THE MISSING WEALTH OF NATIONS: ARE EUROPE AND THE U.S. NET DEBTORS OR NET CREDITORS?

DATA APPENDIX

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Abstract

This data Appendix supplements the paper of the same author "The Missing Wealth of Nations: Are Europe and the U.S. net Debtors or net Creditors?". The paper and the data files are available online at http://www.parisschoolofeconomics.eu/en/zucman-gabriel/.

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The goal of this Appendix is to allow the reader to reproduce all the results of the paper starting from readily available public statistics. I describe line by line each of the steps that leads from the published data to the results. The Appendix is supplemented by an Excel file containing all relevant formulas and by a set of Stata files.¹

The main paper summarizes the key steps. This Appendix gives additional details, provides consistency and robustness checks, compares the choices made in this research with those made in other studies, lists all relevant references, and produces additional results excluded from the main paper for the sake of conciseness. The Appendix is structured as follows:

- Section A studies the assets side: starting from the updated and extended version of the External Wealth of Nations database constructed by Lane and Milesi-Ferretti (2007), I explain how I construct estimates of the total amount of securities assets identifiable worldwide.
- Section B does the same for the liabilities side.
- Section C investigates the discrepancy between total identifiable assets and liabilities. In particular, it describes the construction of the 238×238 bilateral assets matrices that reveal the source of the assets-liabilities gap, using bilateral data provided in the IMF Coordinated Portfolio Investment Survey.
- Section D studies the anomalies at the flow level, that is, in the world balance of payments and in individual countries' balances of payments.
- Section E gives more details on the offshore fortunes in Switzerland.
- Section F lists the complete references used to compute the officially reported net foreign asset positions of rich countries (Figure 1 of the paper), and presents various robustness checks for the claim that the eurozone and the rich world are net creditors, ant not net debtors as in the official statistics.

¹Available online at: http://www.parisschoolofeconomics.eu/en/zucman-gabriel/.

A Global Aggregate Securities Assets (Tables A1 and A4-A9)

A.1 Key data sources

The key data source for this research is the updated and extended version of the External Wealth of Nations database (EWNII) constructed by Lane and Milesi-Ferretti (2007), which contains data for 178 economies. I have used the dataset released in August 2009 on Philip Lane's website.²

Some financial centers are not covered in the August 2009 version of the database, most notably the Cayman Islands, Bermuda, Jersey, Guernsey, and the Isle of Man. But these countries provide data on their aggregate portfolio holdings in the IMF Coordinated Portfolio Investment Survey (CPIS).

With a few minor exceptions (detailed below), for the countries i in both datasets, the aggregate portfolios assets data \hat{A}_i in the EWNII and the CPIS are rigorously identical. So starting with the total assets $\sum_i \hat{A}_i$ in the CPIS or in the EWNII does not make any practical difference. Because the CPIS includes a number of financial centers that are presently excluded from the EWNII, I start with the CPIS world totals. I have worked with the August 2010 release of the CPIS,³ which included final data for 2001-2008. I have not used the preliminary 2009 data.

Col. 1 of Table A1 simply reproduces the line "Total value of investment" of Tables12, 12.1 and 12.2 of the CPIS. In 2008, 74 countries and jurisdictions were participating.

Col. 2 reproduces the line "SEFER+SSIO". It gives the value of the securities held by the reserve managers (central banks) and international organizations that participate in the survey. The list of participants is confidential. By subtracting col. 2 to col. 1, we obtain the value of the privately held portfolios reported in the CPIS.

I list below the few cases in which CPIS and EWNII data differ, and I explain why I choose to keep the CPIS data.

²http://www.philiplane.org/EWN.html.

³Downloaded from http://www.imf.org/external/np/sta/pi/cpis.htm.

A.1.1 The case of Germany

Before 2006, the portfolio asset figures published in the German international investment position were established on the basis of modified cumulated flows, except for the banking sector.⁴ By contrast, the CPIS data were constructed just like in other countries: using stock position surveys of end-investors and custodians.⁵ There was consequently a discrepancy between the portfolio figures reported in the IIP (hence in the EWNII) and in the CPIS: between 2001 and 2005, portfolio assets in the IIP were 10-20% larger than in the CPIS (corresponding to a gap of USD 161-265bn). The German Central Bank interpreted the gap as roughly capturing the securities held by German households with nonresident custodians or "on their own account" (i.e., without using any custodian bank at all).⁶

Since 2006, both the IIP and the CPIS data have been based on a new, high quality security-by-security portfolio stock survey. Accordingly, the IIP (hence EWNII) and CPIS data have been identical since then.

In the paper, I use the CPIS data rather than the IIP series, and I do not correct the CPIS figures. I do so for three reasons. First, the methods used by Germany to compile its CPIS data have always been consistent with those used by all other large countries (i.e., stock position surveys covering the household sector through a survey of domestic custodians). Second, if the gap between modified cumulated flows (reported in the IIP before 2006) and the stock surveys really captured portfolios held offshore by the household sector, as the German Central Bank suggests, then I want to include this gap in my estimate of unrecorded offshore assets Ω , which implies to use the CPIS data when reckoning all identifiable securities assets. Lastly, the interpretation of the gap between the stock survey and the cumulated flow estimates is uncertain, so we should not have strong priors on how to deal with it. Many other factors can explain a discrepancy between cumulated flows and stock surveys data, and conversely portfolios held offshore

⁴See the country notes for Germany in the IMF Balance of Payments Statistics.

⁵See the metadata for Germany on the CPIS website (available from the author upon request). At the time of this paper, the metadata posted online referred to the procedures used for the conduct of the 2003 CPIS.

 $^{^6\}mathrm{See}$ the German metadata for the 2003 CPIS.

need not generate flows captured by domestic balances of payments.

A.1.2 The case of Singapore

Portfolio equity assets in the August 2009 release of the EWNII database (based on cumulated flows) were between 1.5 and 3 times larger than in the August 2010 release of the CPIS (which corresponds to a gap of USD 50-100bn). Lane and Milesi-Ferretti (2007) discarded the CPIS data in light of the high equity liabilities recorded by the U.S. vis-a-vis Singapore in the Treasury International Capital (TIC) system. In fact, the equity liabilities recorded by the U.S. vis-a-vis Singapore on *all* foreign countries.

The discrepancy between Singapore's U.S. holdings as seen from the U.S. TIC and as seen from the CPIS could be explained by two factors:

- The equity liabilities recorded by the U.S. TIC vis-à-vis Singapore include the U.S. securities held by Singapore's central bank (reserve assets) and Singapore's two sovereign wealth funds, the Government Investment Corporation (GIC) and Temasek, while both reserve and sovereign wealth funds' assets used to be excluded from the portfolio of U.S. equities reported by Singapore in the CPIS (IMF, 2007, p. 15).⁷
- Non-Singaporean residents may invest in U.S. equities through offshore accounts in Singapore: their holdings would be captured as equity liabilities vis-à-vis Singapore by the U.S., but would not be recorded as U.S. assets by Singapore (the custodial center bias of Bertaut et al. (2006)).

As it was impossible to know which of the factors was more important, I chose to keep the CPIS data rather than the EWNII figure, implicitly assuming that GIC's and

⁷In March 2008, 34% of GIC's assets were invested in the U.S., and 44% were in public equities, so around around 15% of GIC's assets were in U.S. portfolio equities (GIC, 2008, p. 11). We know that GIC managed "well over USD 100bn" in foreign assets (GIC, 2008, p. 6), so at least USD 15bn of the discrepancy between Singapore's U.S. holdings as seen from the CPIS and the TIC could be explained by GIC. Temasek's holdings, however, were almost entirely invested in Asia (Temasek, 2008, p. 12), and Singapore's central bank was most likely invested in bonds rather than in equities.

Temasek's assets were included in the SEFER like official reserves.⁸

Conversely, debt assets in the EWNII were smaller than in the CPIS. The debt figures in the EWNII come from the IIP, which used to exclude part of Singapore's banking sector, namely the so-called Asian Currency Units. Asian Currency Unites are departments of Singaporean banks, with a distinct balance sheet, which are licensed to deal in foreign currencies, i.e. to accept deposits and to grant loans in currencies other than the Singaporean dollar. Prior to the implementation of the 6th edition of the IMF balance of Payments and International Investment Position Manual in 2012, they were treated as non-residents in the IIP but included as residents for the purpose of CPIS. I chose, therefore, to retain the CPIS debt data.

A.1.3 The case of Mauritius

Equity assets in the EWNII database (based on cumulated flows) are much lower than in the CPIS (EWNII figures are close to 0, vs. USD 155bn in the 2007 CPIS). Mauritius records much more portfolio assets in the CPIS than portfolio liabilities in its IIP. However, from what we know, the CPIS data seem reliable; if anything they probably understate rather than overstate Mauritius' holdings. According to the latest metadata provided to the CPIS, the government, nonfinancial corporations, and the household sectors are not covered by Mauritius' asset survey.⁹

Other minor divergences between CPIS, EWNII and published international investment positions portfolio asset data are due to data revisions. I systematically use the CPIS data, which were the most recent at the time I wrote this paper.

In spite of recent efforts made to insure a comprehensive coverage, the CPIS data have some shortcomings. After a careful examination of all the country metadata provided

⁸I did so because sovereign wealth funds were included in Singapore's international investment position (IMF, 2007, p. 15), suggesting that they might also be included in the SEFER. However, this turned out afterwards to be probably wrong: in 2012, Singapore extended its coverage of portfolio asset holdings to include the assets of sovereign wealth funds. For 2007, the revised portfolio claims (both IIP and CPIS) reach \$258bn which exceeds both the amount reported in the 2010 release of the CPIS (\$176bn) and in the 2009 EWN (\$250bn). So one should keep in mind that my 2007 portfolio equity asset total is probably about \$75bn too small because of the failure to properly account for Singapore's sovereign wealth funds. I am grateful to an anonymous referee for pointing this issue to me.

⁹At the time of this paper, the online metadata referred to the 2003 CPIS.

on the CPIS website, I have identified two deficiencies that have a non-negligible effect on global aggregates: the partial coverage of the Cayman Islands, and, less importantly, the exclusion of the Netherlands' offshore sector. I explain below how I address these shortcomings.

A.2 Correction for the Cayman Islands (Table A6)

Over the 2001-2008 period, the Cayman Islands reported only the portfolio assets of its banks, disregarding its mutual fund industry, among others. Given the huge size of the Cayman fund industry (more than 9,000 mutual funds registered in 2008), it is crucial to upgrade the data reported by the Cayman Islands. In order to estimate the value of the foreign securities owned by all sectors of the Cayman Islands, I have developed two methods that yield convergent results. Detailed results for each method and consistency checks are reported in the first three panels of Table A6. My preferred estimate for the Cayman Islands' total portfolio assets is reported in col. 3 of Table A1.

A.2.1 Estimates based on a gravity model of asset holdings

The first method consists in estimating (i) the value of all U.S. securities held by the Cayman Islands, and (ii) the share represented by U.S. securities in the portfolio of the Cayman Islands.

U.S. securities held by the Cayman Islands U.S. securities held by the Cayman Islands are long term (maturity larger than one year) and short term (maturity less than one year).

For long term securities, the data come from the U.S. Treasury International Capital system (TIC) survey of long term portfolio liabilities. The survey gives the value of the U.S. equities and long term debt securities held by foreigners, broken down by country. The U.S. TIC liability survey has been conducted yearly since 2002; data are for the end of June (before 2002, the survey was conducted at year-end, every 4 to 6 years). In order to obtain year-end data, I use the monthly estimates produced by Bertaut and Tryon (2007).¹⁰ On December 31st 2007, the U.S. recorded nearly USD 800bn of long-term

¹⁰I use the March 2010 update of the dataset, downloaded on October 18th, 2010, from http://www.

portfolio liabilities vis-a-vis the Cayman Islands: USD 469bn in long term debt (Table A6 line 3) and USD 329bn in equities (Table A6 line 2). I assume that the TIC data accurately reflect the holdings of U.S. securities by entities incorporated in the Cayman Islands, i.e. that we can disregard the custodial center bias (see Bertaut et al., 2006).

For short term securities, I use the TIC survey of U.S. cross-border banking liabilities. The survey includes a monthly estimate of short term U.S. Treasury obligations liabilities and of other short term negotiable U.S. securities held by foreigners, broken down by country. I assume, again, that we can disregard the custodial center bias. Therefore, the figures for the Cayman Islands' U.S. short term assets (Table A6 line 4) directly come from the TIC banking liabilities dataset.¹¹

The share of U.S. assets in the Cayman Islands' external portfolio To compute the share represented by U.S. securities in the Cayman Islands' portfolio, I estimate the following gravity-like model of bilateral cross-border portfolio holdings:

$$log(1 + A_{ijt}) = \phi_j + \theta_t + \beta Z_{ijt} + \gamma X_{it} + \epsilon_{ijt}$$
(1)

where A_{ijt} denotes the portfolio holdings of country *i* on country *j* in year *t*, ϕ_j denotes host-country fixed-effects, θ_t year fixed-effects, Z_{ijt} is a vector of bilateral controls, and X_{it} a vector of source-level controls. This model has been used for similar imputation purposes by Lane and Shambaugh (2010). As a benchmark, I start with the exact specification reported in the appendix of Lane and Shambaugh (2010). Z_{ijt} includes the *log* of distance, the *log* of the GDP gap and of the GDP per capita gap, the longitude gap (which should proxy for time zone differences), as well as dummies indicating a common language, the existence of a colonial relationship, and whether *i* and *j* are both industrial countries. X_{it} includes *i*'s population, latitude, GDP per capita, and whether it is

federalreserve.gov/pubs/ifdp/2007/910/ifdp910appendix.htm. It contains data until June 2009 for a sample of about 80 countries including the Cayman Islands. Survey data are collected by the U.S. Treasury for about 200 countries, but the sample in Bertaut and Tryon (2007) is constrained by the availability of transaction series, which are used to link stock positions estimates.

¹¹Downloaded on October 18th, 2010 from http://www.ustreas.gov/tic/. I add columns 7 and 8. Data are unavailable prior to 2003, so for 2001 and 2002 I use the 2003 figure and the percent change of U.S. long term debt liabilities vis-a-vis the Cayman Islands. Note that col. 7 of the TIC banking liabilities dataset includes official holdings in addition to bank holdings, but the total is negligible.

landlocked. All data come from the CEPII database,¹² except GDP and population data which are from the World Bank World Development Indicators (WDI). The benchmark regression excludes offshore financial centers,¹³ and is run on equity and debt (short term plus long term) separately. As Table A9B shows, the regression has a high explanatory power, with R^2 around 0.75 depending on the asset class and on the time frame. All controls have expected signs, except for the longitude gap which enters positively (though weakly).

In the final regressions, I exclude the longitude gap and extend the benchmark model to take into account OFCs (as host and source countries). I complement the CEPII and WDI databases when controls for OFCs are unavailable.¹⁴ In equation (1), I add in X_{it} a dummy indicating whether *i* is an OFC. In order to capture more precisely the specificity of OFCs investment patterns (e.g., their links with other OFCs through master/feeder funds arrangements, their ties with the developed countries that ultimately sponsor the financial firms operating in OFCs), I also add in Z_{ijt} an interacted term $OFC_i \times \phi_j$. The augmented regressions still have R^2 around 0.7 and all coefficients keep sensible signs and magnitudes.

From the predicted bilateral claims A_{ijt}^p , we can compute the predicted share of each country j in i's portfolio at time t as:

$$\omega_{ijt}^p = \frac{A_{ijt}^p}{\sum_j A_{ijt}^p}$$

Some predicted shares are slightly negative, in which case I replace them by $0.^{15}$ In Table A17 and Figures A2 to A7, I investigate the fit of the model by looking

¹²http://www.cepii.fr/anglaisgraph/bdd/distances.htm.

¹³For all the regressions, the OFCs considered are the 42 countries with "significant offshore activity" reported in Table 2 of IMF (2000), with the exception of Switzerland which has no offshore fund industry, hence is better considered not as an OFC for these regressions.

¹⁴The CEPII database lacks information on Jersey, Guernsey and the Isle of man. I take the same values as for the U.K. (note that in the database, the distance between a country and itself is not zero). For missing GDP and population figures, I use Table 5 of Lane and Milesi-Ferretti (2010).

¹⁵Note that a negative A_{ijt} is possible a priori: it means that *i* has a short position on securities issued by *j*. However, this is here mostly an artifact of the linear model. To avoid it, one could estimate shares directly through a logit transformation, like in Kubelec and Sà (2010). That is, one could run regressions of the form $log(\frac{\omega_{ijt}}{1-\omega_{ijt}}) = \phi_j + \theta_t + \beta Z_{ijt} + \gamma X_{it} + \epsilon_{ijt}$. Such a model generates positive predicted shares, but the downside of the logit transformation is that it eliminates the many observations for which $A_{ij} = 0$.

at its predictions in-sample. I consider the country allocation of the equity and debt portfolio generated by the model for the 3 largest cross-border investors whose assets survey is considered particularly reliable: the U.S., Japan, and France. I then compare the predicted shares of each country j in the U.S., Japanese, and French portfolio with the observed shares (from the CPIS). The model generates sensible predicted values, especially for equities. The fit is a bit less satisfactory for debt securities, but debt securities play a much less important role in the present paper than equities: 2/3 of the missing wealth of nations comes from equities, 1/3 from debt.

Conversely, in Table A16, I compare the mean predicted shares $\bar{\omega}_{ijt}^p$ of a set of developed countries j with the mean actual shares $\bar{\omega}_{ijt}$, where the (unweighted) means are computed over the sample of countries i that participate in the CPIS. On average, CPIS-participating countries invest 23%-30% of their equity portfolio in the U.S. and 28%-35% of their debt portfolio in the U.S. (depending on the year). The gravity model reproduces this U.S. share well.

Lastly, while one might fear that the gravity model is inadequate for offshore financial centers, it turns out that the basic model used by Lane and Shambaugh (2010) fits the investment patterns of the CPIS-participating offshore centers well, as Table A9C shows. That is, the gravity model does a good job at explaining the portfolio investment patterns of Bermuda, Jersey, Guernsey, Hong-Kong, Isle of Man, Bermuda, Bahamas, etc. This provides a sensible basis for relying on the gravity model to predict the investment patterns of the Cayman Islands and of the handful of non-CPIS participating offshore centers such as Andorra and the British Virgin Islands (see Section A6 below).

The model predicts that U.S. equities form 30-50% of the total equities held by Cayman-incorportated entities (with an upward trend during the 2001-2008 period) and U.S. debt securities 58-65% of total debt securities held by Cayman entities (Table A6 lines 6 and 7). Combining these predicted shares with the value of the U.S. securities held by the Cayman Islands yields an estimate for the total value of Cayman-owned crossborder equities (Table A6 line 9) and debt securities (Table A6 line 10). For instance, I find that the Cayman Islands had around USD1.2 tr of foreign securities assets at yearend 2008 (Table A6 line 8). Note that only USD 50bn were reported in the CPIS. With around USD 1.2tr of portfolio assets, the Cayman Islands was the 9th largest country by size of cross-border holdings, behind China, but above the Netherlands, Italy, and Switzerland.

Because the correction for the Cayman Islands is important, we need to make sure that it is consistent with all available information. I provide below a second estimate of total Cayman holdings based on an independent dataset.

A.2.2 Estimates based on hedge fund holdings

Since 2006, the Cayman Islands Monetary Authority (CIMA) has published an *Investment Statistical Digest* producing the results of a survey of Cayman-domiciled mutual funds.¹⁶ This dataset provides unique, good quality, and relatively well documented information.

More precisely, the *Digests* provide the gross and net assets managed by a large sample of Cayman funds, their asset allocation, as well as other information not directly relevant here.¹⁷ For the first round of the survey (2006), whose results are presented in CIMA (2007), only the funds that had a December 31st financial year-end were asked to report. Over the 8,134 funds domiciled in the Cayman Islands, 6,718 had a December 31st yearend. Among them, 466 did not report because they had registered after June 30th 2006, which allowed them to avoid the survey. 520 had their audit waived mainly because they had not yet started operations, were dormant or under termination/liquidation. 680 were expected to report but did not (they were probably dormant as well). This leaves 5,052 funds that actually participated in the survey.¹⁸ CIMA (2008) gives two sets of figures for 2007: one for all funds, and one for the funds with a December 31st year-end, in order to insure continuity with the 2006 survey. CIMA (2009) provides data for 2008 on all reporting funds irrespective of their accounting schedule.

¹⁶As of November 2010, three *Digests* had been published (CIMA, 2007; 2008; 2009) available online at http://www.cimoney.com.ky/about_cima/about_feedra.aspx?id=488.

¹⁷e.g. subscriptions, redemptions, total dividends and distributions, net income, fraction of funds listed (and the country of the exchange), nature of the funds (master/feeder, funds of funds, stand alone), location of the investment manager, investment strategy (long/short equity, fixed income, global macro, event driven, multi-strategy, etc.), location of the registrar and transfer agent, etc.

¹⁸The previous explanations come from CIMA's FAQ: http://www.cimoney.com.ky/WorkArea/linkit.aspx?LinkIdentifier=id&ItemID=1814.

At year-end 2006, the 5,052 reporting funds had USD 2.3tr of gross assets and USD 1.4tr of net assets. Net means here gross assets minus loans taken by the funds. 90% of the respondents, accounting for 83.3% of the reported gross assets, disclosed their asset allocation (with the following breakdown: money market claims, long equities, long bonds, investments in master funds, investments in other funds, derivative assets, other assets, short equities, short bonds, other liabilities, derivative liabilities). This dataset provides us with almost all the relevant information needed to infer the cross-border portfolio claims of Cayman funds. From the viewpoint of external portfolio accounting, what matters is simply their net holdings of foreign securities, with net meaning here long position portfolio assets minus short position portfolio assets.¹⁹

Computing the foreign debt holdings of Cayman funds is, then, almost straightforward. Let's assume that all the debt securities they own have been issued by foreigners.²⁰ Adding money market assets (i.e., short term debt) to long bond assets and subtracting short bond assets gives a cross-border portfolio debt asset figure for responding funds consistent with IMF accounting practices.²¹ I then apply a simple multiplicative factor of 1/0.83 to get an estimate for all funds whose financial year ended on December 31st.²² Lastly, I apply (for 2006 only) a second multiplicative factor equal to 1 - (gross assets of funds with December 31st year-end) / (gross assets of all funds expected to report) to get an estimate for all Cayman funds.²³ The results are reported in line 16 of Table A6, which shows, e.g., that Cayman funds had USD 283bn of portfolio debt assets at the end of 2006.

Things are more complicated for equities, because we cannot assume that all the equities held by Cayman funds have been issued by foreign residents. More precisely, the funds hold a great deal of claims on themselves through master/feeder and funds of funds

¹⁹CPIS guidelines explicitly indicate to count short positions as negative assets: "Securities acquired under reverse repos or securities borrowing arrangements and subsequently sold to a third party should be reported as a negative holding—namely, a short position." (IMF, 2002, p. 95).

 $^{^{20}}$ Though large in absolute terms (USD 1.1tr in 2008 according to the Bank for International Settlement), debt securities issued in the Cayman Islands are only 1.2% of global debt securities.

²¹I also include the small category of "other assets" in debt assets.

 $^{^{22}}$ i.e., I assume that the 466 recent funds + the 520 whose audit was waived + the 680 that did not report though they were expected to had 0 asset.

 $^{^{23}\}mathrm{This}$ second multiplicative factor is computed using the 2007 Digest.

arrangements. In a master/feeder structure, a feeder collects money from savers and invests the proceeds in a second fund, the master, which in turns directly buys stocks, bonds, etc. If the feeder and the master are domiciled in the same country, then the claims owned by the feeder on the master should not be counted as cross-border equities. The same goes for funds of funds. We learn from CIMA's *Digests* that around 75% of all the funds domiciled in the Cayman Islands are involved in master/feeder or fund of funds structures. It is a first order issue.

To take it carefully into consideration, we need to know what fraction of Cayman fund assets are invested in master and other funds, and where those funds are domiciled. We do have the first information. In 2006, for instance, 32% (USD 626bn) of the USD 1,930bn of allocated gross assets were invested in master funds, and 11% (USD 207bn) in other funds. However, we do not know if those master and other funds were located in the Cayman Islands or abroad. CIMA (2008, p. 10) states that in a standard feeder/master arrangement, "the feeder fund is [typically] registered in an offshore jurisdiction, such as the Cayman Islands, and invests into the onshore master fund, which is predominately domiciled in the U.S. The master fund is often not registered in an offshore jurisdiction, and holds the actual investments of the two-fund structure."²⁴ We can also consult the list of investment funds registered in the Cayman Islands:²⁵ in November 2010, around 300 of the 9,000 registered funds had "master" in their name. Foreign master funds are likely to be numerous, suggesting that we should count the bulk of Cayman funds' claims on master and other funds as equity assets for the Cayman Islands.

There is one caveat here: it is not clear whether claims of domestic feeders on foreign masters should be counted as portfolio equity assets or as direct investments. In principle, if a feeder fund owns less than 10% of its foreign master, then its claim on the master should be counted as a portfolio equity asset; if a feeder fund owns more than 10% of its foreign master, its claims should be counted as a direct investment.

²⁴Several hedge funds specialists confirm that this offshore feeder / onshore master structure was indeed widespread at least until 2010 (when a E.U. directive on hedge funds was expected to lead to the relocation of some hedge funds in Europe). For instance, the director of a group providing services to the asset management industry mentions "the traditional Ireland-Cayman master-feeder structures in the hedge fund world" in Hedgeweek: http://tiny.cc/8e62n.

²⁵http://www.cimoney.com.ky/WorkArea/DownloadAsset.aspx?id=3861

Accordingly, I make the agnostic assumption that 50% of all the claims of Cayman funds on master and other funds are portfolio equity assets for the Caymans (and 50% are claims on Cayman master and other funds, or direct investments in foreign masters). The 50-50% split is arbitrary; future research should improve it. It yields an estimated USD 952bn figure for foreign equity holdings of Cayman funds at the end of 2006 (Table A6, line 15).²⁶

By adding the securities held by Cayman banks to those held by the funds, we get a figure for the Caymans' total cross-border portfolio assets as estimated from Cayman sources. Bank holdings directly come from the CPIS (and are reproduced in Table A6, lines 11, 12 and 13). The total bank plus fund holdings are displayed in line 17. We can check that when fund holdings can be computed (i.e., since 2005^{27}), the Cayman-databased estimate is very close to the U.S.-data-based estimate (TIC and gravity model). Both methods indicate foreign holdings in the range of USD 0.8-0.9tr in 2005, peaking at USD 1.6-1.8tr in 2007 and down to USD 1.2-1.3tr in 2008. Note, however, that the debt/equity breakdown is quite different whether one looks at the TIC dataset or at the CIMA dataset. The debt share is higher according to U.S. sources.

A.2.3 Coherence between both estimates and uncertainties

To sum up, two different methods, based on fully independent data sources, yield convergent estimates for the value of the portfolio assets of the Cayman Islands. These are reasonable figures to start with (much more reasonable that the negligible bank holdings reported in the CPIS). However, each method has its limitations. In what follows, I provide additional consistency checks, describe in more details the main uncertainties that remain, analyze where they come from, and give their order of magnitude when possible.

First, it is clear that the 50-50 assumption made for dealing with Cayman funds investments in master and other funds is unsatisfactory. We can provide bounds for

 $^{^{26}}$ More precisely, I add long equities assets, 50% of the investments in master funds and other funds, and subtract short equities assets. I then apply the multiplicative factors described above for debt securities.

²⁷The 2006 *Digest* (CIMA, 2007) gives the beginning of year net asset value (NAV) of reporting funds, i.e. their end-2005 NAV. I assume a similar asset allocation in 2005 as in 2006.

the funds' foreign equity holdings by considering two extreme cases. In the lower-bound scenario, all master and other funds in which Cayman funds invest are domiciled in the Cayman Islands, so all the corresponding equity claims are domestic. In the upper bound scenario, all master and other funds are domiciled abroad and feeders are small compared to master funds, so their assets must be counted as portfolio rather than direct investments. The implied lower bound for foreign equity holdings equals USD 400bn in 2006, and the upper bound reaches USD 1,503bn. There is a substantial USD 1tr uncertainty.²⁸

Second, other financial institutions besides funds and banks operate in the Cayman Islands: a large number of structured finance entities (special purpose vehicles – SPVs – or entities – SPEs), as well as holding companies, captive insurances, and international business companies (IBCs).²⁹ Their claims are not included in my "Cayman-based" estimate (line 17), but they are captured by the TIC dataset, hence included in my "U.S.-based" estimate (line 1). The fact that both methods yield convergent results only makes sense if SPVs, holding companies, insurance, and IBCs have negligible cross-border portfolios compared to investment funds. Is it reasonable on a priori grounds? To a large extent, yes. First, before the financial crisis, SPVs were largely used by onshore banks to securitize loans. Thus, they typically had loans (e.g. mortgage), i.e. "other investments", on the asset side (the acquisition of which they financed by issuing international bonds). A particular kind of SPV called structured investment vehicles (SIVs) used to have portfolio holdings: they invested in long term assets such as asset-backed securities and corporate bonds, which they financed by borrowing short term, seeking to make a profit from the spread, juste like traditional banks (hence the term "shadow bank" used to describe To my knowledge, there is no good data on the aggregate holdings of SIVs, them).

 $^{^{28}}$ Note that given the widespread indications that many master funds are onshore, the lower bound scenario is really extreme. However, the U.S. TIC survey recorded only USD 20bn of U.S. investment funds liabilities vis-a-vis the Cayman Islands in June 2007 – maybe because not so many masters are actually domiciled in the U.S., maybe because the investments made by Cayman feeders in U.S. masters are counted by the U.S. as direct investment liabilities, or maybe because the TIC missed a lot of liabilities, since many U.S. hedge funds have apparently been unaware of their reporting duties for a long time. The third scenario seems most plausible.

²⁹For a description of the main financial activities undertaken in the Cayman Islands and especially in the famous Ugland House building that hosted 18,857 entities in March 2008, see the U.S. Government Accountability Office (2008).

but industry reports suggest that they were limited, even at their 2007 peak (around USD 200-300bn, i.e. 10 times less than funds). SIVs basically disappeared at the end of 2008.³⁰ As regards holding companies domiciled in the Cayman Islands, they should have direct investment assets (they control foreign affiliates), not portfolio investments. The captive insurance sector is negligible: according to CIMA, it had USD 34bn of assets in April 2008 (U.S. Government Accountability Office, 2008, p. 9). Lastly, we know very little on the holdings of IBCs.³¹ All in all, it seems reasonable to consider that the bulk of the Cayman Islands' foreign securities holdings belong to the mutual funds sector. Therefore, the consistency between U.S. data and CIMA data is meaningful. There remains, however, some uncertainty on the securities holdings of SPVs and IBCs.

Third, TIC data may be a poor proxy for Cayman holdings of U.S. assets. Sourcebased estimates of a country *i*'s holdings on $j \hat{A}_{ij}$ can substantially differ from host-based data L_{ji} because of cross-border custody. Now, there are reason to believe that crossborder custody is widespread in the Cayman Islands. First, Cayman funds are mostly managed and administered from abroad, which means that their assets may in fact be held by foreign custodians. According to CIMA's *Digests*, at least 50% of Cayman fund assets are managed from the United States. These assets are likely to be in custody in the U.S., hence properly identified as liabilities of the U.S. vis-a-vis the Cayman Islands by the TIC system. But 20% are managed from the U.K. and 6% from Switzerland and Liechtenstein. They may be in custody in U.K. or Swiss bank, hence wrongly attributed to the U.K. or to Switzerland. Thus, TIC data may significantly under-estimate the true U.S. holdings of Cayman funds.

On the other hand, it is likely that wealthy foreigners use Cayman custodians to

³⁰See "Sigma collapse marks end of SIV era", Financial Times, October 1st 2008.

³¹We can gain some insight here by looking at Jersey, a huge center for the incorporation of IBCs, with 33,000 incorporated companies at the end of 2008 (see Jersey's *Financial Services Industry – Quarterly Report*, available online at http://www.jerseyfinance.je/Technical/Statistics/). The CPIS gives the sectoral breakdown of Jersey's portfolio (CPIS Table 3). Col. 7 of the CPIS Table 3 for Jersey gives the assets of "other" financial intermediaries which are neither insurance companies nor mutual funds, i.e. of SPEs and IBCs. At the end of 2008, their foreign portfolios amounted to USD 188bn. Some evidence suggest that the IBC business is somewhat more developed in Jersey than in the Cayman Islands. For instance, there are many more trusts companies, corporate services providers, and consultants in Jersey as in the Cayman Islands. The number of such companies should go hand in hand with the number of IBCs, since their job is basically to provide directors, nominees, trustees, etc., for the administration of offshore corporations (and the management of SPVs).

manage their portfolios of U.S. securities. BIS data show that Cayman banks are huge net importers of cash deposits of "non-bank" agents. Anecdotal evidence confirms that rich persons use the Cayman Islands for wealth management purposes.³² The U.S. securities held by Cayman banks on behalf of foreign residents are recorded as liabilities of the U.S. vis-a-vis the Cayman Islands by the TIC survey, though they should not. Thus, TIC data may over-estimate the true U.S. holdings of the Cayman Islands.

It is impossible on a priori grounds to say which problem is likely to dominate. We can, however, see what happens in Bermuda, the CPIS-participating OFC which is the most akin to the Cayman Islands.³³ Between 2001 and 2004, Bermuda's CPIS-reported claims on the U.S. \hat{A}_{ij} were very close to U.S. TIC-recorded liabilities vis-a-vis Bermuda L_{ji} (the \hat{A}_{ij}/L_{ji} ratio was between 0.9 and 1.17³⁴). Since 2005, Bermuda's U.S. claims have been between 1.3 and 1.5 larger than TIC-recorded liabilities. The Bermudian example shows that the TIC data must be taken with care, and suggests that I may significantly under-estimate the Cayman Islands' holdings of foreign securities.

To sum up, the best available estimate, backed by two fully independent dataset, is that total Cayman holdings of foreign securities amounted to USD 1.2tr in 2008, down from USD 1.6tr in 2007. The key uncertainties that surround these figures are: (i) the location of the master funds in which Cayman hedge funds invest; (ii) the extent to which Cayman funds use non-Cayman and non-U.S. custodians; (iii) the holdings of SPVs and trusts. Overall, it is likely that my estimate understates the foreign holdings of the Cayman Islands. Hence, the figures in Table A6 and col. 3 of Table A1 should be considered as being on the low-end.

 $^{^{32}}$ See, e.g., the detailed testimony of a former Cayman Islands banker to the U.S. Senate (2001). Note also that 8,000 U.S. persons reported to the IRS that they owned an account in the Cayman Islands in 2008 (U.S. Government Accountability Office, 2008), a lower bound for the true figure.

³³Bermuda is the largest "small international financial center" in the CPIS, and like the Cayman Islands a U.K. Overseas Territory (hence has English as official language), located close to the Caribbean sea (Bermuda is in the Atlantic), with a very high GDP per capita (USD 90,698 versus USD 57,222 for the Cayman Islands (Lane and Milesi-Ferretti, 2010)) and a fixed exchange rate with the U.S. dollar. Bermuda also hosts an important hedge fund industry (Sullivan, 2008).

³⁴This, however, conceals important discrepancies by asset class: Bermuda reported significantly more debt assets on the U.S. than the U.S. recorded debt liabilities vis-a-vis Bermuda (with a \hat{A}_{ij}/L_{ji} ratio of 1.1-1.6). The opposite was true for equities (with a \hat{A}_{ij}/L_{ji} ratio of 0.2-0.4). The debt discrepancy can be explained by Bermuda's holdings of U.S. international securities through custodians in Luxembourg and Belgium (Clearstream and Euroclear Bank), and more generally by the fact that Bermuda, still a relatively small OFC, may not have developed yet a substantial domestic custody industry.

But importantly, the uncertainty surrounding Cayman holdings is irrelevant for the computation of the unrecorded global offshore wealth of households Ω . This is because I compute the Cayman Islands' cross-border portfolio *liabilities* using the same data and the same assumptions as those used to estimate Cayman assets (see Section B below). For instance, fund holdings may be USD 1tr larger than my preferred estimate, but if it is the case, the Cayman Islands' equity liabilities would also be USD 1tr larger than my preferred estimate. This would leave unchanged the global asset-liability discrepancy.

A.3 Other corrections for CPIS-reporting countries

Besides the crucial correction for the Cayman Islands, I only make two minor corrections to the raw assets data reported in the CPIS.

A.3.1 Netherlands SFIs

The first is to upgrade the assets reported by the Netherlands, which exclude the assets of Netherlands' special financial institutions (SFIs). SFIs are holding companies, finance companies that extend loans to foreign group corporations and are financed from abroad, and more generally "resident enterprises or institutions, irrespective of their legal form, in which non-residents hold a direct or indirect participating interest through a shareholding or otherwise and whose objective is or whose business consists to a major extent of receiving funds from non-residents and channelling them to non-residents" (De Nederlandsche Bank, 2009, p. 3).

All figures sent by the Netherlands to the IMF, whether for its balance of payments, international investment position, or for the CPIS, exclude the assets of SFIs.³⁵ The EWNII figures are equal to those reported to the IMF. Now, all data should be based on the residence principle defined by the Balance of Payments Manual (IMF, 1993).

³⁵See the country notes for the Netherlands in the IMF *Balance of Payments Statistics* (2009): "The residence of enterprises operating in free trade zones is not recorded following the residency criteria of BPM5. Special Financial Institutions (SFIs) are considered residents of the Netherlands [in the BPM5]. These entities play a significant role in the Dutch balance of payments. However, the size of their transactions also leads to distortions of individual balance of payments items. For this reason, DNB [de Nederlandsche Bank] publishes two balance of payments statements: one including and one excluding SFIs. The Dutch balance of payments reported to the IMF consists of only national figures, i.e., SFIs are excluded."

So, throughout the paper, I use the IIP published by the DNB with SFIs included. It does not make a great difference on the portfolio assets side (less than USD 100bn), since SFIs are mainly holding companies that don't own portfolio assets but direct investments. However, it makes a significant difference (more than half a trillion USD) on the liabilities side.

A.3.2 Other

The second correction consists in filling in the gap for the few CPIS countries that have not participated each year. For instance, Bahrain did not report in 2002 and 2003. To fill in the gap, I simply use Bahrain's share in total CPIS-countries assets in 2004, and apply it to the 2002 and 2003 totals. The same interpolation technique is used for Barbados (2001-2002), Gibraltar (2001-2003), India (2001-2003), Latvia (2001-2005), Kuwait (2001-2002) and Mexico (2001-2002). Col. 4 of Table A1 adds the correction for Netherlands' SFIs and for the missing years.

The key limitation of the CPIS is that a number of countries did not participate during the period covered by the present study (2001-2008), in particular most Middle-Eastern oil-exporters (Oman, Qatar, Saudi Arabia, the United Arab Emirates, Iran and Iraq), China, Taiwan, and the British Virgin Islands. I explain below how I construct estimates of the aggregate securities holdings of (i) China, (ii) Middle-Eastern oil exporters and (iii) all other non-CPIS participating countries.

A.4 China (Table A7)

China did not participate in the CPIS, and we know that it did not participate in the SEFER either (figures reported in the SEFER are too low to be consistent with a participation of China, see Wooldridge (2006).)

I start with the Chinese data on official foreign exchange assets, reported in the IMF International Financial Statistics (IFS) line 1d.d, and reproduced in Table A7, line 2. I assume that 85% of China's foreign exchange reserves are invested in securities.³⁶ The

³⁶Foreign exchange reserves (1d.d) "include monetary authorities' claims on nonresidents in the form of foreign banknotes, bank deposits, treasury bills, short- and long-term government securities, ECUs

85% figure is on a best-guess basis. On average, reserve assets tend to be invested more conservatively, i.e., with a higher fraction in non-risky bank deposits (around 25% since the middle of the 1990s³⁷). However, the BIS dataset on the deposits held by official monetary institutions shows that only 3% of Chinese reserves were deposited in BISreporting banks at the end of March 2006 (Wooldridge, 2006, p. 37). China's central bank may be particularly risk-taking or may hold the bulk of its foreign currency banknotes in Chinese onshore banks — which do not report to the BIS. The 85% figure tries to catch a balance between the two scenarios. If we were to assume that all Chinese foreign exchange reserves are invested in securities, the resulting estimate of Ω would only be trivially affected.

The figures for China's portfolio of publicly-held foreign securities are displayed in line 3 of Table A7 and col. 6 of Table A1. I also estimate the amount of China's privately-held portfolios (i.e., non reserve assets), based on China's (imperfect) international investment position (Table A7, line 9, 10, and 11). The IIP starts in 2004 and is established at book value, which means that equity assets were underestimated during the bull market of 2004-2007. Accordingly, for equities, I only use the 2008 IIP figure: on december 31st 2008 the global stock market was low, with major stock indices flat or negative on a 10 years period, so at that time book values were probably not far from market values. I then extrapolate backwards using the proportional change of U.S. equity liabilities visa-vis China (from the monthly TIC estimates of Bertaut and Tryon (2007)). For debt assets, I use the IIP figures for 2004-2008 and extrapolate backwards similarly.

At the end of 2008, the resulting Chinese portfolio of foreign securities (Table A7 line 15, and Table A1 col. 5) amounted to USD 1.9tr, of which 87% were reserve assets. It means that China was the 7th largest holder of foreign securities, with assets comparable to those of Germany and Luxembourg (USD 2.1tr).

⁽for periods before January 1999), and other claims usable in the event of balance of payments need" (IMF, 2009). By adding reserve positions in the IMF and the U.S. dollar value of SDR holdings by monetary authorities, we get Total Reserves Minus Gold (line 1 l.d, reproduced here in Table A7, line 1); adding Official Gold Holdings (line 1ad) we get total reserve assets.

 $^{^{37}}$ See Wooldridge (2006, p. 31). The same pattern emerges when we restrict the attention to reserves invested in U.S. dollars: McCauley (2005, p. 59) documents that 24.2% of estimated dollar reserves at end-June 2004 were bank deposits (17.9% in non-U.S. banks, 6.3% in U.S. banks).

Regarding portfolio composition, I compute the share of equities in China's portfolio using the share of equities in its portfolio of U.S. assets (from the TIC survey of U.S. liabilities). At year-end 2008, 95% of China's foreign portfolio consisted of bonds. China was accordingly the 3rd largest foreign bond-holder in the world, close to France (USD 2.0tr) and behind Japan.

Lastly, my estimate for total public plus private Chinese securities assets can be compared with the TIC data on Chinese holdings of U.S. securities (Table A7 line 19-22). The ratio between China's (observed) U.S. securities holdings and China's (estimated) total foreign securities appears to be very stable in the 69-76% range throughout the period (Table A7 line 23). This is coherent with other studies³⁸ and suggests that China had probably not significantly diversified away from the U.S. dollar over the period. Estimating the value of China's foreign securities by using the TIC survey and assuming a constant U.S. share (say 70%) would give fully convergent results.

A.5 Middle Eastern oil exporters (Table A8)

Middle Eastern oil exporting countries are Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates. Sovereign Wealth Funds (SWFs) play an important role in their accumulation of foreign claims. SWFs are publicly controlled funds investing budgetary and extra-budgetary savings (here coming mainly from oil revenues). At the time of this paper, Middle East countries' SWF assets were not considered reserve (IMF, 2007, p. 14), contrary for instance to Russia's. Thus, we can distinguish three kinds of investors in Middle East oil exporting countries: i) central banks (accumulating reserve assets); ii) sovereign wealth funds, iii) other investors (wealthy private families, other households, private financial and non-financial corporations). I call public assets reserve plus SWF assets.

³⁸See, e.g., Setser and Pandey (2009), who compute a U.S. share of 66% in February 2009. The small discrepancy with my estimate comes from the fact that Setser and Pandey try to capture China's holdings held offshore, e.g. with Hong-Kong or U.K. custodians (this also explains why they have a somewhat larger figure for total Chinese assets, i.e. USD 2.2tr in February 2009 vs. USD 1.9tr for my december 2008 estimate).

A.5.1 Available data and assumptions

Data on Middle Eastern oil exporters are scarce. In Table A8, I gather the available evidence and present my computations. Each country publishes its reserve holdings (Table A8 line 17), but these figures exclude SWF holdings (and include deposits, not only securities),³⁹ so the coverage of Gulf countries' foreign holdings in standard dataset is significantly incomplete. We only have good data for Saudi Arabia.⁴⁰ Several figures on SWFs holdings circulate in the public domain, but they are not based on official publications. At the time of this paper, there is no way to assess their accuracy: they could be far from the truth.⁴¹ Private assets should be captured by the portfolio part of the IIP, or by cumulating outward private flows, but only Kuwait and Bahrain compile an IIP and participate in the CPIS, and few countries provide detailed flow data.⁴²

Given the difficulties in identifying all Middle Eastern oil exporters' holdings, I sim-

⁴¹The greatest uncertainty surrounds the holdings of the Abu Dhabi Investment Authority (ADIA), with, at the end of 2007, "some estimates as low as USD 250bn and as high as USD 1.3tr" (Setser and Ziemba, 2007, p. 6).

⁴²Qatar and the United Arab Emirates don't disseminate BoP data. When BoP or other flow data exist, there is often no distinction between equity and debt. Lane and Milesi-Ferretti (2007) provide portfolio asset estimates based on cumulated flows for Iran, Oman, Qatar and the United Arab Emirates. Equity assets of Qatar and Iran are set to zero. As far as debt is concerned, there is no breakdown between portfolio and other debt (i.e., bank deposits and loans).

³⁹In 2010, Saudi Arabia revised its reporting method. Before 2010, Saudi Arabia's sovereign wealth fund assets, which are managed by the Saudi Arabian Monetary Agency (SAMA), were excluded from the reserve figures reported by Saudi Arabia to the IMF. From 2010 on, SAMA's sovereign wealth funds are classified as reserve assets. Saudi Arabia has provided revised reserve figures starting in 2005. In order to insure continuity, in line 17 of Table A8 I stick to the old classification, in which reported reserves asset exclude Saudi Arabia's sovereign wealth fund.

 $^{^{40}}$ SAMA publishes its balance sheet monthly (http://www.sama.gov.sa/sites/samaen/ ReportsStatistics/statistics/Pages/MonthlyStatistics.aspx). The first column of Table 8a in SAMA (2010b, p. 16) refers to reserve assets (labelled "issuance department assets" in the annual report (SAMA, 2010a, p. 416)) in the old definition of reserve assets (see the above footnote). At the end of 2008, Saudi Arabia had 121,066 million riyals in reserve (including gold), i.e. USD 32.3bn, of which 1,556 million Riyal in gold holdings (SAMA, 2010b, Table 9 p. 20). This is strictly consistent with the data reported to the IMF in the 2008 edition of the International Financial Statistics (i.e., before SAMA changed its reporting method). Col. 2-6 of SAMA (2010b, Table 8a) refer to Saudi Arabia's sovereign wealth fund holdings (labelled "banking department assets" in the annual report). At the end of 2008, Saudi Arabia's SWF had 1,154,247 million rivals in foreign securities (USD 307.8bn) and 379,487 million rivals in deposits with banks abroad (USD 101bn, i.e. bank deposits amounted to 24%of the SWF assets). Lastly, SAMA (2010b, Table 8a part 2 p. 17) reports the assets of the "independent organizations" managed by SAMA (these are the Public Pension Agency, the General Organization for Social Insurance, the Development Funds and other institutions). At the end of 2008, they had 227,648 million Riyals (USD 60.7bn) in foreign securities. Assuming that 75% of SAMA's IMF-reported foreign exchange reserves were invested in securities, Saudi Arabia had USD 390bn in foreign securities at the end of December 2008, disregarding its private holdings. Note that in the revised reserve figure published in the 2010 edition of the IMF International Investment Statistics, Saudi Arabia has USD 440bn in reserve assets (line 1d.d., which includes deposits) at the end of 2008.

plify matters as follows. I include all the securities held offshore by Middle Eastern oil exporters in my "unrecorded household offshore wealth" total Ω . Therefore, for the purpose of computing the sum of all identifiable assets worldwide (Table A1), we only need to estimate the onshore holdings of oil exporters. The best way to do so is to use counterpart countries data, i.e, most notably the TIC survey of U.S. portfolio liabilities. By definition, the TIC survey tells us the value of all the U.S. securities directly held by oil exporters – that is, through banks in the Middle East, not through Swiss or U.K. custodians. We can then apply an estimate of the share represented by U.S. securities in the portfolio of Middle Eastern oil exporters to get the value of their total onshore portfolio.

The U.S. Treasury does not publish country-level holdings of Middle-Eastern oil exporters, but an aggregate figure for Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates. I take the value of the U.S. long-term securities held by oil exporters (Table A8 line 7) directly from the monthly TIC estimates produced by Bertaut and Tryon (2007). For short-term securities, the Treasury survey of U.S. banking liabilities cannot be used, because it does not disentangle between Asian oil-exporters' different kinds of short-term claims (deposits, securities, other). I compute Middle Eastern oil exporting countries' holdings of short term U.S. debt (Table A8 line 10) from their holdings of long-term securities, assuming a short-term/long-term ratio equal to the average short-term/long-term ratio for all foreign official institutions' holdings of U.S. securities.⁴³

To estimate the share represented by U.S. in the portfolio of Middle Eastern oil exporters, I have looked at all the geographical breakdown estimates published recently.⁴⁴

⁴³Total long-term U.S. holdings of foreign official institutions (FOI) come from the March 2010 release of the Bertaut and Tryon (2007) database; total short-term U.S. securities of FOI are line 5 + line 6 of the Historical Liabilities to Foreigners by Type and Holder dataset, downloaded on June 16, 2010 from http://www.ustreas.gov/tic. Note that "foreign institutions" in the TIC survey include sovereign wealth funds: "Contrary to the assumptions of many data users, the holdings of foreign official institutions as reported in the TIC system consist of more than the foreign reserve asset holdings of central banks and of other foreign government institutions involved in the formulation of international monetary policy. They also include the holdings of foreign government-sponsored investment funds and other foreign government institutions." (Bertaut et al., 2006, p. A63).

 $^{^{44}}$ These are: APICORP (2006), Setser and Ziemba (2007), Woertz (2007), Handy et al. (2008) and Setser and Ziemba (2009).

They share three convictions: (i) the U.S. share is high, much higher than the U.S. share in exports or the average share of the U.S. in global cross-border positions. (ii) However, most authors point to a somewhat declining share of the U.S. in recent year — though the exact magnitude of the decline is debated — and a diversification towards Europe, Japan, and emerging economies. (iii) The diversification strategy mainly concerns the most "aggressive" SWFs (Abu Dhabi Investment Authority, Kuwait Investment Authority, Qatar Investment Authority), whereas the biggest player, the Saudi Arabian Monetary Agency, may still invest the bulk of its assets in the U.S.

I find that assuming for 2001 a 70% share of U.S. assets, and then a regular decline of 2 percentage points per year fits the various available estimates best (Table A8 line 14). The 70% figure for 2001 matches the USD share of oil exporting countries' deposits in BIS-reporting banks (Stever et al., 2006, p. 18), and corresponds to the oldest estimates (usually in the 70-75% range). The 56% figure for 2008 matches the most recent estimates and various back-of-the-envelope computations suggesting that only 50% of Gulf countries' capital outflows have been invested in the U.S. in recent years.

A.5.2 Results and discussions

The resulting onshore portfolio of Middle Eastern oil exporters is displayed in col. 7 of Table A1 and line 15 of Table A8. In 2008, for instance, oil exporters owned USD 582bn of foreign securities onshore. Though mostly publicly held, a surprisingly high share of their portfolio seems to be invested in equities (40-50% throughout the period, except at the end of 2008), suggesting a markedly different investment pattern than in China.⁴⁵

How large is the likely offshore portfolio of Middle Eastern oil exporters? Historically, oil exporters have been key players in the offshore wealth management market: in the beginning of the 1980s, Middle East countries owned around 20% of Switzerland's fiduciary deposits (see Table A25 col. 3). Today, a significant fraction of their holdings are certainly in custody in U.K. and Swiss banks, hence wrongly attributed by the U.S. TIC

 $^{^{45}}$ The high share of equity assets in Gulf countries' portfolio is consistent with available anecdotal evidence. For instance, McKinsey (2007, p. 53) estimates that 46% of the assets held by petrodollars investors are in equities, 42% in bonds and cash, and the remaining 12% in FDIs and alternative investments.

to the U.K. and Switzerland.⁴⁶ This is particularly true for wealthy private families, for which going offshore is a sensible diversification strategy.

We can guess the size of Middle Eastern oil exporting countries' offshore portfolio by comparing my estimate of their onshore holdings (Table A8 line 15) with other estimates that include offshore holdings.

Setser and Ziemba (2009) put Gulf Cooperation Council (GCC⁴⁷) States' assets at USD 1,200bn in 2008. Assuming that 85% were invested in securities (which is more than in Saudi Arabia, where the securities share is 75%), and that Iran and Iraq (the 2 non-GCC oil exporters) have 0 portfolio asset, this figure implies that Middle Eastern oil exporters had securities holdings of around USD 900bn at the end of 2008 (Table A8 line 25). Setser and Ziemba (2009) cumulate the GCC States' current account balances overtime, a method that should in theory capture offshore holdings.⁴⁸ Their securities asset figure is between 1.4 and 1.7 larger than my estimate of Middle East oil exporters' onshore holdings: if Setser and Ziemba (2009) are right, around 40% of oil exporters' foreign securities are held offshore (Table A8 line 27).

Lane and Milesi-Ferretti (2007) also estimate the total assets of Middle East oil exporters. Their portfolio equity figure (Table A8 line 30) is comparable to my onshore estimate.⁴⁹ They don't have a portfolio debt figure, but we can infer one from their total debt asset figure as follows. Debt assets include portfolio debt, deposits with foreign banks, loans, trade credit, and other debt assets. By definition, private debt assets plus reserves minus deposits in BIS-reporting banks is an upper bound for portfolio debt assets.⁵⁰ In line 31 of Table A8, I assume that 20% of the (debt assets + reserve - deposits

⁴⁶Here, one should not confuse the process of using a foreign institution for securities trading, i.e. using a U.K. broker to buy U.S. bonds, and using an offshore custodian for safekeeping, i.e. when a country *i* entrusts its claims on *j* to a custodian which is neither in *i* nor in *j*. Middle Eastern oil exporters, as others, routinely use foreign brokers, which explains why oil exporters are not very apparent in the U.S. Treasury transactions dataset. The use of foreign custodians, however, is a very different thing, and less frequent (which is why the "transaction center bias" is much more pronounced in the TIC data than the "custodial center" bias).

⁴⁷GCC States are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

⁴⁸Setser and Ziemba (2007) assume that all surpluses are channeled to public investment funds (reserve or SWF), except for Saudi Arabia where they assume that one quarter goes to private hands. Their estimate can thus be read as including almost all GCC assets, public plus private.

⁴⁹Note that in some cases (Qatar, Iran), equity assets are 0 in the EWNII database, and Iraq is not included in the database.

⁵⁰It is an upper bound because deposits in BIS banks do not capture all cross-border deposits: Middle

in BIS banks) residual takes the form of loans, trade credit, deposits in non-BIS reporting banks, etc., and that 80% takes the form of debt securities. In this computation, I exclude Bahrain which publishes an IIP (Bahrain's sovereign wealth fund has negligible holdings), and add Bahrain's reported portfolio debt asset in the end.

Summing the portfolio equities and debt securities figures, we get an estimate of the securities held onshore and offshore by Middle Eastern oil exporters. Subtracting my onshore holding estimate, we get the implied offshore holdings (Table A8 line 36). They are comparable, if a bit higher, to those implied by Setser and Ziemba's (2009) study: Lane and Milesi-Ferretti's figures imply that 50-60% of Middle Eastern oil exporters' portfolio is held offshore. This is around 10% of my "unrecorded household offshore wealth" total Ω (Table A8 line 38).

Anecdotal evidence suggests that public institutions and not only wealthy families use offshore custodians.⁵¹ As the focus of this paper is on private offshore wealth, some might find desirable to exclude central banks' or sovereign wealth funds' offshore holdings from Ω . But the distinction between private and public wealth is not always clear, and the fact that public institutions and not only private individuals use offshore custodians is interesting *per se*. It may reflect fears of assets freezing, as happened in the past (for instance when the U.S. froze Iranian assets in 1979⁵²), fears of stricter financial disclosure rules in the wake of 9/11, or infrastructure risks (trading of U.S. Treasury securities was interrupted in the U.S. in September 2001, but still functioned in Europe). It has been an important driver in the development of the offshore wealth management business, and is still part of the puzzling anomalies in global accounts. The use of offshore banks by official

East countries can have deposits in non-BIS reporting banks. And debt assets include loans and trade credits in addition to deposits.

⁵¹See McCauley (2005). Official offshore holdings have historically been important for bank deposits, and driven by the positive yield differential between interests on eurodollar accounts in London and interests on onshore U.S. bank accounts. The differential existed because (i) capital controls *de facto* segmented the onshore and offshore dollar money market, and (ii) U.S. reserve requirements made it costlier for U.S. banks to borrow in the U.S. and advantageous to finance themselves from London, driving up the interests rates there, even after the abolition of U.S. capital controls in 1974. Although the yield differential has disappeared since the end of the 1980s, the habit of holding a large share of reserve USD deposits in offshore banks has remained (McCauley, 2005, p. 62). Much less, however, is known regarding the use of offshore custodians for reserve securities holdings, which is our primary concern here, and cannot be explained by any yield differential.

 $^{^{52}}$ See Hufbauer et al. (1990) cited in McCauley (2005, p. 60)

institutions explains, in particular, why BIS figures on central bank accumulation of USD deposits differ from U.S. sources on official financing of the U.S. current account deficit, a discrepancy that has preoccupied economists and policy-makers alike (McCauley, 2005; Summers, 2004). I choose, accordingly, to include Middle Eastern oil exporters' official offshore holdings in Ω .

Although oil exporters raise important data challenges, we can be confident that my estimate for their onshore holdings is meaningful, i.e. that it includes all onshore holdings (around USD 600bn in 2008), and that offshore holdings (maybe around USD 500bn in 2008) are not many times larger than onshore holdings. I provide below two additional consistency checks supporting this claim.

First, we can turn to the Japanese survey of portfolio liabilities⁵³ to get an idea of Middle Eastern countries' identifiable investments in Japan, and see if they are in line with my estimate of their total onshore holdings. They are. Middle Eastern countries' identifiable assets in Japan reached USD 100bn at the end of 2008, which is around 15% of their estimated total onshore portfolio (Table A8 line 39). This figure is higher than Japan's share of world GDP, but well in line with the diversification assumption: oil exporters' Japanese holdings seems to have been multiplied by 10 in nominal terms between 2001 and 2008, pushing the ratio between Middle Eastern identifiable investments in Japan and in the U.S. from 0.1 to 0.3 (Table A8 line 41).

Second, we have good data for Saudi Arabia, which is by far the largest oil exporter (Saudi's exports top Kuwait's and UAE's taken together). Saudi Arabia's net oil balance is 40-45% of the Middle East's (Table A8 line 44).⁵⁴ Now, Saudi Arabia's total foreign portfolio assets account for 45-55% of my estimated Middle Eastern countries' onshore holdings throughout the 2001-2008 period.⁵⁵ The figure for Saudi assets (line 42 of Table A8) includes reserve, SWF and pension funds assets,⁵⁶ whether held onshore or

⁵³Table 4 of the CPIS downloaded on October 25th, 2008, from http://www.imf.org/.

⁵⁴Data are from the IMF World Economic Outlook.

 $^{^{55}}$ Except in 2008, where Saudi Arabia's share rises to 66%, which is consistent with the widely shared belief that SAMA has a more conservative portfolio than ADIA, KIA and QIA, i.e. was more heavily invested in bonds and in U.S. dollars when the financial crisis hit.

⁵⁶Note that Saudi Arabia's private mutual funds holdings, not included here, are negligible (USD 4.2bn of foreign securities assets at the end of 2008 (SAMA, 2010a, p. 284).

offshore. The consistency between Saudi Arabia's total assets divided by total Middle Eastern onshore holdings, and Saudi Arabia's share in the Middle East's net oil balance, suggests that offshore public wealth is not many times greater than onshore public wealth (otherwise SAMA's holdings would be a much greater percentage of the estimated onshore holdings of Middle Eastern countries). Total Gulf holdings are larger than their onshore holdings, but not many times so.⁵⁷

Some uncertainties remain about the portfolios held by oil exporters. However, the estimate presented in col. 7 of Table A1 rests on solid foundations, namely the U.S. TIC data for (directly-held) assets in the U.S. Total holdings of Middle Eastern countries are larger, but (i) not hugely so (maybe around twice larger); (ii) assets not captured in col. 7 of Table A1 are, by construction, offshore assets that we want to include in Ω , hence exclude from Table A1.

A.6 Other countries (Table A9)

Besides China and most Middle-East countries, smaller investors with non-zero portfolios do not report to the CPIS, most notably Algeria, Angola, the British Virgin Islands, Croatia, Libya, Nigeria, Morocco, Peru, Serbia, Slovenia, Taiwan, and Vietnam. I estimate on the one hand their private holdings and on the other their reserve assets. Table A9 presents the computations, which are summarized in col. 11 of Table A1 (private holdings) and col. 12 of Table A1 (reserve holdings).

A.6.1 Private assets

Private (i.e., portfolio) holdings of non-CPIS participating countries, besides China and Middle East oil exporters, come from two sources. Most data come from the updated and extended External Wealth of Nations mark II (EWNII) database (Lane and Milesi-

⁵⁷Note, however, that SAMA data slightly understate Saudi Arabia's total holdings. For instance, Saudi Arabia's holdings in BIS-reporting banks are slightly higher than cross-border bank deposits reported by SAMA. In December 2008, SAMA reported USD 101bn (SWF) + 8bn (25 % of reserve, old definition) + 4bn (pension funds) = USD 113bn of foreign bank deposits; the BIS locational banking dataset put Saudi Arabia's foreign deposits at USD 180bn, of which USD 39bn belonged to the non-bank sector not covered by SAMA (see BIS Table 7A and 7B, http://www.bis.org/statistics/bankstats.htm).

Ferretti, 2007). Data for small international financial centers (Andorra, Anguilla, Liechtenstein, Monaco, Montserrat, Nauru, Palau, the British Virgin Islands, etc.) come from my own computations.

External Wealth of Nations countries Most non-CPIS participating countries are included in the EWNII. When no international investment position is compiled, EWNII stock estimates are built by cumulating balance of payments flows with valuation adjustments. The reader is referred to Lane and Milesi-Ferretti's (2007) paper and its appendix for all the details.

I take the equity asset figures of non-CPIS countries covered by the EWNII directly from the EWNII database. At the time I wrote this Appendix, the EWNII ended in 2007. I compute the 2008 equity asset levels as 0.575 times the 2007 level. The 0.575 factor is equal to the ratio: equity assets privately owned in the 2008 CPIS / equity assets privately owned in the 2007 CPIS.

Things are more complicated for portfolio debt, because in most cases, the EWNII only gives a figure for portfolio debt plus other debt assets (which include, e.g., cross-border bank accounts). Portfolio debt is identified only for the countries that publish their international investment position. For them, total debt assets are, on average, 5 times larger than portfolio debt assets (it is an unweighted average). Accordingly, I compute portfolio debt as 20% of total debt when the former is missing. I compute the 2008 level as 0.913 of the 2007 level. 0.913 is equal to the ratio: debt assets privately owned in the 2008 CPIS / debt assets privately owned in the 2007 CPIS.

Lines 7 to 12 of Table A9 present the results. As the reader can see, the largest non-CPIS country covered by the EWNII, besides China and Middle East oil exporters, is Taiwan (Table A9 line 10).

Small Offshore Financial Centers Countries which are not in the EWNII database are mostly small offshore financial centers.⁵⁸ I proceed as follows. First, I compute their portfolio liabilities by summing all the claims that CPIS-participating countries report

⁵⁸All other countries or territories have negligible assets. The only exception is Iraq. It is absent from the EWNII database, but I include it in my Middle Eastern oil exporters aggregate.

on them. Second, I assume that they have a zero net portfolio position, so their assets \hat{A}_i are given by:

$$\hat{A}_i = \sum_j \hat{A}_{ji}$$

Note that the CPIS-derived liabilities $\sum_j \hat{A}_{ji}$ are not computed from the raw CPIS data, but from the modified CPIS data that correct for the Cayman Islands' non-bank sector. The correction matters because Cayman funds have significant links with funds in other OFCs (through master/feeder structures). In particular, the extended gravity model suggests that Cayman funds owned more than USD 100bn on the British Virgin Islands in 2008. In turn, it implies that the British Virgin Islands had at least USD 100bn in foreign assets. The methodology used in this paper makes sure that *all* countries and jurisdictions are included in my estimate of total securities assets and that the entire dataset is internally consistent.

Lines 13 to 18 of Table A9 present my estimate of the portfolio claims held by the small international financial centers which are neither included in the CPIS nor in the EWNII. As the reader can see, the largest center is the British Virgin Islands (line 16) which, I estimate, had USD 231bn in portfolio claims at the end of 2007.⁵⁹

The total private holdings of non-CPIS countries, excluding China and Middle Eastern oil exporters, are displayed in lines 5 and 6 of Table A9, and copied in col. 11 of Table A1.

A.6.2 Reserve assets

The reserve assets of non-CPIS countries, excluding China and oil exporters, are displayed in the first panel of Table A9 (lines 1 to 4) and copied in col. 12 of Table A1. In order to compute them, I start with the foreign exchange figures that each country reports to the

⁵⁹Note that in official IIP statistics Liechtenstein is included in Swiss data and Monaco in French data. Hence by including these countries' assets in my world total, I somewhat over-estimate the global amount of identifiable claims. This issue is mitigated by the fact that I also include these countries' liabilities in my global amount of identifiable liabilities. So my global gross securities positions are slightly too high, an issue which on net makes practically no difference (i.e., should not affect my estimate of the total unrecorded wealth). I am grateful to an anonymous referee for pointing this issue to me.

IMF (International Financial Statistics, line $1d.d^{60}$). All reserve assets are not invested in securities (some of them are invested in bank deposits), and we don't know the deposits / securities breakdown. Following Wooldridge (2006, p. 31), I assume that securities account for 75% of foreign exchange reserves and bank deposits for 25%. The SEFER survey shows that around 1.5% of the securities held as reserve are invested in equities, and 98.5% in bonds. Therefore, I assume that bonds are 74% of foreign exchange reserves and equities 1%.

A.7 Total securities assets (Tables A1, A4-A5)

Total identifiable securities assets (Table A1 col. 13) are obtained by summing CPISreported assets (including securities held as reserve and by international organizations), the corrections for CPIS-participants (Cayman Islands and other), and the assets of China, Middle-Eastern oil exporters, and other non-CPIS countries. We see that the CPIS captures the vast majority of all identifiable assets: the ratio between CPIS-reported claims and all identifiable claims was 86% in 2008 (Table A1 col. 15). The ratio has decreased over the period, starting from 93% in 2001. The coverage of the CPIS has somewhat deteriorated.

Securities held as reserve and by international organizations are displayed in col. 14 of Table A1, which is obtained by summing SEFER+SSIO assets, and the reserves of China, oil exporters, and other non-CPIS countries. There is a straightforward way to check that this total is correct. By definition, it must almost be equal to the difference between total non-gold reserve assets held by official monetary institutions, which are reported by all countries in the IMF *International Financial Statistics*,⁶¹ and total reserve held as deposits, which are reported by the Bank for International Settlement (BIS).⁶² We can

⁶⁰"Under Total Reserves Minus Gold (11.d), the line for Foreign Exchange (1d.d) includes monetary authorities' claims on nonresidents in the form of foreign banknotes, bank deposits, treasury bills, shortand long-term government securities, ECUs (for periods before January 1999), and other claims usable in the event of balance of payments need." (*International Financial Statistics*, December 2009, Introduction, p. xiv).

⁶¹And summarized in the IMF COFER database, downloaded on July 27, 2010 from http://www. imf.org/external/np/sta/cofer/eng/index.htm. The total reserve figure in the COFER is the sum of IFS line 1d.d. for all countries.

⁶²BIS locational banking statistics, Table 5C, downloaded on October 22, 2010 from http://www.bis. org/statistics/bankstats.htm.

see in col. 16 of Table A1 that it is indeed the case. The small discrepancy between col. 14 and col. 16 of Table A1 can be explained by three factors:

- Some reserves may be held in banks that do not report to the Bank for International Settlement (for instance part of China's reserves may be held in China).
- The SEFER+SSIO total includes the holdings of international organizations, contrary to the "total non gold reserves minus deposits in BIS-banks" residual.
- Some sovereign wealth funds' holdings might be classified differently in the IMF *International Financial Statistics* and in the SEFER.

Despite these three minor limitations, and considering that col. 14 and col. 16 of Table A1 are almost identical, we can be confident that I have properly accounted for all official holdings in Table A1.

Note that the coverage of reserve holdings by the SEFER survey is significantly worse than the coverage of portfolio holdings by the CPIS. The ratio between all publicly-held securities (col. 14) and SEFER-reported claims (col. 2) is larger than 1.67 in 2008, and has sharply deteriorated, reflecting the fact that China is not reporting to the SEFER.

Table A4 describes who are the main holders of foreign securities. We can distinguish two categories: industrial, emerging and developing countries (left panel) and offshore financial centers (right panel). Note that the figures for industrial, emerging and developing countries only include privately-held portfolios (securities held as reserve assets are aggregated in col. 7). Including reserve holdings changes the ranking of the main investors. For instance, in 2008, Japan was the 4th largest investor in terms of privately held portfolios, after the U.S., U.K. and France. But if we were to include Japan's foreign securities held as reserve (which are included in col. 7), then Japan would move to the 2nd position.

In 2008, 23% of all identifiable securities assets were held by mutual funds and other financial corporations located in offshore financial centers, most notably in Luxembourg, Ireland and the Cayman Islands. This share is slowly growing (21% in 2001). Note also that if we include the amount of unrecorded offshore wealth (Table A4 col. 9, which is

simply Table A3 col. 3) in the total "holdings" of offshore financial centers, then OFCs managed in 2008 31.5% of all (recorded plus unrecorded) cross border securities, a figure which could be disentangled as follows:

- 20% of all cross-border securities were held by mutual funds, banks, special investment vehicles etc. incorporated in tax havens. They appeared on the balance sheet of these institutions, and were well captured by international statistics. Therefore, the *on-balance sheet* wealth management business of tax havens accounted for 1/5 of global cross-border asset trade.
- 11% were held by households through banks in tax havens. They did not appear on the banks' balance sheet, and went unrecorded worldwide. The *off-balance sheet* wealth management business of tax havens accounted for more than 10% of global cross-border asset trade.

Table A5 gives the sectoral breakdown of the portfolios reported to the CPIS: 25% of the securities reported in the CPIS are held by banks; 66% are held by other financial corporations (mutual funds, insurance companies), non-financial corporations and house-holds; and 8% by the public sector. There is substantial heterogeneity across countries; e.g., 75% of Norway's portfolio is publicly held (by Norway's pension fund).

B Global Aggregate Securities Liabilities (Tables A2 and A10-A12)

B.1 External Wealth of Nations data

For portfolio liabilities, I start with the updated and extended version of the External Wealth of Nations (EWNII) dataset constructed by Lane and Milesi-Ferretti (2007). It includes data for the period 1970-2007 and for 178 economies. Col. 1 of Table A2 simply reproduces the total portfolio liability figures of the EWNII. The EWNII has the widest coverage: the sum of all liabilities reported there is slightly larger the sum of all liabilities reported in the published international investment positions sent to the IMF (see Table A2 col. 2).
At the time of this paper, the EWNII ended in 2007. For 2008, I use the international investment position figures published by the IMF. When no IIP is compiled, I assume that 2008 equity liabilities were 57% of 2007 liabilities (95% for debt). These multiplicative factors are equal to the ratio: total (public plus private) assets reported in the 2008 CPIS/total (public plus private) assets reported in the 2007 CPIS.

B.2 Correction to liabilities reported in EWNII

I make a few corrections to the portfolio liabilities figures reported in the EWNII.

B.2.1 No portfolio debt liabilities

In some cases, there is no breakdown in the EWNII between portfolio debt liabilities and other debt, such as bank accounts. To deal with that, I proceed as follows. When portfolio debt liabilities figures are available in published international investment positions sent to the IMF, I use them. When no portfolio debt liability figure is available, I estimate the portfolio debt liabilities L_i of a country j as:

$$L_j = \sum_i \hat{A}_{ij}^{corr}$$

Where $\sum_i \hat{A}_{ij}^{corr}$ denotes the claims reported on j by all CPIS-participating countries, including my corrections (e.g., for the Cayman Islands), and by all non-CPIS participating countries (e.g., the claims of China and Middle East oil exporters on j^{63}). This is to keep an internally consistent dataset. The results are displayed in col. 3 of Table A2. The correction is negligible.

B.2.2 Netherlands

Like for assets, I use the Dutch international investment position that includes special financial institutions (SFIs), rather than the investment position figures reported to the International Monetary Fund (and used in the External Wealth of Nations) which ex-

 $^{^{63}}$ Section C explains how I estimate the bilateral holdings of non-CPIS participating countries.

cludes SFIs. It adds more than half a trillion USD portfolio debt liabilities in 2008 (see Table A2 col. 4).

B.2.3 CPIS-derived liabilities larger than reported liabilities (Table A12)

For most countries j, the raw CPIS-derived liabilities $\sum_i \hat{A}_{ij}$ are smaller than the liabilities L_j reported in the EWNII. Even if all recording systems were perfect, this was to be expected since all countries do not participate in the CPIS.

However for a few countries j, $\sum_i \hat{A}_{ij} > L_j$ (Table A12). This is counter-intuitive: it means that either too much assets are reported by creditor countries in the CPIS vis-a-vis j, or that the EWNII figures underestimate the portfolio liabilities of j. The latter is more likely, for a number of reasons. First, EWNII liabilities are put to 0 in some cases when no balance of payments information is available (e.g. in Panama, Paraguay, or Liberia). Next, liability figures in published international investment positions may miss some liabilities issued offshore (bonds directly issued on the international markets), even with high-standard reporting systems. The French international investment position, for instance, does not record the short-term debt securities issued by French corporations on the international market. This explains why the CPIS-derived short-term debt liabilities of France are larger than the short-term debt liabilities recorded by France in its IIP (which is directly used for the EWNII). Third, when the discrepancy is non-negligible in some years, it can be linked to a particular weakness in the IIP data collection of debtor countries.

Consider the Italian example. In Italy, portfolio liabilities used to be estimated by cumulating adjusted flows before a stock survey was conducted at the end of 2008. The Central Bank of Italy notes that the survey led to a substantial increase in Italy's equity liabilities (Banca d'Italia, 2010, p. 2):

"The new system for the collection of data on investment portfolio stocks is now based on the anonymous security-by-security reporting of the stocks held for investors by depositories. [...] The application of the new method entailed very small revisions for the foreign assets (equities and bonds) in residents' portfolios, for which an annual survey was already made that was very similar to that adopted in the new system [...]. On the liabilities side (equities and bonds issued by residents and held by non-residents) the new system produced stocks that were significantly larger than those published previously. At the end of 2008 liabilities towards non-residents consisting of debt securities amounted to EUR 1,036.7bn under the new system, against EUR 988.5bn under the old system; those consisting of equities and investment funds amounted to EUR 133.7bn under the new system, against EUR 24.3bn under the old system. The gap reflects the imperfections of the method of compiling the statistics under which the data where obtained by summing the flows and adding the valuation adjustments, which gave rise to a systematic distortion over time."

Similar weaknesses can be identified in most of the countries where reported portfolio liabilities in the EWNII are less than the raw CPIS-derived liabilities. The Canadian international investment position at market value relies mostly on flows for equity liabilities combined with a partial survey of stock positions; only 53% of domestic corporations were surveyed in 2004 (Statistics Canada, 2004, p. 73). At the time of this paper, Germany's portfolio liabilities were still computed by cumulating flows (vs. securityby-security custodial and investor surveys for assets).⁶⁴ In Cyprus, portfolio liabilities were only estimated for listed companies.⁶⁵ Lastly, note that international investment positions data can be revised several years after their first publication (e.g., to take into account stock surveys).⁶⁶

In the paper, I make the assumption that liability estimates L_j are accurate. Accordingly, in the few cases where liability figures have obvious deficiencies, it is important to

⁶⁴See the country notes for Germany in the IMF *Balance of Payments Statistics*. As of 2010, "Portfolio investment liabilities are not yet compiled from stock data, but on the basis of modified accumulated flows. It is planned to use stock data for the future in line with further enhancements of the ECB Centralized Securities Database".

⁶⁵See the country notes for Cyprus in the IMF *Balance of Payments Statistics*: "Concerning portfolio investment liabilities, the CSE reports to the CBC stocks of liabilities of listed companies vis-à-vis nonresidents (i.e., equity capital held by nonresident shareholders)".

⁶⁶For instance, the 2007 equity liabilities of Germany were revised upwards by around USD 50bn, and it was not reflected in the version of the External Wealth of Nations database used at the time of this paper.

correct them. So when the raw CPIS-derived liabilities $\sum_i \hat{A}_{ij}$ exceed the reported liabilities L_j , I simply replace the EWNII L_j figures by the CPIS-derived liabilities $\sum_i \hat{A}_{ij}$.⁶⁷ When doing so, I use the raw CPIS data, not the augmented claims that take into account the Cayman Islands' non-bank sector.⁶⁸ This is to make sure that any mistake made in the allocation of the Cayman hedge funds' holdings does not affect the present correction. Note that the IMF made a similar correction when it computed its own global missing stock table for 2002.⁶⁹

The correction is displayed in col. 4 of Table A2, which is simply col. 11 of Table A12. The correction is not negligible, but one order of magnitude smaller than the total missing portfolio wealth (e.g. USD 612bn in 2007 vs. more than USD 5tr of missing wealth). The choice to upgrade the available liability figures in a few cases does not explain any significant part of the gap between securities assets and liabilities at the global level. On the contrary, I have only made limited correction to available liability figures; by definition, the corrections I make in Table A12 are on the low-end, since the raw CPIS-derived portfolio liability understates what would be the true liability L_j recorded by j if its liability survey was accurate.

Looking forward, it seems likely that some portfolio liability figures will be revised. At the time of this research, some large countries (e.g., Germany) still cumulate flows to estimate their portfolio liabilities, whereas they use security-by-security stock surveys for the assets side of their international investment position. The Italian experience shows that cumulating flows can introduce significant inaccuracies. Second, the huge amount of offshore debt issuance makes it difficult to accurately monitor all portfolio debt liabilities.⁷⁰ Third, most statistical efforts have been focused on improving and

⁶⁷Note that Lane and Milesi-Ferretti (2007) already used the CPIS-derived liabilities of Italy instead of the official (old) IIP – they had rightly anticipated that the officially reported figures were too low. Accordingly I do not correct Italy's liability figures reported in the EWNII (see Table A12). I just generalize Lane and Milesi-Ferretti's approach to the few other cases in which reported liabilities in the EWNII or IMF IIP are suspiciously low.

⁶⁸I simply modify the raw CPIS figure by allocating the confidential and unallocated CPIS claims (see Section C below). This has negligible consequences, but is more coherent.

⁶⁹see CPIS Table 14, "Global Discrepancy in Portfolio Investment at end-December 2002", http://www.imf.org/external/np/sta/pi/globaldi.htm#tab14.

⁷⁰We don't know whether offshore issuance of debt securities bias upwards or downwards the global liability figure. For instance, all debt securities issued offshore by U.S. corporations are counted by the U.S. Treasury as foreign liabilities, though some of them could be held by U.S. residents. In this

harmonizing the methods used to compile assets data. There is no such thing as a coordinated portfolio investment liabilities survey.

If improved techniques for liability surveys lead some countries to upgrade their portfolio liability figures, this will increase the gap between identifiable securities assets and liabilities, thus increase my estimate of the amount of unrecorded offshore wealth Ω . As the Italian experience shows, this is a plausible perspective for Germany (where reported equity liabilities, based on modified cumulated flows, have been smaller in recent years than the raw-CPIS derived liabilities).

B.3 Small offshore financial centers

The External Wealth of Nations database has no information on small international financial centers, and a few other small countries. I proceed as follows.

B.3.1 Cayman Islands

For the debt liabilities of the Cayman Islands, I start with the Bank for International Settlements securities statistics (BIS Table 11, and Table 14A and 14B for a breakdown between short-term and long-term debt).⁷¹ They show that the Cayman Islands had issued around USD 1.1tr of international debt in 2008 (Table A6 line 20). If these securities are entirely owned by foreigners, then it gives a good picture of the Cayman Islands' debt liabilities. Note that Cayman funds and structured investment vehicles (SIVs) probably own some of the Cayman-issued debt securities, but we cannot quantify these holdings.

We can compare the BIS figures with the debt claims reported by creditor countries on the Cayman Islands⁷² (Table A6 line 21). Overall, the two series are well in line. However,

case, offshore issuance biases L_j upwards. By contrast, French statisticians disregard short-term debt issued by French corporations on the international market. In this case, offshore issuance biases L_j downwards. Note that the French figures are not affected by the correction described above, because I don't disentangle between short term and long term debt, and that overall CPIS-derived debt liabilities of France are lower than the liabilities France reports in its IIP.

⁷¹http://www.bis.org/statistics/secstats.htm.

⁷²Note that the BIS and CPIS dataset are completely independent: the BIS dataset aggregates securityby-security information coming from several market sources (Dealogic, Thomson Financial Securities Data, ISMA, etc.).

creditor-reported debt claims on the Cayman Islands are 1.25-1.3 larger in 2004 and 2005 than the BIS figures. The BIS has probably missed some Cayman-issued securities. Accordingly, I compute the debt liabilities of the Cayman Islands as the maximum of the BIS and creditor-derived figures (Table A6 line 19).

For equity liabilities, I compute fund equity liabilities and non-fund equity liabilities separately.

For fund liabilities, I use CIMA's *Investment Digests* (CIMA, 2007; 2008; 2009). Specifically, I start with the total net asset values (NAV) of Cayman funds reported in the *Digests*. These NAV overstate the cross-border equity liabilities of Cayman funds, because a substantial fraction of Cayman funds are held by other Cayman funds in master/feeder and funds of funds structures. To deal with that, I assume that 50% of the Cayman Islands' funds investments in master and other funds are investments in domestic funds. Accordingly, I subtract to the NAV of Cayman-domiciled funds 50% of their investments in master and other funds. The remainder captures the net asset value of the funds owned by the rest of the world. This way of proceeding is fully consistent with the strategy adopted in Section A to estimate Cayman funds' holdings of foreign securities. Before 2005 (the first year for which CIMA provides any figure), I extrapolate backwards using the proportional change of the total securities assets of the Cayman Islands (Table A6 line 8).

The resulting fund equity liabilities are displayed in line 22 of Table A6. Note that the funds' equity liabilities are smaller than their portfolio assets (Table A6 line 14). This is the result of two opposing effects. On the one hand, hedge funds are leveraged: they borrow cash to buy securities. This drives their gross portfolio holdings above their net asset value. On the other hand, hedge funds do not invest only in securities, but also, for instance, in derivatives (more than USD 100bn in 2008): this tends to make their portfolio holdings smaller than their NAV, hence smaller than their portfolio liabilities. In 2006, 2007 and 2008, the leverage effect dominates; in 2005 the two effects cancel out.

For the equity liabilities of the non-fund corporations domiciled in the Cayman, I use the TIC survey of U.S. foreign assets. At the end of December 2008, equity assets of the U.S. on the Cayman non-fund sector amounted to USD 61bn (Table A6 line 24), down from USD 184bn in 2007 (Department of the Treasury et al., 2009, Table 30 p. 68).⁷³ This gives a lower bound for the non-fund equity liabilities of the Caymans. It is hard to assess whether this lower bound is far from the truth or not, so I assume that the Cayman non-fund liabilities are simply equal to the U.S. non-fund equity assets on the Caymans.⁷⁴

Total equity liabilities for the Cayman Islands (Table A6 line 22) are the sum of the funds and non-funds liabilities. We can compare these equity liability figures with the equity claims reported by creditor countries on the Cayman Islands (CPIS data corrected plus imputed claims; Table A6 line 25). There is a huge gap. My preferred estimate of Cayman equity liabilities is 2 to 3 times larger than the creditor-derived equity liabilities of the Caymans (Table A6 line 22/25). More importantly, the gap is robust to almost any assumption one can make on the geographical structure of feeder/master and funds of funds arrangements. Take for instance CIMA's 2007 Investment Statistical Digest. It shows that the funds had a USD 2,265bn net asset value, and that they invested around USD 1,559bn in other funds. $^{75}\,$ If we assume that 90% of these funds were in fact domiciled in the Cayman Islands, then we must subtract $0.9 \times 1,559$ bn to the total Cayman funds NAV in order to obtain the value of their cross-border equity liabilities. Even after this subtraction, the Cayman equity liabilities are still larger than the total claims of creditor countries (CPIS corrected plus imputed). Since the 90% assumption is strongly at odds with CIMA's indications that most mater funds are not in the Caymans, there is definitely a significant hole in the identification of the owners of the shares issued by Cayman funds.

 $^{^{73}\}mathrm{I}$ add columns 2 (common stock) and 4 (preferred & other).

⁷⁴To get an independent estimate of non-fund equity liabilities, I have tried the following method. I have used public data on security-by-security holdings of Norway's sovereign wealth funds, broken down by country (available online at http://www.nbim.no/en/Investments/holdings-/). This dataset gives the value of Norway's SWF investment, as well as its share in the capital of each company in which it invests. Thus, we know the total market capitalization of all Cayman Islands' companies in which Norway's SWF invests (note that the SWF does not invest in mutual funds, except for some real estate investment companies). This provides a lower bound for the equity liabilities of the Cayman Islands non-fund sector. In december 2009, 31st, this lower bound is USD 94.2bn; at the same time, U.S. non fund equity claims on the Cayman reached USD 109bn.

 $^{^{75}}$ More precisely, reporting funds invested USD 990bn in master funds and USD 405bn in other funds; and reporting funds accounted for 89.5% of total gross assets.

The low level of assets recorded by the U.S. on Cayman funds is especially striking. At the end of 2008, the U.S. TIC survey shows that U.S. residents reported only USD 35bn of claims on Cayman funds (Department of the Treasury et al., 2009, Table 30 p. 68). This is 20 times less than U.S. portfolio assets owned by the Cayman Islands (which mostly belong to its fund sector), and 30 times less than my preferred estimate of Cayman fund foreign equity liabilities. Given the strong links between the U.S. and the Cayman Islands, it is pretty obvious that the TIC considerably under-estimated the claims on Cayman funds beneficially owned by U.S. residents.

There are four possible explanations. First, U.S. residents may simply hold these claims in self-custody. For instance, a U.S. person can directly invest USD 10mn in a Cayman fund, without any security materializing this claim. The TIC reporting system cannot capture such holdings, and consequently understates U.S. foreign assets. Second, U.S. individuals can use foreign custodians, for instance entrust their claims on Cayman funds to foreign banks (Swiss, Cayman, etc.). In this case, the TIC survey also understates the true amount of U.S. claims on the Caymans.

A third possibility is that the TIC does a pretty good job at capturing the foreign mutual funds shares owned by U.S. residents, and that the bulk of the Cayman Islands' fund liabilities are owned by shell corporations in other tax havens (some, probably most of them, with U.S. resident beneficial owners). For U.S. tax-compliant individuals, investing in an offshore feeder fund is not interesting, because of the passive foreign investment company rules (PFIC). The PFIC rules prevent U.S. investors from avoiding the income tax by investing in foreign funds that don't distribute any income but capitalize all their gains. They aim at leveling out the treatment of domestic and foreign funds.⁷⁶ However, the PFIC status is self-reported by taxpayers: the related taxes can be avoided. Accordingly, non-compliant taxpayers have an incentive to invest trough offshore funds (as long as the funds do not earn too much income subject to withholding taxes⁷⁷). Knowing

⁷⁶Shareholders of a U.S. mutual fund pay taxes each year on their pro-rata share of income and capital gains earned by the fund. Investors in a French mutual fund, by contrast, only pay taxes on distributed income and on realized capital gains when they sell their shares.

⁷⁷To make things clearer, consider the simple example of a Cayman hedge fund investing in U.S. equities and in U.S. debt, and a U.S. person buying a share of this fund. To what extent can she minimize her tax liability? First, since there is no automatic exchange of information between the Cayman Islands

this, compliant hedge fund managers discourage U.S. persons from investing in their offshore feeder funds. They direct them towards their onshore feeder, and use only offshore feeders for tax-exempt U.S. investors (for instance foundations). The solution for U.S. non-compliant taxpayers consists in putting a non-U.S. shell corporation between the offshore feeder and themselves.⁷⁸ In principle, this foreign corporation is a FDI asset for the U.S. (on the tax haven in which the shell entity is incorporated). In practice, this FDI asset goes unrecorded in the U.S. international investment position. The shell entity owns a portfolio equity claim on the offshore feeder. This portfolio equity claim is most probably unrecorded by the country where the shell entity is incorporated (e.g., the Bahamas). This mechanism may explain why the TIC survey records so few U.S. claims on Cayman funds. The low level of recorded claims would not be due to a deficiency of the TIC survey. However, it would leave unchanged the fact that the U.S. under-estimates its net foreign asset position (since, most probably, it does not record the foreign direct investments made by U.S. residents who set up shell corporations in tax havens to hold their portfolio securities).

A fourth, and most likely explanation, for the low level of U.S. claims on Cayman funds, is the fact that U.S. hedge and private equity funds have been unaware of their reporting duties to the TIC for a long time. So a significant amount of claims held by U.S. feeders on offshore Cayman masters probably goes unrecorded. The Federal Reserve Board and the U.S. Treasury are currently working on improving their coverage of U.S.based funds. Looking forward, these improvements will make it possible to know which of the four above explanations accounts best for the low level of U.S. claims recorded on Cayman funds.

and the U.S., the IRS cannot know the income she earns trough the fund: the income tax can be evaded. Second, the fund is not taxed in the Cayman Islands. Third, dividends paid by the U.S. to the funds are subject to a 30% withholding tax that is not refundable. But U.S.-source cross-border interest payments are not subject to any withholding tax, and neither are capital gains. This makes easy for the fund to generate untaxed income (moreover, the withholding tax on dividends can be avoided through the use of derivatives). To sum up, the capital income tax liability of the U.S. investor can easily be reduced to 0, see Sheppard (2008).

⁷⁸At the time of this paper, hedge funds had very limited "know your customer" obligations and were exempt from most anti-money laundering rules. That is, hedge fund managers were not required by law to know if the beneficial owners of the shell corporations investing in their funds were U.S. citizens or not.

Note that the level of claims on foreign mutual funds recorded in the TIC survey is extremely low for all countries, not only for the Cayman Islands. At the end of 2008, over the USD 2,748bn of U.S. equity claims on foreigners, only USD 109bn were on foreign funds. In particular, claims on the 2 largest offshore fund centers, Ireland and Luxembourg, were negligible (resp. USD 7.6bn and USD 4.5bn). In addition to crossborder or self-custody problems, in addition to the use of shell corporations, and in addition to the problems in the reporting of U.S. hedge funds, such low holdings reflect the fact that foreign retail funds are often not registered under the United States Investment Company Act of 1940, which means that their shares cannot be sold to U.S. residents through U.S. banks.⁷⁹

To sum up, the available evidence indicates that the Cayman Islands had large equity liabilities at the end of 2008 (around USD 1tr), and that the bulk of the corresponding claims were missing from counterpart country assets data around the world.

Putting the debt and equity liabilities of the Cayman Islands together, we obtain the Cayman Islands' total portfolio liabilities displayed in line 18 of Table A6. Portfolio liabilities appear to be substantially larger than assets (Table A6 line 8); this is true for both equities (line 22) and debt securities (line 19).

The negative portfolio equity position was to be expected: all offshore mutual fund centers have a negative portfolio equity position, because claims on mutual funds are always counted as equities, even though the funds also invest in bonds.⁸⁰

The negative portfolio debt position is consistent with large-scale securitization taking place through Cayman special purpose vehicles. In a typical securitization operation, a SPV acquires a loan (e.g., mortgage), backing this purchase by issuing international bonds, in particular asset-backed securities (ABS). Securitization is what explains the huge amount of Cayman-issued international debt. Numerous industry reports indicate that the Cayman Islands was the biggest center for securitization in the 2000s. This is confirmed by TIC data on U.S. holdings of foreign ABS: for instance, the U.S. owned

⁷⁹Note, however, that this legislation can be bypassed by investing in an offshore hedge fund that invests in turn in offshore retail funds, since hedge funds are not subject to the Act.

⁸⁰At the end of 2008, Luxembourg had USD 1,413bn of portfolio equity assets versus USD 2,821bn of liabilities; Ireland had USD 649bn of portfolio equity assets versus USD 1,148bn of liabilities.

USD 330bn of foreign long-term ABS in December 2007, of which USD 199bn had been issued in the Cayman Islands (Department of the Treasury et al., 2009, Table 26 p. 56). Securitization implies that Cayman-based SPVs should have a positive net position in "other investments" to balance their negative portfolio debt position. However, there is no data available on SPV assets to confirm this prediction.

B.3.2 Other small offshore centers (Tables A10 and A11)

For the other offshore centers with non-trivial positions not covered by the updated and extended version of the External Wealth of Nations database (the Bahamas, Bermuda, Jersey, Guernsey, the Isle of Man, the Netherlands Antilles, the British Virgin Islands and Liechtenstein), I essentially follow the same method as for the Cayman Islands.

I compute their equity liabilities (Table A10) as max(fund liabilities plus non-fund liabilities; creditor-derived equity liabilities). Fund liabilities are computed as follows:

- Bahamas, Isle of Man, British Virgin Islands: 0 (no data).
- Bermuda: I use the 2001-2008 issues of Bermuda Monetary Authority's *Reports and Accounts*. In 2008, for instance, Bermuda Monetary Authority (BMA) states that Bermuda's funds had a net asset value equal to 171.19 billion Bermudian dollars (BMA, 2009, p. 5), which is USD 171.19bn (Table A10 line 12). I do not try to correct the net asset value figures reported to account for master/feeder structures.
- Jersey: I use the sectoral breakdown of Jersey's portfolio assets reported to the CPIS (CPIS Table 3). In 2008, for instance, Jersey reported to the CPIS that its mutual fund sector had USD 79bn in portfolio assets. I assume that the funds had USD 79bn in equity liabilities (Table A10 line 14).
- Guernsey, Netherlands Antilles: Same as Jersey
- Liechtenstein: I use various issues of the Annual Report of Liechtenstein's Financial Market Authority (FMA). In 2008, for instance, FMA (2009, p. 9) states that Liechtenstein's funds had a net asset value equal to 26.43 billion Swiss France,

which is USD 28bn (Table A10 line 19). I do not try to correct the net asset values reported to account for master/feeder structures.

I compute the non-fund equity liabilities just like for the Cayman Islands, assuming that they are equal to the non-fund equity claims of the U.S. reported in the TIC (see panel 3 of Table A10). Note that because fund data are missing in three relatively important fund centers (Bahamas, Isle of Man, and BVI), and because claims on offshore funds are poorly captured in asset surveys across the world, I probably under-estimate the portfolio equity liabilities of small international financial centers, hence probably under-estimate the unrecorded amount of offshore wealth Ω .

I compute the portfolio debt liabilities, just like for the Cayman Islands, as max(BISreported international debt outstanding, creditor-derived portfolio debt liabilities), see Table A11.

Overall, I estimate that the portfolio liabilities of the small international financial centers (SIFC) not covered by the EWNII database (including the Cayman Islands) accounted for 8-10% of all portfolio liabilities, depending on the year (Table A3 col. 8). This is consistent with the work of Lane and Milesi-Ferretti (2010), who estimate (Table 7 p. 24) that the SIFC accounted for 8% of all-cross border liabilities (portfolio plus FDI plus other etc.) at the end of 2008.

B.4 Other non-EWNII countries and international organizations

Col. 9 of Table A2 gives the portfolio liabilities of all remaining countries (New Caledonia, Réunion, French Polynesia, Puerto Rica, Niue, Suriname, Greenland, Gibraltar, Monaco, Montserrat, etc.), which are very small countries with negligible claims. I equate their portfolio liabilities to the creditor-derived values.

Col. 10 of Table A2 gives the portfolio liabilities of international organizations. For debt, the data come from the BIS database on international securities outstanding (BIS Tables 14A and A4B). For equities, the figures are equal to the equity assets reported in the CPIS-SEFER on international organizations.

B.5 Total securities liabilities (Table A2)

Total securities liabilities are reported in col. 11 of Table A2: this is the sum of the liabilities reported in the EWNII, of the corrections made to the EWNII, and of the liabilities of small international financial centers (Cayman Islands, other), of the remaining small countries and of international organizations.

We can compare this total to the liabilities reported in the EWNII: I estimate that the EWNII has covered 86-87% of all portfolio liabilities throughout the 2001-2008 period (Table A2 col. 12).

It is interesting to compare the portfolio debt liability figures reported in col. 11 of Table A2 with the Bank for International Settlement's series on international debt securities outstanding (Table A2 col. 13). The BIS statistics are compiled completely independently from international investment positions: the BIS uses commercial database on security issues across the world. The BIS defines international securities (as opposed to domestic securities) as "all foreign currency issues by residents and non-residents in a given country and all domestic currency issues launched in the domestic market by non-residents. In addition, domestic currency issues launched in the domestic market by residents are also considered as international issues if they are specifically targeted at non-resident investors" (BIS, 2009, p. 21). Domestic securities are securities issued by residents in domestic currency and targeted at resident investors. Accordingly, all international securities from the BIS viewpoint are not necessarily foreign liabilities from an IIP viewpoint, and vice-versa. Residents can sell securities denominated in foreign currency to residents on the domestic market, or sell securities to residents on the offshore market: both are treated as "international securities" by the BIS, but do not constitute foreign liabilities or assets from a balance of payments perspective (IMF, 1993). Conversely, foreigners can buy securities issued by domestic governments in domestic currency and targeted at resident investors (e.g., foreigners do buy U.S. public debt securities, which are nevertheless considered as "domestic" by the BIS). But all in all, there should be a broad correspondence between cross-border debt securities liabilities and the outstanding amount of international debt issued.

Now, the ratio between international debt securities as computed by the BIS, and my estimate of total cross-border debt liabilities is actually pretty stable, close to 1 over the period (Table A2 col. 14). This suggests that international investment positions probably don't miss, on net, a significant amount of debt liabilities; in particular they seem to do a decent job, on aggregate, at capturing the debt securities issued offshore (which are a considerable fraction of all international debt securities).

C Bilateral Securities Assets Data (Tables A3 and A13-A18)

The first 3 columns of Table A3 summarize the results of Table A1 (securities assets) and Table A2 (securities liabilities). For each asset class, there is a substantial discrepancy between identifiable assets and liabilities, which most probably comes from the failure to record the portfolios held offshore by households.

Col. 12 of Table A3 shows the asset allocation of the unrecorded offshore portfolio: around 2/3 of the missing securities are equities, 1/3 are bonds. In col. 13, I compare the missing assets to the liability totals: around 20% of all cross-border equities issued have no identifiable owner; the discrepancy is lower for bonds (between 3% and 10%). Lastly, in col. 14 and 15, I give a rough indication of how the missing portfolio compares to the world market capitalization. The bond market capitalization comes from the BIS: it is the sum of all international bonds outstanding (BIS Table 11) and domestic bonds outstanding (BIS Table 16). The equity market capitalization is from Global Financial Data.⁸¹

C.1 Construction of the comprehensive bilateral asset matrices (Table A15)

To know where the missing wealth is invested – that is, which countries have issued the securities for which no owner can be identified –, we need exhaustive bilateral securities asset data \hat{A}_{ij} . I compute one matrix per year between 2001 and 2008 and per instrument (equity and debt, with no distinction between short term and long term debt). Each

⁸¹Note that the World Federation of Exchange also publishes an estimate of the global equity market capitalization, which is comparable, if slightly lower.

matrix has 238 lines (all countries and jurisdictions considered by the IMF plus a line for international organizations) and 238 columns. The resulting database has 906,304 observations $(238 \times 238 \times 8 \text{ source-host-year triplets} = 453,152, \text{ multiplied by two asset}$ classes).

The main data source is the CPIS, with data from 74 source countries and jurisdictions in 2008 to 237 host countries and jurisdictions plus an aggregate "international organization" host entity. I explain below the corrections I make to the raw CPIS data, and how I construct \hat{A}_{ij} for the countries *i* that don't participate in the CPIS.

Corrections for CPIS countries C.1.1

Unallocated and confidential claims For 1-2% of total CPIS-countries assets, the host country is not specified, whether because compilers have been unable to identify it ("other countries (unallocated)") or for confidentiality reasons ("other countries (confidential data)"):

$$\hat{A}_i = \sum_j \hat{A}^a_{ij} + \hat{A}^u_i + \hat{A}^c_i$$

where \hat{A}_{ij}^a are claims of i on j, \hat{A}_i^u are i's unallocated claims and \hat{A}_i^c its confidential claims.⁸² Failing to allocate \hat{A}_i^u and \hat{A}_i^c would bias the discrepancy between reported portfolio liabilities and creditor-derived liabilities upwards. Accordingly, I fully allocate confidential and unallocated claims as follows.

First, I assume that all these claims are vis-a-vis countries k for which no positive \hat{A}_{ik} is reported by i in the CPIS.⁸³ Second, I use the gravity model of bilateral holdings to predict the shares of each host country k in each country i's portfolio, that is, I compute

$$\omega_{ikt} = \frac{\hat{A}_{ikt}^p}{\sum_j \hat{A}_{ijt}^p}$$

Third, I rescale the predicted shares such that for each country i and year t, $\sum_k \omega_{ikt} =$

⁸²Note also than in some cases in the raw CPIS files, \hat{A}_i is slightly lower than $\sum_j \hat{A}_{ij}^a + \hat{A}_i^u + \hat{A}_i^c$. This could be due to data revisions affecting \hat{A}_i but not the source-host pairs. When this occurs, I add the residual $\hat{A}_i - (\sum_j \hat{A}^a_{ij} + \hat{A}^u_i + \hat{A}^c_i)$ to \hat{A}^u_i . ⁸³This assumption is necessarily true for confidential claims.

1. Lastly, I allocate the confidential and unallocated claims by applying the rescaled weights to $\hat{A}_i^u + \hat{A}_i^c$.

Official monetary institutions and international organizations, whose assets are aggregated under the line "SEFER-SSIO," also have confidential and unallocated claims. Since it is not possible to use the gravity model in this case, I simply assume that they are invested in the same way as allocated SEFER-SSIO claims (cf. Table A19).

Other Some CPIS countries *i* did not participate each year (most notably Bahrain, Kuwait, and Mexico). I explained in Section A how I compute their aggregate portfolio holdings \hat{A}_i when data are missing. I allocate their total claims using the predicted shares of the gravity model. I allocate the portfolio claims of the Cayman Islands' non bank sector similarly. Wa also saw that the Netherlands did not report the holdings of its special financial institutions (SFIs). I assume that SFIs have the same investment patterns as the Netherlands in general.

C.1.2 Bilateral data for non-CPIS countries

To allocate the aggregate claims \hat{A}_i of non-CPIS participating countries to each host country j, the key distinction is between publicly held securities (reserves or sovereign wealth funds) and privately held securities.

Non-CPIS private claims To allocate the private holdings of non-CPIS participating countries, I simply use the shares predicted by the gravity model of bilateral holdings.

China and other reserve assets For public holdings, it does not make sense to use the model, since reserve assets are invested very differently than private portfolios. The SEFER-SSIO survey gives the reserve claims of an undisclosed sample of countries and international organizations on 238 host countries (including international organizations). Table A15 summarizes the investment pattern of participating central banks and international organizations. Reserve holdings are much more invested in U.S. debt securities than private portfolios (more than 50% of SEFER reserves are, vs. around 25% of private

assets). In 2008, the remaining SEFER-SSIO claims were invested in German (around 15%), French (5.5%), U.K. (4%) and Japanese (4%) public bonds, as well as in bonds issued by international organizations (8.5%).

For China, I do as if all holdings were public.⁸⁴ We know that around 70% of China's holdings were invested in the U.S. throughout the period (Table A6, line 23). The problem boils down to allocating China's non U.S. assets. I assume that the share of Germany, Japan, France, etc. in China's non-U.S. holdings is the same as in the SEFER survey. That is, I make the assumption that, though China is more invested in U.S. assets than most other central banks, it follows the average pattern as regards its non-U.S. investments. This assumption is fully consistent with information that recently leaked on the composition of China's foreign exchange reserves. In September 2010, the China Securities Journal, an official newspaper, reported the currency composition of China's foreign exchange reserves: at that time, 65% of China's \$2,450bn of foreign exchange reserves was in U.S. dollars, 26% in euros, 5% in pounds, and 3% in yen.⁸⁵ In all likelihood, all eurozone bonds held by China are in euros, all U.K. bonds in pounds, all Japanese bonds in yen, and all U.S. bonds in U.S. dollars, so the currency breakdowns give us the country allocation of China's reserve portfolio. It turns out that the non-U.S. portfolio of China, as revealed by the *China Securities Journal*, is very close to the average non-U.S. portfolio os SEFER-participating countries (see Table A15).

For other non-SEFER-reported reserve assets (mainly Taiwanese), I assume that, on aggregate, they are invested like in the SEFER-SSIO survey (e.g., around 50% in U.S. assets, 15% in German bonds, etc.). These are approximations; for instance, the share of Japan may be higher than what the SEFER survey suggests.⁸⁶

In 2008, the exact allocation of USD 1.1tr of securities held as reserve was uncertain (the 1.1.tr figure corresponds to the 30% of China's portfolio not invested in the U.S.

⁸⁴As Table A7 shows (line 18), reserve assets account for around 80% of China's portfolio. To a large extent, the remaining 20% are, in fact, public too. They are not officially counted as reserve because they are not managed by China's central bank, but by China's state banks and China's Investment Corporation (CIC), China's sovereign wealth fund.

⁸⁵I am gratefully to Pierre-Olivier Gourinchas for pointing this source to me. See Gourinchas et al. (2011) for more details.

⁸⁶At the end of 2008, the SEFER survey captured a bit less than 60% of all securities held as reserves.

plus the USD 650bn of non-SEFER, non-oil, non-Chinese reserve holdings). But there is no doubt that these assets were mostly invested in high-quality public bonds, i.e. mainly in U.S., German, Japanese, U.K., French, and international organizations' bonds. The residual uncertainty (what was the exact share of the U.K.? of Japan?) cannot affect any of the main findings of the paper.

Middle East oil exporters By construction, we have assumed that Middle East oil exporters had 70% of their portfolio invested in U.S. securities in 2001, and that this share declined by 2 percentage point each year to reach 56% in 2008. Just like for China, the problem boils down to estimating the share of each non-U.S. country in the portfolio of oil exporters. Should we use the gravity model, on the basis that these are private holdings? Or should we use the SEFER patterns? Anecdotal evidence suggests that oil exporters' sovereign wealth funds invest more aggressively than central banks, that is less in high quality public bonds, and more in equities and in developing countries.⁸⁷ I choose, accordingly, to use the gravity model to allocate their non-U.S. portfolio.⁸⁸ The model generates country shares that are consistent with available evidence. For instance, it predicts substantial equity investment in Asian emerging and developing countries (Taiwan, Hong-Kong, South Korea, India, Indonesia) as well as in the main offshore mutual fund centers, consistent with available indications that SWF do have some hedge and private equity fund shares.⁸⁹ In absolute terms, the model predicts relatively modest investments in European equities (e.g., USD 2-3bn in France). The French central bank conducts each year a survey on the foreign ownership of France's largest companies (CAC40). Middle East countries owned less than 1% of CAC40 corporations at the end of 2009 (Le Roux, 2010, Table 2, p. 22), i.e. less than USD 10bn. The model is consistent with this fact. However, it fails to produce any significant amount of claims on Japan, which is at odds

⁸⁷In its first publicly available annual report, the Abu Dhabi Investment Authority states that its neutral benchmark portfolio has between 35% and 45% of developed countries equities, and between 10% and 20% of emerging market equities (ADIA, 2009). This is very different from traditional reserve holdings patterns (the SEFER-SSIO survey reports virtually no equity claims, see Table A19).

⁸⁸Since we only have information on aggregate holdings of oil exporters and not country level holdings, I take Saudi Arabia to represent all Middle East oil exporters in the model; i.e., the predicted shares are obtained by applying the model estimated coefficients to Saudi Arabia's vector of covariates.

⁸⁹For instance, ADIA gives a 5%-10% share for alternative investments in its benchmark portfolio.

with Japan's estimates of its liabilities vis-a-vis Middle East countries (CPIS Table 4).

There remain uncertainties on where Middle East sovereign wealth funds invest. However, these uncertainties cannot explain the main discrepancies described in the present work, for instance the USD 1 trillion discrepancy between equity liabilities of Luxembourg and identifiable equity claims on Luxembourg – simply because there is absolutely no evidence that sovereign wealth funds massively invest in Luxembourg funds.

C.2 Where the missing wealth is invested (Tables A3, A13-A14 and A18)

Table A13 (for equity) and A14 (for debt) gives the discrepancy between debtor-reported liabilities L_j and creditor-derived liabilities $\sum_j \hat{A}_{ij}$ for each year and country j. The main discrepancies are reported in col. 4 to 11 of Table A3.

In recent years, half of the missing wealth has been invested in mutual funds incorporated in Luxembourg, Ireland and the Cayman Islands. These funds are only intermediaries: in turn, they invest in U.S., Japanese, or German securities. The missing wealth is thus ultimately invested in these countries. If we make Luxembourg, Irish and Cayman funds transparent, we can see that a large proportion of all foreign equity investments in the U.S. cannot be traced to any ultimate owner.

To see why, consider first all foreign investments in the U.S. through Luxembourg, Cayman and Irish (LCI) funds. We can decompose the U.S. equity liability vis-à-vis LCI, $\hat{L}_{US,LCI}$, as follows:

$$\hat{L}_{US,LCI} = \frac{E_{LCI,US}}{A_{LCI}} \left[\sum_{i} \hat{A}_{i,LCI} + \left(L_{LCI} - \sum_{i} \hat{A}_{i,LCI}\right)\right]$$

where $\sum_{i} \hat{A}_{i,LCI}$ denotes all recorded foreign equity investments in LCI mutual fund shares, the difference between parentheses is equal to all unrecorded investments in LCI funds, and the bracket is multiplied by the share of U.S. equities (E) in LCI fund assets (A_{LCI}) . This formula assumes, for simplicity, that LCI funds invest similarly whether the money invested in them is recorded or unrecorded in the residence country of the investor. It also assumes that all equity investments from Luxembourg, the Cayman Islands, and Ireland are undertaken by mutual funds (which is almost true).

Table A18a shows the result of this simple decomposition in 2008. Looking only at Luxembourg, Irish and Cayman funds, almost 10% of all foreign equity investments in the U.S. cannot be traced to any ultimate owner – simply because more than half these offshore mutual funds have unidentifiable owners!

Second, we can use the discrepancy between the portfolio assets reported by Switzerland on the U.S. and the portfolio liabilities recorded by the U.S. vis-à-vis Switzerland to estimate the value of the unrecorded portfolio of U.S. securities held by non-Swiss residents through Swiss banks (Table A18b).

In principle, the assets recorded by Switzerland on the U.S. should equal the liabilities recorded by the U.S. vis-a-vis Switzerland. But because of cross-border custody, Swissreported data (\hat{A}_{kj}) and U.S.-recorded data (\hat{L}_{jk}) are inconsistent. To see why, denote with an upper letter the location of custodian banks. Then if we disregard Switzerland's reserve holdings of U.S. securities, the discrepancy between Swiss-reported portfolio assets and U.S.-recorded portfolio liabilities writes:

$$\hat{L}_{jk} - \hat{A}_{kj} = \sum_{m \neq k} a_{mj}^k + \sum_{m \neq k} \tilde{a}_{mj}^k - \sum_{i \neq k} a_{kj}^i$$

Generally speaking, as the formula shows, bilateral anomalies are hard to interpret. They are not necessarily caused by households' accounts in tax haven. If French banks entrust their U.S. securities to Swiss banks (a_{mj}^k in the above equation), then the liabilities recorded by the U.S. vis-a-vis Switzerland will tend to be larger than the assets reported by Switzerland on the U.S. – and this anomaly does not involve unrecorded offshore wealth, because financial corporations' offshore holdings are well recorded in the French international investment position.

Conversely, if Swiss insurance companies entrust their U.S. bonds to Belgium banks (a_{kj}^i) in the above equation), then the liabilities recorded by the U.S. vis-a-vis Switzerland will tend to be smaller than the assets reported by Switzerland on the U.S. Now, many bonds issued by U.S. residents are held in custody in the two international central securities depositories, one of which is in Belgium (Euroclear Bank) and the other in Luxembourg (Clearstream).

The gap between U.S.-recorded portfolio liabilities vis-à-vis Switzerland and Swissreported U.S. portfolio assets reflects the amount of unrecorded U.S. securities held by foreign households in Swiss banks (\tilde{a}_{mj}^k in the above equation) if three conditions are met:

- 1. All Swiss-owned U.S. securities are held in Switzerland,
- Non-Swiss banks or insurance companies do not use Swiss custodians to keep their U.S. securities,
- 3. Switzerland does not hold U.S. securities as reserve assets.

These three conditions are likely met for U.S. equities (but not for bonds). A straightforward comparison between the CPIS data for Switzerland and the U.S. TIC figures (Bertaut and Tryon, 2007) then shows that each year since 2001, equity liabilities of the U.S. vis-à-vis Switzerland, as recorded by the U.S., have been around 2.5 times larger than the equity assets recorded by Switzerland on the U.S. To put it differently, around 60% of all U.S. equity investments recorded by the U.S. as belonging to Switzerland cannot be traced to any ultimate owner. This represents 3-4% of all foreign equity investments in the U.S. In total, because of household unrecorded offshore accounts, at least 15% of all U.S. cross-border portfolio equities cannot be attributed to any ultimate owner.

D Missing Flows in Balance of Payments (Tables A19-A22)

The stock discrepancies described in this paper have their exact counterpart at the flow level, in the world balance of payments computed by the International Monetary Fund independently from the present study. In this Section, I give more details on cross-border flows and on how tax havens affect the way cross-border flows are recorded. First, Tables A19 summarizes all identifiable credits in the world current account and Table A20 all debits (Section D.1). Second, Table A21 shows the discrepancies between credits and debits: each year, in particular, more investment income is paid than received globally, the flow counterpart of missing assets in international investment positions (Section D.2). Third, Table A22 gives some background on the yields on cross-border investments at the global level (Section D.3). It shows that the yield on the stock of missing securities is similar to the yield on the stock of recorded cross-border securities. Lastly, Section D.4 investigates in details how transfers of funds in and out of tax havens affect individual countries' balances of payments.

D.1 Total credits and debits at the world level (Tables A19-A20)

In the Balance of Payments Statistics (BoPS), the IMF publishes a world Table that includes all country reports plus IMF-staff estimates for non-reporters.⁹⁰

The world Table starts in 1994, so all data from 1994-on directly come from the IMF world Table. Before 1994, global totals are my own estimates based on all country reports and straightforward interpolations. Specifically, I start with the 1994 values, and then use the proportional change of the total credits or debits reported by all countries to extrapolate backwards.

Note that almost all reporting countries give a breakdown of the current account by main components (trade, income, transfers). The category which has the worst coverage is transfers, so I compute transfers as current account minus trade minus income.

Inside the income balance, compensation of employees is almost negligible. To avoid spurious variations in the figures for compensation of employees, I compute investment income totals as income minus compensation of employees.

Inside the investment income balance, almost all countries provide an estimate of direct investment income, but a smaller number of countries give an estimate for their other plus portfolio income balance. I compute other plus portfolio income as investment income minus direct investment income.

⁹⁰See the Balance of Payments Statistics Methodology: "[The World Table] aggregates country data by major balance of payments components. The user should note that this aggregation is done only once a year and that the aggregates included in the BOPS CD-ROM correspond to the most recent issue of BOPSY. For each component, data for countries, country groups, and the world are provided. In addition to data reported by countries as shown in the analytic and standard presentations, the tables in this section also include data for international organizations. Missing data have been estimated for countries by Fund staff to the extent possible. For the balance of payments, the estimation procedure is based largely on the use of the WEO database. Data published in BOPSY may differ from balance of payments data published in the WEO mainly due to timing and coverage differences (for example: BOPSY Part 2 includes data on international organizations)."

Note that in the IMF-computed world Table, there is no breakdown in the investment income balance between portfolio investment income and other investment income balance (however, there is a portfolio investment figure in the *financial* account of the world balance of payments).⁹¹ Inside the direct investment income balance, the breakdown between undistributed reinvested earnings, distributed income and debt and is fragile – hence, I do not report it here.

In col. 11 of Table A19, we can see the rising trend in global exports since 1975: total trade balance credits (that is, exports) were 32% of world GDP in 2008, vs. 14% in 1975.

D.2 Missing flows at the world level (Table A21)

Table A21 gives the difference between identifiable current account credits (Table A19) and debits (Table A20) for each category of the current account. As is well known, the world has tended to run a current account deficit (Table A21 col. 2). Note the spectacular trend reversal in 2004, with the current account surplus reaching USD 400bn in 2007, mainly driven by the trade surplus (col. 3).

The chronic current account deficit has been driven by the income balance (Table A21 col. 6), which has systematically recorded a deficit since the end of the 1970s. To put it differently, more income has always been paid (debit) than received (credit) at the global level. Inside the income balance, there are in fact two anomalies: a recurring *positive* foreign direct investment income discrepancy (Table A21 col. 7): each year, more direct investment income is apparently received than paid. What causes this anomaly is not entirely clear.

One possibility is that poor countries under-estimate their FDI liabilities, because they tend to record book values while rich countries try to estimate market values. Now, statisticians usually estimate FDI income by applying appropriate yields to estimated

⁹¹Note also that inside the portfolio investment income balance, not all countries give a breakdown between equity and debt. If one sums the portfolio debt and equity income figures of all reporting countries, then one gets a larger discrepancy for debt income than for equity income (contrary to what happens at the stock level, where more equities are missing than bonds). This spurious result comes from the fact that the major offshore mutual funds are not covered by the BoPS. Since the Cayman Islands, Jersey, Guernsey, Bermuda, etc. are by definition short equity (just as Luxembourg is), including them in the BoPS would greatly increase the portfolio equity income discrepancy.

stock positions. If positions are under-estimated in poor countries, FDI income paid will be under-estimated too: rich countries will record more FDI income credits from poor countries than poor countries will record FDI income debits to rich countries.

A second possibility is that the FDI income discrepancy comes from inadequate coverage of tax havens. If the income paid by a Bermudian affiliate to its U.S. parent is well recorded by the U.S., but inadequately captured in Bermuda, then we are bound to observe that more direct investment income is received (credit) than paid (debit). In principle, the IMF captures all countries and territories in its world table, but in the absence of first-hand data on FDIs in some tax havens, FDI income debits of tax havens may be undercounted.

Even if all tax havens are covered by the IMF global table, it is possible that some of them do not record direct investment income properly. In 2005, for instance, U.S. corporations repatriated a large amount of undistributed profits from tax havens to benefit from a one time tax break. This led to a large decrease in the global discrepancy for "net reinvested earnings and undistributed profits",⁹² which does not make sense unless tax havens imperfectly record their direct investment income.

To understand why, consider what was recorded (correctly) in the U.S. balance of payments. U.S. corporations repatriated a lot of undistributed earnings, which translated into large "distributed earnings" credits in the U.S. balance of income earned on U.S. direct investments abroad (USD 299bn in 2005 vs. USD 82bn in 2004). On the other hand, U.S. corporations dis-invested in their foreign affiliates, which translated into a negative "reinvestment earnings" line in the U.S. balance of income earned on U.S. direct investments abroad (USD -31bn in 2005 vs. USD + 142bn in 2004). Overall this had no major impact on the U.S. "net distributed profits plus reinvested earnings" line.

It should have gone similarly for tax havens. The fact that the global discrepancy for "net reinvested earnings and undistributed profits" decreased suggests, however, that tax havens properly recorded the increase in earnings distribution (more distributing earnings debits), but failed to record the decrease in their reinvestment earnings debits, hence

 $^{^{92}}$ In 2004, the discrepancy, based on the reports of 121 countries, was USD 136bn; it dropped to USD 35bn in 2005, and went up to USD 183bn in 2006.

recorded more "net distributed profits plus reinvested earnings" debits than usually. If tax havens also fail to record properly their reinvestment earnings debits in normal times, it could explain why more direct investment income credits are structurally recorded than debit.

The portfolio and other income discrepancy (Table A21 col. 8) has a much clearer interpretation than the FDI income discrepancy: as argued in the paper, it reflects unrecorded credits in offshore accounts. A dividend paid by a U.S. corporation to the Swiss account of a French resident is recorded as a portfolio income debit by the U.S., but neither France nor Switzerland records any credit.

In the right panel of Table A21, I compute cumulative discrepancies, which are then converted to constant 2008 U.S. dollars. Col. 12, for instance, can be interpreted as follows. If balance of payments are accurate, except for the fact that the dividends and interest earned in offshore accounts are counted as debits but not as credits, and that, for whatever reason, more direct investment (DI) income is received than paid, then the cumulated discrepancy on non-DI investment income in constant U.S. dollars tells us the purchasing power of all the interest and dividends that have been paid to offshore accounts over time, if these unrecorded dividends and interest have always stayed on 0% interest bearing bank accounts after being received.

As we can see in Figure A1, had the discrepancy on non-DI investment income not existed, the world current account deficit cumulated since 1975 would have been 0 in 2002, instead of almost 2.5 trillions of 2008-US dollars. In other words, as Motala (1997) had already noted, the main driving force of the current account discrepancy is by far the non-DI income discrepancy, which very likely comes from unrecorded accounts in tax havens.⁹³

 $^{^{93}}$ Note that I focus on the non-DI investment income discrepancy rather than on the non-reinvested earnings investment income discrepancy as Motala (1997) because the non-reinvested earnings investment income balance is strongly affected by the problematic recording of the repatriation of U.S. overseas profits in 2005.

D.3 Yields on cross-border bank deposits and portfolio claims (Table A22)

Table A22 presents what we know about the yield on cross-border bank accounts and portfolio securities at the global level. To compute yields, we need comparable stock and flow data. The left Panel of Table A18 computes the yield on identifiable cross-border bank accounts and portfolios; the right Panel on the unrecorded offshore portfolio.

Total cross-border bank liabilities (col. 1) directly come from the BIS locational banking statistics Table 2a. Note than bank liabilities are more than bank accounts, because banks also have, e.g., bond liabilities. The BIS series on cross-border bank accounts (Table 3a of the locational banking statistics) starts in 1995 only, so in col. 2, I use the BIS series after 1995, and I use the proportional change of cross-border bank liabilities before.

Cross-border portfolios in col. 3 are simply all identifiable portfolio securities liabilities (that is, col. 11 of Table A2). Summing cross-border portfolios and cross-border bank accounts, we get a total figure (Table A22 col. 5) than can be directly compared with the "other and portfolio income" debit figure in the world current account (Table A22 col. 6). The implied yield on identifiable cross-border bank accounts and portfolios is displayed in col. 7 (3-4% in recent years).

The right panel of Table A22 shows that the unrecorded offshore portfolio has a similar yield as the recorded portfolio. The flow of unrecorded other+portfolio income divided by the stock of unrecorded securities is also equal to 3-4% in recent years.⁹⁴ An interesting implication of this finding is that it makes sense to use the observed "portfolio+ other income" flow discrepancy, along with the yield on cross-border portfolios and bank deposits, to give rough estimates of the unrecorded stock of household offshore wealth Ω before 2001 (the first year for which we have reasonably comprehensive and accurate portfolio stock data at the global level). Col. 11 presents my estimate of Ω obtained by capitalizing the missing flows with the observed yield on cross-border investments.

 $^{^{94}}$ Note that here, I make the simplifying assumptions that there are no unrecorded bank accounts at the global level, because international statisticians share data on bank deposits through the Bank for International Settlement.

D.4 How transfers of funds to tax havens affect individual countries' balance of payments

The *holding* of portfolio securities by households through bank accounts in tax havens causes anomaly in international investment positions: less security assets than liabilities are recorded globally. It also causes anomalies in balance of payments statistics: less dividends and interest credits than debits are recorded globally. The *transfers* of funds to and from tax havens can also cause anomalies in balance of payments statistics, although this is not systematically the case. To see why, in the following I study five concrete cases.

D.4.1 Case 1: U.S. residents carrying banknotes, gold, or diamonds to Switzerland

First, let's consider the case of a U.S. resident transferring assets to Switzerland by carrying banknotes, gold, or diamond overseas. We know that such transfers still exist today.⁹⁵ When such transfers occur, the U.S. balance of payments does not record any transaction – neither any credit, nor any debit. Both the U.S. international flow and stock statistics fully miss the funds held by households in tax havens. Because they both miss these funds, balance of payments and international investment position statistics are consistent.

Note that if the funds have been legally earned in the U.S., then they are likely to cause anomalies within the set of U.S. *domestic* accounts. The inconsistency will take the form of a discrepancy between net personal lending/borrowing as measured in the national income and product accounts (NIPA) and net personal lending/borrowing as measured in the flow of funds accounts (FFA). In the NIPA, net personal lending/borrowing is essentially computed as a residual, i.e. as income minus consumption minus capital formation (mainly housing investment) minus capital transfers (mainly estate taxes paid). If both income, consumption, capital formation, and capital transfers data are accurate, then net lending/borrowing data are accurate in the NIPA. In the flow of funds accounts, on the

 $^{^{95}}$ In 2008, in the frame of a U.S. initiative against offshore tax evasion through Swiss banks, a Swiss banker testified to the U.S. Senate that he had carried diamonds overseas on behalf of some of his American clients, see U.S. Senate (2008, p. 100).

other hand, statistics on net lending/borrowing come from records of banks and other financial institutions. If households make unrecorded transfers to their offshore accounts (e.g., by carrying diamonds overseas), the FFA will miss the increase in the value of U.S. households' offshore bank deposits. Net lending/borrowing in the NIPA (the "current plus capital account" balance of the U.S. economy) will be higher than net lending/borrowing in the FFA (the "financial account" balance of the U.S. economy). This discrepancy in domestic accounts is the equivalent of the "net error and omissions" discrepancy in balance of payments statistics. It will show up in BEA's integrated macroeconomic accounts, which attempt to reconcile NIPA and FFA in a consistent framework.⁹⁶

When funds are illegally earned (e.g., drug-dealing), then they are probably not picked up as income in the NIPA, hence not as saving either. They go completely unrecorded in NIPA, flow of funds, balance of payments, and international investment positions data – that is, in the full set of U.S. statistics.

What is important to notice, here, is that the use of tax havens by households does not necessarily cause anomalies in the balance of payments data of individual countries. It does not even necessarily cause anomalies within the complete set of national and international accounts of individual countries.

D.4.2 Case 2: U.S. residents making wire transfers to their Bahamian accounts

A second way to transfer funds to tax havens is to make wire transfers. Let's take the case of a U.S. person who transfers funds from her U.S. bank account to her Bahamian bank account. Such transfers will cause anomalies in the U.S. balance of payments. The IMF balance of payments manual (IMF, 1993) states that when a U.S. person sends funds electronically from the U.S. to the Bahamas, this must be recorded twice: both as an "other investment credit" (the interbank assets held by the U.S. bank on the Bahamian bank decrease) and an "other investment debit" (a U.S. person purchases a Bahamian asset, namely a Bahamian bank deposit).⁹⁷ In principle, credits will be well recorded,

⁹⁶Specifically, the anomaly will show up as a "statistical discrepancy" in households' accounts S.3.a line 86 series FU157005045, see http://www.bea.gov/national/nipaweb/Ni_FedBeaSna/Index.asp.

 $^{^{97}}$ Note in particular that the latter operation must not be recorded as a "current transfer" in the current account but as a financial account transaction, see paragraph 12.24 of the 6th version of the

but the debits is not. Here is why.⁹⁸

Let's assume that a U.S. person P starts with having a \$100 deposit claim on Citi in New York; Citi will also have a \$100 fed funds claim on the Fed. P decides to wire the \$100 to her Bahamian bank (BB). BB does not have an account at the Fed, but it does use JPMC as its correspondent bank in the US. So P tells Citi to wire the \$100 to BB for the benefit of a particular account ZZZ. Citi contacts BB and learns that they use JPMC as their correspondent, so it wires the funds to JPMC for the benefit of BB's account ZZZ. Citi sends the wire instructions to the Fed. After the wire, Citi no longer has the claim on the Fed or the liability to P. JPMC has a new claim on the Fed and it has a new liability to BB. BB has a new claim on JPMC and P has a new claim on BB. In the US, banking flows are computed as the change in observed positions each month: the system for short-term instruments (anything less than one year original maturity, including bank deposits) is custodial-based; flows are not looked at. Now, looking at bank positions, JPMC's deposit liabilities to the Bahamas have gone up by \$100 (an inflow or increase in liabilities, i.e. a credit). But unless P puts her deposit with BB in custody at Citi or some other US bank, the US TIC system will not see an offsetting outflow or increase in claims (i.e., no debit will be recorded). There will be negative net errors and omissions in the U.S. balance of payments.

There are trillions of cross-border payments each year; identifying the exact nature of each of those payments (i.e., what cross-border real or financial transactions they offset) is fraught with difficulties. That is why many countries, like the U.S., track the change in positions rather than the flows for a large number of instruments. One should note that even in transaction-based statistical systems it is in practice impossible to accurately capture the wire transfers of funds to offshore havens: statisticians see interbank flows of funds, but they cannot know that the counterpart of those flows are purchases of offshore bank deposits by the household sector. This is especially true given that households who

Balance of Payments Manual: "Funds sent abroad by individuals who are resident in the economy in which they are employed, self-employed, or operating a business, for the purpose of making a deposit in his or her own account with a bank located abroad, represent a financial investment, which is recorded in the financial account, rather than as a personal transfer."

 $^{^{98}}$ I am grateful to an anonymous referee for providing the following detailed example to me.

transfer funds to tax havens may try to conceal such transfers. For example, instead of transferring funds from a personal account in France to a Swiss account, a French person can send funds through a French corporate bank account (e.g., the account of a wealth-holding company, a foundation, or a small business that she controls). This makes it impossible for French statisticians – and anti-money laundering authorities – to know that the funds they see flowing from a domestic to a Swiss bank are the counterpart of the purchase by a French household of Swiss bank deposit. No "other investment" debit will be recorded and there will be more negative "net errors and omissions" in France.

D.4.3 Case 3: Trade mis-invoicing

A relatively simple way to conceal transfers of funds abroad is trade mis-invoicing. Think of a Chinese importer who wants to send funds to Switzerland. There are strong capital controls in a number of developing economies, including in China: transfers of funds to foreign banks by the private sector are generally allowed only if these transfers finance trade operations. Now a Chinese importer can strike a deal with a Swiss-based exporter to mis-invoice its imports: e.g., the importer will pay more than the real value of the goods or services imported, and he will get the difference back on a Swiss account. Such mis-invoicing allows to circumvent capital controls relatively easily because the flows of funds to foreign banks seem to be backed by legitimate trade operations. Such misinvoicing may cause "net errors and omissions" in China's balance of payments: because the goods and services imported will be of lower value than the funds sent abroad to pay for them, more debits than credits will in principle be recorded in the Chinese balance of payment, causing negative "net errors and omissions." However, this is not necessarily the case, because Chinese statisticians may use the inflated bills provided by the exporters to compute the value of China's imports – in which case there will be no "errors and omissions."

The literature on capital flight has traditionally focused on trade mis-invoicing – in particular on trade mis-invoicing between developing economies and tax havens (Cuddington, 1986; Cumby and Levich, 1987; Dooley, 1988; Claessens, 1997; Boyce and Ndikumana, 2001). But trade mis-invoicing also affects rich countries. A French person who wants to send funds to Switzerland without attracting attention from anti-money laundering authorities can create a sham corporation that issues fictitious bills, and justify the transfers of funds to offshore tax havens by showing these bills. In appearance, transfers of funds to tax havens will be justified by trade operations. The trade operations will be entirely fictitious, so in principle French statisticians should not record any goods or service import and there should be negative "net errors and omissions" in the French balance of payments. However, they might again be induced to record service imports on the basis of the fake bills. In this case, imports will be over-estimated in the French current account, asset purchases will be under-estimated in the financial account of the French balance of payments, and there will be no errors and omissions.

Just as it may cause negative "errors and omissions" in China and France, trade misinvoicing may also cause positive "errors and omissions" in tax havens, since tax havens will receive funds larger than the underlying goods or services that they are supposed to export.

D.4.4 Case 4: London traders paid on Jersey accounts

Next, think of the employee of a London-based bank who is paid directly on her offshore account in Jersey. Assuming that nobody does anything to conceal this transfer, U.K. statisticians should be able to correctly record it. For the sake of the argument, let's assume that they do, i.e. that when London banks pay their traders directly on their Jersey accounts, U.K. statisticians correctly record the related flows of funds both as credits (funds flow from U.K. banks to Jersey banks) and debits (U.K. residents purchase Jersey bank deposits).There are, then, two cases.

First, some of the U.K. traders who are paid in Jersey will simply leave their funds in the form of Jersey bank deposits. These deposits will be recorded by the Bank for International Settlements (BIS) as cross-border bank liabilities of Jersey vis-à-vis the U.K. If U.K. statisticians use the BIS data, then they will capture these funds in the U.K.'s international investment position. If U.K. statisticians form their estimate of offshore bank deposits simply by cumulating recorded outflows, they will also correctly capture the funds held offshore by U.K. residents in the U.K.'s IIP. Both the flows of funds into tax havens and the stocks of offshore assets will be duly recorded in U.K. statistics. These funds will be part of the 2% of households' financial wealth that, I estimate, is held by households in offshore tax havens and partly goes recorded in international investment statistics.

Second, some of the U.K. traders who are paid in Jersey will make financial investments through their offshore accounts. They will, say, buy Irish mutual fund shares. Absent information exchange between Jersey and the U.K., those purchases will not be recorded in the U.K. balance of payments. In addition, U.K. statisticians will miss these Irish fund shares when they conduct their asset survey for the CPIS. Both the purchases of portfolio securities from offshore accounts and the stocks of portfolio securities held offshore will be missed in U.K. statistics.

Overall, the "other investment" category in both the U.K. balance of payments and international investment position will be accurate, but the "portfolio investment" category will be biased. Three implications follow:

- a. Portfolio security outflows will be consistent will portfolio security positions: both will be similarly downwards biased.
- b. If households purchase portfolio securities through their offshore accounts and if statisticians use the BIS data to compute the amount of "other investment" assets, then statisticians will duly record transfers of funds to tax havens, but they will miss the portfolios held offshore by households. Recorded "other investment assets" (i.e., the BIS data) will be lower than would be implied from outflows.
- c. If households purchase portfolio securities through their offshore accounts and if statisticians compute the amount of "other investment" assets by cumulating "other investment" flows, then both the transfers of funds to tax havens and households' offshore holdings will be accurately recorded in the short run. However, both will be recorded as "other investments" (i.e., bank deposits) – never as portfolio securities.

In the short run this is not a major issue. But in the long-run it means that the IIP will be unable to capture any increase in the price of the portfolio securities held offshore. The IIP will under-estimate the market value of the funds held offshore by households. The bias will grow over time.

There is no single prediction as to what exact anomaly the transfers of funds to tax havens cause when U.K. trader are paid on Jersey accounts. However, since the IMF has been advocating the use of BIS data over the last 20 years (Motala, 1997, p. 25), the most likely scenario is the one described in point b. above: a discrepancy between cumulated "other investment" outflows and "other investment" asset positions.

D.4.5 Case 5: French investors transferring portfolio securities to Swiss custodians

Households can do more than simply move bank deposits into foreign banks. In principle, they can also transfer portfolios of securities from domestic custodian banks to foreign custodian banks. Such transfers are well documented for large financial institutions, see for instance Le Roux (2010, p. 24) in the case of France. However, to my knowledge the IMF Balance of Payments Manual does not indicate how transfers of portfolio securities from domestic to foreign custodians should be recorded.

For the specific case of France, transfers of portfolios are dealt with as follows.⁹⁹ As of today, French statisticians base their estimates of portfolio outflows on observed changes in portfolio stock data (corrected for valuation changes). When a French person transfers portfolios to an offshore custodian, these portfolios leave the scope of France's asset survey. In order to avoid recording a portfolio investment sale (credit), French statisticians record a negative "other change" in the statistics that attempt to reconcile flow and stock data. That is, flow data are accurate, stock data are inaccurate, and the discrepancy is reflected in the "other change" category of the reconciliation account.¹⁰⁰

⁹⁹This description is based on personal communication with French statisticians in charge of these questions at the Bank of France. They do not reflect the official position of the Bank of France, but simply my personal understanding.

¹⁰⁰Note, however, that there is no systematic procedure to spot the transfers of portfolios abroad. The identification is on a case-by-case basis. When French statisticians fail to notice such transfers, portfolio investment sales (credits) are erroneously recorded in the French balance of payments. Portfolio flow and stock figures are then consistent (both are similarly downwards biased) and transfers of portfolios cause negative "net errors and omissions" in the French balance of payments.

D.4.6 Summary

Transfers of funds into tax havens pose considerable statistical difficulties. However, a number of predictions stand out as to how they should be recorded:

- 1. When funds are wire into offshore accounts, there may be negative "net errors and omissions" in the balances of payments of countries experiencing capital flight, depending on national statistical practices;
- 2. Tax havens, similarly, may record positive net errors;
- 3. In principle, transfers of funds into tax havens should not make portfolio outflow and portfolio stock data inconsistent: both should be similarly under-estimated. One exception is when households transfer the custody of their portfolio securities to offshore banks, in which case cumulated portfolio investment flows should be larger than observed positions. In the statistics that attempt to reconcile flow and stock data, there should be negative "other changes" for "portfolio investment" assets;
- 4. In some cases, transfers of funds into into tax havens could cause a discrepancy between "other investment" outflows and "other investment assets" (e.g., when U.K. traders are paid on their Jersey accounts). In the statistics that attempt to reconcile flow and stock data, there should be negative "other changes" for "other investment" assets.

As Lane and Milesi-Ferretti (2007, Table 3 p. 243) have documented, a number of countries where capital flight may be important, such as Italy and Russia, have experienced large negative "net errors and omissions" over the 1970-2004 period; conversely, Switzerland has experienced large positive "net errors and omissions." More recently, the eurozone as a whole has experienced large negative "net errors and omissions" (ECB, 2009, Chart 1 p. 2). As the ECB has argued, these errors can to a significant extent be explained by the use of tax havens by eurozone households – more precisely by the fact that the purchases of Irish and Luxembourg fund shares by eurozone residents through

offshore accounts go unrecorded.¹⁰¹ Note that the ECB has taken steps to solve this problem (ECB, 2009). In particular, it has improved its coverage of Irish and Luxembourg fund share purchases by eurozone residents. These steps are important. Part of the new purchases of Irish and Luxembourg fund shares by eurozone residents that used to go unrecorded are now duly recorded in the eurozone's balance of payments. But the bulk of the *stock* of Luxembourg and Irish fund shares held in tax havens by eurozone residents is still not recorded in the eurozone IIP.¹⁰²

In the U.S., "net errors and omissions" display no particular trend. Does that invalidate my findings that a significant amount of claims held by U.S. residents on foreign countries go unrecorded in the U.S. IIP? Not at all. As we have seen, not all transfers of funds into tax havens cause "net errors and omissions." Conversely, many factors unrelated to tax havens can cause positive or negative "errors and omissions". We do know that even parts of the balance of payments that are widely considered reliable are in fact subject to substantial errors, including in countries that follow the highest statistical standards. The U.S. Census Bureau (1998), for instance, has argued that U.S. goods exports have tended to be systematically underestimated, by as much as 10% – although many see the trade balance as one of the most reliable part of the balance of payments. For these reasons, it is very hard to use "net errors and omissions" to shed light on the

¹⁰¹The mechanism can be summarized as follows. Generally speaking, the ECB computes the eurozone's balance of payments and IIP by using eurozone countries *bilateral* BOPs and IIPs, and summing individual eurozone countries' bilateral credits, debits, assets and liabilities with non-eurozone countries. There are two exceptions, however. First, the ECB estimates the purchases and holdings of eurozone portfolio securities by non eurozone residents as follows: the ECB starts with the total transactions in/holdings of securities issued by eurozone residents. It then subtracts the recorded acquisitions/holdings of such securities by residents of the eurozone (ECB, 2007, p. 15-16). The ECB applies the same method to estimate the portfolio income paid by the eurozone to the rest of the world. Now take a French resident who purchases an Irish mutual fund share through a Luxembourg offshore account. Ireland records a "portfolio investment credit" (Ireland's external liabilities increase). But France records nothing (because French statisticians are unaware of this purchase) and Luxembourg does not record any portfolio transaction (in keeping with the residence principle). So the eurozone records a portfolio investment credit – as if the Irish fund shares had been bought by a non-eurozone resident. The problem is that the ECB will not record any debit to balance this credit. Ireland, indeed, records an "other investment" debit vis-à-vis Luxembourg (the net interbank assets of Ireland on Luxembourg increase). Luxembourg records an "other investment" credit vis-à-vis Ireland. These "other investments" are well recorded by the ECB as intra-eurozone transactions, so the eurozone does not record any "other investment" transaction with the rest of the world. Overall, there are more credits than debits recorded by the eurozone, causing "negative net errors and omissions." In a nutshell: cross-border custody within the eurozone causes "negative errors and omissions" in the eurozone's balance of payments.

 $^{^{102}}$ All the fund shares that have been purchased before 2004 are not; all the fund shares that are owned by eurozone residents through non-eurozone tax havens – e.g., Switzerland – are not either.

magnitude of capital flight in individual countries. There is no consensus among statisticians on what "net errors and omissions" mostly capture, and this certainly varies across countries.

What about "other changes" in the flow-stock reconciliation accounts? "Other changes" on U.S. "other investment assets" have tended to be positive (Lane and Milesi-Ferretti, 2009, p. 190), rather than negative. But we can identify several reasons as to why this is the case. "Other changes" which are not caused by tax havens can easily dwarf the "other changes" potentially caused by tax havens. Remember that in a given year t, the change in the stock of a country's external assets can be written as: $\Delta Stocks_t =$ $Flows_t + Valuation_t + OtherChange_t$ where $\Delta Stocks_t$ denotes the change in stocks between the beginning and the end of year t, $Flows_t$ the net acquisitions of foreign assets in year t, and $Valuation_t$ the net capital gains on foreign assets. $OtherChange_t$ includes everything that cannot be simply attributed to either flows or valuation effects. For instance, $OtherChange_t$ includes the effects of:

- Changes in the reporting population over year t,
- Changes in statistical methods and concepts during year t,
- Correction to end-of-year t-1 data using more accurate surveys.

All of these factors can have large effects on "other changes" statistics and the U.S. has tended to record net positive "other changes" on its "other investment" assets for a combination of the above reasons. First, as Lane and Milesi-Ferretti (2009, p. 190) explain, the structurally positive other changes on the U.S. "other investment" assets can be explained by a continuous extension of the reporting population: "Since the scope of [U.S. "other investment" asset] surveys has progressively expanded over time and the methodology improved, the most plausible explanation for the residual term is the change in coverage: in effect, the estimated flow can be viewed as the change in position that can be attributed to the existing set of reporters, while the residual term relates to the positions of new reporters."
Changes in statistical methods have also played a large role. In the early 1990s, for instance, the U.S. substituted BIS data for U.S. sources to estimate the value of the bank deposits held offshore by U.S. households and non-bank corporations. As the IMF (1996, p. 13) indicates, "the result of these substitutions on the U.S. balance of payments and international investment position accounts was dramatic; the stock of U.S. nonbank financial claims on nonresidents as of year-end 1993 was increased, in total, by over \$200 billions."

Lastly, the use of more accurate surveys has strongly affected the "other changes" on U.S. "other investment" assets in recent years. In 2008, for example, the "other investment" assets of U.S. non-bank agents were substantially revised "to account for U.S. nonbank financial intermediaries claims associated with the issuance of asset-backed commercial paper (ABCP) that were not captured in BEA's direct investment reporting system. Claims were revised up \$226.0 billion for 2005 and up \$316.0 billion for 2006." (Bach, 2008, p. 42).

In my view, the positive "other changes" on U.S. "other investment" assets should not been seen as evidence that U.S. residents do not transfer funds to offshore tax havens: as we have seen, not all transfers should translate into negative "other changes," and there are known factors that can explain the positive "other changes" on U.S. "other investment" assets. In the eurozone, "other changes" on "other investment" assets display no particular trend; they have been quite close to 0 on average over the 2000-2008 period (but as we have seen, there have been large "net errors and omissions" over the period, at least before the ECB revised its data).

Can we use observed "net errors and omissions" and "other changes" to shed light on which countries are most affected by tax havens? I think that this is fraught with difficulties, for four reasons. First, transfers of funds into tax havens are recorded in many ways – as we have seen, some go fully unrecorded, some are partially recorded, causing "errors and omissions," some are fully recorded, causing "other changes" in flowstock reconciliation accounts. Second, it is impossible to know on a priori grounds which fraction goes fully unrecorded, which fraction goes partially recorded, and which fraction goes fully recorded. These fractions depend in particular on the source of the wealth owned by individuals who have offshore accounts: funds with illegitimate origins are more likely to go fully unrecorded, for instance. Now, the question as to which fraction of the funds in tax havens has a legitimate source and which fraction a criminal source (e.g., drug dealing) is important but falls beyond the scope of this paper. Third, the identification of transfers of funds into tax havens depends a great deal on national statistical practices. On that matter, and contrary to what happens for portfolio stock positions, there has never been any serious attempt at harmonizing practices globally. Last but not least, "net errors and omissions" and "other changes" in stock-flow reconciliation accounts can have many other explanations in addition to the transfers of funds into tax havens. Unfortunately, at this stage it seems hard to use these anomalies to shed light on the wealth held by households in tax havens.

E Offshore Fortunes in Switzerland (Tables A23-A26)

Table A23 summarizes the custodial holdings of Swiss banks. The data are based on various editions of the Swiss National Bank's "Banks in Switzerland" and "Monthly Statistical Bulletin," see the main paper for all relevant details. The value of the offshore portfolio managed by Swiss banks (that is, the portfolio of foreign securities belonging to non-Swiss residents) is in col. 5. Its composition is in col. 6 to 11. Offshore securities managed by Swiss banks account for around 1/3 of all offshore securities of households Ω (see Table 23 col. 12).

Table A24 gives the geographical breakdown of Switzerland's fiduciary deposits, which is the best proxy one can have to estimate who owns the offshore fortunes managed by Swiss banks. Country groups are defined as follows:

 Tax havens: Andorra, Antigua and Barbuda, Aruba, Bahamas, Bahrain, Barbados, Belize, Bermuda, British Antilles, British Overseas Territories, Cayman Islands, Costa Rica, Cyprus, Dominica, Gibraltar, Grenada, Guernesey, Hong Kong, Isle of Man, Jersey, Lebanon, Liberia, Liechtenstein, Luxembourg, Macao, Malaysia, Malta, Marshall Islands, Mauritius, Monaco, Nauru, Netherlands Antilles, Palau,Panama, Samoa, San Marino, Seychelles, Singapore, St. Kitts and Nevis, St. Lucia,St. Vincent and the Grenadines, Turks and Caicos Islands, Uruguay, Vanuatu.

- Europe: Albania, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, "Eastern Europe,"¹⁰³ Estonia, Finland, France, German Democratic Republic, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Macedonia, Moldova, Netherlands, Norway, "Other Western Europe,"¹⁰⁴ Poland, Portugal, Romania, Serbia and Montenegro, Slovak Republic, Slovenia, Spain, Sweden, Tchecoslovakia, Ukraine, United Kingdom, Vatican, Yugoslavia.
- Middle East: Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Oman, "Other Middle East,"¹⁰⁵ Qatar, Saudi Arabia, Syria, United Arab Emirates, West Bank and Gaza, Yemen.
- Latin and South America: Argentina, Bolivia, Brazil, "Central America,"¹⁰⁶ Chile, Colombia, Dominican Republic, Ecuador, El Salvador, Falkland Islands, Guatemala, Haiti, Honduras, Mexico, Nicaragua, "Other South America,"¹⁰⁷ Paraguay, Peru, Venezuela.¹⁰⁸
- Asia: Afghanistan, Armenia, Australia, Azerbaijan, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, China, Fiji, French Polynesia, Georgia, India, Indonesia, Japan, Kazakhstan, Kiribati, Dem. Rep. of Korea, Rep. of Korea, Kyrgyz Republic, Lao, Maldives, Micronesia, Mongolia, Myanmar, Nepal, New Caledonia, New Zealand, "Other Asia,"¹⁰⁹ Pakistan, Papua New Guinea, Philippines, Russian Federation, Solomon Islands, Sri Lanka, St Helen, Taiwan, Tajikistan, Thailand,

 $^{^{103}\}mathrm{An}$ aggregate category used by the SNB between 1976 and 1984.

 $^{^{104}\}mathrm{A}$ residual category used by the SNB between 1976 and 1984.

¹⁰⁵A residual category used by the SNB between 1975 and 1984.

 $^{^{106}\}mathrm{An}$ aggregate category used by the SNB between 1976 and 1984.

¹⁰⁷A residual category used by the SNB between 1976 and 1984.

 $^{^{108}}$ Note that after the EU savings directive(2005), a fraction of Venezuela's holdings are included in the tax havens category, under strong suspicion that they correspond to the holdings of sham corporations created to avoid the directive in 2005.

¹⁰⁹A residual category used by the SNB between 1976 and 1984.

Timor-Leste, Tonga, Turkey, Turkmenistan, Tuvalu, USSR, United States minor Islands, Uzbekistan, Vietnam, Wallis et Futuna.

- Africa: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo, Dem. Rep., Congo, Rep., Côte d'Ivoire, Djibouti, Equatorial, Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Libya, Madagascar, Malawi, Mali, Mauritania, Morocco, Mozambique, Namibia, Niger, Nigeria, "North Africa,"¹¹⁰ "Other Africa,"¹¹¹ Rwanda, Senegal, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Sao Tome and Principe, Tanzania, Togo, Tunisia, Uganda, Western Sahara, Zambia, Zimbabwe.
- North America: Canada, United States of America.
- Caribbean: Cuba, Guyana, Jamaica, Suriname, Trinidad and Tobago.

Table A25 and A26 present two distributions of Switzerland's fiduciary deposits by country group. The first distribution (Table 25) gives the raw shares of each country group. In the second distribution (Table A26), I attempt to make tax havens' "holdings" transparent as follows. Denote f_i the true value of the fiduciary deposits held by residents of country *i* in Swiss banks. What we observe is $\tilde{f}_i = (1-k_i)f_i$ where k_i is the propensity of country *i*'s residents to use sham wealth-holdings entities in tax havens. I make tax havens transparent assuming that Middle East countries do not use sham entities ($k_i = 0$ for Middle East countries), and that k_i is constant across all other (non-haven) countries. To put it differently, I assume that, except for Middle East countries, each non-haven country ultimately owns the deposits assigned to tax haven countries in the same proportion as it owns the deposits assigned to non-haven countries.

This is a rough way to get rid of the meaningless "tax havens' holdings" column. This way of doing things under-estimates Europe's holdings after the European Union savings Directive, since Europeans have massively shifted their holdings to sham entities

¹¹⁰An aggregate category used by the SNB between 1976 and 1984.

 $^{^{111}\}mathrm{A}$ residual category used by the SNB between 1976 and 1984.

in 2005. After 2005, k_i is certainly larger in Europe than elsewhere. Accordingly, I only report figures until 2004 in Table A26. Another problem is that there is no reason why k_i should be independent of country *i*'s characteristics. In particular, we have reasons to believe that k_i is positively correlated with *i*'s tax rate, since using sham entities in tax havens minimizes the probability for a tax evader to be caught. If this is true, then the figures in Table A26 under-estimate the share of fiduciary deposits belonging to residents of high-tax countries – that is, in particular, to Europeans. I plan in future research to improve the method used to make tax havens transparent.

F Net Foreign Asset Positions (Tables A27-A32)

F.1 Official data (Table A27)

In this section, I list the sources used to compute the officially reported net foreign asset positions of rich countries (Table A27, and Figure 1 of the Paper).¹¹²

I define rich countries as all eurozone members as of December 31st 2010,¹¹³ plus five non-eurozone European countries (the U.K., Switzerland, Sweden, Norway, and Iceland, labelled "other Europe" in Table A27), Australia, New-Zealand, Canada, the U.S., and Japan.

I systematically start with the international investment positions reported by national or regional statistical agencies on their websites, that I convert to U.S. dollars using end of period exchange rates from the IMF International Financial Statistics. We have complete time series starting in 1985 or earlier for the U.S. (Bureau of Economic Analysis), Japan (Japanese Ministry of Finance),¹¹⁴ the U.K. (Official of National Statistics), and Switzerland (Swiss National Bank). In all other instances, we only have partial time series: starting in 1999 for the eurozone 16 (ECB), 1999 for Sweden (Statistics Sweden),

 $^{^{112}}$ These sources, as well as the links to the data, are in the sheet "RawData" of the Excel file that supplements the present Appendix, see formulas in Table A27.

¹¹³"eurozone 16", i.e.: Austria, Belgium, Cyprus, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, and Spain.

¹¹⁴Note that the Japanese Ministry of Finance compiled two NFA series, one in yen and one in USD. In 1985 and 1994, the yen series converted to USD differs from the official series in USD. In this case, I use the official NFA directly expressed in USD (which is consistent with the data sent to the IMF).

1998 for Norway (Statistics Norway), 1989 for Iceland (Central Bank of Iceland), 1998 for Denmark (Denmarks Nationalbank), 2001 for Australia (Australian Bureau of Statistics), 2005 for Canada (Statistics Canada),¹¹⁵ and 2000 for New Zealand (Statistics New Zealand).

When no official data is reported by national or regional statistical agencies, I use the series "net IIP as officially reported" in the updated and extended External Wealth of Nations database compiled by Lane and Milesi-Ferretti (2007).¹¹⁶ This concerns Norway (1980-1993),¹¹⁷ Sweden (1985-1998), Iceland (1988), Denmark (1991-1997), Australia (1988-2000), and New Zealand (1991-1999).

Lastly, when a country or region has not reported any data on its website or to the IMF, I use the NFA estimates of Lane and Milesi-Ferretti (2007). This concerns the eurozone before 1999,¹¹⁸ Iceland (1985-1987), Denmark (1985-1990), Australia (1985-1987), Canada (1985-2004), and New Zealand (1985-1990).

In the left Panel of Table A27, I divide each net foreign asset position by world GDP. In the right Panel, I divide each net foreign asset position by the relevant regional or country GDP (i.e., I divide the U.S. NFA by the U.S. GDP, the eurozone 16 NFA by the eurozone 16 GDP, etc.). All GDP figures come from the World Bank's World Development Indicators¹¹⁹).

 $^{^{115}\}mathrm{Canada}$ publishes an IIP at book value and an IIP at market value, I take the market value IIP.

¹¹⁶This series refer to the IIP sent by individual countries to the IMF. In some cases, countries choose not to disseminate IIP series before a certain date, e.g. because there has been a change of methodology. Using the IIPs sent to the IMF allows to recover the older series.

¹¹⁷For Norway there are no official data between 1993 and 1998, I fill the gap by linear interpolation. ¹¹⁸Specifically, before 1999, the net foreign asset position of the eurozone 16 is computed as the sum of the net foreign asset positions of the 16 member countries in Lane and Milesi-Ferretti (2007). Note that in 1999, the official eurozone NFA (USD -396bn) is close to the sum of the 16 net foreign asset positions estimates of Lane and Milesi-Ferretti (USD - 366bn), so I just paste the two series together. After 1999, however, there is a significant divergence between the ECB NFA and the sum of Lane and Milesi-Ferretti's country level estimates. One of the reasons is that the ECB NFA is built with direct investment equity capital mostly at book value, which tends to under-estimate the eurozone's net foreign asset position. I stick, however, to the principle of starting from published sources first when those are available. If the eurozone turns into a net creditor when one adds offshore holdings to the ECB NFA, as argued in the paper, then it does even more so if one uses alternative NFA figures for the eurozone with FDI at market values.

¹¹⁹Downloaded in April 2011 from http://data.worldbank.org/.

F.2 Corrected net foreign asset positions (Tables A28-A32)

Corrected net foreign asset positions account for the unrecorded holdings of households in tax havens. I propose different scenarios, based on different assumptions on the share of unrecorded offshore fortunes Ω owned by residents of rich countries, eurozone residents, U.S. residents, etc.

Specifically, we have a good idea of who owns the unrecorded offshore fortunes in Swiss banks, which, as col. 12 of Table A23 shows, have accounted for around 1/3 of all unrecorded offshore fortunes Ω . In Table A28, I investigate how the eurozone's net foreign asset position (as a percentage of eurozone GDP) evolves each year when we account for eurozone households' offshore fortunes. Table A29 presents similar computations for the U.S.

Tables A30, A31, and A32 present robustness checks.

My estimate of households' unrecorded offshore fortunes Ω is larger than the world net foreign asset discrepancy (the puzzling net debt of the world) that we can compute from Lane and Milesi-Ferretti's updated and extended External Wealth of Nations database. In principle, this can affect the claim made in the paper that the eurozone and the rich world are in actual facts net creditors.

Table A30 explores the sources of the difference between Ω and the NFA discrepancy. From 2001 to 2004, my estimate of households' unrecorded offshore assets Ω is comparable to the NFA discrepancy. The small divergence can be fully explained by three factors: the positive FDI discrepancy in the EWNII database (most likely caused, I argue, by errors in the accounts of developing countries); the inclusion in the EWNII of Middle East oil exporters' offshore holdings (which I include in Ω); and the small corrections I make to the portfolio liability data of some EWNII nations (which affect both developing and developed countries, though marginally).

From 2005 to 2007, the net debt of the world shrinks in the EWNII, while my estimate of households' unrecorded offshore holdings keeps growing. Around one fourth of the difference between Ω and the NFA discrepancy can be explained by the cumulated trade balance discrepancy. If, as I argue in the paper, the trade discrepancy comes from errors in the balance of payments of developing countries (e.g., missing imports in China, see Fisman and Wei (2004)), then it is bound to bias upwards the net foreign asset positions of developing countries, which are still mostly obtained by cumulating balance of payments flows (in particular for the "other assets" category).

In 2005, 2006 and 2007, however, around a third of the difference between Ω and the NFA discrepancy remains unexplained. Two potential factors are (i) some divergence between portfolio asset data in the CPIS and in the EWNII (for instance due to data revisions), and (ii) the net position of non-EWNII countries. In principle, the OFCs not included in the EWNII (but included in my database) should be roughly balanced; however, small imbalances should not be ruled out. For instance, the Cayman SPVs that held U.S. mortgages may have suffered adverse negative shocks when U.S. housing prices started decreasing, which could have driven the Cayman IIP in the red, thus making the OFCs not included in the EWNII net debtors.

Table A31 redoes the computations of Table A28 (the eurozone's net foreign asset position, under various allocations of Ω), but accounting for the fact that the eurozone may *over*estimate some of its foreign assets or under-estimate some of its foreign liabilities.

First, to be fully consistent with the method used to compute Ω , I correct the official eurozone portfolio liabilities to account for the fact that CPIS-derived liabilities are sometimes larger than reported portfolio liabilities. That is, I subtract col. 13 of Table A12 from the eurozone's official net foreign asset position reported in Table A27.

Then, I compute the unexplained difference between Ω and the NFA discrepancy – that is, the difference that can in principle be due to errors in the published accounts of any country. This is simply the sum of Table A30 lines 2 (the FDI discrepancy), line 3 (the derivative discrepancy), line 6 (the cumulated trade discrepancy after 2004), and line 7 (other).

Lastly, I assume that 25% of this unexplained discrepancy is due to errors in the accounts of eurozone countries, and I subtract the resulting figure from the eurozone's official net foreign asset position. 25% corresponds to the share of eurozone cross-border liabilities in total cross-border liabilities, so in effect I assume that the residual measure-

ment errors are distributed across countries proportionally to the size of their international balance sheets. Note that there are strong reasons to believe that they are not, i.e. that the residual measurement errors essentially come from developing countries. The 25% assumption must been seen as a worst-case scenario.

Importantly, the finding that the eurozone is a net creditor when we account for its residents' offshore assets is robust to this worst-case scenario. Even factoring in large, unexplained measurement errors in eurozone accounts, if eurozone residents own 50% of Ω , the eurozone is still a net creditor (see bottom Panel of Table A31), with an average NFA of +2% of eurozone GDP over 2001-2007 (vs. -13% with no offshore account).

Table A32 presents a similar robustness check for the finding that the rich world is a net creditor. That is, I start by subtracting col. 12 of Table A12 to the rich world's official net foreign asset position reported in Table A27; I then assume that 50% of the unexplained difference between the NFA discrepancy and Ω is due to errors in the published accounts of rich countries. The most plausible scenarios still make the rich world balanced (say, with 60% of Ω) or slightly positive.

The findings of this paper are thus robust to making the world IIP fully balanced, even under adverse assumptions on the quality of rich countries' international investment positions.

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	Table A1: Global Cross-Border Securities Assets															
	[1]	[2]	[3]	[4]	[5]	[6]	[7] Bil	[8] Ilions of current L	[9] JSD	[10]	[11]	[12]	[13]	[14]	[15]	[16]
			Correction reporting of	for CPIS countries			Correction	for non-CF	PIS reporting	countries	6					
	CPIS assets	Of which: SEFER + SSIO	Cayman Islands non-bank sector	Other	China	Of which: held as reserve	Middle- East oil exporters (onshore)	Of which: held as reserve	Of which: reported in CPIS	Other	Of which: private portfolios	Of which: reserve	Total securities assets	Of which: reserves + int'l orga.	Memo: (CPIS + SEFER) / Total assets	Memo: reserve minus bank deposits
								Panel A: A	II securities							
2001 2002 2003 2004 2005 2006 2007 2008 2007 2008 2001 2002 2003 2004 2005 2006	12,711 14,116 19,047 23,269 25,892 32,964 39,065 30,718 5,200 4,796 6,950 8,705 10,586 14,249	1,282 1,429 1,850 2,145 2,221 2,558 3,109 3,643 17 14 27 35 35 43	292 371 556 800 839 1,252 1,544 1,203 164 197 334 402 430 616	36 47 59 47 65 58 91 - 84 9 9 9 4 5 10	214 290 407 611 814 1,174 1,585 1,906 5 4 3 4 4 20	180 243 343 518 696 906 1,299 1,654 4 3 3 3 3 3 3 16	146 137 167 248 310 431 590 587 65 56 87 123 153 213	49 55 58 78 96 124 201 — 180 Panel B 22 22 31 39 48 61	22 21 29 35 46 63 79 <u>74</u> Equities 6 5 8 11 16 25	363 422 573 695 849 1,154 1,375 1,183 119 118 170 198 258 428	174 192 282 340 444 660 790 536 536 116 114 166 194 253 421	189 230 292 355 405 585 585 	13,741 15,362 20,780 25,634 28,723 36,972 44,170 	1,700 1,958 2,543 3,096 3,418 4,083 5,195 6,124 46 43 64 82 92 127	93% 92% 91% 90% 89% 88% 86% 93% 92% 92% 93% 92%	1,657 1,986 2,442 2,986 3,371 4,068 5,257 6,197
2007 2008	17,094 9 836	54 39	773 458	24 22	104 95	83 74	259 183	88 56	33 39	517 292	509 283	8	18,738 10 846	234 178	91% 91%	
2000			'					– – [—] – – Panel		<u></u>						
2001	7 511	1 265	129	20	208	176	82	20	15	245	59	197	9 1 9 7	1 655	0.2%	
2002 2003 2004 2005	9,319 12,097 14,564 15,306	1,415 1,823 2,110 2,186	174 222 398 409	29 38 50 43 60	200 287 404 607 809	241 340 515 693	82 81 79 125 157	28 33 28 39 49	15 16 21 25 30	245 305 403 497 591	78 115 147 192	227 288 350 399	10,188 13,234 16,209 17,302	1,935 1,915 2,479 3,014 3,326	92% 91% 90% 88%	
2006 2007 2008	18,715 21,970 <u>20,882</u>	2,515 3,055 3,604	636 770 744	48 67 62	1,154 1,481 1,811	890 1,216 1,580	218 332 404	63 113 124	38 46 34	727 858 891	239 281 253	488 577 638	21,460 25,432 24,761	3,956 4,961 5,946	87% 86% 84%	

				Tabl	e A2: Glo	obal Cro	ss-Borde	er Securitie	es Liab	ilities				
	[1]	[2]	[3]	[4]	[5]	[6]	[7] Billions of current U	[8] SD	[9]	[10]	[11]	[12]	[13]	[14]
			Corr	ection to EWN	II data		Non EWN	II countries						
	EWNII liabilities	Memo: IMF IIPs	No debt data	Netherlands SFIs	raw CPIS derived liabilities > reported liabilities	Cayman Islands	Small OFCs Other small OFCs	Memo: small OFCs / Total	Other	int'l orga.	Total securities liabilities	EWNII liabilities / Total liabilities	Memo: Int'l debt securities (BIS)	Cross-border debt / International debt
							Panel A: /	All securities						
2001 2002 2003 2004 2005 2006 2007 2008 2007 2008 2001 2002 2003 2004 2005 2006 2007	14,055 15,332 20,483 25,200 28,163 35,459 42,411 	13,144 15,233 20,256 24,957 27,764 34,692 41,565 34,497 5,566 5,790 8,135 10,021 11,811 15,338 18,282	35 31 47 58 75 104 168 123	265 326 435 458 394 516 626 	242 198 269 225 456 430 619 523 34 40 63 95 301 261 470	708 838 1,090 1,457 1,592 2,142 2,847 2,241 319 386 561 784 857 1,195 1,669	563 565 780 953 1,119 1,431 1,867 1,227 Panel E 384 359 494 626 757 988 1,304	7.8% 7.9% 8.3% 8.4% 8.8% 9.6% 8.6% 9.9% 11.2% 11.1% 12.0% 11.4% 11.8% 13.1%	17 17 19 30 41 52 93 58 	386 446 514 569 559 670 671 3 9 8 15 16 12 10	16,273 17,754 23,638 28,950 32,399 40,732 49,301 40,097 7,126 6,675 9,486 11,770 14,140 18,531 22,711	86% 86% 87% 87% 86% 86% 86% 88% 88% 88% 88% 86% 86% 86		
2008	11,288	<u>11,145</u> _		14	472	1,106	748	1 <u>3</u> .6%	20	<u>13</u>	13,662	83%		
							Panel	C: Debt						
2001 2002 2003 2004 2005	7,686 9,469 12,143 14,977 15,982	7,578 9,443 12,121 14,936 15,953	35 31 47 58 75	258 318 424 446 383	208 159 206 130 156	389 452 529 673 735	179 206 287 327 362	6.2% 5.9% 5.8% 5.8% 6.0%	7 8 10 14 22	383 436 506 555 543	9,146 11,079 14,152 17,180 18,258	84% 85% 86% 87% 88%	7,597 9,272 11,702 13,935 14,600	1.00 1.02 1.04 1.07 1.09
2006 2007 2008	19,453 23,216 23,358	19,354 23,283 23,353	104 168 123	473 608 592	169 149 51	947 1,177 1,135	442 563 479	6.3% 6.5% 6.1%	26 50 38	587 659 657	22,201 26,591 26,435	88% 87% 88%	18,415 22,700 23,845	1.05 1.03 0.98

		Та	able A3 – (Global Dis	screpanc	y Betwee	en Cross-	Border \$	Securities /	Assets	and Liabi	lities		
	[1]	[2]	[3]	[4]	[5]	[6]	[7] Billions of c	[9]	[10]	[11]	[12]	[13]	[14]	[15]
	Global Securities Assets	Global Securities Liabilities	Discrepancy		Where the m	iissing secur	ities are inves	sted: L _j - Σ _i Â	ij		Offshore asset	Missina	World	Missina
	$\Sigma_i \Sigma_j \hat{A}_{ij}$	$\Sigma_j L_j$	$Ω = Σ_j L_j - Σ_i Σ_j$	Luxembourg	Cayman islands	Ireland	United States	Japan	Swtizerland	Other	allocation	wealth / Cross-border securities	market cap	wealth / World market cap
							Panel A: Al	I securities						
2001 2002 2003 2004 2005 2006 2007 2008 2001 2002 2003 2004 2005 2006 2007	13,741 15,362 20,780 25,634 28,723 36,972 44,170 	16,273 17,754 23,638 28,950 32,399 40,732 49,301 40,097 7,126 6,675 9,486 11,770 14,140 18,531 22,711	2,532 2,392 2,858 3,316 3,676 3,760 5,131 4,490 1,573 1,501 1,940 2,344 2,719 3,020 3,972	305 362 465 570 733 766 1,039 912 311 368 476 582 747 781 1,060	265 274 347 463 559 857 857 203 252 347 477 463 559 798	$ \begin{array}{r} 165\\ 220\\ 314\\ 433\\ 515\\ 527\\ 682\\603\\603\\ 175\\ 226\\ 316\\ 386\\ 441\\ 524\\ 706\\ \end{array} $	509 401 495 539 492 354 264 - 210 Panel B: 411 299 341 382 279 187 192	93 70 94 151 188 231 360 291 Equities 37 27 53 72 135 125 150	125 113 131 147 136 135 110 98 116 106 117 122 117 111 101	$\begin{array}{c} 1,069\\ 953\\ 1,012\\ 1,000\\ 1,148\\ 1,187\\ 1,820\\ 1,536\\ \end{array}$	62% 63% 68% 71% 74% 80% 77%	16% 13% 12% 11% 9% 10% 10% 22% 22% 22% 20% 20% 20% 19% 16% 17%	65,130 66,086 82,453 95,686 102,465 121,338 143,297 119,080 27,907 23,510 32,037 38,152 43,319 53,375 64,563	6% 6% 6% 6% 6% 6% 6%
2008	10,846 _	13,662	2,816	930	600	637	<u>177</u>	<u>50</u>	94	329	63%	21%	35,811	8%
2001	8,187	9,146	959	-6	62	-10	Panel (98	C: Debt 57	9	749	38%	10%	37,224	3%
2002 2003 2004 2005	10,188 13,234 16,209 17,302	11,079 14,152 17,180 18,258	891 918 972 956	-7 -11 -12 -13	22 0 0 0	-6 -2 47 74	103 154 157 213	43 41 78 53	6 15 25 19	729 721 676 610	37% 32% 29% 26%	8% 6% 5%	42,577 50,416 57,534 59,145	2% 2% 2% 2%
2006 2007 2008	21,460 25,432 24,761	22,201 26,591 26,435	740 1,159 1,674	-14 -21 -18	0 59 241	3 -25 -33	168 72 33	106 210 241	25 8 4	453 856 1,206	20% 23% 37%	3% 4% 6%	67,962 78,734 83,269	1% 1% 2%

					Table	A4: Mai	in Holde	rs of Cr	oss-Boro	der Sec	urities					
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]
								Billions of	current USD							
		In	dustrial, e	emerging an	d developi	ing countri	es					Offsho	re financia	l centers		
	United States	United Kingdom	Japan	Germany	France	Other (private)	Reserve + Int'l orga.	Total onshore	Memo: Unknown Owner (Ω)	Luxem- bourg	Ireland	Cayman Islands	Bermuda	Hong-Kong	Other	Total offshore centers
								Panel A: A	II securities							
2001 2002 2003 2004 2005 2006 2007 2008 2007 2008 2001 2002 2003 2004 2005 2006	2,304 2,246 3,134 3,764 4,591 5,972 7,192 4,268 1,613 1,385 2,080 2,560 3,318 4,329	$\begin{array}{c} 1,304\\ 1,360\\ 1,670\\ 2,110\\ 2,374\\ 3,141\\ 3,393\\ \underline{},4\underline{}6\\ \underline{},4\underline{}6\\ \underline{},4\underline{}6\\ 493\\ 664\\ 879\\ 1,076\\ 1,366\end{array}$	1,290 1,395 1,721 2,010 2,115 2,343 2,524 2,377 227 211 274 365 409 510	792 898 1,205 1,515 2,310 2,625 2,149 381 331 441 524 529 928	710 932 1,370 1,751 1,873 2,464 2,965 2,553 202 200 340 443 525 743	2,750 3,166 4,412 5,525 6,290 7,980 9,656 7,584 1,305 1,305 1,305 1,305 1,861 2,285 2,739 3,633	$\begin{array}{c} 1,700\\ 1,958\\ 2,543\\ 3,096\\ 3,418\\ 4,083\\ 5,195\\ \underline{},\underline{,\underline{},\underline{},\underline{,\underline{},\underline{},\underline{,\underline{},\underline{},\underline{},\underline{},\underline$	10,849 11,955 16,055 19,771 22,215 28,294 33,549 27,481 Panel B 4,387 3,969 5,724 7,138 8,688 11,637	2,532 2,392 2,858 3,316 3,676 3,760 5,131 4,490 - : Equities 1,573 1,501 1,940 2,344 2,719 3,020	821 923 1,333 1,616 1,841 2,431 2,883 	433 574 836 1,072 1,182 1,620 1,970 <u>1,627</u> 134 153 223 305 383 573	342 426 618 858 911 1,334 1,634 253 164 202 339 404 432 618	162 188 254 310 392 449 574 <u>396</u> 31 31 31 62 65 87 114	273 320 432 654 707 1,055 1,373 <u>1,069</u> 95 96 153 200 228 339	860 976 1,252 1,354 1,474 1,788 2,188 2,188 1,661 425 419 556 677 795 1,082	2,891 3,407 4,725 5,863 6,508 8,678 10,621
2007 2008	5,248 2 748	1,509 824	573 395	954 590	827 455	4,482 2 708	234 178	13,827 7 897	3,972 2 816	1,413 758	649 431	776 459	138 81	515 275	1,420 945	4,911 2 949
								Panel	C: Debt							
2001 2002 2003 2004	691 861 1,054 1,204	746 867 1,006 1,230	1,062 1,184 1,447 1,645	410 567 764 992	509 732 1,029 1,308	1,390 1,861 2,552 3,240	1,655 1,915 2,479 3,014	6,463 7,987 10,331 12,633	959 891 918 972	502 618 845 978	299 421 612 767	179 224 279 454	131 157 192 245	179 224 279 454	435 557 696 677	1,724 2,202 2,903 3,575
2005 2006 2007 2008	1,273 1,643 1,944 1,519	1,298 1,774 1,885 1,602	1,706 1,833 1,950 1,982	1,024 1,382 1,671 1,560	1,348 1,721 2,138 2,099	3,551 4,347 5,174 4,876	3,326 3,956 4,961 5,946	13,527 16,657 19,722 19,584	956 740 1,159 1,674	1,033 1,283 1,469 1,362	799 1,047 1,321 1,196	480 716 858 794	305 335 435 315	480 716 858 794	679 706 767 716	3,775 4,804 5,710 5,177

	Public sector		Private sector	
		Total	Of which: banks	Of which: non banks
Argentina	7%	93%	0%	93%
Australia	4%	96%	5%	90%
Austria	5%	95%	39%	56%
Bahrain	2%	98%	95%	3%
Barbados	0%	100%	100%	0%
Bermuda	0%	100%	1%	98%
Bulgaria	0%	100%	50%	50%
Cayman Islands	0%	100%	100%	0%
Chile	33%	67%	1%	66%
Colombia	11%	89%	1%	88%
Costa Rica	0%	100%	44%	56%
Cyprus	0%	100%	94%	6%
Czech Republic	1%	99%	35%	64%
Denmark	5%	95%	16%	79%
Equat	0%	100%	99%	1%
Finland	51%	100%	15%	34%
Franco	90/	4370	210/	5470 610/
Grance	0 /0	92 /0	50%	270/
Gleece	00/	07 %	00% 00%	37%
Gueinsey	0%	100%	2070	1270
Hungary	0%	100%	4%	90%
India	0%	100%	3%	97%
Indonesia	0%	100%	40%	60%
Israel	0%	100%	18%	82%
Italy	5%	95%	13%	82%
Japan	0%	100%	26%	74%
Jersey	1%	99%	2%	97%
Kazakhstan	85%	15%	7%	8%
Kuwait	3%	97%	21%	77%
Macao	14%	86%	27%	59%
Malaysia	0%	100%	14%	86%
Mexico	0%	100%	35%	65%
Netherlands	2%	98%	12%	86%
Netherlands Antilles	0%	100%	9%	91%
Norway	75%	25%	4%	21%
Pakistan	0%	100%	97%	3%
Poland	2%	98%	11%	87%
Portugal	13%	87%	29%	57%
Romania	0%	100%	13%	87%
Russian Federation	2%	98%	64%	34%
South Africa	0%	100%	3%	97%
Spain	22%	78%	23%	56%
Śweden	20%	80%	20%	60%
Thailand	5%	95%	13%	82%
Turkey	1%	99%	78%	21%
Ukraine	0%	100%	7%	93%
United Kingdom	0%	100%	40%	60%
Uruguav	0%	100%	36%	64%
Venezuela	65%	35%	14%	21%
Weighted Mean	8%	92%	25%	66%

Table A5: Sectoral Breakdown of Portfolio Claims Reported in the CPIS, 2008

	_	2001	2002	2003	2004	2005	2006	2007	2008
[1]	Holdings of U.S. securities (TIC)	160	194	276	401	445	646	851	706
[2]	Equities	57	65	117	140	165	221	329	213
[3]	Long term debt	92	115	143	227	255	386	469	410
[4]	Short term debt	11	13	16	34	25	40	54	83
[5]	Estimated share of U.S. securities (gravity)								
[6]	Equities	35%	32%	34%	35%	38%	36%	42%	46%
[7]	Debt	57%	57%	57%	57%	58%	59%	61%	62%
[8]	Total assets (est. from TIC + gravity)	342	426	618	858	911	1,334	1,634	1,253
[9]	Of which: equities	164	202	339	404	432	618	776	459
[10]	Of which: debt	179	224	279	454	480	716	858	794
	Consistency checks								
[11]	Bank assets (CPIS)	51	55	62	58	72	82	90	50
[12]	Of which: equities	0	5	5	2	2	2	2	1
[13]	Of which: debt	51	50	57	56	70	80	88	49
[14]	Fund assets (CIMA)	n.a.	n.a.	n.a.	n.a.	768	1,234	1,708	1,216
[15]	Of which: equities	n.a.	n.a.	n.a.	n.a.	608	952	1,188	825
[16]	Of which: debt	n.a.	n.a.	n.a.	n.a.	160	283	520	391
[17]	Banks + Funds (CPIS + CIMA)	n.a.	n.a.	n.a.	n.a.	841	1,316	1,798	1,266
[18]	Liabilities	678	811	1,050	1,396	1,504	2,012	2,662	2,181
[19]	Debt	389	452	529	673	735	947	1,177	1,135
[20]	International debt (BIS)	389	452	493	521	536	869	1,177	1,135
[21]	Creditor derived debt liabilities	327	430	529	673	735	947	1,119	894
[22]	Equities	319	386	561	784	857	1,195	1,669	1,106
[23]	Mutual fund shares (CIMA, est.)	289	359	521	723	768	1,066	1,485	1,045
[24]	U.S. equities on non-fund sector (TIC)	30	27	40	61	88	129	184	61
[25]	Creditor-derived equity liabilities	117	134	215	307	394	636	872	506
[26]	Net portfolio position	-335	-385	-432	-538	-592	-678	-1,029	-928
[27]	Equity	-125	-157	-181	-319	-336	-448	-710	-586
[28]	Debt	-211	-228	-250	-219	-256	-230	-319	-341

Table A6: Portfolio Assets and Liabilities of the Cayman Islands (bn of USD)

		2001	2002	2003	2004	2005	2006	2007	2008
	Public assets								
[1]	Memo: total reserve minus gold	216	291	408	615	822	1,068	1,530	1,949
[2]	Foreign exchange reserves	212	286	403	610	819	1,066	1,528	1,946
[3]	Foreign portfolio reserves (85% of exchange res.)	180	243	343	518	696	906	1,299	1,654
[4]	Of which: equities	4	3	3	3	3	16	83	. 74
[5]	Of which: debt	176	241	340	515	693	890	1,216	1,580
	Private assets								
[6]	External Wealth of Nations II, August 2009	8	6	5	98	123	273	290	n.a.
[7]	Of which: equities	8	6	5	6	6	9	25	n.a.
[8]	Of which: debt	0	0	0	92	117	264	265	n.a.
[9]	International Investment Position	n.a.	n.a.	n.a.	92	117	265	285	252
[10]	Of which: equities	n.a.	n.a.	n.a.	0	0	1	20	21
[11]	Of which: debt	n.a.	n.a.	n.a.	92	117	264	265	231
[12]	Prefered estimate	33	47	64	93	118	268	286	252
[13]	Of which: equities	1	1	1	1	1	4	21	21
[14]	Of which: debt	32	46	64	92	117	264	265	231
	Total assets								
[15]	Total foreign securities held by China	214	290	407	611	814	1,174	1,585	1,906
[16]	Of which: equities	5	4	3	4	4	20	104	95
[17]	Of which: debt	208	287	404	607	809	1,154	1,481	1,811
[18]	Public assets / total assets	84%	84%	84%	85%	86%	77%	82%	87%
	U.S. assets								
[19]	U.S. long term securities held by China (TIC)	152	213	294	405	581	788	1,030	1,275
[20]	Of which: equities	4	3	2	3	3	14	72	72
[21]	U.S. short-term securites held by China (TIC)	1	1	2	21	27	25	66	169
[22]	Total U.S. securities held by China (TIC)	153	214	296	426	608	813	1,096	1,444
[23]	U.S. securities / Total foreign securities	71%	74%	73%	70%	75%	69%	69%	76%

Table A7: China' Cross-Border Securities Assets (bn of USD)

Table A8: Middle-East Oil Exporting Countries' Cross-Border Securities Assets (bn of USD)

		2001	2002	2003	2004	2005	2006	2007	2008
	Assets reported in the CPIS								
[1]	Bahrain	15	14	19	24	31	40	47	33
[2]	Of which: equities	3	2	4	4	7	9	10	6
[3]	Kuwait	6	7	10	12	15	23	32	40
[4]	Of which: equities	3	3	4	6	9	16	24	33
[5]	Bahrain + Kuwait	22	21	29	35	46	63	79	74
[6]	Of which: equities	6	5	8	11	16	25	33	39
	Middle East oil exporters' onshore assets								
[7]	U.S. long term securities held onshore by ME oil exp. (TIC)	82	73	87	127	163	231	302	283
[8]	Of which: equities	45	38	58	79	95	128	150	102
[9]	Of which: long-term debt	36	35	30	48	68	103	152	181
[10]	U.S. short-term securities held onshore by ME oil exp. (est., TIC)	21	20	23	31	29	28	40	45
[11]	Memo: Total U.S. short term claims (i.e. incl. bank accounts)	n.a.	n.a.	25	41	51	70	81	119
[12]	Total U.S.debt securities held onshore by ME oil exp. (est.)	57	55	52	80	97	131	192	226
[13]	Total U.S. securities held onshore by ME oil exp. (est., TIC)	103	93	110	159	192	259	342	329
[14]	Assumed U.S. share	70%	68%	66%	64%	62%	60%	58%	56%
[15]	Implied total securities held onshore by ME oil exporters	146	137	167	248	310	431	590	587
[16]	Of which: equities	65	56	87	123	153	213	259	183
[17]	Memo: foreign exchange reserves (old classification for Saudi Arabia)	66	74	78	104	129	165	269	240
[18]	Of which: Bahrain + Kuwait	12	11	9	10	12	16	21	21
[19]	Portfolios held as reserve assets (75% of reserves)	49	55	58	78	96	124	201	180
[20]	Implied portfolios held onshore by SWFs and by private agents	97	82	108	170	213	308	389	407
[21]	Implied onshore portfolios missed by CPIS	125	116	138	212	264	369	511	513
[22]	Of which: equities	58	50	79	112	137	189	225	143
[23]	Of which: debt	67	65	58	100	127	180	286	370
	Consistency checks								
[24]	Setser & Ziemba (2009) estimate of GCC foreign assets	280	270	380	500	690	900	1,280	1,200
[25]	Assuming 85% in portfolio assets and Iran=Iraq=0	238	230	323	425	587	765	1,088	1,020
[26]	Implied offshore portfolio of ME oil exporters	92	93	156	177	277	334	498	433
[27]	Implied share of ME oil exp' portfolios held offshore	38%	40%	48%	42%	47%	44%	46%	42%
[28]	Implied share of missing wealth Ω belonging to ME oil exp.	4%	4%	5%	5%	8%	9%	10%	10%
[29]	Lane & Milesi-Ferretti's (2007) estimate of ME oil exp' foreign secs	334	346	430	535	679	884	1,160	n.a.
[30]	Portfolio equities (EWNII)	100	85	117	145	176	239	312	n.a.
[31]	Debt securities (portfolio + reserve)	234	261	313	390	503	645	849	n.a.
[32]	Memo: Total debt assets (portfolio+other, EWNII) excl. Bahrain	361	379	431	530	695	905	1,164	n.a.
[33]	Memo: Reserve assets (EWNII), excl. Bahrain	68	77	83	100	119	145	235	n.a.
[34]	Memo: deposits in BIS banks (BIS Table 7A), excl. Bahrain	151	149	146	169	217	285	389	378
[35]	Memo: Portfolio debt of Bahrain (EWNII)	12	16	19	20	25	34	40	n.a.
[36]	Implied offshore portfolio of ME oil exporters	188	209	263	287	369	452	570	n.a.
[37]	Implied share of ME oil exp' portfolios held offshore	56%	60%	61%	54%	54%	51%	49%	n.a.
[38]	Implied sahre of missing wealth Ω belonging to ME oil exp.	7%	9%	9%	9%	10%	12%	11%	n.a.
[39]	Japanese securities held by Middle-East oil exporters (CPIS)	11	14	20	30	48	58	81	100
[40]	Of which: equities	9	11	17	22	34	40	43	34
[41]	Japanese assets / U.S. assets	11%	15%	18%	19%	25%	23%	24%	30%
[42]	Saudi Arabia's foreign securities (Reserve + SWF + pension)	75	78	91	117	159	235	290	390
[43]	Saudi Arabia's foreign sec. / Middle East est. onshore foreign sec.	51%	57%	55%	47%	51%	55%	49%	66%
[44]	Saudi Arabia's net oil balance / Middle East net oil bal.	44%	44%	45%	46%	43%	42%	40%	41%

		2001	2002	2003	2004	2005	2006	2007	2008
	Public assets								
[1]	Memo: total reserve minus gold	252	307	389	473	540	660	780	863
[2]	Foreign portfolio reserves (75% of exchange res.)	189	230	292	355	405	495	585	647
[3]	Of which: equities (1%)	3	3	4	5	5	7	8	9
[4]	Of which: debt (74%)	187	227	288	350	399	488	577	638
	Private assets								
[5]	Of which: equities	116	114	166	194	253	421	509	283
[6]	Of which: debt	58	78	115	147	192	239	281	253
[7]	External Wealth of Nations II countries	112	127	192	241	296	376	466	335
[8]	Of which: equities	64	61	94	117	145	199	266	153
[9]	Of which: debt	48	66	98	124	151	177	200	182
[10]	Memo: Taiwan	63	78	131	168	208	255	307	214
[11]	Of which: equities	43	43	68	86	107	147	197	113
[12]	Of which: debt	20	35	63	82	101	108	110	101
[13]	Small International Financial Centers	62	65	90	99	148	284	324	201
[14]	Of which: equities	52	53	72	77	107	221	243	130
[15]	Of which: debt	10	11	17	23	40	62	81	70
[16]	Memo: British Virgin Islands	50	50	77	79	115	235	231	136
[17]	Of which: equities	42	41	64	65	91	196	199	107
[18]	Of which: debt	7	8	13	14	24	39	31	28

Table A9: Other non-CPIS Countries Securities Assets (bn of USD)

	Equity	Debt	Equity	Debt
Bilateral controls				
Log distance	-0.561***	-0.733***	-0.450***	-0.594***
	(0.017)	(0.018)	(0.010)	(0.010)
Longitude gap	0.003***	0.003***		
	(0.000)	(0.000)		
Common language	0.394***	-0.110***	0.451***	0.014
	(0.030)	(0.032)	(0.022)	(0.023)
Colonial relationship after 1945	0.251***	0.447***	0.343***	0.488***
	(0.055)	(0.060)	(0.038)	(0.041)
Both countries industrial	2.739***	2.806***	2.499***	2.303***
	(0.043)	(0.046)	(0.036)	(0.036)
Log of GDP gap	-0.307***	-0.159***	-0.230***	-0.149***
	(0.009)	(0.010)	(0.007)	(0.007)
Log of GDP p.c. gap	-0.250***	-0.149***	-0.260***	-0.195***
	(0.009)	(0.010)	(0.007)	(0.007)
OFC source x host dummy	No	No	Yes	Yes
Source country controls				
Latitude	-0.003***	-0.003***	-0.005***	-0.005***
	(0.000)	(0.000)	(0.000)	(0.000)
Landlocked dummy	-0.087***	0.208***	0.144***	0.303***
	(0.024)	(0.026)	(0.021)	(0.021)
Population	0.517***	0.518***	0.447***	0.480***
	(0.010)	(0.010)	(0.007)	(0.007)
GDP per capita	1.123***	0.969***	1.220***	1.157***
	(0.015)	(0.016)	(0.012)	(0.012)
OFC dummy			1.235***	1.800***
			(0.141)	(0.143)
Year fixed-effect	Yes	Yes	Yes	Yes
Host-country fixed effects	Yes	Yes	Yes	Yes
Offshore centers included	No	No	Yes	Yes
Observations	33,746	34,037	57,122	57,670
Adjusted R-squared	0.734	0.739	0.685	0.707

Table A9B: Bilateral Portfolio Holdings, Panel Regressions

OLS regressions, pooled data 2001-2008 * p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses. Data sources: IMF Coordinated Portoflio Survey, 2001-2008

Source countries	Non-	OFCs	OF	Cs	OF	Cs
Host countries	OF	Cs	Non-	OFCs	Α	AII
	Equity	Debt	Equity	Debt	Equity	Debt
Bilateral controls					• •	
Log distance	-0.340***	-0.596***	-0.774***	-0.792***	-0.658***	-0.651***
	(0.028)	(0.028)	(0.022)	(0.02)	(0.019)	(0.017)
Common language	0.471***	-0.202***	0.376***	0.143***	0.374***	0.125***
	(0.059)	(0.059)	(0.046)	(0.043)	(0.04)	(0.038)
Colonial relationship after 1945	0.620***	1.444***	0.274***	0.311***	0.502***	0.307***
	(0.126)	(0.13)	(0.076)	(0.077)	(0.062)	(0.062)
Both countries industrial	1.897***	1.972***	2.145***	1.688***	2.030***	1.673***
	(0.126)	(0.127)	(0.087)	(0.076)	(0.085)	(0.074)
Log of GDP gap	0.003	0.013	-0.228***	-0.275***	-0.203***	-0.204***
	(0.039)	(0.041)	(0.014)	(0.013)	(0.012)	(0.012)
Log of GDP p.c. gap	-0.250***	-0.139***	-0.140***	-0.220***	-0.159***	-0.224***
	(0.018)	(0.017)	(0.018)	(0.017)	(0.016)	(0.014)
Source country controls						
Latitude	-0.003***	-0.002*	-0.023***	-0.025***	-0.022***	-0.024***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Landlocked dummy	0.270***	0.424***	0.562***	0.552***	0.691***	0.647***
-	(0.061)	(0.062)	(0.053)	(0.05)	(0.05)	(0.046)
Population	0.410***	0.548***	0.356***	0.433***	0.391***	0.456***
	(0.043)	(0.045)	(0.012)	(0.011)	(0.011)	(0.011)
GDP per capita	1.055***	0.926***	1.545***	1.740***	1.587***	1.724***
	(0.047)	(0.049)	(0.03)	(0.028)	(0.028)	(0.025)
Year fixed-effect	Yes	Yes	Yes	Yes	Yes	Yes
Host-country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	8,466	8,313	11,822	12,257	14,910	15,320
Adjusted R-squared	0.644	0.636	0.650	0.736	0.643	0.710

Table A9C: Bilateral Portfolio Holdings in and of Offshore Financial Canters, Panel Regressions

OLS regressions, pooled data 2001-2008 * p<0.05, ** p<0.01, *** p<0.001. Standard errors in parentheses. Data sources: IMF Coordinated Portoflio Survey, 2001-2008

		2001	2002	2003	2004	2005	2006	2007	2008
	Portfolio equity liabilities								
[1]	Bahamas	10	16	21	22	30	28	35	20
[2]	Bermuda	195	184	251	335	360	404	556	312
[3]	Cavman Islands	319	386	561	784	857	1.195	1.669	1.106
[4]	Jersev	63	41	49	56	77	93	149	89
151	Guernsev	33	38	53	77	101	146	195	119
[6]	Isle of Man	1	2	3	9	3	6	8	5
[7]	Netherland Antilles	28	27	37	42	65	80	122	63
ខែរំ	BVI	43	42	65	67	93	200	204	110
[9]	Liechtenstein	9	8	15	18	27	33	35	28
[10]	Total	703	745	1,055	1,409	1,614	2,183	2,973	1,854
[11]	Memo: investment funds foreign liabilities								
[12]	Bermuda	56	68	116	158	188	212	249	171
[13]	Cayman Islands	289	359	521	723	768	1 066	1 485	1 045
[14]	Jersev	63	41	48	55	76	90	144	79
[15]	Guernsev	29	35	49	72	96	134	184	114
[16]	Isle of Man	_0			. =				
[17]	Netherland Antilles	14	13	0	12	20	24	35	26
181	BVI								
[19]	Liechtenstein	9	7	15	18	27	32	34	28
[20]	Bahamas	1	1	2	2	2	1	1	1
[21]	Bermuda	118	89	107	152	173	189	252	141
[22]	Cayman Islands	30	27	40	61	88	129	184	61
[23]	Jersey	0	0	1	0	1	3	5	11
[24]	Guernsey	4	3	4	5	6	11	11	5
[25]	Isle of Man	0	0	0	0	0	1	1	0
[26]	Netherland Antilles	14	15	23	29	45	56	88	37
[27]	BVI	1	1	2	3	5	4	5	3
[28]	Liechtenstein	0	0	0	0	0	0	0	0
	Memo: creditor-derived equity liabilities								
[29]	Bahamas	10	16	21	22	30	28	35	20
[30]	Bermuda	195	184	251	335	352	404	556	303
[31]	Cayman Islands	117	134	215	307	394	636	872	506
[32]	Jersey	8	9	17	32	37	41	59	53
[33]	Guernsey	12	14	17	23	33	54	68	50
[34]	Isle of Man	1	2	3	9	3	6	8	5
[35]	Netherland Antilles	24	26	37	42	63	78	120	56
[36]	BVI	43	42	65	67	93	200	204	110
[37]	Liechtenstein	4	6	3	2	5	6	12	8

Table A10: Cross-Border Equity Liabilities of Small Offshore Financial Centers (bn of USD)

		2001	2002	2003	2004	2005	2006	2007	2008
	Portfolio debt liabilities								
[1]	Bahamas	4	5	6	10	10	8	17	10
[2]	Bermuda	24	23	27	28	33	38	44	53
[3]	Cavman Islands	389	452	529	673	735	947	1.177	1.135
[4]	Jersev	41	61	109	134	162	208	292	225
[5]	Guernsey	17	14	20	22	22	27	32	27
[6]	Isle of Man	1	1	2	4	2	3	4	4
71	Netherland Antilles	81	91	102	104	103	112	128	118
[8]	BVI	10	10	21	23	24	39	32	29
[9]	Liechtenstein	0	1	1	2	6	7	13	14
[10]	Total	569	658	816	1,000	1,098	1,389	1,740	1,614
	Memo: International debt issued (BIS)								
[11]	Bahamas	2	2	3	4	6	5	9	9
121	Bermuda	24	23	27	28	32	35	44	53
13	Cayman Islands	389	452	493	521	536	869	1,177	1,135
[14]	Jersey								
[15]	Guernsey								
[16]	Isle of Man								
[17]	Netherland Antilles	81	91	102	104	103	112	128	118
[18]	BVI	10	10	21	23	23	25	31	29
[19]	Liechtenstein	0	0	0	0	0	0	1	1
	Memo: Creditor-derived debt liabilities								
[20]	Bahamas	4	5	6	10	10	8	17	10
[21]	Bermuda	15	16	20	26	33	38	40	42
1221	Cayman Islands	327	430	529	673	735	947	1,119	894
1231	Jersey	41	61	109	134	162	208	292	225
[24]	Guernsey	17	14	20	22	22	27	32	27
25	Isle of Man	1	1	2	4	2	3	4	4
[26]	Netherland Antilles	45	51	58	66	75	99	123	91
27	BVI	7	8	13	14	24	39	32	29
[28]	Liechtenstein	0	1	1	2	6	7	13	14

Table A11: Cross-Border Portfolio Debt Liabilities of Small Offshore Financial Centers (bn of USD)

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
						Pai	nel A: Equities	5					
	Belgium	Germany	ПК	Cyprus	Panama	Canada	Faynt	India	China	Other	Total	Of which: Rich World	Of which: Euro area
2001	20	0	0	0	0	0	0	0	0	14	34	20	20
2002	16	0	0	0	0	0	0	0	0	24	40	16	16
2003	20	0	0	0	16	21	0	0	0	6	63	41	20
2004	35	24	0	0	22	0	0	0	0	14	95	59	59
2005	45	66	82	0	25	63	0	0	0	18	301	257	111
2006	71	66	0	0	26	65	0	0	0	33	261	202	137
2007	67	147	13	12	32	128	16	26	0	29	470	367	226
2008	12	45	35	0	15	160	0	98	67	40	472	252	57
						Р	anel B: Debt						
	Belgium	Germany	Luxembourg	Greece	Ireland	Malaysia	Singapore			Other	Total	Of which: Rich World	Of which: Euro area
2001	0	124	47	0	0	0	0			37	208	171	171
2002	11	74	55	0	0	0	0			19	159	140	140
2003	0	132	30	13	0	17	0			13	206	175	175
2004	0	0	66	22	0	0	0			42	130	88	88
2005	0	0	77	14	0	10	14			40	156	92	92
2006	15	0	89	0	0	0	13			51	169	105	105
2007	0	0	79	0	0	13	24			34	149	79	79
2008	0	0	0	0	12	0	11			27	51	12	12

Table A12: Raw CPIS-derived liabilities > reported liabilities (bn of USD)

	2001	2002	2003	2004	2005	2006	2007	2008
Afghanistan, Islamic State of	0	0	0	0	0	0	0	0
Albania	0	0	0	0	0	-1	0	0
Algeria	0	0	0	0	0	0	-1	-1
American Samoa	0	0	0	0	0	0	0	0
Angola	0	0	0	0	0	0	-1	0
Anguilla	0	0	0	0	0	0	0	0
Antigua and Barbuda	0	0	0	-1	0	-1	-3	-1
Argentina	0	0	-1	-1	0	0	0	0
Armenia	0	0	0	0	0	0	-1	0
Aruba	20	12	0	13	0	0	-1	0
Austria	8	-5	12	15	19	25	28	13
Azerbaijan	0	0	0	0	0	0	-1	0
Bahamas, The	0	0	0	0	0	0	0	0
Bahrain	-1	0	-1	-1	-1	-1	-2	-1
Bangladesn	0	-1	0	0	0	0	-1	0
Belarus	0	0	0	0	0	0	-1	0
Belgium	-1	-1	-1	-2	-2	-2	-4	-2
Belize	0	0	0	-1	-1	-1	-2	-1
Benin	0	0	0	0	0	0	-1	0
Bermuda	0	0	0	0	8	0	0	10
Bolivia	0	0	0	0	0	0	-1	0
Bosnia and Herzegovina	0	0	Ő	0	0	-1	-1	0
Botswana	0	0	0	0	0	-1	-2	-1
Brazil	4	3	3	9	24	25	81	17
British Indian Ocean Territory	0	0	0	0	0	0	0	0
Brunei Darussalam Bulgaria	0	0	0	0	0	-1	-1	-1
Burkina Faso	0	0	Ő	0	0	0	-1	0
Burundi	0	0	0	0	0	0	-1	0
Cambodia	0	0	0	0	0	0	-1	-1
Cameroon	0	0	0	0	0	-1	-1	-1
Canada Cape Verde	5	-14	-32	-5	-10	-10	-15	-9
Cayman Islands	203	252	347	477	463	559	798	600
Central African Republic	0	0	0	0	0	0	-1	0
Chad	0	0	0	0	0	0	-1	0
Chile	0	-1	-1	-2	-2	-4	-7	-5
China, P.R. Christmas Island	-5	-5	-7	-8	-11	-14	28	-11
Cocos (Keeling) Islands	0	0	0	0	0	0	0	0
Colombia	0	0	0	1	3	3	4	-1
Comoros	0	0	0	0	0	0	-1	0
Congo, Dem. Rep. of	0	0	0	0	0	0	-1	0
Congo, Rep. of Cook Islands	0	0	0	0	0	0	-1	0
Costa Rica	0	-1	Ő	0	0	-1	-1	0
Croatia	0	0	0	0	0	1	2	0
Cuba	0	0	0	0	0	0	0	0
Cyprus	0	-1	-1	-2	-1	-2	-2	-2
Cote d'Ivoire	1	2	0	2	0	0	-5 0	-4
Denmark	5	2	2	10	6	3	8	1
Djibouti	0	0	0	0	0	0	-1	0
Dominica	0	0	0	0	0	-1	-2	-1
Dominican Republic	0	0	0	0	0	0	-1	0
Ecuador	0	0	0	-1	-2	-3	-1	_4
El Salvador	0	0	0	0	0	0	0	0
Equatorial Guinea	0	0	0	0	0	0	-1	0
Eritrea	0	0	0	0	0	-1	-2	-1
Estonia	0	0	0	0	-1	-2	-1	-1
Euliopia Falkland Islands (Malvinas)	0	0	0	0	0	-1	0	0
Faroe Islands	0	0	0	0	0	0	0	0
Fiji	0	0	0	0	0	-1	-1	-1
Finland	15	7	6	-2	0	10	7	-6
France	20	48	68	51	67	98	22	10
French Gulana	0	0	0	0	0	0	0	0
i i onori i orginesia	0	0	0	0	0	0	0	0

Table A13: Reported equity liabilities minus creditor-derived liabilities (bn of USD)

Franch Couthour Touttouing	0	0	0	0	0	0	0	0
French Southern Territories	0	0	0	0	0	0	0	0
Gabon	0	0	0	0	0	0	0	0
Gambia, The	0	0	0	0	0	-1	-2	-1
Georgia	0	0	0	0	0	0	0	0
Germany	17	12	26	-7	-10	-13	-22	-14
Ghana	0	0	0	0	-1	-2	0	-1
Gibraltar	0	0	0	0	0	0	0	0
Greece	1	3	4	7	8	8	19	0
Greenland	0	0	0	0	0	0	0	0
Grenada	Ő	Ő	õ	0	0 0	-1	-2	-1
Guadeloupe	0	0	0	0	0	0	2	0
Guadeloupe	0	0	0	0	0	0	0	0
Gualin	0	0	0	0	0	0	0	0
Guatemala	0	0	0	0	0	0	-1	0
Guernsey	21	24	35	54	69	91	126	69
Guinea	0	0	0	0	0	0	-1	0
Guinea-Bissau	0	0	0	0	0	0	-1	0
Guyana	0	0	0	0	0	0	0	0
Haiti	0	0	0	0	0	0	0	0
Honduras	0	0	0	0	0	0	-1	0
Hong Kong SAR of China	11	10	5	17	15	1	72	24
	1	10	2	2	10	2	12	
Huligaly	-1	-1	-2	-2	-2	-3	-0	-1
Iceland	-2	-3	-2	-2	2	4	1	-1
India	2	-3	-1	-4	-7	-8	-11	-8
Indonesia	0	-2	-1	-4	-5	8	36	-5
Iran, Islamic Republic of	0	0	0	0	0	-1	-1	-1
Iraq	0	0	0	0	0	0	0	0
Ireland	175	226	316	386	441	524	706	637
Isle of Man	0	0	0	0	0	0	0	0
Israel	3	1	3	5	3	4	7	3
Italy	2	2	3	20	6	1	1	6
lamaiaa	-2	-2	-5	-20	-0	-4	-1	0
Jamaica	0	0	0	-1	105	105	-1	0
Japan	37	27	53	72	135	125	150	50
Jersey	55	32	32	24	40	52	90	36
Jordan	2	1	2	3	7	5	7	5
Kazakhstan	0	0	0	0	0	3	7	2
Kenya	0	0	0	-1	-1	-1	-3	-1
Kiribati	0	0	0	0	0	-1	-1	-1
Korea, Democratic People's Republic of	0	0	0	0	0	0	0	0
Korea Republic of	11	6	5	12	31	41	34	_11
Kuwoit	0	0	5	12	1		1	-11
Kuraua Dopublio	0	0	0	0	-1	-1	-1	-1
Kyrgyz Republic	0	0	0	0	0	0	-1	0
Lao People's Democratic Republic	0	0	0	0	0	0	0	0
Latvia	0	-1	0	0	0	0	0	0
Lebanon	-1	0	0	0	1	2	2	1
Lesotho	0	0	0	0	0	-1	-2	-1
Liberia	-1	0	-1	-1	-2	-1	-1	-1
Libva	0	-1	0	0	0	0	0	-1
Liechtenstein	5	2	12	16	23	27	22	21
Lithuania	0			.0	_0	_1		
Luxombourg	211	260	476	500	747	701	1 060	020
	311	308	470	502	141	701	1,000	930
Macao SAR of China	0	0	0	0	0	-1	-2	-1
Macedonia, FYR	0	0	0	0	0	0	0	0
Madagascar	0	0	0	0	0	0	-1	0
Malawi	0	0	0	0	-1	-1	-2	-1
Malaysia	-2	-1	1	3	1	6	5	-4
Maldives	0	0	0	0	0	-1	-1	-1
Mali	0	0	0	0	0	0	0	0
Malta	-2	-2	-2	-3	-4	0	-1	0
Marshall Islands	0	0	0	0	0	0	0	0
Martinique	0	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	1	1	0
Mauritiua	1	1	1	1	2	-1	-1	0
Mauritius	-1	-1	-1	-1	-3	-2	-2	-1
Mayotte	0	0	0	0	0	0	0	0
Mexico	12	10	12	16	23	36	28	76
Micronesia, Federated States of	0	0	0	0	0	0	0	0
Moldova	0	0	0	0	0	0	-1	0
Monaco	0	0	0	0	0	0	0	0
Mongolia	0	0	0	0	0	0	0	0
Montenearo, Republic of	0	Ó	0	0	0	0	0	0
Montserrat	n n	n n	n n	n n	n n	n n	ñ	ñ
Morocco	1	1	1	0	0	0	1	0
Mozambique	-1	-1	-1	0	0	0	-1	0
Wozanibique	0	0	0	0	0	0	-1	U
wyanmar	0	U	0	0	0	-1	-1	-1
Namibia	0	0	0	0	0	0	0	0
Nauru	0	0	0	0	0	0	0	0
Nepal	0	0	0	0	0	0	-1	0
Netherlands	-2	27	-1	-8	179	229	258	136

Netherlands Antilles	5	2	0	0	3	2	2	7
New Caledonia	0	0	0	0	0	0	0	0
New Zealand	0	0	2	2	0	-1	-1	-1
Nicaragua	0	0	0	0	0	0	-1	0
Niger	0	0	0	0	0	0	-1	0
Nigeria	-1	0	0	-1	2	4	7	4
Niue	0	0	0	0	0	0	0	0
Norfolk Island	Ő	Ő	õ	Ő	Ő	0	0	0
Nonvoy	1	1	0	0	1	11	7	10
Omen	-1	-1	-2	-2	1	11	1	-10
Dallata	0	0	0	0	0	1	3	2
Pakistan	0	0	1	1	2	2	2	0
Palau	0	0	0	0	0	0	0	0
Panama	-1	-1	-2	-2	-2	-3	-4	-3
Papua New Guinea	-1	-1	-1	-1	-2	-1	-2	-2
Paraguay	0	0	0	0	0	0	0	0
Peru	1	2	1	1	4	5	14	6
Philippines	-1	0	0	0	0	3	4	-1
Pitcairn	0	0	0	0	0	0	0	0
Poland	-1	-1	-2	Ő	Ő	-5	-2	-2
Portugal	2	5	17	26	27	8	_2	_2
Puerte Rice	2	0		20	21	0	-2	-2
	0	0	0	0	0	0	0	0
Qaidi Demonia	-1	-1	-1	0	-1	-1	-1	-1
Romania	-1	0	0	0	1	2	0	-1
	13	17	25	54	50	82	110	25
Rwanda	0	0	0	0	0	-1	-1	-1
Réunion	0	0	0	0	0	0	0	0
Samoa	0	0	0	0	0	0	-1	0
San Marino	0	0	0	0	0	0	0	0
Saudi Arabia	-1	-3	-1	-1	-1	-3	-1	-2
Senegal	0	0	0	0	0	0	-1	0
Serbia Republic of	0	-1	0	0	-1	-1	-1	0
Sevehelles	Õ		Ő	Ő	0	-1	0	0
Siorra Loopo	0	0	0	0	0	-1	0	1
Singaporo	0	0	0	0	0	-1	-2	-1
	-4	-2	0	3	5	1	11	11
Slovak Republic	1	1	2	3	4	4	4	-1
Slovenia	0	0	0	0	0	1	2	0
Solomon Islands	0	0	0	0	0	-1	-1	-1
Somalia	0	0	0	0	0	0	0	0
South Africa	2	3	4	3	1	14	22	-3
Spain	12	22	39	38	30	56	102	40
Sri Lanka	0	0	0	0	0	0	0	0
St. Helena	0	0	0	0	0	0	0	0
St. Kitts and Nevis	0	0	0	0	-1	-1	-2	-1
St. Lucia	Õ	ů 0	Ő	Õ	0	-1	_2	-1
St. Eucla St. Dierre and Miguelon	0	0	0	0	0	-1	-2	-1
St. Fielde and the Grandings	0	0	0	0	0	1	0	0
St. Vincent and the Grenadines	0	0	0	0	0	-1	-2	-1
Sudan	0	0	0	0	0	-1	-2	-1
Suriname	0	0	0	0	0	0	0	0
Swaziland	0	0	0	0	-1	-1	-2	0
Sweden	2	1	4	-1	9	19	9	7
Switzerland	116	106	117	122	117	111	101	94
Syrian Arab Republic	0	-1	0	0	0	0	-1	0
São Tomé and Príncipe	0	0	0	0	0	0	-1	0
Taiwan Province of China	-1	12	14	13	16	24	29	29
Tajikistan	0	0	0	0	0	0	-1	
Tanzania	0	0	ů 0	0	0	-1	-2	-1
Thailand	0	1	_1	1	0	1	3	_1
Timer Leete	0	1	-1	1	0	1	J 1	-4
Tana	0	0	0	0	0	0	-1	0
Togo	0	0	0	0	0	0	-1	0
	0	0	0	0	0	0	0	0
Ionga	0	0	0	0	0	-1	0	-1
Trinidad and Tobago	0	0	0	0	0	-1	-2	-1
Tunisia	0	0	0	0	0	1	0	1
Turkey	1	-1	0	1	4	3	13	-1
Turkmenistan	0	0	0	0	0	0	-1	0
Turks and Caicos Islands	0	0	0	0	0	0	0	0
Tuvalu	0	0	0	0	0	0	0	0
Uganda	0	0	0	0	0	_1	-2	_1
Likraine	0	0	0	0	0	-1	-2	-1
United Areh Emirates	0	0	0	0	0	0	-1	0
United Kingdom	-1	-1	-1	-2	-1	-1	-1	-1
	113	34	14	31	-49	-04	-105	-60
United States	411	299	341	382	279	187	192	1/7
United States Minor Outlying Islands	0	0	0	0	0	0	0	0
Uruguay	0	0	0	0	0	0	0	0
Uzbekistan	0	0	0	0	0	0	-1	0
Vanuatu	0	0	0	0	0	-1	-1	-1
Vatican City State	0	0	0	0	0	0	0	0

Maria alla Des (blies Dell'as deserta		•	•		0		0	•
venezuela, Republica Bolivariana de	1	2	3	4	3	4	3	0
Vietnam	0	0	0	0	-1	0	3	2
Virgin Islands, British	0	0	0	0	0	0	0	0
Virgin Islands, U.S.	0	0	0	0	0	0	0	0
Wallis and Futuna Islands	0	0	0	0	0	0	0	0
West Bank and Gaza Strip	0	0	0	0	0	0	0	0
Western Sahara	0	0	0	0	0	0	0	0
Yemen, Republic of	0	0	0	0	0	-1	-1	-1
Zambia	0	0	0	0	-1	-1	0	0
Zimbabwe	0	0	0	-1	0	-1	-1	-1
International Organizations	0	-4	-1	-8	0	-1	0	-1

Table A14: Repo	rted debt liabilities mi	nus creditor-derived	liabilities (bn of USD)

	2001	2002	2003	2004	2005	2006	2007	2008
Afghanistan, Islamic State of	0	0	0	0	0	0	0	0
Albania	0	0	0	0	0	0	-2	-3
Algeria	0	0	0	0	0	0	0	0
Andorra	0	0	0	0	0	0	0	0
Angola	ů 0	0 0	Ő	Ő	-1	ů 0	-1	-1
Anguilla	0	0	0	0	0	0	0	0
Antigua and Barbuda	0	0	0	0	0	0	0	0
Argentina	10	6	10	7	5	7	7	-1
Armenia	0	0	0	0	0	-1	-1	-1
Aruba	-1	-1 40	-1	-1	-1	-1	-1 101	-3
Austria	47	40 52	56	68	09 55	63 54	73	60
Azerbaijan	+0 0	0	0	0	0	-1	-1	-1
Bahamas, The	0	0	0	0	0	0	0	0
Bahrain	0	0	0	0	-1	0	0	3
Bangladesh	0	0	0	0	-1	-1	-1	0
Barbados	0	0	0	0	0	0	0	0
Belarus	0	0	0	0	0	-1	-1	-1 40
Belize	-4	-5	-0	-12	-13	-21	22	42
Benin	0	0	0	0	-1	-1	-2	-1
Bermuda	9	7	7	2	0	0	4	11
Bhutan	0	0	0	0	0	0	0	0
Bolivia	0	0	0	0	0	-1	-1	-1
Bosnia and Herzegovina	0	0	0	-1	-2	-2	-2	-3
Botswana	0	0	0 51	12	-1	-1 27	-2	-2
British Indian Ocean Territory	09	07	0	42	38	0	02	0
Brunei Darussalam	0	0	0	0	0	0	0	0
Bulgaria	1	1	0	-1	-2	-1	-1	-1
Burkina Faso	0	0	0	0	0	0	-2	-1
Burundi	0	0	0	0	0	0	0	0
Cambodia	0	0	0	0	0	-1	-1	-1
Cameroon	0 65	0 36	0 34	0 49	0 33	20	-8	-36
Cape Verde	0	0	0	-+9 0	0	0	-2	-30
Cayman Islands	62	22	0	0	Ő	0 0		241
Central African Republic	0	0	0	0	0	0	0	0
Chad	0	0	0	0	0	0	0	0
Chile	0	1	0	-2	-2	-2	-4	-1
China, P.R. Christmas Island	0	0	0	0	-2	-3	-4	-3
Cocos (Keeling) Islands	0	0	0	0	0	0	0	0
Colombia	6	5	4	3	1	1	0 0	Õ
Comoros	0	0	0	0	0	0	0	0
Congo, Dem. Rep. of	0	0	0	0	0	0	0	0
Congo, Rep. of	0	0	0	0	0	0	0	0
Cook Islands	0	0	0	0	0	0	0	0
Croatia	0	0	0	-1	-1	-1	-2	-1 -1
Cuba	0	0	0	0	0	0	0	0
Cyprus	-1	-2	-3	-2	-1	-2	-3	-3
Czech Republic	-1	0	-1	0	-1	0	0	1
Côte d'Ivoire	0	0	-1	-1	-2	-2	-4	-4
Denmark	28	17	23	23	11	26	37	64
Djibouti	0	0	0	0	0	0	0	0
Dominican Republic	0	0	0	0	_1	-1	-3	_2
Ecuador	2	2	2	1	1	0	-1	0
Egypt	0	0	-1	-1	-2	-2	-3	-3
El Salvador	0	0	0	-1	-2	-2	-3	-2
Equatorial Guinea	0	0	0	0	0	0	0	0
Eritrea	0	0	0	0	0	0	0	0
ESIONIA	U	0	-1	0	-1	-1	-1	-1
Europia Falkland Islands (Malvinas)	0	0	0	0	0	0	0	0
Faroe Islands	0	0	0	Ő	0	0	0	0
Fiji	Ū	0	Ū.	Ū.	Ō	0	Ō	Ō
Finland	6	10	17	19	20	19	15	20
France	158	169	174	282	304	259	262	342
French Guiana	0	0	0	0	0	0	0	0
French Polynesia	0	0	0	0	0	0	0	0

French Southern Territories	0	0	0	0	0	0	0	0
Gabon	0	0	0	0	0	0	0	0
Gambia The	0	0	0	0	0	0	0	0
Coorgia	0	0	0	0	1	1	1	1
Georgia	0	0	0	0	-1	-1	-1	-1
Germany	-58	-71	-110	-147	-110	-241	-125	-6
Ghana	0	0	0	0	0	0	0	0
Gibraltar	0	0	0	0	0	0	0	0
Olbraitai	0	10	0	10	0	0	0	10
Greece	-2	-19	-8	-13	-8	-27	3	16
Greenland	0	0	0	0	0	0	0	0
Grenada	0	0	0	0	0	0	0	0
Guadeloupe	0	0	Ô	0	0	0	0	Ó
Ouadeloupe	0	0	0	0	0	0	0	0
Guam	0	0	0	0	0	0	0	0
Guatemala	0	0	0	0	-1	-1	-2	-1
Guernsev	0	0	0	0	0	0	0	0
Guinea	0	0	0	0	0	0	0	0
Guinea	0	0	0	0	0	0	0	0
Guinea-Bissau	0	0	0	0	0	0	0	0
Guyana	0	0	0	0	0	0	0	0
Haiti	0	0	0	0	-1	-1	-2	-1
Honduras	0	0	0	0	0	0	_	0
	0	0	0	0	0	0	0	0
Hong Kong SAR of China	-1	5	-2	-3	-4	-4	19	-5
Hungary	0	0	-1	-4	0	-3	2	4
Iceland	0	-17	-15	-20	-3	6	-3	24
India	ů.		د. د	-0	5	с С	0	
	9	9	3	2	-0	-2	-2	-3
indonesia	5	4	1	0	3	7	7	11
Iran, Islamic Republic of	0	0	0	0	0	0	0	0
Iraq	0	0	0	0	0	0	0	0
Ireland	_10	- -	_ 0	17	7/	3	_25	-33
	-10	-0	-2	4/	/4	5	-25	-55
Isle of Man	0	0	0	0	0	0	0	0
Israel	7	4	3	2	3	5	4	4
Italy	39	34	19	-35	0	73	146	241
lamaica	0	0	0	0	-1	-1	_1	_1
Janaica	0	0	0	70	-1	-1	- 1	-1
Japan	57	43	41	78	53	106	210	241
Jersey	0	0	0	0	0	0	0	0
Jordan	0	0	0	-1	-1	-1	-1	-1
Kazakhetan	1	1	1	0	1		. 1	
Kazakristari	-1	-1	-1	0	-1	-1	-1	-4
Kenya	0	0	0	0	0	0	0	0
Kiribati	0	0	0	0	0	0	0	0
Korea Democratic People's Republic of	0	0	0	0	0	0	0	0
Koroa, Bonublia of	0	0	10	5	6	0	22	17
Korea, Republic of	0	0	10	5	0	0	23	17
Kuwait	-1	0	0	-1	-2	-2	-1	2
Kyrgyz Republic	0	0	0	0	-1	-1	-2	-1
Lao People's Democratic Republic	0	0	0	0	0	0	0	0
Latvia	0	0	0	1	1	1	1	4
Latvia	0	0	0	-1	-1	-1	-1	-4
Lebanon	0	0	0	0	0	0	0	0
Lesotho	0	0	0	0	0	0	0	0
Liberia	0	0	Ô	0	0	0	0	Ô
	0	0	0	0	0	0	0	0
Libya	0	0	0	0	0	0	0	0
Liechtenstein	0	0	0	0	0	0	0	0
Lithuania	0	0	-1	-1	-2	-1	0	0
Luxembourg	-6	-7	_11	-12	_13	-14	_21	_18
Massa CAD of China	0	,		12	10	14	21	10
Macao SAR of China	0	0	0	0	U	0	0	0
Macedonia, FYR	0	0	0	0	-1	-1	-1	-1
Madagascar	0	0	0	0	0	0	0	0
Malawi	0	0	0	0	0	0	0	0
Malavaia	2	° °	2	2	4	4	5	7
ivialaysia	-2	-2	-3	-3	-4	-4	-0	1
Maldives	0	0	0	0	0	0	0	0
Mali	0	0	0	0	-1	-1	-1	-1
Malta	-1	-1	-2	-3	-7	-7	-24	-6
Marahall Jalanda	0	0	_	0				0
	0	0	0	0	0	0	0	0
Martinique	0	0	0	0	0	0	0	0
Mauritania	0	0	0	0	0	0	0	0
Mauritius	0	0	0	-1	-1	-1	-2	-1
Mayotte	0	0	0	Ó	0	0	0	0
Mayolle	0	0	0	0	0	0	0	0
Mexico	37	35	34	35	32	31	46	63
Micronesia, Federated States of	0	0	0	0	0	0	0	0
Moldova	0	0	0	0	-1	-1	-2	-1
Monaco	ñ	ñ	n n	ñ	n	0	-	0
Maggalia	0	0	0	0	0	0	0	0
wongolia	0	0	0	0	0	0	0	0
Montenegro, Republic of	0	0	0	0	0	0	0	0
Montserrat	0	0	0	0	0	0	Ω	0
Morocco	ñ	Ő	1	0	0	1	7	e e
Manageria	0	0	-1	U	U	-1	-1	-0
wozampique	0	0	0	0	0	-1	-2	-1
Myanmar	0	0	0	0	0	-1	0	0
Namibia	0	0	0	0	0	0	-1	-1
Nauru	0	0	0	0	0	0		
Nanal	0	Ű	0	0	0	0	U	0
Nepal	U	0	0	0	0	0	0	0
Netherlands	93	102	158	172	76	147	163	161

							_	
Netherlands Antilles	36	40	43	38	28	13	5	27
New Caledonia	0	0	0	0	0	0	0	0
New Zealand	4	12	14	18	19	16	26	11
Nicaragua	0	0	0	-1	-1	-1	-2	-2
Nigor	0	õ	Ő	0	1	1	1	1
Niger	0	0	0	0	-1	-1	-1	-1
Nigeria	0	0	0	0	1	0	-1	4
Niue	0	0	0	0	0	0	0	0
Norfolk Island	0	0	0	0	0	0	0	0
Norway	13	9	14	13	17	18	37	43
Oman	0	0	0	0	0	0	0	0
Delvieter	0	0	0	0	0	0	0	0
Pakistan	0	0	0	0	0	0	0	1
Palau	0	0	0	0	0	0	0	0
Panama	-1	-1	-2	-2	-3	-3	-4	-2
Papua New Guinea	0	0	0	0	0	0	0	0
Paraguay	0	0	0	0	0	0	-1	-1
Poru	1	1	Ő	0	0	1	1	
Pelu	1	- -	0	0	0	-1	-1	0
Philippines	3	5	3	1	-1	-3	-3	1
Pitcairn	0	0	0	0	0	0	0	0
Poland	3	4	2	3	-2	1	4	8
Portugal	0	-1	-10	-7	-5	-1	2	1
Puerto Pico	0	ò	0	,	0	0	-	0
	0	0	0	0	0	0	0	0
Qatar	0	0	0	0	0	0	0	0
Romania	0	0	1	-1	-1	-1	-2	-1
Russian Federation	8	11	12	11	14	13	17	4
Rwanda	0	0	0	0	0	-1	-2	-1
Péunion	0	0	0	0	0		-	۰ م
Neurion Semee	0	0	0	0	0	0	0	0
Samoa	0	0	0	0	0	0	0	0
San Marino	0	0	0	0	0	0	0	0
Saudi Arabia	0	0	0	0	0	0	0	0
Senegal	0	0	0	0	0	0	-1	-1
Sorbia Dopublic of	0	0	Ő	0	0	ů 0	0	3
	0	0	0	0	0	0	0	-3
Seychelles	0	0	0	0	0	0	0	0
Sierra Leone	0	0	0	0	0	0	0	-2
Singapore	-4	-1	-3	-4	-4	-5	-6	-6
Slovak Republic	0	0	-1	0	-2	0	-5	-9
Slovenia	0	_1	_1	_1	_3	_2	_2	_1
	0	-1	-1	-1	-5	-2	-2	-1
Solomon Islands	0	0	0	0	0	0	0	0
Somalia	0	0	0	0	0	0	0	0
South Africa	-6	3	-1	-2	-2	-2	0	-3
Spain	-5	0	-5	14	11	60	96	95
Srilanka	0	0	0	0	0	0	0	0
Of Listers	0	0	0	0	0	0	0	0
St. Helena	0	0	0	0	0	0	0	0
St. Kitts and Nevis	0	0	0	0	0	0	0	0
St. Lucia	0	0	0	0	0	0	0	0
St. Pierre and Miguelon	0	0	0	0	0	0	0	0
St. Vincent and the Grenadines	0	0	0	0	0	0	0	0
Outer	0	0	0	0	0	0	0	0
Sudan	0	0	0	0	-1	-1	-1	-2
Suriname	0	0	0	0	0	0	0	0
Swaziland	0	0	-1	0	-1	-1	-2	-2
Sweden	27	14	19	17	12	13	9	11
Switzerland	Q	6	15	25	19	25	8	4
Surian Arab Bonublia	0	0	0	20	0	20	0	
	0	0	0	0	0	0	0	0
Sao Tome and Principe	0	0	0	0	0	0	0	0
Taiwan Province of China	2	3	7	6	-1	-2	-1	0
Tajikistan	0	0	0	0	0	0	0	0
Tanzania	0	0	0	0	-1	-1	-1	-1
Thailand	2	2	-1	-1	-1	-2	1	2
Timor Looto	2	2	0	0	0	2	0	2
Timor-Leste	0	0	0	0	0	0	0	0
logo	0	0	0	0	-1	-1	-2	-1
Tokelau	0	0	0	0	0	0	0	0
Tonga	0	0	0	0	0	0	0	0
Trinidad and Tobago	0	0	0	0	0	0	0	0
Tunicia	1	1	1	1	1	1	5	6
Turlisid	-1	-1	-1	-1	-1	-1	-5	-0
Turkey	0	1	3	5	11	3	9	2
lurkmenistan	0	0	0	0	0	0	0	0
Turks and Caicos Islands	0	0	0	0	0	0	0	0
Tuvalu	0	0	0	0	0	0	0	n
Llaanda	ñ	ñ	ñ	ñ	_1	_1	_1	_1
	0	0	0	4	-1	-1	- 1	-1
	U	U	U	1	1	1	5	8
United Arab Emirates	0	0	0	0	0	0	0	0
United Kingdom	13	24	8	-21	72	4	38	11
United States	98	103	154	157	213	168	72	33
United States Minor Outlying Islands	0	0	0	0	Ó	0	0	0
	1	0	0	0	0	ň	ň	2
Unaguay	1	0	0	0	0	U O	0	2
UZDEKISTAN	0	U	U	U	U	U	U	0
Vanuatu	0	0	0	0	0	0	0	0
Vatican City State	0	0	0	0	0	0	0	0
Venezuela, República Bolivariana de	5	4	5	3	1	-1	0	-3
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Vietnam	0	0	0	0	0	0	0	0
Virgin Islands, British	2	1	8	9	0	0	0	0
Virgin Islands, U.S.	0	0	0	0	0	0	0	0
Wallis and Futuna Islands	0	0	0	0	0	0	0	0
West Bank and Gaza Strip	0	0	0	0	0	0	0	0
Western Sahara	0	0	0	0	0	0	0	0
Yemen, Republic of	0	0	0	0	0	-1	0	0
Zambia	0	0	0	0	0	0	0	0
Zimbabwe	0	0	0	0	0	0	0	0
International Organizations	82	90	101	66	-8	-85	-96	-78

	2001	2002	2003	2004	2005	2006	2007	2008
United States	64.7%	58.4%	57.9%	54.4%	54.3%	53.9%	46.6%	50.8%
Japan	3.8%	5.8%	5.0%	4.6%	4.2%	4.0%	3.9%	3.8%
United Kingdom	3.7%	3.2%	3.2%	2.6%	3.0%	3.6%	4.2%	4.2%
Euro Area	20.5%	20.5%	23.2%	27.2%	25.5%	25.3%	26.5%	27.1%
Germany	15.3%	11.4%	12.0%	12.6%	12.7%	12.5%	12.9%	14.6%
France	3.1%	4.3%	6.1%	9.6%	7.2%	7.0%	6.3%	5.5%
Spain	0.2%	0.5%	0.5%	0.7%	0.8%	0.8%	1.3%	1.7%
Netherlands	0.7%	1.3%	1.6%	1.6%	1.7%	2.0%	2.4%	2.0%
Italy	0.7%	2.0%	2.2%	1.9%	2.0%	1.6%	1.6%	1.2%
Ireland	0.0%	0.2%	0.3%	0.2%	0.3%	0.6%	1.0%	0.9%
Belgium	0.4%	0.7%	0.6%	0.6%	0.7%	0.8%	1.1%	1.2%
International organizations	2.2%	7 1%	6.6%	5 7%	6.4%	8.4%	8.6%	8 5%
Confidential	0.4%	1.1%	0.0 %	2.0%	0. 4 /0 2 7%	1.3%	6.2%	0.5%
Other	4.7%	3.8%	3.2%	3.4%	3.9%	3.6%	3.9%	4.8%
Memo: SEFER+SSIO (bn USD)	1,282	1,429	1,850	2,145	2,221	2,558	3,109	3,643

Table A15: Allocation of SEFER-SSIO Holdings

Actual Predicted Actual Predicted Actual Actual Actual	Actual Predicted Actual Predicted Actual Predicted	edicted
Austria	Switzerland	
2001 0.6% 0.4% 1.5% 1.5% 2001 1.9% 1.1%	3.9% 2.2% 2001 2.5% 2.2% 0.5%	0.4%
2002 0.6% 0.4% 1.7% 1.5% 2002 2.5% 1.1%	4 1% 2 2% 2002 2 1% 2 0% 0 6%	0.4%
2003 12% 0.3% 1.6% 1.4% 2003 2.1% 1.0%	3.9% 2.1% 2003 2.0% 2.0% 0.4%	0.4%
2004 1.7% 0.3% 1.7% 1.4% 2004 1.6% 1.0%	3.7% 2.1% 2004 1.9% 2.1% 0.5%	0.4%
2005 2.9% 0.4% 2.2% 1.5% 2005 1.3% 1.0%	3.9% 2.1% 2005 2.0% 2.2% 0.5%	0.4%
2006 3.4% 0.4% 2.5% 1.5% 2006 1.2% 1.1%	3 0% 2 1% 2006 2 3% 2 3% 0 5%	0.5%
2007 2 4% 0 4% 2 1% 1 4% 2007 1 0% 1 1%	3 2% 2 1% 2007 1 8% 2 4% 0 6%	0.5%
2008 1.6% 0.4% 2.3% 1.4% 2008 1.0% 1.1%	3.1% 2.1% 2008 2.4% 2.2% 0.7%	0.4%
Belaium	United Kinadom	
2001 0.9% 0.6% 1.3% 0.8% 2001 11.3% 10.5%	4.4% 2.5% 2001 10.2% 9.6% 8.4%	11.5%
2002 0.8% 0.6% 1.1% 0.8% 2002 11.4% 10.1%	4 2% 2 4% 2002 10 5% 9 0% 8 5%	11.0%
2003 0.8% 0.6% 1.1% 0.8% 2003 13.9% 9.3%	4.1% 2.3% 2003 10.2% 9.1% 8.7%	11.1%
2004 0.7% 0.5% 1.0% 0.8% 2004 14.2% 8.8%	2.9% 2.2% 2004 10.7% 9.0% 11.0%	11.0%
2005 1.0% 0.6% 1.2% 0.8% 2005 14.3% 8.7%	2.3% 2.2% 2005 10.4% 9.4% 9.6%	11.0%
2006 1.0% 0.6% 1.0% 0.8% 2006 14.3% 8.5%	3 0% 2 2% 2006 10 2% 9 0% 10 0%	11.2%
2007 0.8% 0.6% 1.1% 0.8% 2007 14.3% 8.0%	2 9% 2 0% 2007 9 3% 8 9% 12 2%	10.8%
2008 0.9% 0.6% 0.8% 0.8% 2008 14.1% 7.9%	2.6% 2.0% 2008 9.9% 9.1% 12.2%	11.1%
Denmark Netherlands	United States	
2001 0.3% 0.3% 0.7% 0.7% 2001 3.0% 2.4%	4 8% 6 1% 2001 31 2% 21 7% 35 6%	32.0%
2002 0.3% 0.3% 0.8% 0.7% 2002 3.8% 2.2%	6.3% 5.8% 2002 29.3% 21.4% 35.5%	31.8%
2003 0.3% 0.3% 0.8% 0.7% 2003 3.2% 2.1%	5.8% 5.6% 2003 28.2% 22.6% 35.1%	33.0%
2004 0.2% 0.4% 0.8% 0.7% 2004 3.6% 2.1%	6 2% 5 6% 2004 26 3% 23 4% 30 2%	33.6%
2005 0.9% 0.3% 1.2% 0.7% 2005 2.9% 2.2%	5 1% 5 6% 2005 24 7% 23 0% 31 4%	33.2%
2006 0.8% 0.3% 0.8% 0.7% 2006 2.3% 2.2%	5.6% 5.7% 2006 23.2% 23.0% 30.9%	33.1%
2007 0.5% 0.3% 1.0% 0.7% 2007 2.3% 2.2%	6 7% 5 6% 2007 23 2% 24 3% 28 5%	34.0%
2008 0.5% 0.3% 0.9% 0.6% 2008 2.2% 2.2%	5.5% 5.5% 2008 25.2% 24.6% 28.9%	34.4%
France Norway		
2001 4.6% 4.2% 3.8% 5.0% 2001 0.1% 0.3%	0.6% 0.6%	
2002 4 8% 4 5% 4 6% 5 1% 2002 0 2% 0 3%	0.9% 0.6%	
2003 5 4% 4 2% 5 2% 4 9% 2003 0 2% 0 3%	0.5% 0.6%	
2004 4 7% 3 8% 5 8% 4 6% 2004 0 2% 0 3%	0.5% 0.6%	
2005 3 8% 4 0% 5 3% 4 7% 2005 0 4% 0 3%	0.6% 0.6%	
2006 4.0% 3.9% 5.2% 4.6% 2006 0.5% 0.3%	0.6% 0.5%	
2007 38% 39% 50% 47% 2007 0.6% 0.3%	0.8% 0.5%	
2008 3.7% 3.8% 5.4% 4.6% 2008 0.5% 0.3%	0.9% 0.5%	
Germany Sweden		
2001 4 9% 3 5% 9 6% 10 2% 2001 1 6% 0 8%	20% 11%	
2002 5.0% 3.8% 10.1% 10.5% 2002 1.6% 0.8%	1.4% 1.0%	
2003 4 2% 3 3% 10 6% 9 7% 2003 1 6% 0 7%	1.3% 1.0%	
2004 3.5% 3.1% 11.3% 9.4% 2004 1.4% 0.8%	1.1% 1.0%	
2005 3.4% 3.2% 10.5% 9.5% 2005 1.6% 0.7%	1.3% 1.0%	
2006 3.1% 3.3% 9.2% 9.6% 2006 1.8% 0.8%	1.5% 1.0%	
2007 4.0% 3.3% 8.2% 9.5% 2007 1.4% 0.8%	1.4% 1.0%	
2008 3.6% 3.2% 7.6% 9.4% 2008 0.9% 0.8%	1.7% 1.1%	

Table A16: Actual and Predicted Shares of Each Developed Country in the Aggregate Portfolio of CPIS-Participating Countries

USA France Japan Equity Equity Equity Debt Debt Equity Debt Debt Equity Equity Debt Debt recorded recorded predicted recorded predicted recorded predicted recorded predicted recorded predicted predicted United States 47% 51% 32% 55% 14% 19% 10% 20% 6% 9% United Kingdom 18% 25% 22% 19% 11% 11% 9% 11% 30% 27% 1% 0% 2% 1% 1% 2% Austria 0% 0% 0% 0% 0% 1% Belgium 1% 1% 0% 1% 0% 1% 1% 1% 3% 3% 4% 2% Denmark 1% 0% 1% 1% 0% 0% 1% 0% 0% 0% 0% 0% 7% 8% 5% 9% 4% 6% 6% 4% France 19% 11% 28% Germany 5% 7% 6% 3% 6% 9% 10% 14% 13% San Marino 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Italy 2% 2% 2% 4% 2% 2% 3% 3% 6% 2% 14% 3% Luxembourg 0% 10% 2% 3% 2% 6% 4% 1% 14% 14% 2% 3% 5% 4% 10% 2% 4% 5% 8% 4% 12% Netherlands 5% 3% 8% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Vatican City State 0% 0% 1% 1% 1% 0% 0% 1% 0% 0% 0% 0% Norway 1% 0% Sweden 1% 2% 2% 2% 1% 1% 1% 1% 1% 1% 1% 1% 6% 4% 1% 3% 2% 0% 0% 4% 3% 0% 0% Switzerland 0% Canada 7% 6% 14% 9% 2% 1% 2% 1% 0% 1% 1% 1% 12% 8% 2% 5% 2% 3% Japan 3% 0% 1% 1% 0% 0% 1% Finland 2% 1% 0% 1% 2% 1% 0% Greece 0% 0% 0% 1% 0% 0% 0% 0% 0% 0% 3% 0% 0% Iceland 0% 0% 0% 1% 0% 0% 0% 0% 0% 0% 0% Ireland 1% 6% 2% 3% 1% 2% 2% 1% 4% 2% 4% 1% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Malta Portugal 0% 0% 0% 1% 0% 0% 0% 0% 0% 0% 2% 0% 9% Spain 2% 2% 1% 3% 1% 1% 1% 1% 5% 1% 1% Turkey 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 2% 2% 2% 2% 2% 2% 1% Australia 2% 4% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% New Zealand South Africa 1% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Argentina 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Bolivia 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Brazil 2% 0% 1% 0% 0% 0% 0% 0% 0% 0% 0% 0% Chile 0% 0% 1% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Colombia 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Costa Rica 0% 0% 0% 0% 0% Dominican Republic 0% Ecuador 0% 0% 0% 0% El Salvador 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Guatemala 0% Haiti 0% Honduras 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Mexico 2% 0% 2% 0% Nicaragua 0% 1% 0% 0% 0% 0% 0% 0% 0% 0% 0% Panama 0% 0% Paraguay 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% Peru 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0% 0%

Table A17: Reported and Predicted Shares of Each Foreign Country in the U.S., Japanese, and French Portfolios (2001-2008 averages)

Uruguay	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Venezuela, Rep [*] blica Bolivariana de	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Antigua and Barbuda	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Anguilla	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bahamas The	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Aruba	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Barbados	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Barbados	6%	2%	19/	0%	10/	0%	0%	0%	10/	0%	0%	0%
Deminica	0%	2 /0	1 /0	0%	1 /8	0%	0%	0%	1 78	0%	0%	0 /0
Dominica Falkland Jalanda (Malvinas)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Paikiano Islanos (Maivinas)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Greenland	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Grenada	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Guadeloupe	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
French Guiana	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Guyana	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Belize	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Jamaica	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Martinique	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Montserrat	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Netherlands Antilles	1%	0%	0%	0%	0%	0%	1%	0%	1%	0%	3%	0%
St. Kitts and Nevis	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Lucia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St Pierre and Miguelon	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Vincent and the Grenadines	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Suriname	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tripidad and Tobago	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pritich Indian Occor Torriton	0%	0 %	0%	0%	0 %	0%	0%	0%	0 %	0%	0%	0 /0
Courses Jolando	0%	0%	0%	49/	U %	0%	1 5 9/	0%	070	0%	20/	0%
	3%	2%	11%	4%	7%	0%	15%	1%	4%	0%	3%	0%
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Banrain	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cyprus	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Iran, Islamic Republic of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Iraq	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Israel	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Jordan	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kuwait	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lebanon	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Oman	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Qatar	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Saudi Arabia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Svrian Arab Republic	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
United Arab Emirates	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Eavot	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Yemen Republic of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
West Bank and Gaza Strin	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Afghanistan, Islamic State of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rangladosh	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bhutan	0%	0 %	0%	0%	0 %	0%	0%	0%	0 %	0%	0%	0 /0
Brunoi Doruggolom	0%	0%	0%	0%	0%	0%	0%	0%	070	0%	0%	0%
	0%	0%	0%	0%	U%	0%	U%	0%	U%	0%	U%	0%
wyanmar Osera a sila	U%	0%	0%	0%	0%	0%	U%	0%	0%	0%	0%	0%
Campodia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Sri Lanka	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Taiwan Province of China	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Hong Kong SAR of China	2%	0%	0%	0%	2%	0%	0%	0%	1%	0%	0%	0%
India	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Indonesia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Timor-Leste	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Korea, Republic of	2%	0%	1%	0%	1%	1%	0%	0%	1%	0%	0%	0%
Lao People's Democratic Republic	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Macao SAR of China	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Malavsia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Maldives	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Nepal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pakistan	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Palau	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Philippines	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Singapore	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Thailand	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vietnam	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Diibouti	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Algeria	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Angola	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Botswana	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Burundi	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cameroon	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cape Verde	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Central African Republic	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Chad	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Comoros	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Congo Rep of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Congo Dem Rep of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Benin	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equatorial Guinea	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Fritrea	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ethiopia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gabon	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gambia The	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ghana	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Guinea-Bissau	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Guinea	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CÙte d'Ivoire	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kenva	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lesotho	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Liberia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Libva	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Madagascar	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Malawi	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mali	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mauritania	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mauritius	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Morocco	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Western Sahara	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mozambique	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Niger	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Nigeria	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
RĚunion	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Zimbabwe	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Rwanda	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
S"o TomÈ and PrÌncipe	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Seychelles	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Senegal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Sierra Leone	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Somalia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Namibia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Sudan	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Swaziland	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tanzania	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Togo	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tunisia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Liganda	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Burkina Faso	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Zambia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Solomon Islands	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cook Islands	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Earoo Islands	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Gibraltar	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kiribati	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cuem	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Neuru	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Nauru Naw Caladania	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
New Caledonia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vanuatu Danua Naw Ovince	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Papua New Guinea	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
St. Helena	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
American Samoa	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
United States Minor Outlying Islands	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Samoa	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
longa	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Marshall Islands	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Micronesia, Federated States of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
luvalu	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
French Polynesia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Wallis and Futuna Islands	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Armenia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Azerbaijan	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Belarus	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Albania	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Georgia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kazakhstan	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Kyrgyz Republic	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bulgaria	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Moldova	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Russian Federation	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tajikistan	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
China, P.R.	1%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turkmenistan	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Ukraine	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Uzbekistan	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cuba	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Czech Republic	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Slovak Republic	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Estonia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Latvia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Serbia, Republic of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Montenegro, Republic of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Hungary	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Lithuania	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mongolia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Korea, Democratic People's Republic of	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Croatia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Slovenia	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Macedonia, FYR	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Bosnia and Herzegovina	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Poland	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Romania	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Andorra	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monaco	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Mayotte	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Guernsey	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Christmas Island	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Cocos (Keeling) Islands	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
French Southern Territories	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Isle of Man	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Jersey	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Niue	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Norfolk Island	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Pitcairn	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Puerto Rico	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tokelau	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Virgin Islands, British	0%	1%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
Virgin Islands, U.S.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Liechtenstein	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
International Organizations	0%	0%	2%	0%	0%	0%	5%	0%	0%	0%	2%	0%

	[1]	[2]	[3]	[4]	[5]	[6]	[7]
	Creditor-derived equity liabilities	Reported equity liabilities	Discrepancy	Discrepancy, % of equity liabilities	Share of fund assets invested in U.S. equities	U.S. equities with no identifiable owner	As a % of U.S. foreign equity liabilities
j	$\sum_i \hat{A}_{ij}$	L_j	[2]-[1]	([2]-[1])/[2]	$\frac{E_{j,US}}{A_j}$	[3]x[5]	$\frac{[6]}{L_{US}}$
Ireland	253	889	636	72%	6%	35	2%
Luxembourg	1,151	2,081	930	45%	7%	61	3%
Cayman Islands	506	1,106	600	54%	17%	102	5%
Total	1,910	4,076	2,166	53%	9%	198	9%

 Table A18a: Unidentified Investments in U.S. Equities through Irish, Luxembourgish and Caymanian Funds, bn U.S.D., 2008

Table A18b: Unidentified Investments in U.S. Equities through Switzerland, bn U.S.D.

	2001	2002	2003	2004	2005	2006	2007	2008
U.S. equity assets of Switzerland	47	40	52	55	56	63	67	47
U.S. equity liabilities "vis-à-vis Switzerland"	122	97	123	135	143	167	179	120
U.S. equities in Swiss banks with unidentifiable owner	74	57	71	80	87	103	112	73
As a fraction of U.S. equity liab. "vis-à-vis Switzerland"	61%	59%	58%	59%	61%	62%	63%	61%
As a fraction of all U.S. equity liabilities	5%	4%	4%	4%	4%	4%	3%	3%

		•	Table A ^r	19 – The	World C	urrent	Account	: Credits			
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]
					Bill	lions of current L	JSD		[0]		
	Memo: number of countries used for estimation	Current account	Trade	Income	Compensation of employees	Investment income	FDI income	Portfolio and other income	Current Transfers	World GDP	World exports / world GDP
1975	62	899	785	78	3	/5	25	51	36	5,786	14%
1976	89 110	1,091	958	80 109	3	83	29	54	47	0,290	10%
1977	110	1,435	1,204	100	0	103	30	101	03 77	7,120	10%
1970	124	1,094	1,470	140	10	139	30 62	101	11	0,390	10%
$ \frac{1979}{1080}$	$ \frac{129}{125}$		$ \frac{1,009}{2,267}$			213	$-1\frac{02}{62}$		$\frac{99}{117}$	$ \frac{9,750}{10,064}$	$\frac{1970}{210}$
1900	130	2,005	2,207	233	11	200	55	204	117	11 242	21%
1901	130	2,790	2,304	370	11	363	46	317	117	11,242	20%
1962	142	2,079	2,109	374	11	300	40 50	270	117	11,130	20%
1905	142	2,500	2,132	332	11	320	50	270	117	11,077	19%
1005	144	2,752	2,243	257	11	346	52	200	102	12 / 15	19/0
1905	140	2,752	2,275	302	11	378	64	233	145	14 671	17%
1980	140	3,000	2,019	J92 461	17	570	84	359	173	16,670	100/
1000	149	3,001	2,900	401 595	10	444 566	110	452	202	10,070	10%
1900	140	4,171	3,304	202	19	500	112	403	202	10,040	10%
$ \frac{1909}{1000}$	$ \frac{140}{147}$		3,040		$- \frac{21}{25}$	097	$-1 \frac{119}{124}$	$\frac{5/7}{700}$		- 19,000 - 01,040	$\frac{19\%}{10\%}$
1990	147	5,300	4,227	800	20	040	124	740	209	21,040	19%
1991	147	5,502	4,342	005	27	003	114	749	200	22,939	19%
1992	150	5,000	4,005	900	29	077	124	703	290	24,502	19%
1995	150	5,032	4,040	909	20	001	134	745	200	24,001	19%
1994	All	0,019	0,012	914	29	000	200	/15	290	20,707	20%
1995	All	7,745	0,329	1,094	30	1,000	209	049	323	29,040	21%
1990		0,090	6,074	1,050	42	1,015	241	7/4	307	20,273	2270
1997		0,300	6 9 4 2	1,107	42	1,005	272	793	270	20,012	23%
1990		0,415	0,042	1,207	43	1,104	2/0	000	290	30,012	23%
$ \frac{1999}{2000}$	////		$ \frac{7,070}{7,070}$	$ \frac{1,259}{1,421}$		$ \frac{1}{1} \frac{2}{200}$	$-1\frac{34}{200}$			$- \frac{31,099}{22,049}$	$\frac{25\%}{25\%}$
2000		9,007	7,070	1,401	41	1,390	390	1,000	305	32,040	25%
2001		9,335	7,015	1,331	44	1,200	296	940	309	22 097	24%
2002	All All	3,140 11 267	0,000	1,2/9	49	1,229	500	044	400	37,007	2470 250/
2003	All All	12 054	3,000	1,499	72	1,409	J20 722	J14 1 096	512	42 167	2070
2004		16 0/0	12 025	2 432	70	1,019	052	1,000	603	42,107	2170
2005		10,045	14 000	2,402	86	2,000	1 1 1 2 2	1,402	761	40,000	20%
2000		22 240	17 201	3,120	105	2 010	1,123	1,313	070	49,400	30%
2007		24,210	10 972	4,024	120	3,919	1,000	2,000	072	55,751	3170
2000	All	24,090	19,073	4,040	120	3,921	1,291	2,030	915	01,303	3270

		Table /	420 – T	he World (Current A	ccount: D	ebits		
	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]
					Billions of	current USD			• •
	Memo: number of countries used for estimation	Current account	Trade	Income	Compensation of employees	Investment income	FDI income	Portfolio and other income	Current Transfers
1975	62	893	769	76	3	73	18	55	48
1976	89	1,100	960	85	3	82	22	60	54
1977	118	1,458	1,276	113	6	107	31	76 100	70
1978	124	1,/19	1,483	149	8	142	30	106	87
$ \frac{1979}{1080}$	· <u>129</u> ·	$ \frac{2}{2742}$		$\frac{221}{242}$	$\frac{8}{11}$	$\frac{212}{202}+$	$\frac{47}{50}$	$ \frac{100}{242}$	$ \frac{107}{105}$
1980	135	2,742	2,304	313	11	302	80	243	125
1901	130	2,00/	2,339	402	12	390	60	350	120
1902	142	2,700	2,227	413	10	399	40	303	120
1903	142	2,000	2,170	301	12	201	40 51	303	120
1904	144	2,015	2,204	403	14	200	40	240	120
1965	140	2,039	2,304	404	14	440	49	340	151
1900	140	3,134	2,340	437	10	419	50	309	107
1907	149	3,000	2,979	622	22	493	03	429	219
1900	140	4,237	3,307	767	25	742	70	526	210
$ \frac{1909}{1000}$				$\frac{707}{020}$	$ \frac{23}{31}$	<u></u>	$\frac{79}{76}$		$\frac{235}{280}$
1990	147	5,400	4,240	929	34	925	63	862	209
1992	150	5,000	4 662	972	37	934	65	869	341
1993	156	5 907	4,002	972	37	936	85	850	328
1993	ΔII	6 578	5 237	972	37	956	121	835	347
1995	All	7 800	6 245	1 180	43	1 137	170	967	375
1996	All	8 128	6,589	1 139	43	1 097	190	907	400
1997	All	8.379	6 817	1 179	41	1,138	216	921	384
1998	All	8.488	6.779	1,305	44	1.262	244	1.017	403
1999	All	8.817	7.060	1.351	47	1.303	298	1.005	407
2000	 All	9.816	7.892	1.522	48	1.475	362	1.112	402
2001	All	9,484	7,658	1,405	51	1,354	288	1,066	420
2002	All	9,846	8,019	1,373	57	1,316	348	968	454
2003	All	11,387	9,290	1,576	68	1,508	476	1,032	521
2004	All	13,796	11,265	1,907	78	1,829	622	1,207	624
2005	All	15,946	12,787	2,444	87	2,358	828	1,529	714
2006	All	18,517	14,621	3,152	96	3,056	1,017	2,039	744
2007	All	21,814	16,917	4,044	114	3,929	1,238	2,692	854
2008	All	24,598	19,507	4,147	136	4,011	1,225	2,786	944

Image: Bit of the state of the sta						Tab	ole A21	– The	World C	Current	Accour	nt: Disc	repanc	ies						
Image: series of the		[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]	[18]	
Internation Arran Internation Internation <th< th=""><th></th><th></th><th></th><th></th><th></th><th>Billions of c</th><th>urrent USD</th><th></th><th></th><th></th><th></th><th></th><th></th><th>В</th><th>illions of 2008 US</th><th>SD</th><th></th><th></th><th></th></th<>						Billions of c	urrent USD							В	illions of 2008 US	SD				
1976 62 5 15 2 0 2 7 -5 -12 -9% 21 -18 40 61 28 89 -49 55.9 1977 178 23 -12 -5 0 -4 -7 -5 -5% -96 -48 -47 -48 -47 -48 -47 -48 -47 -48 -47 -48 -47 -48 -47 -48 -47 -48 -48 -48 -430 -430 -48 -48 -430 -48 -430 -430 <t< th=""><th></th><th>Memo: number of countries used for estimation</th><th>Current account</th><th>Trade</th><th>Income</th><th>Compensation of employees</th><th>Investment income</th><th>FDI income</th><th>Portfolio and o ther income</th><th>Current Transfers</th><th>Memo: Portfolio & other income balance / debits</th><th>Cumulative current account balance</th><th>Cumulative investment income balance (ex- FDI)</th><th>Cumulative C.A. minus non-DI inv income balance</th><th>Cumulative trade</th><th>Cumulateive FDI income</th><th>Cumulative trade + FDI income</th><th>Cumulative transfers + employee income</th><th>U.S. CPI-U (annual average)</th></t<>		Memo: number of countries used for estimation	Current account	Trade	Income	Compensation of employees	Investment income	FDI income	Portfolio and o ther income	Current Transfers	Memo: Portfolio & other income balance / debits	Cumulative current account balance	Cumulative investment income balance (ex- FDI)	Cumulative C.A. minus non-DI inv income balance	Cumulative trade	Cumulateive FDI income	Cumulative trade + FDI income	Cumulative transfers + employee income	U.S. CPI-U (annual average)	
1976 89 9 -14 -38 24 49 52 101 -78 659 1977 178 124 -25 -12 -3 0 -3 2 -5 -10 -5% -173 -60 -112 -38 49 11 -123 726 1979 129 -31 -27 4 2 -3 15 -13 -46 -94 -266 -91 -155 -11 -88 -25 -10 -38 424 -10 -18 -14 88 -25 -11 -14 -1	1975	62	5	15	2	0	2	7	-5	-12	-8%	21	-18	40	61	28	89	-49	53.8	
1977 118 23 .12 .5 0 .4 .46 .46 .46 .46 .46 .66 .98 .606 1978 129 .24 .25 .12 .3 0 .3 2 .5 .10 .5% .77 .40 .115 .113 .88 .25 .12 .13 .13 .15 .13 .16 .13 .26 .26 .24 .41 .155 .113 .88 .25 .13 .13 .14 .15 .13 .26 <th .26<="" t<="" td=""><td>1976</td><td>89</td><td>-9</td><td>-2</td><td>1</td><td>0</td><td>2</td><td>7</td><td>-5</td><td>-8</td><td>-9%</td><td>-14</td><td>-38</td><td>24</td><td>49</td><td>52</td><td>101</td><td>-78</td><td>56.9</td></th>	<td>1976</td> <td>89</td> <td>-9</td> <td>-2</td> <td>1</td> <td>0</td> <td>2</td> <td>7</td> <td>-5</td> <td>-8</td> <td>-9%</td> <td>-14</td> <td>-38</td> <td>24</td> <td>49</td> <td>52</td> <td>101</td> <td>-78</td> <td>56.9</td>	1976	89	-9	-2	1	0	2	7	-5	-8	-9%	-14	-38	24	49	52	101	-78	56.9
1978 124 -25 -12 -3 0 -3 2 -5 -10 -5% -173 -60 -112 -38 49 11 -123 62 1979 138 -77 -6 -6% -26 -137 60 -112 -38 49 11 -123 624 1981 138 -77 -68 -37 -10 -13 4 3 -77 -8 -7% -369 -244 -107 67 -110 -134 624 1981 138 -78 -38 -9 -17% -86 -324 -31 63 -28 -16 96 -112 -88 437 -31 63 -28 -16 96 -112 -38 437 -31 63 -28 -16 -112 -38 437 -31 63 -28 -16 -112 -38 437 -31 63 -28 -16 -112 -48 43 -21 -30 -112 -38 438 432 -10 <td>1977</td> <td>118</td> <td>-23</td> <td>-12</td> <td>-5</td> <td>0</td> <td>-4</td> <td>-1</td> <td>-3</td> <td>-7</td> <td>-5%</td> <td>-96</td> <td>-48</td> <td>-48</td> <td>4</td> <td>46</td> <td>50</td> <td>-98</td> <td>60.6</td>	1977	118	-23	-12	-5	0	-4	-1	-3	-7	-5%	-96	-48	-48	4	46	50	-98	60.6	
179 129 -31 -27 4 2 3 15 -13 -13 -15 -113 26 -137 369 -115 -113 88 -26 -130 826 -136 715 -136 -116 138 824 198 138 77 36 32 1 11 5 266 99 -756 369 715 341 223 67 196 146 996 1983 142 -76 38 29 -1 -28 5 -33 9 -175 -863 342 431 432 238 -160 965 1985 146 477 32 47 -4 44 48 -145 -130 663 464 451 114 431 -245 1035 1986 148 -67 -3 47 4 43 221 75 166 -1456 1,414 75 668 <td>1978</td> <td>124</td> <td>-25</td> <td>-12</td> <td>-3</td> <td>0</td> <td>-3</td> <td>2</td> <td>-5</td> <td>-10</td> <td>-5%</td> <td>-173</td> <td>-60</td> <td>-112</td> <td>-38</td> <td>49</td> <td>11</td> <td>-123</td> <td>65.2</td>	1978	124	-25	-12	-3	0	-3	2	-5	-10	-5%	-173	-60	-112	-38	49	11	-123	65.2	
1980 138 -548 -37 -13 1 -14 3 -77 -36 -72 -26 -74 -26 -75 -266 -75 -54 -26 -9 -55 -56 -175 -341 -28 -79 -10 -14 5 -26 -9 -55 -56 -176 -341 -28 -72 -70 -7		129			4	2	3	15	13	8	<u>-8%</u>		<u>-9</u> 1			<u>88</u>			72.6	
1981 192 142 -36 -32 -1 -31 -5 -26 -9 -8% -516 -175 -341 -263 67 -196 -146 90.5 1982 142 -76 -38 -29 -1 -28 5 -33 -9 -17% -826 -310 -517 -402 72 -330 -168 99.6 1984 144 -87 -32 47 -3 7 -41 -9 -17% -966 -382 -683 -468 94 -382 -210 103.9 1985 146 -87 -32 47 -3 44 4 44 -13 -17% -1,239 -663 -676 -545 114 -431 -22,14 107.6 1987 149 -78 -11 -53 -5 -49 21 -70 -14 -1,33 -75 -568 -50 22 -267 -261 190 167 -199 -569 -569 -569 -262 -267 -268	1980	135	-58	-37	-13	1	-14	3	-17	-8	-7%	-369	-125	-244	-197	87	-110	-134	82.4	
1982 142 -76 -38 -39 -2 -37 0 -37 -12 -10% -683 -246 -437 -33 63 -268 -169 96.5 1984 144 -83 -39 -35 -2 -33 7 -41 -9 -12% -965 382 -683 466 84 -382 -201 1039 1985 146 -87 -32 -44 -4 46 -8 -14% -1106 464 -642 -545 114 -245 109.6 1985 148 -67 -3 -44 -4 -70 -14 -16% -1,343 -675 -66 -530 02 -329 -298 183.3 1988 148 -67 -3 -47 -46 40 -266 -168 -1597 -699 -600 -550 262 -267 -321 124.0 1999 147 -59 -21 -59 -6 -52 48 -100 -20 -12% -1,504 </td <td>1981</td> <td>138</td> <td>-77</td> <td>-36</td> <td>-32</td> <td>-1</td> <td>-31</td> <td>-5</td> <td>-26</td> <td>-9</td> <td>-8%</td> <td>-516</td> <td>-175</td> <td>-341</td> <td>-263</td> <td>67</td> <td>-196</td> <td>-145</td> <td>90.9</td>	1981	138	-77	-36	-32	-1	-31	-5	-26	-9	-8%	-516	-175	-341	-263	67	-196	-145	90.9	
1983 142 -76 -38 -29 -1 -28 5 -33 -9 -11% -826 -310 -517 -402 72 -30 -166 99.6 1984 144 -83 -39 -35 -2 -33 7 -41 9 -12% -965 -382 -583 -666 644 -382 -211 103.9 1985 146 -77 -32 -44 4 -46 -67 -13% -12% -133 -675 -666 -645 114 -413 -245 109.6 1987 149 -78 -11 -53 -5 49 27 -70 -14 -16% -1,343 -675 -666 -50 202 -228 -288 113.6 1989 148 -67 -3 -47 4 43 22 -75 -16 -14% -1411 -785 -626 -50 282 -228 -384 103.7 1990 147 -99 -21 -59 -6	1982	142	-88	-38	-39	-2	-37	0	-37	-12	-10%	-683	-246	-437	-331	63	-268	-169	96.5	
1984 146 -87 -32 -47 -3 -44 -4 -12% -965 -382 -583 -466 84 -382 -201 103.9 1985 146 -87 -32 -47 -3 -44 -46 -8 -114% -1.106 -664 -624 -513 89 -424 -218 -108 -664 -624 -513 89 -424 -218 -108 -664 -624 -513 89 -424 -218 -108 -664 -624 -513 89 -424 -218 -108 -12% -12% -12% -12% -12% -666 -513 90 -22 -23 -12% -13% -12% <th< td=""><td>1983</td><td>142</td><td>-76</td><td>-38</td><td>-29</td><td>-1</td><td>-28</td><td>5</td><td>-33</td><td>-9</td><td>-11%</td><td>-826</td><td>-310</td><td>-517</td><td>-402</td><td>72</td><td>-330</td><td>-186</td><td>99.6</td></th<>	1983	142	-76	-38	-29	-1	-28	5	-33	-9	-11%	-826	-310	-517	-402	72	-330	-186	99.6	
1985 146 -57 -32 -47 -3 -44 4 -48 -8 -14% -1,106 -464 -642 -513 89 -424 -218 107.6 1986 148 -78 -11 -53 -5 -49 21 -70 -14 -16% -1,333 -675 -666 -545 114 -431 -245 1096 1986 149 -67 -3 -47 -4 -46 12 -70 -14 -16% -1,333 -675 -666 -545 116 -397 -271 113.6 1999 149 -93 -25 -50 -4 -46 -40 -20 -12% -1,507 -99 -556 328 -228 -321 124.0 - 128.1 1389 130.2 138.1 130.2 138.1 130.2 138.1 130.2 138.1 130.2 140.3 -13% -1,26 -1,016 -556 328 -228 -321 144.1 144.5 144.5 138.1 130.2 14	1984	144	-83	-39	-35	-2	-33	7	-41	-9	-12%	-965	-382	-583	-466	84	-382	-201	103.9	
1966 1/48 -78 -21 44 4 41 14 -54 -13 -133 -1239 -563 -676 -545 114 431 -245 109.6 1987 149 -78 -11 -53 -5 49 21 -70 -14 -16% -1,343 -675 -668 -545 114 431 -245 109.6 1988 148 -67 -3 -47 4 43 32 -75 -16 -1,4% -1,111 -785 -662 -530 202 -227 -221 124.0 1990 147 -99 -21 -59 -6 -52 48 -100 -20 -1,2% -1,165 -570 -56 328 -228 -348 130.7 149 149 -12% -1,155 -570 -568 326 -287 -348 130.7 1991 147 -124 -27 -69 -7 -62 51 -113 -226 -1,2% -1,901 -1,485 -557 -558<	1985	146	-87	-32	-47	-3	-44	4	-48	-8	-14%	-1,106	-464	-642	-513	89	-424	-218	107.6	
1987 149 $\cdot 78$ $\cdot 11$ $\cdot 53$ $\cdot 5$ $\cdot 49$ 271 $\cdot 700$ $\cdot 144$ $\cdot 1,343$ $\cdot 675$ $\cdot 668$ $\cdot 547$ 150 $\cdot 397$ $\cdot 271$ 113.6 1988 148 $\cdot 677$ $\cdot 3$ $\cdot 47$ $\cdot 4$ $\cdot 43$ 32 $\cdot 75$ $\cdot 166$ $\cdot 1,446$ $\cdot 1,411$ $\cdot 785$ $\cdot 626$ $\cdot 530$ 202 $\cdot 329$ $\cdot 287$ $\cdot -221$ $\cdot 247$ $\cdot -399$ -262 $\cdot 287$ -321 1240 1990 $\cdot 147$ $\cdot 124$ $\cdot 27$ $\cdot 69$ -7 $\cdot 62$ 51 $\cdot 173$ -12% $\cdot 1,155$ $\cdot 570$ -566 328 -228 $\cdot 348$ 130.7 1991 147 $\cdot 124$ $\cdot 77$ $\cdot 68$ $\cdot 49$ $\cdot 106$ $\cdot 43$ $\cdot 172\%$ $\cdot 1,184$ $\cdot 1,185$ $\cdot 576$ $\cdot 588$ $\cdot 488$ $\cdot 99$ $\cdot 447$ $\cdot 1403$ 1992 156 $\cdot 75$ 33 -63 $\cdot 8$ $\cdot 100$ $\cdot 44$ $\cdot 12\%$ $\cdot 12\%$	1986	148	-78	-21	-44	-4	-41	14	-54	-13	-15%	-1,239	-563	-676	-545	114	-431	-245	109.6	
1988 148 -67 -3 -47 -4 -43 32 -75 -16 -14% -1,111 -785 -626 -530 202 -329 -298 118.3 1989 148 -93 -255 -50 -4 -46 -46 -66 -178 -1.597 -899 -609 -550 282 -287 -321 124.0 1990 147 -194 -27 -69 -7 -62 51 -113 -28 -13% -1,155 -570 -576 395 -181 -389 1362 1991 147 -124 -27 -69 -7 -62 51 -113 -28 -13% -1,155 -570 576 395 -181 -389 1362 1992 156 -75 33 -63 8 -55 48 -103 -45 -12% -1,901 -1,414 -396 -371 575 204 -600 1482 1994 All -56 48 -77 79 39	1987	149	-78	-11	-53	-5	-49	21	-70	-14	-16%	-1,343	-675	-668	-547	150	-397	-271	113.6	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1988	148	-67	-3	-47	-4	-43	32	-75	-16	-14%	-1,411	-785	-626	-530	202	-329	-298	118.3	
1990 147 .99 .21 .59 .6 .52 48 .100 .20 .1584 .1,118 .576 .556 328 .228 .348 130.7 1991 147 .124 .27 .69 .7 .62 51 .113 .28 .13% .1,726 .1,155 .570 .576 .395 .181 .389 136.2 1992 150 .108 1 .66 .9 .58 .49 .106 .43 .12% .1,814 .1,285 .557 .558 .458 .99 .457 .140.3 1993 156 .75 .33 .63 .8 .55 .46 .103 .45 .12% .1,800 .1,401 .499 .492 .517 .52 .523 .144.5 1994 .4// .58 .75 .79 .8 .71 .49 .121 .54 .14% .1,901 .1,401 .499 .402 .517 .523 .144.5 1996 .4// .38 .85 .90<		$ \frac{148}{1} - $	- <u>93</u>			$\frac{-4}{-}$	46	L _ <u>40</u>		-18 -	<u>13%</u>		<u>89</u> 9			<u>262</u>	<u> </u>		$ \frac{124.0}{2} - $	
1991147 -124 -27 -69 -7 -62 57 -173 -28 $-1,726$ $-1,155$ -570 -576 395 -181 -389 1362 1992150 -108 1 -66 -9 -58 49 -106 -43 $-1,2\%$ $-1,841$ $-1,285$ -557 -576 395 -181 -389 1402 1993 156 -75 33 -63 -8 -55 48 -103 -45 -12% $-1,841$ $-1,285$ -557 558 458 -99 -457 140.3 1994 All -58 75 -79 -8 -71 49 -121 -54 -14% $-1,937$ $-1,541$ -396 -371 575 204 -600 148.2 1995 All -55 84 -87 -7 -79 39 -118 -52 -12% $-1,966$ -297 -243 614 371 -668 152.4 1996 All -38 85 -90 -8 -81 51 -132 -33 -15% $-1,966$ -297 -243 614 371 -668 152.4 1997 All 9 110 -71 1 -73 55 -128 -30 -14% $-1,901$ $-1,901$ 30 32 726 758 878 -762 160.5 1998 All -66 64 -98 0 -98 <	1990	147	-99	-21	-59	-6	-52	48	-100	-20	-12%	-1,594	-1,018	-576	-556	328	-228	-348	130.7	
1992750-1081-66-9-5849-706-43-72%-1,841-1,285-557-558458-99-457140.31993156-7533-63-8-5548-103-45-12%-1,900-1,40149949251725-523144.51994All-5875-79-8-7149-121-54-12%-1,900-1,401-396-371575204-600148.21995All-5584-87-7-7939-118-52-12%-1,962-1,666-297-243614371-668152.41996All-3885-90-8-8151-132-33-15%-1,958-1,800-158-119666548-706156.91997All9110-711-7355-128-30-14%-1,901-1,9313032726758-728160.51998All-6864-980-9834-132-33-13%-1,962-2,075113115759875-762163.01999All-6864-980-9834-132-33-13%-1,962-2,075113115759875-762163.01999All-1602-17-92<	1991	147	-124	-27	-69	-7	-62	51	-113	-28	-13%	-1,726	-1,155	-570	-576	395	-181	-389	136.2	
1993156-7533-63-8-5548-103-45-12%-1,900-1,40149949251725-523144.5.1994All-5875-79-8-7149-121-54-14%-1,937-1,541-396-371575204-600148.21995All-5584-87-7-7939-118-52-12%-1,962-1,666-297-243614371-668152.41996All-3885-90-8-8151-132-33-15%-1,958-1,966-297-243614371-668152.41997All9110-711-7355-128-30-14%-1,901-1,9313032726758-728160.51998All-6864-980-9834-132-33-13%-1,962-2,075113115759875-762163.01999All-10217-92-6-8628-113-36-10%-2,172-2,26694102807909-815172.22001All-149-44-74-8-6660-126-31-12%-2,235-2,26694102807903-860177.12001All-149-44-74<	1992	150	-108	1	-66	-9	-58	49	-106	-43	-12%	-1,841	-1,285	-557	-558	458	-99	-457	140.3	
1994All-5875-79-8-7149-727-54-14%-1,937-1,541-396-371575204-6001482.21995All-5584-87-7-7939-118-52-12%-1,962-1,666-297-243614371-668152.41996All-3885-90-8-8151-132-33-15%-1,958-1,960-158-119666548-706156.91997All9110-711-7355-128-30-14%-1,901-1,9313032726758-722160.51998All-6864-980-9834-132-33-13%-1,962-2,075113115759875-762163.01999All-10217-92-6-8642-128-27-13%-2,051-2,196145134798932-788166.62000All-150-22-91-6-8428-113-36-10%-2,217-2,26694102807909-815172.22001All-149-144-74-8-6660-126-31-12%-2,234-2,26694102807909-815172.22003All-19815-95 <td>1993</td> <td>156</td> <td>-75</td> <td>33</td> <td>-63</td> <td>-8</td> <td>-55</td> <td>48</td> <td>-103</td> <td>-45</td> <td>-12%</td> <td>-1,900</td> <td>-1,401</td> <td>-499</td> <td>-492</td> <td>517</td> <td>25</td> <td>-523</td> <td>144.5</td>	1993	156	-75	33	-63	-8	-55	48	-103	-45	-12%	-1,900	-1,401	-499	-492	517	25	-523	144.5	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1994	All	-58	75	-79	-8	-/1	49	-121	-54	-14%	-1,937	-1,541	-396	-371	575	204	-600	148.2	
1996All-3865-90-8-6157-732-33-16%-1,958-1,800-158-119666548-706160.91997All9110-711-7355-128-30-14%-1,901-1,9313032726758-728160.51998All-6864-980-9834-132-33-13%-1,962-2,075113115759875-762163.01999All-10217-92-6-8642-128-27-13%-2,051-2,196145134798932-788166.62000All-150-22-91-6-8642-128-27-13%-2,051-2,196145134798932-788166.62000All-149-44-74-8-6660-126-31-12%-2,293-2,3566346857903-840177.12002All-9815-95-8-8737-124-18-13%-2,374-2,4679363889951-858179.92003All-2066-77-8-6949-118-9-11%-2,345-2,5512061389271,065-859184.02004All5589-16-6<	1995	All	-55	84	-87	-/	-79	39	-118	-52	-12%	-1,962	-1,666	-297	-243	614	371	-668	152.4	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1996	All	-30	00	-90	-0	-01	51	-132	-33	-15%	-1,958	-1,800	-158	-119	666	548	-706	150.9	
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	1997	All	9	64	-71		-/3	33	-120	-30	-14%	-1,901	-1,931	30	32	726	758	-728	160.5	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	1998	All	-00	4	-90	0	-90	34	-132	-33	-13%	-1,962	-2,075	113	115	759	875	-762	165.0	
$ \begin{array}{c c c c c c c c c c c c c c c c c c c $		<u>A</u> "		$ \frac{1}{22} - \frac{1}{22}$	<u>- 92</u>	$ \frac{-0}{6}$		$+ - \frac{42}{26}$	120	21	<u>13%_</u>		<u>-2,196</u>	145	<u>134</u>	/ <u>98</u>	<u> </u>		<u>100.0</u>	
2007 All -108 15 -95 -8 -87 37 -124 -18 -13% -2,350 63 46 857 903 -840 171 2002 All -98 15 -95 -8 -87 37 -124 -18 -13% -2,345 -2,346 93 63 889 951 -888 179.9 2003 All -20 66 -77 -8 -69 49 -118 -9 -11% -2,345 -2,651 206 138 927 1,065 -859 184.0 2004 All 55 89 -16 -6 -10 111 -121 -18 -10% -2,221 -2,622 401 237 1,029 1,265 -864 188.9 188.9	2000	All	-149	-22	-91	-0	-04	60	-115	-30	-10%	-2,172	-2,266	94	102	807	909	-815	172.2	
2002 All -30 13 -30 13 -30 13 -30 13 -33 889 951 -838 13.3 2003 All -20 66 -77 -8 -69 49 -118 -9 -11% -2,345 -2,551 206 138 927 1,065 -859 184.0 2004 All 55 89 -16 -6 -10 111 -121 -18 -10% -2,221 -2,622 401 237 1,029 1,265 -864 188.9	2001	All	-149	-44	-74	-0	-00	37	-120	-18	-12%	-2,293	-2,356	63	46	857	903	-840	177.1	
2003 Air -20 00 -17 -5 -09 49 -170 -9 -177% -2,345 -2,551 200 138 927 1,065 -859 104.0 2004 All 55 89 -16 -6 -10 111 -121 -18 -10% -2,221 -2,622 401 237 1,029 1,265 -864 188.9	2002		-20	66	-33	-0	-60	10	-12-	_0	-13%	-2,374	-2,467	93	63	889	951	-858	184.0	
2004 All 30 03 -10 -10 111 -121 -10 -10% -2,221 -2,622 401 237 1,029 1,265 -864 106.9	2003	All	-20	80	-16	-0	-09	111	-110	-9	-11%	-2,345	-2,551	206	138	927	1,065	-859	188.0	
	2004	Δ <i>ι</i>	103	137	-10	-0	-10	123	-121	-21	-10%	-2,221	-2,622	401	237	1,029	1,205	-004	195.3	
2000 All 200 All 100 101 12 70 77 120 721 75% 72,037 720 72,037 700 737 4000 007 101 101 101 101 101 101 101 101	2005	Δ <i>ι</i>	254	261	-12	-10		107	-120	16	-8%	-2,034	-2,6//	643	380	1,131	1,511	-868	201.6	
2000 , 100 2012 100 -10 -10 -10 101 -121 10 -200 $-1,100$ $-2,122$ $1,023$ 647 $1,210$ $1,857$ -834 2010 -2010 -2017 4	2000	Δ <i>ι</i>	403	404	-2-7	_9	- 1-7	95	-106	18	-0%	-1,700	-2,722	1,023	647	1,210	1,857	-834	201.0	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2008	All	298	366	-99	-16	-83	73	-156	31	-4%	-1,234 _200	-2,/5/	1,523	1,049	1,275	2,324	-601	215.3	

	[1]	[2]	[3]	[4]	[5] B	[6] illions of current USD	[7]	[8]	[9]	[10]	[11]
			Lia	abilities and de	bits				Missing flows a	and stocks	
	Memo: Cross- Border Bank Liabilities	Cross-Border Bank Accounts	Cross Border Portfolios	Memo: EWNII debt + equity	Deposits & portfolio, stocks	Deposits & portfolio, income	Yield	Missing deposits & portfolio income	Missing portfolio wealth	Yield	Memo: Capitalized missing wealth
1975				1,055	1,038	55	5%	-5			87
1976	670	640		1,289	1,268	60 76	5% 5%	-5			114
1977	072 857	640 817		1,576	1,551	106	5%	-3			70
1979	1 120	1 068		2 411	2 372	166	7%	-13			179
980		1,273		2,862	2.816	243	<u> </u>	-17			
981	1,532	1,461		3,258	3,205	330	10%	-26			250
982	1,627	1,552		3,549	3,492	353	10%	-37			362
983	2,038	1,943		3,842	3,780	303	8%	-33			411
984	2,125	2,026		4,045	3,979	339	9%	-41			479
85	2,536	2,419		4,804	4,726	340	7%	-48			663
986	3,234	3,084		6,024	5,927	369	6% 6%	-54			8/5
00	4,232	4,035		7,452	7,332	429	6% 79/	-70			1,191
100	4,023	4,409		0,197	0,005	526	7%	-/5			1,140
<u>an</u>	$\frac{5,402}{6,481}$	<u> </u>		<u> </u>	<u>9,44</u> /	<u> </u>	$-\frac{7}{7\%}$				$\frac{1,227}{1,389}$
91	6 423	6 124		12 298	12 099	862	7%	-113			1,586
92	6,301	6,008		12,679	12,474	869	7%	-106			1,525
93	6,267	5,976		14,189	13,960	850	6%	-103			1,697
94	7,150	6,818		15,545	15,295	835	5%	-121			2,208
995	7,831	7,467		17,808	17,521	967	6%	-118			2,139
96	8,100	7,673		19,391	19,079	907	5%	-132			2,786
97	9,118	8,454		21,240	20,897	921	4%	-128			2,904
98	9,695	8,943		24,054	23,666	1,017	4%	-132			3,066
999	$\frac{9,611}{10,421}$	<u> </u>		$ \frac{26,664}{27,475}$		$\frac{1,005}{1,100}$	$ \frac{4\%}{40}$	$ \frac{-128}{442}$			$\frac{3,340}{2,740}$
100	10,421	9,400 10,021	16 273	21,413	27,031	1,112	470	-113	2 532	5 %	2,740
01	12 803	10,021	17 754	21,910	27, 4 00 30,557	968	4%	-120	2,002	5%	3,230
)3	15 464	13 488	23 638	38 553	39 102	1 032	3%	-118	2,858	4%	4 479
04	18,244	15.856	28,950	46.573	47,194	1.207	3%	-121	3.316	4%	4,723
)5	20,052	17,223	32,399	50,699	52,451	1,529	3%	-128	3,676	3%	4,384
ô	24,602	21,289	40,732	63,057	65,334	2,039	3%	-121	3,760	3%	3,866
'	31,418	27,131	49,301	77,301	80,719	2,692	3%	-106	5,131	2%	3,169
08	29.067	24.342	40.097	n.a.	69 165	2 786	4%	-156	4 490	3%	3 868

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
	All securities	Swiss owned	Foreign owned	Swiss securities	Foreign securities (= offshore)	Equities	Mutual fund shares	Bonds	Asset allocat	ion of Swiss offs Mutual fund shares	hore portfolio Bonds	Swiss offshore portfolio / Global offshore portfolio
1998	2,139	987	1,152	361	791	311	161	480	39%	20%	61%	
1999	2,145	984	1,161	361	800	398	175	402	50%	22%	50%	
2000	2,247	1,015	1,232	439	794	405	184	389	51%	23%	49%	
2001	2,012	883	1,128	340	789	402	206	387	51%	26%	49%	31%
2002	2,114	918	1,196	338	859	392	224	466	46%	26%	54%	36%
2003	2,652	1,134	1,518	438	1,079	549	306	530	51%	28%	49%	38%
2004	3,121	1,351	1,770	508	1,261	684	382	577	54%	30%	46%	38%
2005	3,357	1,378	1,980	609	1,371	892	606	478	65%	44%	35%	37%
2006	4,112	1,705	2,406	772	1,634	1,149	782	485	70%	48%	30%	43%
2007	4,800	2,017	2,782	790	1,992	1,465	1,036	527	74%	52%	26%	39%
2008	3,772	1,665	2,107	562	1,545	1,005	767	540	65%	50%	35%	34%
2009	4,375	1,963	2,412	686	1,726	1,102	755	624	64%	44%	36%	
2010	4,826	2,207	2,618	769	1,849	1,221	823	628	66%	45%	34%	

Table A23: Securities in Custody in Swiss Banks, bn of USD

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
				Latin and			North		Total ex tax		Pich	Of which:	Developing	Evel Middle
	Tax havens	Furone	Middle Fast	America	Asia	Africa	America	Caribbean	havens	Total	countries	Euro area 16	countries	Excl. Mildule Fast
1976	7 536	9 190	3 440	1 266	775	1 076	695	0	16 442	23.978	9 039	7 666	7 404	3.964
1977	9.620	11.642	3.421	1.498	954	1.337	620	0 0	19.472	29.092	11.259	8.970	8.213	4.792
1978	12.004	12.487	4.931	1.843	948	1,925	817	0	22,951	34.955	12,108	10.235	10.844	5.913
1979	15,744	19,535	7,096	2,730	1,350	2,795	1,328	0	34,834	50,578	18,915	15,666	15,918	8,822
1980	19,219	29,102	10,121	4,055	2,043	3,484	1,808	0	50,613	69,832	28,107	22,344	22,506	12,385
1981	22,997	39,495	11,481	6,454	2,476	3,941	2,342	0	66,189	89,186	38,335	29,529	27,854	16,373
1982	23,622	34,564	15,066	5,790	2,725	3,912	2,337	0	64,394	88,016	33,062	25,652	31,333	16,267
1983	26,083	31,940	16,740	5,619	3,157	3,868	2,545	0	63,869	89,952	30,183	22,525	33,685	16,945
1984	31,287	30,573	20,519	6,290	4,408	3,156	3,221	27	68,194	99,481	34,132	24,513	34,061	13,542
1985	36,054	34,110	22,954	6,773	5,396	3,437	3,527	23	76,220	112,274	38,048	27,244	38,173	15,219
1986	41,891	37,954	22,495	7,698	6,088	3,756	4,169	27	82,187	124,078	42,638	30,521	39,549	17,054
1987	54,532	49,199	26,023	9,840	7,323	4,647	5,709	31	102,772	157,304	55,549	38,484	47,224	21,201
1988	55,527	51,157	26,382	10,825	7,361	4,454	5,894	36	106,109	161,636	57,803	39,847	48,306	21,924
1989	73,037	63,877	28,649	13,791	7,942	5,462	7,257	21	126,999	200,036	71,947	52,642	55,052	26,403
1990	95,234	86,870	35,428	19,175	9,134	6,375	9,154	29	166,165	261,399	97,106	72,110	69,059	33,631
1991	90,378	85,304	36,051	17,818	9,463	6,353	8,733	31	163,753	254,131	94,987	71,803	68,766	32,715
1992	84,407	84,516	34,032	14,611	9,053	5,746	9,916	42	157,916	242,323	95,206	72,500	62,711	28,679
1993	78,767	75,297	32,620	11,881	8,466	5,620	7,443	30	141,357	220,124	83,362	64,204	57,996	25,376
1994	92,095	79,398	34,653	13,853	10,125	6,178	6,523	63	150,793	242,888	86,556	68,837	64,237	29,584
1995	101,769	84,249	36,385	14,286	11,658	5,879	7,179	71	159,707	261,476	92,089	73,412	67,617	31,232
1996	108,209	81,342	36,268	14,559	12,852	5,637	7,918	94	158,670	266,879	89,536	70,040	69,134	32,866
1997	112,745	78,389	35,916	15,556	14,451	5,871	7,598	52	157,833	270,578	86,561	67,540	71,273	35,357
1998	118,840	82,476	35,774	16,630	15,641	6,355	8,032	65	164,973	283,813	91,533	69,691	73,440	37,666
1999	113,674	75,736	32,668	17,411	16,423	5,627	7,946	53	155,864	269,538	84,617	63,688	71,247	38,579
2000	132,723	75,266	33,327	19,570	17,283	5,506	8,584	64	159,600	292,323	84,536	61,901	75,064	41,737
2001	135,266	76,727	30,564	16,424	17,890	5,736	8,043	64	155,448	290,714	85,578	61,466	69,870	39,306
2002	142,367	74,435	30,721	18,107	17,533	6,276	8,007	84	155,163	297,530	83,161	59,463	72,002	41,281
2003	141,122	74,793	30,697	16,406	19,742	6,398	7,903	85	156,024	297,146	83,495	60,009	72,527	41,830
2004	166,646	81,664	32,591	17,074	19,048	6,676	7,997	70	165,120	331,766	90,719	64,091	74,401	41,810
2005	207,498	51,982	38,712	19,502	20,993	7,055	8,973	75	147,292	354,790	62,104	38,856	85,188	46,476
2006	267,932	64,702	44,638	22,611	26,500	7,732	13,055	116	179,354	447,286	77,789	49,149	101,565	56,927
2007	356,950	84,119	49,419	26,704	29,214	9,345	13,990	169	212,960	569,910	98,719	66,376	114,241	64,822
2008	293,305	74,898	37,434	21,732	29,824	8,338	11,949	203	184,378	477,683	87,146	61,707	97,231	59,797

 Table A24: Fiduciary Deposits in Swiss Banks, 1976-2008, mn of USD

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]
				Latin and					-		D : 1	Of which:		
	Tay bayana	Furana	Middle Feet	South	Acia	Africo	North	Caribbaan	Iotal ex-tax	Tatal	Rich	Euro area	Developing	Excl. Middle
1076				America	ASIa	AIRCa	America			1008/		10	210/	Easi
1970	3170	30% 40%	1470	5%	3%	4 70	3%	0%	67%	100%	30%	32%	31%	1770
1977	33%	40%	1270	5%	3%	5%	2 %	0%	07 70	100%	39%	31%	20%	10%
1976	34%	30%	14%	5%	3%	0%	2%	0%	00%	100%	35%	29%	31%	17%
1979	31%	39%	14%	5%	3%	6%	3%	0%	69% 70%	100%	37%	31%	31%	17%
1980	28%	42%	14%	6% 70/	3%	5%	3%	0%	72%	100%	40%	32%	32%	18%
1981	26%	44%	13%	7%	3%	4%	3%	0%	74%	100%	43%	33%	31%	18%
1982	27%	39%	17%	7%	3%	4%	3%	0%	73%	100%	38%	29%	36%	18%
1983	29%	30%	19%	6% C%	4%	4%	3%	0%	71%	100%	34%	25%	37%	19%
1984	31%	31%	21%	6% C%	4%	3%	3%	0%	69%	100%	34%	25%	34%	14%
1985	32%	30%	20%	6% C%	5%	3%	3%	0%	68%	100%	34%	24%	34%	14%
1986	34%	31%	18%	6% C%	5%	3%	3%	0%	66% 65%	100%	34%	25%	32%	14%
1987	35%	31%	17%	6% 70/	5%	3%	4%	0%	65%	100%	35%	24%	30%	13%
1988	34%	32%	16%	7%	5%	3%	4%	0%	66%	100%	36%	25%	30%	14%
1989	37%	32%	14%	7%	4%	3%	4%	0%	63%	100%	36%	26%	28%	13%
1990	36%	33%	14%	7%	3%	2%	4%	0%	64%	100%	37%	28%	26%	13%
1991	36%	34%	14%	7%	4%	2%	3%	0%	64%	100%	37%	28%	27%	13%
1992	35%	35%	14%	6%	4%	2%	4%	0%	65%	100%	39%	30%	26%	12%
1993	36%	34%	15%	5%	4%	3%	3%	0%	64%	100%	38%	29%	26%	12%
1994	38%	33%	14%	6%	4%	3%	3%	0%	62%	100%	36%	28%	26%	12%
1995	39%	32%	14%	5%	4%	2%	3%	0%	61%	100%	35%	28%	26%	12%
1996	41%	30%	14%	5%	5%	2%	3%	0%	59%	100%	34%	26%	26%	12%
1997	42%	29%	13%	6%	5%	2%	3%	0%	58%	100%	32%	25%	26%	13%
1998	42%	29%	13%	6%	6%	2%	3%	0%	58%	100%	32%	25%	26%	13%
1999	42%	28%	12%	6%	6%	2%	3%	0%	58%	100%	31%	24%	26%	14%
2000	45%	26%	11%	7%	6%	2%	3%	0%	55%	100%	29%	21%	26%	14%
2001	47%	26%	11%	6%	6%	2%	3%	0%	53%	100%	29%	21%	24%	14%
2002	48%	25%	10%	6%	6%	2%	3%	0%	52%	100%	28%	20%	24%	14%
2003	47%	25%	10%	6%	7%	2%	3%	0%	53%	100%	28%	20%	24%	14%
2004	50%	25%	10%	5%	6%	2%	2%	0%	50%	100%	27%	19%	22%	13%
2005	58%	15%	11%	5%	6%	2%	3%	0%	42%	100%	18%	11%	24%	13%
2006	60%	14%	10%	5%	6%	2%	3%	0%	40%	100%	17%	11%	23%	13%
2007	63%	15%	9%	5%	5%	2%	2%	0%	37%	100%	17%	12%	20%	11%
2008	61%	16%	8%	5%	6%	2%	3%	0%	39%	100%	18%	13%	20%	13%

 Table A25: Distribution of Fiduciary Deposits in Swiss Banks by Country of Owner, 1976-2008, Uncorrected Shares (% of Total)

	[1]	[2]	[3]	[4] Latin and	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]
				South							Of which:	Developing	Excl. Middle
	Tax havens	Europe	Middle East	America	Asia	Africa	North America	Caribbean	Total	Rich countries	Euro area 16	countries	East
1976	0%	61%	14%	8%	5%	7%	5%	0%	100%	60%	51%	40%	26%
1977	0%	64%	12%	8%	5%	7%	3%	0%	100%	62%	49%	38%	26%
1978	0%	60%	14%	9%	5%	9%	4%	0%	100%	58%	49%	42%	28%
1979	0%	61%	14%	8%	4%	9%	4%	0%	100%	59%	49%	41%	27%
1980	0%	61%	14%	9%	4%	7%	4%	0%	100%	59%	47%	41%	26%
1981	0%	63%	13%	10%	4%	6%	4%	0%	100%	61%	47%	39%	26%
1982	0%	58%	17%	10%	5%	7%	4%	0%	100%	56%	43%	44%	27%
1983	0%	55%	19%	10%	5%	7%	4%	0%	100%	52%	39%	48%	29%
1984	0%	51%	21%	10%	7%	5%	5%	0%	100%	57%	41%	43%	23%
1985	0%	51%	20%	10%	8%	5%	5%	0%	100%	57%	41%	43%	23%
1986	0%	52%	18%	11%	8%	5%	6%	0%	100%	58%	42%	42%	23%
1987	0%	53%	17%	11%	8%	5%	6%	0%	100%	60%	42%	40%	23%
1988	0%	54%	16%	11%	8%	5%	6%	0%	100%	61%	42%	39%	23%
1989	0%	56%	14%	12%	7%	5%	6%	0%	100%	63%	46%	37%	23%
1990	0%	57%	14%	13%	6%	4%	6%	0%	100%	64%	48%	36%	22%
1991	0%	57%	14%	12%	6%	4%	6%	0%	100%	64%	48%	36%	22%
1992	0%	59%	14%	10%	6%	4%	7%	0%	100%	66%	50%	34%	20%
1993	0%	59%	15%	9%	7%	4%	6%	0%	100%	65%	50%	35%	20%
1994	0%	59%	14%	10%	7%	5%	5%	0%	100%	64%	51%	36%	22%
1995	0%	59%	14%	10%	8%	4%	5%	0%	100%	64%	51%	36%	22%
1996	0%	57%	14%	10%	9%	4%	6%	0%	100%	63%	49%	37%	23%
1997	0%	56%	13%	11%	10%	4%	5%	0%	100%	62%	48%	38%	25%
1998	0%	56%	13%	11%	11%	4%	5%	0%	100%	62%	47%	38%	25%
1999	0%	54%	12%	12%	12%	4%	6%	0%	100%	60%	45%	40%	28%
2000	0%	53%	11%	14%	12%	4%	6%	0%	100%	59%	43%	41%	29%
2001	0%	55%	11%	12%	13%	4%	6%	0%	100%	61%	44%	39%	28%
2002	0%	54%	10%	13%	13%	5%	6%	0%	100%	60%	43%	40%	30%
2003	0%	54%	10%	12%	14%	5%	6%	0%	100%	60%	43%	40%	30%
2004	0%	56%	10%	12%	13%	5%	5%	0%	100%	62%	44%	38%	28%

 Table A26: Distribution of Fiduciary Deposits in Swiss Banks by Country of Owner, 1976-2004, Corrected Shares (% of Total)

	Net foreign asset position / World GDP							Net foreign asset position / Country or region GDP						
	Rich countries	USA	Japan	Other rich countries	Euro area 16	Other Europe	Canada, Australia, NZ	Rich countries	USA	Japan	Other rich countries	Euro area 16	Other Europe	Canada, Australia, NZ
1985	0%	0%	1%	-1%	-1%	1%	-2%	0%	1%	10%	-4%	-3%	16%	-37%
1986	0%	0%	1%	-1%	0%	1%	-2%	0%	-1%	9%	-3%	-2%	16%	-41%
1987	0%	0%	1%	-1%	0%	1%	-2%	0%	-2%	10%	-2%	0%	14%	-44%
1988	0%	-1%	2%	-1%	0%	1%	-2%	0%	-3%	10%	-2%	1%	11%	-41%
1989	-1%	-1%	1%	-1%	0%	1%	-2%	-1%	-5%	10%	-3%	0%	11%	-41%
1990	-1%	-1%	1%	-1%	0%	0%	-2%	-1%	-4%	11%	-4%	0%	3%	-42%
1991	-2%	-1%	2%	-2%	0%	0%	-2%	-2%	-5%	11%	-5%	-1%	4%	-45%
1992	-1%	-2%	2%	-2%	-1%	0%	-2%	-2%	-7%	14%	-5%	-2%	6%	-44%
1993	-1%	-1%	2%	-2%	-1%	1%	-2%	-1%	-4%	14%	-6%	-3%	8%	-49%
1994	0%	-1%	3%	-2%	-1%	0%	-2%	-1%	-4%	14%	-6%	-3%	7%	-49%
1995	-1%	-1%	3%	-2%	-1%	0%	-2%	-1%	-6%	16%	-6%	-4%	5%	-48%
1996	-1%	-2%	3%	-2%	-1%	0%	-2%	-1%	-6%	19%	-6%	-3%	3%	-47%
1997	-1%	-3%	3%	-2%	0%	0%	-1%	-1%	-9%	22%	-5%	-1%	2%	-40%
1998	-2%	-3%	4%	-3%	-1%	0%	-1%	-3%	-10%	30%	-9%	-6%	-4%	-41%
1999	-3%	-2%	3%	-3%	-1%	0%	-1%	-3%	-8%	19%	-9%	-6%	-3%	-37%
2000	-3%	-4%	4%	-2%	-1%	0%	-1%	-4%	-14%	25%	-8%	-7%	3%	-29%
2001	-3%	-6%	4%	-2%	-1%	0%	-1%	-4%	-18%	33%	-6%	-5%	4%	-26%
2002	-5%	-6%	4%	-3%	-2%	0%	-1%	-6%	-19%	37%	-9%	-11%	7%	-33%
2003	-5%	-6%	4%	-3%	-3%	1%	-1%	-6%	-19%	38%	-10%	-11%	8%	-37%
2004	-5%	-5%	4%	-4%	-3%	0%	-1%	-7%	-19%	39%	-11%	-12%	2%	-35%
2005	-4%	-4%	3%	-3%	-2%	0%	-1%	-5%	-15%	34%	-8%	-8%	4%	-29%
2006	-5%	-4%	4%	-4%	-3%	0%	-1%	-7%	-16%	41%	-12%	-12%	-3%	-25%
2007	-3%	-3%	4%	-4%	-3%	0%	-1%	-5%	-13%	50%	-12%	-15%	5%	-29%
2008	-5%	-5%	4%	-4%	-4%	1%	-1%	-8%	-23%	51%	-11%	-17%	12%	-22%
2001-2008 average	-4%	-5%	4%	-3%	-3%	0%	-1%	-6%	-18%	40%	-10%	-11%	5%	-30%

Table A27: Net Foreign Asset Positions of Rich Countries, As Officially Reported

		Share of no	on-Swiss fortur	nes belonging t	to euro-area
			20	001	
		0%	25%	50%	75%
	0%	-5%	2%	8%	15%
Share of Swiss fortunes	40%	0%	7%	13%	20%
belonging to euro-area	50%	1%	8%	15%	21%
	60%	2%	9%	16%	23%
			20	02	
		0%	25%	50%	75%
	0%	-11%	-5%	1%	6%
Share of Swiss fortunes	40%	-6%	0%	5%	11%
belonging to euro-area	50%	-4%	1%	7%	12%
	60%	-3%	2%	8%	14%
			20	003	
		0%	25%	50%	75%
	0%	-11%	-6%	-1%	4%
Share of Swiss fortunes	40%	-6%	-1%	4%	9%
belonging to euro-area	50%	-5%	0%	5%	11%
	60%	-4%	1%	7%	12%
		.,,	20	04	,.
		0%	25%	50%	75%
	0%	-12%	-7%	-1%	4%
Share of Swiss fortunes	40%	-7%	-1%	4%	9%
belonging to euro-area	50%	-5%	0%	5%	10%
	60%	-4%	1%	6%	12%
		.,.	20	005	,.
		0%	25%	50%	75%
	0%	-8%	-3%	3%	9%
Share of Swiss fortunes	40%	-3%	3%	8%	14%
belonging to euro-area	50%	-2%	4%	10%	15%
	60%	0%	5%	11%	17%
			20	006	
		0%	25%	50%	75%
	0%	-12%	-7%	-3%	2%
Share of Swiss fortunes	40%	-6%	-1%	4%	8%
belonging to euro-area	50%	-5%	0%	5%	10%
	60%	-3%	2%	7%	12%
			20	07	
		0%	25%	50%	75%
	0%	-15%	-9%	-2%	4%
Share of Swiss fortunes	40%	-9%	-2%	4%	10%
belonging to euro-area	50%	-7%	-1%	6%	12%
	60%	-5%	1%	7%	14%
			20	08	
		0%	25%	50%	75%
	0%	-17%	-11%	-6%	-1%
Share of Swiss fortunes	40%	-12%	-7%	-1%	4%
belonging to euro-area	50%	-11%	-6%	0%	5%
	60%	-10%	-5%	1%	6%
			2001-200	8 average	
		0%	25%	50%	75%
	0%	-11%	-6%	0%	6%
Share of Swiss fortunes	40%	-6%	0%	5%	11%
belonging to euro-area	50%	-5%	1%	7%	12%
	60%	-3%	2%	8%	1.3%

Table A28: Euro-Area Net Foreign Asset Position/Euro-Area GDP

Table A29: U.S. Net Foreign Asset Position/U.S. GDP

		Share of r	on-Swiss fortu	nes belonging t	o the U.S.
			20	01	
		0%	25%	50%	75%
	0%	-18%	-14%	-10%	-6%
Share of Swiss fortunes	5%	-18%	-14%	-9%	-5%
belonging to the U.S.	10%	-18%	-13%	-9%	-5%
	15%	-17%	-13%	-9%	-4%
			20	02	
		0%	25%	50%	75%
	0%	-19%	-16%	-12%	-8%
Share of Swiss fortunes	5%	-19%	-15%	-12%	-8%
belonging to the U.S.	10%	-18%	-15%	-11%	-8%
	15%	-18%	-14%	-11%	-7%
			20	03	
		0%	25%	50%	75%
	0%	-19%	-15%	-11%	-7%
Share of Swiss fortunes	5%	-18%	-14%	-10%	-6%
belonging to the U.S.	10%	-18%	-14%	-10%	-6%
	15%	-17%	-13%	-9%	-5%
			20	04	
		0%	25%	50%	75%
	0%	-19%	-15%	-10%	-6%
Share of Swiss fortunes	5%	-19%	-14%	-10%	-5%
belonging to the U.S.	10%	-18%	-14%	-9%	-5%
	15%	-17%	-13%	-9%	-4%
			20	05	
		0%	25%	50%	75%
	0%	-15%	-11%	-6%	-2%
Share of Swiss fortunes	5%	-15%	-10%	-6%	-1%
belonging to the U.S.	10%	-14%	-10%	-5%	-1%
	15%	-14%	-9%	-5%	0%
		,	20	06	
		0%	25%	50%	75%
	0%	-16%	-12%	-8%	-4%
Share of Swiss fortunes	5%	-16%	-12%	-8%	-4%
belonging to the U.S.	10%	-15%	-11%	-7%	-3%
	15%	-15%	-11%	-7%	-3%
			20	07	
		0%	25%	50%	75%
	0%	-13%	-7%	-2%	4%
Share of Swiss fortunes	5%	-12%	-6%	-1%	5%
belonging to the U.S.	10%	-11%	-6%	0%	5%
	15%	-11%	-5%	1%	6%
			20	08	
		0%	25%	50%	75%
	0%	-23%	-18%	-12%	-7%
Share of Swiss fortunes	5%	-22%	-17%	-12%	-7%
belonging to the U.S.	10%	-22%	-16%	-11%	-6%
	15%	-21%	-16%	-11%	-6%
			2001-2008	8 average	
		0%	25%	50%	75%
	0%	-18%	-13%	-9%	-5%
Share of Swiss fortunes	5%	-17%	-13%	-8%	-4%
belonging to the U.S.	10%	_17%	-12%	00/	20/
belonging to the 0.0.	10 /0	-17/0	= 1 Z /0	-0.70	7.70

Table A30: Households' Unrecorded Offshore Assets vs. Net Debt of the World (bn USD)

		2001	2002	2003	2004	2005	2006	2007	2008
[1]	My estimate of households' unrecorded assets ${f \Omega}$	2,532	2,392	2,858	3,316	3,676	3,760	5,131	4,490
[2]	Minus: FDI discrepancy (EWNII)	340	374	381	469	330	159	97	n.a.
[3]	Minus: Derivative discrepancy (EWNII)	17	-3	-32	-45	38	24	-47	n.a.
[4]	Minus: Middle East oil exporters' offshore holdings incl. in EWNII (est.)	188	209	263	287	369	452	570	n.a.
[5]	Minus: Correction to portfolio liability data reported in EWNII	242	198	269	225	456	430	619	523
[6]	Minus: Cumulated trade discrepancy after 2004				89	227	488	892	1,259
[7]	Minus: Other	108	-192	107	315	793	460	1,325	n.a.
[8]	Equals = World net debt (EWNII)	1,637	1,805	1,871	1,975	1,463	1,746	1,674	n.a.
[9]	Memo: World net debt (IMF, July 2011)	1,724	2,016	1,994	2,180	1,547	1,403	1,084	645

Table A31: Euro-Area Net Foreign Asset Position/Euro-Area GDP, World IIP balanced

		Share of r	on-Swiss fortur	es belonging to	euro-area
			20	01	
		0%	25%	50%	75%
	0%	-10%	-3%	4%	10%
Share of Swiss fortunes	40%	-5%	2%	9%	15%
belonging to euro-area	50%	-4%	3%	10%	17%
	60%	-3%	4%	11%	18%
			20	02	
		0%	25%	50%	75%
	0%	-13%	-8%	-2%	3%
Share of Swiss fortunes	40%	-9%	-3%	3%	8%
belonging to euro-area	50%	-7%	-2%	4%	9%
	60%	-6%	0%	5%	11%
			20	03	,.
		0%	25%	50%	75%
	0%	-15%	-10%	-5%	1%
Share of Swiss fortunes	40%	-10%	-5%	1%	6%
belonging to euro-area	50%	-9%	-3%	2%	7%
0.0	60%	-7%	-2%	3%	8%
		. ,0	20	04	0,0
		0%	25%	50%	75%
	0%	-16%	-10%	-5%	0%
Share of Swiss fortunes	40%	-10%	-5%	0%	5%
belonging to euro-area	50%	-9%	-4%	1%	7%
	60%	-8%	-3%	3%	8%
	0070	070	20	05	070
		0%	25%	50%	75%
	0%	-14%	-8%	-2%	3%
Share of Swiss fortunes	40%	-8%	-3%	3%	9%
belonging to euro-area	50%	-7%	-1%	4%	10%
	60%	-6%	0%	6%	11%
			20	06	,0
		0%	25%	50%	75%
	0%	-17%	-12%	-7%	-2%
Share of Swiss fortunes	40%	-11%	-6%	-1%	4%
belonging to euro-area	50%	-10%	-5%	0%	5%
5 5 5 1 1 1	60%	-8%	-3%	2%	7%
		0,0	20	07	. , v
		0%	25%	50%	75%
	0%	-22%	-16%	-9%	-3%
Share of Swiss fortunes	40%	-16%	-9%	-3%	3%
belonging to euro-area	50%	-14%	-8%	-1%	5%
	60%	-12%	-6%	0%	7%
	0070	1270	2001-200	7 average	170
		0%	25%	50%	75%
	0%	-13%	_ <u>8%</u>	_3%	20/2 20/2
Share of Swiss fortunes	40%	- 13 /0	-0%	-070	2 /0 6%
belonging to euro-area	40 /0 50%	-3 /0 _7%	- -+ /0 _20/_	1 ∕0 20∕_	U /0 70/-
seconding to ouro-area	50%	-170	-270	∠ 70	/ 70

Table A32: Rich World Net Foreign Asset Position/Rich World GDP, World IIP balanced

		Share of n	on-Swiss fortur	nes belonging to	o rich world
			20	001	
		0%	30%	60%	90%
	0%	-6%	-4%	-2%	0%
Share of Swiss fortunes belonging	50%	-5%	-2%	0%	2%
to rich world	60%	-4%	-2%	0%	2%
	70%	-4%	-2%	0%	3%
			20	002	
		0%	30%	60%	90%
	0%	-7%	-5%	-3%	-2%
Share of Swiss fortunes belonging	50%	-5%	-4%	-2%	0%
to rich world	60%	-5%	-3%	-1%	0%
	70%	-5%	-3%	-1%	1%
			20)03	
		0%	30%	60%	90%
	0%	-8%	-6%	-4%	-2%
Share of Swiss fortunes belonging	50%	-6%	-4%	-2%	0%
to rich world	60%	-5%	-3%	-2%	0%
	70%	-5%	-3%	-1%	1%
			20)04	
		0%	30%	60%	90%
	0%	-9%	-7%	-5%	-3%
Share of Swiss fortunes belonging	50%	-7%	-5%	-3%	-1%
to rich world	60%	-6%	-4%	-2%	0%
	70%	-6%	-4%	-2%	0%
			20	005	
		0%	30%	60%	90%
	0%	-8%	-6%	-4%	-2%
Share of Swiss fortunes belonging	50%	-6%	-4%	-2%	0%
to rich world	60%	-6%	-4%	-2%	1%
	70%	-5%	-3%	-1%	1%
			20	006	
		0%	30%	60%	90%
	0%	-9%	-8%	-6%	-4%
Share of Swiss fortunes belonging	50%	-7%	-5%	-3%	-1%
to rich world	60%	-7%	-5%	-3%	-1%
	70%	-6%	-4%	-2%	-1%
			20	007	
		0%	30%	60%	90%
	0%	-9%	-7%	-4%	-2%
Share of Swiss fortunes belonging	50%	-7%	-4%	-2%	1%
to rich world	60%	-6%	-4%	-1%	1%
	70%	-6%	-3%	-1%	2%
			2001-200	7 average	
	•••	0%	30%	60%	90%
.	0%	-7%	-5%	-4%	-2%
Share of Swiss fortunes belonging	50%	-5%	-4%	-2%	0%
to rich World	60%	-5%	-3%	-1%	0%
	70%	-5%	-3%	-1%	1%



Figure A2: Share of Each Foreign Country in the U.S. Equity Portfolio, 2001-2008 average





Figure A3: Share of Each Foreign Country in the U.S. Debt









Figure A7: Share of Each Foreign Country in France's Debt