GLOBAL FINANCIAL INTEGRITY

The Absorption of Illicit Financial Flows from Developing Countries: 2002–2006

Prepared by Dev Kar, Devon Cartwright-Smith and Ann Hollingshead

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Global Financial Integrity Wishes to Thank
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Contents

We are pleased to present our report, "The Absorption of Illicit Financial Flows from Developing Countries: 2002-2006"

In December 2008 Global Financial Integrity produced its analysis entitled "Illicit Financial Flows from Developing Countries: 2002-2006." We found that some $850 billion to $1 trillion a year was disappearing from poorer countries as proceeds of bribery and theft, criminal activity, and commercial tax evasion. This analysis utilized established economic models, namely the World Bank Residual Method and IMF Direction of Trade Statistics. And the estimate is considered to be quite conservative, as it does not include illicit flows generated through smuggling and some forms of trade mispricing.

The question then arises: Where are these financial flows absorbed? There are no established economic models providing analytical tools to answer this question. It is in fact easier to analyze outflows from developing countries with weak statistical capacities than it is to analyze inflows into developed countries with much stronger statistical capacities. The greater part of illicit flows departing one country and arriving in another country are transferred as cash through the shadow financial system, resulting in deposits in accounts outside countries of origin. But such money does not remain as cash on deposit; instead much of it gets withdrawn and put into securities, real estate, consumption, or other uses. Withdrawal data are not reported.

End-of-period deposit data are reported. Thus it is possible to examine the change of annual end-of-period deposits and compare this to outflow data. For each country, the Bank for International Settlements (BIS) compiles data on the total of private deposits outside countries of origin. Normally, such external deposit data is provided globally, not broken down by country of deposit. At our request, the BIS kindly made available regional breakdowns of such deposit data. Growth of external deposits by region compared to estimated illicit outflows provides a basis for analyzing where such global illicit outflows ultimately arrive. With additional analytical techniques it is possible to estimate how much is deposited in offshore financial centers versus developed country banks.

Our work demonstrates that developed countries are the largest absorbers of cash coming out of developing countries. Developed country banks absorb between 56 percent and 76 percent of such flows, considerably more than offshore financial centers. Thus, the problem of absorption of illicit financial flows is one that rests primarily with Europe and North America, rather more so than with tax havens and secrecy jurisdictions. The policy implication is clear. While developing countries need to implement policies to curtail illicit financial flows, efforts to alleviate poverty and contribute to sustainable growth will be thwarted as long as developed countries permit their banks and cooperating offshore financial centers to facilitate the absorption of illicit funds.

Our work further demonstrates the need for considerably improved data on cross-border deposits. This should be a major focus of current efforts toward global financial reform.

GFI thanks Dev Kar, Devon Cartwright-Smith, and Ann Hollingshead for their excellent work in producing this difficult and very important analysis.

Raymond W. Baker
Director

Abstract

A recent study by Kar and Cartwright-Smith (2008) found that over the period 2002 to 2006, illicit financial flows from developing countries increased from US$372 to US$859 billion. The purpose of this paper is to link these outflows with major points of absorption consisting of offshore financial centers and developed country banks. While offshore centers have recently attracted media attention regarding their lack of transparency, the paper finds that large data gaps exist for banks as well. These gaps make it difficult to analyze the absorption of illicit funds, defined as the change in private sector deposits of developing countries in banks and offshore centers. The paper argues that both need to greatly improve the transparency of their operations. Regular reporting of detailed deposit data by sector, maturity, and country of residence of deposit holder would close many of the data gaps identified in this paper and allow for a more robust analysis of the absorption of illicit flows from developing countries. Given data limitations, certain assumptions had to be made regarding the behavior of illicit flows and investments. These assumptions were formulated as control variables for a simple model of absorption. Several simulations of illicit outflows against absorption (defined as the non-bank private sector deposits of developing countries) were carried out using different settings of the control variables. The paper finds that while offshore centers have been absorbing an increasing share of illicit flows from developing countries over the five-year period of this study, international banks have played a pivotal role in facilitating that absorption. Depending upon whether one uses the narrower Bank for International Settlements or broader International Monetary Fund definition (a control variable), offshore centers hold an estimated 24 or 44 percent of total absorption respectively, while banks hold the balance. As total absorption consists of both licit and illicit funds, the paper presents a simple algebraic analysis to estimate the portion of such deposits in banks and offshore centers. Furthermore, the analysis shows that the polar extreme (all illicit or all licit) in such holdings by either group is not tenable given the overall volume of illicit flows and absorption.

Executive Summary

According to a recent study at Global Financial Integrity, illicit financial flows from developing countries increased at a compound annual rate of 18.2 percent per annum since 2002 to nearly a trillion dollars in 2006. Massive as these flows are, economists have not studied the issue of absorption—where are illicit funds deposited after they leave the developing countries?

The objective of this paper is to shed light on the absorption of illicit funds by developed country banks (henceforth, banks) and offshore financial centers (henceforth, offshore centers or OFCs). Banks are defined as those in four developed countries (Australia, Japan, United Kingdom, and United States) and the European reporting centers (see Appendix Table 4). As there is no universally agreed definition of offshore centers, this paper uses both the International Monetary Fund (IMF) and the BIS versions. Specifically, the IMF classifies Ireland and Switzerland as offshore centers whereas the BIS does not. Also, the paper makes no distinction between offshore centers and tax havens because the two lists are identical except for Liberia, which is a pure tax haven. The paper presents a framework for estimating the extent to which banks and offshore centers facilitate the absorption of flight capital. The policy implication of this paper is that economic and governance policies in developing countries could curtail illicit flows if they are complemented by developed country policies that make the absorption of these funds much more difficult.

We point out that extensive data gaps and lack of transparency in the financial transactions of banks and offshore centers introduce significant errors in any attempt to "map" illicit outflows to initial points of absorption. These data gaps are highlighted in order to elicit discussion on the next steps involved in strengthening the database on international banking. However, quite apart from statistical issues, the fact remains that economic models are basically unable to capture the totality of illicit flows. While data on absorption are not complete either, simulations carried out in the paper show that illicit flows are significantly lower than total absorption.

An important reason is that financial institutions absorb both licit as well as illicit funds from developing countries. Hence, the data on absorption compiled by the Bank for International Settlements (BIS) includes a licit component, involving funds that conform to a developing country's tax laws and its exchange control regime. Thus, legitimate profits of companies on which domestic taxes were paid and are legally repatriated or the transfer of foreign currency by individuals who obtained prior approval for such transfers would be examples of licit funds from developing countries absorbed in traditional banks and offshore centers. Illicit financial flows on the other hand comprise funds that are illegally earned, transferred, or utilized—if it breaks laws in its origin, movement, or use it merits the label. In terms of economic models used in this paper, illicit funds are either unrecorded leakages from a country's balance of payments (captured by the World Bank Residual model) or are generated through trade mispricing (estimated using the Trade Misinvoicing model). Thus one would expect absorption to exceed total illicit flows by a significant margin,

notwithstanding the fact that the deposit data reported to the BIS are likely to be understated as well (mainly due to the fact that not all points of absorption report deposit data to the BIS).

The methodology underlying the simulation model starts with the recognition that absorption of illicit funds refers only to cash deposits in banks and offshore centers. No international institution or country statistical agency has any information on the portion of illicit funds invested in tangible assets like precious metals and stones, real estate, and collectables such as art objects. Therefore the models presented in the paper seek to compare cash illicit outflows with cash absorption or deposits. Illicit outflows from developing countries in cash are based on estimates of cash deposit shares in investor portfolios by country obtained from two private companies, CapGemini and Oliver Wyman. The implicit assumption is that investors invest the same proportion of their total portfolio in cash whether making illicit investments abroad or licit investments in general.

Data on bank and offshore center deposits from developing countries are based on BIS locational banking statistics, which, unfortunately, are not broken down by private non-bank and public sectors. Hence, the private/public split in the BIS consolidated banking statistics had to be used in order to derive the private sector deposits of developing countries on a locational basis.

As expected, cash absorption exceeded illicit outflows in cash by a significant margin. Apart from this general observation, model simulations using the BIS definition of OFCs indicate that, on average, banks account for about 76 percent of total cash absorption while offshore centers absorb the rest (24 percent). According to our estimates, offshore centers have increased their share of holdings of illicit deposits from 21.8 percent in 2003 to 34.2 percent in 2006, reflecting a corresponding decline of the share held by banks during that period from 78.2 percent to 65.8 percent. In fact, private sector deposits in offshore centers nearly double to 44 percent of total absorption if the wider IMF definition, which includes Ireland and Switzerland as offshore centers, is used. The paper also notes that the higher 44 percent of total absorption is also likely to include a higher licit portion in offshore centers given that financial institutions in Ireland and Switzerland also act as traditional banks. The increasing role of offshore centers in the world's shadow financial system helps explain the recent media focus as well as the ongoing efforts by the G-20 to improve their transparency and accountability.

On average, we find that offshore centers have absorbed more illicit flows from Asia (43.9 percent) than any other region during 2002 to 2006. They played a smaller role in the absorption of illicit flows from MENA (36.0 percent), Africa (26.8 percent), Europe (15.8 percent) and the Western

Hemisphere (10.4 percent). This suggests that developing countries in the Western Hemisphere and Europe deposit most of their illicit funds in developed country banks rather than offshore centers. When Ireland and Switzerland are classified as offshore centers, the corresponding regional shares increase significantly (Asia 53.1 percent, MENA 49.3 percent, Africa 45.5 percent, Europe 37.6 percent, and Western Hemisphere 42.1 percent).

Another interesting finding of the paper is that regardless of which definition of OFCs is chosen, developed country banks hold, on average, a significant portion of illicit funds ranging possibly from 46 to 67 percent of total deposits. In fact, though the data used to determine the licit/illicit splits are admittedly imperfect, it appears that even at its widest range, the proportion of illicit funds in developed country banks was significant between 2003 and 2006 (anywhere from 20 to 72 percent).

I. Introduction

This paper is the second part of a project financed by the Ford Foundation. The first part, which began in early 2008, culminated in the publication of the report *Illicit Financial Flows from Developing Countries, 2002-2006* by Global Financial Integrity (GFI). The 2008 GFI study showed that, even at its most conservative estimate, illicit financial flows (IFFs) from developing countries increased from US$372 billion to at least US$859 billion over the period 2002 to 2006 or at a compound annual rate of 18.2 percent. As massive as these flows are, economists have not studied where illicit funds are deposited after they leave the developing countries. The objective of this paper is to shed light on the absorption of these funds by developed country banks (henceforth, banks) and offshore financial centers (referred to as offshore centers or OFCs). Absorption is defined as the change in the private sector deposits of developing countries in banks and offshore centers.

It should be clear at the outset that absorption in banks and offshore centers involve cash deposits (see Section II on Data Sources). Absorption of illicit funds exclusively involves cash deposits or liquid financial assets. No international organization, national statistical agency, or research institution has any information on investments of illicit funds in tangible assets like precious metals, real estate, and collectibles. Hence, we need to estimate the proportion of illicit funds from developing countries that were invested in cash.

We obtained estimates of cash deposit shares in investor portfolios by country from two private companies, CapGemini and Oliver Wyman. The implicit assumption is that investors invest the same proportion of their total portfolio in cash whether making illicit investments abroad or licit investments in general. Hence, the rest of the paper is devoted to the analysis of cash outflows of illicit funds from developing countries and their subsequent absorption in banks and offshore centers as cash deposits.

Note that the analysis of absorption presented here cannot be used to ascertain the total stock of illicit funds from any particular country that is deposited in these points of absorption abroad. This is because deposit data are stocks at end-December and there is no information on concurrent withdrawals throughout the year. Hence, the change in deposits from one year to the next cannot be cumulated and compared to cumulative cash outflows.

An important question is why do we need to know where illicit flows are initially absorbed? Should we care that these flows are intermediated through offshore financial centers or non-offshore country banks? The main reason is that illicit financial flows have deprived developing countries of scarce financial resources for development and poverty alleviation and have seriously undermined the effectiveness of foreign aid. Attempts by developing countries to curtail illicit outflows have not worked because there are many institutions which are not only willing, but actively seeking, to absorb

these illicit flows. Economic and governance policies in developing countries must be complemented by efforts in developed countries to make the absorption of illicit funds more difficult. If, as we find in this study, both offshore centers and banks have been complicit in the absorption of illicit funds, then regulatory measures and oversight to bring about greater transparency and accountability must be applied even-handedly in order to penalize and discourage such transactions. As Kapur and Webb (2000) write:

> *Banking secrecy has made it difficult to monitor and regulate private banking activities, even in jurisdictions where there are stringent laws on domestic money-laundering. Even in high-profile cases (such as that of Mobutu or of Marcos) countries have been unable to recover their looted wealth. The role of private banking in abetting capital flight gained prominence in 1999, when the Bank of New York helped shift at least US$7 billion in ill-gotten gains out of the Russian Federation into private bank accounts in the West. But the scandal in this case was because the lost funds were perceived to have come out of the pockets—via contributions to IMF—of US tax-payers (in itself a fallacy, but that's a separate issue). Far more grievous scandals in developing countries go unnoticed. During the 1980s debt crisis, even as US banks were pressing floundering Latin America countries to service their debt, their private banking operations provided easy avenues for capital flight, thereby exacerbating the problem of debt-services (Lissakers, 1991). Some of the largest and most venerable banking institutions have been implicated in recent years. The Mexican crisis and the travails of Indonesia and the Russian Federation have been sharply exacerbated by massive capital flight. In all these cases the benefits of borrowings are privatized and the costs socialized in that capital flight reduces the foreign exchange available to governments to pay off their debts, and they cannot capture private foreign assets to offset private and/or public liabilities.* [2]

More recently in 2009, there was widespread media coverage of UBS helping U.S. citizens evade taxes by facilitating the illicit transfer and absorption of taxable income. Greater regulatory oversight and transparency related to banking operations could perhaps have discouraged UBS from breaking the law. However, in the absence of a balanced approach between outflow-reducing and absorption-restricting policy measures, GFI's study shows that illicit financial flows have been increasing at around 18 percent per annum over the period 2002 to 2006. Hence, efforts to curtail illicit flows must examine the role of banks and offshore centers in the absorption of these funds, which is the objective of this paper. The policy implication is clear: regulatory agencies need to formulate policies requiring stricter oversight and greater transparency, in order to make absorption more difficult and complement efforts by developing countries to improve the effectiveness of and reduce their dependence on foreign aid.

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[2] Devesh Kapur and Richard Webb, Governance-related Conditionalities of the International Financial Institutions, No. 6, August 2000, page 13, last paragraph.

The paucity of any systematic study of absorption arises from the fact that estimating the volume of illicit flows absorbed by banks and offshore centers is very difficult. There are significant problems of estimation regarding both sides of the illicit outflows-to-absorption equation. As explained in GFI's study, even the best economic models cannot capture all the conduits for sending money out of a country because they must rely on officially recorded statistics. Hence, smuggling, "hawala"-style currency swap arrangements, and same-invoice faking that are arranged by word of mouth between colluding traders all generate illicit flows that cannot be captured by economic models.

Regarding the absorption side of the equation, researchers can easily see that there is a lack of deposit data at an appropriate level of detail. This lack of data is directly related to the deliberate opacity with which banks and offshore centers operate. For example, because OFCs typically do not disseminate data on their transactions, it is difficult to obtain even aggregate deposit data, let alone deposit data on non-resident non-bank private sector of developing countries. In that regard, the newly-assembled dataset developed by Lane and Milesi-Ferretti (2010) based on external assets and liabilities of small international financial centers, is not in itself suitable for studying the issue of the absorption of illicit funds from developing countries. For one, data on the liabilities of these investment centers do not relate to developing countries specifically but include those related to developed countries as well. For another, their sample of small international financial centers excludes the larger offshore centers (e.g., Ireland, Malaysia, Singapore, and Switzerland) by definition. Moreover, the aggregate external liabilities are not at an appropriate level of sectoral detail (such as non-bank, private sector) necessary to permit the illicit flows-to-absorption simulations we carry out. Given these data limitations, we had to make a number of assumptions regarding the behavior of illicit flows and absorption in order to simulate the model.

The paper is organized as follows. Section II discusses the data sources and issues underlying the absorption model. Thereby, we bring out the data required to better map illicit flows against absorption in banks and offshore centers. Section III presents a brief overview of the BIS and IMF classifications of offshore centers and why tax havens are not explicitly considered in this paper. The absorption model is estimated using both the BIS and the IMF definition of offshore centers. Section IV presents a simple model of absorption which allows one to vary the underlying core assumptions through control variables. Section V provides an analysis of the licit and illicit shares possible in offshore centers and banks. The main conclusions of the paper are presented in Section VI.

II. Data: Sources and Related Issues

GFI's study of illicit flows discussed data limitations underlying the estimation of illicit flows from developing countries. This section reviews the main sources of absorption data used to estimate the distribution of illicit funds in banks and offshore centers and discusses their limitations. We first discuss the sources and methods for estimating illicit flows, followed by the estimation of the cash component of illicit funds invested abroad. The remainder of the section is devoted to a brief overview of the various sources of data on absorption and their limitations.

(i) Illicit Financial Flows

Estimates of total illicit outflows are obtained from GFI's 2008 study (see Appendix Table 5). The trade mispricing component was derived using the Gross Excluding Reversals (GER) method while illicit flows from the balance of payments were captured using the World Bank Residual model (Change in External Debt or CED). In that paper, we sought to minimize the data issues related to informal intra China-Hong Kong trade by excluding Hong Kong's trade data from the world. This was consistent with the approach used by Zhu, Li, and Epstein (2005). In this study, however, Hong Kong could not be excluded from the mispricing estimates because the absorption figures we obtained from the BIS include that Special Administrative Region of China as a major offshore center in Asia.

(ii) Estimating Illicit Outflows in Cash: Merrill Lynch-CapGemini and Oliver Wyman

Illicit funds from developing countries are invested in a variety of assets, such as equity (stocks and bonds); certificates of deposits, annuities, and other fixed investment assets; precious metals, art objects, and other tangible assets; and investments in real estate. Because absorption of illicit financial flows from developing countries into banks and offshore centers exclusively involve cash deposits, total illicit flows must be scaled down by the portion of funds that is invested as cash deposits that can be traced from banking statistics.

Merrill Lynch-CapGemini (MLC) is a private consulting company that provides estimates of the proportion of cash held by high net-worth individuals (HNWIs) in their investment portfolios. In contrast, the corresponding estimates of cash investments provided by Oliver Wyman (OW) refer to the general investing public, not just HNWIs. Furthermore, OW cash deposit shares cover only a select number of developing countries, which means regional averages must be assumed from this handful of countries. In contrast, MLC's estimates of cash investment ratios refer to regional averages.

Both MLC and OW derive estimates of cash investments that are related to licit funds based on officially recorded national accounts, savings propensities, and income distributions. We use these cash investment shares to estimate the cash component of illicit flows out of developing countries. As illicit investment decisions cannot be directly observed nor information on them collected through surveys, we have to assume that illicit investors in developing countries hold the same proportion of their illicit assets in cash as do licit investors estimated by the MLC and OW wealth models. However, because illicit investments are relatively riskier, there is an incentive to hold a higher proportion in cash rather than in a more illiquid form, so that the cash deposit shares based on the MLC and OW models are likely to understate illicit deposits. This could explain some of the gap between illicit outflows and absorption.

The cash deposit shares used in our study are based on regional estimates of cash investments provided by MLC and OW. Ideally, illicit financial flows from each developing country should be scaled down by the cash investment factor relating to illicit investors in that country. However, as neither MLC nor OW provides estimates of licit investments in cash for each developing country, we scaled down regional illicit flows by the corresponding regional cash deposit shares. Of course, this method introduces estimation errors to the extent that the investors in each country hold proportions of cash investments that are different from the regional cash holdings preferences.

It should also be noted that we use MLC over OW data for almost every region because we assume that only high net-worth individuals send illicit capital abroad and not the general population. Participation in trade mispricing, for example, first requires that an individual has the capital and the opportunity to engage in international trade. The general population is unlikely to engage in international trade transactions. Because the OW cash deposit shares relate to the general population, rather than HNWIs, the OW estimates are consistently much greater than those from MLC. A reasonable explanation for this could be that HNWIs have more sophisticated investment strategies, relative to the general population, and therefore they would favor lower cash deposits in order to maximize the return on their portfolio. As such, we primarily use the cash-deposit shares estimated by MLC, rather than estimates developed by Oliver Wyman. However, as MLC provides no estimates for Africa, we used the OW deposit shares for South Africa, which was the only African country for which the estimate was available.

The MLC model provides estimates of total wealth held by high net-worth individuals in 71 countries, accounting for more than 98 percent of world gross national income. It then distributes national wealth across the adult population of the country. The model is updated on an annual basis to calculate the value of high net worth individuals' financial wealth at a macro level. Total wealth by country is estimated using the national account statistics database of the IMF and the World Bank. Annual national savings are then summed over time to arrive at a book value of accumulated national wealth. National wealth at book value is adjusted using world stock price indexes to reflect

the market value of the equity portion of HNWI wealth. This stock of wealth is then distributed according to the relationship between income and wealth, using the World Bank's data on income distribution and Lorenz curve specifics for each country. The distribution of wealth among the adult population of each country yields estimates of HNWIs across countries, regions, and the world. The MLC wealth model includes values of private equity holdings at book value as well as all forms of publicly quoted equities, bonds, funds, and cash deposits. It does not include collectibles, consumables, consumer durables, and real estate used for primary residence.

The OW wealth model analyzes 48 countries grouped into seven major regions, covering some 95 percent of total world GDP. Wealth, defined as gross financial assets, consists of (i) cash and deposits, (ii) equities and bonds, (iii) mutual funds, (iv) alternative investments, and (v) individual pension assets. Residential real estate, occupational pension assets and household debt are not considered. Official records of household balance sheets provided by national central banks and the OECD are used to estimate asset data. If official data are not available, as is the case for many Latin American, Asian, or Eastern European countries, the OW model looks at the relationships between the state of economic development, GDP, and financial assets to determine the total asset pool for a specific base year.

(iii) Absorption: International Monetary Fund

Beja (2005) proposed a method to capture the absorption of illicit outflows using data on the change in currency deposits of domestic residents in foreign banks, after adjusting for changes in exchange valuations. He claimed that these mirror statistics, which can be used to obtain an estimate of private foreign assets, could be obtained from the IMF's *International Financial Statistics* (IFS). Upon closer scrutiny, however, it is clear that IFS monetary statistics cannot be used to derive estimates of the absorption of illicit flows into OFCs and developed country banks. In fact, the IFS "Banking Survey" section does not include a line called "currency deposits of domestic residents in foreign banks." Such data are not available even to country officials. This means that the IMF, which publishes official banking statistics from developing countries, does not have this information. It is therefore unlikely that most developing countries currently compile such data.

(iv) Absorption: Datamonitor

Datamonitor, a private sector company, has developed a limited database on OFCs, which is available for a fee. Their exclusive database was developed from a study of secondary information from each of the governing bodies of eleven offshore financial centers: The Bahamas, Bermuda, Cayman Islands, Hong Kong, Guernsey, Jersey, Isle of Man, Dublin, Luxembourg, Singapore, and Switzerland. As the company points out, the quantification of information on deposits, mutual funds, and insurance contracts written in each OFC is based on data provided by the governing bodies within each offshore location. Where specific data on deposits or other financial instruments are not provided, Datamonitor makes estimates using proxy data obtained from the regulators.

The lack of sectoral and geographical detail necessary to obtain data on the private sector non-resident deposits of developing countries limits the use of these data to analyze the absorption of illicit flows. Nevertheless, the company does collect limited data on private sector non-resident deposits, so that a further breakdown into developed and developing country holders is just one level short. Another drawback to the Datamonitor database is that it covers only eleven centers. We could find no other data source that provides this level of detail. On balance however, the coverage and level of detail on offshore financial center deposits provided by Datamonitor fell well short of our expectations given the hefty charges involved.

(v) Absorption: Bank for International Settlements

The Bank for International Settlements (BIS) publishes the most comprehensive dataset on cross-border international banking statistics currently available. It does not, however, provide breakdowns of the data at the country level, which would have been ideal for this study. The BIS collects and disseminates two different sets of international banking data, based on information provided by member country banks. The first set of data, locational statistics, collects quarterly data on the gross international financial claims and liabilities of banks residents from a given country. The second set, known as the consolidated statistics, report banks' on-balance sheet financial claims vis-à-vis the rest of the world and provides a measure of the risk exposures of lenders' national banking systems. That is to say, consolidated statistics show reporting countries' claims on the rest of the world. Once differences in reporting regimes are taken into account, the two sets of data may be used to complement one another in economic analysis.

The main purpose of locational statistics is to provide information on the role of banks and financial centers in the intermediation of international capital flows. The key organizational criteria are the country of residence of the reporting banks and their counterparties, as well as the recording of all positions on a gross basis. Locational statistics can be used to present the combined cross-border positions of reporting banks in all the BIS reporting countries vis-à-vis individual countries listed on the locational tables. There are currently 42 countries providing these statistics (*Appendix Table 1*).

Some of the locational banking statistics are restricted for use by reporting countries. The BIS needs specific approval from each reporting country for release of individual country data to third parties. Since we were not able to obtain country-level data from the BIS without permission from those individual countries, we requested and received aggregated regional-level data. This dataset, which does not show cross-border bank positions on a bilateral basis, could not be used to determine one or more reporting country's deposits vis-à-vis one or a sub aggregate of counterparties.

If bilateral deposit data were available, researchers would be able to track the pattern of deposit holdings by residents of any developing country into any individual bank or offshore center. Ideally, the distribution of such holdings would account for the totality of all foreign assets held by the private sector of a particular developing country in those points of absorption. Even at the most detailed level, however, locational data refer only to the external deposits of the 42 reporting banks vis-à-vis the non-bank sector. These data are not further broken down by private and public sectors. The consolidated statistics, however, do provide a split between public and private sector deposits. Although consolidated statistics report these banks' claims on the rest of the world, we assume each country's claims on the world have the same public/private split as other country's claims on them. In this way, we use this split in conjunction with the consolidated statistics in order to derive a proxy for private sector holdings of developing countries.

The BIS provided data on the deposits of developing countries in four major destination groups: Asian financial centers, offshore financial centers, European financial centers, and banks in four other developed countries (U.S., U.K., Australia and Japan). There are several countries that are classified as offshore financial centers by the IMF for which we did not receive deposit information from the BIS. For these countries, which we have classified as "other financial centers," we obtained deposit information primarily from the BIS and supplemented their data with data from the IMF and central bank websites. These latter two sources did not provide a breakdown of their data by region of origin. We therefore had to assume their splits were consistent with those of other offshore financial centers.

III. Points of Absorption (PoAs)

Financial institutions absorb both licit as well as illicit financial flows from developing countries. Licit funds involve those that conform to a developing country's tax laws and its exchange control regime. Legitimate profits of companies on which domestic taxes are paid and are legally repatriated or the transfer of foreign currency by individuals who obtain prior approval for such transfers would be examples of licit funds from developing countries absorbed in the two main points of absorption: offshore financial centers and non-offshore developed country banks. Illicit financial flows on the other hand comprise funds that violate the tax or capital controls in effect in developing countries. By definition, illicit funds are unrecorded leakages from a country's balance of payments or are generated through trade mispricing.

A range of criteria have been put forward to define an offshore financial center, including (i) orientation of business primarily toward nonresidents (ii) favorable regulatory environment (iii) low or zero tax rate and (iv) offshore banking as an entrepôt business.[3] There is, however, a lack of consensus on the definition of an OFC, since many centers display only some of these characteristics while other centers that practice banking secrecy, such as Delaware in the United States, are not generally considered as offshore centers.

One alternative to seeking a universal definition of offshore centers that is gaining support is to consider them as part of a broader group of the world's secrecy jurisdictions, which also includes developed countries.[4] Secrecy jurisdictions are defined by the Tax Justice Network as places that "intentionally create regulation for the primary benefit and use of those not resident in their geographical domain and are designed to undermine the regulation of another jurisdiction" (*Appendix Table 2*). To encourage depositors, secrecy jurisdictions also create a deliberate, legally backed veil of secrecy that ensures their clients cannot be identified. Globalization, the attendant myriad range of cross-border transactions, intermediation in many countries, and efforts by a number of countries to build or promote their offshore industries have blurred distinctions between different kinds of secrecy jurisdictions.

In this paper, we use the IMF definition of an offshore center, which is "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." The IMF considers 46 countries and jurisdictions as offshore financial centers, of which only 26 are IMF members (Appendix Table 3).

[3] Zoromé (2007) proposed an alternative data-based indicator, namely the ratio of net financial services exports to GDP. This approach is complicated by the fact that many jurisdictions do not prepare sufficiently detailed balance of payments data, and in some cases the data for net financial services has to be inferred from other sources, such as the IMF's Coordinated Portfolio Investment Survey or data on International Investment Positions.

[4] Reference, *Identifying Tax Havens and Offshore Finance Centers*, Tax Justice Network, 2007, Washington, DC.

Like offshore centers, tax havens are another type of secrecy jurisdiction. We do not make a distinction between them because according to the IMF criteria, all tax havens, with the exception of Liberia, are also classified as offshore centers. Nevertheless, it is useful to consider the characteristics of jurisdictions popularly known as tax havens. According to the Organization for Economic Co-operation and Development (OECD), tax havens have four key characteristics. First, the jurisdiction imposes no or only nominal taxes. Second, the jurisdiction lacks transparency in terms of the information it provides regarding its transactions and operations. Third, its laws or administrative practices prevent the effective exchange of information with other governments. Finally, there is no requirement that such activities be substantial. As of March 2009, the OECD listed 35 jurisdictions that meet the criteria of a tax haven (Appendix Table 3).

In this study, developed country banks are traditional banks in non-OFC developed countries, specifically those in four developed countries (Australia, Japan, United Kingdom, and United States) and the European reporting centers (see Appendix Table 4).

IV. A Model of Absorption

The following simple model attempts to map the cash portion of regional illicit outflows with the private sector deposits in the absorption centers. One would expect absorption to be larger than the illicit outflows because, as noted earlier, absorption includes a licit component while illicit outflows captured by economic models are likely to be understated.

The model takes the form:

$$\sum_{i=1}^{5} \boldsymbol{A_i} = \sum_{i=1}^{5} (\boldsymbol{S_i} * \boldsymbol{IFF_i}) \pm \sum_{i=1}^{5} \boldsymbol{\varepsilon_i}$$

where ***A*** represents cash absorption from five developing country regions ***i***, ***S*** is the share of illicit investments in cash, by region, ***IFF*** is illicit financial flows out of those regions, and ε is a residual or error term that captures the gap between cash IFFs and cash absorption due to measurement errors and data issues (see Appendix Table 4 for estimates of regional cash outflows and cash absorption).

The magnitude and sign of the residual can arise for any number of reasons already discussed, including the fact that (i) IFFs are understated by economic models, (ii) not all deposits in PoAs are illicit, (iii) cash absorption in PoAs is not fully reported, and (iv) there are errors in the estimation of the cash deposit shares. ε can therefore be either positive or negative, depending on whether cash absorption is under- or over-estimated relative to cash IFFs. There is also no reason to assume that the expected value of this error term is zero. To do so would be to imply that the cash portion of all illicit outflows not captured by the trade mispricing and the residual models precisely equals the amount of cash absorption missed due to measurement or availability issues. Similarly, there is no reason to assume that the expected value of the ratio of cash absorption to cash IFFs, the absorption coefficient, would be one, as this implies that the expected value of the error term is zero.

Regional and Global Control Variables

When designing the model, we incorporated a series of control variables that would allow us to adjust the underlying model components. We could then observe how IFFs compare with absorption in terms of key statistics such as correlation and the absorption coefficient (AC). There are two main types of control variables—those that apply to each of the five developing regions (regional control variables) separately and those that impact the model as a whole (global control variables). For instance, as we can use either the normalized or the non-normalized estimates of IFFs for a region, this becomes a regional control variable. Specifically, if we know that IFFs for Africa are understated as a result of missing country data, it would not be reasonable to normalize the already understated figures for the region. For the global control variables, we can choose whether OFCs are defined according to the BIS or IMF classification, or we can choose between IFF estimates as defined in GFI's study and those provided by the traditional method (where "inflows" of capital, captured by the illicit flows models, are allowed to wash out estimated outflows).

Simulations

Four simulations of the IFF-Absorption model were carried out using different settings for the regional and global control variables. The results of these simulations are discussed in order to select the one which performs the best in terms of simple parameters such as correlation and absorption coefficient (the ratio of absorption to illicit flows). We also present the results of the IFF-Absorption simulations for each region. Thus, the simulation for Africa involves the comparison of illicit outflows from Africa with the absorption of these flows in banks and offshore centers across the world.

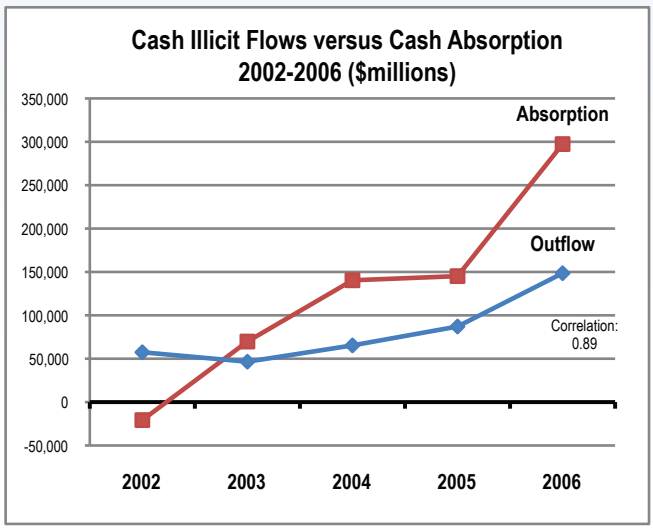
Simulations of cash IFFs against Absorption were carried out using the non-normalized CED+GER estimates of illicit flows and the BIS classification of OFCs, which includes Ireland and Switzerland

Simulation 1

IFF Models: CED+GER
Normalization: Non-Normalized (all regions)
OFCs: BIS definition (Ireland and Switzerland are DCBs)

Simulation 1A

	Africa			Asia			Europe			MENA			Western Hemisphere			Total		
Year	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)
2002	7,978	3,303	0.41	17,593	-4,124	-0.23	8,837	3,682	0.42	6,846	-8,291	-1.21	16,188	-15,328	-0.95	57,442	-20,758	-0.36
2003	3,939	9,588	2.43	16,897	4,086	0.24	8,153	14,934	1.83	5,876	8,231	1.40	11,686	32,955	2.82	46,551	69,793	1.50
2004	6,493	9,456	1.46	20,087	24,252	1.21	15,833	32,018	2.02	10,927	20,333	1.86	12,013	54,336	4.52	65,352	140,394	2.15
2005	3,928	3,743	0.95	35,941	20,968	0.58	12,380	52,190	4.22	18,375	38,787	2.11	16,465	29,487	1.79	87,089	145,174	1.67
2006	5,187	21,714	4.19	60,712	46,650	0.77	38,950	66,376	1.70	25,280	92,268	3.65	18,411	70,351	3.82	148,540	297,359	2.00
Average	**5,505**	**9,561**	**1.74**	**30,246**	**18,366**	**0.61**	**16,831**	**33,840**	**2.01**	**13,461**	**30,266**	**2.25**	**14,952**	**34,360**	**2.30**	**80,995**	**126,392**	**1.56**
	Correlation: -0.20			**Correlation: 0.88**			**Correlation: 0.79**			**Correlation: 0.96**			**Correlation: 0.00**			**Correlation: 0.89**		



All figures are in US$ millions, unless otherwise specified.

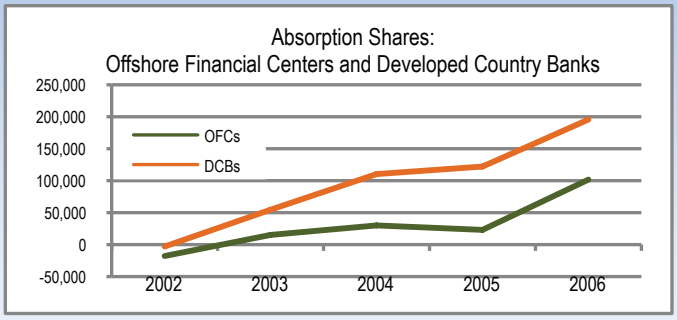
in European reporting countries (part of banks), rather than offshore reporting centers (part of OFCs). This benchmark simulation provided the best fit between cash IFFs and cash absorption in PoAs, reflected in an absorption coefficient of 1.56 (section A, last column). Overall correlation between IFFs and absorption was an impressive 0.89 (section A), suggesting that despite formidable data issues, the simulation was successful.

The BIS classification also reveals that over the period 2002-2006, OFCs accounted for 24 percent of total liquid asset absorption, while developed country banks covered the remaining 76 percent (section B). This figure changes significantly when using the IMF classification for Ireland and Switzerland, which includes these countries as OFCs.

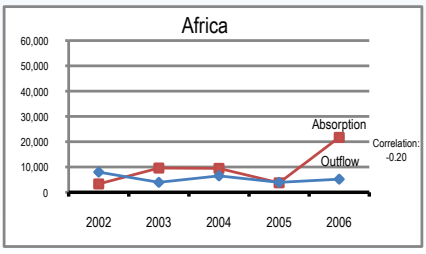
Simulation 1B

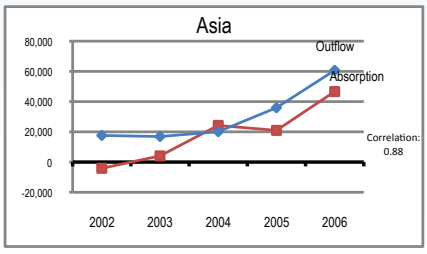
	2002	2003	2004	2005	2006	Share
OFCs	**-17,813**	**15,194**	**30,037**	**23,059**	**101,696**	**24.1%**
Africa	689	2,714	2,846	1,142	5,410	26.78%
Asia	-6,841	1,193	11,370	12,773	21,848	43.93%
Europe	-408	-233	6,770	4,479	16,088	15.78%
MENA	-11,145	-16	11,084	13,054	41,440	35.96%
Western Hemisphere	-107	11,535	-2,033	-8,390	16,911	10.43%
DCBs	**-2,945**	**54,599**	**110,357**	**122,115**	**195,663**	**75.9%**
Africa	2,614	6,874	6,610	2,600	16,304	73.22%
Asia	2,716	2,893	12,882	8,194	24,802	56.07%
Europe	4,090	15,166	25,248	47,710	50,288	84.22%
MENA	2,855	8,246	9,248	25,734	50,828	64.04%
Western Hemisphere	-15,220	21,420	56,369	37,876	53,440	89.57%

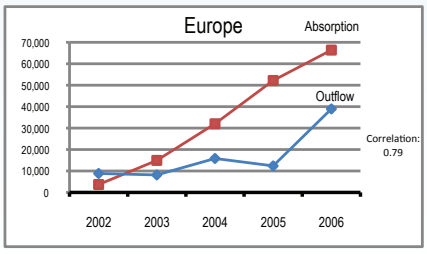
Share	**2002**	**2003**	**2004**	**2005**	**2006**
OFC	**-**	**21.8%**	**21.4%**	**15.9%**	**34.2%**
DCB	**-**	**78.2%**	**78.6%**	**84.1%**	**65.8%**

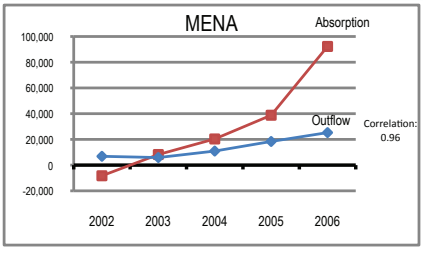


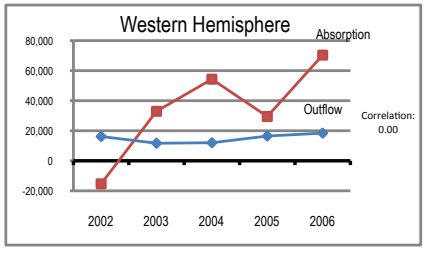
Simulation 1C











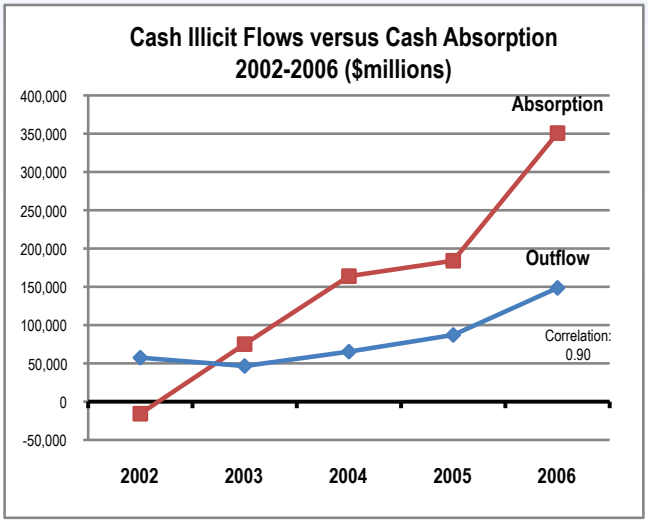
Non-normalized outflow estimates were used for the benchmark simulation. Since illicit financial flows are already understated for reasons discussed previously, reducing the illicit outflow estimates by normalizing outflows ought to widen the gap between IFFs and absorption. The simulation clearly shows that absorption is above non-normalized IFFs for all years but 2002. This result is common to all iterations of the model as it is a feature of the absorption data. Since the model uses flow data, a negative value for absorption in 2002 implies that deposits in banks and offshore centers declined in 2002 from their levels in the previous year. One likely reason is that investor panic at the end of 2001, when the world's wealthiest country declared war, led to substantial net withdrawals from both. A regional breakdown of the data (see the five regional graphs in section C) shows that in 2002 absorption was below IFFs for all regions and negative for Asia, MENA, and most significantly for the Western Hemisphere (closest to the epicenter of the terrorist strikes).

Simulation 2

IFF Models: CED+GER
Normalization: Non-Normalized (all regions)
OFCs: IMF definition (Ireland and Switzerland are OFCs)

Simulation 2A

Year	Africa			Asia			Europe			MENA			Western Hemisphere			Total		
	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)
2002	7,978	3,588	0.45	17,593	-3,736	-0.21	8,837	4,403	0.50	6,846	-6,376	-0.93	16,188	-13,595	-0.84	57,442	-15,716	-0.27
2003	3,939	10,191	2.59	16,897	5,270	0.31	8,153	15,668	1.92	5,876	11,190	1.90	11,686	32,820	2.81	46,551	75,139	1.61
2004	6,493	14,195	2.19	20,087	25,930	1.29	15,833	40,805	2.58	10,927	19,139	1.75	12,013	63,846	5.31	65,352	163,915	2.51
2005	3,928	2,856	0.73	35,941	22,228	0.62	12,380	56,348	4.55	18,375	47,121	2.56	16,465	55,502	3.37	87,089	184,055	2.11
2006	5,187	25,890	4.99	60,712	50,880	0.84	38,950	86,152	2.21	25,280	100,649	3.98	18,411	87,204	4.74	148,540	350,775	2.36
Average	**5,505**	**11,344**	**2.06**	**30,246**	**20,115**	**0.67**	**16,831**	**40,675**	**2.42**	**13,461**	**34,345**	**2.55**	**14,952**	**45,156**	**3.02**	**80,995**	**151,634**	**1.87**
	Correlation: -0.09			**Correlation: 0.88**			**Correlation: 0.87**			**Correlation: 0.97**			**Correlation: 0.16**			**Correlation: 0.90**		



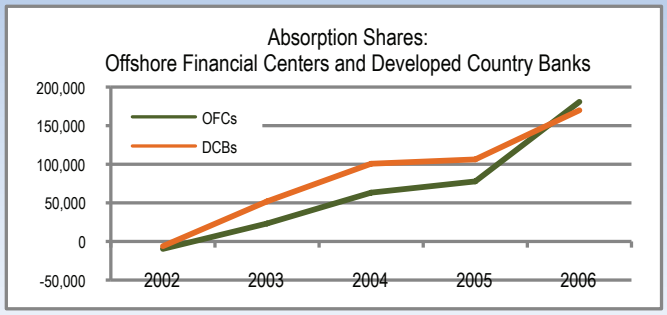
All figures are in US$ millions, unless otherwise specified.

Considering the relatively poor simulation of IFFs and absorption for Africa and the Western Hemisphere, one might attribute the low correlation to any of several factors. As CapGemini does not estimate cash deposit shares for Africa, we had to use the OW estimate for South Africa, which is likely to understate the cash deposit investment share for the continent as a whole. Moreover, there are significant data gaps in the IMF databases for several African countries. The GFI study of illicit flows showed that countries with missing data accounted for nearly 37 percent of total African GDP. Regarding the Western Hemisphere, the poor correlation may be due to a large volume of cash deposits that are not captured by the economic models we used. Cash proceeds from black market activity or the drug trade can be directly smuggled out of a country and deposited in some of the nearby island OFCs without the need for trade mispricing. Such transactions are also not captured by the CED model.

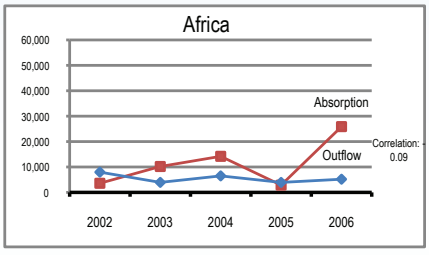
Simulation 2B

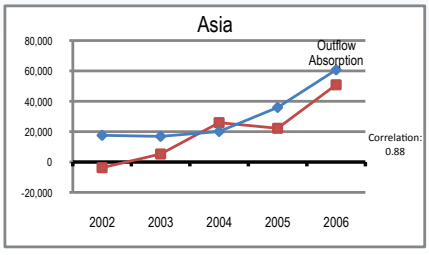
	2002	2003	2004	2005	2006	Share
OFCs	**-9,630**	**23,243**	**63,230**	**77,776**	**180,866**	**44.21%**
Africa	1,149	3,625	9,538	-105	11,612	45.52%
Asia	-6,248	3,007	13,792	14,554	28,320	53.12%
Europe	763	872	19,168	10,331	45,390	37.63%
MENA	-8,078	4,472	9,456	24,789	54,069	49.33%
Western Hemisphere	2,783	11,267	11,275	28,207	41,476	42.08%
DCBs	**-6,086**	**51,896**	**100,686**	**106,279**	**169,909**	**55.8%**
Africa	2,439	6,566	4,658	2,961	14,278	54.48%
Asia	2,512	2,263	12,138	7,674	22,561	46.88%
Europe	3,640	14,796	21,637	46,017	40,761	62.37%
MENA	1,701	6,718	9,683	22,332	46,580	50.67%
Western Hemisphere	-16,377	21,552	52,571	27,296	45,728	57.92%

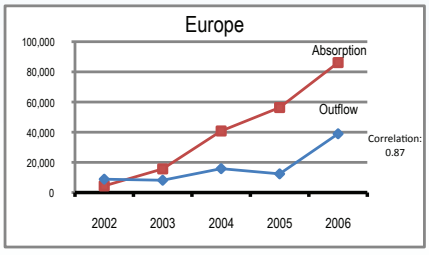
Share	2002	2003	2004	2005	2006
OFC	**-**	**30.9%**	**38.6%**	**42.3%**	**51.6%**
DCB	**-**	**69.1%**	**61.4%**	**57.7%**	**48.4%**

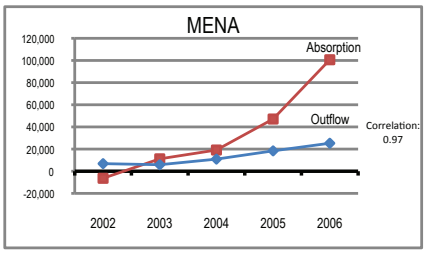


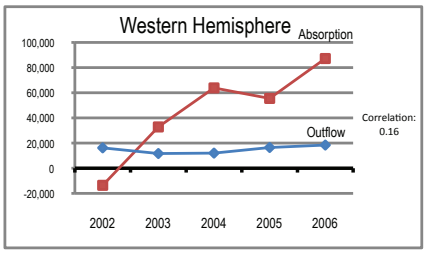
Simulation 2C











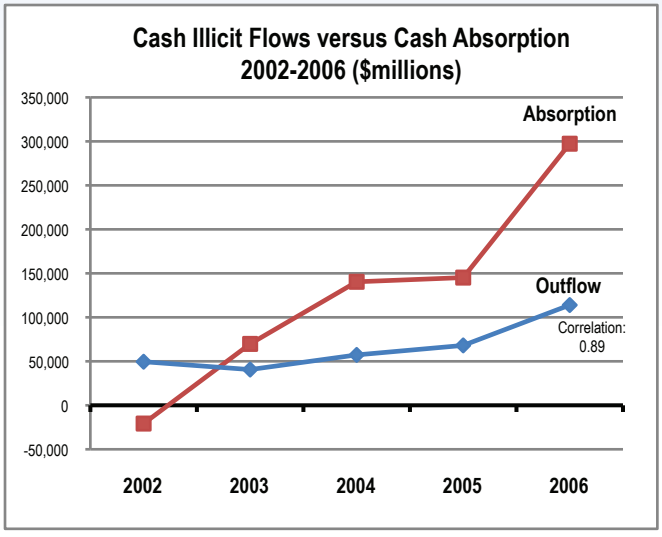
The second simulation was carried out using the IMF's definition of OFCs, which shifts Ireland and Switzerland from European reporting countries to offshore reporting centers. We calculated that for the period of this study, the private sector accounts for about 27 percent of total deposits in European reporting centers compared to 83 percent in OFCs. Hence, total cash absorption is higher when the IMF classification of OFCs is used. The IFF figures remain unchanged from Simulation 1. As a result, the absorption coefficient increased to 1.87 while the correlation between cash IFFs and cash absorption increased to 0.90 (section A). Though this correlation is not significantly different from the first iteration (0.89), it is equally impressive. Offshore centers' share of absorption increased dramatically from 24 percent to 44 percent (section B). Regional correlations are also affected by the change in classification (section C). Africa's correlation has worsened, suggesting that understated illicit outflows from Africa fit poorly with the increase in cash absorption that arises

Simulation 3

IFF Models: CED+GER
Normalization: Normalized Asia, Europe, Western Hemisphere; Non-normalized Africa, MENA
OFCs: BIS definition

Simulation 3A

Year	Africa			Asia			Europe			MENA			Western Hemisphere			Total		
	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)
2002	7,978	3,303	0.41	12,932	-4,124	-0.32	7,866	3,682	0.47	6,846	-8,291	-1.21	13,916	-15,328	-1.10	49,538	-20,758	-0.42
2003	3,939	9,588	2.43	13,741	4,086	0.30	7,310	14,934	2.04	5,876	8,231	1.40	9,758	32,955	3.38	40,623	69,793	1.72
2004	6,493	9,456	1.46	16,819	24,252	1.44	13,459	32,018	2.38	10,927	20,333	1.86	9,579	54,336	5.67	57,277	140,394	2.45
2005	3,928	3,743	0.95	19,832	20,968	1.06	11,028	52,190	4.73	18,375	38,787	2.11	14,917	29,487	1.98	68,080	145,174	2.13
2006	5,187	21,714	4.19	28,458	46,650	1.64	37,454	66,376	1.77	25,280	92,268	3.65	17,580	70,351	4.00	113,959	297,359	2.61
Average	**5,505**	**9,561**	**1.74**	**18,356**	**18,366**	**1.00**	**15,424**	**33,840**	**2.19**	**13,461**	**30,266**	**2.25**	**13,150**	**34,360**	**2.61**	**65,896**	**126,392**	**1.92**
	Correlation: -0.20			**Correlation: 0.95**			**Correlation: 0.79**			**Correlation: 0.96**			**Correlation: 0.10**			**Correlation: 0.89**		



All figures are in US$ millions, unless otherwise specified.

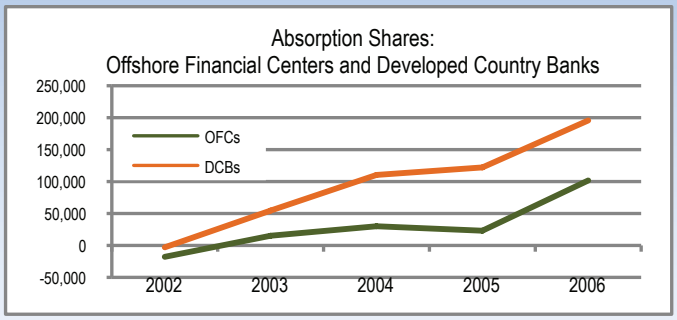
from the shift in OFC classification. Regional correlations improved for Europe and the Western Hemisphere, while there were no significant changes in the correlations for Asia or MENA.

The third simulation was conducted using the same assumptions as the first two, except that illicit flows from Asia, Europe, and Western Hemisphere were normalized, while those for Africa and the MENA regions were not. This is because there are large gaps in direction of trade and balance of payments data for many countries in these regions, which was not true of the other three regions. Asia and the Western Hemisphere had slight increases in correlation, but the overall correlation remained unchanged. The gap between cash portion of illicit outflows and cash absorption naturally increased when IFFs were reduced, yielding an absorption coefficient of 1.92 (Section A).

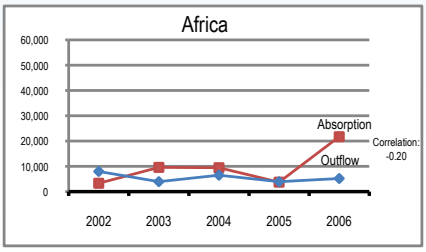
Simulation 3B

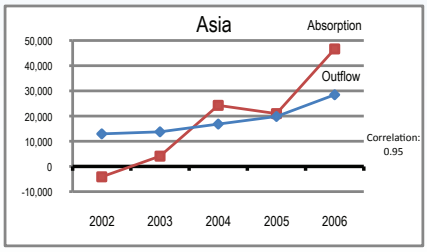
	2002	2003	2004	2005	2006	Share
OFCs	**-17,813**	**15,194**	**30,037**	**23,059**	**101,696**	**24.1%**
Africa	689	2,714	2,846	1,142	5,410	26.78%
Asia	-6,841	1,193	11,370	12,773	21,848	43.93%
Europe	-408	-233	6,770	4,479	16,088	15.78%
MENA	-11,145	-16	11,084	13,054	41,440	35.96%
Western Hemisphere	-107	11,535	-2,033	-8,390	16,911	10.43%
DCBs	**-2,945**	**54,599**	**110,357**	**122,115**	**195,663**	**75.9%**
Africa	2,614	6,874	6,610	2,600	16,304	73.22%
Asia	2,716	2,893	12,882	8,194	24,802	56.07%
Europe	4,090	15,166	25,248	47,710	50,288	84.22%
MENA	2,855	8,246	9,248	25,734	50,828	64.04%
Western Hemisphere	-15,220	21,420	56,369	37,876	53,440	89.57%

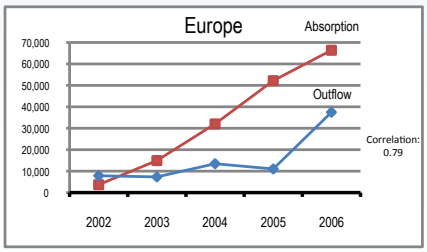
Share	2002	2003	2004	2005	2006
OFC	-	21.8%	21.4%	15.9%	34.2%
DCB	-	78.2%	78.6%	84.1%	65.8%

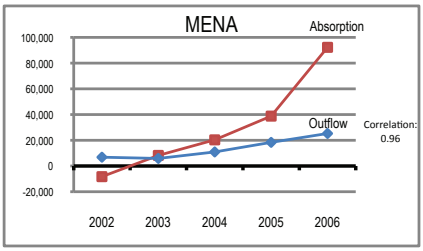


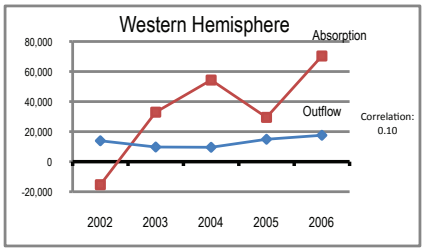
Simulation 3C











Another simulation used normalized IFFs from all regions but this yielded no interesting results and is not presented here. The correlation for Africa actually worsened (-0.25) and MENA remained unchanged. The overall absorption coefficient was the worst yet (2.02), which is not surprising given that IFFs were as small as possible and absorption was unchanged.

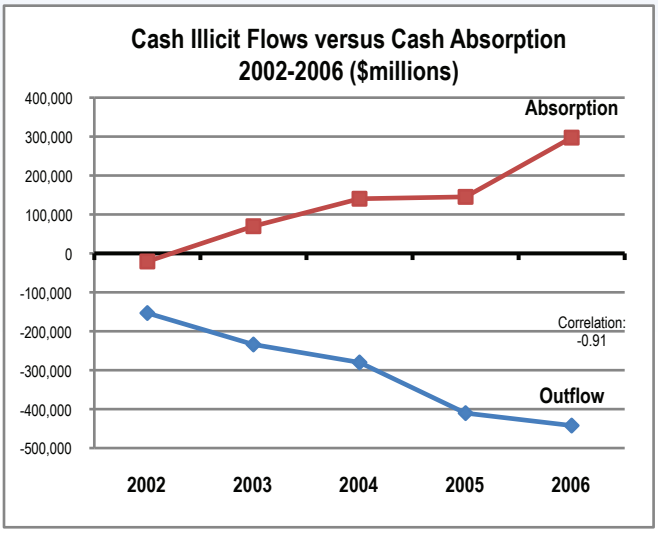
We carried out a final simulation to test how well the traditional model compares to the BIS absorption data. This model does not use the Gross Excluding Reversals method of estimating trade misinvoicing, but instead allows illicit inflows into developing countries to wash out estimates of the cash share of outflows. The purported illicit inflows are netted out from outflows without any supporting evidence of economic reform or improvements in governance that could have resulted in

Simulation 4

IFF Models: Traditional (Allow cash outflows and inflows to wash out into a net position)
Normalization: Not applicable; no normalization under the traditional model
OFCs: BIS definition

Simulation 4A

Year	Africa			Asia			Europe			MENA			Western Hemisphere			Total		
	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)	IFF	Abs	Ratio (Abs/IFF)
2002	-4,662	3,303	-0.71	-43,589	-4,124	0.09	-51,855	3,682	-0.07	-44,729	-8,291	0.19	-8,379	-15,328	1.83	-153,215	-20,758	0.14
2003	-7,448	9,588	-1.29	-99,519	4,086	-0.04	-63,948	14,934	-0.04	-55,034	8,231	-0.15	-8,041	32,955	-4.10	-233,990	69,793	-0.30
2004	-18,494	9,456	-0.51	-124,037	24,252	-0.20	-85,342	32,018	-0.20	-41,435	20,333	-0.49	-10,746	54,336	-5.06	-280,054	140,394	-0.50
2005	-28,055	3,743	-0.13	-111,177	20,968	-0.19	-181,353	52,190	-0.19	-31,861	38,787	-1.22	-57,827	29,487	-0.51	-410,273	145,174	-0.35
2006	-75,064	21,714	-0.29	-142,812	46,650	-0.33	-148,786	66,376	-0.45	-30,347	92,268	-3.04	-45,177	70,351	-1.56	-442,186	297,359	-0.67
Average	**-26,745**	**9,561**	**-0.36**	**-104,227**	**18,366**	**-0.18**	**-106,257**	**33,840**	**-0.32**	**-40,681**	**30,266**	**-0.74**	**-26,034**	**34,360**	**-1.32**	**-303,943**	**126,392**	**-0.42**
	Correlation: -0.85			**Correlation: -0.90**			**Correlation: -0.90**			**Correlation: 0.77**			**Correlation: -0.37**			**Correlation: -0.91**		



All figures are in US$ millions, unless otherwise specified.

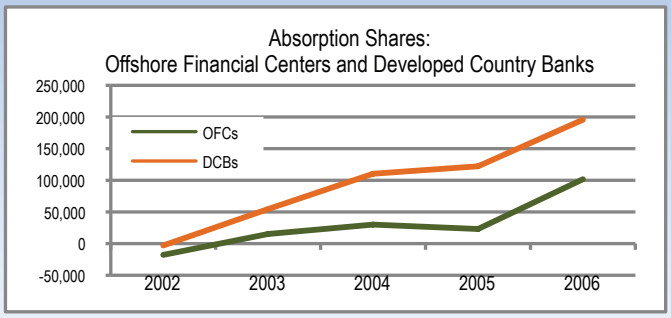
the return of illicit capital. Similarly for the CED residual model, unsubstantiated inflows were added to outflows yielding a net position that was added to the net trade mispricing estimates. As the graph of Simulation 4 (Section A) shows, cash outflows were overwhelmingly negative, suggesting that not only were developing countries receiving significant financial inflows through illicit channels over the period 2002-2006, but that corresponding deposits in the points of absorption were also increasing.

The severely negative estimates are the result of two factors. On the one hand the outflows were reduced by the share of cash deposits shares for each region, while on the other, the illicit inflows into a country are brought in as cash (so that estimates were not reduced by the deposit shares). The net position of reduced outflows and unfettered inflows is reflected in the results of this simulation.

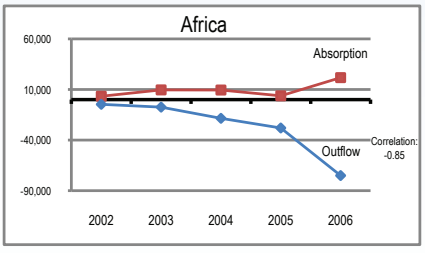
Simulation 4B

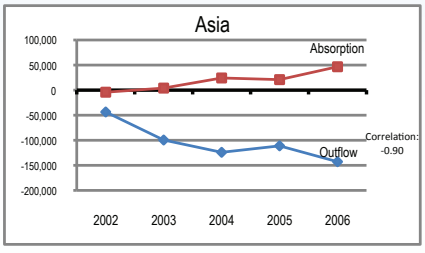
	2002	2003	2004	2005	2006	Share
OFCs	**-17,813**	**15,194**	**30,037**	**23,059**	**101,696**	**24.1%**
Africa	689	2,714	2,846	1,142	5,410	26.78%
Asia	-6,841	1,193	11,370	12,773	21,848	43.93%
Europe	-408	-233	6,770	4,479	16,088	15.78%
MENA	-11,145	-16	11,084	13,054	41,440	35.96%
Western Hemisphere	-107	11,535	-2,033	-8,390	16,911	10.43%
DCBs	**-2,945**	**54,599**	**110,357**	**122,115**	**195,663**	**75.9%**
Africa	2,614	6,874	6,610	2,600	16,304	73.22%
Asia	2,716	2,893	12,882	8,194	24,802	56.07%
Europe	4,090	15,166	25,248	47,710	50,288	84.22%
MENA	2,855	8,246	9,248	25,734	50,828	64.04%
Western Hemisphere	-15,220	21,420	56,369	37,876	53,440	89.57%

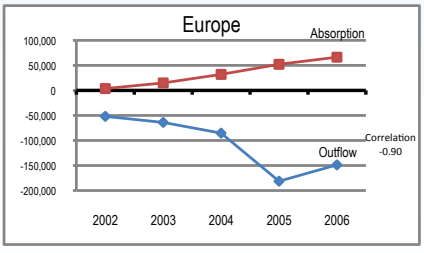
Share	2002	2003	2004	2005	2006
OFC	**-**	**21.8%**	**21.4%**	**15.9%**	**34.2%**
DCB	**-**	**78.2%**	**78.6%**	**84.1%**	**65.8%**

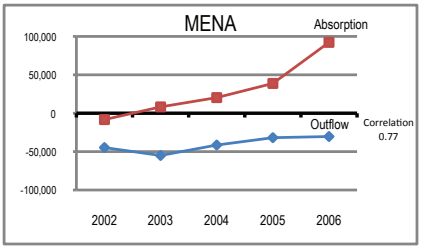


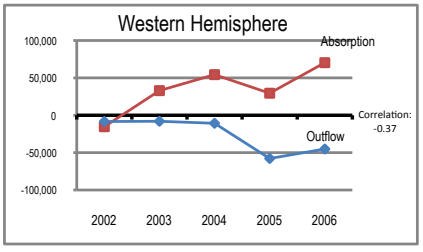
Simulation 4C









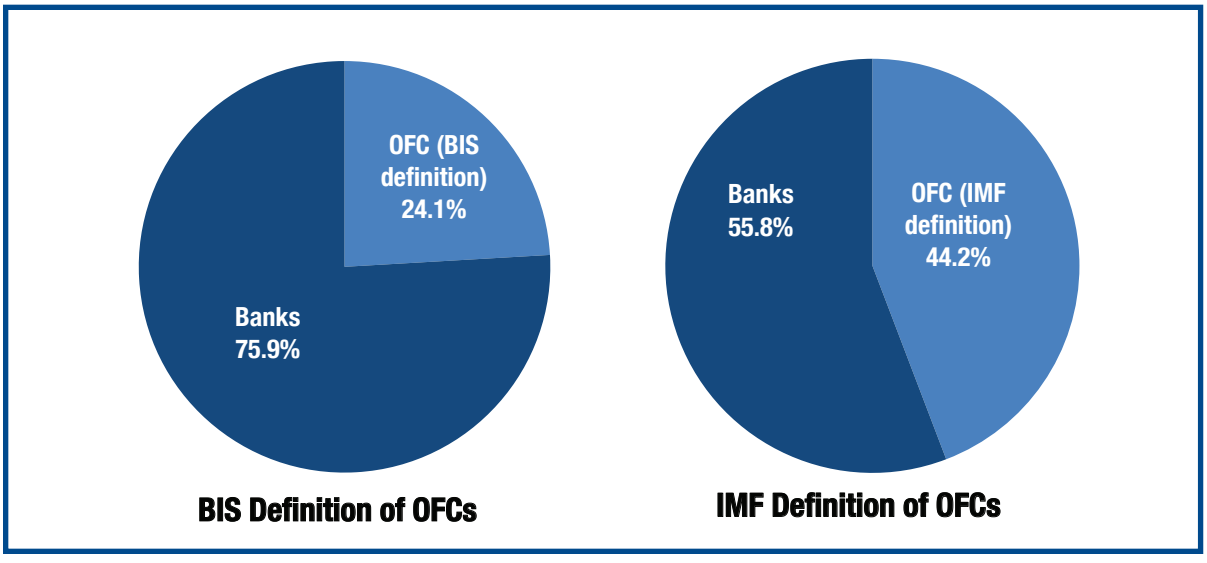


Summary of Simulations

The following conclusions can be drawn from the simulation results subject to the assumptions previously outlined.

1. As expected, we found absorption, defined as the change in private sector deposits in banks and offshore centers to exceed illicit cash outflows by a significant margin (some 60-100%). This is because illicit flows are most likely understated due to the reasons already discussed while absorption also includes licit cash deposits.
2. Following the terrorist attacks on the United States in 2001, there was a much larger withdrawal from the OFCs than there was from banks (US$18 billion versus less than US$3 billion, see Simulation 1, section B, 2002 figures). Cash absorption of IFFs in that year was also below cash IFFs. This suggests that net cash withdrawals from PoAs were diverted into noncash investments or brought into countries as illicit capital. The net withdrawal of funds from PoAs in 2002 should be viewed as a one-off shock effect of the attacks in the United States that affected investor behavior related to the world's shadow financial system.
3. Model simulations using the BIS definition of offshore centers indicate that, on average, developed country banks hold about 76 percent of the cash derived from illicit outflows, while offshore centers hold the balance of 24 percent. We observe that offshore centers have increased their market share of developing country private sector deposits from 21.8 percent in 2003 to 34.2 percent in 2006 reflecting a corresponding decline of the share held by developed country banks during that period from 78.2 percent to 65.8 percent. Most of the increase in the offshore centers' market share in the absorption of illicit flows has come in the last year when the stake jumped to 34.2 percent from just around 20 percent in the previous three years. The increasing role of offshore centers in the world's shadow financial system helps explain the

Chart 1. Absorption by Developed Country Banks and Offshore Centers, 2002-2006 (Average percent)

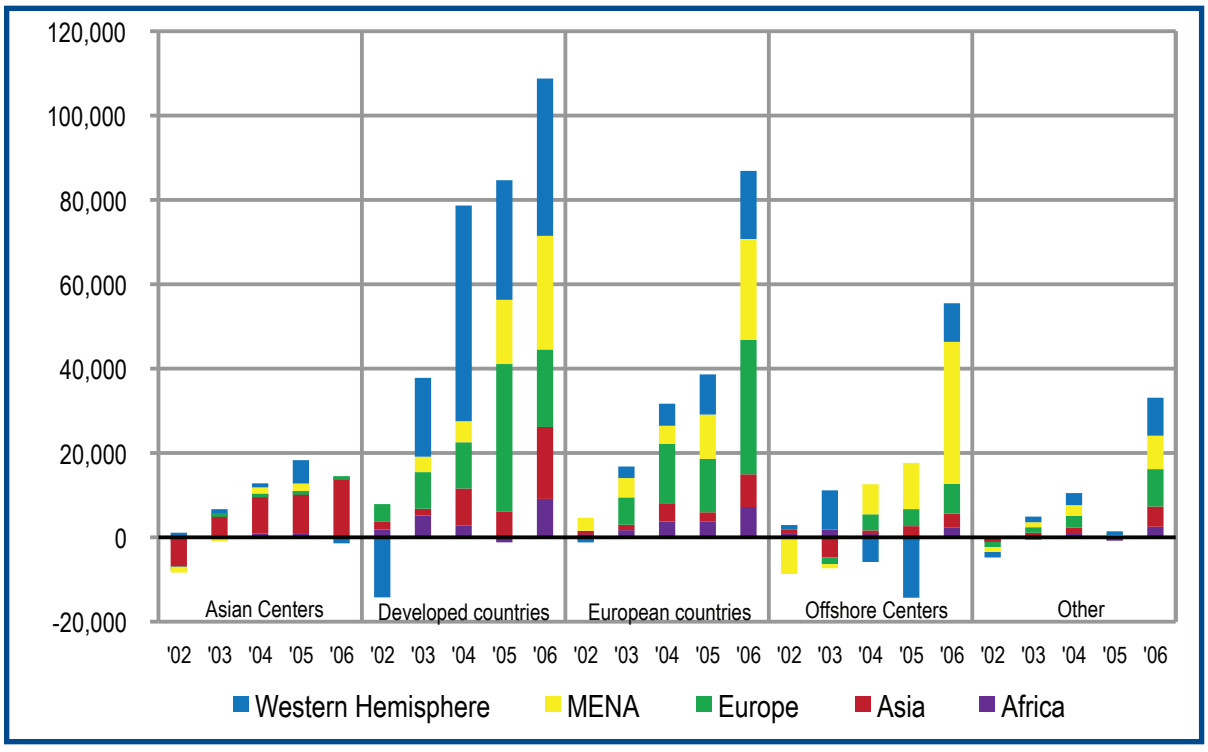


recent media focus as well as the ongoing efforts by the G-20 to improve their transparency and accountability. If we were to use the IMF definition of offshore centers, then their holdings of private sector deposits from developing countries almost doubles from 24 percent to 44 percent of the total. Note that this 44 percent share is also likely to include a higher licit portion given that points of absorption in Ireland and Switzerland act as offshore centers as well as traditional banks. The relative proportion of absorption in banks and offshore centers (as defined by the BIS and the IMF) are shown in Chart 1.

4. On average, offshore centers absorbed more illicit flows from Asia (43.9 percent) than any other region during 2002 to 2006 (Simulation 1, section B). They played a smaller role in the absorption of illicit flows from MENA (36.0 percent), Africa (26.8 percent), Europe (15.8 percent) and the Western Hemisphere (10.4 percent). This means that developing countries in the Western Hemisphere and Europe deposit most of their illicit funds in developed country banks rather than offshore centers. When Ireland and Switzerland are classified as offshore financial centers, the corresponding regional shares increase significantly (Asia 53.1 percent, MENA 49.3 percent, Africa 45.5 percent, Europe 37.6 percent, and Western Hemisphere 42.1 percent; Simulation 2, section B).

Chart 2 shows the flows of private bank deposits, broken down by developing country regions into the absorption groupings. It is clear from the chart that deposits of cash from developing countries were mainly into Developed and European countries, particularly during 2004-2006. Over the five

Chart 2. Points of Absorption by Region 2002-2006 (US $ Millions)

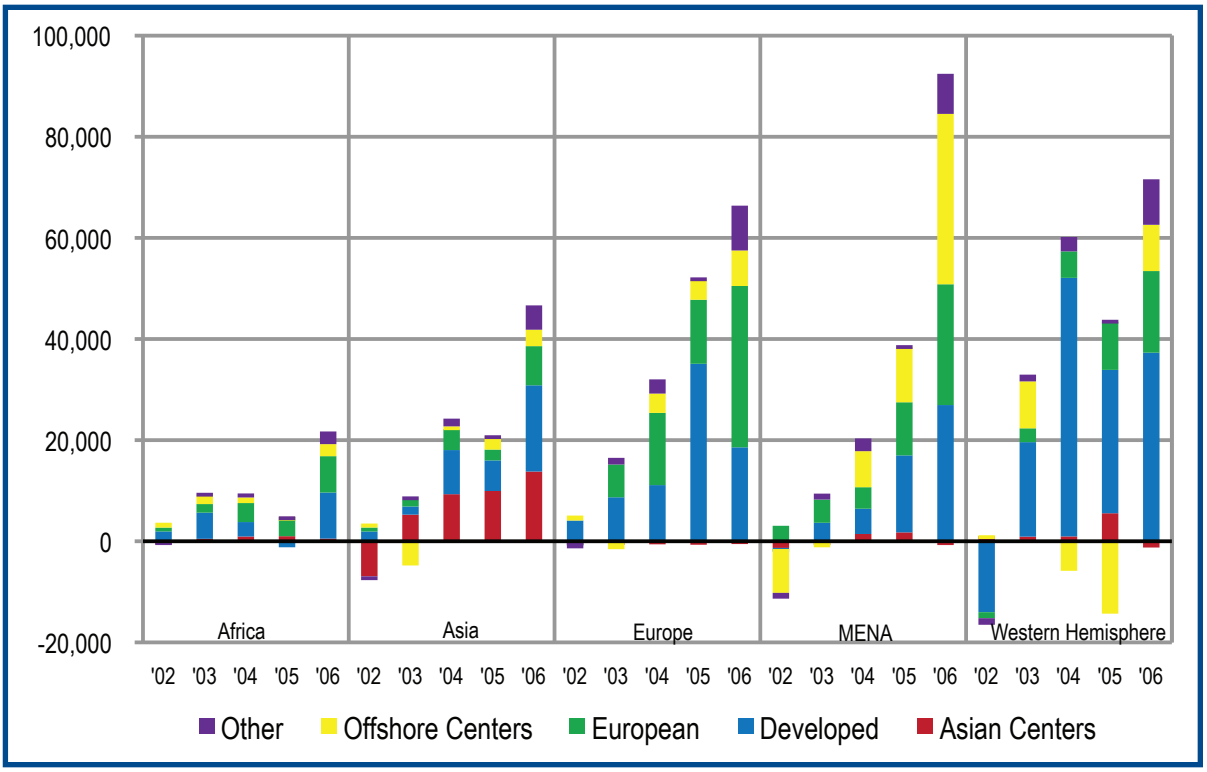


Sources: Bank for International Settlements and GFI staff estimates

years of the study, there was an unmistakable increase in deposits across all absorption groupings, with the largest gains in 2006. The notable exception to this trend is in the Asian financial centers, which experienced a small decline in the flow of absorption in the last year of the study. This is a surprising finding given the prevalent conventional knowledge that Asian financial centers, Hong Kong and Macao in particular, play an important role in the global financial market. The Western Hemisphere seems to have a net withdrawal from Asian centers in 2006, which might explain this decline. Cash deposits from Asia (red bars) in all Points of Absorption, including the Asian financial centers, increased in 2006.

One can observe some distinct regional patterns in this graph. Asian centers are dominated by deposits from developing countries in Asia. Deposits into banks (Developed and European countries) are driven by developing Europe and the Western Hemisphere. In a break from regional trends, offshore center deposits are dominated by countries in the Middle East and North Africa. A similar regional pattern is also evident when the graph is inverted, plotting developing country regions by deposits in PoA groupings (Chart 3).

Chart 3. Regions by Points of Absorption 2002-2006 (US $ Millions)



Sources: Bank for International Settlements and GFI staff estimates

V. Licit-Illicit Analysis

The following analysis allows us to derive rough estimates of the split between licit and illicit funds in developed country banks (DCBs or banks) and, by default, in OFCs. We start by providing a simple explanation of the algebraic formulations and manipulations.

Absorption takes place in either banks or offshore centers but in each there is some portion of funds that is licit, some that is illicit (Equation 1). Now, we assume the total illicit is given by the amount of cash illicit outflows. Therefore, the difference between total cash absorption and cash illicit outflows ought to be the amount of licit flows. These licit flows are presumably absorbed by both banks and offshore centers. Equation 2 states exactly this: the sum of the licit amount in banks and the licit amount in offshore centers equals the total licit flows (the difference between total absorption and illicit flows). The only unknowns now are exactly what percentage of deposits in banks and offshore centers are licit. Equation 3 rewrites this idea so that we can identify one of these unknowns in terms of the other, much like the familiar equation for a line, $y = mx + b$. Here, y is the licit percentage of bank deposits and x is the licit percentage of offshore center deposits.

At this point, we can either graph x and y or we can just plug in a range of values for x and see what results we get for y. The goal would be to see if the range of y is acceptable for any values of x or if only a few values of x are acceptable. We can also plug in values for y and determine the acceptable range for x. Specifically, we seek to find out if it is alright to say that banks have only licit or no illicit deposits (i.e., y is 100 percent). Are banks as clean as they claim to be? We can also see if it is reasonable to assume that offshore centers, which are at the heart of the world's shadow financial system, only have illicit deposits. We find that neither extreme is reasonable in that extremes yield corresponding shares that violate boundary conditions (such as the share of licit and illicit deposits in banks and offshore centers must equal one).

Let:

δ_1 = Licit fraction in OFCs $0 \leq \delta_1 \leq 1$

δ_2 = Licit fraction in DCBs $0 \leq \delta_2 \leq 1$

δ_3 = Illicit fraction in OFCs $0 \leq \delta_3 \leq 1$

δ_4 = Illicit fraction in DCBs $0 \leq \delta_4 \leq 1$

OFC and DCB represent total deposits in OFCs and DCBs, such that:

$\delta_1 + \delta_3 = 1$ and $\delta_2 + \delta_4 = 1$

Total absorption consists of the sum of licit and illicit funds in both points of absorption OFCs and DCBs:

$$A = \delta_1 OFC + \delta_3 OFC + \delta_2 DCB + \delta_4 DCB$$

The assumption underlying this paper is that the cash share of illicit outflows is absorbed in both OFCs and DCBs because the PoAs neither have the operational means nor the incentive to effectively exclude illicit funds. Hence:

(1) $IFF = \delta_3 OFC + \delta_4 DCB$

or, $\delta_4 DCB = IFF - \delta_3 OFC$

$\therefore$ $A = \delta_1 OFC + \delta_3 OFC + \delta_2 DCB + IFF - \delta_3 OFC$

(2) $A = \delta_1 OFC + \delta_2 DCB + IFF$

or, $\delta_2 DCB = A - \delta_1 OFC - IFF$

This gives:

(3) $\delta_2 = [A- \delta_1 OFC – IFF]/DCB$

or, $\mathbf{\delta_2 = [A- IFF] /DCB - \delta_1[OFC/DCB]}$

Equation 3 provides the general relationship between the proportion of licit funds in OFCs and DCBs. This is as far as one can get without making assumptions about δ_1 or δ_2. For example, one can assume that the OFCs only absorb illicit funds ($\delta_1 = 0$). Then the licit fraction in DCBs would be:

$$\delta_2 = [A – IFF]/DCB$$

The assumption that there are no licit funds from developing countries deposited in OFCs, however, is a restrictive one, particularly if one includes Ireland and Switzerland as OFCs. These countries also act like DCBs, suggesting they attract some licit funds from developing countries. Equation 3 can be rearranged to show the relationship between illicit funds in OFCs and DCBs as well:

(4) $\mathbf{\delta_4 = 1-[A- (1-\delta_3)OFC – IFF]/DCB}$

Or, equivalently,

(5) $\mathbf{\delta_3 = 1-[A- (1-\delta_4)DCB – IFF]/OFC}$

Equation 4 specifies the illicit fraction of funds in DCBs in terms of the corresponding illicit fraction of funds in OFCs. Equation 5 determines the illicit fraction in OFCs for varying assumptions of the illicit fraction in DBCs. The following tables show the proportion of licit and illicit funds in OFCs and DCBs based on these formulas. The first table uses the BIS definition of OFCs while the second uses the IMF definition. As absorption was negative for 2002, this year was excluded from the calculations.

Table 1. BIS Definition

	Proportion of Illicit Funds in DCBs, δ_4, 2003-2006					Proportion of Illicit Funds in OFCs, δ_3, 2003-2006				
	0%, δ_3=0	30%, δ_3=0.3	70%, δ_3=0.7	100%, δ_3=1	**Average**	0%, δ_4=0	30%, δ_4=0.3	70%, δ_4=0.7	100%, δ_4=1	**Average**
2003	81%	73%	62%	53%	**67%**	291%	184%	40%	-68%	**112%**
2004	63%	55%	44%	36%	**49%**	232%	121%	-25%	-136%	**48%**
2005	72%	66%	58%	53%	**62%**	380%	221%	9%	-150%	**115%**
2006	72%	57%	36%	20%	**46%**	139%	82%	5%	-53%	**43%**

Table 2. IMF Definition

	Proportion of Illicit Funds in DCBs, δ_4, 2003-2006					Proportion of Illicit Funds in OFCs, δ_3, 2003-2006				
	0%, δ_3=0	30%, δ_3=0.3	70%, δ_3=0.7	100%, δ_3=1	**Average**	0%, δ_4=0	30%, δ_4=0.3	70%, δ_4=0.7	100%, δ_4=1	**Average**
2003	85%	72%	54%	41%	**63%**	190%	123%	34%	-33%	**79%**
2004	69%	50%	25%	6%	**38%**	110%	62%	-1%	-49%	**30%**
2005	82%	60%	31%	9%	**46%**	113%	72%	17%	-24%	**44%**
2006	83%	51%	9%	-23%	**30%**	78%	50%	13%	-16%	**31%**

These estimates are subject to all of the data issues and assumptions described in this paper. However, there are some points worth noting.

(i) If one were to include Ireland and Switzerland as OFCs as under the IMF definition, the estimates show that it is unrealistic to assume that OFCs hold only illicit funds, at least for 2006. This finding is based on the fact that when $\delta_3 = 1$, δ_4 is negative. This contradicts the range of possible values for δ_4. Therefore, for this year, and for this definition, OFCs absorbed at least some licit deposits from developing countries.

(ii) Similarly, it is unrealistic to assume that DCBs hold only illicit funds ($\delta_4 = 1$) because then δ_3 would be negative, which violates the boundary conditions on δ_3. This reasonable conclusion is supported by both definitions for all years.

(iii) Conversely, if we assume that DCBs absorb only licit funds ($\delta_4 = 0$), the corresponding value for δ_3 is larger than 100 percent for nearly all years of either definition. The sole exception is the aforementioned 2006, IMF definition. This means that by and large, developed country banks absorb both licit and illicit funds from developing countries.

(iv) From Equation 3, if we hold the first term constant, then we can take the partial derivative of δ_2 with respect to δ_1.

$$\partial\delta_2/\partial\delta_1 = -(OFC/DCB)$$

So a given increase in δ_2 (licit fraction in DCBs) requires a decline in the licit fraction in OFCs by a factor of (OFC/DCB). The larger the market share of OFCs relative to DCBs, the larger is the decline in the licit fraction of OFC deposits required for a given increase in the corresponding fraction in DCBs. In other words, increasing the licit business of banks (or reducing their illicit business) becomes progressively harder as OFC market shares increase. This goes to the heart of the G-20 efforts to curtail the growth of OFCs in order to support the legitimate business of banks. The important caveat to this finding is that we are holding the first term constant, that is we are assuming that the size of licit flows from developing countries (as a share of total DCB deposits) does not change over time. In other words, if licit capital flows from developing countries do not expand as a result of macro-economic reform and improvements in governance (as is unlikely to happen in the short run), then curtailing the role of banks in the world's shadow financial system can only come about if we crack down on OFC transactions.

VI. Conclusions

This paper makes several important, rather seminal, contributions to the study of the absorption of illicit flows from developing countries. After several unsuccessful attempts to get data at the necessary level of detail from the IMF, the central banks of the PoAs, and private corporations like Datamonitor and CapGemini, we finally managed to obtain high quality data from the BIS. Even better, the BIS was able to provide a regional breakdown of absorption, so that we were able to compare illicit outflows and absorption on a regional level.

The model of absorption presented in this paper explicitly incorporates the two types of PoAs: offshore financial centers and developed country banks, as defined in Section III. Since there is no international consensus on the definition of an OFC, we used both the narrower BIS and the wider IMF definitions of OFCs in our model. Classifying Ireland and Switzerland as offshore reporting centers instead of European reporting countries resulted in an increase in overall absorption due to the larger role of private sector deposits in offshore centers, suggested by the BIS consolidated banking statistics.

In order to compensate for a lack of data at a sufficient level of detail, some assumptions had to be made. We used CapGemini's estimates of the cash share of deposits in the investment portfolios of HNWIs and assumed that the deposit shares remained unchanged between licit and illicit portfolios. For Africa, where CapGemini's estimates were lacking, we supplemented with the estimates provided by Oliver Wyman. We then assumed that the regional cash deposit shares represent the deposit shares of all countries in that region. On the absorption side, we combined information about the public/private split from the consolidated statistics with the data provided in the locational statistics. We were further able to vary the model by incorporating a series of control variables that allowed us to change certain parameters, according to different assumptions about the behavior of IFFs.

A number of simulations were run. The regional simulations attempt to compare regional illicit outflows with the absorption of these funds in banks and offshore centers worldwide. The performance of each was measured in terms of the resulting correlation between IFF and absorption and the absorption coefficient. If perfect data were available, both the correlation and AC would be close to 1, but given data limitations on illicit outflows and absorption, we did not expect such results. The first simulation defined a base case, pairing non-normalized illicit outflows with absorption, according to the BIS classification for offshore centers. The next simulation looked at the results from classifying Ireland and Switzerland as OFCs according to the IMF definition. A third simulation examined the effects of normalizing the IFFs from certain regions. The final simulation used the traditional model of IFFs, which allowed illicit inflows of capital to offset outflows. We found net illicit cash flows to be negative for all years for all regions. This model therefore failed spectacularly in explaining official data on absorption.

We finally use a simple algebraic technique to derive the share of licit and illicit funds deposited in OFCs and DCBs. Our calculations demonstrate that it is unrealistic for developed country banks to only hold illicit deposits. By the same measure, when Ireland and Switzerland are classified as OFCs, we found that OFCs must hold some licit funds in their total portfolio.

Our most interesting finding, however, was that developed country banks hold a significant portion of the total of illicit funds, ranging possibly from 46 to 67 percent on average no matter how we define OFCs (if we exclude 2006's outlier). In fact, though the data used to determine the licit/illicit splits are admittedly imperfect, it appears that even at its widest range, the proportion of total illicit funds that find their way into developed country banks was anywhere from 20 percent to 72 percent between 2003 and 2006.

The findings and conclusions in this paper are dependent upon the data we were able to obtain and assumptions we were forced to make to compensate for the lack of higher quality data. This paper provides a framework for relating illicit flows from developing countries to the absorption of these flows in offshore financial centers and developed country banks. In order for economists to improve upon the present analysis, the following data requirements need to be met.

Private consulting firms that estimate deposit shares would need to provide time series data on each country's cash deposit shares and would need to improve the coverage for important countries in Africa. The BIS would need to expand the coverage of locational banking statistics from the forty-one countries listed in Table 1. Estimates of absorption are understated to the extent that private sector deposits of developing countries are also held in countries that do not report locational banking data to the BIS. Furthermore, the locational deposit data that are reported do not relate to the private sector deposits of developing countries. For instance, because locational deposits are not split between private and public sectors, the private-public split from the consolidated banking data had to be applied to the locational data. We urge member reporting countries to cooperate with the BIS so that the latter can collect and disseminate the private-public breakdown of locational banking statistics.

The IMF also has an important role to play in improving the range and breakdown of international banking data. In this age of electronic banking and large-scale data processing, there is no reason for countries not to compile a detailed breakdown of non-resident private sector deposits and to make such data publicly available. It is inconceivable that such monetary statistics would violate any country's bank secrecy laws. The call for greater transparency and accountability from the world's financial system will ring hollow if it is not backed up by concrete action by international organizations and member countries to make a wider range of detailed monetary statistics available.

References

Baer, K, 2002, *Improving large taxpayer compliance: a review of country experience*, Occasional Paper No. 215, International Monetary Fund, Washington, DC.

Baker, Raymond, 2005, *Capitalism's Achilles Heel: Dirty Money and How to Renew the Free Market System*, John Wiley & Sons: Hoboken, NJ.

Bank for International Settlements, Statistics, Available Online: http://www.bis.org/statistics.

Beja, Edsel L., 2005, *Capital Flight: Meanings and Measures*, in Capital Flight and Capital Controls in Developing Countries, Edited by Gerald A. Epstein, pp. 58-82, Edward Elgar, Cheltenham, United Kingdom.

Cheung, Yin-Wong and Xing Wang Qian, 2009, *Capital Flight: China's Experience*, Department of Economics, University of California, Santa Cruz and State University of New York, Buffalo, October.

Christian Aid, 2008, *Death and taxes. The true toll of tax dodging*, Report from Christian Aid (May).

Colchester, Nicholas, 1986, *A heavyweight sheds pounds*, Financial Times, April 8, 1986.

Desai, Mihir, C. Fritz Foley, and James Hines, 2005, *The Demand for Tax Haven Operations*, Journal of Public Economics 90 (2006): 513-531.

Dharmapala, D. and James Hines, 2006, *Which countries become tax havens?* NBER Working Paper 12802.

The Economist, 2009, *Haven hypocrisy*, March 26th 2009.

Edison, Hali J. and Francis E.A. Warnock, 2001, *A Simple Measure of the Intensity of Capital Controls*, IMF Working Paper No. 01/180, International Monetary Fund, Washington, DC.

Errico, Luca and Alberto Musalem, *Offshore Banking: An Analysis of Macro-and Micro Prudential Issues*, IMF Working Paper No. 99/5, International Monetary Fund, Washington, DC.

Financial Stability Forum, 2000, *Report of the Working Group on Offshore Financial Centers*, Basel.

House of Commons, Treasury Committee, 2008, *Offshore Financial Centers—Written Evidence*, Washington, DC.

International Monetary Fund, 2008, *Monetary and Financial Statistics: Compilation Guide*, Washington, DC.

International Monetary Fund, 2008, *Offshore Financial Centers. Report on the Assessment Program and Proposal for Integration with the Financial Sector Assessment Program, Supplementary Information*, Washington, DC.

International Monetary Fund, 2000, *Offshore Financial Centers—IMF Background Paper*, Washington, DC.

Kapur, Devesh and Richard Webb, 2000, *Governance-related Conditionalities of the International Financial Institutions*, G-24 Discussion Paper Series, No. 6, August 2000.

Kar, Dev and Devon Cartwright-Smith, 2008, *Illicit Financial Flows from Developing Countries: 2002-2006*, Global Financial Integrity, Washington, DC.

Kar, Dev and Devon Cartwright-Smith, 2010, *Illicit Financial Flows from Africa: Hidden Resource for Development*, Global Financial Integrity, Washington, DC.

Kar, Dev, 1986, *Currency Invoicing and Exchange Conversion in International Trade*, Papers in International Financial Statistics, PIFS/86/1, International Monetary Fund, February 14, 1986, Washington, DC.

Lane, Philip R. and Gian Maria Milesi-Ferretti, 2010, *Cross-Border Investment in Small International Financial Centers*, IMF Working Paper, WP/10/38, International Monetary Fund, February, Washington, DC.

Lissakers, Karen (1991), Banks, Borrowers and the Establishment: A Revisionist Account of the International Debt Crisis, New York, Basic Books.

Merrill Lynch/Cap Gemini Ernst & Young, 2006, *Asia-Pacific Wealth Report 2006*, New York, NY.

Merrill Lynch/Cap Gemini Ernst & Young, 2007, *Asia-Pacific Wealth Report 2007*, New York, NY.

Merrill Lynch/Cap Gemini Ernst & Young, 2003, *World Wealth Report 2003*, New York, NY.

Merrill Lynch/Cap Gemini Ernst & Young, 2004, *World Wealth Report 2004*, New York, NY.

Merrill Lynch/Cap Gemini Ernst & Young, 2005, *World Wealth Report 2005*, New York, NY.

Merrill Lynch/Cap Gemini Ernst & Young, 2006, *World Wealth Report 2006*, New York, NY.

Merrill Lynch/Cap Gemini Ernst & Young, 2007, *World Wealth Report 2007*, New York, NY.

Tax Justice Network, 2007, *Identifying Tax Havens and Offshore Finance Centers*, Washington, DC.

Tax Justice Network, 2005, *Briefing Paper: The Price of Offshore*, March 2005, Washington, DC.

OECD, 2009, *A Progress Report on the Jurisdictions Surveyed by the OECD Global Forum in Implementing the Internationally Agreed Tax Standard*, September 28th 2009, Paris.

Oliver Wyman, 2008, *The Future of Private Banking: A Wealth of Opportunity?*

Official Norwegian Reports, 2009, *Tax havens and development: Status, analyses, and measures, 2009*: 19, Norwegian Ministry of Foreign Affairs, Oslo.

Rose, Andrew K., and Mark M. Spiegel, 2006, *Offshore Financial Centers: Parasites or Symbionts?* NBER Working Paper 12044, National Bureau of Economic Research, February, Cambridge, Massachusetts.

World Economic Forum, 2008, *The Financial Development Report 2008*.

Zhu, Andong, Chunxiang Li and Gerald Epstein, 2005, *Capital Flight from China, 1982-2001*, in Capital Flight and Capital Controls in Developing Countries, Edited by Gerald A. Epstein, pp. 262-285, Edward Elgar, Cheltenham, United Kingdom.

Zoromé, Ahmed, 2007, *Concept of Offshore Financial Centers: In Search of an Operational Definition*, IMF Working Paper No. 07/87, International Monetary Fund, April, Washington, DC.

Appendix

Appendix Table 1. Countries that Report Locational Banking Statistics (42)

Australia	France	Malaysia
Austria	Germany	Mexico
Bahamas	Greece	Netherlands
Bahrain	Guernsey	Netherlands Antilles
Belgium	Hong Kong	Norway
Bermuda	India	Panama
Brazil	Ireland	Portugal
Canada	Isle of Man	Singapore
Cayman Islands	Italy	Spain
Chile	Japan	Sweden
Chinese Taipei	Jersey	Switzerland
Cyprus	Korea	Turkey
Denmark	Luxembourg	United Kingdom
Finland	Macao	United States

Source: Bank for International Settlements

Appendix Table 2. Secrecy Jurisdictions

Andorra	Ireland	Panama
Anguilla	Isle of Man	Portugal
Antigua and Barbuda	Israel	Russia
Aruba	Italy	Samoa
Australia*	Japan*	San Marino
Bahamas	Jersey	Sao Tome e Principe
Bahrain	Lebanon	Seychelles
Barbados	Liberia	St. Lucia
Belgium	Liechtenstein	St. Kitts and Nevis
Belize	Luxembourg	St. Vincent
Bermuda	Macao SAR	Singapore
British Virgin Islands	Malaysia	Somalia
Cayman Islands	Maldives	South Africa
Cook Islands	Malta	Spain
Costa Rica	Marshall Islands	Switzerland
Cyprus	Mauritius	Taiwan
Dominica	Monaco	Tonga
Germany	Montserrat	Turks and Caicos Islands
Gibraltar	Nauru	United Arab Emirates
Grenada	Netherlands	United Kingdom
Guernsey	Netherlands Antilles	United States
Hong Kong SAR	Niue	Uruguay
Hungary	Northern Mariana Islands	US Virgin Islands
Iceland	Palau	Vanuatu

*Australia and Japan are not Secrecy Jurisdictions according to TJN, but since they are both classified as Points of Absorption, we include estimates of their non-resident deposits in this study.

Source: Tax Justice Network, 2007, Identifying Tax Havens and Offshore Finance Centers

Appendix Table 3. Offshore Financial Centers, Classifications

Jurisdiction	IMF: OFC	OECD: Tax Haven	IMF: Member	BIS: Member
Andorra	X	X (uncooperative)		
Anguilla	X	X		
Antigua and Barbuda	X	X	X	
Aruba	X	X		
Bahamas, The	X	X	X	
Bahrain	X	X		
Barbados	X		X	
Belize	X	X	X	
Bermuda	X	X		
British Virgin Islands	X	X		
Cayman Islands	X	X		
Cook Islands	X	X		
Costa Rica	X		X	
Cyprus	X	X	X	
Dominica	X	X	X	
Gibraltar	X	X		
Grenada	X	X	X	
Guernsey	X	X		
Hong Kong SAR China	X			X
Ireland	X		X	X
Isle of Man	X	X		
Jersey	X	X		
Lebanon	X		X	
Liberia		X	X	
Liechtenstein	X	X (uncooperative)		
Luxembourg	X		X	
Malaysia	X		X	X
Malta	X	X	X	
Marshall Islands	X	X	X	
Mauritius	X	X	X	
Macao SAR of China	X			
Monaco	X	X (uncooperative)		
Montserrat	X	X		
Nauru	X	X		
Netherlands Antilles	X	X		
Niue	X	X		
Palau	X		X	
Panama	X	X	X	
St. Lucia	X	X	X	
St. Kitts and Nevis	X	X	X	
St. Vincent & the Grenadines	X	X		
San Marino		X	X	
Samoa	X	X	X	
Seychelles	X	X	X	
Singapore	X		X	X
Switzerland	X		X	X
Turks and Caicos Islands	X	X		
US Virgin Islands		X		
Vanuatu	X	X	X	
TOTAL	**46**	**38**	**26**	**5**

Source(s): International Monetary Fund, Organization for Economic Co-operation and Development, Bank for International Settlements

Appendix Table 4. Regional Absorption and Outflow, by Year and Center

	Absorption[1]							Outflow
	Year	Offshore Reporting Centers	Asian Financial Centers	Developed countries	European Reporting countries	Other	Total	
Africa	2002	959	91	1,852	761	-361	**3,303**	7,978
	2003	1,859	483	5,172	1,701	372	**9,588**	3,939
	2004	1,106	946	2,851	3,759	794	**9,456**	6,493
	2005	32	1,002	-1,190	3,790	108	**3,743**	3,928
	2006	2,381	525	9,111	7,193	2,504	**21,714**	5,187
Asia	2002	789	-6,935	1,925	791	-694	**-4,124**	17,593
	2003	-4,787	5,266	1,607	1,286	715	**4,086**	16,897
	2004	536	9,309	8,726	4,156	1,525	**24,252**	20,087
	2005	2,624	9,942	6,048	2,146	208	**20,968**	35,941
	2006	3,249	13,789	17,055	7,748	4,810	**46,650**	60,712
Europe	2002	979	-108	4,103	-13	-1,279	**3,682**	8,837
	2003	-1,563	13	8,685	6,481	1,317	**14,934**	8,153
	2004	3,817	144	10,964	14,283	2,810	**32,018**	15,833
	2005	4,039	58	35,043	12,667	383	**52,190**	12,380
	2006	7,027	199	18,378	31,910	8,863	**66,376**	38,950
MENA	2002	-8,682	-1,319	-207	3,061	-1,144	**-8,291**	6,846
	2003	-978	-215	3,660	4,586	1,178	**8,231**	5,876
	2004	7,130	1,441	4,994	4,255	2,513	**20,333**	10,927
	2005	10,954	1,757	15,227	10,506	342	**38,787**	18,375
	2006	33,696	-183	26,940	23,889	7,927	**92,268**	25,280
Western Hemisphere	2002	186	1,006	-14,027	-1,193	-1,299	**-15,328**	16,188
	2003	9,281	917	18,685	2,735	1,337	**32,955**	11,686
	2004	-5,845	959	51,136	5,233	2,853	**54,336**	12,013
	2005	-14,319	5,540	28,356	9,520	389	**29,487**	16,465
	2006	9,150	-1,239	37,296	16,143	8,999	**70,351**	18,411
Total First Year	**2002**	**-5,770**	**-7,265**	**-6,353**	**3,408**	**-4,778**	**-20,758**	**57,442**
Total Second Year	**2003**	**3,811**	**6,465**	**37,809**	**16,789**	**4,918**	**69,793**	**46,551**
Total Third Year	**2004**	**6,744**	**12,800**	**78,671**	**31,686**	**10,494**	**140,394**	**65,352**
Total Fourth Year	**2005**	**3,330**	**18,299**	**83,485**	**38,630**	**1,430**	**145,174**	**87,089**
Total Fifth Year	**2006**	**55,502**	**13,091**	**108,780**	**86,883**	**33,104**	**297,359**	**148,540**
Total (Sum of regional averages)		**12,723**	**8,678**	**60,479**	**35,479**	**17,267**	**126,392**	**80,995**
Total		**63,617**	**43,391**	**302,393**	**177,395**	**86,333**		

[1] Based on change in estimated private sector deposits in points of absorption shown in the columns. The public-private splits, based on BIS consolidated deposits statics, were applied to reported locational data to derive the data shown in this table.
Average 2002-2006, in millions of US dollars
BIS Definition

Western Hemisphere does not include Antigua & Barbuda (0 for both normalized models) or St. Kitts (4 for GER, 0 for CED)

Destinations Regions	Destination Countries
Offshore Reporting Centers (defined):	Bahamas, Bermuda, Cayman Islands, Netherlands Antilles, Panama, Guernsey, Isle of Man, Jersey and Bahrain
Asian Financial Centers (defined):	Hong Kong SAR, Macao SAR, Singapore and Taiwan
Developed countries (defined):	Australia, Japan, United Kingdom and United States
European Reporting countries (defined):	Euro area reporting countries (Ref: page A5 of BIS QR Annex), Denmark, Norway, Sweden, Switzerland and Turkey
Other (hand compiled)	Andorra, Anguilla, Antigua and Barbuda, Aruba, Barbados, Belize, British Virgin Islands, Cook Islands, Costa Rica, Cyprus, Dominica, Gibraltar, Grenada, Lebanon, Liechtenstein, Malaysia, Malta, Marshall Islands, Mauritius, Monaco, Montserrat, Nauru, Niue, Palau, Samoa, Seychelles, St. Lucia, St. Kitts and Nevis, St. Vincent & the Grenadines, Turks and Caicos Islands, Vanuatu

Appendix Table 5: Illicit Financial Flows, 2002-2006

Summary Estimates of Non-normalized Illicit Financial Flows From Developing Countries and Regions, 2002 - 2006										
	(in millions of US dollars)									
	2002	2003	2004	2005	2006	Average 2002 - 2006	Average distribution 2002 - 2006	Compound annual growth rate	Share from GER	Share from CED
Non-normalized illicit flows (GER + CED)										
Developing Countries	**273,893**	**366,713**	**448,020**	**524,693**	**780,587**	**478,781**	100.0%	23.30	**34.6%**	**65.4%**
Africa	16,868	16,737	21,796	20,035	24,600	20,007	4.2%	7.84	49.7%	50.3%
Asia	62,717	77,298	90,103	165,114	275,965	134,239	28.0%	34.49	50.8%	49.2%
Europe	65,751	97,058	131,943	88,431	185,476	113,732	23.8%	23.05	14.1%	85.9%
MENA	27,384	58,763	84,052	141,344	180,574	98,424	20.6%	45.83	10.4%	89.6%
Western Hemisphere	101,173	116,857	120,127	109,769	113,972	112,380	23.5%	2.41	54.6%	45.4%
Summary Estimates of Normalized Illicit Financial Flows From Developing Countries and Regions, 2002 - 2006										
	(in millions of US dollars)									
	2002	2003	2004	2005	2006	Average 2002 - 2006	Average distribution 2002 - 2006	Compound annual growth rate	Share from GER	Share from CED
Normalized illicit flows (GER + CED) (three correct signs and IFF/export FOB = or >10 %)										
Developing Countries	**220,870**	**313,399**	**378,275**	**409,588**	**582,407**	**380,908**	100.0%	21.40	**36.1%**	**63.9%**
Africa	7,535	11,911	13,476	11,628	13,017	11,513	3.0%	11.55	35.8%	64.2%
Asia	44,414	61,296	74,324	93,773	124,082	79,578	20.9%	22.81	81.7%	18.3%
Europe	58,254	86,902	111,931	78,685	178,093	102,773	27.0%	25.04	7.3%	92.7%
MENA	23,691	55,712	82,752	126,057	158,390	89,320	23.4%	46.23	6.4%	93.6%
Western Hemisphere	86,976	97,578	95,792	99,446	108,826	97,724	25.7%	4.58	56.3%	43.7%

Source: Global Financial Integrity staff estimates

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