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Concept of Offshore Financial Centers: In Search of an Operational Definition

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Abstract

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This paper proposes a new definition of Offshore Financial Centers (OFCs) and develops a statistical method to differentiate between OFCs and non-OFCs using data from the Coordinated Portfolio Investment Survey (CPIS), the International Investment Position (IIP), and the balance of payments. The suggested methodology identifies more than 80 percent of the OFCs in the study sample that also appear in the a priori list used by the IMF to conduct its OFC assessment program. The methodology distinguishes OFCs based strictly on their macroeconomic features and avoids subjective presumptions on their activities or regulatory frameworks. The study also identifies three new countries meeting OFC criteria.

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I. INTRODUCTION

In recent years, there has been an increasing recognition of the need to improve the understanding of the activities of offshore financial centers (OFCs) because these centers have captured a significant proportion of global financial flows. A clear definition of what constitutes an OFC would be useful to the IMF in the context of its assessment program of the centers. Indeed, following concerns expressed by the Financial Stability Forum (FSF) in 2000, the Executive Board mandated the IMF to enhance OFCs' adherence to internationally accepted prudential and supervisory standards.

Concerns regarding potential risks posed by OFCs to the international financial system have resulted in a number of global initiatives to improve oversight.[2] The IMF, in the context of its remits, is concerned with OFCs in many respects. First, OFCs provide financial services predominantly to nonresidents. In conducting its surveillance of economic and financial policies, the IMF is interested in the impact on the national economies of its member countries of the operations undertaken in OFCs. Second, there are specific vulnerabilities to financial system stability in countries operating OFCs. Although the scope for regulatory arbitrage is being minimized through various multilateral initiatives, anonymity, opacity of financial operations and legal protection in some OFCs have heightened the potential for financial abuses. Third, because OFCs depend on their ability to attract global financial business, competition is strong, and incentives for compliance with international standards are significantly different in OFCs compared to primarily domestic markets. There is a greater risk that profitability is achieved at the expense of regulatory and supervisory standards.

Motivated by its mandate to promote financial stability, the IMF, in 2000, embarked on an assessment program aimed at determining the extent to which OFCs met the standards advocated by international standard setters[3] in banking, insurance, securities and anti-money-laundering regimes; and at helping to strengthen their financial supervision.

Notwithstanding this focus, there is no unanimity on what constitutes an OFC. While authors have proposed various lists of what they consider to be OFCs, an empirical framework for uniform classification does not exist.

This paper (i) proposes a framework for a uniform classification; (ii) develops operational and measurable indicators of the OFC status of any given economy; and (iii) derives a list of countries/jurisdictions[4] that could be classified as OFCs.

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[2] Some international bodies, including the Financial Stability Forum (FSF), the Financial Action Task Force on Money Laundering (FATF), and the Organization for Economic Cooperation and Development (OECD), have set up "name and shame" lists of what they believe to be poorly regulated OFCs.

[3] The assessments utilize the Basel Committee, the International Association of Insurance Supervisors (IAIS), the International Organization of Securities Commissions (IOSCO), and FATF standards as sectoral yardsticks.

[4] In this study, the term "jurisdiction" is used to designate any territorial entity that is not a "country" or a "state" as commonly understood by international law and practice. In most cases, a jurisdiction refers to an overseas territory under the sovereignty of another state (typically a former colony or dependency). In other cases, jurisdiction refers to an enclave within a given country.

Following this introduction, sections II and III surveys and assesses the literature, respectively. Section IV proposes a definition, as well as empirical indicators, and section V concludes the paper.

II. Definitions of an OFC: A Survey of the Literature

There is no consensus among scholars and practitioners on what constitutes an *Offshore Financial Center*, even though various attempts have been made to define OFCs, since they started to have an impact on international financial markets in the early 1970s.

Many variants of the term have been used, including International Financial Center (IFC), International Banking Center (IBC), International Banking Facilities (IBFs), and Offshore Banking Center. All these terms broadly refer to the same concept of offshore financial center.

The survey identifies two groups of definitions: the conceptual definitions (mostly proposed by academics) and the operational definitions intended for practical applications (mostly proposed by the IMF).

Table 1 summarizes the characteristics used in the conceptual definitions. Three distinctive and recurrent characteristics of OFCs have emerged from these definitions: (i) the primary orientation of business toward nonresidents; (ii) the favorable regulatory environment (low supervisory requirements and minimal information disclosure) and; (iii) the low-or zero-taxation schemes.

Table 1. OFC Definitions

(Quote of each definition is reported in Appendix II)

CHARACTERISTICS	REMARKS
Primarily orientation of business toward nonresidents	
Dufey and Giddy (1978)	
McCarthy (1979)	The country or jurisdiction should also have made a *conscious* effort to attract offshore business.
Park (1994)	
IMF (June 2000)	
Favorable regulatory environment	
Dufey and Giddy (1978)	
McCarthy (1979)	
Johnston (1982)	
Errico and Musalem (1999)	
Low-or zero-taxation scheme	
Dufey and Giddy (1978)	
McCarthy (1979)	
Park (1994)	
Johnston (1982)	
Errico and Musalem (1999)	
Disproportion between the size of the financial sector and the domestic financing needs	
Johnston (1982)	
Dealings in currencies that are *not* the currency of the country where the center is located	
Park (1994)	
Offshore banking activity is essentially *entrepôt* business	
Johnston (1982)	OFCs are locations for the temporary storage of funds
IMF (1995)	
Centers separated from major regulating units (states)	
Hampton (1996)	The separation could be by geography and/or by legislation. This criterion is not pertinent because the mere partition of offshore business from the main economy lacks enough specificity to characterize an OFC (see Appendix II).

In the early 1990s, when the IMF used to publish data on cross-border positions of OFCs in the International Financial Statistics (IFS) some operational definitions were proposed. OFCs were alternatively defined (IMF, 1995) as countries where "the banking system, acting as financial entrepôt, acquires substantial external accounts beyond those associated with economic activity in the country concerned," or countries where the ratio of deposit banks' external assets to exports of goods and services is significantly higher than the world average. "Significantly larger than the world average" here means at least three times the world average (Landell-Mills, 1986).[5] More recently, the IMF's Statistics Department (IMF, 2002), in an effort to define the perimeter of its data collection, called OFC "a jurisdiction in which international investment position assets, including as resident all entities that have legal domicile in that jurisdiction, are close to or more than 50 percent of GDP and in absolute terms more than $1 billion."[6]

III. Limitations of the Definitions Proposed So Far

All the definitions examined above tend to equate OFCs with a regulatory and taxation phenomenon and do not differentiate OFCs based on distinctive (preferably measurable) macroeconomic features they have developed as a result of the cross-border nature of their financial intermediation.

The issue of an objective definition is of crucial importance to the work of the IMF. Indeed, the IMF has been carrying out a program of OFC assessments with an initial list of OFCs based on an FSF list that includes IMF member countries and non-member OFCs (Table 10). Since the OFC assessment program is voluntary and relies on a cooperative effort to enhance the supervisory capacity of the assessed jurisdictions, enshrining the eligibility in the program through objective and mutually acceptable criteria will go a long way toward promoting participation in, and ownership of, the assessment programs and the ensuing reforms.

IV. Definition of OFCs and Empirical Indicators

A. Proposed Definition

As indicated above, the current definitions of OFCs do not adequately capture the intrinsic feature of the OFC phenomenon, which is its raison d'être—the provision of **financial services** to nonresidents, namely, exports of financial services. Although one could argue that any given economy, to some extent, provides financial services, the peculiarity of OFCs is that they have specialized in the supply

[5] For statistical purposes, the IFS used to apply the term "major offshore banking centers" to the Bahamas, Bahrain, the Cayman Islands, Hong Kong, the Netherlands Antilles, Panama, and Singapore, for all of which the ratio of deposit bank external assets to exports of goods and services is more than three times the world average. See Landell-Mills J. (1986).

[6] In a similar approach, the Bank of International Settlement (BIS) also attempted to provide a working definition. Thus, for the purposes of the BIS international locational banking statistics and the BIS database on international debt securities, an OFC is a jurisdiction in which banks' external liabilities and/or international securities issues are close to or more than 50 percent of GDP and, in absolute terms, more than $1 billion (see IMF (2002).

of financial services on a scale far exceeding the needs and the size of their economies. The following definition attempts to capture that feature so characteristic of OFCs.

An OFC is a country or jurisdiction that provides ***financial services***[7] *to nonresidents on a scale that is incommensurate with the size and the financing of its domestic economy.*

Regardless of the motivations for nonresident financial dealings with OFCs (local savoir faire, zero taxation, lax regulation, etc.) and the nature of the activities undertaken (banking, insurance, special purpose vehicles (SPVs), or otherwise), the setting up of an OFC usually results from a conscious effort to specialize the economy in the export of financial services, in order to generate revenues that often constitute a critical proportion of the national income.[8]

The receipts of these exports typically consist of:

- financial services billed to nonresidents by entities domiciled offshore (bank fees for advisory services and financial engineering; intermediary service fees, such as those related to lines of credit, financial leasing, and foreign exchange; commissions on funds administration, and on securities transactions, including brokerage, placements of issues, underwritings, arrangement of swaps, options, and other hedging instruments; services related to asset management; and security custody services, etc.); and

- registration/renewal fees for licensed entities (offshore banks, insurance companies, collective investment vehicles, international business companies, trusts and estates, etc.).[9]

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[7] Our definition of financial services would ideally include financial services and insurance services (excluding freight insurance), as defined in United Nations *et al.* (2002, paras. 3.108 and 3.99). However, our data do not include insurance services because most balance of payments submissions could not provide breakdowns from which we could exclude freight insurance.

[8] To give an idea of the order of magnitude, at end-2000, the British Virgin Islands collected fees accounting for almost 55 percent of government revenue, or 13 percent of GDP, let alone other source of revenue stemming from the offshore financial sector. The Cayman Islands collected fee accounting for 14.5 percent of government revenue, or 4.1 percent of GDP, for the same period (Suss E. *et al*, 2002).

[9] In addition, OFCs also deliver nonfinancial services, including ship and aircraft registrations, trademarks, patents and copyright registrations, and economic citizenship programs.

B. Indicator of OFC Status

Consistent with the proposed definition, an indicator of the OFC status of a country or jurisdiction would relate the level of its net exports of financial services to a measure of its national income or domestic financing needs. More specifically, it can be considered that *the ratio of net financial services exports*[10] *to GDP could be an indicator of the OFC status of a country or jurisdiction*.

This ratio relates two flows and could, in principle, be computed from a relatively detailed current account of the balance of payments, prepared in accordance with the fifth edition of the Balance of Payments Manual (BPM5; IMF,1993).[11] In practice however, the measurement of the ratio is hampered by omissions in the reporting of financial services' entries in many countries' balance of payments. Furthermore, many jurisdictions, especially OFCs, neither collect nor disseminate balance of payments statistics. To circumvent these limitations, the flow concept of the ratio can be supplemented by a stock concept, for which data are available.

OFCs: Why Should We Expect a Positive Correlation Between Flows of Financial Services and Stocks of Financial Assets?

The use of offshore vehicles by corporations and high-net-worth individuals generally obeys one fundamental principle: to capture higher return on investments, in exchange for services fees paid to the host jurisdictions. In this process, various vehicles are used, such as *asset-holding vehicles,* to park and isolate high-risk assets; *collective investment and derivatives trading vehicles,* to take advantage of tax incentives or undertake risky investments difficult to implement under onshore regulation; *asset protection schemes,* to circumvent inheritance taxes or potential expropriation; *SPVs* to levy financing (bond issuing and syndicated loans) while keeping the liabilities "off balance sheet"; and *trade vehicles,* to keep export receipts offshore. All these activities, which represent the major part of offshore business, engender a change in assets domiciliation. Therefore, in theory, and as confirmed by the empirical results (Section IV.E), a positive correlation exists between the exports of financial services and the accumulation of assets in offshore jurisdictions.

C. Proxy Indicators of OFC Status

These indicators are based on the premise that exports of financial services from OFCs are generally matched by underlying capital flows from partner countries, which, in turn, affects the assets and liabilities position of the OFC.

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[10] The specification we are using is also one way of measuring what is called in the trade literature a "Revealed Comparative Advantage (RCA)" index. It is customary in the empirical trade literature to analyze countries' specialization patterns by using RCA indexes. Measures of RCA indexes to infer specialization from actual data can be roughly classified according to the variable used as numerator of the ratio: exports, X; import, M; and net trade, (X-M). Ballance, Forstner and Murray (1987) after comparing the most commonly used measures of RCA, concluded that RCA measures based upon *net exports* (appropriately normalized for product significance and country size) can be theoretically justified and, empirically, such indices are more consistent among themselves and with other indices than any of the alternative RCA measures. Little support were found for RCA indexes based on only one side of the market, i.e., demand indexes using imports variable or supply indexes using exports variable. As for ratios using X+M variable, they are measures of trade openness, not specialization.

[11] The sub-item "financial services" in the "services" entry of the current account of the balance of payments records flows of financial services exchanged between residents and nonresidents.

Based on accounting identity, every cross-border capital flow is matched by a change in the assets and liabilities positions of the countries involved. These positions (stocks) are the result of past external transactions measured at current market price. In tracking these positions for various countries, one would expect countries or jurisdictions with the biggest stocks of assets to have been the ones that registered the largest flows of financial services over time and, as a result, exported the most financial services to nonresidents for a given period.

As part of their daily cross-border transactions, banks, security dealers, collective investment schemes (mutual funds and hedge funds), insurance companies, pension funds, and nonfinancial corporations domiciled (resident) in OFCs execute orders on behalf of nonresidents and trade nonresident-issued securities. These securities comprise equities and debt securities. The assets positions resulting from these transactions are recorded as portfolio investment assets, that is, securities issued by nonresidents and held by residents.[12] *OFCs are characterized by a proportionally high level of portfolio investment assets because they are home (legal domicile) to a large number of primarily custodian entities*, which hold and manage securities on behalf of clients residing outside the OFC. Shell companies, trusts, and SPVs, in addition to the entities cited above, often perform custody functions. Assets are booked offshore, while in most cases the management is located elsewhere, often onshore.

For the stock analysis, the Coordinated Portfolio Investment Survey (CPIS) and the International Investment Position (IIP) statistics published by the IMF were used to devise two measurements, called CPIS Assets and filtered IIP assets, respectively.

Proxy indicator based on CPIS (CPIS Assets)

The CPIS collects data on cross-border holdings of portfolio investment assets (broken down into equities, long-term debt securities, and short-term debt securities) by residence of the issuer.[13] The strength of the CPIS is that the data are reported in accordance with the residence principle recommended by the BPM5 (IMF, 1993). Thus, countries with offshore entities have agreed to include in their CPIS all banks, insurance companies, and mutual funds deemed to be legally domiciled in their jurisdictions, even if treated as nonresident for the purpose of compiling balance of payments and national income accounts statistics. Using the CPIS database, we compile the ratio of CPIS Portfolio Assets to GDP (in percent).

Proxy indicator based on international investment position data (Filtered IIP)

Although the CPIS coverage is quite large (about 70 economies provided data on their portfolio holdings in 2003), data from the IMF's International Financial Statistics (IFS) were used to construct

[12] Residents need not be nationals of the OFC in which they are located. The jurisdiction of legal incorporation—or in the absence of legal incorporation, legal domicile—determines the residence of corporate entities.

[13] The CPIS also enables to determine portfolio investment liabilities for all countries, broken down by counterpart asset holder. However, since not all jurisdictions participate in the CPIS, and of those that do, not all report their holdings, the liabilities data are not comprehensive.

a second sample of countries, to which a second proxy indicator derived from the IIP statistics was applied.[14]

Starting from total IIP assets,[15] this paper, in order to arrive at a measurement analogous to CPIS assets, introduced the concept of filtered IIP assets, defined as total IIP assets less the components not pertaining to portfolio capital transactions.[16]

Although financial derivatives are not reported in CPIS because they are not classified as securities, this paper includes them in filtered IIP assets. Indeed, not only are derivatives an essential component of OFC service providing, but their valuation is also difficult to separate from the underlying assets.

However, the paper excludes general government assets, reserve assets, and assets under the control of the monetary authorities (monetary gold, SDRs, etc.) from filtered IIP assets because it is focusing on private-sector-driven OFC business.

Thus, the second proxy indicator can be defined as the ratio of filtered IIP assets to GDP.

D. Data Description and Issues

Data description

Not all countries provide the same type and quality of data to the IMF: one group submits only balance of payments' financial services, another only IIP data, and yet another provides only CPIS data. However, the simultaneous use of the three different measures improves substantially the coverage in the present study from 77 to more than a hundred countries and jurisdictions (104), including some jurisdictions that are not IMF members.

The sample of economies examined comprises countries and jurisdictions whose financial systems are at various stages of development and therefore could not be treated uniformly. Thus, following the 2003 World Bank analytical classification of income published in the World Development Indicators, the countries were classified in two categories[17] based on their income level (low and middle income; and high income) in order to compute financial services ratios, CPIS Assets, filtered IIP, and other relevant indicators for each group.

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[14] According to BPM5, para. 461, "the international investment position is the balance sheet of the stock of external financial assets and liabilities. The financial items that comprise the position consist of claims on nonresidents, liabilities to nonresidents, monetary gold, and SDRs."

[15] The BPM5 divides total external assets of the IIP in five main components: foreign direct investment, portfolio investment, financial derivatives, reserve assets, and other investment assets.

[16] More precisely, filtered IIP assets are total IIP assets excluding foreign direct investment, reserve assets, and all assets belonging to general government and monetary authorities. This description of portfolio capital transaction is in conformance with BPM5, save for the exclusion of government and monetary authorities' assets (IMF, 1993, para. 385).

[17] The 2003 World Development Indicators breaks down the world economies, according to their gross national income (GNI) per capita in U.S. dollars (Atlas methodology), into low income (GNI per capita < US$765), high income (GNI per capita > US$9385) and middle income (anything in between). We consolidated these three categories in two. See: http://www.worldbank.org/data/countryclass/history.htm.

A detailed description, as well as treatment of the data used, is provided in Appendix III.

Data issues

Table 2 summarizes the main findings in terms of data issues. However, a narrative and an expanded discussion on data deficiencies related to the three measures are provided in Appendix III.

Table 2. Summary of Data Issues Related to the Measures of OFC Status

Approaches	Strengths	Weaknesses
Financial services approach	• Good overall coverage. • Most common data on transactions with nonresidents.	• Many OFCs, especially those that are not IMF member, either do not compile a balance of payments or compile a partial balance excluding the offshore sector. • Implicit pricing of some financial services (spread of two variables) may distort reporting. • Weak coverage of insurance services. • Generic issues in reporting "invisible trade."
Filtered IIP approach	• Adequate coverage, especially for onshore middle-income jurisdictions. • Built-in consistence with balance of payments data (same submission).	• Many OFCs do not compile an international investment position (same reasons as for the balance of payments). • Difficulties in stock valuations, which may require interpolations involving flow data. • Although allowed for, poor submission of data on financial derivatives.
CPIS Assets approach	• Best coverage of offshore jurisdictions. • Only data available for many offshore jurisdictions.	• Data quality is not uniform and collection methods vary across countries • Substantial underreporting for some major jurisdictions, where participants choose not to cover all the sectors for confidential or practical reasons.

E. Econometric Estimations

The ratio of net exports of financial services to GDP was estimated for countries and jurisdictions that did not provide one, to construct a homogeneous series of ratios of net exports of financial services to GDP for all countries in each group of income (regardless of the type of data they provided).

For countries/jurisdictions providing CPIS and international investment position data, the series Max (CPIS, IIP) which comprises the higher of both CPIS total assets and portfolio investment asset position (IIP) of the balance of payments, was first assembled (see Section A in Appendix III for construction and rationale). Then, an ordinary least squares (OLS) regression was run on the sample of countries for which both series (net exports of financial services and Max (CPIS, IIP)) were available, using the following equation:

$$\textit{Ratio of net financial services exports} = \alpha + \beta\ (\textit{Ratio of Max (CPIS, IIP)}) + \mu \qquad (1)$$

where α and β are parameters, and μ the error term.

This allowed the computation of estimated ratios of net exports of financial services for countries that provided at least one component of Max (CPIS, IIP).

For countries and jurisdictions for which filtered IIP and financial services net exports were available, an OLS regression of the following equation was run:

$$\textit{Ratio of net financial services exports} = \gamma + \delta\ (\textit{Ratio of filtered IIP}) + \varepsilon \qquad (2)$$

where γ and δ are parameters, and ε the error term.

This formulation enabled the estimation of ratios of net financial services exports for countries that initially provided only data pertaining to their international investment assets positions.

The summary results of the regressions are as follows:

Table 3. High income countries, Max (CPIS, IIP), Equation 1.

Explanatory variable	Coefficient	"t" statistic
Max(CPIS, IIP) ratio	0.0038605	3.53***
Intercept	0.0000416	0.00

R-squared = 0.3416
Number of observations = 26
*** statistical significance at the 99 percent level or greater

Table 4. High income countries, "filtered IIP", Equation 2.

Explanatory variable	Coefficient	"t" statistic
"Filtered" IIP ratio	0.0028953	4.91***
Intercept	-0.1297243	-0.90

R-squared = 0.5231
Number of observations = 24
*** statistical significance at the 99 percent level or greater

Table 5. Low and middle income countries, Max (CPIS, IIP), Equation 1.

Explanatory variable	Coefficient	"t" statistic
Max(CPIS, IIP)ratio	0.0081085	1.76**
Intercept	-0.0672926	-1.39

R-squared = 0.0814
Number of observations = 37
** statistical significance at the 95 percent level or greater

Table 6. Low and middle income countries, "filtered IIP", Equation 2.

Explanatory variable	Coefficient	"t" statistic
"Filtered" IIP ratio	0.0050788	4.26***
Intercept	-0.1464467	-3.16

R-squared = 0.3615
Number of observations = 34
*** statistical significance at the 99 percent level or greater

The results of the regressions show that, for both groups of income, the equations using the ratio of filtered IIP as independent variable (eq. 2) are more robust than those using Max (CPIS, IIP) as independent variable (eq. 1). In addition, the regressions for the group of high-income countries present a better fit than those of the group of low-and middle-income countries, presumably reflecting the better quality of data from the high-income country group.

To construct our final series of ratios of net exports of financial services for each group of income, we combined (i) the observed value of the financial services exports variable, (ii) the estimated value of this variable generated by the regression using filtered IIP (eq. 2); and (iii) the estimated value of the

same variable using Max (CPIS, IIP) (eq. 1), when an estimation out of filtered IIP was not available (see Table 8 for high-income countries and Table 9 for low-and middle-income countries).

Although the results of the regressions display a statistically significant relation between the independent variables and the observed ratios of financial services exports, these regression equations are not intended to be behavioral equations per se. They reflect and confirm the assumption of a positive correlation between flows and stocks made in section IV.C. In this context, Max (CPIS, IIP) and filtered IIP can be interpreted as "instrumental variables" used to construct a comprehensive financial services series.

In the high-income group, 29 values were observed, and 11 estimated, of which 4 were estimated using equation (2) (filtered IIP) and 7 using equation (1) (Max (CPIS, IIP)). As for the low-and middle-income group, 51 values were observed, and 13 estimated, of which 9 through equation (2) and 4 through equation (1).

F. Empirical Results

After computing the ratio of net exports of financial services to GDP for each of the two income groups, the mean and the standard deviation for each group were also calculated.

The standard deviation was used as the *threshold* above which a country or a jurisdiction is considered an OFC. Although it is classically interpreted by statisticians as a measure of the degree of dispersion of the data from the mean value, we can also, based on its very construction, state that the standard deviation is an "average" or "expected" variation around an average. It indicates how far a typical member of a sample is from the mean value of that sample. Therefore, ratios above the standard deviation were considered as atypical (i.e., beyond the expected variation around the average ratio) and indicative of OFCs.

Results for high-income countries and jurisdictions

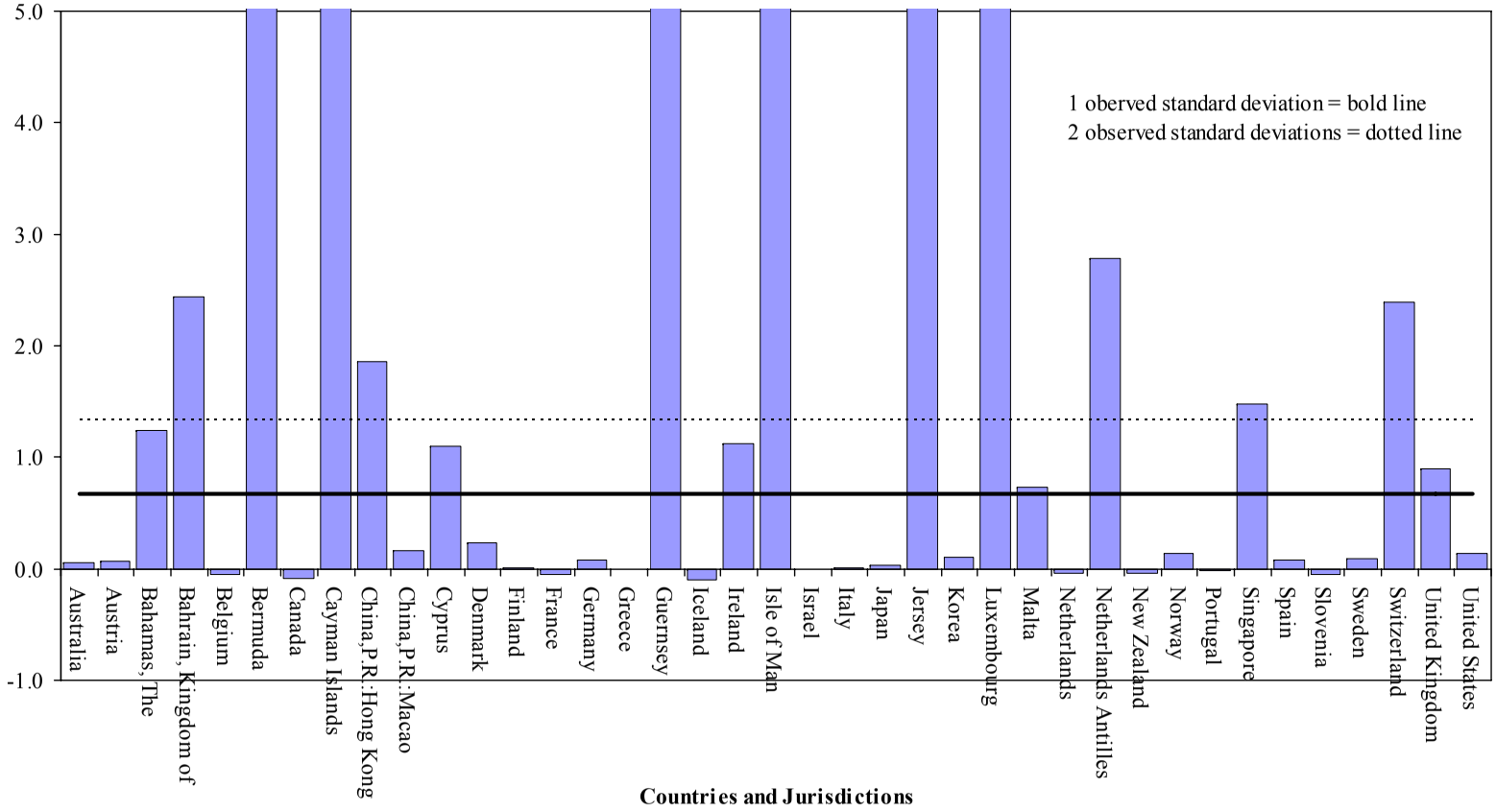
One jurisdiction in this group (Luxembourg) qualifies as an outlier[18] (five standard deviations above the mean) with respect to the CPIS data and, as such, was excluded from the regression of equation (1) and the statistical moments. Some other studies, including Khorana et al. (2005), and Bertaut and Kole (2004), adopted a similar approach to deal with this type of jurisdictions.

Metadata for Aruba shows that the offshore activity of the jurisdiction was totally or partially excluded from both CPIS and balance of payments records, making the data irrelevant for the selection criteria.

[18] We subscribe here to the standard statistics definition, which is that outliers are single observations that are far away from the data. One common definition of "far away" in this context is a value that is at least three standard deviations above or below the mean. Under the assumption of normality, the Grubb's test of outliers could also be applied. The common dealing with outliers is either to exclude them or to keep them and use techniques that require the law of the distribution to be known. See, for instance, Barnett and Lewis (1994).

Of the some 40 countries belonging to this category of income (Figure 1 and Table 8), 11 emerged as OFCs: The Bahamas, Bahrain, Bermuda, the Cayman Islands, Cyprus, Hong Kong, Guernsey, Ireland, Isle of Man, Jersey, Luxembourg, Malta, Netherlands Antilles, Singapore, Switzerland, and the United Kingdom. In this group, if the threshold of two standard deviations, which is an even more stringent indicator of the OFC status, is considered, the certainty that Bahrain, Bermuda, the Cayman Islands, Hong Kong, Guernsey, Isle of Man, Jersey, Luxembourg, Netherlands Antilles, Singapore, and Switzerland are OFCs is even greater (see Figure 1). These findings confirm the generally accepted attributes of these places as OFCs or major international financial centers. Save for the United Kingdom, all these centers are already on the list of OFCs established by the IMF (Table 10) in the framework of its assessment of standards and codes under the OFC program (IMF, July 2003).

Figure 1. Ratio of Net Financial Services Exports to GDP - High Income Countries (in percentage of GDP)



Results for low-and middle-income countries and jurisdictions

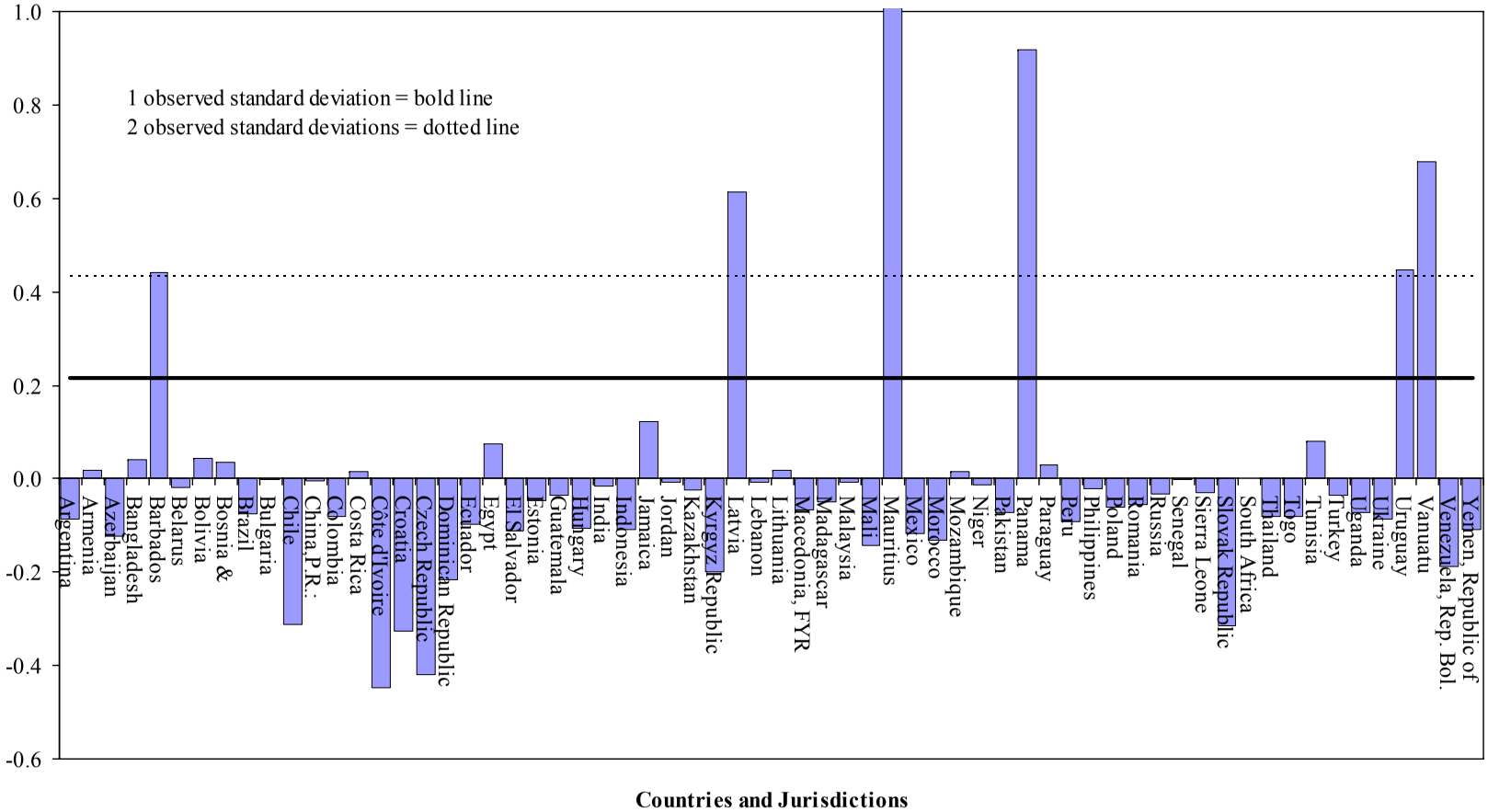
Of the more than 60 members of this category, 6 qualified as OFCs (Figure 2, Table 9): Barbados, Latvia, Mauritius, Panama, Uruguay, and Vanuatu. All the countries and jurisdictions of this short list are well-established OFCs that participate in the IMF OFC program, except Latvia and Uruguay. Latvia is known to host numerous offshore banks and companies serving mainly nonresident CIS[19] clients, with offshore investment coming from Eastern Europe and Russia. Indeed, more than half of bank total deposits in Latvia are of nonresident origin (IMF, 2005). As for Uruguay, its OFC status is demonstrated by the operations of some 12 offshore banks and about half a dozen offshore mutual fund companies. Uruguay is already under consideration for participation in the IMF OFC program.

Data for Mauritius required individual treatment. First, although Mauritius provided actual data for financial services, the metadata on Mauritius, as reported in the IMF General Data Dissemination System (GDDS),[20] shows that "offshore financial transactions with the rest of the world are not presently covered in the balance of payments." Therefore, the ratio of net exports of financial services to GDP for Mauritius was inaccurate, since the report of cross-border financial services is considerably underestimated. Second, with respect to CPIS assets data, and the regression of equation (1), Mauritius, at 6 standard deviations above the mean and a ratio of CPIS assets to GDP of over 470 percent (compared with an average of 7 percent in its group), was treated as an outlier.

[19] Commonwealth of Independent States (CIS).

[20] See GDSS metadata for Mauritius as of July 2005 on the IMF external website: http://dsbb.imf.org/Applications/web/gdds/gddscountrycategorylist/?strcode=MUS.

Figure 2. Ratio of Net Financial Services Exports to GDP - Low and Middle Income Countries (in percentage of GDP)



Countries and Jurisdictions

Overall, as one could expect (Figures 1 and 2), a majority of low-and middle-income countries and jurisdictions are net importers of financial services, while the majority of countries and jurisdictions in the high-income group are net exporters. Twenty-two countries and jurisdictions have been identified by this study as offshore or international financial centers, of which 16 belong to the group of high-income countries (Table 7).

V. CONCLUSION

This paper has (i) proposed an alternative definition of OFCs based on the nature of their trade and, (ii) developed a statistical method to distinguish between OFCs and non-OFCs. The approach was purposely made as simple and accessible as possible to minimize potential divergences about the conclusions of the study stemming from technicalities. Application of our definition and methodology to the initial list of OFCs used in the IMF OFC program (Table 10) yielded a few interesting results. First, the study identified 80 percent of the OFCs in the study sample that also appear in the a priori list used by the IMF to conduct its OFC program—which constitutes a broad ex post confirmation of the empirical list. Second, it differentiated OFCs strictly based on distinctive macroeconomic features, thus avoiding subjective presumptions about the activities of OFCs. Third, in terms of specific findings, the study identified Latvia, the United Kingdom, and Uruguay as OFCs—a suggestion that is corroborated by the facts. Indeed, offshore financial entities are present in these countries and they cater to an extensive nonresident clientele.

Table 7 - Summary

All OFCs identified by the study	OFCs of the IMF list in the study sample
Bahamas	Bahamas
Bahrain, Kingdom of	Bahrain, Kingdom of
Barbados	Barbados
Bermuda	Bermuda
Cayman Islands	Cayman Islands
	Costa Rica
China Hong Kong	China Hong Kong
Cyprus	Cyprus
Guernsey	Guernsey
Ireland	Ireland
Isle of Man	Isle of Man
Jersey	Jersey
Latvia	
	Lebanon
Luxembourg	Luxembourg
	Macao SAR
	Malaysia (Labuan)
Malta	Malta
Mauritius	Mauritius
Netherlands Antilles	Netherlands Antilles
Panama	Panama
Singapore	Singapore
Switzerland	Switzerland
United Kingdom.	
Uruguay	
Vanuatu	Vanuatu

Looking ahead, many avenues could be explored to refine the findings of the study. For instance, it would be interesting to see if sectoral proxies could also be constructed to examine OFC activity from the perspective of one sector at a time (banking, insurance, securities, etc.). One could also take advantage of the Bank for International Settlements (BIS) locational statistics, which provide detailed data on the banking sector, to supplement the CPIS and IIP statistics in order to come with an extended sample and identify minor centers, which, generally, have an important offshore banking component.

Table 8. High Income Countries - Balance of Payments Financial Services Data, CPIS and Investment Position Data - 2003

Countries/Jurisdictions (estimated values in bold)	Ratio of net exports of financial services to GDP in percentage	Ratio of portfolio assets to GDP (percentage) Max of (CPIS, IIP)	Ratio of filtered IIP assets to GDP, (percentage)	IIP Portfolio Investment/ CPIS Assets in millions US$ Max of (CPIS, IIP)	CPIS Assets, in millions US$	Portfolio Investment Assets Position (IIP), in millions US$	Filtered International Investment Position Assets, in millions US$	International Investment Position Assets, in millions US$	GDP 2003 at current prices converted in billion of US$
Australia	0.052	25.30	42.31	128483.25	128483.25	128246.25	214833.00	380847.91	507.80
Austria	0.069	80.73	138.32	206807.41	206807.41	206806.97	354335.81	441930.75	256.17
Bahamas, The	**1.237**	320.34		17625.00	17625.00				5.50
Bahrain, Kingdom of	**2.444**	233.53	888.92	22433.74		22433.74	85392.98	89831.07	9.61
Belgium	-0.053	136.11	285.83	421821.79	417784.53	421821.79	885821.47	1234113.97	309.91
Bermuda	**42.080**	10900.34		253977.87	253977.87				2.33
Canada	-0.092	31.86	39.16	276235.55	276235.55	180643.14	339448.56	703313.60	866.92
Cayman Islands	**17.309**	4483.53		62365.89	62365.89				1.39
China,P.R.:Hong Kong	1.860	215.90	468.89	334912.00	334912.00	334911.89	727361.59	1185406.67	155.12
China,P.R.:Macao	0.160	72.39		5736.88	5736.88				7.92
Cyprus	1.099	49.84	179.34	6554.90	6554.88	6554.90	23585.78	29143.13	13.15
Denmark	**0.231**	59.83		126994.26	126994.26				212.27
Finland	0.003	66.18	84.61	107413.10	107411.84	107413.10	137331.04	292463.27	162.31
France	-0.048	76.41	128.72	1367001.44	1367001.44	1249233.30	2302954.20	3513026.45	1789.13
Germany	0.075	55.96	125.81	1366328.56	1205126.81	1366328.56	3072068.15	3963642.32	2441.76
Greece	0.002	19.54	49.65	33996.17	33996.17	30473.66	86392.99	109631.23	173.99
Guernsey	**16.444**	4259.47		110320.22	110320.22				2.59
Iceland	-0.094	35.46	71.40	3686.91	3686.91	3404.13	7423.43	9243.03	10.40
Ireland	1.124	516.99	760.68	811645.48	811644.22	811645.48	1194230.91	1282652.64	156.99
Isle of Man	**5.299**	1372.63		29003.75	29003.75				2.11
Israel	**-0.003**	12.47	43.93	13750.40	13182.00	13750.40	48420.70	88379.90	110.23
Italy	0.006	53.88	82.68	791146.99	791063.63	791146.99	1214052.44	1559847.56	1468.32
Japan	0.030	40.09	54.60	1721316.67	1721314.28	1721316.67	2344321.38	3599804.43	4293.82
Jersey	**22.358**	5791.40		208490.44	208490.44				3.60
Korea	0.098	2.85	12.42	17342.70	17342.50	17342.70	75541.00	256643.44	608.15
Luxembourg	21.992	4732.29		1279528.57	1279528.57				27.04
Malta	**0.735**	146.73	298.59	6986.95	6262.76	6986.95	14217.83	17306.49	4.76
Netherlands	-0.034	145.56	254.96	782592.94	782592.94	782592.69	1370768.00	1933460.59	537.64
Netherlands Antilles	**2.782**	720.68		20492.44	20492.44				2.84
New Zealand	-0.034	27.00	48.31	21499.43	21499.43	19831.65	38474.49	53274.23	79.64
Norway	0.141	83.57		184357.81	184357.81				220.60
Portugal	-0.014	66.10	131.10	97316.79	97289.75	97316.79	193026.97	257356.26	147.23
Singapore	1.481	155.76	295.80	143875.06	143875.06	76583.78	273232.01	450586.90	92.37
Spain	0.033	49.12	72.45	432701.02	432701.02	432696.22	638234.32	997725.50	880.98
Slovenia	-0.047								28.07
Sweden	0.087	70.87	95.97	213706.32	213706.32	210128.39	289412.59	556611.35	301.55
Switzerland	2.393	203.76	418.80	657540.48	654431.65	657540.48	1351476.30	1764376.70	322.70
United Kingdom	0.900	95.78	278.91	1729515.29	1729515.29	1672215.71	5036175.33	6394917.20	1805.66
United States	0.135	28.57	48.40	3134244.00	3134244.00	2474374.00	5310086.00	7863967.24	10971.25
Observed standard deviation 1/	0.667								

Source: IMF's EDSS and CPIS databases.
1/ Excluding Luxembourg

Table 9. Low and Middle Income Countries - Balance of Payments Financial Services Data, CPIS and Investment Position Data - 2003

Countries/Jurisdictions (estimated values in bold)	Ratio of net exports of financial services to GDP in percentage	Ratio of portfolio assets to GDP (percentage) Max of (CPIS, IIP)	Ratio of filtered IIP assets to GDP, (percentage)	IIP Portfolio Investment/ CPIS Assets in millions US$ Max of (CPIS, IIP)	CPIS Assets, in millions US$	Portfolio Investment Assets Position (IIP), in millions US$	Filtered International Investment Position Assets, in millions US$	International Investment Position Assets, in millions US$	GDP 2003 at current prices converted in billion of US$
Argentina	-0.085	10.12	77.94	13115.15	13115.15	938.99	101012.82	144832.93	129.60
Armenia	0.019	0.16	9.04	4.44		4.44	253.89	784.78	2.81
Azerbaijan	**-0.124**	0.01	4.50	0.40		0.40	321.20	3185.35	7.14
Bangladesh	0.040	0.00	0.74	0.97		0.97	384.42	3104.01	51.67
Barbados	**0.441**	62.69		1689.90	1689.90				2.70
Belarus	-0.019	0.09	4.36	16.30		16.30	777.40	1683.76	17.83
Bolivia	0.043	11.19	24.14	905.38		905.38	1952.61	3424.26	8.09
Bosnia & Herzegovina	0.036								7.02
Brazil	-0.076	1.37	5.50	6950.48	4463.88	6950.48	27800.36	134222.87	505.73
Bulgaria	-0.001	3.86	13.45	768.92	768.92	692.67	2681.40	11610.85	19.94
Chile	-0.312	28.58	42.49	20966.54	12985.43	20966.54	31171.73	60938.13	73.37
China,P.R.: Mainland	-0.005								1468.05
Colombia	-0.081	10.77	16.27	8626.11	1919.24	8626.11	13030.76	29755.02	80.09
Costa Rica	0.016	1.27	12.55	222.65	222.65	222.65	2193.79	4421.99	17.49
Côte d'Ivoire	-0.448								14.04
Croatia	-0.327	0.18	25.37	50.72		50.72	7306.33	17661.97	28.80
Czech Republic	-0.420	14.79	29.87	13403.54	13403.54	13403.54	27064.62	59549.86	90.60
Dominican Republic	-0.216								16.32
Ecuador	**-0.099**	0.00	9.37				2548.81	3709.40	27.20
Egypt	0.076	1.88		1339.60	1339.60				71.36
El Salvador	-0.113	5.75	16.18	859.70		859.70	2416.60	5527.66	14.94
Estonia	-0.047	16.55	30.41	1521.32	1521.32	1504.47	2794.67	6081.72	9.19
Guatemala	-0.037								24.77
Hungary	-0.105	1.27	17.10	1044.71	790.60	1044.71	14031.50	32122.70	82.07
India	-0.016								592.49
Indonesia	**-0.108**	1.21	7.54	2876.55	1813.59	2876.55	17975.74	56013.20	238.52
Jamaica	0.123								8.15
Jordan	**-0.008**	7.26		722.57		722.57			9.95
Kazakhstan	-0.024	15.21	17.20	4563.55	4525.52	4563.55	5161.41	14254.23	30.01
Kyrgyz Republic	-0.200	0.39	8.49	7.57		7.57	163.12	719.04	1.92
Latvia	0.613	11.36	45.12	1256.44		1256.44	4992.01	6645.43	11.06
Lebanon	**-0.008**	7.27		1310.93	1310.93				18.04
Lithuania	0.019	1.46	11.69	268.76		268.76	2144.82	5716.95	18.35
Macedonia, FYR	**-0.067**	0.09		4.01		4.01			4.68
Madagascar	-0.051								5.47
Malaysia	-0.008	1.60		1664.34	1664.34				103.74
Mali	-0.143	2.29	9.30	98.31		98.31	399.17	1314.44	4.29

Table 9 (continued). Low and Middle Income Countries - Balance of Payments Financial Services Data, CPIS and Investment Position Data - 2003

Countries/Jurisdictions (estimated values in bold)	Ratio of net exports of financial services to GDP in percentage	Ratio of portfolio assets to GDP (percentage) Max of (CPIS, IIP)	Ratio of filtered IIP assets to GDP, (percentage)	IIP Portfolio Investment/ CPIS Assets in millions US$ Max of (CPIS, IIP)	CPIS Assets, in millions US$	Portfolio Investment Assets Position (IIP), in millions US$	Filtered International Investment Position Assets, in millions US$	International Investment Position Assets, in millions US$	GDP 2003 at current prices converted in billion of US$
Mexico	**-0.119**	0.80	5.48	5123.00	5123.00		35030.80	108475.87	638.74
Morocco	**-0.133**	0.34	2.73	147.62		147.62	1193.17	16812.09	43.73
Mozambique	0.015								4.95
Niger	-0.012								2.41
Pakistan	-0.073	0.08		67.96	67.96				83.48
Panama	0.917	27.83	141.62	3579.10	3579.10	3444.06	18216.17	20706.61	12.86
Paraguay	0.030	0.08	14.35	4.70		4.70	866.68	2507.75	6.04
Peru	**-0.093**	7.02	10.46	4257.97		4257.97	6341.22	17714.31	60.64
Philippines	-0.021	5.25	17.32	4075.00	3680.66	4075.00	13453.00	31939.58	77.68
Poland	-0.060	1.93	11.23	4041.00	4039.69	4041.00	23536.00	61303.22	209.54
Romania	-0.056	0.02	3.36	13.50	13.45	13.50	1925.21	15563.66	57.33
Russia	-0.032	1.11	18.06	4778.40	4777.00	4778.40	77699.58	315129.75	430.11
Senegal	-0.002								6.90
Sierra Leone	-0.031	2.66	3.48	26.30		26.30	34.41		0.99
Slovak Republic	-0.314	5.47	16.76	1786.07	1785.37	1786.07	5475.21	19479.07	32.67
South Africa	0.000	29.57	38.59	48921.39	48921.39	40752.11	63842.92	100719.01	165.43
Thailand	**-0.081**	1.92	12.86	2748.02	2747.71	2748.02	18382.14	63726.31	142.95
Togo	-0.080								1.80
Tunisia	0.081	0.23	10.62	56.28		56.28	2654.14	4495.76	25.00
Turkey	-0.035	0.82	12.93	1956.00	1948.35	1956.00	30983.00	74514.99	239.70
Uganda	-0.072								6.44
Ukraine	-0.085	0.05	7.43	26.00	15.00	26.00	3669.00	11035.21	49.39
Uruguay	0.448	15.67	96.48	1753.76	1753.76	1479.90	10796.60	13324.84	11.19
Vanuatu	**0.677**	37.17	162.18	102.51	102.51	12.19	447.29	503.20	0.28
Venezuela, Rep. Bol.	-0.188	7.90	62.98	6596.00	3621.18	6596.00	52605.00	88315.70	83.52
Yemen, Republic of	**-0.108**	0.07	7.60	7.92		7.92	862.27	6020.71	11.35
Observed standard deviation	0.217								

Source: IMF's EDSS and CPIS databases.

1/ Mauritius ratio of net exports estimated, since the balance of payments do not record offshore activities.

Table 10. Lists of Offshore Financial Centers According to the IMF and the Financial Stability Forum (FSF)

		Jurisdictions
IMF - 46	FSF - 42	1 Andorra
		2 Anguilla
		3 Antigua and Barbuda
		4 Aruba
		5 Bahamas, The
		6 Bahrain
		7 Barbados
		8 Belize
		9 Bermuda
		10 British Virgin Islands
		11 Cayman Islands
		12 Cook Islands
		13 Costa Rica
		14 Cyprus
		15 Gibraltar
		16 Guernsey
		17 Hong Kong SAR
		18 Ireland
		19 Isle of Man
		20 Jersey
		21 Lebanon
		22 Liechtenstein
		23 Luxembourg
		24 Macao SAR
		25 Malaysia (Labuan)
		26 Malta
		27 Marshall Islands
		28 Mauritius
		29 Monaco
		30 Nauru
		31 Netherlands Antilles
		32 Niue
		33 Panama
		34 Samoa
		35 Seychelles
		36 Singapore
		37 St. Kitts and Nevis
		38 St. Lucia
		39 St. Vincent and the Grenadines
		40 Switzerland
		41 Turks and Caicos Islands
		42 Vanuatu
		43 Dominica
		44 Grenada
		45 Montserrat
		46 Palau

Sources: IMF; and Financial Stability Forum (2000).

APPENDIX I: OFCs—THEIR ORIGINS AND ACTIVITIES

A. The Origins and Rationale of OFCs

The OFCs and the Eurocurrency market share a common history, inasmuch as OFCs are merely the geographical extension of the Eurocurrency market outside Western Europe.

OFCs and Eurocurrency centers are essentially the efficient response of international banks to the attempt by sovereign governments in many advanced countries in the 1960s and the 1970s to control capital flows through the imposition of restrictive domestic regulations. These restrictions, which in many cases were intended to provide governments with more control over monetary policy, encouraged a shift of deposits and borrowing to less regulated institutions, essentially banks in OFCs and Eurobanks, which are exempt from such restrictions.

In explaining the creation and growth of present-day offshore centers, practitioners and academics put forward at least four factors:

- the establishment of capital controls with a view to reducing unsustainable balance of payments deficits[21] recorded primarily by the United States in the late 1950s and also, by many OECD countries in the 1960s;
- the imposition of high taxes, coupled with a tightening of monetary policy,[22] in an attempt to curb balance of payment deficits resulting from fiscal imbalances, particularly in some OECD countries;
- the removal in 1958 of foreign exchange restrictions on the conversion by nonresidents of current earnings in Western Europe (Johnston, 1982); and
- the fact that U.S. banks' interest in conducting business transactions in foreign currencies and to extend their reach to new territories was spurred by the Glass-Steagall Act of 1933, which barred commercial banks from entering the investment banking business.

Thus, the combined effect of increasingly restrictive regulatory regimes onshore and new business opportunities abroad engendered by the return to full convertibility of nonresident assets in Europe provided an impetus to financial institutions and large multinational corporations to delocalize and increase the volume of their financial activities offshore. It is this massive delocalization that contributed to broaden and deepen the scope of markets in international currencies that are now known as the Eurocurrency market.

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[21] For the United States, for instance, these measures included the Interest Equalization Tax (1963), the Voluntary Foreign Credit Restraint (1965), and the Foreign Direct Investment Program (1965), all aimed at limiting the ability of U.S. banks to lend to foreigners.

[22] Tight monetary policy was achieved by imposing domestic capital restrictions, such as reserve requirements and interest rate ceilings (with the intention of limiting banks' credit through their capacity to mobilize deposits).

Throughout the 1960s and the 1970s, the Eurocurrency market grew at a remarkable pace. The shift of financial activities to Eurocurrencies gained considerable momentum after 1966, when U.S. money market rates rose above the interest rate ceilings on dollar deposits allowed by Regulation Q,[23] resulting in a credit crunch that, in turn, forced U.S. banks to seek funds in the Eurodollar market (Cassard, 1994). During 1966-77, the gross size of the Euromarket — that is, the sum of all Eurocurrency liabilities, including interbank deposits—grew 17-fold, from US$18 billion at end-1966 to US$310 billion at end-1977 (Dufey and Giddy, 1978).

In the early 1970s, the geographical location of the market shifted from being mainly Western European to worldwide. Banks and, later, securities and insurance firms began setting up offshore branches in a number of jurisdictions in the Caribbean, Latin America and Southeast Asia. It is these jurisdictions that have become known today as offshore financial centers.

B. Significance of OFC Activities in the International Financial System

While incomplete (there are no worldwide statistics for securities and IBCs) and with the limitations inherent to OFC data collection, the available statistics nevertheless indicate that offshore banking business remain sizeable.[24]

Calculations based on BIS data suggest that, by end-December 2003, the external position of offshore banks in terms of assets (in accordance with the BIS list) had reached US$1.9 trillion, compared with US$16 trillion of total bank assets. By the same date, external loans (i.e., claims of OFCs on the rest of the world) had reached US$1.5 trillion or 13 percent of the world cross-border bank claims, as reported to the BIS (US$11.9 trillion). However, because not all banks or OFCs report to the BIS, it is more likely that these figures are underestimated.

Regarding securities, although OFCs are recognized as significant hubs for the administration of mutual funds, assets under management in OFCs are estimated at around US$400 billion, a rather small portion of the assets managed worldwide (estimated at US$12 trillion) (Dixon, 2001).

In the insurance sector, publicly available worldwide consolidated data are scarce. Bermuda, the leading OFC and the world's largest captive insurance center, reported in 2001 some 1,600 insurance and reinsurance companies totaling $172 billion in assets, and underwriting over $48 billion in annual gross premiums (IMF, 2005). Furthermore, for the first time, in 2004, Bermuda became the fourth-largest reinsurance market in the world, after the United Sates, Germany, and Switzerland (in terms of total net written premiums).

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[23] Under Regulation Q, ceilings were imposed on the level of interest rates banks were permitted to pay on deposit in the United States (but not their branches abroad).

[24] Based on BIS data, on-balance-sheet OFC cross-border assets reached US$4.6 trillion at end-June 1999 (about 50 percent of total cross-border assets), of which US$0.9 trillion in the Caribbean. (IMF, 2000).

APPENDIX II: DEFINITIONS OF OFCS CITED IN THE SURVEY OF THE LITERATURE

A survey of the literature finds the following definitions of OFCs:

"Offshore banking is financial intermediation performed (primarily) for nonresident borrowers and depositors. The principal attraction of an offshore banking center (for banks as well as participants) is simply the absence of intrusive and expensive official regulation, including taxation and controls over the portfolio decisions of the banking community." **Dufey G., Giddy I.** (1978, p.37).

"Offshore centers are defined as cities, areas or countries which have made a conscious effort to attract offshore banking business, i.e., nonresident foreign currency denominated business, by allowing relatively free entry and by adopting a flexible attitude where taxes, levies and regulation are concerned." **McCarthy I. S.** (1979, p.3).

"International financial centers are distinguished from their domestic counterparts by three important characteristics. First, international financial centers deal in external currencies, which are *not* the currency of the country where a center is located. […] Second, offshore centers are generally free of the taxes and exchange controls that are imposed on domestic financial markets. […] Third, offshore financial centers are primarily but not exclusively for nonresident clients." **Park Y. S.** (1994, p.32).

"An offshore banking centre may be defined as being typically a small territory in which the conduct of international banking business is facilitated by favorable and/or flexibly administered tax, exchange control and banking laws, and in which the volume of banking business is totally unrelated to the size and needs of the domestic market. Offshore banking activity is essentially entrepôt business with foreign currency funds being deposited in a given centre from one foreign source and then on-lent to another foreign borrower." **Johnston R. B**. (1982, p. 18).

"An OFC [is] a centre that hosts financial activities that are separated from major regulating units (states) by geography and/or by legislation. This may be a physical separation, as in an island territory, or within a city such as London or the New York International Banking Facilities (IBFs)." p. 4. **Hampton M.** (1996, p.4).

"OFCs are jurisdictions where offshore banks are exempt from a wide range of regulations which are normally imposed on onshore institutions." **Errico L., Musalem A.** (1999, p.6).

APPENDIX III: DATA DESCRIPTION AND ISSUES

A. Data Description

Financial services data

Using 2003 as base year—the most recent year with the best data coverage over all databases—a sample of all the countries and jurisdictions (77) that concomitantly provided data on financial services (IMF, Balance of Payments Statistics Yearbook) and nominal GDP at market prices (IFS),[25] was constructed.

CPIS Assets used in the regressions and concept of max (CPIS, IIP)

A sample was constructed using data from all 69 countries and jurisdictions that responded to the questionnaire for the 2003 CPIS.

First, a series of CPIS Assets extracted from the CPIS database[26] was put side by side with a series of Portfolio Investment Assets Position (IIP) built from the IIP statements contained in the IFS. Then, the two series were combined to generate one series that contains (i) the CPIS Assets for economies that submitted only the CPIS; (ii) the Portfolio Investment Assets Position (IIP) for economies that solely submitted the IIP; and (iii) the highest value of the two series for economies that submitted both CPIS and IIP data with different values (Max of (CPIS, IIP).

These treatments were adopted for the following reasons:

- The merging of CPIS assets and Portfolio Investment Assets Position (IIP) to form a single series is made because, in spite of being collected for different purposes, these two concepts are identical in the IMF framework of cross-border statistics.[27] In practice however, discrepancies occur, and some countries report nonreconcilable data owing to differing coverage or release dates, or the suppression of entries to preserve the confidentiality of source information.

- The use of the highest value of the two series of data is warranted by valuation and coverage issues that arose during the collection of the data. The CPIS should be used

[25] Throughout the study, actual data referring to the IMF's International Financial Statistics (IFS) and the Balance of Payments Statistics Yearbook (BPSY) were extracted from the IMF's internal EDSS database, which is the source data used to generate the tables of the IFS and BPSY publications. However, although rarely, discrepancies with the printed editions may occur, as the database may include data revisions.

[26] See Table 12: "All Economies – Reported Portfolio Investment Assets: Total Portfolio Investment", from the CPIS database on the IMF external website: http://www.imf.org/external/np/sta/pi/global.htm.

[27] See "Portfolio Investment – CPIS Data: Notes and Definitions" on the CPIS website at www.imf.org/external/np/sta/pi/notes.htm.

in instances where it is higher than the IIP because these generally correspond to situations where the IIP has been published using an incorrect valuation method (many countries continue to publish IIP data using "book value"), whereas the CPIS is systematically compiled on a market-value basis. Market value could be much higher than book value and is generally more accurate. Instances where the IIP is greater than the CPIS occur when the CPIS coverage is deliberately more limited than IIP coverage because of concerns about confidentiality.

Filtered IIP data used in the regressions

The sample is drawn from the IFS series and is made of 70 countries and jurisdictions corresponding to the IIP reporters who provided comprehensive submissions at end-2003.

Common features

For IMF members, GDP denominated in U.S. dollars was obtained by converting GDP at current price in national currency (IFS), using the IFS average exchange rate. For five jurisdictions that are not members of the IMF and/or do not publish official GDP statistics, estimates contained in the Central Intelligence Agency World Factbook,[28] were used. In a few cases,[29] estimates of GDP contained in IMF staff reports or the World Economic Outlook (WEO) were used.

B. Data Issues

Data on financial services

Whereas the balance of payments records of financial services provide a reliable indicator of financial activities with nonresidents, in practice its measurement leads to some complications. Indeed, in addition to the errors and omissions stemming from the difficulties of recording "invisible trade" in general, financial services do not always come with an explicit price. Very often, spread earnings from financial services are made by the difference between the rates of interest charged to borrowers and the rates paid to depositors, or by bid-asked spreads on traded financial assets. Banks, for instance, earn a net interest margin on their lending to, and borrowing from, overseas residents, which contributes to their services earnings. For this reason, an imputed amount—financial intermediation services indirectly measured (FISIM)—is provided for in the System of National Accounts (SNA 1993) to measure such services. However, because the BPM5 does not require the estimation of FISIM, for practical reasons, the balance of payments records tend to underestimate the trade of financial services in general, and banking services in particular (Whichard, 1999). This situation may perhaps affect the analysis in low-and middle-income countries, where the

[28] The CIA World Factbook is available online at http://www.cia.gov. Jurisdictions for which we used CIA data include Bermuda, Guernsey, Isle of Man, and Jersey. For the Cayman Islands, in the absence of 2003 data, we used CIA 2004 GDP.

[29] Azerbaijan, Bahamas, Barbados, Lebanon, Macedonia, Moldova, Netherlands Antilles, and Vanuatu.

effect of these understatements could be compounded by weak data collection capabilities. However, the magnitude of such omissions would be difficult to assess, as most of these countries do not compile FISIM in the first place.

Data on CPIS Assets

Although the CPIS provides a valuable and unique perspective on cross-border equity position, the interpretation of its results should be made keeping in mind some shortcomings. First, the quality of the data is not uniform. The CPIS is only four years old, and, for many countries, this survey marked their first attempt to collect portfolio data. Only about one third of CPIS participants previously went through a similar exercise by reporting an IIP statement. Second, CPIS coverage is incomplete in terms of countries and institutions. As participation in the CPIS is voluntary, a number of countries likely to be substantial holders of equity asset portfolios have not yet participated. In addition, massive underreporting of assets occurs, as some CPIS participants choose not to cover all the sectors (banking, insurance, securities etc.) in their submission. For instance, the Cayman Islands reports only portfolio holdings by the banking sector, thereby excluding its sizeable mutual funds industry; the Bahamas also reports only banking sector holdings, and Bahrain excludes offshore insurance companies from its CPIS reporting. Third, data collection methods vary across countries. Countries had to decide whether to (i) conduct the survey at the aggregate or security-by-security level, (ii) survey end-investors or custodians, and (iii) make participation in the survey optional or mandatory (Warnock, 2002). Each of these choices represented a cost-efficiency trade-off that affected the ultimate accuracy of each survey.

Data on Filtered IIP

Of all the existing statistics on cross-border balance sheets, the IIP is probably the one with the best coverage. However, the compilation of the IIP entails practical issues that need to be considered before analyzing its results. Of the many shortcomings of the IIP, two are of particular relevance to our study. The first pertains to stock valuations. Indeed, where actual stocks are not directly measurable, stocks are derived from flows, making allowance for exchange rate and price changes. While balance of payments flows are recorded at market value at the time the transaction took place, stocks should be valued at market price at the end of the period to which the balance sheet relates. The reconciliation of these two requirements involves a very sensitive work of revaluation of flows and initial stocks in order to arrive at a fair estimate of final stocks. These revaluations become even more difficult in the context of highly volatile financial markets.

The second shortcoming pertains to the collection of data on financial derivatives stocks. As these instruments are contingent claims, not only could their value dramatically change over time but also the status of some these stocks could change during their lifetime, moving from one side of the ledger to the other. As a result, many countries submitting IIPs refrain from filling out the financial derivatives line in the IIP statement.

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