



# IMF Working Paper

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## European Financial Linkages: A New Look at Imbalances

*Claire Waysand, Kevin Ross,  
John de Guzman*

**IMF Working Paper**

European Department

**European Financial Linkages: A New Look at Imbalances<sup>1</sup>**

**Prepared by Claire Waysand, Kevin Ross, John de Guzman**

Authorized for distribution by Anne-Marie Gulde-Wolf

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**Abstract**

We document external investment positions among European Union countries at the start of the financial crisis through the creation of a new database comprising bilateral external financial asset and liabilities, excluding reserve assets and derivatives. While there are some gaps in the data, the overall coverage of reported bilateral net international investment positions (IIPs) appears satisfactory. The dataset provides a richer picture of financial linkages, enabling us to map the financing of Euro area imbalances. Creditor and debtor positions vis-à-vis the rest of the EU have tended to increase between 2000 and 2008, with capital flowing largely from wealthier to catching-up economies. This has in particular resulted in an increased interdependency among Euro Area economies.

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Authors' E-Mail Addresses: [cwaysand@imf.org](mailto:cwaysand@imf.org); [kross@imf.org](mailto:kross@imf.org); [jdeguzman@imf.org](mailto:jdeguzman@imf.org).

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## I. INTRODUCTION

Financial integration, both at the global and intra-European Union (EU) level, has helped to facilitate the development of large current account imbalances within the EU as well as within the Euro area during its first few years of existence. In large part, financing these imbalances was made easier through the elimination of foreign exchange risk premia, both for countries that originally adopted the Euro and for those with a perspective to adopt in the near term.

In this context, the perception that these external imbalances could be the reflection of internal unsustainable developments has only gained ground slowly over time. Nevertheless, the recent emergence of rapid deleveraging processes in some of the EU countries that had experienced previous booms and large current account deficits made evident the need to better understand intra-EU, and Euro area, financial linkages. While there had been several attempts to *estimate* these linkages, to date, a detailed decomposition of *actual* bilateral financial positions has been missing.

Against this background, the main aim of this paper is to construct a database which documents *actual* bilateral external financial positions for most European countries. The database used in our analysis contains bilateral assets, liabilities, as well as net bilateral positions vis-à-vis a range of about 200 countries.<sup>2</sup> Improved country reporting and the existence of complementary databases describing external assets and liabilities now allow for the gaps in bilateral asset and liability positions to be largely filled, except for reserves and financial derivatives.

Nevertheless, it is important to note the limitations of our database. Discrepancies between reported bilateral data and overall aggregates are especially prevalent in the case of Luxembourg. Similarly, while discrepancies largely compensate each other in the case of Switzerland, there is wide uncertainty on the size of claims and liabilities of actual residents. Data are also overall of a lesser quality for a number of Member States that joined the EU in 2004 and 2007, as their reporting is, so far, less comprehensive. For most other EU countries, gaps between reported aggregates by financial instrument and the sum of allocated bilateral positions are around 15 percent of total liabilities and slightly lower on the asset side.

Different uses can be made of this database. In this paper, we mainly use it to derive a number of stylized facts on the financing of imbalances of EU countries—a natural complement to Milesi-Ferretti, Stobbe and Tamirisa (2010), and hence largely concentrate on net positions. From a risk and contagion point of view, however, gross positions, also reported in the database and some of our tables, are more relevant. In this respect, one has to keep in mind that the choice we made—using locational (and not consolidated, on an

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<sup>2</sup> While there are some restrictions due to confidentiality reasons, actual bilateral positions of EU advanced economies vis-à-vis around 40 partners (including all EU advanced economies) and for Emerging European countries by groups are available.

ultimate risk principle) statistics for cross-border credits and loans—is consistent with balance of payment principles and with the mapping of imbalances among countries. However, BIS consolidated statistics (on an ultimate risk basis, i.e., adjusted for risk transfers) offer a more relevant picture of a country banking sector’s exposure. Thus, a risk mapping exercise could use bilateral portfolio and FDI positions as reported in the base, together with consolidated BIS data on an ultimate risk for credits and deposits.

After recalling the related literature in section II and describing briefly the construction and the limitations of the database in section III, we identify financing patterns of deficit countries and investment patterns of surplus countries in the European Union in section IV. Section V concludes.

## II. RELATED LITERATURE

This work is at the intersection of two different strands of literature, relating to Euro area imbalances and external financial positions.

### **Intra-Euro area and intra-EU imbalances**

There is no reason why positions of constitutive countries or states should be in balance within a monetary union. As noted by Greenspan in 2004<sup>3</sup>, states in the US probably had significant current account imbalances over time without precipitating interstate balance-of-payments crises. Indeed, while the role of exchange rate regimes in explaining current account dynamics is not settled<sup>4</sup>, the absence of exchange rate premium helps to facilitate the financing of current account deficits.

Current account deficits across Euro area and EU countries were for some time viewed as benign. Capital flows originated from wealthier European countries, with higher GDP and capital per capita endowments, and to feed into catching up economies, with lower GDP per capita and endowments, thus facilitating their convergence. This was in line with theoretical predictions and seen as contradicting Feldstein and Horioka (1980) analysis that levels of savings and investment were very correlated as well as Lucas’ (1990) observation that capital did not flow from “rich to poor countries”. Europe was, on the contrary, confirming the benefits of financial integration (see for instance Blanchard and Giavazzi (2002), Abiad,

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<sup>3</sup> See for instance A. Greenspan’s Remarks at the European Banking Congress 2004, Frankfurt, Germany, November 19, 2004, on the United States: “Although we have scant data on cross-border transactions among the separate states, anecdotal evidence suggests that over the decades significant apparent imbalances have been resolved without precipitating interstate balance-of-payments crises.”

<sup>4</sup> Decressin and Stavrev (2009) found that the size of current account imbalances was invariant to the exchange rate regime. Berger and Nitsch (2010), however, noted that the absence of exchange rate flexibility may result in more persistence trade imbalances. This would also be consistent with Decressin and Stavrev’s finding of greater persistence in current account imbalances in countries with a fixed exchange rate.

Leigh and Mody (2007), Schmidtz and von Hagen (2009), and also Bakker and Gulde (2010) for a more extensive review of the literature on flows to Emerging European countries).

The perception that growing external imbalances could be the reflection of internal unsustainable developments even in the Euro area, with the building up of an excessive indebtedness of private or public agents likely to result in painful adjustment periods, nevertheless gained ground over time (see inter alia Gourinchas (2002), Ahearne and Pisani-Ferry (2006), Blanchard (2006), European Commission (2006, and following years), Guyon (2007)). The emergence of deleveraging processes in some of the EU countries that had experienced previous booms and large and persistent current account deficits put in a way a closure to the debate—and modalities for taking into account these imbalances in a systematic way in EU policy advice are now being agreed upon at EU level.

### **Bilateral financial linkages at global level**

The growth in cross-border claims and global imbalances has sparked interest in documenting external positions in order to more fully understand financial inter-linkages and contagion channels. Following Lane and Milesi-Ferretti (2001; 2007), who constructed a database containing estimates of *aggregate* International Investment positions (IIP) for 145 countries over the 1970-2004 period<sup>5</sup>, updated and extended in 2007 (*External Wealth of Nations, Mark II - EWNII*), a number of papers have investigated *global level bilateral linkages*.

Kubelec and Sá (2010) constructed a dataset on stocks of bilateral external assets and liabilities for 18 countries over the 1980-2005 period. However, given their global perspective, while their sample included 6 of the largest European countries, 5 of which in the European Union, it did not cover key creditor and debtor economies within Europe.<sup>6</sup> Also, gravity models had to be used to estimate missing data since detailed *bilateral positions* were generally not readily available for most countries for the period under consideration. Lane and Shambaugh (2010) built a comprehensive data base for the period 1990-2005, including inter alia most European countries; but as they were concentrating on major currency exposures, they did not detail intra-EU, and a fortiori, not intra-Euro area bilateral assets and liabilities.

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<sup>5</sup> The data was created by taking estimated 1970 stock positions, and cumulating flows from balance of payments data adjusted for valuation changes. For industrial countries, end-1970 stock positions were taken from Sinn (1990); developing country stock positions were taken from the OECD.

<sup>6</sup> The 6 are Germany, France, U.K., Switzerland, Italy, and Spain.

More recently, Milesi-Ferretti, Stobbe and Tamirisa (2010) have computed a dataset with bilateral assets and liabilities of about 70 countries, covering 15 large countries or country groupings—and offering a complete mapping of the financing of global imbalances. Given their focus, however, Euro area and Emerging Europe were treated as a whole.

### **Bilateral financial linkages in the EU and the Euro area**

There had been several efforts to better map financial inter-linkages among EU, or Euro area, countries. Several studies have exploited portfolio investment data (CPIS) when they became available (inter alia: Lane and Milesi-Ferretti, 2005, Lane, 2006, Coeurdacier and Martin 2006), showing the existence of a “Euro area bias”. Others aimed at characterizing the patterns of financial flows but had to use indirect measures, such as bilateral trade balances (Schmidt and von Hagen (2009)) as a proxy for capital flows—a non-trivial assumption in view of our results. Several papers examined divergences in current account balances (Blanchard and Giavazzi (2002), Abiad, Leigh and Mody (2007)) and tried to explain the observed patterns. Their shared conclusion was that capital seemed to flow from higher GDP per capita economies to lower GDP per capita ones. Finally, a number of papers have used BIS consolidated bilateral data (e.g. Árvai, Driessen, and Ötker-Robe (2009); Tressel (2010)) to investigate possible contagion channels.

There was, however, no view encompassing various financing instruments and describing intra Euro area and intra EU bilateral positions.

### III. METHODOLOGY

#### A. Main Principles

The data set covers 29 reporting European countries over the 2001 to 2008 period<sup>7</sup>—with bilateral positions reported against over 200 partner countries. All data are in US dollars<sup>8</sup>.

To construct the database, we follow the IIP classifications from the 5<sup>th</sup> revision of the Balance of Payments Manual (IMF, 1993).<sup>9</sup> The manual follows the residency principle<sup>10</sup>; thus external assets and liabilities are claims between a country's residents and non-residents. Ideally, we would like to have information on all possible forms of bilateral holdings: Reserve assets; foreign direct investment; portfolio investment; financial derivatives; and Other investment.

However, we do not have bilateral information on financial derivatives and foreign exchange reserves. We therefore subtract aggregate financial derivatives, taken from national sources (as reported to the IMF's electronic data statistical system), and aggregate total foreign reserves assets, taken from the IMF's Balance of Payment Statistics (BPTS), from the aggregate IIP figures that we are trying to decompose.

The end-of-year *bilateral* stock positions (asset and liabilities) are thus documented or estimated for the following categories:

- Foreign direct investment;<sup>11</sup>
- Portfolio investment, divided into *equity* and *debt* securities; and
- Other investment.

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<sup>7</sup> The database includes the EU 27 countries (Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Ireland, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom) plus Norway and Switzerland. Data for the UK excludes Guernsey and Jersey.

<sup>8</sup> Most of our data sources report their data in US dollars (CPIS, BIS, OECD and EDSS databases). Converting from the original currency units, which may not be the dollar, may introduce more volatility. However this is not a problem as ratios expressed as a share of GDP are furthermore not affected by the choice of the *labeling* currency. End of period market exchange rates taken from the IFS database are used to convert national currency units when needed.

<sup>9</sup> In 2000, the IMF published *Financial Derivatives: A Supplement to the fifth edition (1993) of the Balance of Payments Manual*, which amongst other things, include a new functional category for financial derivatives.

<sup>10</sup> Positions vis-à-vis International organizations are in most cases treated as a separate counterpart. However, BIS data includes the positions vis-à-vis the ECB and the BIS in positions vis-à-vis respectively Germany and Switzerland.

<sup>11</sup> FDI category is defined as investment where equity participation exceeds 10 percent, and includes green field investments.

Finally, data in the base represent *stocks* of assets and liabilities. As a consequence, variations across time have to be interpreted cautiously as they can be attributed to transactions during the period considered, but also to revaluation effects—due to a change in the nominal value of assets and/or in the exchange rate—or may reflect revisions.

### *Data sources*

For the most part, bilateral data is pulled from multilateral sources (see Appendix I for more details):

- For direct investment, the main data source is the OECD, FDI positions by partner country. The OECD *Benchmark Definition* recommends *market value* as the conceptual basis for valuation. Market valuation places all assets at current prices rather than when purchased or last revalued, and allows comparability of assets of different vintages. It allows for consistency between flows and stocks of assets of different enterprises, industries, and countries, as well as over time. However, in practice *book values* from the balance sheets of direct investment enterprises (or investors) are generally utilized to determine the value of the stocks of direct investment.<sup>12</sup> Data on bilateral investment should be improved through the IMF’s ongoing Coordinated Direct Investment Survey (CDIS).
- For portfolio investment, the main data source is the IMF’s Coordinated Portfolio Investment Survey (CPIS). The CPIS provides information on individual economy year-end holdings of portfolio investment securities (equity securities and debt securities) valued at market prices, cross-classified by the country of issuer of the securities. Participation in the CPIS is voluntary and some 75 economies currently participate in the survey. Participating countries report asset positions, and are encouraged to report liabilities but most do not. Liabilities are therefore estimated in CPIS database as a “mirror” from creditor positions. To the extent that not all countries participate in the CPIS, the sum of derived bilateral liabilities usually falls short of the reported EDSS aggregate.
- Other investment is taken from the Bank for International Settlements (BIS) Locational Banking Statistics. To avoid double counting of portfolio instruments, the balance sheet items we include in this category are those reported under “loans and

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<sup>12</sup> This approach reflects the fact that enterprise balance sheet values—whether they are regularly revalued on a current market value basis, reported on a historical cost basis, or are based on some interim but not current revaluation—represent the only source of valuation of assets and liabilities readily available in most countries. Many national FDI data releases indicate that they follow current BPM5 standards, without precisely stating if book or market valuation methods are used.

deposits”<sup>13</sup>. Other investment consists of two components that are added up: Other investment from banks and Other investment from non banks.

*Other investment from banks* comprises loans and deposits made by banks to non-residents in all currencies, including interbank borrowing and loans and inter-office balances. For BIS participating countries, reported data is directly used to describe bilateral banking claims and liabilities. For BIS non-reporting countries, however, we have to use mirror data on both the asset and liability sides:<sup>14</sup> information on country A banks’ claims and liabilities vis-à-vis country B is provided through country B banks’ reporting, provided B is a reporting country (see Appendix I).

*Other investment from non-banks* corresponds to underlying financial transactions made by non-banks, such as trade credit claims, financial leases, as well as insurance and pension claims. It is derived using (incomplete) mirror data: our information on Other investment claims of country A non-banks vis-à-vis country B is limited to the one provided by country B banks reporting their liabilities vis-à-vis country A non-banks. Thus, if B is a non-BIS reporting country, we have no information on Other investment claims of country A non-banks vis-à-vis B, and in all cases we miss relations between non-banks and non-banks.

It is important to note the use of *locational* BIS data, as opposed to BIS data on a *consolidated* basis. The former, based on residency, is consistent with balance of payments data and IIP, while the latter is not. Consolidated data on an ultimate basis represents the best snap shot of total bank exposures<sup>15</sup>. Annex II discusses some of the differences and presents a comparison of total bank assets of European reporting countries measured from locational or residency basis, against the BIS data on a consolidated, ultimate risk, basis.

While our analysis relies on a wider set of data, the restricted nature of BIS figures places some constraints on our reporting. One should not be able to derive individual restricted data from our publicly available dataset. This requires us to report bilateral Other investment positions of, or vis-à-vis, *groupings* of countries in a number of cases—in particular for EU Member states that joined in 2004 or 2007, that do not document BIS locational statistics.

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<sup>13</sup> See BIS (2008), “Guidelines to the international banking statistics”, for a precise description.

<sup>14</sup> In the case of Estonia, within the “other investment” category, bilateral information is only available for “total other investment” data.

<sup>15</sup> For BIS reporting banks’ exposures to Greece, Ireland, Portugal and Spain see for instance BIS Quarterly Review, December 2010.

## ***B. Gaps and Discrepancies***

As a general point, one should have in mind that there are some inherent data limitations. There is uncertainty regarding the effective holder of a claim or a liability, as well as the economic nature of the claim, especially when intermediary vehicles (mutual funds, trustees) are involved. Felettigh and Monti (2008) describe them as introducing an “intermediation” and a “geographical veil” in CPIS data<sup>16</sup>. One should also keep in mind the possible asymmetry between positions reported by counterpart, i.e. liabilities reported by country A vis-à-vis B may not match assets reported by country B vis-à-vis A. This is especially the case for FDI data<sup>17</sup>. Like others, as a guiding principle, for each country, we retain data as reported by the country authorities

We try to estimate the size of the gaps in our data coverage. First, as noted above, we have no bilateral information on reserves and financial derivatives. For most countries, the sum of these aggregates represents less than 10 percent of total assets plus liabilities. This is, however, not the case for a number of Member states that acceded the EU in 2004 or 2007 – for which reserve assets amount to a substantial share of their external assets – nor for the UK, that plays a major role in the financial derivatives market (more than a third of its claims and liabilities). Second, there are also informational gaps in other sub-components of the IIPs. As a result, the sum of *reported bilateral positions* in FDI, portfolio, and other investment does not add up to gross asset and liability data stripped of financial derivatives and foreign reserve assets. Gaps stem in particular from the fact that the universe of CPIS and BIS reporting countries is incomplete, an acute problem when using (incomplete) mirror data.

The charts in Appendix I present the total amount of unallocated assets and liabilities by country at end-2008. For most EU advanced countries, the gaps are around 15 percent of total assets and liabilities. They are particularly small –as a share— for the U.K. but very large for Luxembourg (an additional reason for treating this country separately when we divide countries into groupings)<sup>18</sup>. Switzerland’s unallocated total assets are actually negative, primarily due to the fact that the sum of other investment bank bilateral claims were

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<sup>16</sup> They note, like others (Fidora, Fratzscher and Thimann (2006)) that holdings in a fund located in a country A emanating from a resident of a country B and invested in a debt instrument of a country C are likely to be reported as an equity claim from a resident of country B on A. This misses the effective nature of B resident’s final investment and its destination. Similarly, the fund’s investments and liabilities appear in the foreign position of country A on other countries. This particularly affects countries with a large fund industry (Luxemburg, Ireland, UK, Switzerland) but also results in a distortion in country B (and C)’s effective claims and liabilities. Lipper has some partial fund industry data on cross border exposures.

<sup>17</sup> Such asymmetries may arise from different treatments of transactions reported by financial Special Purpose Entities.

<sup>18</sup> While the overall discrepancy between aggregate data and reported bilateral positions is small in the case of the Netherlands, it must be noted that when including financial Special Purposes Entities, assets and liabilities dramatically increase and result in alternative IIP aggregates (non reported under EDSS).

greater than the reported aggregates.<sup>19</sup> Luxembourg's gap is especially large since it reports minimal bilateral foreign direct investment and has large portfolio equity gaps—which may reflect non-complete data on cross border mutual fund industry claims. The data gaps in EU countries that joined in 2004 and 2007 vary, with limited gaps in Estonia, Bulgaria and Romania, but above average discrepancies in Lithuania, Latvia, Cyprus and Malta. Discrepancies are also large in Norway. In absolute amount, however, the most significant discrepancies are clearly those observed for Luxemburg and the UK.

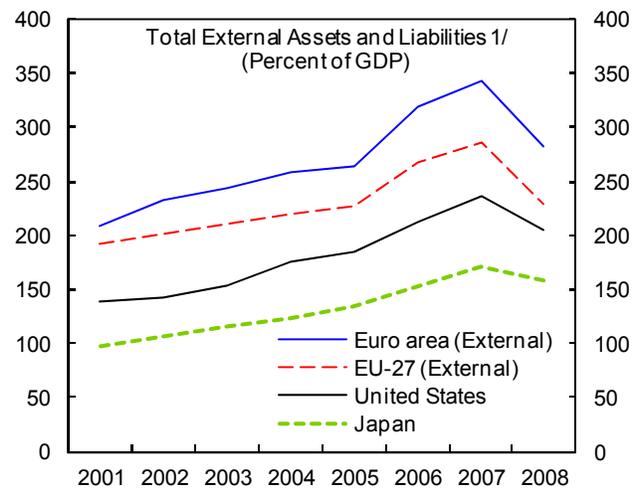
Appendix I provides a summary of the data sources country by country and further description on the size of unallocated balances.

#### IV. STYLIZED FACTS

##### A. *External financial integration of the EU and the EA is high.*

Financial integration is commonly measured as the sum of cross border assets and liabilities expressed as a percentage of GDP. The text chart plots financial integration over the period 1999-2008 for European groupings (*excluding intra-zone claims*), the US, and Japan for the period 1999 to 2009. Data exclude financial derivatives and reserves<sup>20</sup>.

Following a more global trend, financial integration of the EU and the Euro area appears to have increased since Euro adoption. While the Euro Area as a whole has a relatively small negative external position (-17.7 percent of its GDP at end-2008, down to -12.4 percent at end Q2 2010), it is notable that its external assets and liabilities are relatively high compared with other large economic zones with much larger absolute IIPs, like the United States and Japan.



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Excludes financial derivatives and reserve assets.

The strong inflexion observed in Euro

<sup>19</sup> OI, bank assets total about \$900 billion in 2007, while the sum of bilateral claims are about \$1.4 trillion. However, a negative discrepancy of a similar size occurs on Switzerland's other investment bank liabilities. Most likely these gaps stem from a misrepresentation of the final holder of a claim or a liability by external financial partners. This may be due to the importance of trustee business on behalf of non-residents (see also Milesi-Ferretti, Strobbe and Tamirisa (2010)).

<sup>20</sup> Our data and ECB data for Euro Area external position are broadly consistent, the main difference arising from unallocated intra-EA financial derivatives and reserves. The overall difference is limited to 2%-6% from 2001 to 2008 on the asset side and 1%-5% on the liabilities side in percent of total EA assets as reported by the ECB (respectively liabilities).

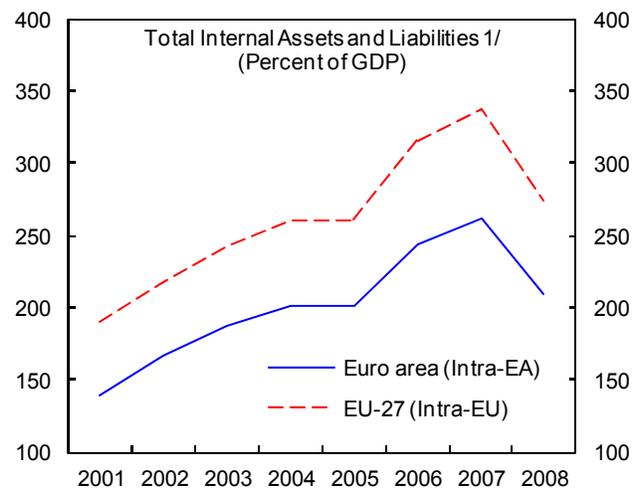
Area assets and liabilities, *excluding financial derivatives and reserves*, in 2008 both reflects a strong slow-down in transactions and revaluation effects due to price, non-exchange rate related, adjustments. Reintegrating financial derivatives assets and liabilities would attenuate the inflexion, since the increase in the value of total assets and liabilities in the form of financial derivatives roughly doubled in 2008 compared with 2007 (to around +550 bn Euros).

**B. However, internal financial integration among EU and EA countries is large as well.**

Looking at the Euro area, and the EU, as a collection of countries allows us to assess the relative importance of intra zone financing within the two regions. For each country within the aggregate, external assets and liabilities here comprise all foreign assets and liabilities including those claims against countries within the zone, as well as against the rest of the world.

Other EU countries as a group constituted the first financial partner of both EU countries, and of Euro area countries, with around half of the total assets and liabilities. For the Euro area countries, assets and liabilities vis-à-vis other Euro area countries alone represented 40-45 percent of total assets or liabilities.

One has however to keep in mind that while coverage appears overall satisfactory, it is more complete on the asset side than on the liabilities side – resulting in a large negative unallocated IIP position both for the EU and for the Euro area, as pointed in Milesi-Ferretti, Strobbe and Tamirisa (2010).



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.  
1/ Excludes financial derivatives and reserve assets.

When correcting for these un-tracked assets, EU assets and liabilities vis-à-vis EU countries represented around 2/3 of the allocated assets and liabilities and other Euro area countries accounted for a bit more than half of the tracked assets and liabilities of Euro area countries. Other patterns of EA financing (such as its main external partners and extra EA bilateral positions), as reflected in Figure 3b are broadly consistent with Milesi-Ferretti, Strobbe and Tamirisa (2010) and with previous works (Lane and Milesi-Ferretti, 2005, Lane, 2006).

**C. While European countries EU and Euro Area IIPs broadly reflect their global IIPs, there are some marked differences.**

The correlation between net positions vis-à-vis EU countries (in percent of GDP) and vis-à-vis Euro area countries is high (0.80). In most cases, countries with creditor (respectively debtor) positions vis-à-vis the EU also reported net creditor (debtor) positions vis-à-vis the Euro area as of end-2008. Austria was an exception, with large positive net assets on

Member states that joined in 2004 and 2007 but negative IIP vis-à-vis the rest of the Euro area.

The correlation between global IIPs and the net positions vis-à-vis the EU at end-200 is a bit weaker (0.75). Indeed, while countries with negative net positions vis-à-vis other EU countries were also *global* debtor countries, i.e. had a negative global IIP (with the exception of Cyprus and Malta), the sign of global IIPs of countries with positive positions vis-à-vis the rest of the EU varied.

Some of these countries posted significant positive global IIP (Luxembourg, Belgium, Germany, and outside the EU, Switzerland and Norway), consistent with accumulated current account surpluses. Some others were globally debtor countries – this was the case at end 2008 for Austria, France, Finland, Denmark and the UK.

Consistently with its global positive IIP, Germany had recourse to limited financing from abroad (Japan, Switzerland and France), while its large savings were being channeled to UK, Spain, Ireland and the US, often in the form of credits and loans (see Figure 4A).

France or the UK had for instance more of a role of financial intermediaries (see Figures 4A and E), with France receiving financing from other financial centers, including from the US, largely in the form of deposits and loans to its financial institutions, and holding large debt bonds vis-à-vis other Euro area countries, in addition to extending loans to Spain and Italy. The UK picture had some resemblance with France, but with two important differences –the UK had large net assets on the US, and funding through deposits and loans was a more important instrument of financing.

Table 1. Net Investment Positions and GDP per Capita, 2008

	Net IIP against: 1/ (USD billions)			Net IIP against: 1/ (Percent of GDP)			GDP per Capita 2/ US dollars
	EU	EA 3/	Global	EU	EA 3/	Global	
Germany	1,117	735	919	31	20	25	44,525
France	708	764	-322	25	27	-11	45,991
Switzerland	437	366	608	87	73	121	65,699
Belgium	287	282	159	57	56	31	47,224
United Kingdom	212	145	-148	8	5	-6	43,652
Luxembourg	212	84	41	366	144	71	118,570
Norway	105	102	236	23	23	53	93,235
Finland	53	-60	-22	20	-22	-8	51,020
Austria	49	53	-60	12	13	-14	49,975
Malta	-4	-45	0	-52	-529	6	20,481
Denmark	-5	-13	-20	-1	-4	-6	62,238
Cyprus	-18	-30	1	-70	-119	4	32,161
Estonia	-18	-5	-18	-78	-21	-75	17,651
Latvia	-23	-11	-26	-69	-33	-76	14,913
Lithuania	-26	-11	-24	-55	-23	-50	14,047
Slovenia	-41	-39	-17	-75	-72	-32	27,155
Sweden	-51	-50	-57	-10	-10	-12	52,882
Bulgaria	-52	-43	-49	-105	-86	-98	6,561
Slovak Republic	-60	-50	-51	-63	-52	-53	17,599
Czech Republic	-80	-81	-79	-37	-37	-36	20,734
Romania	-118	-108	-97	-58	-53	-47	9,501
Hungary	-144	-113	-150	-93	-72	-97	15,477
Netherlands	-149	-160	92	-17	-18	10	53,355
Portugal	-175	-136	-225	-69	-54	-89	23,830
Greece	-189	-199	-249	-54	-57	-71	31,602
Poland	-217	-190	-243	-41	-36	-46	13,887
Ireland	-321	-327	-148	-121	-123	-56	59,902
Italy	-475	-334	-468	-21	-14	-20	38,887
Spain	-988	-794	-1,227	-62	-50	-77	35,364

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Net bilateral IIPs exclude financial derivatives and reserve assets, whereas Net Global IIPs include them.

2/ Nominal GDP per capita.

3/ Euro Area country composition in 2008.

***D. EU and EA countries have accumulated significant external positions vis-à-vis other EU and EA countries, with capital flowing from more advanced economies to those with a lower GDP per capita.***

Several studies have concluded that in the European Union, financial integration has weakened the link between saving and investment levels and have enabled countries with lower GDP per capita to develop current account deficits—and hence to receive positive net inflows, while countries with higher GDP per capita tended to develop surpluses (Blanchard and Giavazzi (2002) and Abiad, Leigh and Mody (2007)). The same conclusion was derived using trade balances as a proxy of bilateral flows (Schmidt and von Hagen (2009)). There was however no direct measure of intra EU, or intra Euro area, financing. Our database

provides such a measure—the net financial assets positions accumulated vis-à-vis the rest of the EU, or vis-à-vis the rest of the Euro area.

We restrict the analysis to EU and Euro area countries in 2002 (Figure 1) and in 2008 (Figure 2) and consider IIPs vis-à-vis the relevant group of countries<sup>21</sup>. Like others, we also exclude from our analysis Luxembourg, which appears to be a clear outlier (see Figures 1 and 2) and Ireland (an outlier especially in 2008).

The dispersion of EU countries net external positions vis-à-vis the rest of the EU, as well as the dispersion of Euro area countries net external positions vis-à-vis the rest of the Euro area, have increased between 2002 and 2008 - consistently with the well established observation of an increase and persistence in current accounts dispersion across Euro area countries.

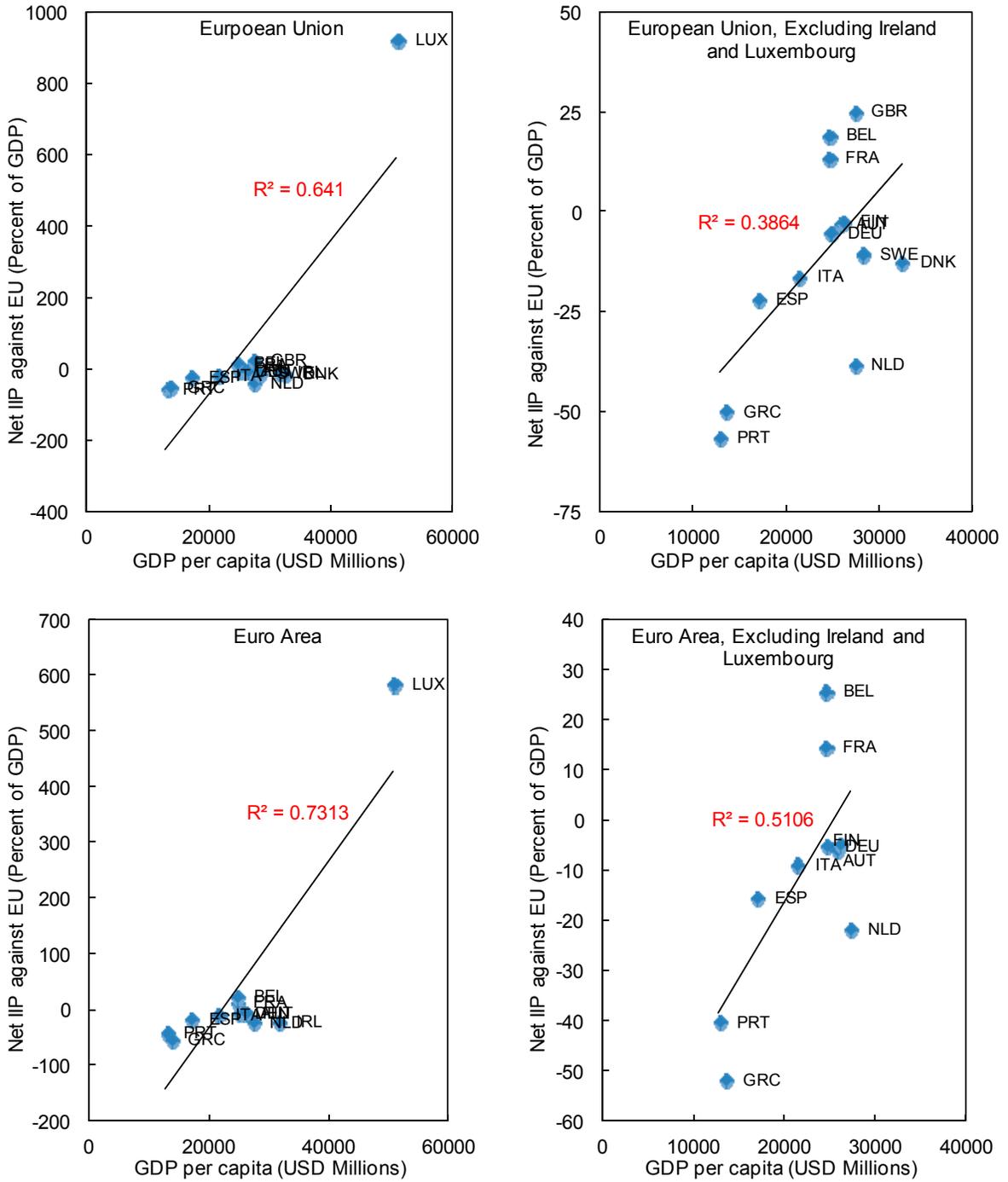
Between these two dates, within both the EU and the Euro area, the correlation between IIPs vis-à-vis the group and GDP per capita has increased. Admittedly, our database contains stocks, not flows. There is no reason, however, why valuation effects on stocks would result in a positive correlation between IIP vis-à-vis the rest of the EU and GDP per capita. Indeed, looking only at the valuation effect on stocks of assets and liabilities, everything else being equal, real convergence, translating into higher productivity gains and a real effective appreciation, would contribute to inflating the value of liabilities (notably FDI and portfolio, equity holdings) relative to the value of the assets for catching up economies, hence would per se depress IIP positions. Rather, the observation both within the EU and within the Euro area of a strong correlation between IIPs *vis-à-vis the rest of zone* and GDP per capita is a strong indication that within these two zones, capital appears to have flown from wealthier countries to catching up economies. The results would a fortiori hold if we compared the situation of countries in the EU (respectively members of the Euro Area) in 2008 with the situation of the same countries in 2002.

Finally, a correlation between *global IIP* and GDP per capita among EU (EA) countries also exists, which is not surprising given the strong correlation between global IIPs and IIPs vis-à-vis the EU or the EA, but it is weaker. It is also consistent with the findings of Lane and Milesi-Ferretti (2007) which find an overall correlation of 0.43 between IIPs and GDP per capita at end 2004, with a stronger correlation among developed countries.

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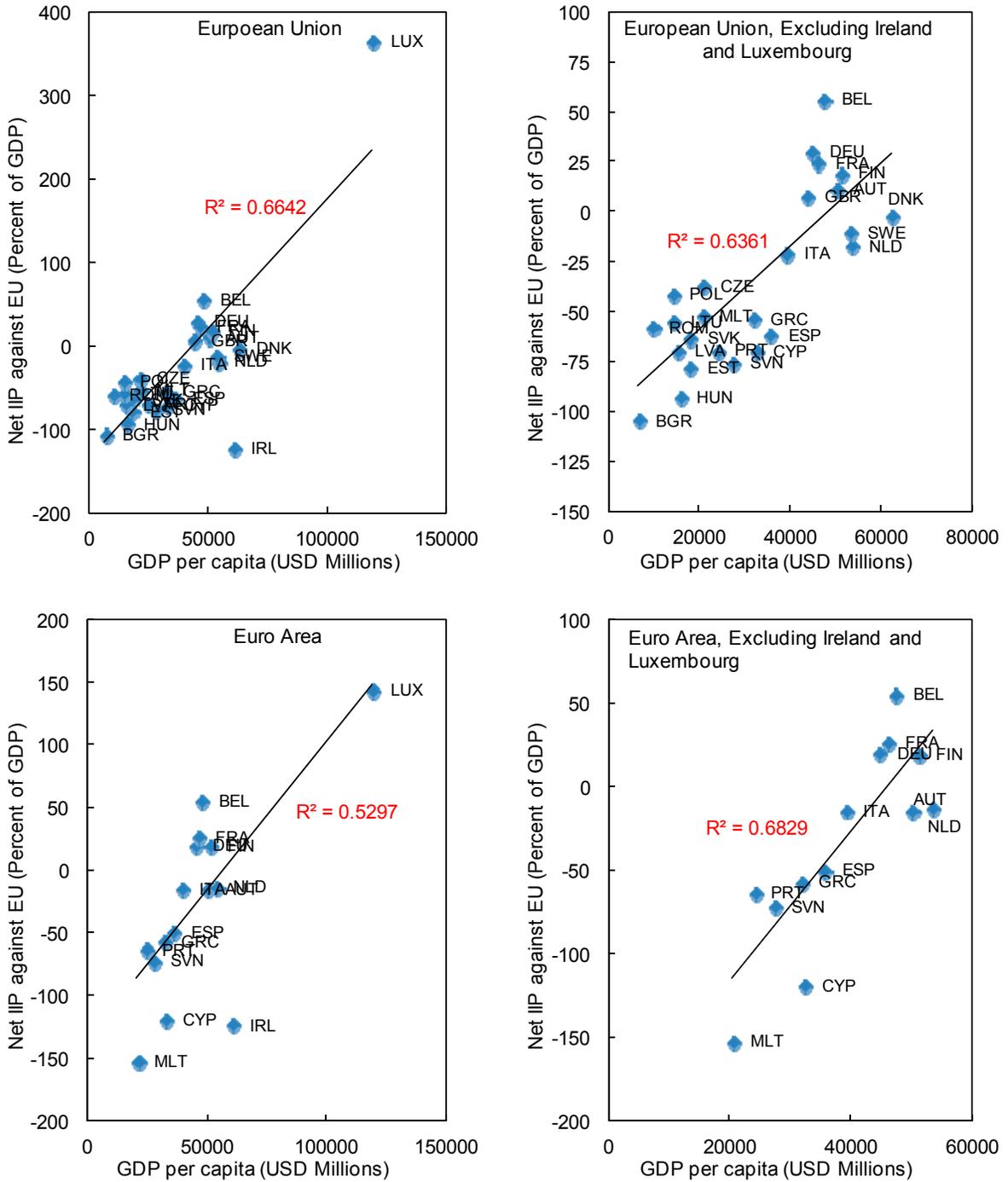
<sup>21</sup> Thus the perimeter of EU IIPs changes with time: in 2002 (respectively 2008), it refers to the net external position of countries vis-à-vis other countries member of the EU in 2002 (respectively 2008). The same applies to Euro area IIPs.

Figure 1. Euro Area and European Union: Net Financial Positions and GDP per Capita, 2002 1/



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.  
 1/ Positions based on 2002 European Union and Euro Area country compositions.

Figure 2. Euro Area and European Union: Net Financial Positions and GDP per Capita, 2008 1/



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO. 1/ Positions based on 2002 European Union and Euro Area country compositions.

***E. Top net creditors or debtors do not necessarily coincide with top trade partners nor with main financial partners on a gross basis.***

The link between trade and net financial relationships is tenuous. Tables 2A-F contain, for each country for which we can provide the information<sup>22</sup>, the main bilateral net financial positions and accumulated bilateral trade imbalances over 1998-2008.<sup>23</sup> A quick examination suffices to suggest that bilateral trade relations appear to be a poor proxy for bilateral financing relationships. For instance, the largest bilateral accumulated trade surplus of France between 1998 and 2008 was with the UK while its largest deficit was with Germany. But the UK happened to be the second largest net creditor of France at end-2008 and Germany the fifth largest debtor. Germany exhibited more similarity than most other countries between trade and financial links, though its relationships with France suggested the opposite, with significant assets vis-à-vis a number of countries with which it accumulated surpluses (the UK, Spain, Italy and the US) and conversely liabilities vis-à-vis Japan mirroring its accumulated trade deficits with this country.

A few countries appear among the main financial partners of EU advanced economies, while there is more diversity for Emerging Europe. Tables 3A-F contain the main gross financial partners, from an asset and a liability point of view. For most advanced EU economies, partners were concentrated on a limited number of countries with large financial centers—as evident in the recurrence of France, Germany, Luxembourg, Netherlands, the UK and the US among the top seven partners. The relative importance of large financial centers was somewhat weaker for emerging Europe economies, with Austria being frequently among the largest partners for Central and Eastern European Countries and sometimes Italy (in spite of the fact that the use of locational banking data understated their exposures), while the data confirmed the importance of Nordic countries financing for the Baltic countries.

As found at global scale by Milesi-Ferretti, Strobbe and Tamirisa (2010), our data show that main financial partners do not necessarily coincide with their main creditors or debtors. Looking in particular at Euro area's countries main partners<sup>24</sup>, the same country constituted both the main source of financing and the main destination of investment in a large number of cases. Germany was the first creditor and the first debtor of Austria and Luxemburg, France of Belgium, Sweden of Finland, and the United Kingdom of most others (France, Germany, Netherlands, Greece, Ireland and Spain). In contrast, because of two way relationships, the UK was never the first net creditor for Euro area countries—with Germany (Austria, Ireland and Spain) and France (Belgium, Italy, Netherlands, Greece and Portugal) playing this role in most cases.

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<sup>22</sup> Some countries have to be treated as a group due to the restricted nature of some information.

<sup>23</sup> Bilateral trade balance positions are not symmetric, since exports are f.o.b. (freight on board, covering transportation and insurance to the border, while imports are c.i.f. (cost, insurance and freight, covering shipping freight, transport and insurance from port).

<sup>24</sup> Excluding Member states that joined in 2004 for confidentiality reasons.

Finally, while decomposition and mapping of bilateral net positions on a locational basis are interesting on their own, gross positions on a consolidated basis are more relevant from a risk and contagion point of view. In this respect, one has to keep in mind that our database contains banking data on a locational basis. Thus, for example, claims and liabilities of a foreign bank operating in the UK are reported as UK claims and liabilities, and the role of UK is overstated compared with the ultimate risk borne on a consolidated basis. A risk mapping exercise would therefore use bilateral portfolio and FDI positions as reported in the base, together with consolidated BIS data ideally limited to deposits and loans (to avoid double counting of portfolio assets and liabilities).

***F. The intra-Euro area dependency is high and has increased for a number of countries.***

The relative importance of intra Euro area net financing appears to have increased between 2002 and 2008, as evidenced by Table 4. Among Euro area countries with large financing needs, the role of intra Euro area net financing has increased (Ireland, Spain) or slightly decreased while remaining predominant (Greece, Portugal). Net investment in other Euro area countries has also played an increasing role for Euro area creditor countries.

With accumulated assets vis-à-vis non EU countries, Ireland has relied increasingly on intra-EU, and intra-Euro area net financing. In 2008, this represented more than twice its global financing needs, while in 2002 financing from the Euro area just covered, its then, much smaller financing needs. During the same period, the share of EU and intra-Euro area net financing has roughly doubled for Spain, from less than 1/3 to around 2/3 for the Euro area (and 40-45 percent to 80 percent for the EU). This evolution is well above what could be attributed to valuation issues linked to foreign exchange rate changes<sup>25</sup>. In Greece, the share of Euro area financing was already high in 2002 and has slightly decreased, at around 80 percent in 2008 (88 in 2002). The same evolution has been observed in Portugal, from 2/3 to slightly below 60 percent.

On the creditor side, several Euro area countries now have IIPs vis-à-vis the rest of the Euro area that are broadly equal (Germany), or exceed (France, Belgium), their global IIPs (including financial derivatives and reserves)—reflecting the fact that net accumulated assets vis-à-vis the rest of the Euro area are comparable, or even exceed, global financing capacities. The situation was different in 2002 for Germany (which had net liabilities vis-à-vis the rest of the Euro area) or Belgium (although it already had significant positive assets vis-à-vis the rest of the area).

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<sup>25</sup> The Euro nominal effective exchange rate has appreciated by slightly less than 20 percent between end 2002 and 2008, reducing the relative share of liabilities not denominated in Euros.

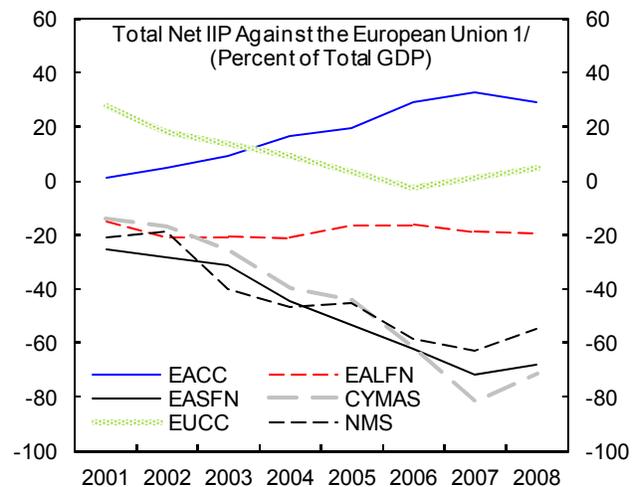
### G. *Intra-European net positions have diverged across country groupings*

Considering countries' net positions vis-à-vis the rest of the EU as a share of their GDP, we identify countries with relatively similar patterns, allowing us to define several sub-groups within the Euro area, the rest of the EU, and the rest of our database:

- **(EACC):** EA creditor countries comprise countries with positive IIPs vis-à-vis the rest of the EU, with the exception of Luxembourg (see below) (*Austria, Belgium, Finland, France, and Germany*).
- **(EALFN):** EA countries with limited financing needs have moderately negative IIP positions vis-à-vis other EU countries (*Italy and the Netherlands*).
- **(EASFN):** EA countries with significant financing needs comprise countries with large negative IIP vis-à-vis the rest of the EU (*Greece, Ireland, Portugal and Spain*).
- **(LUXG):** *Luxembourg*.
- **(CYMAS):** *Cyprus, Malta and Slovenia*, Member states that acceded the EU in 2004 and are part of the Euro area.
- **(EUCC):** Non Euro area other EU Creditor countries (*Denmark, Sweden and the UK*).
- **(NMS):** Non Euro area EU countries that acceded in 2004 or 2007 (*Poland, Romania, Lithuania, Estonia, Latvia, Bulgaria, Czech Republic, Slovak Republic, Hungary*).
- **(SN):** Other countries (*Switzerland and Norway*).

The examination of IIPs by country groupings vis-à-vis the rest of the EU show large—and growing—positions vis-à-vis the rest of the EU for three groups of countries: EA Creditor Countries (EACC) and, on the debtor side, Euro Area countries with significant Financing Needs (EASFN) and Non Euro Area Member States that acceded in 2004 and 2007 (NMS).

Growing IIPs can result from a variety of factors, as asset and liabilities stocks are affected by transactions (incremental flows), year after year, but also by revaluation effects and by other



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Excludes financial derivatives and reserve assets.

adjustments. Still the persistence of current account deficits in NMS and EASFN countries indicates that their IIPs vis-à-vis the rest of the EU also increased as a result of net flows.

#### ***H. Financing patterns reflected specializations of financial centers and sources of financing needs of debtor countries.***

Figures 3C-J contain a description by country groups of main financial partners at group level and assets and liabilities positions with the other country groupings. Information at detailed country level is provided, when possible, in Figures 4A-F, retracing financial linkages with the top creditor and debtor partners into various instruments. We identify here a number of characteristics at country group levels.

On the financing side, patterns reflected relative specialization – both in geographic terms and in terms of instruments (keeping in mind, however, the relatively poor coverage for Luxembourg as well as the use of locational data, which overstates the UK and Finnish banking exposure but understates it for other countries).

*Euro area creditor countries* had strong links with other EU countries and showed as a whole little specialization in terms of instruments. Their largest debtors were Euro area countries with significant financing needs, which were financed both in the forms of loans and through debt bonds and those with more limited financing needs (mainly debt).

Total assets and liabilities were largest as a share of GDP in *Luxemburg*, reflecting both the density of funding linkages (cross border deposits and loans, often broadly balanced with other zones) as well as a significant activity on debt and equity markets, with largest net assets held outside the EU (on the US) –but limited FDI. This was consistent with Luxembourg role in the fund industry.

The position of *non Euro area creditor countries (Denmark, Sweden and UK)* largely reflected the role of the UK as a global financial intermediary, with a large financing from the Rest of the world and most important financial linkages as well as largest creditor position vis-à-vis the United States. Cross border loans were clearly the predominant instrument.

*Cyprus, Malta and Slovenia* were net debtors to the rest of the EU. They had the second largest share of assets and liabilities to their GDP, with a clear specialization as banking intermediaries, receiving funds from the rest of the Euro area (notably Austria, Greece and Germany) and from Russia, and channeling them notably into the UK. On the debtor side, patterns reflected largely the nature of the financing needs –as well as the extent of financial integration.

*Non Euro area EU countries that acceded in 2004 or 2007* had much more limited financial linkages than other groupings, reflecting in part their limited accumulated assets. The main distinctive feature was the importance of FDI financing, followed by deposits and loans (including intra-groups ones) and only to a much more limited extent by portfolio debt

instruments. This is broadly consistent with findings by Gulde and Bakker (2010) for EU9. In contrast, FDI played a limited role in the financing of *Euro area countries with significant financing needs*, while cross border funding in the form of deposits and loans (mainly from Euro area and other EU creditor countries) was predominant, followed by debt portfolio liabilities.

The relative importance of debt portfolio financing was even larger for *Euro area countries with limited financing needs*, with less important cross border loans financing.

## V. CONCLUSION

We constructed a database describing bilateral external assets and liabilities, excluding reserves and financial derivatives, for a number of European economies between 2000 and 2008. We documented some inherent limitations to the data and estimated the size of our informational gaps. There was no bilateral information on reserve assets and financial derivatives, accounting for around 10 percent of total assets and liabilities, but much larger for the UK. In addition, the gap in the coverage of portfolio investment, foreign direct investment, and other investment was around 15 percent of total assets and liabilities for most countries. New data sources, and a growing number of participating countries, should enable this dataset to be improved over time.

While real-time data are not available, as there are reporting lags, data used in constructing the database were mostly available until end 2008—enabling us to get a sense of the size and nature of financial linkages at the beginning of the financial crisis. While we constructed and used our dataset to map Euro area imbalances, other uses are possible. Accounting for portfolio and direct investment exposures could, together with BIS data on a consolidated basis, improve the understanding of possible transmission channels in particular across Euro Area countries. As it is updated, this dataset could also help track the consequences of the ongoing deleveraging in a number of countries.

Our dataset enabled us to identify a number of stylized facts. While the EU, and the Euro Area, are both financially very integrated zones, more than half of the allocable assets and liabilities of EU (respectively EA) countries are vis-à-vis other EU (respectively EA) countries. Individual country positions vis-à-vis the rest of the EU only partially reflected their global IIP positions, as a number of countries play a role as financial creditors within the EU while they have net liabilities vis-à-vis the rest of the world. Bilateral linkages were also related to bilateral trade positions only to a very limited extent.

Our dataset furthermore allowed us to identify a strong correlation, both within the EU and within the EA, between accumulated IIP positions vis-à-vis the countries of the respective zone and relative GDP per capita—confirming that capital has indeed flown within both zones from countries with higher GDP per capita to countries with lower GDP per capita.

There were, however, notable differences between the financing of Euro area countries with significant financing needs, and of EU 2004 or 2007 acceding Member states, both in their origins and in their nature. While financing of the former was less exclusively ensured by

other EU or Euro area countries, our database suggests that inter-dependency across Euro area countries increased over time, as persistently large current account positions translated into an increasing share of assets of Euro area creditor countries, or liabilities of Euro area debtor countries, held vis-à-vis other countries in the area over time.

These findings confirm that, even absent contagion effects, excessively large accumulated current account imbalances should be a matter of common interest among Euro area countries. Correcting these imbalances is likely to be painful not only for deficit countries but also for their partners within the Euro area, as they imply a negative correction in the value of their accumulated assets. Closer cooperation among countries, that would avoid the buildup of both public and private sector imbalances, would therefore be in all the countries' best interests.

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Table 2A. Top Financial and Trade Positions: Euro Area Creditor Countries, 2008

	Debtors			Trade		Creditors			Trade	
	Net IIP 1/			Balance 2/		Net IIP 1/			Balance 2/	
	USD billions	Percent of GDP		USD Billions	USD billions	Percent of GDP	USD Billions			
Austria										
	Visegrad Countries	84	20	United States	27	Germany	-46	-11	Germany	-167
	Bulgaria and Romania	43	10	United Kingdom	22	France	-45	-11	Netherlands	-26
	Malta and Slovenia	27	6	Italy	20	Italy	-26	-6	Belgium	-9
	Rest of the World	25	6	Spain	17	Luxembourg	-14	-3	China	-8
	United Kingdom	19	5	Poland	10	Belgium	-7	-2	Kazakhstan	-5
	Russia and China	14	3	Romania	8	Switzerland	-5	-1	Libya	-3
	Cyprus	12	3	Slovenia	8	Brazil	-2	0	Sweden	-2
Belgium										
	Ireland	124	24	France	181	Rest of the World	-59	-12	Netherlands	-141
	Spain	67	13	Germany	85	France	-48	-9	Ireland	-118
	Luxembourg	51	10	United Kingdom	61	Switzerland	-25	-5	China	-64
	Italy	46	9	Italy	60	United Kingdom	-24	-5	Japan	-52
	Visegrad Countries	23	5	Spain	59	Finland	-21	-4	Norway	-20
	Greece	23	4	Luxembourg	38	Baltics	0	0	Sweden	-19
	Germany	17	3	India	23	Cyprus	0	0	Russia	-15
Finland										
	Belgium	21	8	United States	28	United States	-54	-20	Russia	-13
	Netherlands	16	6	United Kingdom	20	United Kingdom	-11	-4	Germany	-13
	Baltics	11	4	Spain	10	Sweden	-10	-4	Denmark	-9
	Spain	6	2	United Arab Emirates	8	France	-3	-1	Sweden	-9
	Russia and China	6	2	Poland	8	Luxembourg	-2	-1	China	-2
	Germany	6	2	Saudi Arabia	6	Canada	0	0	Japan	-2
	Denmark	5	2	France	5	Austria	0	0	Ireland	-1
France										
	Italy	245	9	United Kingdom	88	Luxembourg	-201	-7	Germany	-217
	Spain	237	8	Spain	81	United Kingdom	-114	-4	Belgium	-166
	Netherlands	153	5	United States	47	United States	-109	-4	Netherlands	-143
	Greece	66	2	Greece	32	Switzerland	-106	-4	China	-81
	Germany	62	2	United Arab Emirates	28	Other Offshore Centers	-54	-2	Norway	-54
	Portugal	61	2	Hong Kong	27	Guernsey	-32	-1	Russia	-46
	Belgium	48	2	Switzerland	17	Denmark	-6	0	Ireland	-35
Germany										
	Spain	277	8	United States	337	France	-144	-4	Netherlands	-163
	United Kingdom	191	5	France	265	Switzerland	-126	-3	China	-151
	Ireland	183	5	United Kingdom	259	Rest of the World	-107	-3	Japan	-100
	United States	157	4	Spain	217	Other Offshore Centers	-14	0	Norway	-99
	Visegrad Countries	132	4	Austria	186	Finland	-10	0	Ireland	-82
	Italy	108	3	Italy	175	Guernsey	-8	0	Russia	-36
	Luxembourg	92	3	Switzerland	89	Malaysia	5	0	Libya	-32

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven positive (negative) net foreign asset positions at end-2008.

2/ Top seven bilateral trade balances, accumulated from 1998 to 2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Other Offshore Centers and International Organizations.

Table 2B. Top Financial and Trade Positions: Euro Area Countries with Limited Financing Needs, 2008

	Debtors		Trade		Creditors		Trade		
	Net IIP 1/		Balance 2/		Net IIP 1/		Balance 2/		
	USD billions	Percent of GDP	USD Billions	USD Billions	USD billions	Percent of GDP	USD Billions	USD Billions	
Italy									
Luxembourg	64	3	United States	155	France	-219	-9	Germany	-131
Austria	27	1	Spain	94	United Kingdom	-146	-6	Netherlands	-121
Netherlands	25	1	United Kingdom	79	Ireland	-103	-4	China	-107
Greece	24	1	France	62	Germany	-94	-4	Libya	-90
Visegrad Countries	11	0	Greece	58	Rest of the World	-83	-4	Russia	-57
Brazil	9	0	Hong Kong	33	Belgium	-49	-2	Algeria	-51
Switzerland	6	0	United Arab Emirates	31	Other Offshore Centers	-8	0	Belgium	-51
Netherlands									
United States	51	6	Germany	371	France	-121	-14	China	-231
Spain	43	5	France	193	Switzerland	-103	-12	United States	-122
Italy	39	4	Belgium	169	United Kingdom	-78	-9	Japan	-94
Visegrad Countries	30	3	United Kingdom	136	Luxembourg	-77	-9	Russia	-76
Ireland	28	3	Italy	131	Rest of the World	-55	-6	Malaysia	-53
Canada	26	3	Spain	74	Germany	-44	-5	Norway	-44
Russia and China	25	3	Austria	35	Other Offshore Centers	-19	-2	Brazil	-41

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven positive (negative) net foreign asset positions at end-2008.

2/ Top seven bilateral trade balances, accumulated from 1998 to 2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Other Offshore Centers and International Organizations.

Table 2C. Top Financial and Trade Positions: Euro Area Countries with Significant Financing Needs, 2008

	Debtors		Trade		Creditors		Trade		
	Net IIP 1/		Balance 2/		Net IIP 1/		Balance 2/		
	USD billions	Percent of GDP	USD Billions	USD Billions	USD billions	Percent of GDP	USD Billions	USD Billions	
Greece									
Bulgaria and Romania	19	5	Cyprus	5	France	-67	-19	Germany	-47
Cyprus	17	5	Albania	4	Germany	-50	-14	Italy	-47
United States	4	1	Macedonia	3	Netherlands	-25	-7	Russia	-27
Malta and Slovenia	1	0	Bulgaria	2	Italy	-24	-7	France	-26
Visegrad Countries	1	0	United Arab Emirates	1	Belgium	-20	-6	Netherlands	-24
Russia and China	1	0	Malta	1	Luxembourg	-9	-3	China	-19
Baltics	0	0	Lebanon	1	Austria	-9	-2	South Korea	-18
Ireland									
United States	349	132	Belgium	106	Germany	-223	-84	United Kingdom	-43
Italy	109	41	United States	95	Belgium	-98	-37	Taiwan	-14
Australia	20	8	Germany	40	Netherlands	-75	-28	China	-7
Visegrad Countries	6	2	France	39	France	-61	-23	Singapore	-6
United Kingdom	4	1	Italy	28	Rest of the World	-61	-23	Norway	-5
Cayman Islands	2	1	Switzerland	27	Luxembourg	-56	-21	Denmark	-2
Malta and Slovenia	2	1	Spain	24	Other Offshore Centers	-39	-15	Thailand	-1
Portugal									
Greece	6	2	United States	7	France	-64	-25	Spain	-77
Netherlands	4	2	United Kingdom	5	Germany	-35	-14	Germany	-24
United States	4	1	Singapore	4	Ireland	-26	-10	Italy	-20
Brazil	2	1	Morocco	1	Spain	-23	-9	Netherlands	-13
Visegrad Countries	2	1	Australia	1	United Kingdom	-19	-7	Brazil	-8
Denmark	1	1	Malaysia	1	Canada	-16	-6	Japan	-7
Switzerland	1	1	Greece	0	Belgium	-14	-5	France	-7
Spain									
Brazil	61	4	Portugal	87	Germany	-287	-18	Germany	-197
Visegrad Countries	40	2	Greece	16	France	-239	-15	China	-93
Mexico	32	2	United Arab Emirates	6	United Kingdom	-217	-14	Netherlands	-65
Portugal	31	2	Morocco	4	United States	-105	-7	Italy	-63
Italy	16	1	Mexico	3	Netherlands	-93	-6	France	-41
Switzerland	5	0	Dominican Republic	3	Luxembourg	-75	-5	Belgium	-40
Bulgaria and Romania	2	0	Hong Kong	2	Ireland	-72	-4	Russia	-38

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven positive (negative) net foreign asset positions at end-2008.

2/ Top seven bilateral trade balances, accumulated from 1998 to 2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Other Offshore Centers and International Organizations.

Table 2D. Top Financial and Trade Positions: Other Euro Area Countries, 2008

	Debtors		Trade		Creditors		Trade		
	Net IIP 1/		Balance 2/		Net IIP 1/		Balance 2/		
	USD billions	Percent of GDP	USD Billions	USD Billions	USD billions	Percent of GDP	USD Billions	USD Billions	
Cyprus									
United Kingdom	10	41	Lebanon	0	Greece	-11	-43	Greece	-7
United States	4	17	Jordan	0	Russia and China	-10	-39	Italy	-6
Switzerland	4	16	Iraq	0	Austria	-9	-37	Germany	-5
Bulgaria and Romania	2	8	Albania	0	Germany	-9	-36	United Kingdom	-3
Netherlands	2	7	Qatar	0	France	-2	-9	China	-3
Rest of the World	1	5	Oman	0	Ireland	-2	-8	France	-3
Italy	1	4	Tanzania	0	Guernsey	-1	-4	United States	-3
Luxembourg									
United States	332	573	France	8	Switzerland	-157	-271	Belgium	-42
France	142	245	United Kingdom	8	Germany	-147	-254	China	-21
Netherlands	58	99	Italy	8	Italy	-72	-125	Germany	-10
Spain	57	98	Spain	6	Belgium	-19	-32	Taiwan	-3
Rest of the World	39	68	Sweden	3	Baltics	1	1	United States	-3
Russia and China	25	44	Portugal	2	Other Offshore Ce	1	2	Netherlands	-2
Visegrad Countries	17	30	Denmark	2	Malta and Sloveni	2	4	Japan	-1

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven positive (negative) net foreign asset positions at end-2008.

2/ Top seven bilateral trade balances, accumulated from 1998 to 2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Other Offshore Centers and International Organizations.

Table 2E. Top Financial and Trade Positions: Other European Union Creditor Countries, 2008

	Debtors		Trade		Creditors		Trade		
	Net IIP 1/		Balance 2/		Net IIP 1/		Balance 2/		
	USD billions	Percent of GDP	USD Billions	USD Billions	USD billions	Percent of GDP	USD Billions	USD Billions	
Denmark									
Sweden	29	8	United Kingdom	23	Germany	-23	-7	China	-20
Spain	13	4	United States	22	Luxembourg	-21	-6	Belgium	-11
United States	12	4	Japan	13	Netherlands	-14	-4	Netherlands	-10
Rest of the World	9	3	Spain	10	Switzerland	-11	-3	Germany	-10
Visegrad Countries	8	2	Sweden	8	Austria	-6	-2	Taiwan	-3
Cayman Islands	6	2	Finland	6	Finland	-5	-2	Italy	-3
Baltics	6	2	France	6	Belgium	-5	-2	Argentina	-3
Sweden									
Baltics	37	8	United States	74	Luxembourg	-30	-6	Germany	-62
United States	20	4	Norway	25	Denmark	-28	-6	Denmark	-10
Russia and China	17	4	Spain	20	United Kingdom	-20	-4	Ireland	-8
Spain	13	3	United Kingdom	18	Germany	-16	-3	Russian Federation	-8
Visegrad Countries	9	2	Belgium	13	Netherlands	-14	-3	China	-6
Italy	8	2	Finland	12	France	-6	-1	Netherlands	-5
Finland	6	1	Australia	11	Austria	-5	-1	Luxembourg	-3
United Kingdom									
Spain	247	9	Ireland	84	Rest of the World	-412	-15	Germany	-203
United States	229	9	United States	53	Germany	-218	-8	China	-171
Italy	125	5	United Arab Emirates	31	Other Offshore Centers	-133	-5	Norway	-139
Australia	64	2	Saudi Arabia	14	Ireland	-89	-3	Japan	-93
France	61	2	Greece	13	Switzerland	-34	-1	Netherlands	-64
Russia and China	58	2	Spain	13	Netherlands	-29	-1	Italy	-47
Luxembourg	57	2	Australia	10	Cyprus	-12	0	Hong Kong	-47

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven positive (negative) net foreign asset positions at end-2008.

2/ Top seven bilateral trade balances, accumulated from 1998 to 2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Other Offshore Centers and International Organizations.

Table 2F. Top Financial and Trade Positions: Switzerland and Norway, 2008

	Debtors		Trade		Creditors		Trade		
	Net IIP 1/		Balance 2/		Net IIP 1/		Balance 2/		
	USD billions	Percent of GDP	USD Billions		USD billions	Percent of GDP	USD Billions		
Switzerland									
Netherlands	108	21	United States	63	United States	-104	-21	Germany	-127
Luxembourg	97	19	Hong Kong	26	Other Offshore Centers	-78	-15	Ireland	-30
France	78	15	Japan	20	Austria	-54	-11	Netherlands	-21
Germany	72	14	Spain	19	Rest of the World	-33	-7	Italy	-17
United Kingdom	65	13	Turkey	11	Denmark	-7	-1	France	-14
Canada	31	6	United Kingdom	10	Italy	-6	-1	Belgium	-12
Belgium	24	5	Singapore	10	Baltics	0	0	Austria	-11

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven positive (negative) net foreign asset positions at end-2008.

2/ Top seven bilateral trade balances, accumulated from 1998 to 2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Other Offshore Centers and International Organizations.

Table 3A. Top Gross Financial Partners: Euro Area Creditor Countries, 2008

	Total Assets 1/		Total Liabilities 2/			
	USD billions	Percent of GDP	USD billions	Percent of GDP		
Austria						
	Germany	157	38	Germany	203	49
	Visegrad Countries	96	23	France	81	19
	Rest of the World	78	19	Italy	68	16
	United Kingdom	53	13	Rest of the World	54	13
	Bulgaria and Romania	45	11	Luxembourg	37	9
	Italy	42	10	United Kingdom	34	8
	Netherlands	39	9	United States	33	8
Belgium						
	France	277	55	France	324	64
	Netherlands	225	44	Netherlands	224	44
	United Kingdom	198	39	United Kingdom	222	44
	Luxembourg	176	35	Luxembourg	126	25
	Ireland	166	33	Rest of the World	97	19
	Spain	95	19	Germany	73	14
	Germany	90	18	Switzerland	45	9
Finland						
	Sweden	76	28	Sweden	87	32
	Netherlands	34	12	United States	79	29
	Germany	33	12	United Kingdom	32	12
	Belgium	29	11	Germany	27	10
	Rest of the World	25	9	France	25	9
	Denmark	24	9	Rest of the World	22	8
	United States	24	9	Denmark	19	7
France						
	United Kingdom	805	28	United Kingdom	918	32
	Germany	590	21	United States	637	22
	United States	528	18	Germany	528	18
	Rest of the World	500	17	Luxembourg	479	17
	Netherlands	482	17	Rest of the World	462	16
	Italy	462	16	Netherlands	329	11
	Spain	397	14	Belgium	266	9
Germany						
	United Kingdom	939	26	United Kingdom	748	20
	Luxembourg	728	20	Luxembourg	636	17
	United States	613	17	France	562	15
	Netherlands	463	13	United States	457	13
	France	418	11	Netherlands	420	12
	Spain	360	10	Rest of the World	405	11
	Ireland	336	9	Switzerland	278	8

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven foreign asset positions at end-2008.

2/ Top seven foreign liability positions at end-2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Offshore Centers and International Organizations.

Table 3B. Top Gross Financial Partners: Euro Area Countries with Limited Financing Needs, 2008

	Total Assets 1/		Total Liabilities 2/			
	USD billions	Percent of GDP	USD billions	Percent of GDP		
Italy						
	Luxembourg	271	12	France	448	19
	France	229	10	Germany	290	13
	Netherlands	208	9	United Kingdom	288	12
	Germany	196	8	Ireland	211	9
	United States	147	6	Luxembourg	207	9
	United Kingdom	142	6	Netherlands	182	8
	Spain	120	5	United States	147	6
Netherlands						
	United Kingdom	574	65	United Kingdom	652	74
	United States	451	51	United States	400	46
	Germany	272	31	France	362	41
	France	241	27	Germany	316	36
	Belgium	229	26	Luxembourg	223	25
	Rest of the World	147	17	Belgium	219	25
	Luxembourg	146	17	Rest of the World	202	23

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven foreign asset positions at end-2008.

2/ Top seven foreign liability positions at end-2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Offshore Centers and International Organizations.

Table 3C. Top Gross Financial Partners: Euro Area Countries with Significant Financing Needs, 2008

	Total Assets 1/		Total Liabilities 2/			
	USD billions	Percent of GDP	USD billions	Percent of GDP		
Greece						
	United Kingdom	101	29	United Kingdom	108	31
	Cyprus	41	12	France	72	20
	Luxembourg	28	8	Germany	56	16
	Bulgaria and Romania	22	6	Luxembourg	37	11
	United States	16	5	Netherlands	31	9
	Rest of the World	9	3	Italy	26	7
	Netherlands	6	2	Cyprus	24	7
Ireland						
	United Kingdom	672	254	United Kingdom	668	252
	United States	526	198	Germany	379	143
	Italy	197	74	United States	177	67
	Germany	156	59	France	174	66
	France	113	42	Netherlands	157	59
	Netherlands	82	31	Belgium	137	52
	Luxembourg	61	23	Luxembourg	116	44
Portugal						
	Spain	48	19	France	87	34
	Ireland	39	16	Spain	71	28
	Netherlands	30	12	Ireland	65	26
	Germany	27	11	Germany	62	25
	United Kingdom	27	11	United Kingdom	45	18
	France	23	9	Netherlands	26	10
	Luxembourg	18	7	Luxembourg	24	9
Spain						
	United Kingdom	212	13	United Kingdom	429	27
	France	157	10	France	397	25
	Netherlands	143	9	Germany	375	23
	Italy	137	9	Netherlands	236	15
	United States	118	7	United States	223	14
	Germany	88	5	Luxembourg	160	10
	Portugal	86	5	Italy	121	8

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven foreign asset positions at end-2008.

2/ Top seven foreign liability positions at end-2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Offshore Centers and International Organizations.

Table 3D. Top Gross Financial Partners: Other Euro Area Countries, 2008

	Total Assets 1/		Total Liabilities 2/	
	USD billions	Percent of GDP	USD billions	Percent of GDP
Cyprus				
United Kingdom	26	102	Greece	34
Greece	23	90	Russia and China	16
Rest of the World	11	43	United Kingdom	16
Switzerland	8	33	Austria	13
Russia and China	6	25	Germany	12
United States	6	25	Rest of the World	10
Netherlands	5	19	Ireland	5
Luxembourg				
Germany	528	913	Germany	676
United States	416	718	Switzerland	245
France	331	572	Italy	242
Rest of the World	195	336	France	189
Belgium	170	294	Belgium	189
Italy	170	293	Rest of the World	156
Netherlands	146	252	Netherlands	88

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven foreign asset positions at end-2008.

2/ Top seven foreign liability positions at end-2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Offshore Centers and International Organizations.

Table 3E. Top Gross Financial Partners: Other EU Creditor Countries, 2008

	Total Assets 1/		Total Liabilities 2/	
	USD billions	Percent of GDP	USD billions	Percent of GDP
Denmark				
Sweden	105	31	Germany	82
Rest of the World	78	23	Sweden	76
United Kingdom	71	21	United Kingdom	74
United States	65	19	Rest of the World	69
Germany	59	17	United States	53
France	30	9	Luxembourg	38
Ireland	27	8	Netherlands	32
Sweden				
United States	124	25	United Kingdom	109
Rest of the World	105	22	United States	104
United Kingdom	89	18	Rest of the World	99
Finland	88	18	Denmark	93
Denmark	65	13	Luxembourg	87
Luxembourg	57	12	Finland	81
Germany	56	12	Germany	72
United Kingdom				
United States	2227	83	United States	1998
Rest of the World	854	32	Rest of the World	1266
Germany	724	27	Germany	942
Netherlands	704	26	Netherlands	732
France	674	25	Ireland	626
Ireland	537	20	France	613
Luxembourg	426	16	Luxembourg	369

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven foreign asset positions at end-2008.

2/ Top seven foreign liability positions at end-2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Offshore Centers and International Organizations.

Table 3F. Top Gross Financial Partners: Norway and Switzerland, 2008

	Total Assets 1/		Total Liabilities 2/	
	USD billions	Percent of GDP	USD billions	Percent of GDP
Switzerland				
United Kingdom	325	65	United States	405
United States	302	60	United Kingdom	259
Luxembourg	238	47	Rest of the World	227
Netherlands	228	45	Germany	151
Germany	222	44	Luxembourg	141
Rest of the World	193	38	Netherlands	121
France	180	36	France	102

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Top seven foreign asset positions at end-2008.

2/ Top seven foreign liability positions at end-2008.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data are available.

Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Countries, the Baltics, Offshore Centers and International Organizations.

Table 4. Net Investment Positions of European Countries, 2002 and 2008  
(Percent of GDP)

	European Union 1/		Euro Area 2/		WORLD 3/	
	2002	2008	2002	2008	2002	2008
Luxembourg	924	366	586	144	123	71
Switzerland	148	87	109	73	138	121
Belgium	19	57	26	56	41	31
Germany	-5	31	-5	20	6	25
France	14	25	15	27	3	-11
Norway	18	23	9	23	34	53
Finland	-2	20	-5	-22	-41	-8
Austria	-3	12	-6	13	-21	-14
United Kingdom	25	8	26	5	-12	-6
Denmark	-12	-1	-21	-4	-18	-6
Sweden	-10	-10	-8	-10	-25	-12
Netherlands	-38	-17	-22	-18	-27	10
Italy	-16	-21	-9	-14	-15	-20
Czech Republic	5	-37	2	-37	-18	-36
Poland	-23	-41	-22	-36	-37	-46
Malta	16	-52	-8	-529	38	6
Greece	-50	-54	-52	-57	-59	-71
Lithuania	-19	-55	-13	-23	-36	-50
Romania	-6	-58	-5	-53	-21	-47
Spain	-22	-62	-15	-50	-47	-77
Slovak Republic	-43	-63	-35	-52	-25	-53
Portugal	-56	-69	-40	-54	-60	-89
Latvia	-20	-69	-10	-33	-43	-76
Cyprus	-23	-70	-37	-119	11	4
Slovenia	-20	-75	-24	-72	-1	-32
Estonia	-41	-78	-20	-21	-60	-75
Hungary	-32	-93	-26	-72	-74	-97
Bulgaria	-17	-105	-18	-86	-29	-98
Ireland	-9	-121	-21	-123	-20	-56

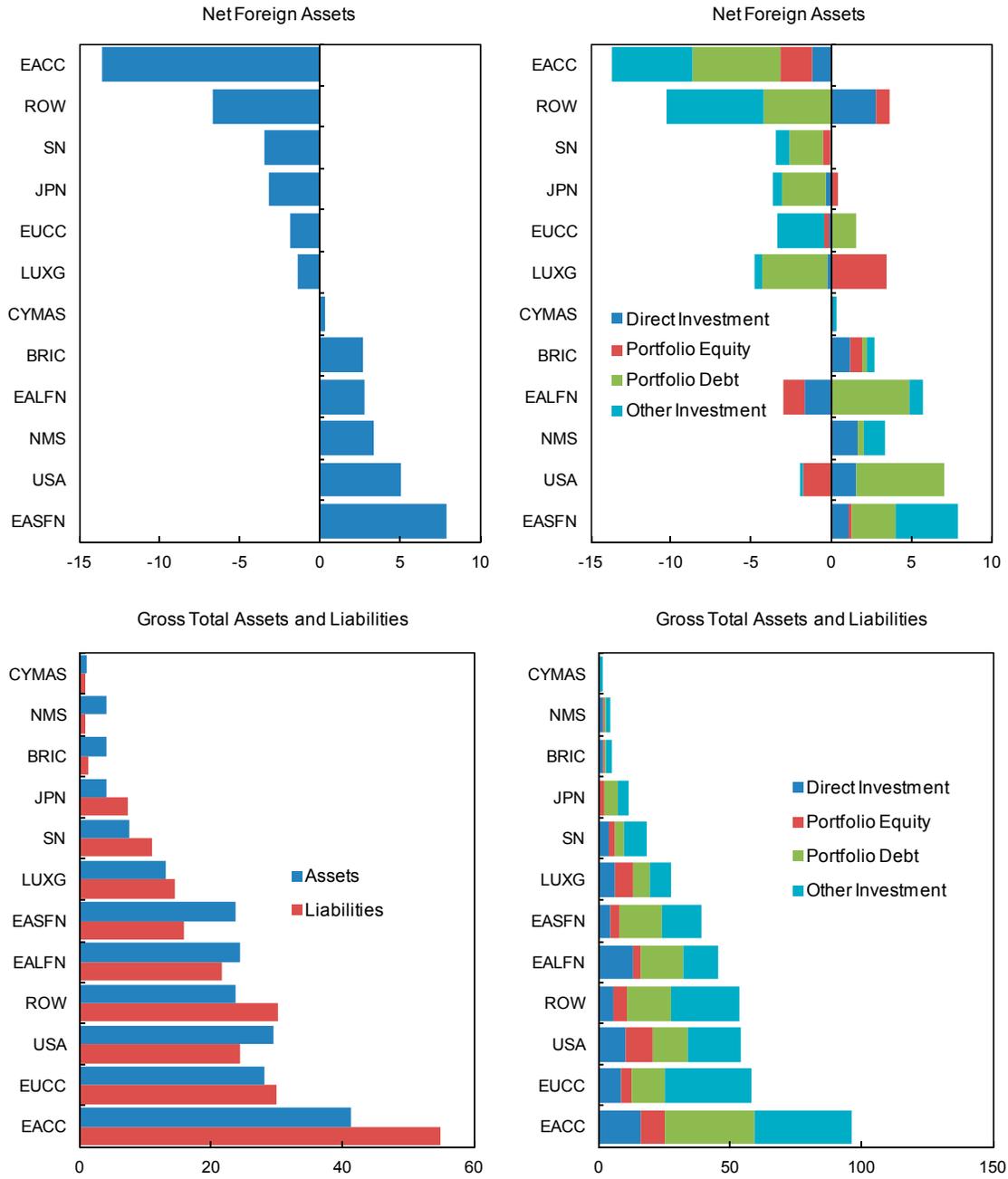
Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Net investment position with the European Union (based on corresponding year's members).

2/ Net investment position with the Euro Area (based on corresponding year's members).

3/ Includes financial derivatives and reserve assets.

Figure 3A. Net Foreign Assets and Gross Positions: European Union Countries, 2008  
(Percent of GDP)

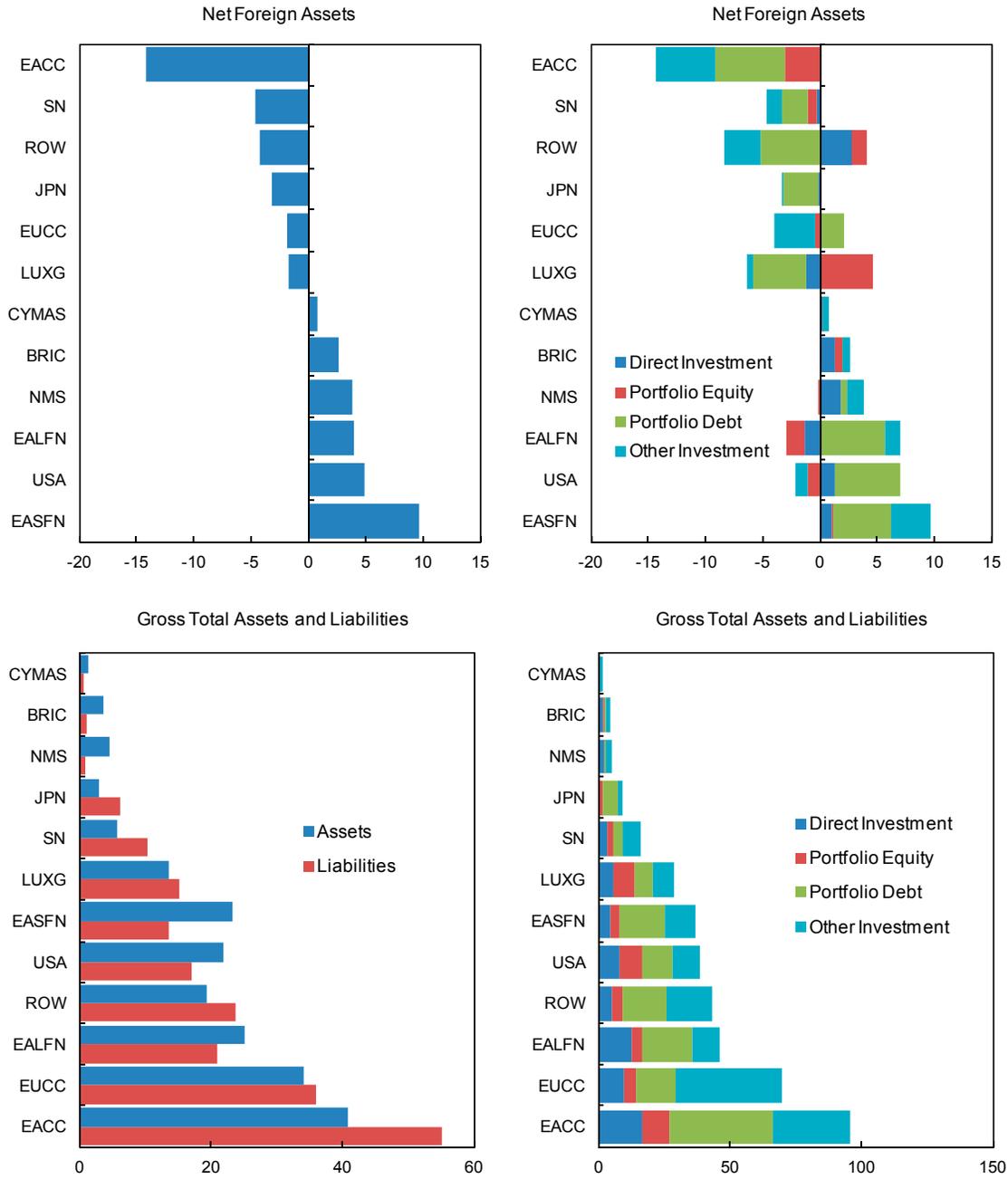


Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Notes:

- EACC - Euro area creditor countries;
- EALFN - Euro area countries with limited financing needs;
- EACSFN - Euro area countries with significant financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

Figure 3B. Net Foreign Assets and Gross Positions: Euro Area Countries, 2008  
(Percent of GDP)

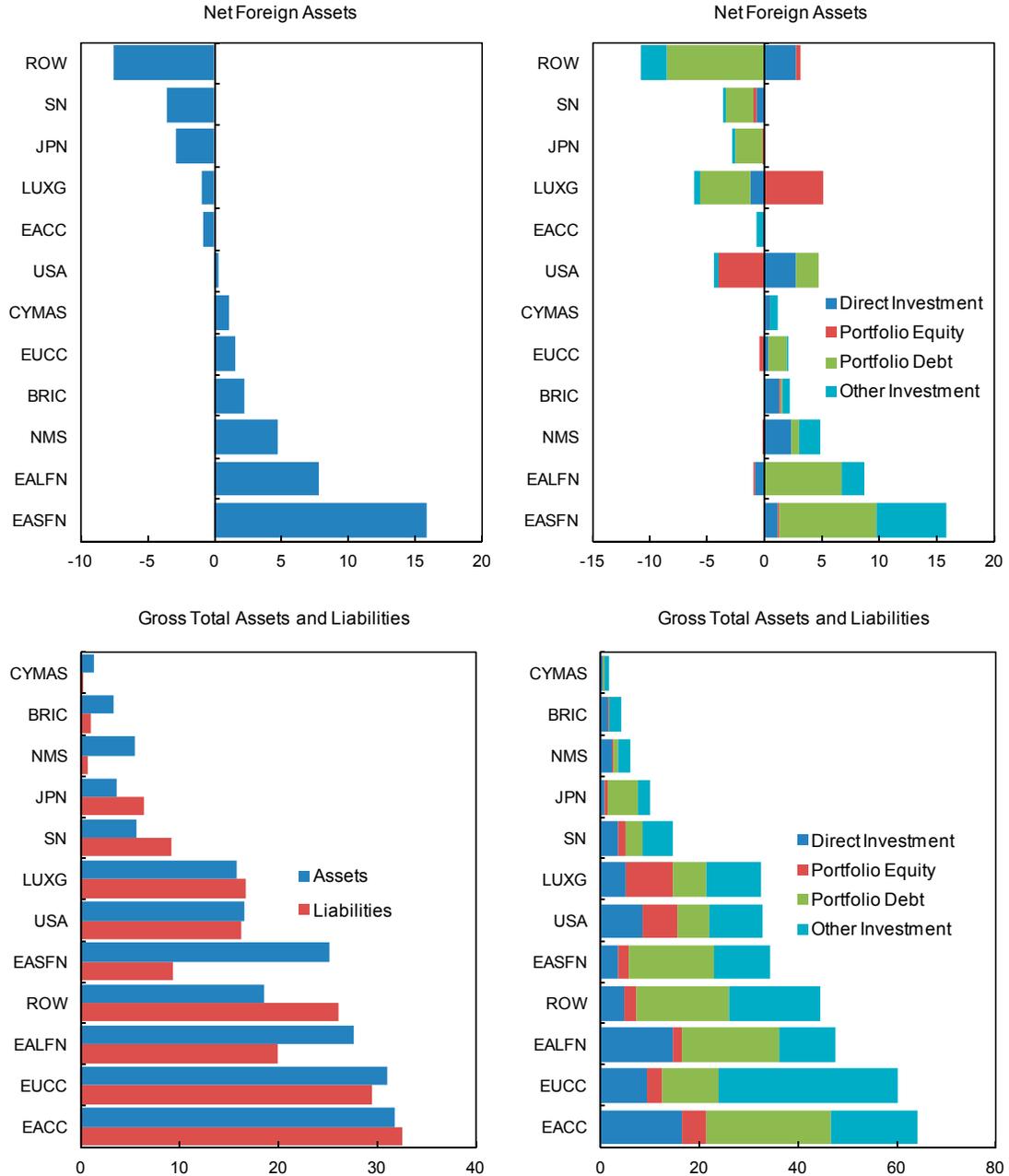


Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Notes:

- EACC - Euro area creditor countries;
- EACLFN - Euro area countries with limited financing needs;
- EACSFN - Euro area countries with significant financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

Figure 3C. Net Foreign Assets and Gross Positions: Euro Area Creditor Countries (Austria, Belgium, Finland, France and Germany), 2008 (Percent of GDP)

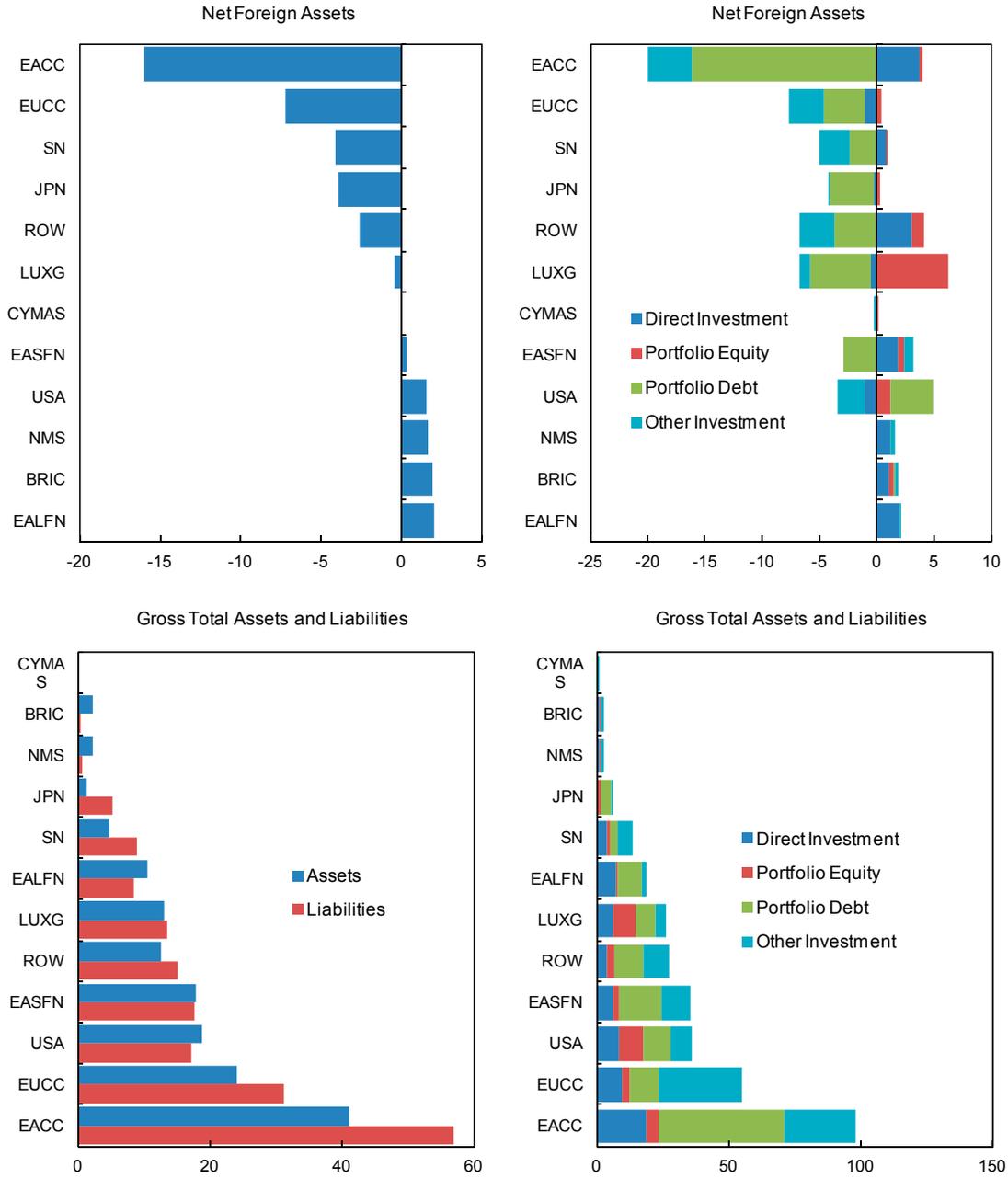


Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Notes:

- EACC - Euro area creditor countries;
- EACLFN - Euro area countries with limited financing needs;
- EACSFN - Euro area countries with significant financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

Figure 3D. Net Foreign Assets and Gross Positions: Euro Area Countries with Limited Financing Needs (Italy and Netherlands), 2008  
(Percent of GDP)

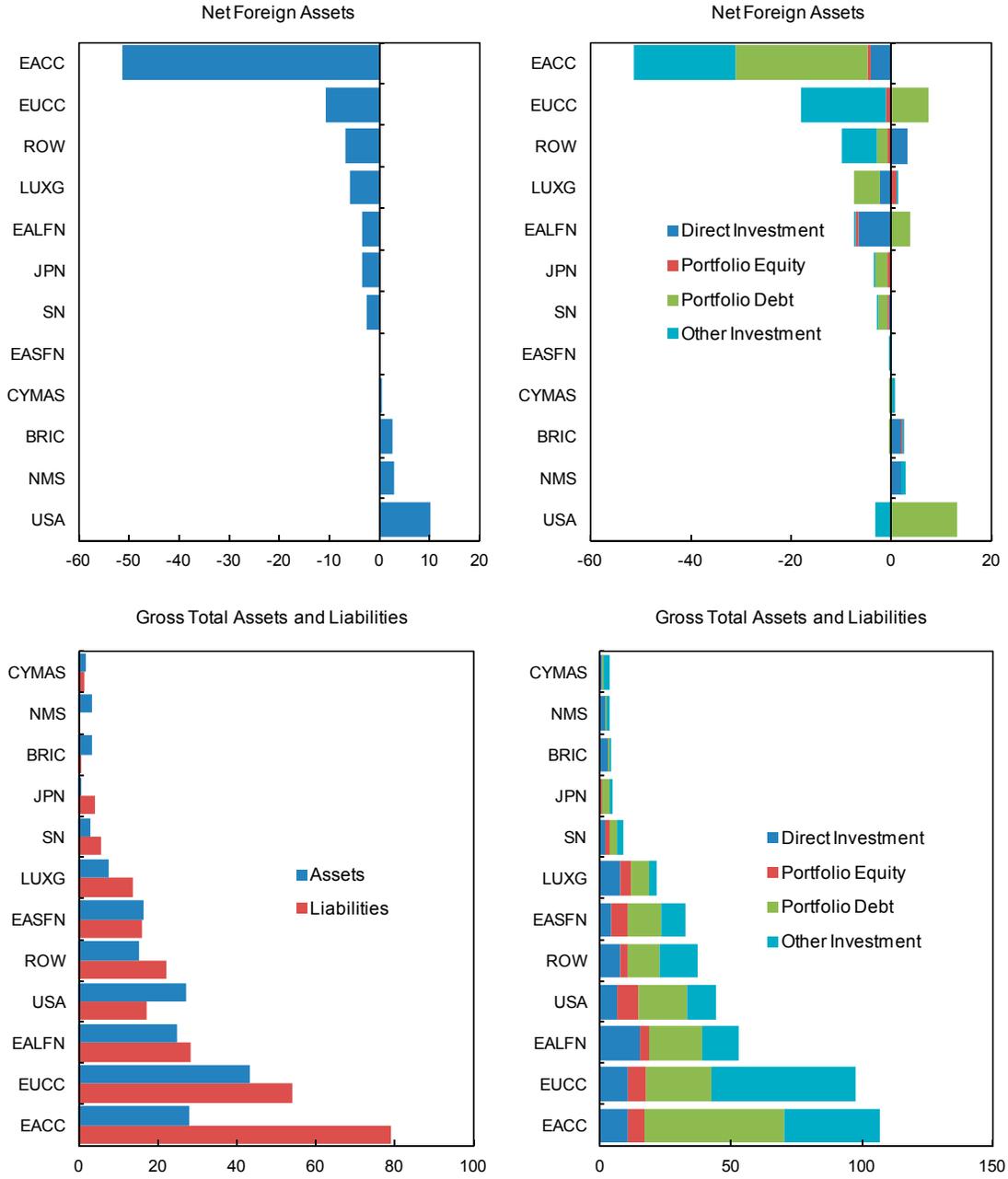


Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Notes:

- EACC - Euro area creditor countries;
- EALFN - Euro area countries with limited financing needs;
- EASFN - Euro area countries with significant financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

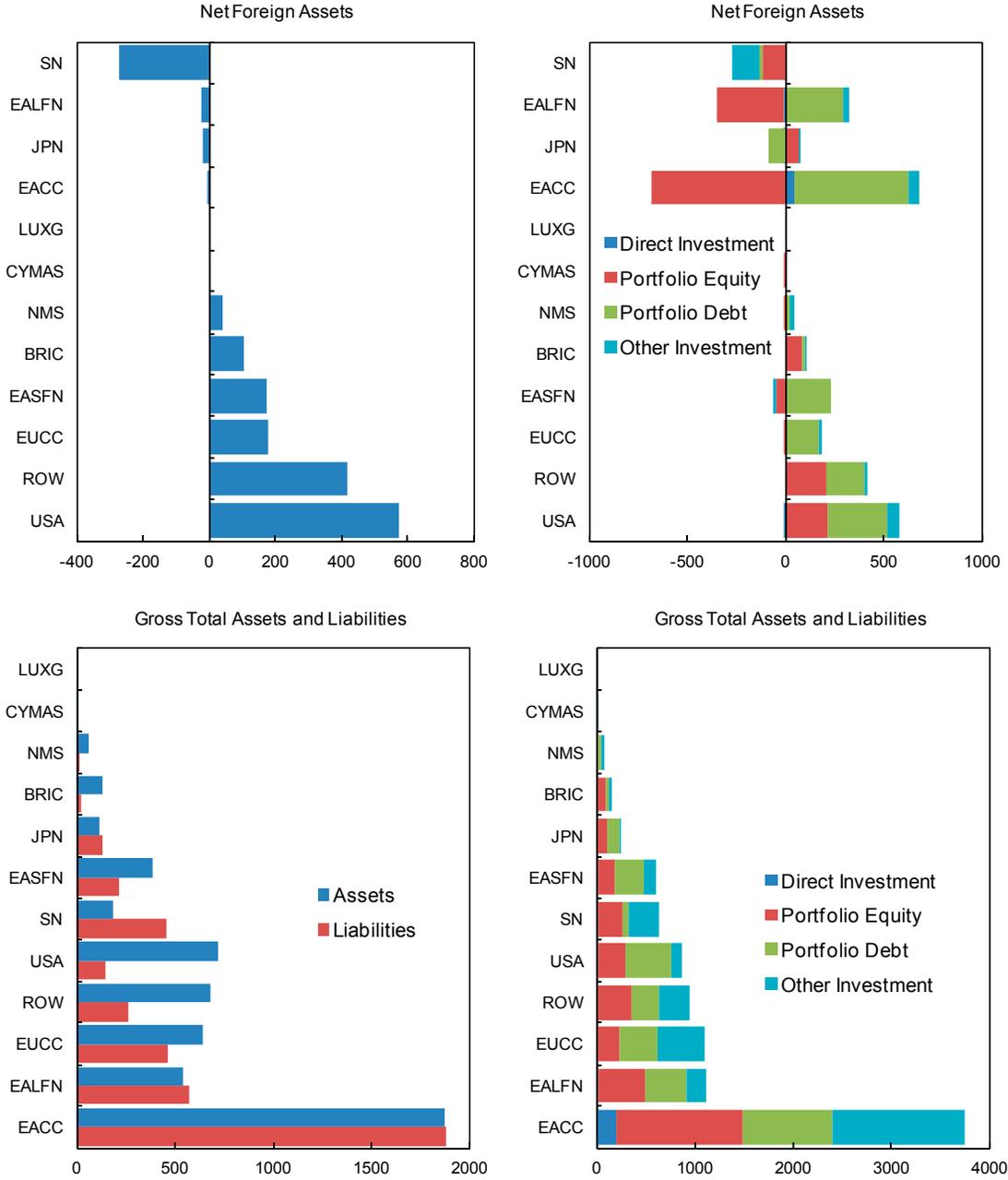
Figure 3E. Net Foreign Assets and Gross Positions: Euro Area Countries with Significant Financing Needs (Greece, Ireland, Portugal and Spain), 2008  
(Percent of GDP)



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

- Notes:
- EACC - Euro area creditor countries;
  - EACLFN - Euro area countries with limited financing needs;
  - EACSFN - Euro area countries with significant financing needs;
  - LUX - Luxembourg;
  - CYMAS - Cyprus, Malta and Slovenia;
  - EUCC - Other EU creditor countries;
  - NMS - Non-Euro area countries that acceded in 2004 or 2007;
  - SN - Switzerland and Norway;
  - USA - United States;
  - JPN - Japan;
  - BRIC - Brazil, Russia, India and China.

Figure 3F. Net Foreign Assets and Gross Positions: Luxembourg, 2008  
(Percent of GDP)

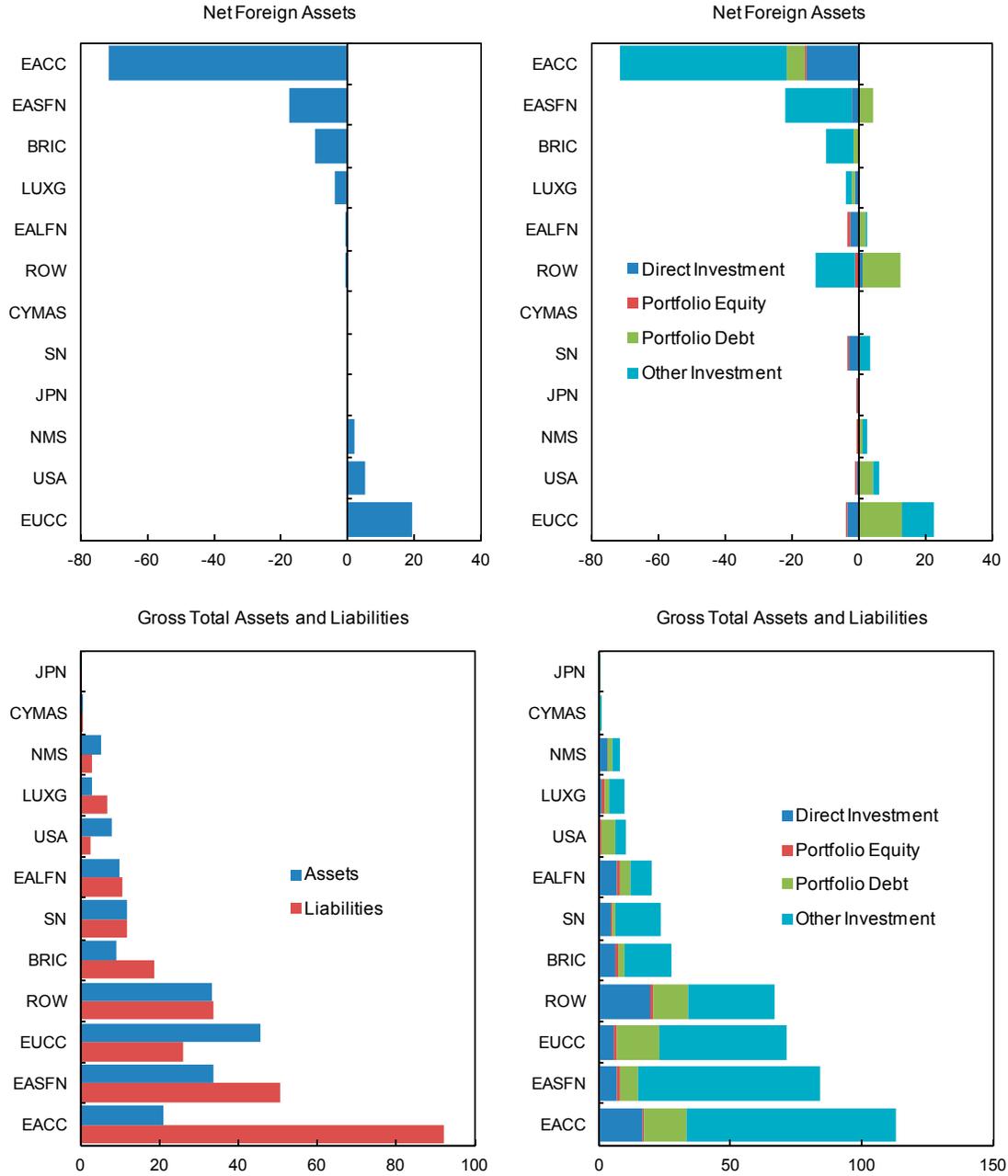


Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Notes:

- EACC - Euro area creditor countries;
- EALFN - Euro area countries with limited financing needs;
- EASFN - Euro area countries with significant financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

Figure 3G. Net Foreign Assets and Gross Positions: Cyprus, Malta and Slovenia, 2008  
(Percent of GDP)

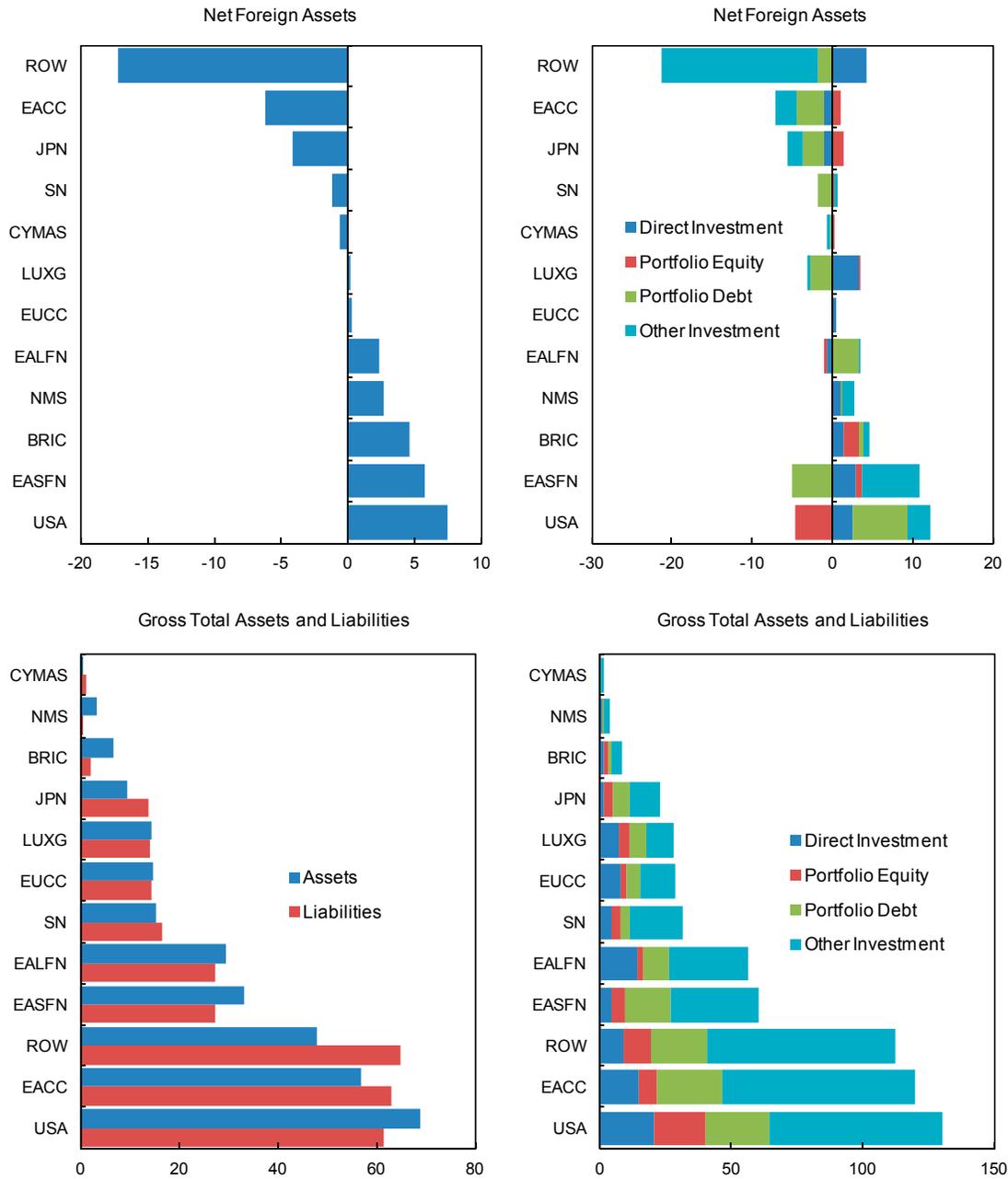


Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Notes:

- EACC - Euro area creditor countries;
- EASFN - Euro area countries with significant financing needs;
- EALFN - Euro area countries with limited financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

Figure 3H. Net Foreign Assets and Gross Positions: Other EU Creditor Countries (Denmark, Sweden and United Kingdom), 2008  
(Percent of GDP)

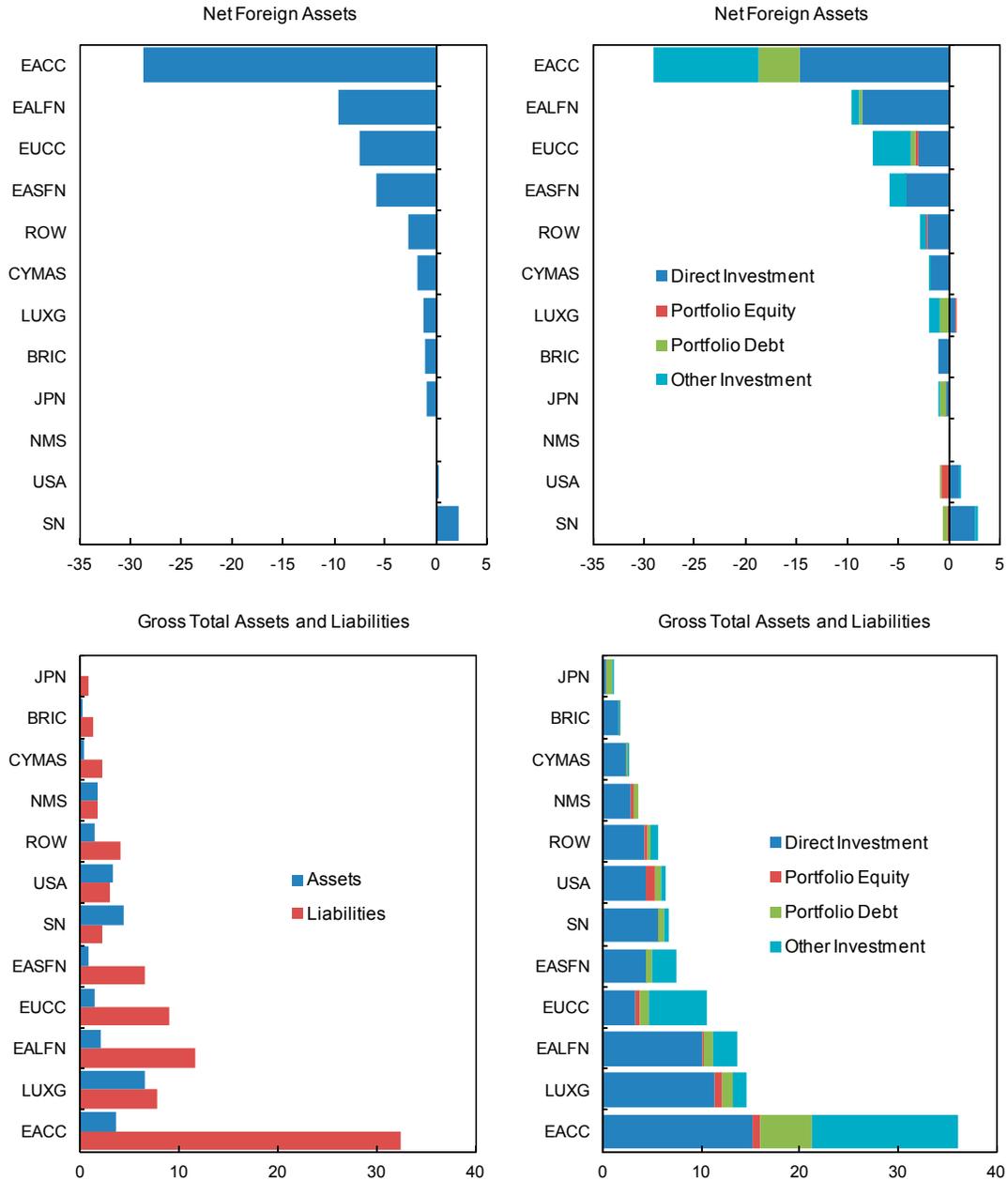


Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Notes:

- EACC - Euro area creditor countries;
- EACLFN - Euro area countries with limited financing needs;
- EACSFN - Euro area countries with significant financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

Figure 3I. Net Foreign Assets and Gross Positions: Non-Euro Area EU Countries that Acceded in 2004 or 2007, 2008 1/ (Percent of GDP)



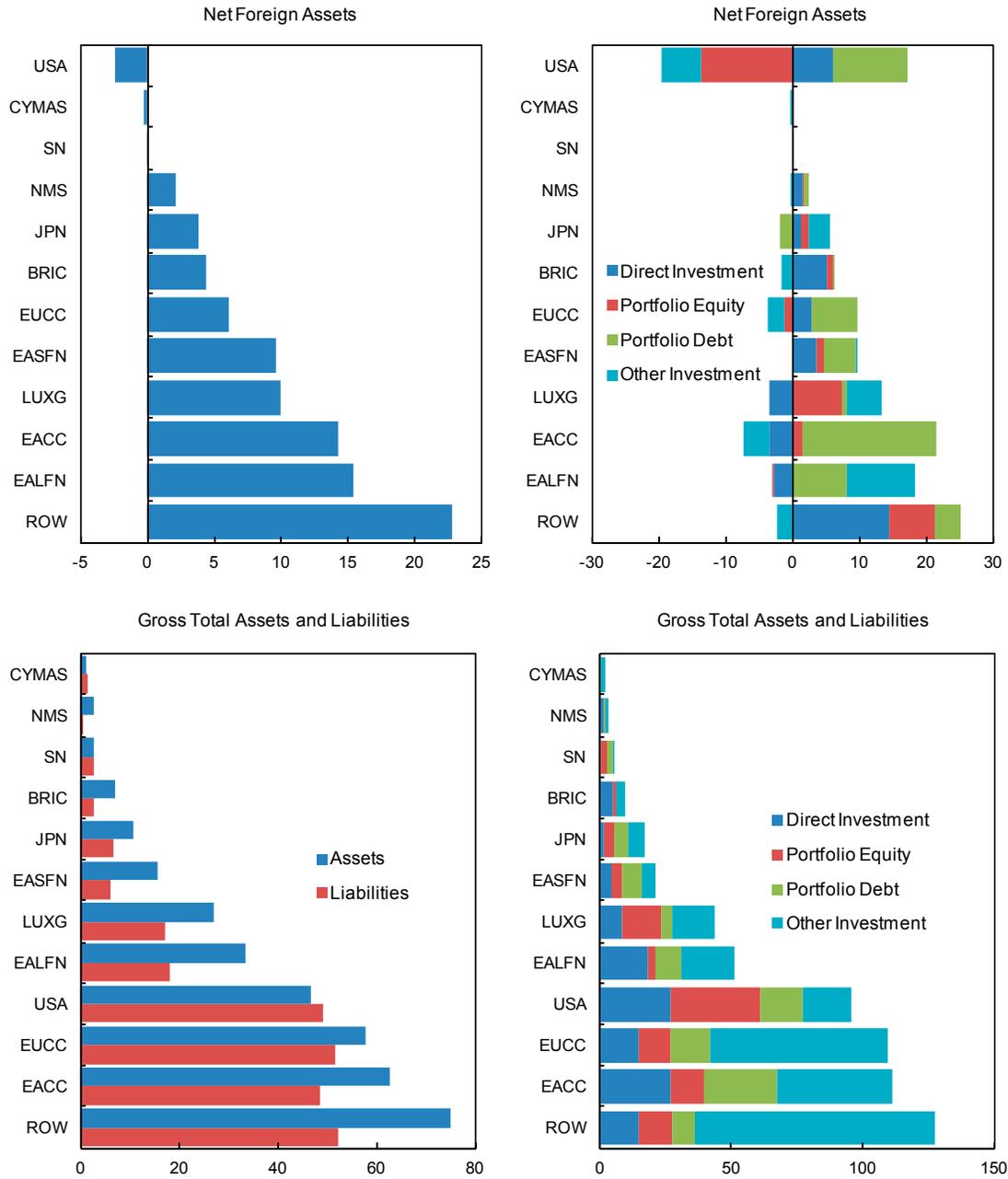
Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ Non-Euro area countries that acceded in 2004 or 2007 are Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania and Slovak Republic.

Notes:

- EACC - Euro area creditor countries;
- EACLFN - Euro area countries with limited financing needs;
- EACSFN - Euro area countries with significant financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

Figure 3J. Net Foreign Assets and Gross Positions: Norway and Switzerland, 2008  
(Percent of GDP)

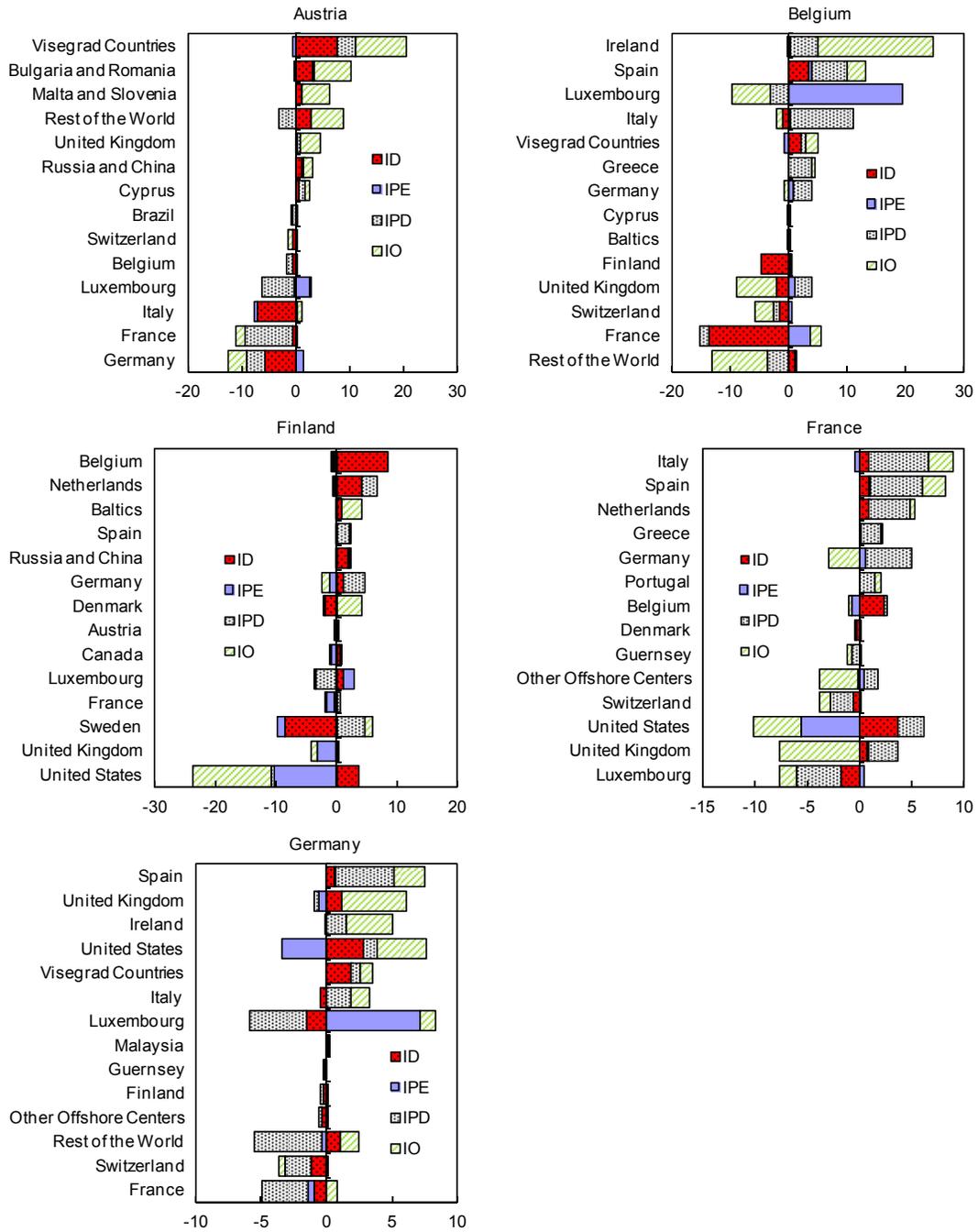


Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Notes:

- EACC - Euro area creditor countries;
- EACLNF - Euro area countries with limited financing needs;
- EACSFN - Euro area countries with significant financing needs;
- LUX - Luxembourg;
- CYMAS - Cyprus, Malta and Slovenia;
- EUCC - Other EU creditor countries;
- NMS - Non-Euro area countries that acceded in 2004 or 2007;
- SN - Switzerland and Norway;
- USA - United States;
- JPN - Japan;
- BRIC - Brazil, Russia, India and China.

Figure 4A. Net Foreign Positions: Euro Area Creditor Countries, 2008 1/  
(Percent of GDP)



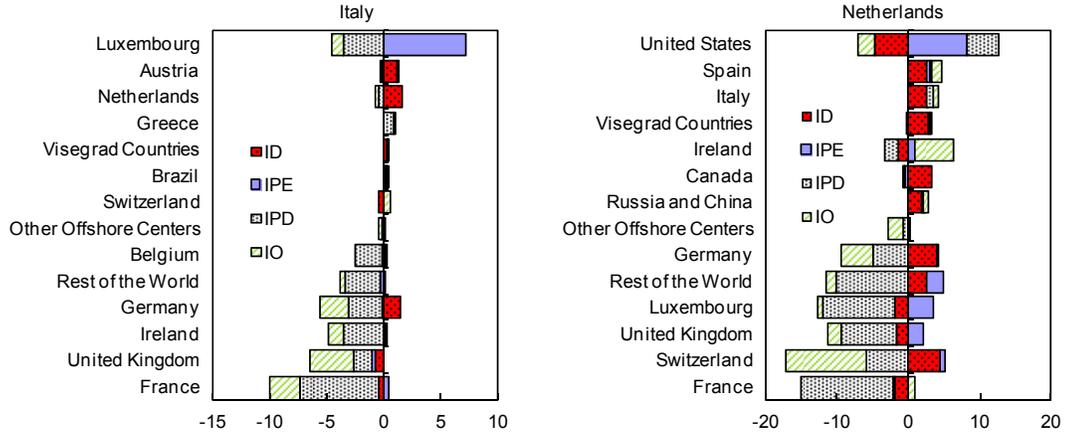
Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ ID is net direct investment;  
IPE is net portfolio equity;  
IPD is net portfolio debt;  
and IO is net other investment.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.  
Baltics is composed of Estonia, Latvia and Lithuania.  
Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data is available.  
Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Four, the Baltics, Other Offshore Centers and International Organizations.

Figure 4B. Net Foreign Positions: Euro Area Countries with Limited Financing Needs, 2008 1/  
(Percent of GDP)



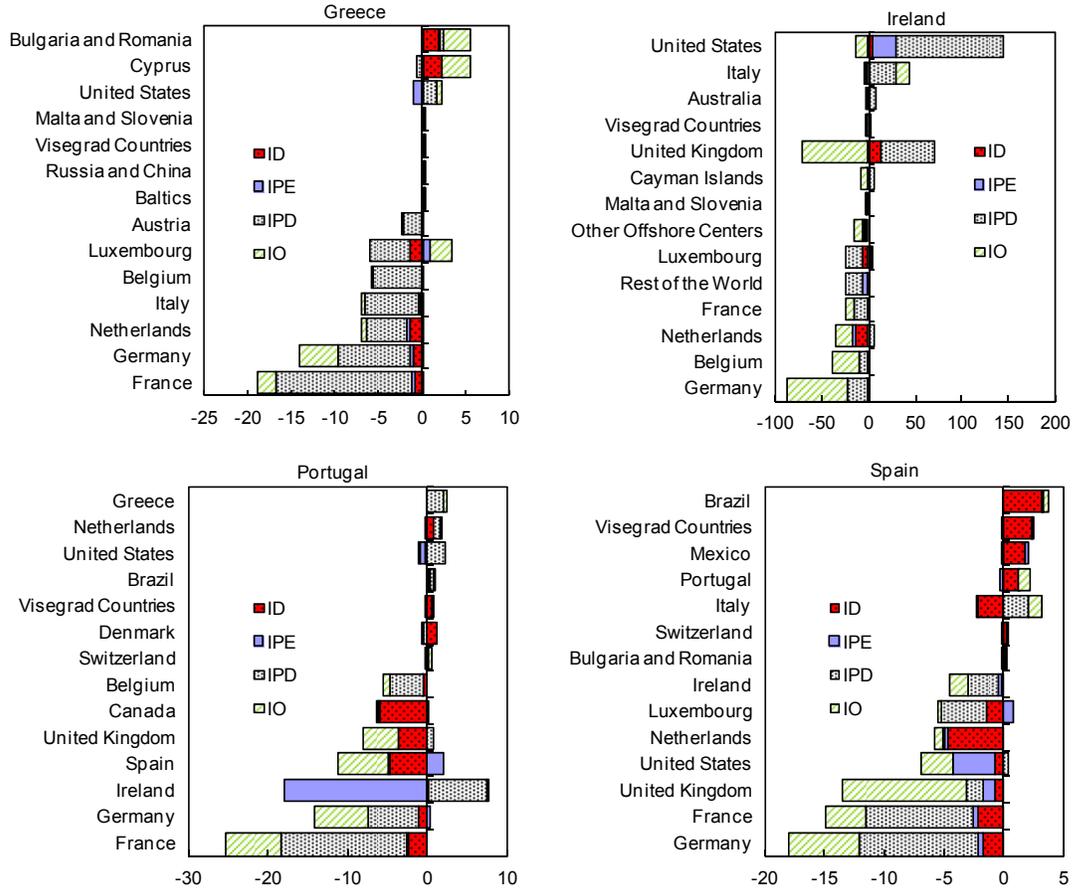
Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ ID is net direct investment;  
IPE is net portfolio equity;  
IPD is net portfolio debt;  
and IO is net other investment.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.  
Baltics is composed of Estonia, Latvia and Lithuania.  
Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data is available.  
Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Four, the Baltics, Other Offshore Centers and International Organizations.

Figure 4C. Net Foreign Positions: Euro Area Countries with Significant Financing Needs, 2008 1/  
(Percent of GDP)



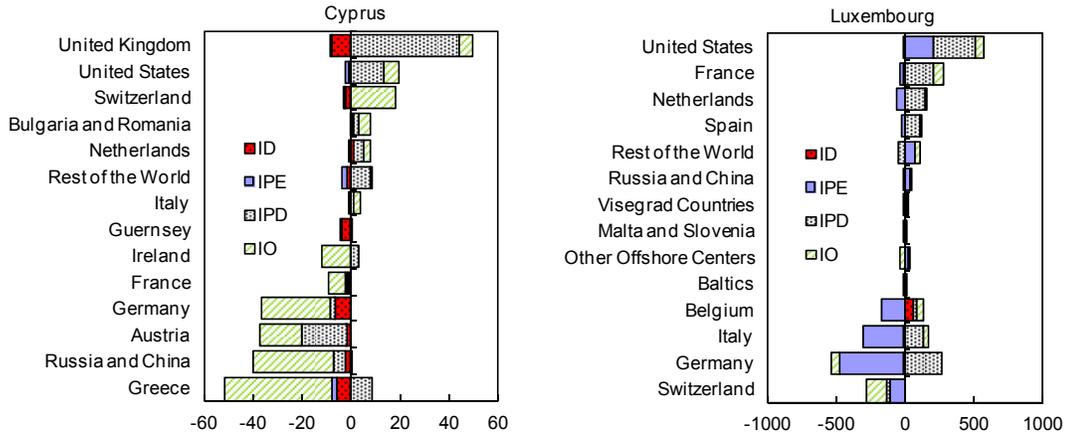
Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ ID is net direct investment;  
IPE is net portfolio equity;  
IPD is net portfolio debt;  
and IO is net other investment.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.  
Baltics is composed of Estonia, Latvia and Lithuania.  
Other Offshore Centers exclude the Cayman Islands, Guemsey and Jersey, for which bilateral data is available.  
Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Four, the Baltics, Other Offshore Centers and International Organizations.

Figure 4D. Net Foreign Positions: Other Euro Area Countries, 2008 1/  
(Percent of GDP)



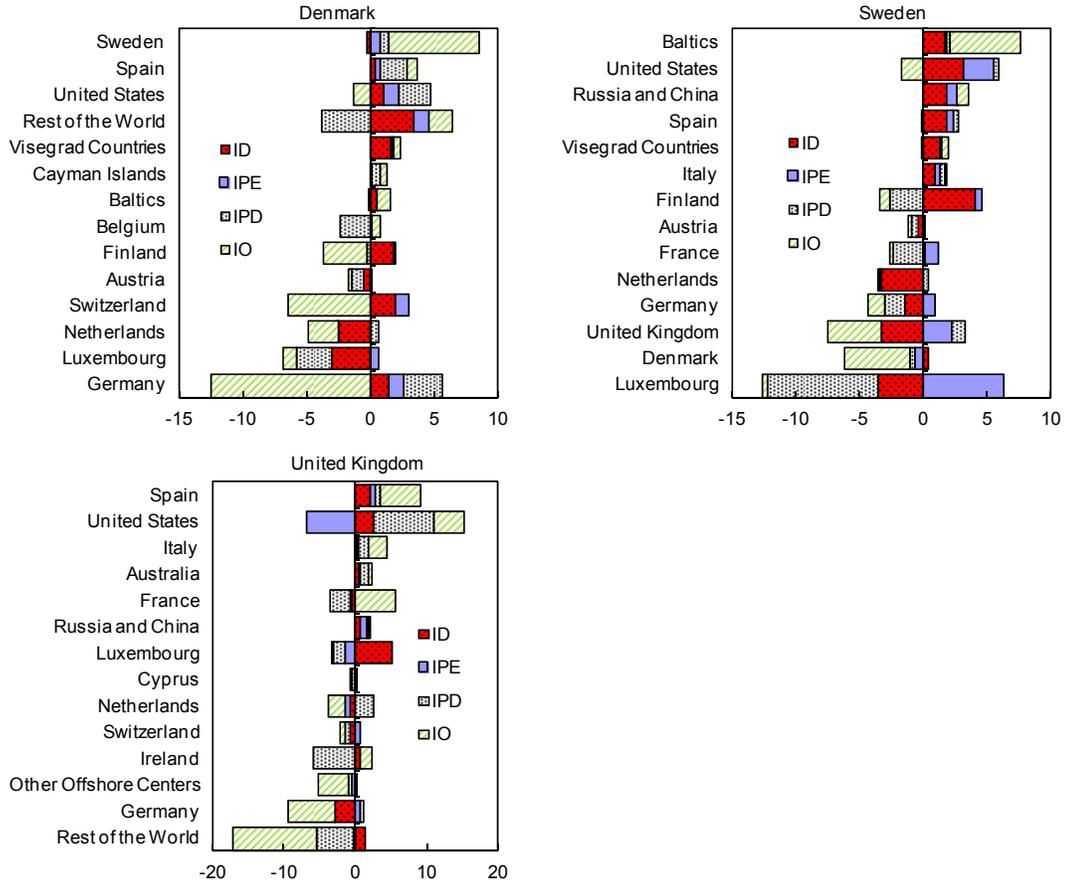
Sources : IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ ID is net direct investment;  
IPE is net portfolio equity;  
IPD is net portfolio debt;  
and IO is net other investment.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.  
Baltics is composed of Estonia, Latvia and Lithuania.  
Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data is available.  
Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Four, the Baltics, Other Offshore Centers and International Organizations.

Figure 4E. Net Foreign Postions: Other European Creditor Countries, 2008 1/  
(Percent of GDP)



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ ID is net direct investment;

IPE is net portfolio equity;

IPD is net portfolio debt;

and IO is net other investment.

Notes:

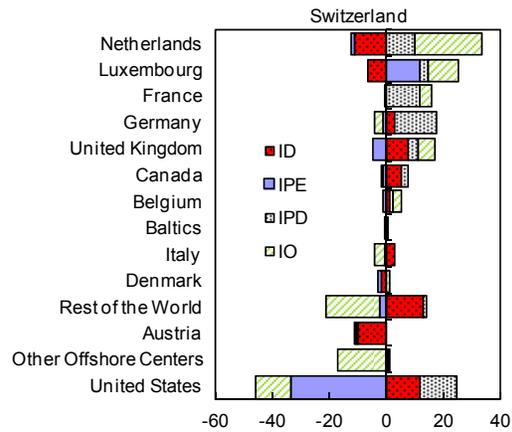
Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guernsey and Jersey, for which bilateral data is available.

Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Four, the Baltics, Other Offshore Centers and International Organizations.

Figure 4F. Net Foreign Postions: Switzerland, 2008 1/  
(Percent of GDP)



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

1/ ID is net direct investment;

IPE is net portfolio equity;

IPD is net portfolio debt;

and IO is net other investment.

Notes:

Visegrad Countries are Czech Republic, Hungary, Poland and Slovakia.

Baltics is composed of Estonia, Latvia and Lithuania.

Other Offshore Centers exclude the Cayman Islands, Guemsey and Jersey, for which bilateral data is available.

Rest of the World is composed of other BIS non-reporting countries excluding the Visegrad Four, the Baltics, Other Offshore Centers and International Organizations.

## Appendix I. Summary of Data Construction and Gaps

### 1- Data sources

There is no bilateral information on Reserves and Financial derivatives– which represent less than 10 percent of total assets and liabilities for most, but not all, countries (see Figure I-5). For other components of the International Investment Positions, international sources used are:

- For bilateral *direct investment* : the OECD, FDI positions by partner country,
- For *portfolio investment* (equity and debt): the IMF’s Coordinated Portfolio Investment Survey (CPIS)
- For *Other investment*, BIS locational statistics.

Information on the structure of *direct investment* is pulled from the OECD in most cases (Czech Republic, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Norway, Netherlands, Poland, Portugal, Slovakia, Spain, Sweden and Switzerland), from national sources (Austria, Denmark, Estonia, Hungary, Latvia, Lithuania, UK) or from ECB or Eurostat sources (Bulgaria, Cyprus, Malta, Romania and Slovenia). For Belgium, the total direct investment data is derived from mirror positions.

Reporting on *portfolio information on the asset side* to CPIS is good throughout our sample – with the exception of Lithuania and Slovenia. However, as we use mirror CPIS data to assess liabilities, it is important to note that participation to CPIS is voluntary, with 75 participants so far<sup>26</sup> – and some key players missing (in particular China and several oil exporters), which creates an a gap between *portfolio liabilities* as reported in EDSS and liabilities we are able to allocate.

The main complications emanate from *Other investment* data.

For *Other investment, banks*, while reported data is directly used for BIS participating countries to describe bilateral banking claims and liabilities, we use mirror data for BIS non-reporting countries on both the asset and liability sides. Relying on information provided by BIS reporting countries on their banks’ assets and liabilities vis-à-vis banks of the non-reporting country concerned provides part of the information, but we essentially miss two things: the concerned country’s (i) bilateral bank claims and liabilities on banks from other non-reporting countries and (ii) bank claims and liabilities on all (non-resident) non-banks.

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<sup>26</sup> In addition to our 27 countries: Argentina, Aruba, Australia, Bahrain, Bermuda, Brazil, Canada, Cayman Islands, Chile, Colombia, Costa Rica, Egypt, Guernsey, Hong Kong SAR of China, Iceland, Indonesia, Isle of Man, Israel, Japan, Jersey, Kazakhstan, Republic of Korea, Lebanon, Macao SAR of China, Malaysia, Mauritius, Netherlands Antilles, New Zealand, Philippines, Russian Federation, Singapore, South Africa, Thailand, Turkey, Ukraine, United States, Uruguay, República Bolivariana de Venezuela.

There were 41 reporting BIS countries for locational banking data at the end of 2008, with China, the Russian federation (both identified among the 25 countries with biggest, most interlinked financial sectors by a recent IMF study) and several oil exporters among the non-reporting countries.

Table I -1  
Reporting countries providing locational banking data\*

Australia (1997)	Denmark (1977)	Japan (1977)	Portugal (1997)
Austria (1987)	Finland (1983)	Jersey (2001)	Singapore (1983)
Bahamas <sup>1</sup> (1983)	France (1977)	Luxembourg (1977)	South Korea (2005)
Bahrain (1983)	Germany (1977)	Macao SAR (2006)	Spain (1983)
Belgium (1977)	Greece (2003)	Malaysia (2008)	Sweden (1977)
Bermuda (2002)	Guernsey (2001)	Mexico (2003)	Switzerland (1977)
Brazil (2002)	Hong Kong SAR (1983)	Netherlands (1977)	Turkey (2000)
Canada (1977)	India (2001)	Netherlands Antilles (1983)	United Kingdom (1977)
Cayman Islands (1983)	Ireland (1977)	Norway (1983)	United States (1977)
Chile (2002)	Isle of Man (2001)	Panama (2002)	
Chinese Taipei (2000)	Italy (1977)		

<sup>1</sup> Reports semi-annual data only.

Source: Guidelines to the international locational banking positions, BIS, updated in December 2008.

We are further using mirror data to capture part of *Other investment, non banks* –mirror data containing information of claims and liabilities of non-resident banks on resident non-banks. This misses a number of bilateral positions: those involving (i) non-resident banks from BIS non-reporting countries and (ii) relations between non-banks and non-banks. We choose however *not to* make assumptions (such as assuming that the structure derived for part of the Other investment aggregate applies to its totality, or even to the whole sub-aggregate Other investment, non banks) and to classify as “unallocated” the missing parts (or the parts in excesses, in the few cases where reported bilateral positions is greater than the authorities’ aggregate numbers).

For the UK, an alternative source could have been the Annual Pink Book published by the Office of National Statistics (<http://www.statistics.gov.uk/statbase/product.asp?vlnk=1140>). While Other Investment data published in the Pink book cover banks and non-banks financial positions, bilateral coverage is limited to a smaller number of countries – total coverage being roughly similar to the data derived from BIS sources. Comparison between the two sources provides, however, an indication of the size of non banks to non banks position for a selected group of countries.

Table I - 2. United Kingdom: Comparison of Other Investment Data, 2008

	IMF Database (USD Billions)	Pink Book (USD Billions)	Coverage 1/ (Percent)
Belgium	176	181	97
France	462	541	85
Germany	500	602	83
Ireland	338	399	85
Italy	139	160	87
Luxembourg	167	198	84
Netherlands	383	422	91
Spain	243	282	86
Norway	54	64	85
Switzerland	225	238	94

Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and UK Pink Book from ONB.

## 2- Gaps

Tracking unallocated data provides a good benchmark of possible measurement errors and gaps in our data coverage. Figure I - 1 reports gaps in assets and liabilities under Portfolio investment, Foreign direct investment, and Other investment for each country, at end-2007.

The figure presents a bar chart on the evolution of the (GDP weighted) unallocated asset data as a percent of total assets, broken down by asset category. The size of unallocated assets (as a percent of total external assets) tends to be decreasing with time –reflecting improved coverage and reporting. 2008 marks a rebound, consistent with the fact that bilateral data are not yet fully available, and that the consistency is improved over time, with data being revised.

By asset category, it appears that the unallocated amount is to a large part due to limited coverage of other investments.

A similar exercise on the liability side indicates overall slightly larger unallocated liabilities, with notably a larger share of unallocated portfolio liabilities, reflecting uncertainty on the final holder. This is in large part due to the reliance of CPIS liabilities data on derived mirror data from participating countries' reported assets.

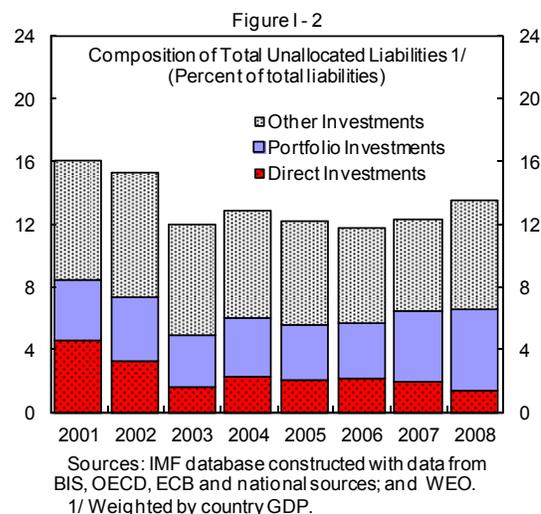
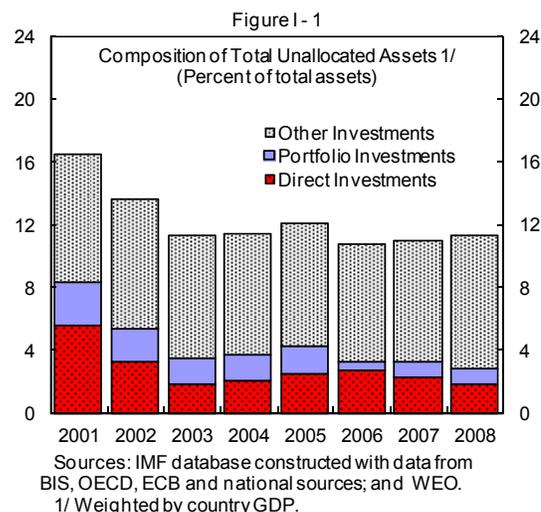
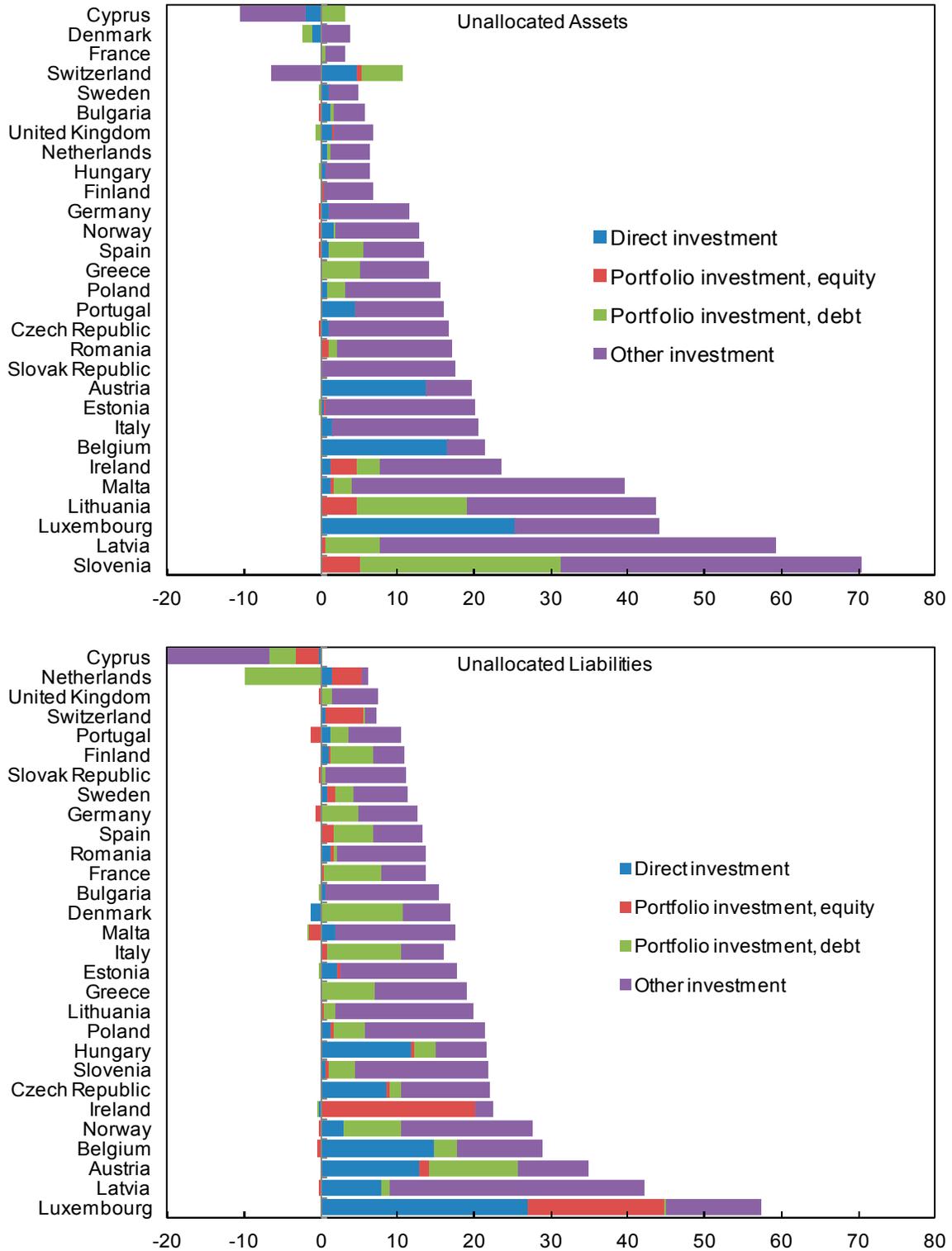
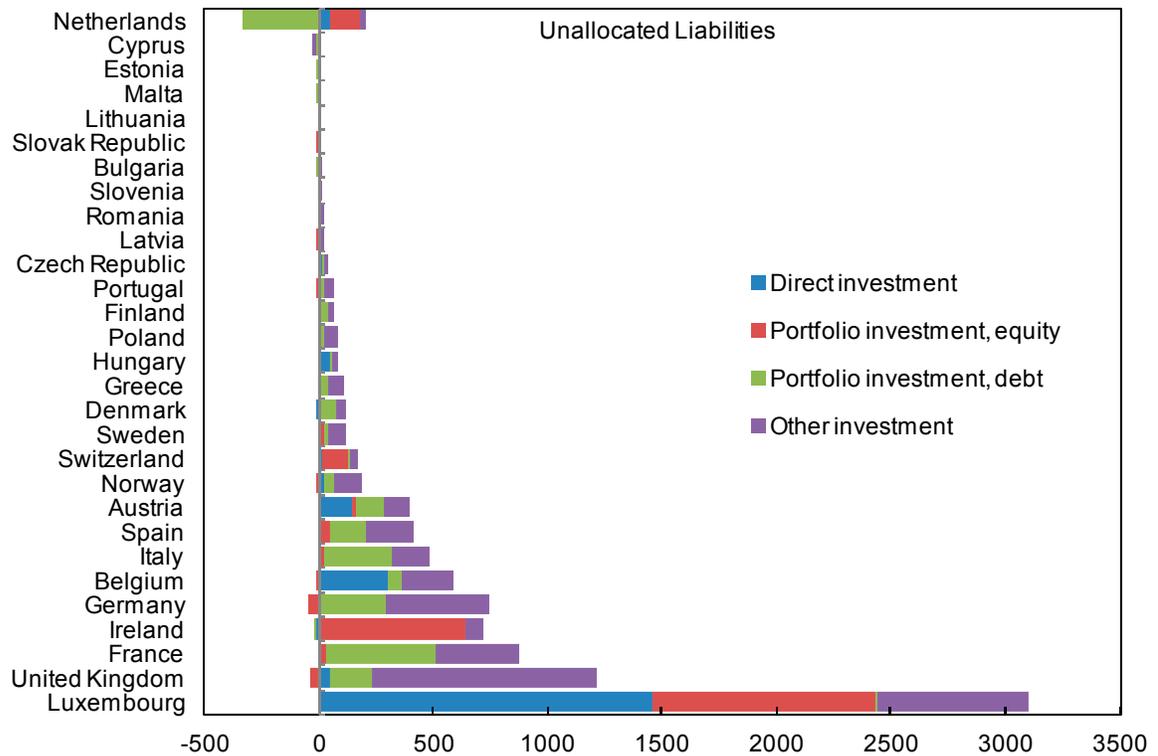
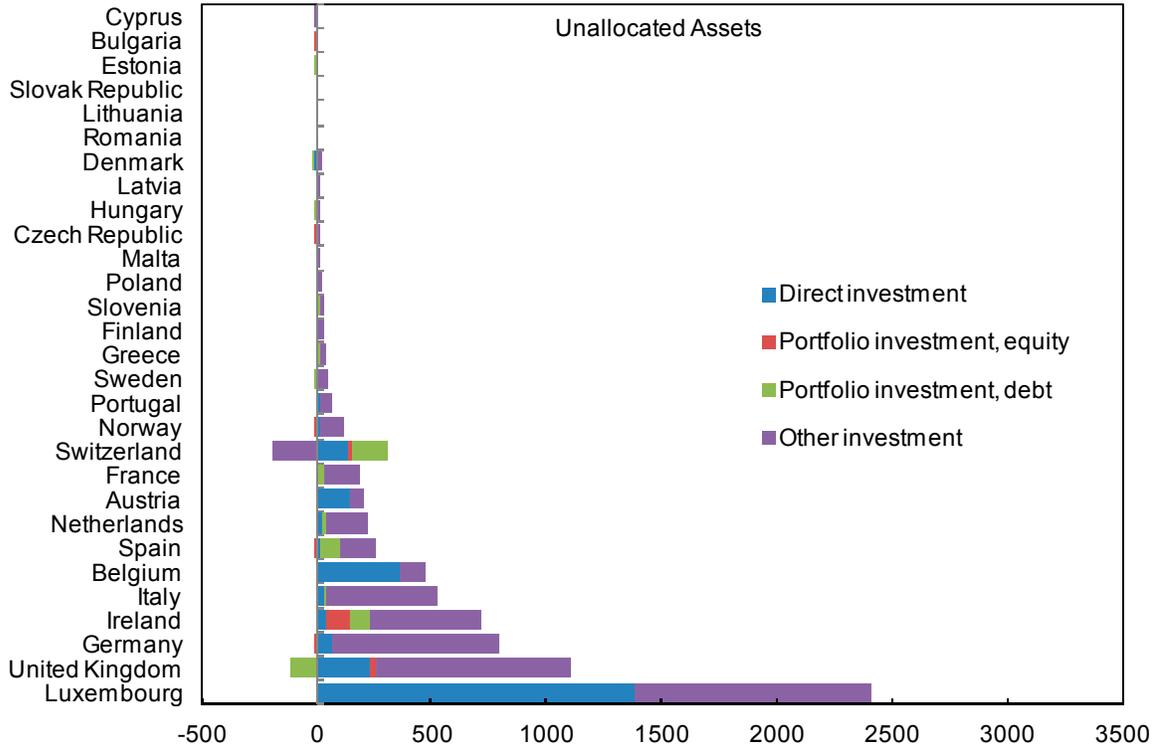


Figure I - 3. Unallocated Assets and Liabilities, 2008 1/  
(Percent of total)



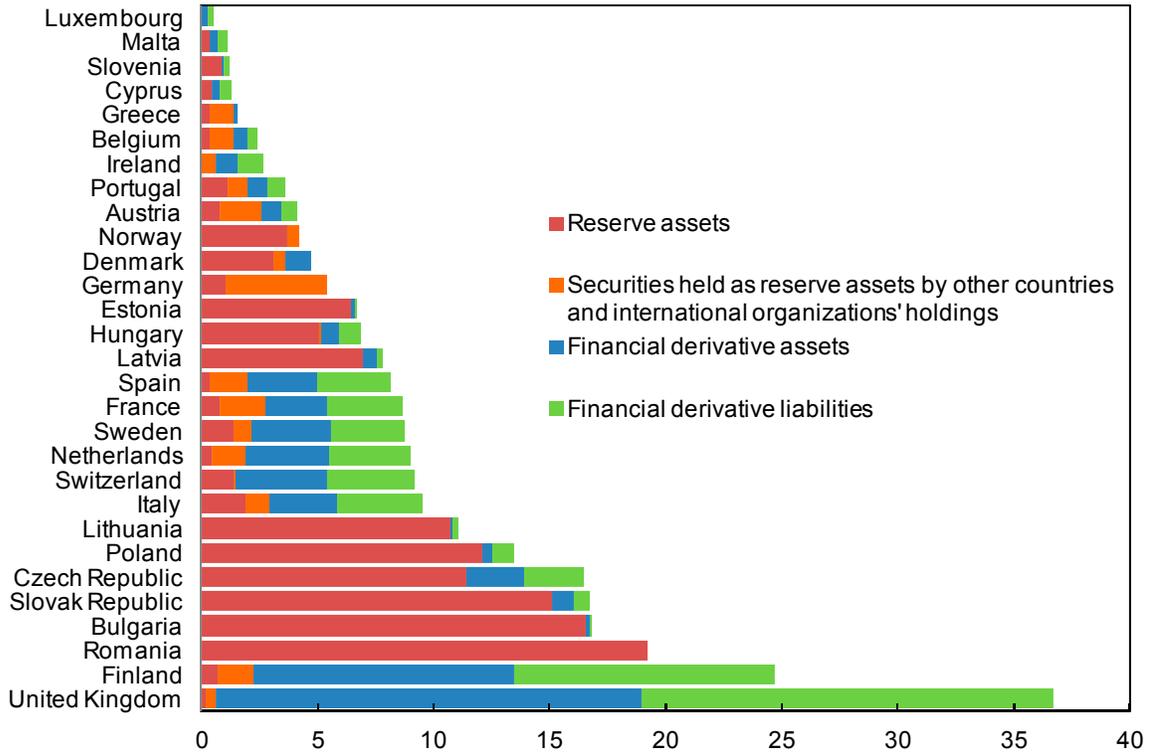
Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.  
1/ Data is presented as total unallocated assets and liabilities in percent of total aggregate assets and liabilities, respectively.

Figure I - 4. Unallocated Assets and Liabilities, 2008  
(USD Billions)



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

Figure I - 5. Share of Reserves and Financial Derivatives, 2008  
(Percent of total assets and liabilities)



Sources: IMF database constructed with data from BIS, OECD, ECB and national sources; and WEO.

## Appendix II. Locational versus Consolidated BIS data

*BIS locational banking statistics* present aggregate international claims and liabilities of all banks (including affiliates of foreign banks) resident in a reporting country. The residency principal follows balance of payments guidelines and is what we used in the construction of the database. The main items include: (i) loans and deposits; (ii) debt securities; and (iii) other assets and liabilities (e.g. equity shares, derivatives).

On the other hand, *BIS consolidated banking statistics* are compiled on a group world-wide (headquarter) basis, and include exposures of foreign affiliates (subsidiaries and branches) of the same banking group. Consolidated data are collected on both an “immediate borrower” and “ultimate risk” basis. The difference between two data sets of consolidated banking statistics is based upon risk transfer instruments, which reallocate external claims via risk transfer vehicles to the country of ultimate risk. Consolidated data on an ultimate basis, therefore provide the best snap shot of true cross border bank exposures.

*Consolidated and locational banking statistics* differ for a variety of reasons, and direct comparisons are inherently problematic. Below is a listing of some of the key differences as far as claims are concerned:

- Inter-office positions are netted out of consolidated statistics, while they are included in locational data.
- Local claims in local currency are large for many banks, and are only included in consolidated data.
- Locational statistics cover banks' offices/affiliates that are located in the BIS reporting countries (43 countries) whereas consolidated banking statistics by nationality cover banks' headquartered in BIS reporting countries, but includes information on the positions of their offices/affiliates in all countries in the World.
- Reporting institutions in locational statistics also include in many cases non-banks (e.g. brokers and dealers) but only banks in the case of consolidated statistics.

Table II-1. Comparison of External and Foreign Claims of Reporting Banks, end-2007  
(in billions of US\$)

Location / Parent country of banks	Locational external claims of banks 1/	Consolidated foreign claims 2/	Consolidated minus locational
Austria	483	540	57
Belgium	1,162	1,353	192
Finland	102	8	-94
France	2,814	3,552	738
Germany	3,561	4,257	696
Greece	124	91	-33
Ireland	1,030	743	-287
Italy	648	1,111	464
Netherlands	1,326	2,442	1,116
Portugal	139	142	3
Spain	613	1,220	607
Sweden	337	691	354
Switzerland	1,539	2,544	1,005
United Kingdom	6,844	4,005	-2,839

Source: BIS and staff estimates.

1/ Table 2A of the BIS Locational Banking Statistics; external positions of banks.

2/ Table 9D of BIS Consolidated Banking Statistics; consolidated foreign claims, ultimate risk basis.

- Locational banking statistics include all on-balance sheet items (instruments) but consolidated foreign or international claims do not include on-balance sheet derivatives claims (positive market value). Such positions are reported separately (see BIS Table 9C). Note that for our purposes we only take the loans and deposits component in locational statistics, to avoid double counting with portfolio (CPIS) data.