09	0.12	0.72	0.08	0.11
BAHRAIN	0.71	0.06	0.09	0.73	0.08	0.11
BARBADOS	0.64	0.05	0.08	0.70	0.06	0.08
BELIZE	0.58	0.14	0.24	0.66	0.14	0.21
BERMUDA	0.67	0.09	0.13	0.69	0.07	0.10
CAYMAN ISLANDS	0.65	0.10	0.16	0.70	0.07	0.11
CYPRUS	0.66	0.14	0.21	0.69	0.14	0.20
GIBRALTAR	0.78	0.04	0.06	0.76	0.08	0.11
GRENADA	0.65	0.03	0.05	0.72	0.03	0.05
GUERNSEY	0.76	0.08	0.10	0.76	0.08	0.10
HONG KONG	0.65	0.10	0.15			
ISLE OF MAN	0.75	0.04	0.06	0.76	0.05	0.06
JERSEY	0.74	0.05	0.06	0.74	0.04	0.06
LEBANON	0.60	0.07	0.11	0.65	0.06	0.09
LIECHTENSTEIN	0.79	0.04	0.05	0.80	0.06	0.07
LUXEMBOURG	0.73	0.07	0.10			
MALTA	0.75	0.04	0.05	0.78	0.03	0.04
MAURITIUS	0.66	0.08	0.12	0.69	0.06	0.09
MONACO	0.74	0.05	0.06	0.74	0.05	0.06
NETH. ANTILLES	0.70	0.09	0.14	0.72	0.07	0.09
PANAMA	0.68	0.08	0.12	0.71	0.07	0.10
SAN MARINO	0.81	0.03	0.04	0.82	0.03	0.03
SINGAPORE	0.71	0.10	0.14			
ST. KITTS & NEVIS	0.74	0.06	0.08	0.78	0.06	0.07
ST. VINCENT	0.67	0.04	0.06	0.72	0.03	0.05
SWITZERLAND	0.75	0.07	0.09			
VIRGIN ISLs, BRITISH	0.42	0.02	0.06	0.45	0.02	0.04
WESTERN SAMOA	0.66	0.06	0.09	0.72	0.04	0.06

<0.1	<0.2	>0.2	>0.65	>0.7	>0.75

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[413] The full sample is dominated by developed OFCs while the second sample is dominated (in terms of observations) by less developed OFCs (Lebanon and Panama account for 745 of the 1703 observations available in the second sample).

The most apparent feature of Table 7.3-3 is that the estimates obtained without the four largest OFCs appear systematically higher than the estimates obtained with the four largest OFCs. This can be because the removal of the banks from the four largest OFCs, which represent three quarters of the sample, reduces variability in the profit efficiency estimates (see Bos and Schmiedel 2003). Moreover, changing the sample also changes the shape of the frontier, which in turn, affects the rating of the banks (Bos and Schmiedel 2003). Following this brief overview of the primary results, the study proceeded to search for potential regressors to include in the extended models. The following section reviews these factors and their correlation to the estimates obtained with the reduced model.

7.4 Correlating the alternative profit efficiency estimates

The methodological choices for estimating alternative profit (AP) efficiencies were discussed in Chapter 6. It was found that one-step models, in which it is possible in the same procedure to estimate efficiency levels and find the influence of potential determinants, tends to yield better results than two steps models, in which efficiency levels are first estimated then regressed against potential determinants. Having obtained standard alternative profit efficiency estimates for both the full sample and the reduced sample (without Hong Kong, Luxembourg, Singapore, and Switzerland), it is possible to recalculate the alternative profit efficiency estimates using the Battese and Coelli (1995) one step procedure in which determinants of bank efficiency are included. The following section introduces the predictors, and explains in what way these predictors may have an influence on efficiency.

❖ Size, as expressed by banks' Total Assets (logged), is a widely used variable in the empirical literature as a determinant of bank efficiency. Chapter 6 featured a

brief overview of the issue of scale economies and their influence on efficiency. Larger banks are typically expected to be more efficient, due to economies of scale although the optimal size may already be reached by relatively small banks (see also Goddard et al (1999, pp109-120)).

❖ The net interest margin (net interest revenue / earning assets) can be used as a proxy for competitive pressure (Goddard et al (2001, p11)). The existence of low competition may be indicated by high net interest margins while higher competition is likely to reduce net interest margins. One would expect margins to be positively correlated to profit efficiency as higher margins are an indication of greater revenue generating capacity.

❖ The deposits ratio (Deposits / Total Assets) and the loan ratio (loans / total assets) can be used as a proxy for the business mix of the bank. Thus, it can be assumed that a bank having a low loan/asset ratio or a low deposit/asset ratio may be focusing more on private banking and asset management activities of offshore banking business. The relationship with profit efficiency is indeterminate prior to estimation.

❖ The equity ratio (Equity/Total assets) can be used as a crude measure of risk (Hempel and Simonson, 1999). A risk adjusted ratio would be preferable, but unfortunately, such information is typically unavailable for banks in OFCs. A higher ratio is suggestive of lower risk so one may expect an inverse relationship with profit efficiency. Alternatively, a high capital ratio may reduce funding costs and so could boost profits. The relationship prior to estimation is indeterminate.

❖ Whether the bank is a local market leader (in terms of deposits size) may influence its behaviour and efficiency. For example, the largest banks may have

less incentive to become more efficient (see Berger and Hannan, 1998 about the 'quiet life' hypothesis). A dummy will be used (1 if market leader).

❖ Bank ownership is also a potentially important determinant of bank efficiency (Altunbas et al, 2001). A dummy variable can be used to identify banks affiliated to one of the world's top 50 banking groups (1 if so, 0 otherwise). Another dummy variable can be used to distinguish locally owned and operated banks (1 if locally owned, 0 otherwise).

❖ Tax is a dominant feature in offshore banking business. The relevant measure of tax pressure for banks should be the 'tax paid/income before tax' ratio as it accounts for taxation as a whole. We prefer this broad indicator rather than income tax, because various sources of income may be taxed differently and because banks must also pay other forms of tax than just income tax. We would suspect an inverse relationship between the amount of tax paid and profit efficiency.

❖ Bank age may play a role in efficiency, as older banks may have learnt to be more efficient at serving their market than newcomers. We can identify three age groups of banks, (less than 20 years old, between 20 and 50 years old and more than 50years old)[414]. Dummy variables will be used to identify the relevant age group (1 if the bank corresponds to the relevant age group, 0 otherwise).

❖ GDP (logged) seems the most appropriate measure of OFC size as it accounts for the total amount of economic activity and for the country's economic power. It can be assumed that in a large developed economy, banks may be more efficient. Weill (2003b) found that banks in Western Europe were more efficient

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[414] Small (1999) reports, that older banks tend to be more profitable than their more recent counterparts. According to Maude and Molyneux (1996), old age tends to be seen as a sign of strength, and Swiss private banks often use their history in their advertising. See for instance UBS and its complete history at http://www.ubs.com

that their counterparts in Eastern Europe. Economic development could have played a role.

❖ GDP per inhabitant (logged) by contrast, is a proxy for economic development. It accounts for the fact that the country with the highest GDP may not necessarily be the most developed (Lebanon has a higher GDP than Bermuda but a much lower GDP per inhabitant). GDP per inhabitant should be positively influence bank efficiency for several reasons. Thus, a bank operating in a more developed area may benefit from a better infrastructure and technologies. Moreover, countries with higher GDP per inhabitants usually find it easier to attract the highly qualified expatriate workforce usually available in short supply in small countries and necessary for the running of high quality services such as private banking.

❖ The immigration ratio can be used as a proxy for the openness of the OFC to both foreign workforce and tax refugees. As explained in Chapter 2, OFCs are host to wealthy expatriates coming to the country to pay less tax. They also often have to import foreign highly skilled labour. OFCs having a restrictive immigration policy may favour the employment of less qualified local workers rather than more competent foreigners. We would expect the immigration ratio (immigrants per 1000 inhabitants and per year) to be positively correlated with bank efficiency.

❖ Because this work is devoted to OFCs, it is important to select an indicator of the relative size of the offshore business relative to GDP. The GDP multiple (Total deposits divided by GDP) or the deposits per inhabitants can be used as a measure of success, as these ratios (as seen in Chapter 2) are the most

commonly used to indicate the relative size of the offshore financial centre. We would expect the most developed OFCs to also host the most efficient banks.

❖ The growth in the amounts of deposits in the jurisdiction over the whole period of the study (in percentage and over the period 1995-2005 to avoid lag effects) can account for the success and attraction of offshore deposits to the OFC over the period reviewed. The growth of the banking sector may influence efficiency in that in a growing banking sector, there may be less incentive for banks to become efficient, whereas in a decreasing banking sector, banks may be forced to become more efficient to keep their profitability.

❖ Regulation can be expected to influence the way banks operate. Because laws are rarely directly comparable[415], the FSF and FATF classification could be used instead. They represent a synthetic appreciation of offshore regulation[416]. Poorly rated OFCs (FSF category 3 or FATF category 3) tend to share lax regulation, very low tax, low or no anti-money laundering enforcement. In such OFCs, there is no regulatory incentive for a bank to be efficient. A bank established in such a jurisdiction may be used for a different purpose than generating profit (tax minimisation of the entity owning it) and may be relatively inefficient. Conversely, OFCs highly rated by the FSF or the FATF (FSF category 1 or FATF category 1) represent the 'best practice OFCs' featuring adequate money laundering regulation, law enforcement and better regulatory standards. Banks located in such OFCs can be expected to be more efficient because regulation forces them to be so. Dummies will be used. 1 if the

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[415] For instance, if a country does not formally enforce bank secrecy but allows indirect ways to ensure bank secrecy instead (holding an account through a trust or a company whose owners are kept secret) the result is the same.
[416] Thus, OFCs as classified by the FSF are appraised on their level of regulation (relatively to financial stability), while FATF classification sorts OFCs on the quality of their financial crime prevention quality.

OFC was on the FATF blacklist, 0 otherwise; and the three FSF categories will also appear as dummies (1 if in the corresponding category, 0 otherwise).

❖ A dummy variable can be used to account for whether the country has a local or foreign head of state to account for country independence (0 if foreign head of state, 1 otherwise). Having a foreign head of state may give the OFC less leeway to craft its own laws. Although it is difficult to infer how this factor may influence bank efficiency, because it accounts for an important part of the regulatory landscape of OFCs, it should be taken into account.

❖ Because a large number of offshore centres are associated with small island economies, we can distinguish between these and other OFCs using a dummy variable (1 if the OFC is an island) to see if there is a difference in profit efficiency of banks based in small economies or not.

❖ The one-bank concentration ratio appeared to be the most convenient measure to account for market structure with the sample. The one-bank concentration ratio is calculated as the ratio of the deposits of the market leader (the bank with the greatest amount of deposits in the jurisdiction) by the total amount of deposits in the jurisdiction. A market leader dummy variable can also be used instead (1 if the bank is a market leader). Bourke (1989) examined the relationship between concentration and profitability. Berger and Humphrey (1994) found that concentration did not influence profitability, but that it led to higher prices for customers.

❖ A bank's relative market power can be represented by its market share (deposits of the bank as a proportion of total deposits in the jurisdiction) once efficiency is controlled for (as noted by Berger 1995). It is possible that a bank's market power may play a role in its decision to become more efficient. A bank having

great market power may have less incentive to be efficient than a bank with less market power.

❖ Bank type (commercial, savings, cooperative, Islamic etc.) may also be expected to influence the efficiency of a bank's operations. We control for bank type using dummy variables (1 if the bank is in the relevant category). Commercial banks (meant to be profitable) can be expected to be more profit efficient than cooperative of savings banks (which are not primarily meant to make profit).

Table 7.4-1 displays the descriptive statistics for the regressors that will be used in the Battese and Coelli (1995) one-step profit efficiency estimates (for the full sample). The values normally expressed as currencies (GDP; deposits per inhabitant etc.) have been logged. Values reported in percentages have been kept as such. Regulatory characteristics (FSF classification, FATF blacklist, and head of state), ownership characteristics (whether the bank is locally owned, or whether it is a subsidiary of one of the world's largest institutions) and age were accounted for using dummy variables. The figures shown in table 7.4-1 have already been the object of thorough attention in Chapter 2 and Chapter 5.

At first sight, in Table 7.4-2, the same factors seem to have an influence on both sets of efficiency estimates. 'Net interest margins' (a proxy for competitive pressure), 'GDP per inhabitant' (logged), 'deposits per inhabitant' (logged), 'FSF class', all seem to have a potential influence on profit efficiency. The determinants that show a consistent relationship between the full sample and the full sample minus the four major OFCs must be the object of particular attention.

Table 7.4-1   Descriptive statistics for the predictors (full sample)*

	Max	Min	Mean	Standard deviation
ln TA	20.521	7.026	12.963	1.716
ln Equity	17.224	4.812	10.621	1.630
Net Interest Margin	0.221	-0.085	0.022	0.020
Deposits/Total Assets	1.077	0.000	0.717	0.218
Net Loans/Total Assets	1.000	0.000	0.438	0.300
Equity/Total Assets	1.000	0.000	0.156	0.180
GDP per inhabitant (US$)	44,593	1,267.281	22,942.236	9,937.632
ln GDP per inhabitant	10.705	7.145	9.897	0.618
GDP	229.600	0.052	95.339	88.720
ln GDP	5.436	-2.957	3.509	1.881
Immigrants per 1000 people per year	33.200	-19.200	3.897	6.846
Deposits per inhabitant (millions US$)	19.906	0.000	0.693	2.383
GDP multiple (deposits / GDP)	568.976	0.000	24.743	77.374
Market change (deposit growth from 1995 to 2002)	566.667	-100.000	49.783	53.534
Concentration ratio	105.863	0.151	25.903	19.494
"tax ratio" (tax paid / income before tax)	14.049	-4.118	0.226	0.356
Market share	100.000	0.000	1.351	6.010

*Dummy variables have been excluded

Using both sets of estimates, bank 'size' (in terms of total Assets or Equity) appears positively correlated with efficiency. This result appears consistent with previous research associating 'size' and efficiency and could stem from economies of scale (Goddard et al 2001). There is also a significant negative correlation between the 'net interest margins' and the AP efficiency estimates. This suggests that profit performance is greater where banks focus on non-interest sources of income. To a certain extent the result is disconcerting as higher net interest margins could be expected to translate into higher profits.

Particular attention can be devoted to specific 'offshore' factors. Thus, the regulatory factors show interesting results. It appears that in both samples, the most developed OFCs in terms of regulation (group 1 FSF) tend to be more profit efficient, while the OFCs with the weakest regulatory regimes (group 3 FSF and FATF blacklist) show lower bank efficiency results. The FSF class variable shows similar results. Deposits per inhabitant and GDP multiple are indicators of OFC success. No significant

results are obtained with the GDP multiple, but the deposits per inhabitant variable appears in both cases significantly and positively correlated with bank efficiency. Thus, well developed OFCs have the most efficient banks. The small island economy dummy shows contradictory results. When the sample contains the four most developed OFCs, which have the most efficient banks and which are not small island economies (SIEs), the correlation between the SIE factor and efficiency is negative. With the reduced sample (without the four large OFCs), the sample is dominated by observations from Lebanon and Panama, both of which are not SIEs and have low levels of bank efficiency. This observation explains why correlation with the SIE variable changes signs when the sample is changed. The same applies to the head of state dummy (Luxembourg, Switzerland and Singapore have local heads of state, just as Lebanon and Panama). The last important OFC related variable, the tax ratio does not seem to play a significant role in influencing bank profit efficiency.

Other interesting observations include the relationship between market change and efficiency. The market change variable was calculated as the percentage change in the amounts of deposits in a jurisdiction between 1995 and 2002. It therefore acts as a long term trend. In an increasing market, banks may choose to implement a strategy aimed at increasing market share. Such a strategy may involve spending on advertising, launching new products, and other sunk costs with no immediate effects on profits. It is therefore not surprising that there is a negative correlation between market growth and bank efficiency.

As bank age was available for many of the banks, it was also interesting to see if there was any sort of relationship between age and profit efficiency. As it was stressed in Chapter four, private banks tend to use their age or tradition for advertising purposes. With the reduced sample, nothing particular appears. With the large sample, however, it

appears that younger banks (less than 20 years of age) are at a disadvantage compared with older banks (more than 50 years old).

Table 7.4-2   Correlation between alternative profit efficiency estimates (obtained with the full sample and the reduced sample) and potential predictors of efficiency

List of potential predictors	All sample		All sample minus 4 major OFCs	
	Corr.	P value	Corr.	P value
Logarithm of Total Assets	**0.19**	**0.000**	**0.19**	**0.000**
Logarithm of Equity	**0.139**	**0.000**	**0.159**	**0.000**
Net interest margin	**-0.47**	**0.000**	**-0.38**	**0.000**
Deposit ratio (deposits/total assets)	**-0.104**	**0.000**	0.039	0.112
Net Loans/Total Assets	**0.114**	**0.000**	**-0.051**	**0.034**
Equity/Total Assets	-0.016	0.246	-0.023	0.333
Market leader (largest deposits in the OFC)*	-0.009	0.538	**0.091**	**0.000**
Subsidiary of one of the top 50 banks worldwide*	-0.033	0.017	**0.076**	**0.002**
Local ownership (1 if the bank is locally owned)*	**0.175**	**0.000**	-0.023	0.342
Tax ratio (tax paid as % of income before tax)	0.036	0.017	-0.045	0.135
<20 years (1 if the bank is less than 20 years old)*	-0.023	0.158	**0.075**	**0.014**
The bank is between 20 and 50 years old*	**-0.139**	**0.000**	-0.036	0.24
>50 years (1 if the bank is > 50 years old)*	**0.177**	**0.000**	-0.052	0.09
Ln GDP/inh. (logarithm of the GDP per inhabitant)	**0.403**	**0.000**	**0.296**	**0.000**
GDP (logarithm of the total GDP in $billions)	**0.207**	**0.000**	**-0.251**	**0.000**
Immigration (as ‰ of total population)	**-0.043**	**0.002**	0.035	0.146
Logarithm of the deposits per inhabitant	**0.249**	**0.000**	**0.203**	**0.000**
GDP multiple (deposits of OFC/GDP of OFC)	**-0.095**	**0.000**	0.004	0.874
Market change 95-2002 (%)	**-0.184**	**0.000**	**-0.221**	**0.000**
FSF 1 (1 if the OFC is in FSF group1)*	**0.346**	**0.000**	**0.105**	**0.000**
FSF 2 (1 if the OFC is in FSF group2)*	0.024	0.082	**0.219**	**0.000**
FSF 3 (1 if the OFC is in FSF group3)*	**-0.391**	**0.000**	**-0.284**	**0.000**
FATF (1 if the OFC is blacklisted by the FATF)*	**-0.351**	**0.000**	**-0.209**	**0.000**
Head of state dummy (0 if foreign 1 if local)*	**0.193**	**0.000**	**-0.099**	**0.000**
FSF class (from 1 to 3)*	**-0.377**	**0.000**	**-0.261**	**0.000**
Small Island Economy (1 if the OFC is a SIE)	**-0.159**	**0.000**	**0.105**	**0.000**
Concentration ratio (one bank concentration ratio)	**0.243**	**0.000**	**0.137**	**0.000**
Market share (deposits as % of OFC deposits)	-0.021	0.139	**0.16**	**0.000**
Specialised Governmental Credit Inst.*	**0.157**	**0.000**	**0.066**	**0.007**
Commercial Bank*	**-0.148**	**0.000**	**-0.062**	**0.010**
Savings Bank*	**0.186**	**0.000**	**0.066**	**0.006**
Investment Bank/Securities House*	**-0.067**	**0.001**	**0.007**	**0.003**
Bank Holding & Holding Company*	0.027	0.054	-0.035	0.146
Islamic Bank*	**-0.055**	**0.000**	-0.033	0.171
Real Estate / Mortgage Bank*	**0.061**	**0.000**	-0.001	0.953
Cooperative Bank *	**0.076**	**0.000**	na	na
Medium & Long Term credit bank*	0.023	0.093	0.023	0.347

*Dummy variables; In bold, the results for which the P value is significant at 5%.

< - 0.2	< - 0.1	>0.1	>0.2

Concentration seems to play a positive role on bank efficiency, both with the results obtained with the full sample and with the reduced sample. Banks operating in more concentrated markets appear more profit efficient than banks operating in less concentrated markets. It is possible to argue that banks having to share a market with a local champion may be subject to greater competitive pressure and can therefore be forced to become more efficient.

GDP appears to have a strong influence on efficiency. Interestingly, GDP variables also appear correlated to most other variables (see Table 7.4-3). Thus, FATF blacklisted countries (as well as FSF 'class 3' countries) tend to be the least developed but also display low efficiency scores.

Table 7.4-3   Correlation between GDP and other predictors (and P values)

	Using all sample		Sample without 4 main OFCs	
	ln GDP /Inh	GDP	ln GDP/Inh	GDP
Net Interest Margin	**-0.398	**0.094	**-0.292	**0.125
ln dep/inhabitant	**0.740	**-0.102	**0.852	**-0.746
Market change	**-0.196	**-0.071	**0.134	**-0.267
FSF category	**-0.710	**-0.610	**-0.209	**0.508
FATF blacklist	**-0.705	**-0.489	**-0.393	**0.571
Head of state	0.003	**0.215	**-0.519	**0.692
Island yes/no	**-0.104	**-0.406	**0.533	**-0.628
Concentration %	**0.252	**0.671	**0.124	**-0.211
Market share %	**-0.146	**-0.240	**0.117	**-0.270
FSF group 3	**-0.732	**-0.547	**-0.376	**0.538
Ln Total Assets	**0.204	**-0.109	**0.301	**-0.111
Local yes/no	*-0.031	**0.328	**-0.145	*0.055
More than >50 years old	**0.121	**0.361	*0.064	0.027
Between 20-50 years old	**-0.152	**-0.168	**-0.118	**0.093

* P value below 0.01; ** P value below 0.05

While 'GDP' appears to be an important potential predictor for the efficiency estimates, 'net interest margin' and 'market change' seem to be the two other most promising predictors, because of their correlation to the AP efficiency estimates and (also because of their relatively low correlation to the GDP indicators). Interestingly, market change and 'net interest margin' are also positively correlated (correlation = 0.239, P value = 0.000). Such an observation was already noted in Chapter 5 when

commenting on net interest margins. This may reflect the fact that in growing markets, competitive pressures are less acute.

Table 7.4-4   Correlations between performance indicators and AP efficiency scores

All observations	All sample		Without 4 major OFCs	
Performance indicators.	Correlation	P value	Correlation	P value
ROE	-0.001	0.916	0.082	0.001
ROA	0.016	0.255	0.027	0.261
Cost income ratio	-0.201	0.000	-0.237	0.000

There seems to be no significant correlation between alternative profit efficiency estimates and the usual measures of bank profitability, ROA and ROE (see Table 7.4-4). This is not surprising because profit efficiency and profitability are two different measures of performance, giving different information (as illustrated by Emrouznejad 1995). However, there is negative correlation between the AP efficiency measures and the cost-income ratio, a crude measure of efficiency. This implies that the banks having the lower cost-income ratios are more AP efficient. This relation holds for both sets of estimates.

7.5   Finding appropriate predictors of bank AP efficiency in OFCs

In order to identify the potential predictors of bank alternative profit efficiency for inclusion in the Battese and Coelli (1995) one-step model, a stepwise regression approach can be used. Potential predictors (as discussed in the previous section) that appeared to be the most significant, were chosen to be included in the model.

The results of the regressions are disclosed in Table 7.5-1 and 7.5-2. The most important predictors appear to be the 'GDP per inhabitant' (logged) and the 'Net Interest Margin'. As expected, profit efficiency levels are negatively influenced by 'net interest margins'. A possible reason is that interest margins do not drive profit

performance in offshore banking as instead, performance is driven by non-interest sources. The positive relationship between 'GDP per inhabitant' and efficiency was also expected. Banks appear to be more profit efficient in the most developed OFCs. Because the two most important predictors appear to be 'GDP per inhabitant' and 'net interest margins', these two predictors are used in the Battese and Coelli (1995) model specification to derive profit efficiency estimates.

The second table shows the results obtained in a similar stepwise regression with the estimates obtained without the four major OFCs. The same regressors have been used. Again, 'Net Interest Margin' and the 'GDP per inhabitant' stand out as the most significant predictors.

For both stepwise regressions, the two most important predictors appear to be the 'Net Interest Margin' and the 'GDP per inhabitant', in the same order and with the same signs. The effects of the other predictors appear marginal and depend on the countries studied. As the other predictors appear to have only a marginal influence in explaining variation in bank profitability, we chose to use the 'GDP per inhabitant' and the 'Net Interest margins' in our second set of profit efficiency estimates. The results of these tests are displayed in the following section.

Table 7.5-1   Stepwise regression with the whole sample using the alternative profit efficiency estimates as dependent variable

Step	1	2	3	4	5	6	7	8
Constant	0.7672	0.3857	0.4417	0.4652	0.43	0.4928	0.473	0.5212
NIM	-2.291	-1.792	1.892	-1.817	-1.718	-1.662	-1.619	-1.612
T-Value	-37.55	-28.13	-30.17	-28.68	-26.13	-25.02	-23.56	-23.44
P-Value	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ln GDP/inh		0.0374	0.0297	0.0278	0.0298	0.0146	0.0147	0.0093
T-Value		20.25	15.83	14.73	15.53	4.13	4.16	1.94
P-Value		0.00	0.00	0.00	0.00	0.00	0.00	0.05
Concentration			0.00084	0.00088	0.00082	0.00107	0.00107	0.00107
T-Value			15.03	15.83	14.37	14.26	14.29	14.31
P-Value			0.00	0.00	0.00	0.00	0.00	0.00
Market change				-0.0151	-0.0141	-0.0178	-0.0179	-0.017
T-Value				-7.02	-6.5	-7.83	-7.86	-7.28
P-Value				0.00	0.00	0.00	0.00	0.00
Local H. of State					0.0169	0.021	0.0208	0.0197
T-Value					5.42	6.53	6.46	6.02
P-Value					0.00	0.00	0.00	0.00
Ln Dep/inh						0.0067	0.0065	0.0074
T-Value						5.15	4.96	5.21
P-Value						0.00	0.00	0.00
Ln TA							0.00158	0.00164
T-Value							2.5	2.58
P-Value							0.01	0.01
FSF Category								-0.0037
T-Value								-1.63
P-Value								0.10
S	0.0782	0.0752	0.0736	0.0733	0.0731	0.0729	0.0729	0.0729
R-Sq	21.47	27.25	30.3	30.96	31.35	31.71	31.79	31.82
R-Sq(adj)	21.45	27.22	30.26	30.91	31.29	31.63	31.7	31.72

The 'FATF blacklist' (1 if on the blacklist, 0 otherwise) variable was not selected in the stepwise regression. *The Mallows C-p statistic indicates the optimal number of regressors in a stepwise regression. The optimal number of regressors is reached when the C-p statistics becomes equal or inferior to the number of regressors.

Table 7.5-2   Stepwise regression using the estimates obtained without the 4 largest OFCs using the alternative profit efficiency estimates as dependent variable

Step	1	2	3	4	5
Constant	0.7497	0.5126	0.4764	0.4832	0.5367
NIM	-1.372	-1.137	-0.934	-0.941	-0.92
T-Value	-16.46	-13.41	-10.98	-11.15	-10.9
P-Value	0.00	0.00	0.00	0.00	0.00
Ln GDP per inhabitant		0.0249	0.0299	0.0283	0.0256
T-Value		9.57	11.57	10.98	9.56
P-Value		0.00	0.00	0.00	0.00
Market change 1995-2002			-0.0222	-0.0229	-0.0212
T-Value			-9.65	-10	-9.11
P-Value			0.00	0.00	0.00
Concentration ratio				0.00048	0.00034
T-Value				5.51	3.63
P-Value				0.00	0.00
FSF category					-0.0107
T-Value					-3.44
P-Value					0.001
S	0.0733	0.0713	0.0694	0.0688	0.0686
R-Sq	14.15	18.68	23.04	24.44	24.98
R-Sq(adj)	14.09	18.58	22.9	24.25	24.75
Mallows C-p	233.2	136.2	43	14.4	4.6

The following regressors were included in this stepwise regression: the net interest margin; the GDP per inhabitant, logged; the deposits per inhabitant, logged, the market change over the period 1995-2002; the FSF category (1 to 3); the FATF blacklist (1 if on the blacklist, 0 otherwise); whether the head of state is local or not (1 if yes); the concentration ratio (deposits of the largest bank in the OFC divided by the total amounts of deposits in the jurisdiction; the total Assets, logged.

7.6   Deriving the 'preferred model' for alternative profit efficiency

The model specifications to be discussed in this section are based on the reduced model that has been already discussed in this chapter (the reduced model excludes potential efficiency predictors and has been estimated with the whole sample and for a reduced sample excluding banks from Switzerland, Luxembourg, Hong Kong and Singapore). In both cases, four models were tested against each other (both using the whole bank sample and with the sample excluding the four major OFCs). In

particular, we compare the earlier model specification and those following the Battese and Coelli (1995) approach that include various predictors of bank profit efficiency. These include:

❖ The reduced model (no predictors)

❖ The reduced model + 'net interest margin'

❖ The reduced model + 'GDP per inhabitant'

❖ The reduced model + 'net interest margin' + 'GDP per inhabitant'

When a new model is estimated, it is important to assess whether it provides a good estimate for technical inefficiency effects. For the Frontier model, the null hypothesis is that there are no technical efficiency effects in the model, hence, $H_0 : \gamma = 0$ versus $H_1 : \gamma > 0$. The coefficient for γ is allowed to vary between 0 and 1. If $\gamma = 0$, it can be assumed that deviations from the frontier are better explained by randomness than ineffiency. If $\gamma = 1$, deviations from the frontier are assumed to come predominantly from the existence of inefficiency. Under the null hypothesis, $H_0 : \gamma = 0$, the model is equivalent to the traditional average response function, without the technical efficiency effect, u_i[417]. The one-sided generalized likelihood-ratio test of $\gamma = 0$ is calculated as 'LR test of the one-sided error'. This value is compared to the value provided by the χ^2 table (Kodde and Palm, 1986 p1246). with the corresponding degree of freedom. If it is greater, the null hypothesis is rejected.

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[417] See for instance Battese and Coelli (1995 p330)

Table 7.6-1

Model	Gamma value	LR test of the one-sided error	Degrees of Freedom	Critical value at 0.05	Null hypothesis
With the whole sample					
Reduced model	0.547	142.110	1.000	2.706	rejected
Reduced model + NIM	0.044	1109.040	3.000	7.045	rejected
Reduced model + GDP	0.875	1098.560	3.000	7.045	rejected
Reduced model + NIM +GDP	0.000	1408.480	4.000	10.370	rejected
Excluding the 4 large OFCs					
Reduced model	0.531	70.420	1.000	2.706	rejected
Reduced model + NIM	0.924	561.910	3.000	7.045	rejected
Reduced model + GDP	0.948	474.400	3.000	7.045	rejected
Reduced model + NIM +GDP	0.921	570.400	4.000	10.370	rejected

The null hypothesis states that there are no technical inefficiency effects in the model.

Thus, as seen in Table 7.6-1, even though the gamma value is close to zero in two cases, the null hypothesis is in fact always rejected.

In order to choose the model specification that offers the best fit for the sample, structural tests were performed. These tests use the Log-Likelihood Ratio Tests (LR) to test whether a reduced model provides the same fit as an extended model (including more variables). The null hypothesis states that the reduced model does not offer a better fit than the extended model. In order to perform this test, the generalized likelihood ratio (LR) statistic was computed at every stage:

$$LR = -2*[l(H_0) - l(H_1)]$$

In the equation, $l(H_0)$ is the log-likelihood statistic of the reduced model and $l(H_1)$ was the log-likelihood statistic of the extended model. The result LR was then compared to the figure provided by the Chi square distribution at a degree of freedom equal to the difference in the number of parameters between the models compared. If LR is greater than the figure provided by the Chi Square table, the extended model is adopted.

Table 7.6-2   Results of the log likelihood functions for the 8 models tested

Model	Log Likelihood function results
With the whole sample	
Reduced model	-3899.3972
Reduced model + NIM	-3415.9338
Reduced model + GDP	-3421.1755
Reduced model + NIM +GDP	-3266.2141
Excluding the 4 large OFCs	
Reduced model	-1388.7228
Reduced model + NIM	-1142.9778
Reduced model + GDP	-1186.7339
Reduced model + NIM +GDP	-1138.7356

Table 7.6-3   Selection of the relevant model

With the whole sample	LR results	Degrees of freedom	Chi square value at 1% significance	Decision
RM vs RM + NIM	966.92	1	6.64	Select extended model
RM vs RM + GDP	956.44	1	6.64	Select extended model
RM + NIM vs RM + GDP + NIM	299.43	1	6.64	Select extended model
RM + GDP vs RM + GDP + NIM	309.92	1	6.64	Select extended model
RM vs RM + GDP + NIM	1266.36	2	9.21	Select extended model
Excluding the 4 large OFCs				
RM vs RM + NIM	491.49	1	6.64	Select extended model
RM vs RM + GDP	403.97	1	6.64	Select extended model
RM + NIM vs RM + GDP + NIM	8.48	1	6.64	Select extended model
RM + GDP vs RM + GDP + NIM	95.99	1	6.64	Select extended model
RM vs RM + GDP + NIM	499.97	2	9.21	Select extended model

RM = Reduced model

With both sets of data, the extended model featuring the net interest margin and the GDP per inhabitant appear to provide the best model fit (as seen in Table 7.6-3). This is consistent with the main findings for the stepwise regression results.

Overall, we chose the model specification that includes the GDP and NIM predictors as our preferred model for both samples. This is estimated using the full sample of OFC banks and a reduced sample excluding banks from the largest OFCs (Hong Kong, Singapore, Luxembourg and Switzerland). The results are reported in Table 7.6-4 and 7.6-5. When comparing the coefficients obtained from estimates of the preferred model with the coefficients previously obtained with the reduced models, it

appears that these are in general comparable in terms of signs and magnitude[418].

Comparing the results obtained with the reduced models (see Table 7.3-1 and 7.3-2) with the results obtained with the extended model (see Tables 7.6-4 and 7.6-5), it can be observed that T ratios are systematically more significant with the extended models. The very low γ value for the preferred model using the full sample, implies that randomness plays a much greater role than inefficiency in explaining departures from the frontier. In the case of the model obtained for the smaller sample, that is not the case and the γ value (0.921) suggests that inefficiency effects outweigh randomness.

We have seen, in Table 7.4-2, that the GDP per inhabitant was positively correlated with bank efficiency and that the net interest margin was negatively correlated with bank efficiency (when estimated using the reduced model). By reciprocity, in Table 7.6-4 and 7.6-5, the GDP per inhabitant (parameter δ_2 of equation 2) is negatively correlated with the level of inefficiency (offshore banks operating in more developed economies with higher GDP per inhabitant are more efficient). As seen in Table 7.6-4 and 7.6-5, the net interest margin is positively correlated with the inefficiency (parameter δ_1 of equation 2). This confirms that high net interest margins are associated with lower profit efficiency for offshore banks. A possible explanation is that low competition allows higher net interest margins, but does not incite banks to become more efficient. These results thus confirm our findings of section 7.4.

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[418] When the coefficients displayed in Table 7.3-1 (reduced model whole sample) are correlated with the coefficients displayed in Table 7.6-3 (extended model whole sample), a correlation coefficient of 0.995 is found with a P value of 0.000. Similarly, when the coefficients displayed in Table 7.3-2 (reduced model with the reduced sample) are correlated with the coefficients displayed in Table 7.6-4 (extended model with the reduced sample), a correlation coefficient of 0.986 is found with a P value of 0.000.

Table 7.6-4   Parameters for the prefered model (whole sample)

	Prameter	Coefficient	Standard error	T ratio
Constant	α	19.942	1.348	14.796
Ln (input 1/ input 2)	$\beta 1$	0.507	0.028	18.014
(Ln(input 1/ input 2))^2	$\beta 2$	0.065	0.002	32.798
Ln (Output 1)	ψ1	0.724	0.439	1.651
Ln (output 2)	ψ2	-1.684	0.37	-4.554
(LN (output 1))^2	χ1	-0.061	0.047	-1.321
Ln(output 1)*Ln (output 2)	χ2	0	0.003	0.087
(Ln (output 2))^2	χ3	0.184	0.042	4.413
Ln(input 1/ input 2)* Ln (output 1)	η1	-0.025	0.003	-8.597
Ln(input 1/ input 2)* Ln (output 2)	η2	0.021	0.002	11.007
Cos(X1)	a1	1.95	0.944	2.066
Sin(X1)	b1	0.273	0.163	1.673
Cos(X2)	a2	-3.39	0.777	-4.363
Sin(X2)	b2	0.559	0.275	2.033
Cos(X1+X1)	c1	0.45	0.135	3.34
Sin(X1+X1)	d1	0.18	0.048	3.782
Cos(X1+X2)	c2	0.148	0.06	2.468
Sin(X1+X2)	d2	-0.023	0.078	-0.288
Cos (X2+X2)	c3	-0.621	0.102	-6.093
Sin(X2+X2)	d3	-0.002	0.081	-0.029
Cos (2*X1+X2)	$\lambda 1$	0.273	0.037	7.306
Sin(2*X1+X2)	$\lambda 2$	0.016	0.018	0.879
Cos(X1+2*X2)	$\lambda 3$	-0.194	0.03	-6.509
Sin(X1+2*X2)	$\lambda 4$	-0.032	0.037	-0.873
Constant	$\delta 0$	2.137	0.586	3.646
NIM	$\delta 1$	11.65	0.465	25.032
GDP	$\delta 2$	-0.202	0.012	-17.144
sigma-squared		0.204	0.004	52.434
gamma		0.001	0.087	0.002

Table 7.6-5   Parameters for the preferred model (sample excluding the four major OFCs)

	Prameter	Coefficient	Standard error	T ratio
Constant	α	10.993	1.67	6.582
Ln (input 1/ input 2)	$\beta 1$	0.403	0.078	5.135
(Ln(input 1/ input 2))^2	$\beta 2$	0.081	0.006	14.308
Ln (Output 1)	ψ1	4.948	0.583	8.484
Ln (output 2)	ψ2	-2.926	0.826	-3.541
(LN (output 1))^2	χ1	-0.662	0.083	-7.961
Ln(output 1)*Ln (output 2)	χ2	0.008	0.012	0.643
(Ln (output 2))^2	χ3	0.367	0.109	3.349
Ln(input 1/ input 2)* Ln (output 1)	η1	0.008	0.01	0.859
Ln(input 1/ input 2)* Ln (output 2)	η2	0.009	0.005	1.913
Cos(X1)	a1	8.002	1.071	7.474
Sin(X1)	b1	0.487	0.454	1.073
Cos(X2)	a2	-4.295	1.421	-3.023
Sin(X2)	b2	-0.687	0.419	-1.641
Cos(X1+X1)	c1	0.963	0.166	5.813
Sin(X1+X1)	d1	0.197	0.131	1.501
Cos(X1+X2)	c2	0.151	0.23	0.657
Sin(X1+X2)	d2	-0.104	0.185	-0.565
Cos (X2+X2)	c3	-0.669	0.201	-3.323
Sin(X2+X2)	d3	-0.496	0.17	-2.915
Cos (2*X1+X2)	$\lambda 1$	0.164	0.075	2.179
Sin(2*X1+X2)	$\lambda 2$	-0.007	0.097	-0.074
Cos(X1+2*X2)	$\lambda 3$	0.003	0.077	0.033
Sin(X1+2*X2)	$\lambda 4$	-0.173	0.079	-2.187
Constant	$\delta 0$	-0.238	1.406	-0.17
NIM	$\delta 1$	71.074	3.874	18.344
GDP	$\delta 2$	-1.059	0.108	-9.831
sigma-squared		1.999	0.094	21.263
gamma		0.921	0.005	181.402

Having found the most appropriate model to estimate offshore bank efficiency, the alternative profit efficiency measures for the preferred specification are then analysed.

7.7 Results obtained with the preferred models

After selecting the most appropriate model to compute the alternative profit efficiency of banks in the sample, the first step is to present the descriptive statistics of the alternative profit efficiency measures obtained. These are shown per country in tables 7.7-1 and 7.7-2.

In general, the results obtained from the preferred model are similar to those obtained from the earlier reduced model (which excluded efficiency predictors). The main factor differentiating all the models observed appeared to be the levels of efficiency measured. While levels of profit efficiency vary depending on the sample used and the regressors employed, rank correlation of profit efficiency measures derived for the reduced and the preferred model are high (Country rank correlation between the reduced model and preferred model (whole sample) = 0.721, P value = 0.000; Country rank correlation between the reduced model and preferred model (reduced sample) = 0.914, P value = 0.000).

In Table 7.7-1 as in table 7.7-2, there is a clear difference in terms of efficiency levels between European OFCs and Caribbean OFCs. On average, profit efficiency averages are higher in European OFCs. This holds with the full sample (mean profit efficiency for European OFCs at 0.74 is higher than in Caribbean OFCs at 0.47)[419] and for the reduced sample (mean profit efficiency for European OFCs at 0.86 is higher than in Caribbean OFCs at 0.77)[420]. In both tables, it is also possible to observe that the six OFCs where bank profit efficiency is highest are European OFCs.

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[419] Using a two sample T test with the whole sample and with the estimates found with the preferred model, the difference in efficiency between Caribbean and European banks, is found to be significant (T value = -40.7, P value = 0.000).

[420] Again, using a two sample T test with the reduced sample and with the estimates found with the preferred model, the difference in efficiency between Caribbean and European banks, is found to be significant (T value = -3.57, P value = 0.000).

Table 7.7-1   Descriptive statistics for the alternative profit efficiency estimates (whole sample)

Country Name	Mean	StDev	Dispersion	Min	Max
ANDORRA	0.71	0.04	0.06	0.63	0.82
ANGUILLA	0.45	0.05	0.11	0.38	0.54
ANTIGUA & B.	0.47	0.10	0.21	0.36	0.72
ARUBA	0.45	0.05	0.11	0.40	0.56
BAHAMAS	0.67	0.11	0.16	0.30	0.84
BAHRAIN	0.62	0.10	0.16	0.15	0.80
BARBADOS	0.45	0.06	0.14	0.34	0.67
BELIZE	0.28	0.08	0.28	0.19	0.41
BERMUDA	0.73	0.14	0.19	0.46	0.87
CAYMAN Isls	0.63	0.16	0.26	0.12	0.96
CYPRUS	0.58	0.13	0.23	0.18	0.80
GIBRALTAR	0.72	0.04	0.06	0.65	0.76
GRENADA	0.32	0.03	0.08	0.28	0.36
GUERNSEY	0.75	0.05	0.07	0.68	0.84
HONG KONG	0.63	0.17	0.28	0.07	0.91
ISLE OF MAN	0.73	0.05	0.07	0.58	0.82
JERSEY	0.81	0.10	0.13	0.48	0.87
LEBANON	0.41	0.09	0.23	0.08	0.64
LIECHTENSTEIN	0.79	0.03	0.03	0.76	0.87
LUXEMBOURG	0.86	0.08	0.09	0.33	0.99
MALTA	0.62	0.06	0.09	0.37	0.73
MAURITIUS	0.56	0.13	0.23	0.42	0.98
MONACO	0.83	0.04	0.04	0.70	0.91
NETH. ANTILLES	0.61	0.14	0.22	0.25	0.77
PANAMA	0.51	0.08	0.15	0.24	0.68
SAN MARINO	0.70	0.12	0.16	0.35	0.81
SINGAPORE	0.72	0.11	0.15	0.20	1.00
ST. KITTS & N.	0.44	0.07	0.16	0.32	0.57
ST. VINCENT	0.38	0.02	0.04	0.36	0.40
SWITZERLAND	0.74	0.07	0.10	0.40	0.95
VIRGIN Isls, B.	0.20	0.04	0.19	0.15	0.25
WESTERN S.	0.33	0.06	0.18	0.21	0.41

Dispersion is calculated as standard deviation divided by mean.
Pearson correlation of dispersion and % Market change 95-2002 = 0.508 P-Value = 0.006

In both tables (7.7-1 and 7.7-2), the mean and dispersion of the profit efficiency scores appear significantly negatively correlated (with data from Table 7.7-1, correlation = -0.382 and P value = 0.028; with data from Table 7.7-2, correlation = -0.59 and P value = 0.001), indicating that in the OFCs where efficiency is highest, there are smaller differences among bank's profit efficiency levels. A possible explanation is

that in countries where banks are profit efficient, competitive pressure may encourage inefficient banks to improve their performance. Alternatively, it is possible that the political, legal and institutional environment is conducive to improved profit performance in these OFCs.

Looking at dispersion again, there appears to be a strong and significant positive correlation between market growth (over the period 1995-2002 cf. Table 5.3-12) and the dispersion of bank profit efficiency observed (correlation = 0.5, P value = 0.006 with the whole sample; correlation = 0.554, P value = 0.005 with the reduced sample). Thus, high market growth may result in greater discrepancies among banks' efficiencies. This could possibly indicate that banks are not equally successful at remaining efficient when market conditions change.

The tables 7.7-3 and 7.7-4 bring a further dimension to the analysis, in representing the average profit efficiency per country and per year. In the first tables, strong contrasts can be observed between the countries of the sample. Yet, when the four major OFCs were removed from the sample, the contrasts become far less apparent. Because the banks of the four most developed OFCs appeared more efficient, removing them from the sample makes the other banks appear substantially relatively more efficient. Thus, the average efficiency estimate obtained is 69.43% with the full sample, but increased up to 80.92% when the four main OFCs were removed. For example, Liechtenstein banks were consistently 10 percentage points more efficient than Maltese OFCs when all the banks were included in the sample, but the difference became less pronounced with the estimates obtained without the four major OFCs. Those two tables show a clear trend: profit efficiency appears to be improving substantially in most OFCs overtime. While the improvement in efficiency (in percentage) may vary depending on the sample selected, in general there is a strong

correlation between the growth rates observed in both tables (correlation = 0.685 and P value = 0.000[421]). The drop in profit efficiency observed for Hong Kong in 1997 is probably attributable to the effects of the Asian crisis on Hong Kong banks performance.

Table 7.7-2   **Descriptive statistics for the alternative profit efficiency scores (excluding the four major OFCs – Luxembourg, Switzerland, Hong Kong and Singapore)**

Country Name	Mean	StDev	Dispersion	Min	Max
ANDORRA	0.89	0.01	0.02	0.86	0.93
ANGUILLA	0.85	0.01	0.02	0.83	0.87
ANTIGUA & B.	0.79	0.05	0.06	0.64	0.89
ARUBA	0.82	0.03	0.04	0.78	0.86
BAHAMAS	0.84	0.07	0.09	0.47	0.93
BAHRAIN	0.84	0.07	0.08	0.52	0.92
BARBADOS	0.79	0.05	0.07	0.62	0.90
BELIZE	0.69	0.15	0.22	0.51	0.86
BERMUDA	0.82	0.07	0.09	0.62	0.93
CAYMAN Isls	0.82	0.09	0.11	0.37	0.93
CYPRUS	0.72	0.23	0.32	0.00	0.95
GIBRALTAR	0.87	0.05	0.06	0.75	0.92
GRENADA	0.79	0.02	0.03	0.75	0.82
GUERNSEY	0.88	0.04	0.05	0.81	0.95
ISLE OF MAN	0.87	0.03	0.03	0.79	0.92
JERSEY	0.86	0.05	0.06	0.68	0.90
LEBANON	0.74	0.08	0.11	0.24	0.91
LIECHTENSTEIN	0.89	0.03	0.03	0.74	0.94
MALTA	0.88	0.02	0.02	0.81	0.93
MAURITIUS	0.80	0.06	0.07	0.67	0.93
MONACO	0.87	0.02	0.03	0.78	0.94
NETH. ANTILLES	0.84	0.06	0.07	0.62	0.93
PANAMA	0.82	0.07	0.09	0.41	0.94
SAN MARINO	0.91	0.02	0.02	0.88	0.93
ST. KITTS & N.	0.86	0.04	0.05	0.77	0.91
ST. VINCENT	0.81	0.03	0.03	0.78	0.84
VIRGIN Isls, B.	0.31	0.05	0.17	0.25	0.34
WESTERN S.	0.78	0.07	0.09	0.62	0.86

Pearson correlation of Dispersion and % Market change 95-2002 = 0.554 P-Value = 0.005

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[421] Observations from Belize and San Marino appeared as outliers and were not taken into account in the correlation.

Table 7.7-3   Alternative profit Efficiency per year and per country, whole sample

Country Name	1995	1996	1997	1998	1999	2000	2001	2002	%Change*
ANDORRA	0.68	0.69	0.72	0.7	0.71	0.72	0.71	0.69	1.47
ANGUILLA	0.52	0.5	0.49	0.4	0.41	0.39	0.43		-17.31
ANTIGUA & B.	0.43	0.45	0.46	0.49	0.4	0.55	0.5	0.47	9.30
ARUBA	0.43	0.44	0.41	0.41	0.45	0.56	0.48		11.63
BAHAMAS	0.7	0.73	0.72	0.66	0.68	0.64	0.63	0.67	-4.29
BAHRAIN	0.62	0.59	0.58	0.62	0.65	0.62	0.63	0.66	6.45
BARBADOS	0.46	0.49	0.43	0.39	0.43	0.45	0.46	0.56	21.74
BELIZE		0.27	0.3			0.29	0.27		0.00
BERMUDA	0.69	0.73	0.74	0.72	0.73	0.72	0.73	0.76	10.14
CAYMAN ISLs	0.58	0.61	0.64	0.64	0.63	0.62	0.69	0.63	8.62
CYPRUS	0.52	0.57	0.59	0.57	0.6	0.58	0.57	0.61	17.31
GIBRALTAR	0.69	0.69	0.68	0.7	0.76	0.75	0.76		10.14
GRENADA	0.32	0.31	0.31	0.31	0.33	0.34	0.35		9.37
GUERNSEY	0.68	0.7	0.7	0.78	0.79	0.77	0.76	0.74	8.82
HONG KONG**	0.74	0.71	0.65	0.63	0.58	0.6	0.62	0.64	-13.51
ISLE OF MAN	0.71	0.73	0.71	0.71	0.71	0.77	0.75		5.63
JERSEY	0.84	0.74	0.85	0.74	0.85	0.85	0.82		-2.38
LEBANON	0.36	0.37	0.38	0.41	0.43	0.46	0.47	0.49	36.11
LIECHTENSTEIN	0.77	0.78	0.79	0.78	0.81	0.78	0.78	0.8	3.90
LUXEMBOURG	0.82	0.85	0.86	0.86	0.86	0.88	0.91	0.91	10.98
MALTA	0.58	0.6	0.6	0.62	0.63	0.62	0.65	0.67	15.52
MAURITIUS	0.48	0.51	0.5	0.5	0.53	0.54	0.87	0.62	29.17
MONACO	0.79	0.83	0.84	0.84	0.84	0.83	0.84	0.83	5.06
NETH. ANT.	0.64	0.65	0.48	0.64	0.6	0.58	0.74	0.74	15.63
PANAMA	0.48	0.49	0.52	0.52	0.52	0.52	0.51	0.5	4.17
SAN MARINO	0.35	0.63	0.69	0.68	0.75	0.75	0.8	0.81	131.43
SINGAPORE	0.68	0.64	0.7	0.72	0.76	0.72	0.71	0.74	8.82
ST. KITTS & N.	0.32	0.38	0.42	0.47	0.57	0.42	0.42	0.5	56.25
ST. VINCENT			0.39	0.36	0.37	0.4	0.4		2.56
SWITZERLAND	0.71	0.72	0.74	0.75	0.76	0.74	0.76	0.77	8.45
VIRGIN ISLs, B.				0.15	0.25	0.21			40.00
WEST. SAMOA	0.35	0.32	0.36	0.31	0.33	0.31	0.3		-14.29

*Variation in mean efficiency is expressed in percentage. The first and the last means were used for the calculation (Change = [last year – first year]/first year). **JCG corporation of Hong Kong was not taken into account. The bank, apparently not involved in offshore banking, but its very low score (it was less than 10% efficient) was artificially making Hong Kong banks less efficient.

| <0.4 | >0.4 | >0.5 | >0.6 | >0.7 | >0.8 | >0 | >10 |

Table 7.7-4   Alternative profit efficiency estimates per country per year (Whole sample minus four largest OFCs – Luxembourg, Switzerland, Hong Kong and Singapore)

Country Name	1995	1996	1997	1998	1999	2000	2001	2002	%Change*
ANDORRA	0.87	0.87	0.89	0.89	0.9	0.89	0.89	0.9	3.45
ANGUILLA	0.87	0.86	0.86	0.85	0.84	0.83	0.85		-2.30
ANTIGUA & B.	0.79	0.81	0.81	0.82	0.8	0.8	0.74	0.8	1.27
ARUBA	0.84	0.84	0.83	0.79	0.79	0.86	0.82		-2.38
BAHAMAS	0.85	0.87	0.86	0.81	0.85	0.83	0.85	0.87	2.35
BAHRAIN	0.86	0.86	0.84	0.82	0.84	0.81	0.83	0.89	3.49
BARBADOS	0.78	0.79	0.75	0.76	0.8	0.78	0.83	0.88	12.82
BELIZE		0.51	0.55			0.73	0.76		49.02
BERMUDA	0.81	0.81	0.82	0.76	0.8	0.82	0.84	0.88	8.64
CAYMAN ISLs	0.8	0.81	0.83	0.79	0.8	0.82	0.85	0.87	8.75
CYPRUS	0.6	0.63	0.75	0.67	0.75	0.81	0.8	0.62	3.33
GIBRALTAR	0.86	0.84	0.86	0.83	0.91	0.91	0.91		5.81
GRENADA	0.77	0.8	0.79	0.79	0.8	0.81	0.81		5.19
GUERNSEY	0.81	0.83	0.83	0.89	0.89	0.88	0.89	0.9	11.11
ISLE OF MAN	0.87	0.88	0.85	0.86	0.85	0.9	0.89		2.30
JERSEY	0.88	0.83	0.88	0.83	0.89	0.87	0.87		-1.14
LEBANON	0.7	0.71	0.72	0.75	0.74	0.77	0.78	0.81	15.71
LIECHTENSTEIN	0.87	0.9	0.86	0.91	0.91	0.89	0.9	0.9	3.45
MALTA	0.88	0.88	0.87	0.88	0.88	0.88	0.88	0.88	0.00
MAURITIUS	0.78	0.77	0.77	0.81	0.8	0.81	0.87	0.87	11.54
MONACO	0.86	0.87	0.87	0.88	0.88	0.87	0.88	0.88	2.33
NETH. ANT.	0.89	0.88	0.78	0.84	0.85	0.83	0.91	0.9	1.12
PANAMA	0.81	0.8	0.83	0.82	0.82	0.81	0.82	0.84	3.70
SAN MARINO	0.88	0.89	0.9	0.9	0.92	0.91	0.91	0.91	3.41
ST. KITTS & N.	0.77	0.84	0.87	0.87	0.91	0.9	0.88	0.84	9.09
ST. VINCENT			0.84	0.82	0.84	0.78	0.78		-7.14
VIRGIN ISLs, B.				0.25	0.34	0.33			32.00
WEST. SAMOA	0.78	0.76	0.8	0.79	0.82	0.75	0.75		-3.85

*Variation in mean efficiency is expressed in percentage. The first and the last means were used for the calculation (Change = [last year – first year]/first year).

<40%	>40%	>50%	>60%	>70%	>80%	>85%	>0	>10

The differences between the estimates provided by both samples can be explained by the distribution of the observations. The following histograms illustrate the distribution of the profit efficiency observations in the sample.

Figure 7.7-1   **Histogram of profit efficiency full sample of OFCs (frequency of observations)**
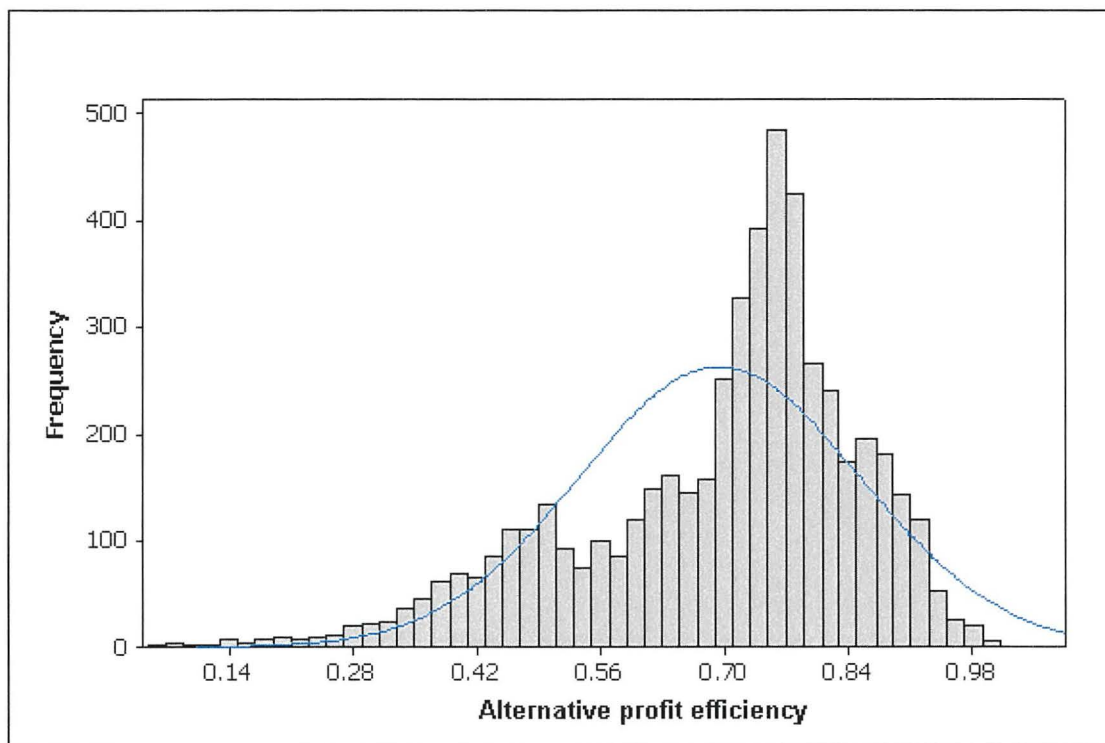
Examining the distribution of the observations in the sample, it appears that virtually all levels of bank profit efficiency appear in the sample, from extremely efficient banks, to very inefficient banks. Figure 7.7-1 shows two peaks, centred on 0.50 and 0.77. On closer inspection, as demonstrated in Figure 7.7-2, the repartition of the observations in the sample is not homogenous at all. Thus, the observations from Luxembourgian banks appear grouped together and tend to regroup the most efficient banks in the sample. The other banks from Hong Kong, Singapore and Switzerland are less efficient than their Luxembourgian counterparts but are still (on average) more profit efficient than the banks from smaller OFCs.

Figure 7.7-2   Distribution of the observations in the sample (Luxembourg vs other OFCs)
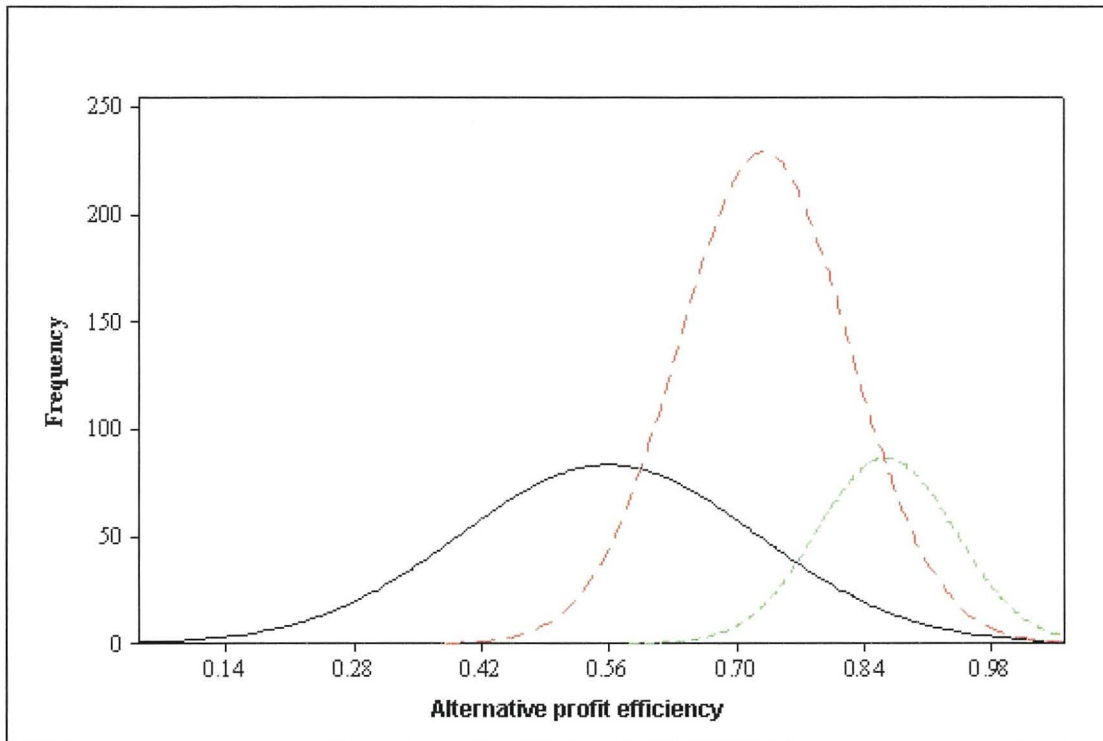
In Green: distribution for the observations for Luxembourg (mean = 0.86, standard deviation = 0.075). In red: distribution for the observations for Switzerland, Hong Kong and Singapore (mean = 0.72, standard deviation = 0.094). In Black: distribution for the rest of the sample (mean = 0.55, standard deviation = 0.16).

Figure 7.7-2 shows that it is possible to divide the full sample of efficiency observations into three groups. Luxembourgian banks are more efficient than the banks from the three other largest OFCs (Switzerland, Hong Kong and Singapore), which on average are themselves substantially more efficient than the banks from other OFCs. While the observations for the four most developed OFCs seem quite concentrated, the observations for the smaller OFCs appear to span the whole spectrum of possible observations. However, the number of observations in the smaller OFCs sample was dominated by observations from Panama and Lebanon, where banks also appeared less profit efficient on average than the other banks from other smaller OFCs. Lebanese and Panamian banks, which both had low profit efficiency estimates in the first case, represent an important part of the sample, and lower the average value among smaller OFCs. This appears clearly in Figure 7.7-3. While there seems to be important

discrepancies among Panamian and Lebanese banks (some quite efficient, many less efficient), the two countries share some similarities that could explain why their banks appear so profit inefficient[422]. Both are developing countries sharing many socio-economical features. In particular, bank labour expenses per employee appear similar (see Table 5.2-1 at US$23,500 in Panama and US$25,400 in Lebanon). These figures imply lower salaries in comparison with other more developed OFCs, and possibly lower workforce quality (e.g. unable to attract well qualified expatriate employees) which may reflect on efficiency. The relatively low GDP multiples as shown in table 2.4-1 indicate that banking activity relative to GDP remains modest, and that the local banking sector represents a substantial share of the total banking sector. Local banks competing for local customers may have less incentive to improve efficiency than banks competing for international customers. History may also provide an explanation. The Lebanese civil war ceased in 1990, allowing the slow rebirth of the offshore banking industry in Lebanon[423]. The same year in Panama, a US military intervention led to the capture of Panamian former ruler Noriega, jailed in the USA as a drug trafficker. The Panamian banking industry had to undergo a substantial cultural change following a major loss of deposits in 1990 (Chambost 1999, p328). Both banking sectors thus appear to have had to go through major changes just five years before the period studied (1995-2002). Despite these dramatic events that undoubtedly affected the evolution of these banking sectors, since 1995 at least, they have become more efficient.

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[422] Both countries are comparable in terms of population sizes, in terms of development (see human development index in Table 2.4-9); GDP levels per inhabitant are comparable at US$5248 in Lebanon and US$6002 in 2002. Even the tourism incomes are very similar at US$189.5 in Lebanon and US$185.6 in Panama (see Table 2.4-8). Market size in US$ billions had become similar by 2002 (US$40 billion for Panama and US$36 billion for Lebanon). Average bank size is also comparable (see Figure 5.3-1).

[423] Chambost (1999, p550) mentions that as of 1999, it still lagged behind other OFCs in terms of regulatory quality and attractiveness for OFC users.

Figure 7.7-3   Influence of Lebanon and Panama
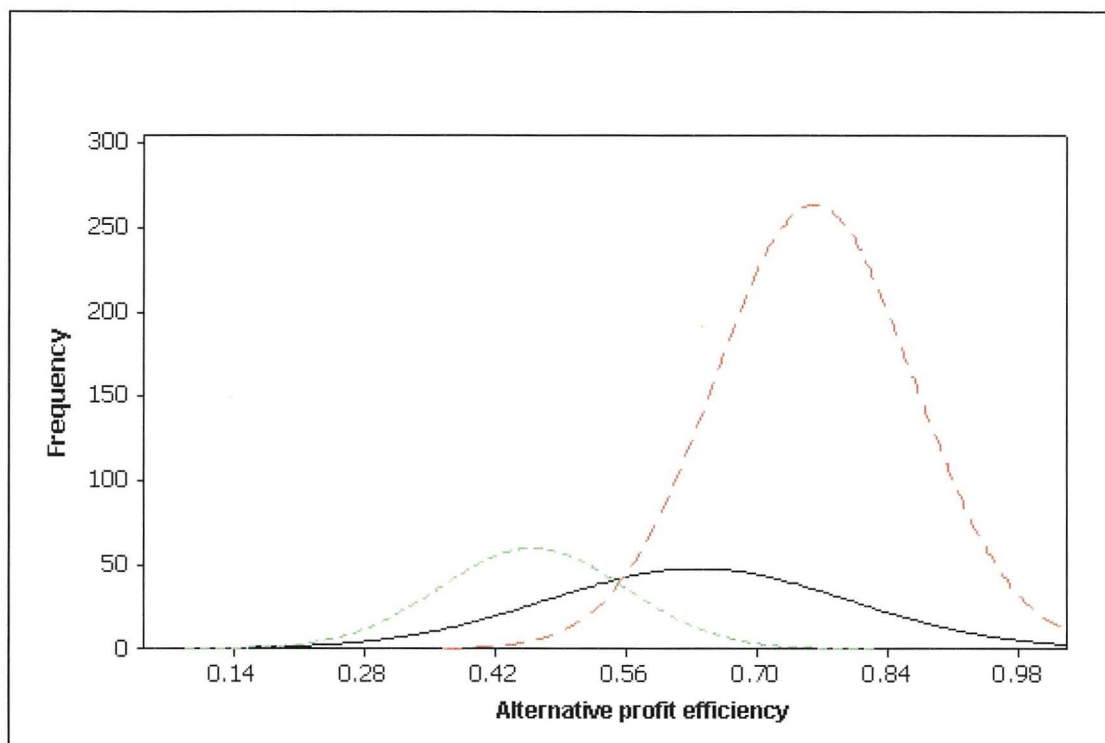
In Green, observations for Lebanon and Panama (mean = 0.46, standard deviation 0.09)
In red, observations for the countries of the four largest OFCs (mean = 0.76, standard deviation =0.1)
In Black: all the other observations (mean = 0.63, standard deviation = 0.16)

The analysis provided thus far offers a general overview of offshore bank profit efficiency, its distribution and evolution in OFCs. Table 7.7-5 and 7.7-6 show the banks with the 25 highest profit efficiency averages (all years) obtained using both samples. The first table features 21 banks from Luxembourg and four from Cayman. The overwhelming presence of Luxembourgian banks is unsurprising as the country was rated most efficient overall. If one considers bank specialisation (as defined by the BankScope database), almost all the banks in Table 7.7-5 are commercial banks, with two mortgage banks, one cooperative bank and one investment bank (on closer inspection, the bank Banco Espirito Santo appears to be a private bank, but the 'private bank' category does not exist in BankScope).

Table 7.7-5   The 25 most alternative profit efficient banks, whole sample (mean per bank)

Rank	Bank Name	Mean AP Eff	Bank Category	Country	Country of origin
1	**Erste Europ. Pfandbrief und K.**	**0.971**	**Mortgage**	**LUX.**	**GERMANY**
2	BCP Finance Bank Ltd	0.954	Commercial	CAYMAN	PERU
3	Bank Leumi (Luxembourg) SA	0.949	Commercial	LUX.	ISRAEL
4	Banca Popolare Com. E Ind. Intl.	0.948	Commercial	LUX.	ITALY
5	**BNP Paribas Luxembourg**	**0.947**	**Commercial**	**LUX.**	**FRANCE**
6	**Crediop Overseas Bank**	**0.945**	**Commercial**	**CAYMAN**	**ITALY**
7	Fideuram Bank (Luxembourg) SA	0.943	Commercial	LUX.	ITALY
8	Bunadarbanki Intl. SA	0.943	Commercial	LUX.	ICELAND
9	BANIF	0.941	Commercial	CAYMAN	PORTUGAL
10	Europäische Hypothekenbank SA	0.939	Mortgage	LUX.	GERMANY
11	Deutsche Postbank International SA	0.932	Commercial	LUX.	GERMANY
12	IMI Bank (Luxembourg) SA	0.928	Commercial	LUX.	ITALY
13	BES Finance Ltd	0.927	Investment	CAYMAN	PORTUGAL
14	Bankgesellschaft Berlin Intl. SA	0.925	Commercial	LUX.	GERMANY
15	**HVB Banque Luxembourg**	**0.924**	**Commercial**	**LUX.**	**GERMANY**
16	KBC Luxembourg	0.924	Commercial	LUX.	BELGIUM
17	Banca Lombarda International SA	0.924	Commercial	LUX.	ITALY
18	Banque Populaire du Lux. SA	0.923	Cooperative	LUX.	LOCAL
19	**Deutsche Bank Luxembourg SA**	**0.921**	**Commercial**	**LUX.**	**GERMANY**
20	Banque LBLux SA	0.920	Commercial	LUX.	GERMANY
21	WGZ-Bank Luxembourg SA	0.920	Commercial	LUX.	GERMANY
22	**Crédit Agricole Indosuez S.A.**	**0.919**	**Commercial**	**LUX.**	**FRANCE**
23	**ABN Amro Bank SA**	**0.919**	**Commercial**	**LUX.**	**NETH.LDS**
24	Banque Degroof SA	0.918	Commercial	LUX.	LOCAL
25	B.P. Edmond de Rothschild Europe	0.918	Commercial	LUX.	LOCAL

The bank categories are provided by BankScope. Bank Names, categories have been shortened for the sake of presentation. In bold characters are the banks that are subsidiaries of some of the world's largest 50 banking institutions listed by BankScope.

The list of banks in Table 7.7-5 includes some well known 'names' such as BNP (which employs 1200 people in Luxembourg to serve the private banking market), Deutsche Bank (market leader by deposits size in Luxembourg), Hypovereinbank, Dexia (of which Crediop Cayman is a subsidiary) and Fideuram (a private bank). Seven of the 25 banks are subsidiaries of the world's largest 50 banks (by asset size). By comparison, only 173 of the 1039 banks of the sample are subsidiaries of the world's largest 50 banks. Using the complete sample, computing the correlation between average profit efficiency and ownership from a large bank, a correlation coefficient of

0.145 is found, with a P value of 0.000. It is therefore possible that to some extent, subsidiaries of large international banking groups may benefit from the expertise of their parent company especially in improving profit efficiency.

Table 7.7-5 also features the bank's country of origin. Because German banks have a prominent place in Luxembourg, it is not surprising to find that 8 of the banks on the list are of German origin. BES and BANIF are Portuguese banks serving the private banking market in Cayman, probably geared to serving Brasilian clients. Bank Leumi of Israel targets people sharing its Jewish culture and faith. Bunadarbanki targets Icelandic expatriates. It is possible that the customers of such banks would be willing to pay extra to deal with banks sharing their culture and language.

Examining the average efficiency scores obtained from the reduced sample (in Table 7.7-6), the list of the 20 most efficient banks (averages for all years and 358 banks) includes 2 market leaders. It also includes Von Ernst Liechtenstein, a subsidiary of a Swiss private bank, as well as the Isle of Man Bank Limited, one of the sample's largest banks (by assets). Some change in bank ranking was expected following the change in the sample, and BANIF was the only bank remaining from the original classification.

In comparison with Table 7.7-5, Table 7.7-6 appears more heterogenous as it features 10 different OFCs (by comparison with just Cayman and Luxembourg in the previous table). Interestingly, the classification also included all three banks from San Marino. Here again, almost all the banks are commercial banks.

We could find little information about the bank rated as most efficient, Centrobanco Hispano, apart from the fact that it became a subsidiary of Banco Santander (Spain). However, the second bank rated most efficient "First City Bank"

from Mauritius was cited by the US Senate[424], indicating that the results for this bank

may be artificially high due to some form of malpractice.

Table 7.7-6   The 25 most AP efficient banks (on 358), reduced sample (mean per bank)

	Bank Name	Mean	Specialisation (General)	Country Name	Country of origin
1	**Centrobanco Hispano S.A.**	**0.933**	Commercial	PANAMA	SPAIN
2	First City Bank Ltd	0.932	Commercial	MAURITIUS	LOCAL
3	ES Bank (Panama) SA	0.926	Commercial	PANAMA	PORTUGAL
4	Volksbank Malta Ltd	0.923	Commercial	MALTA	AUSTRIA
5	Banco de Credito del Peru	0.919	Commercial	PANAMA	PERU
6	BBM Bank Limited	0.919	Commercial	BAHAMAS	BRASIL
7	St Georges Bank & Co. Inc	0.918	Commercial	PANAMA	UNKNOWN
8	National Bank of Liecht.	0.917	Spec. Gov. CI	LIECHT.	LOCAL
9	Hamburgische Landesbank	0.916	Commercial	GUERNSEY	GERMANY
10	Banco Atlantico Limited	0.914	Commercial	GIBRALTAR	SPAIN
11	Banca di San Marino SpA	0.911	Commercial	S.MARINO	LOCAL
12	BANIF Ltd	0.910	Commercial	CAYMAN	PORTUGAL
13	SBM Nedbank Intl. Limited	0.910	Commercial	MAURITIUS	LOCAL
14	Bank von Ernst AG	0.909	Commercial	LIECHT.	SWITZ.
15	Cassa di Risparmio	0.904	Savings	S.MARINO	LOCAL
16	Isle of Man Bank Limited	0.904	Commercial	I.O. MAN	LOCAL
17	Banco del Centro S.A.	0.904	Commercial	PANAMA	MEXICO
18	Banca Agricola Comm. DRM	0.904	Commercial	S.MARINO	LOCAL
19	Al-Tawfeek Company	0.903	Investment	CAYMAN	SAUDI
20	GTC Bank Inc	0.902	Commercial	PANAMA	UNKNOWN
21	Bank Frick & Co AG	0.900	Commercial	LIECHT.	LOCAL
22	BancSabadell D'Andorra	0.900	Commercial	ANDORRA	LOCAL
23	Unibanca, CA	0.899	Commercial	PANAMA	ITALY
24	CaixaBank SA	0.898	Commercial	ANDORRA	SPAIN
25	Credit Commercial de France	0.897	Commercial	MONACO	FRANCE
358	First Merchant Bank OSH Ltd	0.271	Investment	CYPRUS	TURKEY

For the sake of convenience, the names of the banks have been shortened. Thus, 'Cassa di Risparmio' was originally 'Cassa di Risparmio della Republica di San Marino'. In bold, the banks that are subsidiaries of some of the world's largest 50 banks.

The least profit efficient bank in the sample, FMB[425], from Northern Cyprus has

some intriguing features. While on average it appears to be the least efficient, it also has

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[424] Thus according to US Senate (2001), "the First City Bank doctored its financial statements" (p66). Source: Minority staff of the permanent subcommittee on investigations report on correspondent banking: A gateway for Money Laundering, Feb 5th 2001.
See http://www.senate.gov/~gov_affairs/psi_finalreport.pdf
[425] See http://www.firstmerchantbank.com also called First Merchant Bank Offshore Limited

the highest profit efficiency score observed in the sample (0.953 in 1997, but extremely low efficiency scores for the other years, making it in the least profit efficient bank on average). The comments made by official US sources concerning the bank[426] seem to indicate serious financial irregularities at the bank over the period, thus possibly explaining the erratic behavior of the bank's efficiency ratings.

Over the course of this study, particular attention has been devoted to the market leaders, the banks having the highest market shares (in deposits) in their jurisdiction. The following Table 7.7-7 shows the list of banks that appear at some point as market leaders (thus for one same country, there may be two market leaders appearing during various years), their rank and profit efficiency scores.

The largest bank in the sample, UBS AG, appears at the 154th place, behind HSBC Hong Kong, which ranks 122nd. Some of the market leaders rank very low, however, and the market leaders of the less developed OFCs all appear in the bottom of the chart. Overall, it does not seem that being a market leader conveys any strong profit efficiency advantage[427].

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[426] See http://www.fdic.gov/news/news/financial/2004/fil10104.html
See also Federal Register Notices (2004) at http://www.access.gpo.gov/su_docs/fedreg/a040824c.html
See also http://www.globalsecurity.org/security/library/news/2004/08/sec-040824-usia02.htm
[427] For the reduced sample, Spearman's rank correlation of market leaders vs non-market leaders = 0.0062 with a P value of 0. Using the reduced sample, the coefficient becomes -0. 99 with a P value of 0.000. Thus, there is appears to be no significant profit efficiency advantage to being a market leader.

Table 7.7-7   Ranks and mean profit efficiency results for the market leaders

Rank	Bank Name	Mean	Specialisation	Country name	Country of Origin
19	**Deutsche Bank Lux.SA**	**0.963**	**Commercial**	**LUX.**	**GERMANY**
122	**HSBC Hong Kong**	**0.861**	**Commercial**	**HONG KONG**	**LOCAL**
146	Coutts (Cayman) Ltd	0.850	Commercial	CAYMAN	UK
150	Cnie Monégasque de Banque	0.846	Commercial	MONACO	ITALY
154	**UBS AG**	**0.846**	**Commercial**	**SWITZ.**	**LOCAL**
183	Banque du Gothard	0.829	Commercial	MONACO	SWITZ.
186	**Credit Suisse First Boston Ltd**	**0.828**	**Commercial**	**BAHAMAS**	**SWITZ.**
208	**Merrill Lynch Bank**	**0.815**	**Investment**	**CAYMAN**	**USA**
220	Bank of Bermuda Ltd.	0.810	Commercial	BERMUDA	LOCAL
233	Banca Agricola Commerciale	0.803	Commercial	SAN MARINO	LOCAL
244	**Crédit Foncier de Monaco**	**0.798**	**Commercial**	**MONACO**	**FRANCE**
252	LGT Group Foundation	0.793	Investment	LIECHT.	LOCAL
277	ENI International Bank Ltd	0.788	Commercial	BAHAMAS	-
405	KBC International Finance NV	0.762	Investment	NETH. ANT.	BELGIUM
452	Jyske Bank Ltd	0.754	Commercial	GIBRALTAR	DENMARK
517	DBS Bank	0.736	Commercial	SINGAPORE	LOCAL
544	FirstCaribbean IB Ltd	0.730	Commercial	BAHAMAS	UK
561	Isle of Man Bank Limited	0.726	Commercial	ISLE OF MAN	LOCAL
655	**Rabobank Curacao NV**	**0.693**	**Investment**	**NETH.ANT.**	**NETH.**
688	Credit Andorra	0.678	Commercial	ANDORRA	LOCAL
718	Republic National Bank	0.662	Commercial	GIBRALTAR	USA
730	Bank of Butterfield Intl Ltd	0.656	Commercial	CAYMAN	BERMUDA
741	Arab Banking Co BSC	0.649	Commercial	BAHRAIN	LOCAL
752	**UBS (Panama) SA**	**0.640**	**Commercial**	**PANAMA**	**SWITZ.**
754	Bank of Valletta plc	0.639	Commercial	MALTA	LOCAL
790	**HSBC Overseas Bank Ltd**	**0.618**	**Commercial**	**MALTA**	**UK**
799	Bank of Cyprus Group	0.613	Commercial	CYPRUS	LOCAL
802	Cassa di Risparmio	0.609	Savings	SAN MARINO	LOCAL
836	Mauritius Commercial Bank	0.573	Commercial	MAURITIUS	LOCAL
880	FirstCaribbean Itl.	0.524	Holding	BARBADOS	UK
892	Primer Banco del Istmo	0.516	Commercial	PANAMA	LOCAL
913	St. Kitts-Nevis-Anguilla NB.Ltd	0.498	Commercial	ST. KITTS &N.	LOCAL
923	BLOM Bank s.a.l.	0.492	Commercial	LEBANON	LOCAL
954	Barbados National Bank	0.464	Commercial	BARBADOS	LOCAL
957	National Bank of Anguilla	0.461	Commercial	ANGUILLA	LOCAL
1010	Antigua Commercial Bank	0.403	Commercial	ANTIGUA & B.	LOCAL
1022	National Commercial Bank Ltd	0.385	Commercial	ST. VINCENT	LOCAL
1046	National Commercial Bank	0.303	Commercial	GRENADA	LOCAL
1047	ANZ Bank (Samoa) Limited	0.296	Commercial	WEST. SAMOA	AUST.
1049	Atlantic Bank Ltd	0.287	Commercial	BELIZE	HOND.
1055	Belize Bank Ltd	0.233	Commercial	BELIZE	LOCAL
1059	Credomatic International Corp	0.203	Holding	VIRGIN I. B.	SPAIN

The banks which are subsidiaries of the top 50 largest banking groups have been printed in bold.

Comparing the results of the full and reduced sample, one can see that the efficiency ratings obtained from the latter appear systematically higher than those

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obtained from the full sample (and differences in ratings across countries are also smaller). This requires an explanation. Bos and Schmiedel (forthcoming paper)[428], mention that changes in the structure of a bank sample not only changes the benchmark, against which banks can be rated, but more crucially, it changes the whole shape of the frontiers, thus possibly producing major changes in bank ratings. This may explain why such differences can be observed when the number of observations is dramatically decreased, or when the countries found most efficient are withdrawn from the sample. The question is therefore whether banks serving the offshore market really operate under a common profit frontier. While in theory, competition in the offshore banking market can be global, it may not necessarily be so in practice.

Having completed the analysis the results of the efficiency study, we can proceed to the conclusion.

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[428] Bos, JWB, Schmiedel, H, "Is there a frontier in a single European market?"

7.8 Conclusions

In this chapter, the results of our empirical analysis are presented, namely, the estimation of alternative profit efficiency for a sample of offshore banks over the period of 1995-2002. The efficiency measures were obtained by applying the stochastic Fourier Flexible model. Two model specifications were used: the reduced model (specified as the Fourier Flexible including two outputs, two input prices) and the preferred model (the same as the former plus GDP per inhabitant and net interest margins included as control / environmental variables in the specified model, as suggested in Battese and Coelli 1995).

The preferred model was tested both using the whole sample (with all the OFCs available) and a sample excluding banks from the four largest OFCs (Switzerland, Luxembourg, Singapore and Hong Kong). Using the full sample, banks in the sample are found to be 69% efficient on average, but when excluding the four main OFCs, average efficiency reaches up to 81%. This might be the case as changing the sample composition (and removing the OFCs where banks are found to be most efficient) changes the shape of the efficient frontier and thus the efficiency scores.

Overall, banks located in the most developed OFCs (such as Luxembourg, Switzerland, Singapore and Hong Kong) appear more efficient than banks located in the least developed OFCs (such as Lebanon or Panama). Reflecting this, the most efficient banks are essentially Luxembourgian banks, often of German origin. We also found that efficiency ratings appear to have substantially increased across the years in almost all OFCs. Differences were observed between the results obtained when the four major OFCs are included and the results obtained when they were excluded. The question is therefore whether banks serving the offshore market really operate under a

common profit frontier. While in theory competition in offshore banking could be global, it may not necessarily be so in practice.

The last chapter will conclude this thesis by providing a summary of our findings and disclosing some possible areas for future research.

8 Conclusion

Having completed the analysis of the profit efficiency characteristics of offshore banks, this chapter now concludes the thesis. The first part of the chapter outlines the main contribution of the thesis and highlights the results and their implications. We then identify the limitations of our work and suggest areas for future research.

8.1 Contribution and overview of the main results

The main contribution of this thesis is that it is the first, as far as can be ascertained, to provide a thorough exploration of offshore banking and of the efficiency of banks that operate in OFCs. It may help to understand the nature of the offshore banking phenomenon better, and serve as a stepping stone for future research. Furthermore, the outcomes of the quantitative analysis may provide interesting results for regulators, academics and bankers. Because of the pioneering nature of our work, it is useful to highlight the main findings of this thesis, on a chapter by chapter basis.

Chapter 1 puts the study in context and sets its goals. While offshore finance arouses growing interest from international regulatory bodies, there appears to be no thorough exploration of the offshore banking sector. Academic work in the area seems to concentrate on development economics. In particular, there does not appear to be any study of offshore bank efficiency. Chapter 1 then sets the main research questions and defines the structure of the study.

Chapter 2 first defines the terms 'offshore finance' and 'offshore banking'. Our definitions result from a consensus produced by many definitions issued by international organizations and researchers. An OFC is found to be a jurisdiction whose regulation is crafted so as to attract foreign financial activity, essentially featuring low

tax, greater secrecy, and in general enabling non-residents to do business more conveniently than in their country of origin. Offshore banks are defined as banks doing business in OFCs and whose activities are 'international' on both sides of the balance sheet (i.e. borrowing abroad to lend abroad). Various lists of OFCs are reviewed, and from those lists, the countries chosen for the study are selected based on their hosting of offshore banks and data availability. After a historical overview of offshore banking, we explore the 'raison d'être' of OFCs. Because they are small and often deprived of natural resources, these small countries use regulation as an advantage to attract foreign business activities, sometimes very successfully. The study proceeded towards a description of these countries in quantitative terms, sampling data from various sources, so as to create as complete a picture as possible of the economical, political, and socio-cultural background of OFCs. From our overview, it appears that all OFCs have not been equally successful at attracting offshore banking activities. In particular, the OFCs having the most controversial laws (i.e. no anti money laundering regulation) also appear to be the least developed OFCs. Tourism and offshore banking are often reported to complement each other. We find a strong and significant correlation between the tourism income per inhabitant and the banking deposits per inhabitant, thus providing empirical support for a phenomenon otherwise well documented. About two thirds of the OFCs studied have a Common Law background.

Chapter 3 provides an overview of an aspect that was found to be central to the concept of offshore finance: regulation. It was felt that because regulation makes offshore banking possible, it may play a crucial role in the understanding of offshore bank efficiency. We examined how prudential regulation is developed to prevent abuse, and how OFCs compete on regulation. We then created an overview of all the legal entities that can be found offshore alongside offshore banks. A section was then

devoted to the tax features of OFCs and how these can be exploited by international investors to limit their tax liability. We then outline the secrecy features of OFCs. Most OFCs appear to have drawn inspiration from the British Common Law and Swiss law for their secrecy features. Money laundering regulation is a more recent yet essential component of offshore regulation. As a result of international pressures on OFCs, almost all OFCs have adapted their regulation. These reforms, however, do not appear to have endangered the industry, which adapts itself constantly.

Chapter 4 provides a thorough overview of the offshore banking business. We commenced by analyzing the demand for offshore banking services, which seemed to primarily stem from high net worth individuals from both developed and developing countries. Banks serving the offshore banking market range from very large listed international banks such as UBS or HSBC to small locally owned banks. Services range from deposit taking to customized private banking for the most demanding customers. Beyond the low tax/high secrecy background, other features characterize offshore banking. These include a great emphasis on the customer/banker relationship (because the customer is heavily dependent on his bankers' discretion, trust is paramount); a great need to outsource, which sometimes results in having small locally-owned banks selling sophisticated products produced by larger international banks. We complete the chapter with an overview of the trends animating the offshore banking sector at the time of the study. A more constraining regulatory environment seems to be reducing the attractiveness of offshore banking, possibly leading to growing competition between onshore and offshore banks.

Chapter 5 is devoted to data selection and preliminary analysis. Individual bank data from the selected OFCs were obtained from Bankscope, and descriptive statistics of the financial features of banks operating in these OFC's were presented. Four OFCs

stood out in terms of number of bank observations: Switzerland, Hong Kong, Singapore and Luxembourg, that constituted around three quarters of the sample. The total amounts of deposits in the sample were then compared to the amounts of deposits reported by the BIS for these countries. It appears that all OFC s (reported in the Bankscope database) are not equally well represented (partly owing to the fact that shell banks are not present in our sample and these can account for a substantial share of offshore bank deposits in certain jurisdictions, such as in the Cayman Islands). The banks are essentially commercial banks and investment banks/securities houses (these are usually private banks). To a lesser extent, there are some savings banks and specialized governmental savings institutions, almost all from Switzerland (these were kept in our sample of OFC banks because they usually compete with commercial banks for non-resident banking business). Bahrain was the main OFC for Islamic banks. In terms of ownership, offshore banks are often either locally owned (in 40% of the cases) or owned by an owner of a neighboring country. Historical data enabled us to see when the banks of the sample were created. While the expansion of offshore banking is associated with the 1950s-1960s, 10 OFCs had banks that were created in the 19th century. Most of the bank mergers observed have occurred between 1998 and 2001, concerning banks operating not only the four most developed OFCs but also other smaller OFCs, notably Panama, Jersey and Lebanon. Using the BIS offshore deposits data and our own, it was possible to produce estimates of the deposits-one-bank concentration ratio in most OFCs. High levels of local ownership also appear associated with high levels of concentration. In 12 of the OFCs surveyed, one bank concentration ratios of more than 40% were observed. This suggests that in these OFCs, the banking sector is dominated by one bank with a substantial share of the deposits. On closer inspection, these banks are usually local and with a relatively old history. Following

this observation, particular attention was devoted to the largest banks, called 'market leaders' because they display the highest market share (in bank deposits) in the OFCs where they operate. The 30 largest banks of the sample all originate from the four main OFCs[429] (Switzerland, Hong Kong, Singapore, Luxembourg). Labour expenses are positively correlated with the GDP per inhabitant, suggesting that labour is more expensive in the most developed OFCs. Labour expenses are on average equal to 3.5 times the GDP per inhabitant. Thus, the banking sector in most OFCs appears to be an important source of taxable income. This confirms the ability of the offshore banking business to create high-incomes. Tax paid by banks reaches on average 15% of income before tax. This is lower than what is generally observed in onshore countries, yet, banks are rarely tax-exempt, thus making a direct financial contribution to the OFCs hosting them. Analyzing the balance sheets and income statements of the banks of the sample, showed that, even though banks operating in OFCs rarely have minimal capital ratios, they do not appear to be under capitalized. In addition, while deposits appear to be the major source of funding, banks tend to have relatively low loan/asset ratios. One major feature of the income statement ratios is that these ratios show very high levels of dispersion both within and across OFCs. A significant positive correlation between the levels of the net interest margins and the market growth led to the conclusion that in growing markets, net interest margins may be higher, possibly because growing markets alleviate competitive pressures. A positive and significant correlation is found between the proportion of non interest income in total income and the labour costs per employees. If the proportion of non-interest income can be used as a proxy for involvement in private banking, this would confirm that workers working in the private banking sector tend to be paid more. Cost income ratio statistics suggest that market

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[429] Except Arab Banking Corporation from Bahrain.

leaders tend to be more efficient (in terms of cost control) than the other banks (the cost income ratio for the market leaders is lower than the average cost income ratio in 20 OFCs). For the 7 OFCs where this is not the case, it appears that banks in these OFCs enjoy particularly high market shares. Interestingly, the findings of chapter 5 are consistent with the limited data concerning the offshore banking sector found in the literature. Thus, Mercer Oliver Wyman (2005) reported average cost income ratios in the wealth management sector of 60%, and this is similar to what was found for our own sample.

Chapter 6 aims at finding the most appropriate way to assess efficiency in the offshore banking sector. Following a review of the bank efficiency literature, decisions concerning the relevant efficiency concept to choose and the relevant method to measure bank efficiency were made. Owing to data constraints (lack of labour expenses among others) and because it was felt that the assumptions underpinning the study of cost and profit efficiency could not hold (the important levels of concentration made perfect competition unlikely; because offshore banking encompasses traditional deposit taking as well as private banking and because private banking comes in all shapes, the products could not be considered homogenous) the alternative profit efficiency concept was seen as the concept most worthy of study. Stochastic frontier analysis (SFA) was seen as the most suitable method to study alternative profit efficiency in banking. It has the advantages of being a one-step method (allowing to assess efficiency and find the determinants of efficiency in the same process), that has been used in a large number of bank efficiency studies to date. The functional form chosen for estimating alternative profit efficiency was the Fourier Flexible, which avoids making assumptions concerning the shape of the frontier.

Chapter 7 presents the results of the efficiency study. Alternative profit efficiency is estimated without any regressors (reduced model) both for a large sample including all the countries of the sample, and then for a sample excluding the four major OFCs. The efficiency estimates obtained were then regressed against a set of regressors. GDP per inhabitant (positively correlated with profit efficiency) and the net interest margin (negatively correlated with profit efficiency, possibly indicating that banks are more profit efficient when they focus on non-interest sources of business) were found to be the best two regressors to be used in the preferred model. Beyond GDP per inhabitant and the net interest margin, many other response variables showed some correlation with the efficiency estimates. The preferred model was found to be the reduced model including GDP per inhabitant (logged) and net interest margin as regressors. Estimates were calculated using the preferred model for both the full sample and the sample without the four major OFCs. The efficiency estimates were found to be higher when computed without the four major OFCs. Minor differences in ranking obtained using either sample can be attributed to the fact that frontier shape, and in turn efficiency ratings, may have been affected by sample composition. Using both samples however, efficiency ratings appear to have improved substantially across the years. Banks from the most developed OFCs (in terms of GDP per inhabitant) had the highest alternative profit efficiency scores, with Luxembourgian banks performing substantially better than others. When banks from the four major OFCs were withdrawn from the sample, ratings appeared to increase, most likely because in the absence of these highly efficient banks (representing three quarters of the observations), all the other banks appear relatively more efficient. On the other side of the distribution, banks from the less developed OFCs appeared substantially less profit efficient. In particular, banks

from Panama and Lebanon performed poorly. Recent political turmoil (1990) in both countries may have played a role.

Our study yielded a substantial amount of new information about offshore banking. We will now briefly overview the implications of these findings.

8.2 Implications of the results

Our results are likely to be interesting to banks. The fact that bank profit efficiency appears to have progressed in most OFCs over the last years bears witness to the fact that banks have made an effort to improve their profit efficiency. Relatively important variations in the alternative profit efficiency estimates within most OFCs suggests that there is scope for improving profits performance. This may be achieved through increased outsourcing, or by improving workforce quality. While onshore customers in some countries may have to repatriate their wealth onshore, offshore banks must be ready to follow them onshore. However, facing onshore competition will force banks to improve their efficiency to remain competitive, particularly while their traditional selling arguments (low tax and secrecy) are being eroded. Some consolidation in the offshore banking sector may occur (a good thing when an efficient bank takes over a less efficient bank). Due to the constraints arising from serving OECD customers[430], offshore banks may be well advised to search for customers in countries where regulators have less leverage on them, such as developing countries (as China and India). Establishing subsidiaries in other OFCs to be closer to this potential customer base may be a sensible move (many banks have already done so).

For the OFCs, there are no indications that a very lax regulatory environment allows banks to be more profit efficient. In fact, the most profit efficient banks are

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[430] As explained in chapter three, OECD countries usually try to refrain their citizens from benefiting from the low tax features of offshore banks.

located in highly regulated countries. Regulation should also be as attractive as possible from the customer's point of view (. Banking regulation, however, should provide strong incentives to improve profit efficiency. From the OFCs point of view, bank profit efficiency should be an important concern. Indeed, banks usually pay tax on their income in most countries (as seen in table 5.2-14). Greater income translates to more tax income for the countries concerned. While this remark could apply to most countries, the reliance of most successful OFCs on offshore-finance derived income makes it even more important. Fostering bank profit efficiency should therefore be a major concern of OFCs. Ensuring that the jurisdiction may go on attracting a highly qualified foreign workforce is also another important issue. In the face of international pressure, offshore banks have started to diversify internationally[431]. Such a move appears only feasible to banks large enough to set up subsidiaries abroad. OFCs could be well advised to foster the emergence of national champions where they have not done so yet.

Our findings also have implications for the international organizations controlling the activity of OFCs. The IMF country reports often mention a lack of data concerning offshore banking. Using available data, our investigation managed to produce a basic set of statistics that may help make the offshore banking sector less obscure. As far as international organizations are concerned, we have shown that in many of these OFCs, the banks (for which information is available) appear essentially involved in activities of a commercial nature (instead of being purely tax minimization subsidiaries of their onshore owners). When estimating profit efficiencies, some observations located at the tails stood out. For example, First Merchant Bank of Cyprus, although it displays fairly stable ROEs over the period surveyed, displays both

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[431] In chapter 4, we have discussed the case of offshore banks seeking to expand abroad. As it has been seen, doing so is not the privilege of the banks of the major four OFCs. Indeed, banks from Bermuda, Liechtenstein, Lebanon and other OFCs have started to expand abroad.

the absolute highest observation in terms of profit efficiency and the absolute lowest observations. The bank was known to have laundered money (which at the time was not an offence in Cyprus). Inconsistencies in profit efficiency scores of various offshore banks may be useful as a signaling device for regulators to identify 'unusual' commercial activities.

Having identified several potential implications of our findings, we will now examine the limitations of our study.

8.3 Limitations of the study

Data availability problems are often cited by researchers and regulators alike as a reason for the opacity of the offshore banking sector. While we found sufficient data to conduct our research, data availability was still a concern. Causes for data availability limitations are many. First, there is a lack of obligatory disclosure of financial information from banks and funds alike in many OFCs. In the case of 'shell' banks (who represent the bulk of the deposits in many Caribbean OFCs), data unavailability was found not to be a cause for concern because 'captive' or 'shell' banks do not have a commercial activity as such (and were therefore not relevant to our study). In other cases, offshore banks that are part of larger international groups may simply not publish accounting data because they may not need to (unlike smaller independent banks that may need to make data available to their customers to gain their trust). Some bank details for various countries are also often missing, such as bank labour costs. Such missing data influenced the input choice of the efficiency estimation employed in the study. There may also be concerns as to the relevance of the accounting information of some banks (whose accounts may not necessarily audited). While we found possible evidence of account manipulation (possibly leading certain

banks to be far more or far less efficient than they should be), data overall appears to have been relevant insofar as it led (we believe) to coherent results.

Macroeconomic data was also often found to be missing, usually because it is simply unavailable (some of the countries may simply be too small to be able to afford gathering and keeping detailed information), or because macroeconomic data is only available in consolidated form, encompassing several countries. Such data was of little use for this study. In order to compensate for missing data, we have resorted to deducing missing data as much as possible, yet often, data that could have been of great interest could simply not be obtained or estimated.

Data availability has thus posed the greatest challenges and as such represents the greatest limitation to studies in the field of offshore finance. While the results of the study appear globally rather satisfactory, particularly in the absence of previous research in the area, data availability has delimitated the area that was available for investigation. For example, input and output specifications were limited by data availability ('price of labor' could not be used in the study because of the lack of labor data. Instead 'price of other services' defined as overheads/assets was used instead). In a similar way, the lack of macroeconomic data set us a limitation in choice in the regressors available to establish the preferred model. Using regressors that would not have been available for all countries would indeed have forced us to reduce the number of countries available for the efficiency estimation.

Overall we have endeavored to make the best use possible of available data. Increasing data availability over the last years owing to international pressures on the OFCs, has resulted in making more data available for study. Thus, we may proceed to the last part of our conclusion, exploring possibilities for further research.

8.4 Opportunities for further research

Because of the lack of previous work in the area, there are substantial opportunities for further research in the field of offshore banking and finance. In the course of this thesis, we have found several topics that seem to have not been addressed by academic research thus far, but would be worthy of further investigations.

The first category of topics that would benefit from further research relates to economic development issues.

For instance, the presence of 'local champions' (locally-owned and managed banks with a large market share) in many OFCs seems to suggest that some OFCs fostered a home-grown offshore banking industry, developing their own banks to serve foreign customers instead of solely relying on foreign banks. For instance, Bermuda and Mauritius seem to have had a relatively restrictive attitude towards foreign banking groups, probably in order to foster the development of their own banks. Other countries, by contrast (Cayman Islands, Jersey, and Guernsey) owe their offshore banking sectors almost strictly to the arrival of foreign banking groups. It could be interesting to investigate what development strategy works best and in which circumstances. While having a home-grown offshore banking industry offers the advantage of allowing a better control of the banking sector (in particular allowing for tighter bank secrecy)[432], adding value in the OFC and to keep income in the jurisdiction, having a more opened banking sector more welcoming of foreign banking institutions may have the advantage of fostering a faster but perhaps more volatile growth. Alternatively, it would be interesting to study the critical success factors in the area of offshore banking development. Indeed, it is clear that all OFCs are not equally

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[432] The Financial Times recently reported that the UK managed to force the subsidiaries of UK banks to disclose banking details of British customers having undeclared accounts in the Channel Islands.

successful (new entrants such as Montenegro or Nauru regularly fail) in developing their offshore banking industry, and it could be of value to investigate the factors that play the greatest role in the development of an offshore banking sector. Alternatively, it could be worthwhile to analyze in more detail the complicated relationships between OFCs and onshore jurisdictions. While OFCs must constantly adapt their regulation to the requests of onshore countries, it could be interesting to see to what extent it is possible for an OFC to craft laws that allow them to attract offshore business without leading to retaliation from onshore countries (for instance, an overview of the IMF country reports indicated that many OFCs were focusing on the development of the captive insurance business, an area that has thus far been almost exempt from onshore criticism).

The area of offshore bank efficiency studies, to which this study contributes, deserves more attention. In particular, looking at cost efficiency would complete the picture provided by this study of the alternative profit efficiency of offshore banks. The presence of some of the largest banks among the most efficient could hint at the existence of economies of scale. Thus, further research could investigate the existence of technical progress, economies of scale and cost efficiency. Further research should also take into account whether the accounts are audited or not and whether the banks are listed on the stocks markets or not. A point requiring particular attention is whether banks operating offshore really operate under a common frontier, and whether banks operating in the most developed OFCs (Switzerland, Hong Kong, Singapore and Luxembourg) really are comparable with the others.

It is also be possible to make a formal study of the competitive advantages of OFCs and how these are likely to evolve. Thus, while regulation is easy to copy and may not be a competitive advantage as such (regulation can be modified under onshore

pressures or copied if successful), more stable sources of competitive advantage could include workforce or government quality, or relations with onshore countries (independence etc). In particular, as offshore regulation becomes burdened by pressures from onshore countries, it appears interesting to see to what extent OFCs can adapt to remain competitive vis a vis onshore financial centers.

While various authors reported the possibility that offshore private banks would enter into competition with private banks onshore, this issue deserves investigation as many large offshore banks made substantial investments to follow their customers onshore. While the offshore environment has advantages of its own, the erosion of these advantages may invite customers to repatriate their funds onshore, thus forcing banks to follow them. To study such an issue, a possibility would be to start with a qualitative study, which could include a survey of offshore/private bank websites to compare the services offered (paying particular attention to the importance given to the 'offshore' selling point in offshore banks websites) and possibly a survey sent to the bankers themselves. The quantitative part could analyze offshore and onshore private bank financial statements to compare their characteristics.

While various commentators had foreseen that the growth of offshore banking business would stall and that funds would be repatriated onshore or that holders of offshore accounts would be subject to tax in their home countries, recent evidence seems to show that OFCs and their banks may have found ways to continue to prosper, offering their customers ways to circumvent these new legal requirements. Hall (2006) mentions that the EU policy forcing OFCs to either impose a withholding tax on the income of the deposits owned by EU nationals or forcing offshore account owners to disclose offshore account information has not had a large effect on the European OFC industry (as yet). Once again, offshore banking seems to have managed to evolve to

survive. This evolution process of offshore banking could also be the very object of a specific study.

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Appendices

Appendix 1: OFC and tax havens lists

The OFCs used in the sample studied are printed in red font. A detailed definition of the lists is provided at the end of appendix 1. This table completes section 3.5-1 of this thesis.

Name	FATF black list	FSF category	OECD Harmful tax list	CFATF Members	United Nations represented	Chambost List	Doggart List
Aland							yes
Alderney			yes			yes	
Andorra		2	yes		1993	yes	yes
Anguilla		3	yes	yes		yes	yes
Antigua and Barbuda		3	yes	yes	1981	yes	yes
Athos (Mount)						yes	
Austria					1955	yes	
Azores							yes
Bahamas	yes/R	3	yes	yes	1973	yes	yes
Bahrain		2	yes		1971	yes	yes
Barbados		2	yes	yes	1966	yes	yes
Belize		3	yes	yes	1981	yes	yes
Belgium					1945	yes	
Bermuda		2		yes		yes	yes
BVI		3	yes	yes		yes	yes
Brunei					1984	yes	yes
Cambodia					1955	yes	
Campione						yes	
Cayman	yes/R	3		yes		yes	yes
Canary, Ceuta-Melila							yes
Canton de Vaud						yes	
Ciskei						yes	
Cook	yes		yes			yes	yes
Corsica							yes
Costa Rica				yes	1945	yes	
Cuba						yes	
Cyprus (Greek)		3			1960	yes	yes
Cyprus (Turkish)		3					yes
Danemark						yes	
Dublin						yes	
Dominica	yes		yes	yes		yes	
Djibouti					1977	yes	
Falklands							yes
French Antarctic terr.							yes

Name	FATF black list	FSF category	OECD Harmful tax list	CFATF Members	United Nations represented	Chambost List	Doggart List
French Polynesia						yes	
Gibraltar		2	yes			yes	yes
Grenada			yes	yes	1974	yes	yes
Groenland						yes	yes
Guernsey		1	yes			yes	yes
Haiti					1945	yes	
Hungary	yes					yes	
Hong-Kong		1				yes	yes
Iceland					1946		yes
Ingushetia						yes	yes
Ireland					1955	yes	
Israel	yes				1949	yes	
Jamaica				yes	1962	yes	
Jersey		1	yes			yes	yes
Jordan						yes	
Kuwait					1963		yes
Labuan						yes	yes
Lebanon	yes	3			1945	yes	yes
Liberia			yes		1945	yes	yes
Liechtenstein	yes/R	3	yes		1990	yes	yes
Luxembourg		1			1945	yes	yes
Macau						yes	yes
Madere						yes	yes
Maldives			yes		1965		yes
Malta		2			1964	yes	yes
Man (Isle of)		1	yes			yes	yes
Marshall (Islands)	yes		yes		1991	yes	yes
Mauritius		3			1968		yes
Maurier (Isle of)						yes	
Monaco		2	yes		1993	yes	yes
Montenegro						yes	
Montserrat			yes	yes		yes	
Nauru	yes		yes		1999	yes	yes
Neth Antilles & Aruba		3	yes	yes		yes	yes
New Caledonia						yes	
Nine						yes	
Norfolk Islands							yes
Niue	yes		yes				yes
Quatar					1971		
Oman					1971	yes	
Palau							
Panama	yes/R	3	yes	yes	1945	yes	yes
Philippines					1945	yes	
Polynesia (French)						yes	
Pitcairn (Islands)						yes	yes

Name	FATF black list	FSF category	OECD Harmful tax list	CFATF Members	United Nations represented	Chambost List	Doggart List
Samoa			yes		1976	yes	yes
San Marino							yes
Sark			yes			yes	
Seychelles			yes		1976	yes	yes
St Barthelemy (Fra.)						yes	
St Helen						yes	
Singapore		1			1965	yes	yes
S.Tome&Principe					1975		yes
SriLanka						yes	
StLucia			yes		1979		yes
StMartin						yes	
StPierre&Miquelon						yes	
StKitts and Nevis	yes		yes	yes	1983	yes	yes
St Vincent & Gren.	yes		yes	yes	1980	yes	yes
Svalbard						yes	yes
Switzerland (Vaud)		1			2002	yes	yes
Tanger						yes	
Tokelau							yes
Tonga			yes		1999	yes	yes
Trieste						yes	yes
Tunisia						yes	
Turks Caicos			yes	yes		yes	yes
Uruguay					1945	yes	yes
UK						yes	
USA						yes	
US Virgin Islands			yes			yes	yes
Vatican						yes	yes
Vanuatu			yes		1981	yes	yes
Venezuela				yes	1945		

FATF blacklist[433]: The financial action task force (FATF) was created in 1989 by the OECD for tackling money laundering problems, and issued a list of 40 recommendations against money laundering in 1990. In 2000, it issued a list of the 'uncooperative' countries that had not implemented these measures. The list of uncooperative countries includes more than OFCs. Countries noted here as yes/R are the countries originally included in the list but that took steps to be removed from the list. The list is displayed as found in Doggart (2002, p249).

FSF categories: The financial stability forum (FSF) was created by the G7 and supported by the BIS in 1999. It aims at detecting and addressing flaws in the international financial system. While issuing a report in March 2000, the FSF recognized that all OFCs were not equally well supervised and issued a classification. Categories go from 1 (very well supervised centers) to 3 (poorly supervised).

OECD harmful tax list: the list, published in june 2000 by the OECD, encompasses preferential tax regimes and 35 tax havens. OECD member states (including major

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[433] This list completes section 3.5-1

OECD member states) had to dismantle or adapt these preferential regimes. The list of tax havens encompasses those deemed uncooperative. Because Bermuda and the Cayman Islands agreed to cooperate, they were removed from the list (list as in Doggart, 2002, p249).

CFATF members: The Caribbean financial action task force (CFATF) was created in Aruba in 1990 to find solutions to the problems met by OFCs when tackling money laundering problems. The list regroups OFCs of the Caribbean, but non-OFCs countries as well.

United Nations represented: The date mentioned is the date at which the countries joined the United Nations. Presence at the United Nations offers the OFC some political influence (47 OFCs are represented) and stands as a mark hallmark of political independence.

Chambost list: Chambost, an international lawyer based in Switzerland, was one of the first authors to issue tax havens guides. He produced a list of tax havens, which he rated in function of their attractiveness for tax minimization purposes. The list provided here is the lists of the countries/tax havens present on his list (he recommended to avoid some of them). The list was published in 1999.

Doggart list: Doggart's 'Tax havens and their uses' is also a guide of tax havens, outlining their strengths and weaknesses. The list provided here is the list of all the places mentioned by Doggart in her book.

Appendix 2: Offshore regulation: examples

Regulatory framework in selected OFCs (from Errico and Musalem 1999)

Anguilla	Both private and public companies may operate onshore and offshore. All four domestic banks offer offshore banking services.	n/a	No taxes are levied	Offshore and onshore banks are under the oversight of the Offshore Finance Committee chaired by the Governor (Anguilla is a British dependency with internal self rule) with representatives of both the government and the private sector.
Antigua and Barbuda	Offshore banks may be legally established under the International Business Companies (IBC) Act (1982) and are defined as corporations licensed to carry out business in currencies other than those of Caricom. Confidentiality provisions in the IBC Act make customer information disclosure possible only in cases related to criminal acts.	Minimum paid in capital is US$1 million. Licensing includes information on shareholding, shareholders, directors, and officers with satisfactory evidence that the latter have the necessary education and experience, and recent financial information about the applicant. Offshore banks must submit quarterly returns and an annual audit must be submitted to the Inspector of Banks in the Ministry of Finance, which has the ability to carry out on-site inspections.	Offshore banks have a 50 year reprieve from taxes on profits. There are no income, capital gains, or other wealth taxes on individuals.	Offshore banks are regulated by the supervisor of Banking and Trust corporations and the Ministry of Finance. The Eastern Caribbean Central Bank does not supervise the offshore sector.
Bahrain	Deposits from non-bank institutions are allowed only if they are at least equivalent to US$ 50,000. Offshore banks cannot extend loans to residents of Bahrain; cannot offer current accounts.	Locally incorporated offshore and onshore banks must follow the same rules. Offshore institutions are required to disclose fully their ownership structure. They are subject to regular reporting requirements to the Bahrain Monetary Authority (BMA), on a monthly, quarterly, semi-annually, and annually basis. Prudential requirements are applied on a consolidated basis.	Taxation is minimal	Offshore banks must be licensed by the BMA, which also supervises them. A deposit insurance scheme is in place for all commercial banks. The BMA has the ability to provide lender-of-last-resort (LOLR) facilities to onshore banks. Offshore banks are excluded from the LOLR support.
Barbados	Offshore banks must be licensed under the Offshore Banking Act of 1979 as an eligible company under the Companies Act or as a qualified foreign bank. Offshore banks are	Prior to licensing, supervisors investigate the applicants, the net-worth of the principals and capital adequacy, as well as background information on shareholders, directors, and senior	Low-tax jurisdiction with an extensive web	Offshore banks must be licenced by the Central Bank of Barbados, which also regulates and supervises them.

	allowed to do business with residents such as International Business Companies (IBCs) and Foreign Sales Corporations (FSCs).	officers. Applicant institutions must provide financial statements from shareholders, directors, and senior officers. Applicant institutions must provide financial statements from shareholders controlling more than 5 percent of the voting stock, information on corporate structure and approval of the parent supervisor. Offshore banks are required to submit quarterly returns; the Basle capital adequacy criteria for country and individual risk exposure supply.	of bilateral tax treaties.	
Belize	IBCs are allowed to carry out offshore banking with appropriate licence. IBCs are prohibited from owning shares or assets in a locally incorporated company. They cannot sell shares or borrow from Belizean residents.	n/a	Taxation is minimal. A one off fee of US$100 is levied with registered capital up tp US$50,000.	Offshore banks must be licensed by the central bank of Belize under the 1996 Offshore Banking Act. The central bank also supervises offshore banks. The Belize Association of Offshore Practitioners (1995) also ensures a degree of professional code of conduct in the industry.
Isle of Man, Jersey and Guernsey	Allowed to engage in lending and deposit taking activities in foreign currencies with non-residents.	Offshore banks are subject to conditions which cover the ownership, management, capital adequacy, the production of accounts, audit, and similar requirements.	Taxation is minimal	For the purpose of banking supervision, the Crown Possessions are not part of the UK; neither are they part of the EU. They have their own supervisory authorities. The UK deposit insurance fund does not apply to all kinds of deposits made in the crown possessions. The Bank of England is not the lender-of last resort to banks incorporated in the Crown Possessions.
Malaysia (Labuan)	Offshore banks are allowed to operate only in the International Offshore Financial Centre (IOFC) on the island of Labuan off Borneo. Offshore banks cannot accept checking accounts and extend loans denominated in the Malaysian currency to both nonresidents and Malaysian residents.	No exchange controls are in place. There are stringent bank secrecy rules.	Taxation is minimal	Offshore banks operating in the IOFC are not regulated by the Banking and Financial Institution Act of 1989, but are governed by separate legislations monitored by a regulatory body known as the Labuan Offshore Financial Services Authority. There is no formal deposit insurance scheme. Bank Negara has the ability to provide lender of last resort facilities with the approval of the Ministry of Finances.

Singapore	Typically, offshore banking is operated through Asian Currency Units (ACUs). ACUs are operational units whose function is to conduct business in the Asia Dollar Market. ACUs may also be operated by onshore commercial banks and merchant banks. In these cases, ACUs are distinct accounting entities (but not distinct legal entities) separately licenced by the Monetary Authority of Singapore (MAS). ACUs accept deposits and make loans in foreign currencies and are prohibited from doing business in Singapore dollars. They cannot accept time deposits of less than SGD 250,000 operate savings accounts, have more than one branch. Total credit facilities to Singapore non-bank customers must be less than SGD 50 million.	ACUs are exempt from several prudential regulations, most notably, the reserve requirements (normally 6percent), the minimum liquid asset ratio (normally no less than 18 percent), limitations on investments, limitation on acquisition of immovable property, and some of the limitations on credit facilities (limit to a single borrower and related party or parties). Foreign ACUs are required to provide a guarantee from their parent institutions ensuring liquidity on demand to the ACU should it run into difficulties. ACUs are required to provide detailed financial statements to the MAS on a monthly basis.	ACUs are taxed ata concessionary rate of 18 percent (normal corporate tax rate is 26 percent). There is no withholding or income tax on non-resident ACUs depositors.	ACUs must be licensed by the MAS, which also supervises them. Inspections on the accounts of the ACUs are carried out on a regular basis. There is no formal deposit insurance scheme. The MAS has the ability to act as a lender of last resort, but not an obligation to do so. In 1995, the Banking Act was amended to allow foreign regulators to inspect the Singaporean branches of banks under their oversight.
Thailand	Allowed to engage in lending and deposit taking activities in foreign currencies with non-residents. Also allowed ton engage in treasury and corporate finance activities. Cannot engage in transactions denominated in Bath with Thai residents.	n/a	Offshore banks are taxed at a concessionary rate of 10 percent (corporate income tax is 30 percent).	Offshore banks are licensed by the Central Bank and are subject to its supervision. A deposit insurance scheme for Bath deposits is in place. It is not open to offshore banks.
The Bahamas	Non-resident companies, including offshore banks are allowed to operate freely in foreign currencies. Exchange control approval is required to operate Bahamian dollar accounts.	Under the Caricom Bank Supervision Harmonisation Project (CBSHP), offshore banks are subject to applications requirements, minimum required levels of capital and reserves, and external audits. Like onshore banks, offshore institutions must meet requirements in the case of directors' qualifications, information disclosure and reporting.	No income, corporate, capital or withholding taxes apply.	The Central Bank of the Bahamas supervises offshore banks.
The	Foreign banks can operate Offshore Banking	Locally incorporated offshore and onshore banks	Taxation is	Offshore banks are licensed by the Central Bank

Philippines	Units (OBUs). OBUs are permitted to conduct all normal banking transactions with non-residents in any foreign currency. Deposits from nonblank institutions are allowed only if they are at least equivalent to US$50,000. Cannot conduct transactions denominated in pesos. Transactions in foreign currency with residents are strictly limited.	must follow the same rules. In order to gain the approval from the Central bank for the establishment of an OBU, foreign banks must provide a guarantee of financial support to the OBU if need be and promise to train local citizens in various international banking positions.	minimal.	and are subject to its supervision. A Deposit Insurance Scheme (DIS) for peso deposits is in place. It is unclear whether offshore banks may participate in the DIS.
USA	US banks are allowed to engage in cross-border transactions, including offshore banking, through head office international departments, foreign branches, foreign subsidiaries and affiliates, and International Banking Facilities (IBFs). US banks are allowed to participate abroad in investment banking and other activities permitted to banks in many countries, but still prohibited at home.	Head office international departments are subject to US regulation of their international lending exposure under the International Lending Supervision Act. IBFs are subject to Fed authorisation and are regulated and supervised in the same way as the head office international departments. Reserve requirements are applied on foreign currency deposits held with IBFs when these funds are transferred to the US parent institutions or lent to US residents.	n/a	The Office of the Comptroller of the Currency (OCC) and the Fed are largely responsible for supervising the international operations of US banks. They carry out off-site monitoring and on-site inspections of offices abroad. The US deposit insurance schemes does not apply to the IBFs.

Source: Errico & Musalem (1999, pp7-9).

Chambost (1980) summary table

	Com. systems	Law system	Local exch. control	Nr of banks	Legal basis	Secrecy in foreign exchange matters	Penalties for secrecy violations	Numbered accounts	Pseudonym accounts	Countries with wich difficulties exist	Bilateral information exchange convention	With. tax on div. from local companies
Andorra	satisfying	medieval	no	6	custom	total secrecy	civil	yes	yes	France & Spain		nil
Bahamas	excellent	common law	yes	350	1965	secrecy	civil & penal	yes	yes	USA	nil	nil
Bahrain	good	medieval	no	53	custom	total secrecy	civil	no	no	nil	nil	nil
Cayman	excellent	common law	yes	220	1966	secrecy	civil & penal	yes	difficult	USA	nil	nil
Hong Kong	excellent	common law	no	108	Com. law	total (exc. UK)	civil	difficult	difficult	China & UK		nil
BVI	satisfying	common law	no	4	Com. law	secrecy	civil	difficult	difficult	nil	yes[434]	nil
Jersey	excellent	common law	yes		Com. law	secrecy	civil	yes	no	UK	UK	nil
Guernsey	excellent	common law	yes	50	Com. law	secrecy	civil	yes	no	UK	UK	nil
Liechtenstein	excellent	Germano-latin	no	3	1960	total secrecy	civil & penal	yes	yes	nil	nil	4%
Luxembourg	excellent	French civil code	yes	94	Var. texts	secrecy	civil	yes	difficult	nil	8 countries	15%
Isle of Man	satisfying	common law	yes	39	Com. law	secrecy	civil	yes	no	UK	nil	20.50%
Vanuatu	satisfying	common law	yes	46	1971	total secrecy	civil & penal	yes	yes	Australia	nil	nil
Panama	excellent	civil code	no	82	1959	total secrecy	civil & penal	yes	no	nil	nil	nil
Singapore	excellent	common law	yes	100	1970	secrecy	civil & penal	no	no	nil	Many	40%
Switzerland	perfect	civil code	no	500	1934	total secrecy	civil & penal	yes	yes	nil	Many	35%

Notes:
⇨ None of the countries mentioned enforce a withholding tax on interest from anonymous accounts apart from Switzerland where it is 35%
⇨ Only Switzerland allowed bearer accounts
⇨ In all countries, offshore accounts could be opened in the name of a trust or a company (legal entities)
⇨ The identification of the beneficiary owner of foreign entities was required nowhere
⇨ Foreign currency accounts could be opened for non-residents in all countries
⇨ Secrecy in foreign tax matters was total everywhere. In Switzerland, Singapore and Switzerland there could be exceptions to this point
⇨ Back to back loans were possible everywhere apart from between Bahrain and Israel and between Vanuatu and Australia

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[434] Danemark, Sweden, Norway, USA, Japan, Switzerland

Appendix 3: OFC selection

Africa

Liberia is often considered an OFC as it is an important issuer of 'flags of convenience'. However, there is no evidence of other offshore financial activities. Moreover, little information is available about the economy of this country, plagued by Civil war.

Mauritius made substantial efforts to become an OFC (Hein and Pang 1998). Its main originality is to have developed a wide network of double taxation agreements. It has its own stock exchange and a central depository system. According to Baker (1997), the granting of offshore banking licenses has been limited to help authorities to supervise the sector. Mauritius undertakes 90 percent of its offshore banking with India as it targets Indian expatriates willing to invest in India. All main accounting firms are represented on Mauritius.

Asia/Pacific

The **Cook Islands** enacted the "offshore Banking Act" in 1981 for companies wishing to conduct offshore banking operations[435]. It offered two sorts of offshore banking licences: licence "A" which allowed banks to have a physical presence subject to a minimum capital requirement of US$10 million, and licence B for banks operating strictly offshore with lower capital requirements (US$2 millions). No bank data was available.

Labuan, a Malaysian island became an OFC and aims to become an Asian Islamic OFC equivalent to Bahrain. The development of Labuan as an OFC was financed by the Malaysian government (Chambost, 1999). In 1997 there were 57 banks there but almost no bank specific information was available in BankScope.

Nauru[436] is the world's smallest republic. Facing decreasing income from its phosphates exploitation mines[437], Nauru started licensing offshore "captive" banks at very attracting conditions. During the 1990s, around 400 banks were licensed. Pressures from FATF countries led to the cancellation of these licences[438]. Only one observation (apparently from a Russian bank) was available for Nauru in BankScope, which is therefore not represented in the study.

Hong Kong became a haven for the Chinese Diaspora (ant their wealth) fleeing the revolution (Khoury in Park & Essayad, 1989, p145). A British colony, its use of common law helped it to set up a successful offshore banking industry (Chambost, 1980, p182). By 1999, among Hong Kong's banks, about 130 were licensed to do business exclusively with non-residents; in 2002, it was the 9th largest banking centre in the world and it has been a FATF member since 1991. The services industry provides a substantial part of the country's income (Doggart, 2002, p199-

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[435] For more information, see http://www.trustnet.com.hk/cook-islands.htm

[436] L'Etat du Monde 2002 (2001 p348)

[437] Phosphates granted Nauru one of the highest per capita incomes in the world (up to US$17,500 in 1983). Phosphate income allowed the state to employ 95% of all Nauruans (The Economist December special issue 2002)

[438] In particular, Nauru had no anti money-laundering regulations and no means to enforce them while the licensing requirements appeared prone to abuse. See FinCEN http://www.ustreas.gov/fincen/advis21.pdf

See also Small (1999), Federal Register (2003) and Levin (2001).

209). Very reliant on China to which it is attached since 1998, Hong Kong has an important free trade zone and plays a great role in China's external trade. Hong Kong banks were thus selected in the sample.

Western Samoa's[439] Offshore Banking Act was enacted in 1987 and allows for three classes of offshore banking licences. They are differentiated by the sorts of operation that can be conducted and the level of capital required. The "A" class licence requires a US$ 10 million capital guarantee, the "B1" class licence requires a US$ 2 million capital guarantee, and the "B2" class licence requires a US$ 250,000 capital guarantee. Western Samoa was included in the sample.

Singapore also attracted the Chinese Diaspora and became Hong Kong's rival in the region. It is famous for its severe laws and its low level of crime. Singapore's Eurocurrency business started in the 1960s when Singapore became a hub between Asia, the US and Europe. In 1970 it allowed foreign banks to open branches (Hodjera, 1978[440]). Chambost included Singapore among the bank havens in 1980[441]. Singapore's bank secrecy laws were essentially meant to protect foreign depositors (Doggart, 2002, p56).[442] While Singapore has become less reliant on offshore finance (Chambost, 1999, p581), it still had 200 banks in 2002 and was adapting its legislation (Tan 2002, pp380-382). Singapore's domestic banking sector has become more concentrated, and total banking sector assets amounts to US dollars 203 billion (US Embassy in Singapore[443]). Avery (2004, p90) reports, that the world's top 20 private banks are present in Singapore. Private banks benefit from low the low-tax environment. Singapore was thus included in the sample.

Vanuatu[444] issued offshore banking licences, like Nauru and West Samoa. It was forced to improve its offshore banking law under international pressure. The Reserve Bank of Vanuatu must now approve the nomination of the managers of the offshore banks, the bank must maintain a physical presence in Vanuatu (putting an end to captive banking) and external auditing is compulsory. Little data is available about Vanuatu's offshore banking sector. Banks from Vanuatu could therefore not be used in our analysis.

Caribbean

Anguilla is a self-administered crown dependency since 1980. Like in most other crown dependencies, it is administered by a governor who personally takes charge of internal security, external affairs, defence, the public service, and international financial services while other matters are delegated to local government (Stationery Office, 2000). Very reliant on tourism, Anguilla is expanding its offshore financial sector, focusing on offshore companies incorporation and management. Banking has remained limited (The Stationery Office, 2000). Anguilla was included as its two banks were represented in BankScope for almost all the years under study.

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[439] For further information on Western Samoa's offshore industry, see
http://www.trustnet.com.hk/samoa.htm#bankingact
[440] Hodjera (1978) notes that allowing branches rather than subsidiaries passes the risk to the bank's head offices.
[441] Chambost (1980) p261
[442]The Belgian bank MeesPierson considers Singapore as a safe alternative for offshore assets both for European and Asian customers. See
http://www.meespierson.com/meespierson/com/home.nsf/wwwVwContent/l2singapore.htm
[443] It is also mentioned that domestic banks cannot be more than 40% foreign owned.
http://singapore.usembassy.gov/ep/2002/BankingMarch.2002.html
[444] For more details, see http://www.mooresrowland.com/offshore%20companies%20bank.html

Antigua and Barbuda relies on tourism (60 to 70% of GDP). It was severely struck by Cyclone "Luis" in 1995. There is offshore banking activity in Antigua, with 40 offshore banks, six of them licensed for local business as well. Bank secrecy is enforced as strictly as in the Cayman Islands (Chambost, 1999). Antigua and Barbuda was included in the sample, because enough data was available.

The **Bahamas** was one of the first OFCs to attract Euromarkets business in the 1960s. It remains one of the ten largest financial centres in the world with 400 banks and US$200 billion of deposits (Higney, 2003, p25). It engaged in reforms to improve its image[445] and toughened its anti money laundering regulation and even cancelled several banking licences. These reforms appeared successful (Conville, 2001; Higney, 2003, p25; The Economist, March 2002, p62[446]). The 190 banks having a presence on the islands in 1999, employed 4000 people and provided 15% of the country's GDP (Le Monde du Renseignement, 1999, n.364). Law consulting is a growing job provider. Lawyers mainly deal with IBCs and trusts, 10,000 of which are created each year (Le Monde du Renseignement, 1999, n.364). Banks from the country were therefore included in the study.

Barbados is present on all lists of tax havens (Chambost, Doggart, OECD…). Barbados enacted its Offshore Banking Act in 1979. The Barbadian economy has aimed to diversify in the IT business, attracting call centres building on the already very good telecommunication infrastructure. It has the third oldest parliament of the British Commonwealth. According to Eedes 2003 (p129), there were seven banks in Barbados in 2003. Barbados was thus included in the sample.

Belize has a small offshore banking industry. While there are few banks in Belize, some, including the Atlantic Bank Ltd, provides comprehensive offshore banking services including the establishment and management of IBCs. Belize appears on most lists of tax havens. Banks from Belize were included in the sample.

Bermuda is a major OFC particularly active in the insurance sector (it has some of the world's largest catastrophe insurance companies). Chambost (1999, p368) reports that 40% of all companies quoted in Hong Kong are incorporated in Bermuda. The jurisdiction has its own stock market. Bermudian banks are reputed to be very well regulated (The Stationery Office, 2000). In 2004, 13,500 foreign businesses were domiciled in Bermuda of which 400 had a presence on the island. The local market leader, Bank of Bermuda, was listed on the NASDAQ until it was bought by HSBC (the Banker, June 2004, p90). Bermuda was included in the study because of the amounts of foreign deposits per inhabitants indicating offshore origin (GDP multiple of 9.5).

The **British Virgin Islands** (BVI) is active in the incorporation of international business corporations (IBCs; a world market share of 45%). There were more than 250,000 offshore companies in the BVI in 2000. Half of the state's income comes from financial services. The BVI also offers other financial services, in the areas of banking, insurance, trusts and mutual funds. 1,545 non-public funds and 139 public funds (whose size is not known) were incorporated in the BVI. Its offshore captive insurance sector gathers a gross premium income of around US$250 million yearly. There are 13 banks operating in the BVI, with about US$2.7 billion of assets, but banking has not been especially promoted (The Stationery Office, 2000). BVI banks were included in the study.

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[445] See The Economist March (2002 p62) about corruption issues. Bahamian authorities also multiplied the interventions against drug traffickers in 2001, with 20 seisures of marijuana and cocain (Thompson 2002).

[446] This issue of the Economist estimate Bahamian bank deposits to 350 billion dollars.

The **Cayman Islands** became the Bahamas' main rival after the Bahamas' independence in 1973 (Hudson, 1996). Its 450 banks hold assets of US$782 billion[447], and most of the world's 50 biggest banks have a subsidiary there. 70 banks have a physical presence. Cayman also has a well developed mutual funds and international business corporations (IBCs) sector. The jurisdiction has its own stock exchange, the CSX (The Stationery Office, 2000). According to Barclays[448],Grand Cayman is ranked as the world's fifth international financial centre, after London, Tokyo, New York and Hong Kong[449]. Cayman banks were included in the study.

Panama is situated between North and South America and between the Atlantic and Pacific Oceans. Panama's reputation has long been tainted by money laundering[450]. Panamian bank customers include South American residents keeping savings there as a safeguard against instability in their home countries. Panama's offshore sector relies essentially on flags of convenience[451] registration and offshore banking. Since 1991, following the US intervention aimed at capturing its former ruler general Noriega[452] Panama has had to cooperate with the USA in the fight against money laundering and drug trafficking and adopted anti money laundering regulation in 2000. Nowadays, there are 109 banks in Panama including 30 international banks and 92 banks licensed for both domestic and international banking. Around 75% of bank deposits in Panama come from abroad[453]. Panamian banks were included in the sample.

Grenada is also present on most OFC lists. It is a minor tax haven which has enabled the emergence of an offshore banking sector (Chambost, 1999, p570). According to Doggart (2002, p24), foreign pressures forced Grenada to close 17 offshore banks in March 2001 following a toughening of the laws concerning offshore banking. Grenada was included in the sample.

Montserrat's OFC sector has suffered from a series of natural disasters. The cyclone Luis in 1995 damaged most of the island's infrastructure and caused coastal erosion[454]. The volcanic eruptions between 1995 and 1998 have also caused substantial damage and led half the population to flee the island (during the eruptions in 1997, 8,000 of the 12,000 inhabitants had to leave the island[455]). Its dependence on foreign aid leaves it little scope for the development of its OFC sector (Stationery Office, 2000). Chambost (1999, p554) reports that in 1990 the authorities of Montserrat cancelled 311 bank licences leaving only 23 in activity. No BankScope data was available concerning Montserrat.

The **Netherlands Antilles** and **Aruba** are located in the West Indies and North of Venezuela. The islands became OFCs during WWII, where they provided a legal base for expatriate Dutch companies. Current activities include holding companies and bank licensing (Chambost, 1999; Doggart, 2002). Aruba has its own

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[447] The US$800 billion deposited in Cayman represent 20% of the funds deposited in the USA (Doggart 2001; Begala 2002).

[448] Barclays has been in the Cayman Islands for 50 years, and was the first foreign bank established there. See http://www.caribbean.barclays.co.uk/off-cayman.html

[449] Banking provide 30% of Cayman's GDP (Parker and Burton Dec 2003 p17).

[450] Doggart (2002 p82) reports that in 1970 230 of the 250 banks of Panama were closed as a result of AML effort.

[451] There is also a Free Trade Zone in Colon, on the Panama Canal.

[452] Jailed in the USA for drug trafficking

[453] http://www.explorepanama.com/business/business.htm

[454] About the damage caused to Caribeban SIEs by storms http://www.unesco.org/csi/act/cosalc/hur9b.htm#7.5

[455] Estimate found in the CIA world fact book in 2004 http://www.cia.gov/cia/publications/factbook/geos/mh.html#People

central bank and 14 banks have been licensed, including 8 limited to offshore business (Chambost, 1999, p185). Aruba and the Netherlands Antilles were included in the sample as separate entities.

St Kitts and Nevis is also present on most OFC lists. Some of its laws have attracted specific attention from onshore countries. It famously developed a settler and trust system in 1994 which allowed the settler of a trust to be also a beneficiary. If the trust is being sued for fraud, action must be completed within a year or never (it usually is five years in most other jurisdictions). Should a trust have been used for a fraud lost in court for it, the trust's validity is not afflicted. He who wishes to sue a trust must first pay a caution of US$ 250,000. The trust deed is also not public, and foreign judgements are not recognised in Nevis (Chambost, 1999). The country is known to have a small offshore banking sector, and was thus included in the sample[456].

St Vincent and Grenadines is quite recent in the market for offshore services. Its island "Moustique" is famous as a retreat for HNWIs. While it does not actively promote offshore banking, it is on most OFC lists, and is home to some private banks. Banks from country were included[457] in our sample.

The **Turks and Caicos** live off offshore finance and tourism. Its finance sector is particularly developed in the fields of life insurance and trusts. In December 1999, there were 2,512 insurance companies, who do not have to file accounts, and 13,500 exempt companies, licensed to do business outside the jurisdiction. In the Turks and Caicos, the names of company directors do not have to be made publicly available (The Stationery Office, 2000). There is some offshore banking activity[458] but banks from this country were not included in our analysis due to a lack of data.

Europe

Andorra is a mountain enclave between France and Spain. It is renowned for its tourism industry and its banks. It is also a tax haven where two thirds of the population consists of (mainly) Spanish and French immigrants. Chambost (1999) and Doggart (2002) and other sources report the existence of an offshore banking activity. Andorra's banks were therefore included in our analysis.

Cyprus, still divided between Greece and Turkey, has developed an offshore banking activity on both parts of the island. The sharing of the orthodox religion seems to have attracted many Greek and Russian customers to Cyprus (Chambost, 1999, p574)[459]. Cyprus and Russia signed a tax treaty in 1986. Since then, Cyprus seems to have benefited from the arrival of East-European money (Sinuraya, 1999, pp89-94; Doggart, 2002, p196; The Economist, feb 2nd 2002, p68). Cyprus was included in the sample.

Gibraltar is a British territory strategically located between Europe (Spain) and Africa (Morocco). Its main resources are tourism and offshore finance including

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[456] See CIA website at http://www.cia.gov/cia/publications/factbook/geos/sc.html

[457] A private bank in St Vincent : http://www.tritoncapitalbank.com/tritoncapitalbank.asp

[458] Websites of banks active in offshore banking on Turks and Caicos:
http://www.firstcaribbeanbank.com/international/index.html
http://www.turksandcaicosbanking.tc/english/index.html

[459] Cyprus banks seem to try to appeal to Russian customers; several have their websites translated into Russian such as the Federal bank of the Middle East, Cyprus: http://www.fbme.com

banking. It has been cited on most OFC lists, particularly because of its offshore banks[460]. Gibraltar was included in the study.

Guernsey is Jersey's main competitor and likewise a major OFC. The presence of offshore banks with numbered accounts and the existence of bank secrecy (Chambost 1999) along with substantial amounts of deposits, justifies the inclusion of Guernsey in the banking sample. The island has grown quite dependent on its OFC status and 55% of its national income comes from the financial services sector (banks, insurance, and fund management)[461].

The **Isle of Man** is an OFC located in the Irish Sea, with substantial amounts of bank deposits (more than US$30 billions since 1995). Doyle et al (1997) praised the island for being a quality OFC. The OFC activities supplied about a third of the Island's GDP in the 1990s. It has made great efforts to implement anti money laundering regulations (Howard, 2001). The Isle of Man was therefore included in the sample.

Jersey and Guernsey are neighbours and competitors in the field of offshore finance (including banking). Jersey has a restrictive policy concerning bank licences and only accepts subsidiaries of the top 500 banks in the world. Jersey is home to more than 70 banks (by the mid 1990s) with £96 billion in deposits (Chambost, 1999, p254). Bank secrecy in Jersey is based on British common law (Tournier case); numbered accounts can be obtained.

The Principality of Liechtenstein is one of Europe's strictest[462] places for offshore finance, whose financial activities have proven lucrative[463]. The country left the OECD blacklist after having adapted its laws about trusts (Anstalts), which used to offer a very high standard of secrecy. This move has made the country loose ground in the market for offshore trusts[464]. Liechtenstein uses the CHF and its banks are intimately linked to Swiss banks (Intelligence Newsletter, 2000, p383). Liechtenstein is one of the OFCs whose head of state enjoys the most power (Simonian, 2003). A small offshore banking centre, Liechtenstein was included in the study.

Luxembourg started its OFC activities (for banking and funds management) so as to diminish its dependency on the steel industry in the 1970s. Clearstream, one of the two clearing houses for the international exchanges of securities, is located in Luxembourg[465]. The offshore banking sector now accounts for 17% of the GDP and employs 9% of the labour force. Its €540 billion banking assets represent 35 times its GDP. It had 1521 investment funds in 1998 with US$488 millions in total assets (The Banker, Jan. 2000, pp42-43). One of the most developed offshore banking centres, Luxembourg's banks were included in the study.

The Central Bank of **Malta** (Quarterly Review, Dec. 2002, p82) indicates that the existing offshore banks and the bearer accounts they offered were to be phased out. However, over the whole period surveyed in the present study, there was an

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[460] Peillion V., Montebourg A. (2001) "La cité de Londres, Gibraltar et les Dépendances de la Couronne : des centres offshore sanctuaires de l'argent sale", Assemblée Nationale N.2311

[461] According to the CIA World Factbook consulted in 2004. No year available for this estimate, but data probably from 1999 (last date available for the GDP estimate). See: http://www.cia.gov/cia/publications/factbook/geos/gk.html#Econ

[462] Peillion, Montebourg (2000)

[463] Doggart (2002 p213) of the 11 banks operating in Liechtenstein, there were three members of the Swiss Bankers' Association, an exclusive club enjoying above average profitability.

[464] The Economist (Apr 13th 2002 p43)

[465] See Peillion, Montebourg (2002)

offshore banking industry operating. In 1996 already, Malta had decided not to allow the opening of new offshore banks. Malta's banks were therefore kept in the sample.

Monaco, an OFC located in the French Riviera is a principality under French protection. Monaco is one of Europe's long established low-tax centres with 35,000 inhabitants including 80% of foreigners, and 10 bank accounts per inhabitant. The French government appoints most of its civil servants which in turn have to be approved by the Prince Rainier of Monaco (Euromoney, Dec. 2000, p10). It's high GDP multiple and bank secrecy justify its banks' inclusion in the sample.

San Marino is a small enclave in the middle of Italy, and claims to be one of the world's oldest democracies. Tourism represents 50% of its GDP and banking is cited as one of its main industries (CIA World Factbook May 10th 2004). Its estimated GDP in 2001 was US$940 millions, while its total amount of banking sector assets (according to the bank sample for this study) reached US$ 4.4 billions in 2000, thus a GDP multiple of 4.7 (comparable to Switzerland). San Marino has around for 28,000 inhabitants, with bank assets amounting to US$158,000 per inhabitant).

Switzerland is home to one third of the world's private banking market, and foreign deposits represent more than 50% of the deposits of its banks. Yet, the foreign pressures to limit the tax advantages it grants to expatriate wealth mean that it can be considered a tax haven[466]. The Canton of Vaud offers low tax for foreign residents[467]. Swiss banks contribute to a large extent to the Swiss economy (Besson, 2002; Beck, Feb 14th 2004, p13). In fact, various sources consider that Switzerland is home to a third of the world's offshore deposits (Targett, 2004; Doggart, 2002). Doggart (2002, p238) also cites Swiss sources according to which the Swiss banks' securities portfolios were around CHF 3.52 trillion, in 1999 among which CHF 1.9 trillion belonged to foreigners[468]. Switzerland was therefore included in the study as the world's largest (and most developed) OFC.

Arab countries

Bahrain started its offshore banking business in 1975 (with the licensing of Offshore Banking Units) to diversify its economy; the OFC grew fast and already had US$23 billion banking assets by 1978. A further development occurred following Lebanon's civil war and decline, which led to the replacement of Lebanon by Bahrain as the most important OFC for petrodollars (Gerakis & Roncesvalles, 1983). Bahrain's offshore banking features "Islamic banking" practices. Recently, Bahrain changed its regime into a constitutional monarchy (Olayan, 2002). Although not explicitly included in local law, bank secrecy is implicitly represented in Bahrain's Islamic traditions. Bahrain's banks were therefore included in the study.

Dubai recently attempted to diversify as an OFC (thus competing with Bahrain). The private wealth held in the Gulf region is estimated to be close to US$1.4 trillion, yet is mostly invested outside of the region. The Abu Dhabi Free Zone Authority is monitoring the development of the OFC. This was achieved with the commitment of the Credit Agricole to open a subsidiary in 1999 (Knight, 1999). While Dubai has taken steps to become an OFC (Dudley, Jan. 2003, pp103-104; Targett, 2004; Hannon, 2001, pp40-41), those developments are too recent to allow Dubai's banks to be part of the sample.

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[466] Switzerland was included in the list of OFCs published by the FSF in April 2000.
[467] Recommended by Chambost (1999) as the best tax haven to live in and do business.
[468] Thus consistent with an estimate from Intelligence Online (2002) according to which Swiss banks had about US$2.8 trillion under management worldwide.

Lebanon emulated Swiss law (Fehrenbach, 1966) to attract foreign deposits (particularly from the Middle East) and managed to become an important local offshore banking centre, between the 1950s and the 1970s. The civil war which lasted through the 1970 and mid 1980s saw bank deposits leaving for Bahrain. Lebanon is trying to recover since then. Lebanon tends to attract mostly depositors from the Middle East. Nowadays, Lebanon is facing economic problems including substantial public indebt ness (Dudley, Nov. 2002, pp90-94). Lebanese banks were included in our analysis.

Appendix 4: Offshore bank profiles

We will now look at all the largest banks available in our sample to have a better idea of who they are and what they do. The sample used for the study reveals that many offshore banking markets tend to be dominated by one bank with a large market share (see Table 5.2-11). While many OFCs have a clear market leader, others do not. Thus, for certain countries, several banks may appear as market leaders in various years, depending on their asset sizes. Lack of data in some countries (such as Cayman, Bahamas or Channel Islands), may result in having the 'true' market leader remaining hidden. The figures given for UBS and HSBC concern only the Swiss and Hong Kong operations of these banks (the total consolidated assets for both international banks are well above those figures). Market share is calculated as deposits of the banks (for its local operations) as a proportion of the total deposits in the jurisdiction. When the total amounts of deposits in an OFC could not be established, the market share could not be established either. Data will be given for the year 1998, which corresponds to the year in which the greatest amount of data was available for the sample.

Switzerland: UBS AG

UBS AG (Switzerland) had total assets of US$785.98 billions and a 54.5% market share in 1998. The largest bank in Switzerland, one of the world's biggest, employs almost 66,000 people in 50 countries. It is active in asset management, private banking and retail banking. Its roots start back to 1852. UBS and SBC grew over the years, acquiring other banks and expanding their business in Switzerland. In 1964, UBS opened subsidiaries in Hong Kong and Lebanon, in 1968 in Nassau. UBS and SBC merged in 1998 (website http://www.ubs.com)

Hong Kong: HSBC

HSBC Hong Kong had total assets of US$118.4 billions and a 30.6% market share in Hong Kong in 1998. HSBC started its activities in 1865 to finance trade between Europe and China. It is now present in 79 countries. It has subsidiaries in many OFCs and offers an extensive array of banking services. It does advertise offshore banking in Hong Kong as one of the many services (website http://www.hsbc.com).

Singapore: DBS

DBS Singapore had total assets of US$52.77 billions and a 18.6% market share in Singapore in 1998. Established in Singapore since 1968, it has subsidiaries in many other Asian countries. It offers most services one can expect from such a big bank including private banking (http://www.dbs.com). It does serve the offshore private banking market among others (Euromoney, 2004).

Luxembourg: Banque Générale du Luxembourg

Banque Générale du Luxembourg had total assets of US$34.44 billions and a market share of 8% in 1998. Created in 1919 in Luxembourg, Fortis the big Belgian bank is now its main shareholder. It offers a wide array of services including retail and private banking and also telebanking by internet and phone. It has more than 100,000 telebanking customers. This is substantial in a country where there are only

440,000 inhabitants, and many competitors. Telebanking may be available for offshore clients (http://www.bgl.lu).

Bahrain: Arab Banking Corporation BSC

Arab Banking Corporation had total assets of US$25.5 billions and a market share of 57.4% in Bahrain in 1998. It was incorporated in 1980 as an offshore banking unit. Its three main shareholders were the Ministry of Finance of Kuwait, the Libyan Secretariat of Treasury, and the Abu Dhabi Investment Authority. Its shares are listed on the Bahrain stock exchange. The bank started by focusing on trade finance and project finance. It aims at being the best regional bank of the Arab world and focuses on the markets it can service best. The bank targets clients from the Arab world. Although not strictly an Islamic bank, it is involved in Islamic banking among other things. It has a network of subsidiaries in New York (which has a branch in the Cayman Islands), Sao Polo, London, Paris, Milan, Frankfurt, Singapore Bahrain, Abu Dhabi Teheran, Amman, Tunis Tripoli, Algiers and Egypt. The bank offers various gold related products (accounts, loans and derivatives). Its products and services are essentially meant to satisfy the needs of Arab customers (for more details, see http://www.arabbanking.com/intro/index.asp).

Isle of Man: The Isle of Man Bank Limited

The Isle of Man Bank Limited had total assets of US$12.7 and a market share of 34% in the Isle of Man in 1998. Created locally in 1865, it has been serving the local market until 1960, establishing a wide network of branches in the Isle of Man. In 1961, it was acquired by UK's National Provincial bank who wanted to expand its offshore business (it already had branches in the Channel Islands). It remained relatively independent though. National Provincial merged into Nat West. The expansion of offshore activities in the late 1960s benefited the bank. Since then, Nat West was acquired by Royal Bank of Scotland. The bank provides internet services. It is focused on retail banking. It had 11 branches and employed around 300 people in 2002. It also offers credit card accounts in US$ or Euro. Although there is no specific emphasis on offshore business, the formulation of its web address suggests that it does take offshore customers (http://www.natwestoffshore.com).

Bermuda: Bank of Bermuda

Bank of Bermuda had total assets of US$10.1 billions and a market share of 47% in Bermuda in 1998. Bank of Bermuda[469] was founded in 1889 in Hamilton, Bermuda. It has subsidiaries in 15 other OFCs. It provides private banking services, but also fund administration, trust, custody, and asset management for institutions and individuals. The banks' assets in 2001 were US$11.1 billions and it had US$105 billions under administration. A branch of HSBC since 2004, it is active in commercial, corporate and private banking. It apparently serves customers all over the world (USA, Europe among others). Rather little information available over the Internet. In operation since 1890, it is Bermuda's biggest bank. It employs 2,150 employees and has six offices in Bermuda.

Liechtenstein: LGT Group foundation

LGT Liechtenstein had total assets of US$9.3 billions and a 34.7 % market share in Liechtenstein in 1998. A recently created private bank (1996), owned by the

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[469] See http://www.bankofbermuda.com

Liechtenstein royal family and that also manages its wealth. It also takes other customers. The bank has representative offices in various locations including Cayman, Tokyo, Singapore, Germany, Ireland, Switzerland and Austria (http://www.lgt-bank-in-liechtenstein.com). Date of creation?

Jersey: HSBC Bank Middle East

HSBC Bank Middle East had total assets of US$8.2 billions and a 5.2% market share in Jersey. It appeared to be the largest bank with available data in Jersey. Created in 1889 in London to do business in the Middle East, it became part of HSBC in 1959. It does business in the Middle East, in Bahrain, Jordan, Lebanon, Oman, Qatar and the Emirates where it represents HSBC. It was voted "Best bank in the Middle East" by Euromoney in 2003. The Principal Office is in London, but the Head Office is in StHelier Jersey. The bank is involved in personal and corporate banking. Specifically targets residents of Middle Eastern countries (for more details, see (http://www.middleeast.hsbc.com/hsbc/meregional_wel).

Cyprus: Bank of Cyprus Group

Bank of Cyprus Group had total assets of US$8.2 billions and a market share of 40% in Cyprus in 1998. It was set up in Cyprus in 1899 by Cypriot investors. The website is available in English or Greek. It has subsidiaries in the UK, Greece, Australia, the Channel Islands, and representative offices in the following countries: South Africa, UK, Canada, Romania, USA, and Russia. Representative offices can provide various sorts of information concerning offshore companies and trusts, foreign finance, insurance and more. It cooperates with such big institutions as UBS, Morgan Stanley Dean Witter and others and offers some of UBS's services (in the fund business). Its shares have been traded in Athens since 2000 (http://www.bankofcyprus.com).

Netherlands Antilles: KBC International Finance

KBC International Finance had total assets of US$6.3 billions and a market share of 3.3% in the Netherlands Antilles. It was the largest banks with available data for this OFC. Apparently a subsidiary of the large Belgian Banking Group KBC, which arose from the merger of several Belgian banks in 1998. Now, it has 12 million customers and 45,000 employees and does business essentially in Europe. No data found on its Subsidiary in the Netherlands Antilles (for more details, see also http://www.kbc.com/fs_index.asp).

Lebanon: BLOM Bank Sal

Banque du Liban et de l'Outre-Mer (BLOM) had total assets of US$4.5 billions and a 12.5% market share in Lebanon in 1998. This Bank was started in 1951 by local investors. It opened subsidiaries In Saudi Arabia and Dubai and in 1979 in Switzerland. In 1993, it opened a subsidiary in Limassol, Cyprus (Greek part). Since 1981, it is Lebanon's largest bank. The bank is active in retail, private and investment banking. Its offices are active all over Lebanon (http://www.blom.com.lb).

Guernsey: Woolwich Guernsey

Woolwich Guernsey had total assets of US$3.7 billions and a 5.8% market share in Guernsey. It is the largest bank with available data in Guernsey. Established in 1990 as a subsidiary of the Woolwich Bank (previously a building society and now part of Barclays), it offers offshore banking services such as accounts in Pounds,

Dollars or Euros. It has 30,000 customers with more than 2 billion pounds of deposits (approximately US$100,000 per customer). Accounts can be opened by a trustee on behalf of the customer. Interest is paid gross. It is the customers' responsibility to declare its income to the appropriate authorities (for more details, see https://www.woolwichguernsey.co.gg/index.htm).

Andorra: Credit Andorra

Credit Andorra had total assets of US$3.7 billions and a market share of 31.1% in 1998. It was founded in 1949. It is owned 49% by a Spanish pensions company and 18% by its employees. Its website in Spanish, Catalan, English and French. The biggest bank in Andorra, it has a network of 17 branch offices. It is active in retail and private banking. It markets its services to foreigners (http://www.creditandorra.ad).

Malta: HSBC Bank Malta Plc

Mid Med Bank Malta had total assets of US$3.3 billions and a 42% market share in 1998. Mid-Med Bank, Malta's biggest bank was bought by HSBC in 1999. It serves Malta's private and retail banking markets. (http://www.hsbcmalta.com).

Gibraltar: Republic National Bank of New York

Republic National Bank of New York Had total assets of US$2.95 billions and a 38.9% market share in Gibraltar in 1998. Subsidiary of the Republic National Bank of New York, created by E. Safra. The group was bought by HSBC. Operations ceased in 1999. Little data available. http://www.hsje.org/edmond%20safra.htm

Cayman islands: Coutts Cayman Ltd

Coutts Cayman had total assets of US$2.4 billions and a market share of 0.6% in 1998. Coutts' Cayman office was established in 1967. It employs 75 people locally, offering trusts and fiduciary services and discretionary asset management. It is a subsidiary of Coutts, which has £34 billions in assets and 75,000 customers worldwide (£453,000 per customer on average) was established in 1692. Coutts then became part of Nat West and then RBS. It became RBS's private bank branch. Coutts bought Bank Von Ernst in 2003. It has subsidiaries in Liechtenstein and the Cayman islands (for more details see http://www.coutts.com/locations/cayman.asp). Coutts Cayman was the largest bank with available data in 1998 for the Cayman Islands.

Bahamas: FirstCaribbean

Because no data was available for Bank Safra (Bahamas) who was the leader in 1998, we will describe FirstCaribbean instead. FirstCaribbean had total assets of US$3.2 billions and a 1.2% market share in the Bahamas in 2002. With overall total assets in excess of US$9 billions in the Caribbean in 2005, it claimed to be the market leader in the Caribbean. It operated across 15 Caribbean countries (Anguilla, Antigua, The Bahamas, Barbados, Belize, The British Virgin Islands, The Cayman Islands, Dominica, Grenada, Jamaica, St Kitts and Nevis, St Lucia, St Maarten, St Vincent and the Grenadines and The Turks and Caicos Islands). The fact that a bank may become a market leader with such a small market share may be explained by the fact that the bulk of the bank assets may be held in captive banks (which by definition are not competitors).

Monaco: Compagnie Monegasque de Banque

Compagnie Monegasque de Banque had total assets of US$2.3 billions and a 4.7% market share in 1998. Founded in 1976 by an Italian bank (Banca Comerciale Italiana). It promises reliability, performance and confidentiality. It is specialized in private banking. Discretionary management services start at Euro 300,000. No internet business. The website is in Italian, English and French. It has started to serve German, Dutch and Swedish customers[470]. It was the largest banks with available data for 1998 in Monaco.

Barbados: FirstCaribbean International Bank Ltd

FirstCaribbean International Bank had total assets of US$2 billions and a 18.3% market share in Barbados in 1998. This bank is the result of the Cooperation between CIBC and Barclays. CIBC started business in 1920 in Barbados. Other branches were opened in Cuba, Jamaica, and Trinidad. In 1957, it opened a branch in Nassau. Other branches opened after that in the Caribbean. In 2001, Barclays and CIBC combine their operations in the Caribbean. It is now operating in the following places: Anguilla, Antigua, The Bahamas, Barbados, Belize, The British Virgin Islands, The Cayman Islands, Dominica, Grenada, St Kitts & Nevis, St Lucia, St Maarten, St Vincent, The Turks and Caicos Islands. It offers offshore services. Minimum balance of US$15,000 required. (http://www.firstcaribbeanbank.com/).

San Marino: Cassa di Risparmio della Repubblica di San Marino

Cassa Di Risparmio had total assets of US$1.9 billions and a 46% market share in San Marino in 1998. Among other things, the bank is active in private banking. It was founded in 1882. Page not available in English. Offers possibilities of telebanking including phone banking and internet. banking (http://www.carisp.sm).

Panama: Dresdner Bank Lateinamerika

Dresdner Bank Lateinamerika had total assets of US$1.8 billions and a 4.5% market share in Panama in 1998. A subsidiary of Dresdner Bank Lateinamerica (subsidiaries all over South America incl. Cayman), it was opened in 1971 in Panama. It is the biggest bank in Panama. It is active in the field of private banking. Accounts can be opened in US$, Euros and other major currencies. The bank can set up offshore companies and trusts for its customers. Website in English, German, Portuguese and of course Spanish (http://www.dbla.com/).

Mauritius: Mauritius Commercial Bank

Mauritius Commercial Bank had total assets of US$1.4 billions and a 66.7% market share in Mauritius in 1998. It was founded in 1838 as "Banque Commerciale de l'Ile Maurice". The bank offers its services both to residents and to non-residents. It is possible to open accounts in foreign currencies (GBP, US$, Euro, CHF, AUD (Aussie), ZAR (Rand)). Minimum amounts for accounts (GBP500, US$/EURO1000) but no interest at this level. Interest starts at GBP/Euro/US$2000. It is therefore present in the retail banking segment of the market. It has 46 branches all over the Island (for more details, see http://www.mcb.mu/home/index.asp).

Antigua: Stanford International Bank Ltd

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[470] See http://www.cmb.mc/

Stanford International Bank of Antigua had total assets of US$530 millions and a market share of Website available in English and Spanish. Although the bank was the largest in Antigua in 1998 for which data was available, it is difficult to establish its market share. It is a member of Stanford Financial Group, an international financial services network with US$17 Bns in deposits and assets under management. It has more than 40,000 clients (US$425,000 per client). SIB in Antigua has had strong growth in assets under management over the last few years (+70% in two years). It sells its services to HNWIs and had subsidiaries in Antigua, Switzerland and other countries. The site stresses Antigua's tax haven status. No minimum amount of deposits mentioned (http://www.stanfordinternational.com/).

Aruba: Caribbean Mercantile Bank

Caribbean Mercantile Bank had total assets of US$370 millions and a 41% market share in Aruba. Established in 1962, it is a subsidiary of Maduro and Curiel Bank in Curacao and is affiliated to the Bank of Nova Scotia. It is a full service commercial bank. It has many branches in Aruba and offers its services via the Internet. No specific offshore banking or private banking advertised (http://www.cmbnv.com/haveflash.html).

Grenada: National Commercial Bank of Grenada

National Bank of Grenada had total assets of US$122 millions and a 51% market share in 1998 in Grenada. Established in 1979 and locally (partly government) owned. The bank has several branches on the Islands and offers private banking services. Although committed to confidentiality, it cannot guarantee it over the Internet. Although it seems primarily focused on retail banking locally, its application form available online suggests that it can take non-resident customers and that it makes currency accounts available (http://www.ncbgrenada.com).

Belize: Atlantic Bank Ltd

Atlantic Bank had total assets of US$80 millions and a 10% market share in Belize in 1998. It offers personal, corporate and International banking. It provides full offshore banking including IBC. Personal savings accounts available from US$1000. Credit cards available. The credit card can be in the name of the IBC. The credit card account must be backed by a deposit in US$ used as a guarantee (http://www.atlabank.com/).

West Samoa: ANZ Bank (Samoa) limited

ANZ Bank Samoa appeared to be the largest bank available for Samoa in 1998 with total assets of US$50 millions. Market share could not be established. It offers offshore banking services along with retail banking services for the local community. It is a subsidiary of ANZ bank and has been in operation since 1990. ANZ is a big Australia New Zealand bank (http://www.anz.com/samoa/).

Appendix 5: Wealth of Europe's royal families by asset type

Royal Family	Financial Assets		Art collection		Real Estate		Jewels		Other assets		Total
	M€	%TA	M€	%TA	M€	%TA	M€	%TA	M€	%TA	M€
Liechtenstein	300	6%	3,000	59%	1,500	30%	50	1%	200	4%	5,050
Luxembourg	1,645	35%	450	10%	2,300	49%	10	0%	250	5%	4,655
UK	800	19%	1,500	36%	1,400	34%	200	5%	250	6%	4,150
Netherlands	2,400	59%	800	20%	250	6%	400	10%	200	5%	4,050
Belgium	200	9%	1,200	53%	800	35%	10	0%	45	2%	2,255
Spain	850	47%	500	28%		0%	10	1%	450	25%	1,810
Monaco	485	41%	200	17%	485	41%	23	2%		0%	1,193
Sweden	520	66%	260	33%		0%	2	0%	11	1%	793
Danemark	18	12%	80	55%		0%	3	2%	45	31%	146
Norway	80	57%	2	1%	45	32%	2	1%	12	9%	141
Mean	729.8	35%	799.2	31%	968.6	23%	71.0	2%	162.6	7%	2,424

A survey of Europe's 10 wealthiest royal families (Eurobusiness, July 1999, in Robert and Backes, 2001) all figures in million Euros

Appendix 6: Captive bank costs comparative table

OFC	Type of license	Incorporation Fees(US$)	Annual Fees(US$)	License fee (US$)	Total First Year (US$)
ANTIGUA	Offshore	20,000	8,000	15,300	43,300
BAHAMAS	General license	25,000	8,000	25,000	58,000
BAHAMAS	Restricted license	20,000	8,000	5,000	33,000
BARBADOS	Class I	20,000	8,000	12,500	40,500
BARBADOS	Class II	20,000	8,000	12,500	40,500
BARBADOS	Class III	15,000	8,000	12,500	35,500
BELIZE	Class I	18,000	8,000	20,000	46,000
BELIZE	Class II	15,000	8,000	15,000	38,000
CAPE VERDE	Offshore	20,000	8,000	Various	Min,28,000
CAYMAN Isls.	Class A	35,000	8,000	51,000	94,000
CAYMAN Isls.	Class B1	25,000	8,000	14,500	47,500
CAYMAN Isls.	Class B2	25,000	8,000	7,320	40,320
COOK Isls	Class A	20,000	8,000	10,000	38,000
COOK Isls	Class B	18,000	8,000	2,000+	Min, 28,000
DOMINICA	Onshore/Offshore	25,000	8,000	20,000	53,000
DOMINICA	Offshore	20,000	8,000	8,000	36,000
EAST TIMOR	International	20,000	8,000	n/a	28,000
GRENADA	Offshore Class A	20,000	8,000	15,000	43,000
GRENADA	Offshore Class B	15,000	8,000	13,000	36,000
LABUAN	Offshore	20,000	8,000	16,200	44,200
MONTSERRAT	Offshore	12,000	8,000	15,000	35,000
North.CYPRUS	OBU	25,000	8,000	10,000	43,000
PALAU	International	20,000	8,000	300	28,300
PANAMA	General license	25,000	8,000	30,000+	63,000+
PANAMA	Intnl. license	25,000	8,000	15,000	48,000
PANAMA	Repr. Office	18,000	8,000	5,000	31,000
PUERTO RICO	OBU	20,000	8,000	5,000	33,000
SAMOA	Class B1	20,000	8,000	17,500	45,500
SAMOA	Class B2	18,000	8,000	7,500+	33,500+
St,LUCIA	Class A	20,000	8,000	25,000	53,000
St,LUCIA	Class B	15,000	8,000	15,000	38,000
St,KITTS	ODTC	20,000	8,000	8,000	36,000
St,KITTS	ODTC Restricted	15,000	8,000	4,000	27,000
St VINCENT	Offshore Class A	20,000	8,000	10,000	38,000
St VINCENT	Offshore Class B	16,000	8,000	7,500	31,500
VANUATU	Offshore	20,000	8,000	15,000	43,000

Data found on http://www.offshore-protection.com/bankFormations.html; the authors (who offer to setup captive banks) note in particular that the incorporation fees include notaries fees; the annual fee include the cost of hiring a registered agent and a local office facility; a captive bank requires in general about US$1 million with at least US$250,000 in paid up capital. The annual fee of $8,000 is the fee required by the local agent for the running of the captive bank.