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Public Debt in the Flow-of-Funds Perspective

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Abstract

Since the global financial crisis of 2008-2009, public debt in advanced economies has increased substantially. In the past, people blamed the governments for the overwhelming public deficit; however, more recently, they began to notice that the real cause lies in the saving-investment imbalance in the private sector rather than in the lax fiscal policy of the government. According to the empirical evidence, almost all the countries, in which non-financial corporations are net savers, are suffering from government deficits. The real problem is that the mature economies are no longer investing enough to maintain the trade balance so that they cannot invest the surplus funds abroad either because of the balance of payments constraint.

JEL Codes: E01, E62, H62

Keywords: saving-investment imbalance; national accounting;
balance of payments constraint

1. Introduction

Since the global financial crisis of 2008-2009, public debt in advanced economies has increased substantially. As Nelson (2013) pointed out, high levels of debt in mature economies are a relatively new global concern, after decades of attention on debt levels in developing and emerging countries. Four eurozone countries, Greece, Portugal, Ireland and Cyprus have turned to IMF and other European governments for financial assistance in order to avoid defaulting on their public debts. There are also concerns about the sustainability of public debt in Japan and the US, and more recently, also in the major European countries. As of the end of 2015, the stock of gross central government debt exceeded annual nominal GDP in five OECD countries: Japan, Greece, Portugal, Italy and Ireland. The ratio of the former to the latter is over eighty percent in seven more countries: United States, United Kingdom, Belgium, Spain, Iceland, France and Slovenia. In the past, people blamed the governments for the high public debt-GDP ratio; however, more recently, they began to notice that the real cause lies in the saving-investment imbalance in the private sector rather than in the lax fiscal policy of the government.

Fisher and Easterly (1990) were one of the first authors who approached the public debt problem from the macroeconomic perspective. They clarified the logical relationship between the public debt and the net external debt using macroeconomic identities. Ruggles and Ruggles (1992) and Ruggles (1993) were the pioneers of the empirical study in this field; they pointed out that the public debt problem was best approached from the viewpoint of private-sector saving-investment imbalances. According to their study, in the perspective of national accounting, the real problem is the saving glut and dearth of investment in the private sector. Over the past decades, a combination of diverse forces has created a significant increase in the supply of saving in the mature economies — a

saving glut. Bernanke (2005) argued that one source of the saving glut is the strong saving motive of rich countries with aging populations, which must make provision for a impeding sharp increase in the number of retirees relative to the number of workers. With slowly growing or declining workforces, as well as high capital-labor ratios, many advanced economies face an apparent dearth of domestic investment opportunities.

This paper is organized as follows. In section 2, we will mathematically investigate into the relationship between each account of the national accounting system from the viewpoint of vertical double entry and horizontal double entry. Section 3 observes saving-investment imbalance of each country using the National Accounts of the OECD Countries and OECD Database on Balance of Payments Statistics for 2000-2014. The last section provides our concluding remarks with respect to the role of government debt in the mature economies.

2. Fundamental Analytical Framework

2.1 Vertical double entry and net lending or net borrowing

Let us suppose a national accounting system as depicted in Table 1, which consists of four accounts: income and outlay account, capital account, financial account and the balance sheet. We assume that the balance sheet, which is the foundation of the system, consists of only three items: financial assets (F_{st}), liabilities (L_{st}), and non-financial assets (N_{st}). Subscript $s = 1, \cdots, S$ indicates the s th institutional sector and $t = 1, \cdots, \tau$ refers accounting period. The assets are recorded on the left-hand side while the liabilities are listed on the right hand side of the T-shaped balance sheet. We define net worth (W) and financial net worth (V) as follows:

$$W_{st} \equiv F_{st} + N_{st} - L_{st} \quad ; \tag{1}$$

$$V_{st} \equiv F_{st} - L_{st} \quad . \tag{2}$$

[Table 1]

The changes in non-financial assets are recorded in the capital accounts while that of financial assets and liabilities are listed in the financial accounts. ΔN^{+} (ΔN^{-}), ΔF^{+} (ΔF^{-}), ΔL^{+} (ΔL^{-}) are increase (decrease) in non-financial assets, financial assets, and liabilities during an accounting period, respectively. All of them are supposed to be either positive or zero. From the definition of net worth (equation (1)) and above notations, the changes in net worth could be expressed as follows:

$$\Delta W_{st} = \left(\Delta F_{st}^{+} - \Delta L_{st}^{+} + \Delta N_{st}^{+}\right) - \left(\Delta F_{st}^{-} - \Delta L_{st}^{-} + \Delta N_{st}^{-}\right) \ . \tag{3}$$

We further define, following paragraph 2.43 of SNA 2008, any factor that results in either increase or decrease of net worth during an accounting period as resource (R_{st}) and use (U_{st}) respectively. They are supposed to be either positive or zero and entered in the income and outlay accounts. By definition, resources minus uses equals the changes in net worth.

$$\Delta W_{st} = R_{st} - U_{st} \tag{4}$$

Equation (3) and (4) are the opposite sides of the same coin so that we have;

$$U_{ut} + \Delta F_{st}^{+} - \Delta L_{st}^{+} + \Delta N_{st}^{+} = R_{st} + \Delta F_{st}^{-} - \Delta L_{st}^{-} + \Delta N_{st}^{-} . \tag{5}$$

This equation shows the vertical double entry of each sector, where the uses, the increase in assets and the decrease in liabilities, are recorded on the left-hand side; and the resources, the decrease in assets and the increase in liabilities, are entered on the right-hand side of the account respectively.

Some key variables — saving, investment, net lending or net borrowing, and net

financial transactions — can be written in the following manner using the above notations. We define net saving of institutional sector s during accounting period t as total resources less uses:

$$S_{st}^{net} = R_{st} - U_{st} = \Delta W_{st} . \quad (6)$$

Note that total uses include the cost arising from the depreciation of capital, an equivalent of consumption of fixed capital in the present SNA, so that total resources less uses makes net saving. Consequently, we can obtain gross saving using the following equation:

$$S_{st}^{gross} = R_{st} - \left(U_{st} - \Delta N_{st}^{-}\right) . \quad (7)$$

We define investment or capital formation either in net or gross terms as an increment of non-financial assets during the period:

$$I_{st}^{net} = \Delta N_{st}^{+} - \Delta N_{st}^{-}; \qquad I_{st}^{gross} = \Delta N_{st}^{+} . \quad (8)$$

Net lending or net borrowing (*NLNB*) is written in the following manner using the above variables:

$$\Delta V_{st}^{NLNB} = \left(R_{st} - U_{st}\right) - \left(\Delta N_{st}^{+} - \Delta N_{st}^{-}\right) = S_{st}^{net} - I_{st}^{net} \quad (9)$$

Alternatively, we can obtain net lending or net borrowing from the gross variables:

$$\Delta V_{st}^{NLNB} = \left\{R_{st} - \left(U_{st} - \Delta N_{st}^{-}\right)\right\} - \Delta N_{st}^{+} = S_{st}^{gross} - I_{st}^{gross} \quad (10)$$

Thus, net lending or net borrowing is the balance of saving and investment either in net or gross terms. Besides, from the definition of net worth (equation (2)), net financial transactions (*NFT*) is written in the following manner:

$$\Delta V_{st}^{NFT} = \left(\Delta F_{st}^{+} - \Delta F_{st}^{-}\right) - \left(\Delta L_{st}^{+} - \Delta L_{st}^{-}\right) = \Delta F_{st} - \Delta L_{st} . \quad (11)$$

From equations (5),

$$\left(R_{st} - U_{st}\right) - \left(\Delta N_{st}^{+} - \Delta N_{st}^{-}\right)$$

$$= \left\{ R_{st} - \left(U_{st} - \Delta N_{st}^{-} \right) \right\} - \Delta N_{st}^{+}$$

$$= \left(\Delta F_{st}^{+} - \Delta F_{st}^{-} \right) - \left(\Delta L_{st}^{+} - \Delta L_{st}^{-} \right). \quad (12)$$

In other words,

$$S_{st}^{net} - I_{st}^{net} = S_{st}^{gross} - I_{st}^{gross} = \Delta F_{st} - \Delta L_{st}; \quad (13)$$

so that

$$\Delta V_{st} \equiv \Delta V_{st}^{NLNB} = \Delta V_{st}^{NFT}. \quad (14)$$

The above equation proves that net lending or net borrowing is measured identically both in the capital account (as the saving-investment balance) and in the financial accounts (as the net financial transactions) as paragraph 2.113 of SNA 2008 claims.

If a sector has net lending, i.e. $\Delta V_{st} = S_{st} - I_{st} > 0$ (S_{st} and I_{st} can be either net or gross), there are three possible situations:

either $S_{st} \geq 0$ and $I_{st} \geq 0$ and $S_{st} > I_{st}$; (15)

or $S_{st} \geq 0$ and $I_{st} \leq 0$; (16)

or $S_{st} \leq 0$ and $I_{st} \leq 0$ and $S_{st} > I_{st}$. (17)

Equation (15) depicts the most common case, in which both the saving and investment of the sector is positive, but the former is greater than the latter. In equation (16), net investment is negative because new investment is less than the amount of the disposal of non-financial assets or the consumption of fixed capital. Equation (17) is the case, in which the sector is eating up its own capital. Likewise, if a sector has net borrowing, i.e. $\Delta V_{st} = S_{st} - I_{st} < 0$, again there are three possible situations:

either $S_{st} \geq 0$ and $I_{st} \geq 0$ and $S_{st} < I_{st}$; (18)

or $S_{st} < 0$ and $I_{st} \geq 0$; (19)

or $S_{st} \leq 0$ and $I_{st} \leq 0$ and $S_{st} < I_{st}$. (20)

Equation (18) depicts the most common case, in which both the saving and investment of the sector is positive, but the former is less than the latter. In equation (19), although the sector is dissaving, it is accumulating capital goods by borrowing from other sectors. Equation (20) is the case, in which the sector is not only eating up its own capital, but also borrowing from other sectors.

2.2 Public Debt in the framework of Horizontal double entry

Since paragraph 2.58 of SNA 2008 states that a financial asset and its liability counterpart have to be recorded for the same amount in the creditor and debtor accounts, which is referred to as current buy-back cost accounting principle, the following equation holds:

$$\sum_{s=1}^{S} \Delta F_{st} = \sum_{s=1}^{S} \Delta L_{st} \; ; \tag{21}$$

where S is the number of institutional sectors including the dummy sector called ‘rest of the world’. Therefore,

$$\sum_{s=1}^{S} \Delta V_{st} = \sum_{s=1}^{S} \Delta V_{st}^{NFT} = \sum_{s=1}^{S} \Delta F_{st} - \sum_{s=1}^{S} \Delta L_{st} = 0 . \tag{22}$$

In other words, the sum of net lending or net borrowing across all the sectors is zero. It means that if a sector has net lending, some other sector(s) should offset it by net borrowing and vice versa. Furthermore, from equations (14) and (22),

$$\sum_{s=1}^{S} \Delta V_{st}^{NLNB} = \sum_{s=1}^{S} R_{st} - \sum_{s=1}^{S} U_{st} - \sum_{s=1}^{S} \Delta N_{st}^{+} + \sum_{s=1}^{S} \Delta N_{st}^{-} = \sum_{s=1}^{S} S_{st} - \sum_{s=1}^{S} I_{st} = 0 . \tag{23}$$

The above equation ascertains that net lending or net borrowing is equivalent to the saving-investment balance.

In order to address the public debt problem, we simply aggregate the institutional sectors into three categories: domestic private sector (H), domestic public sector (G) and

rest of the world (R). Equation (22) or (23) could be rewritten as follows:

$$\Delta V_{Ht} + \Delta V_{Gt} + \Delta V_{Rt} = 0; \tag{24}$$

where

$$\Delta V_{Ht} = \left(\Delta F_{Ht} - \Delta L_{Ht}\right) = \left(R_{Ht} - U_{Ht}\right) - \left(\Delta N_{Ht}^{+} - \Delta N_{Ht}^{-}\right);$$

$$\Delta V_{Gt} = \left(\Delta F_{Gt} - \Delta L_{Gt}\right) = \left(R_{Gt} - U_{Gt}\right) - \left(\Delta N_{Gt}^{+} - \Delta N_{Gt}^{-}\right);$$

$$\Delta V_{Rt} = \left(\Delta F_{Rt} - \Delta L_{Rt}\right) = \left(R_{Rt} - U_{Rt}\right).$$

Note that non-financial assets are not recorded in the rest-of-the-world sector so that the net increase in financial assets ($\Delta F_{Rt} > \Delta L_{Rt}$), which is the external deficit for domestic economy, are equivalent to the balance of resources over uses ($R_{Rt} > U_{Rt}$), which is equivalent to the net exports from the viewpoint of the domestic economy. Solving equation (24) for ΔV_{Gt}, we have $\Delta V_{Gt} = -\Delta V_{Ht} - \Delta V_{Rt}$. Therefore, in the perspective of the horizontal double entry, the public debt (negative ΔV_{Gt}) is a consequence of either positive ΔV_{Ht} or ΔV_{Rt}. The former is the excess saving over investment in the domestic private sector (discussed in equations (15), (16), (17)) and the latter implies an unfavorable balance of trade.

3. Empirical Evidence

We obtained the data of gross saving, gross capital formation, and net lending or net borrowing for each institutional sector from the OECD National Accounts Statistics, which include 28 OECD countries plus six non-OECD countries — China, Colombia, Latvia, Lithuania, Russia and South Africa. While the data of many of the countries are

based on SNA 2008, other countries still publish data based on SNA 1993; however, the presentation format is standardized. Figure 1 depicts the net lending or net borrowing of each institutional sector for 2014 in proportion to the nominal GDP of the country. The data for the countries with '*' are for 2013 because the data for 2014 is not available yet. The institutional sectors are non-financial corporations, financial corporations, general government, household/NPISH (non-profit institutions serving households) and rest of the world. The data is obtained from the 'changes in net worth due to saving and capital transfers account' and 'acquisition of non-financial assets account', which are equivalent to the capital account mentioned in the previous section.

[Figure 1]

Figure 1 reveals that the NLNB for general government is negative in 26 out of 34 countries, of which the NLNB for non-financial corporations are positive in 18 countries: Austria, Belgium, Finland, Greece, Hungary, Ireland, Italy, Japan, Latvia, Lithuania, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, United Kingdom and United States. The finding implies that dearth of domestic investment is at least one of the main causes of the government deficits. Among these countries, the NLNB for both households/NPISH and non-financial corporations are positive in eleven countries including Austria, Belgium, Hungary, Italy, Japan, Netherlands, Portugal, Slovak Republic, Slovenia, Spain and United States; these countries are apparently suffering from saving glut as well as from dearth of domestic investment.

[Figure 2]

Figure 2 illustrates the fluctuations in the NLNB for non-government and government sectors and rest of the world. There are obvious negative correlation between the NLNB of the sectors in most of the countries; the correlation coefficients are listed in

Table 2. All the coefficients that is statistically significant at five percent significance level are negative. We can classify the countries into three groups according to the pair of the sectors that show the highest correlation as in Table 3. In 18 out of 34 countries, the highest correlation is observed between the NLNB for non-government sector and the rest of the world; we will refer to them as Group I. As in Switzerland, which is depicted in Figure 2-1, the green line, which depicts the fluctuations in the NLNB of the rest of the world, is a mirror image of the blue line, which illustrates that of the non-government sector. This is most probably because the private sector saving is coming from the current-account surplus that reflects the trade balance etc.

[Table 2]

[Table 3]

In majority of the countries that does not belong to Group I, the highest correlation is observed between the NLNB of the non-government and government sectors; we will refer to them as Group II. As in Japan, which is depicted in Figure 2-2, the red line, which depicts the fluctuations in the NLNB of the government sector, is somewhat a mirror image of the blue line, which illustrates that of the non-government sector. Although the non-government sector with its aging population is accumulating savings preparing for the retirement, the country is no longer running a current account surplus enough to accommodate it because of the dearth of investment that is hampering the competitiveness of the country in the world trade market. As detailed in the section 2.2, the financial account balance must more or less coincide with the current account balance and vice versa because the capital account balance is negligible in most countries.

In Finland, France and Norway, the highest correlation is observed between the NLNB for the government sector and the rest of the world. As in Norway, which is

depicted in Figure 2-3, the green line, which depicts the fluctuations in the NLNB of the rest of the world, is somewhat a mirror image of the red line, which illustrates that of the government sector. In this country, the government is running a budget surplus throughout the observation period because of the huge revenue from the oil and gas production plus that from the *Oljefondet* (oil fund). Undoubtedly, the country has enormous trade surplus from the oil so that the government has no difficulty to invest abroad as much as they wish.

[Table 4]

[Figure 3]

As we have mentioned earlier, if the NLNB of the government sector is negative, there are two possibilities: the saving of the sector is either positive or negative. Table 4 lists the proportion of years in which gross saving of the government sector was negative. We found that gross saving was negative in the majority of the observed years in seven countries: Greece, Hungary, Japan, Poland, Portugal, United Kingdom and United States (Figure 3). It is noteworthy that in five of the listed countries, the stock of gross central government debt is more than 80 percent of the nominal GDP. The exceptions are Hungary and Poland, two former communist countries, whose government had some wealth from the sale of assets through the privatization program.

[Figure 4]

Figure 4 depicts the fluctuations in the goods and services account and financial account balances for each country, which are obtained from OECD Database on Balance of Payments Statistics according to BPM6 classifications. This statistics includes not only all the countries that publish the national accounts data except for Mexico but also includes the following nine countries: Australia, Brazil, Canada, India, Indonesia, Israel,

Luxembourg, New Zealand and Turkey. Since, in most of the countries, the goods and services account is the dominant account among the current and capital accounts, a high correlation is observed between the trade (i.e. goods and services) and financial account balances (see table 5). The correlation coefficients are positive and statistically significant at five percent significance level in 28 out of 42 countries; the exceptions are Australia, Brazil, China, Finland, Indonesia, Ireland, Israel, Luxembourg, Netherlands, New Zealand, Norway, Sweden, Switzerland and United Kingdom.

[Table 5]

The positive trade balance means exports of the country is exceeding the imports from abroad while negative number implies that the imports are greater than the exports. In the meantime, the positive financial account balance shows the country is accumulating external assets or repaying debt while the negative number indicates either decreasing external assets or new borrowing from abroad. Both the trade and financial account balances are negative for the majority of observed periods in 18 out of 42 countries. The countries are Australia, Colombia, Estonia, France, Greece, Iceland, India, Latvia, Lithuania, Poland, Portugal, Slovak Republic, Spain, South Africa, Turkey, United Kingdom and United States. Among these countries, the net lending or net borrowing (NLNB) for both households/NPISH and non-financial corporations are positive in three countries that include Portugal, Spain and United States (see figure 3); these countries are apparently suffering from saving glut as well as from dearth of domestic investment. The problem is that these countries have no investment opportunities abroad because they are running trade deficits. The good news is that Portugal and Spain are producing trade surplus in the more recent years.

4. Concluding Remarks

According to Figure 1, in 21 out of 34 countries, the non-financial corporations are net savers rather than investors. Almost all of these countries are suffering from the deficit in the government sector; the only exceptions are Germany and Denmark. This will justify the claim that the real cause of the public deficit lies in the saving-investment imbalance in the private sector, rather than just in the lax fiscal policy of the government.

However, even if the private sector in total is a net lender, it does not necessarily mean that the public sector should run a fiscal deficit. For example, in Switzerland, the private sector saving is balanced by the external surplus rather than by the fiscal deficit. Therefore, in theory, other mature economies can learn from this example. The problem is that some mature economies are no longer competitive producers in the world market. Since these countries have trade deficits, they cannot invest in foreign capital because of the balance of payments constraint. One possible reason for this situation is the dearth of domestic investment. Not only the population but also the capital equipment is aging in these countries so that they cannot supply products attractive enough to foreign buyers. Another problem is that some governments are not using the raised funds in a proper manner. According to Figure 3, the government is dissaving in the majority of the years in seven countries: Greece, Hungary, Japan, Poland, Portugal, the United Kingdom and the United States. All the countries but Hungary and Japan ran trade deficit in the majority of the observed years; Japan is also suffering from trade deficit in the most recent years. This fact suggests that the government should carefully use the savings that the private sector has generated. If the private sector cannot invest it profitably, the government must find the best possible investment opportunity that will boost the competitiveness of the country as well as will provide for the needs of future retirees.

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Table 1: Summary Table of the National Accounting System

Flow Accounts

Account	Sector 1		⋯	Sector s		⋯	Sector S	
	Uses/ Assets	Resources/ Liabilities		Uses/ Assets	Resources/ Liabilities		Uses/ Assets	Resources/ Liabilities
Income & Outlay Account	U_{1t}	R_{1t}		U_{st}	R_{st}		U_{St}	R_{St}
Capital Account	ΔN_{1t}^{+} ΔN_{1t}^{-}			ΔN_{st}^{+} ΔN_{st}^{-}			ΔN_{St}^{+} ΔN_{St}^{-}	
Financial Account	ΔF_{1t}^{+} ΔF_{1t}^{-}	ΔL_{1t}^{+} ΔL_{1t}^{-}		ΔF_{st}^{+} ΔF_{st}^{-}	ΔL_{st}^{+} ΔL_{st}^{-}		ΔF_{St}^{+} ΔF_{St}^{-}	ΔL_{St}^{+} ΔL_{St}^{-}

Stock Accounts

Accounts	Sector 1		⋯	Sector s		⋯	Sector S	
	Assets	Liabilities		Assets	Liabilities		Assets	Liabilities
Balance Sheet	N_{1t} F_{1t}	L_{1t}		N_{st} F_{st}	L_{st}		N_{St} F_{St}	L_{St}

Table 2 Correlation Coefficients between the Net Lending or Net Borrowing of the Sectors

Country	Non-government Sector and Government Sector	Non-government Sector and Rest of the World	Government Sector and Rest of the World
Austria	−0.8120	−0.7915	0.2861
Belgium	−0.6964	−0.1126	−0.6347
Chile	−0.7748	−0.9036	0.4293
China	0.2221	−0.8122	−0.7287
Colombia	−0.2894	−0.9588	0.0056
Czech Republic	−0.6823	−0.6815	−0.0700
Denmark	−0.9001	−0.8200	0.4888
Estonia	−0.6095	−0.9727	0.4359
Finland	−0.3611	−0.2167	−0.8321
France	−0.5993	−0.1062	−0.7324
Germany	−0.2536	−0.8299	−0.3291
Greece	−0.2599	−0.7723	−0.4127
Hungary	0.1142	−0.9424	−0.4399
Iceland	−0.5372	−0.8089	−0.0613
Ireland	−0.9343	−0.3185	−0.0127
Italy	−0.3020	−0.7837	−0.3555
Japan	−0.8892	0.1572	−0.5798
Korea	−0.7447	−0.8873	0.3532
Latvia	−0.6753	−0.9704	0.4771
Lithuania	−0.6742	−0.9401	0.3820
Mexico	−0.5505	−0.7137	−0.1920
Netherlands	−0.8246	−0.8601	0.4206
Norway	−0.9001	0.6952	−0.9389
Poland	−0.7695	−0.7105	0.0972
Portugal	−0.5269	−0.8460	−0.0075
Russia	−0.8691	0.3296	−0.7520
Slovak Republic	−0.7051	−0.8776	0.2789
Slovenia	−0.9300	−0.8974	0.6723
South Africa	0.0383	−0.8664	−0.5321
Spain	−0.8934	−0.7858	0.4242
Sweden	−0.6188	−0.5828	−0.2761
Switzerland	−0.2815	−0.8928	0.2235
United Kingdom	−0.9140	0.1522	−0.5401
United States	−0.9572	−0.4779	0.2505

Table 3 The Pair of the Sectors that Show the Highest Correlation in the Net Lending or Net Borrowing

Group I (non-government sector and rest of the world)	Chile, China, Colombia, Estonia, Germany, Greece, Hungary, Iceland, Italy, Korea, Latvia, Lithuania, Mexico, Netherlands, Portugal, Slovak Republic, South Africa, Switzerland
Group II (non-government sector and government sector)	Austria, Belgium, Czech Republic, Denmark, Ireland, Japan, Poland, Russia, Slovenia, Spain, Sweden, United Kingdom, United States
Group III (government sector and rest of the world)	Finland, France, Norway

Table 4 Proportion of Years in Which Gross Saving of the Government Sector is Negative

Country	Proportion	Number of Observation Periods
Austria	0.133	15
Belgium	0.333	15
Chile	0.000	6
China	0.143	14
Colombia	0.357	14
Czech Republic	0.067	15
Denmark	0.000	15
Estonia	0.000	15
Finland	0.000	15
France	0.200	15
Germany	0.333	15
Greece	1.000	9
Hungary	0.533	15
Iceland	0.143	14
Ireland	0.467	15
Italy	0.267	15
Japan	0.800	15
Korea	0.000	15
Latvia	0.133	15
Lithuania	0.364	11
Mexico	0.000	11
Netherlands	0.200	15
Norway	0.000	15
Poland	0.786	14
Portugal	0.867	15
Russia	0.000	12
Slovak Republic	0.467	15
Slovenia	0.333	15
South Africa	0.143	7
Spain	0.400	15
Sweden	0.000	15
Switzerland	0.000	14
United Kingdom	0.667	15
United States	0.714	14

Table 5 Correlation Coefficients between trade balance and financial account balance

Country	Correlation Coefficients	Number of sample period
Australia	0.4877	15
Austria	0.8398	15
Belgium	0.6764	12
Brazil	0.5582	5
Canada	0.9917	15
Chile	0.9053	12
China	−0.5065	5
Colombia	0.7269	15
Czech Republic	0.6368	15
Denmark	0.6501	10
Estonia	0.9631	15
Finland	0.4191	15
France	0.7001	15
Germany	0.9395	15
Greece	0.9584	11
Hungary	0.8685	15
Iceland	0.5267	15
India	0.9911	5
Indonesia	−0.4914	5
Ireland	0.2968	13
Israel	−0.6630	15
Italy	0.9540	13
Japan	0.7402	15
Korea	0.9758	15
Latvia	0.9548	15
Lithuania	0.9389	11
Luxembourg	−0.0496	13
Netherlands	0.5960	11
New Zealand	−0.9129	14
Norway	0.4564	10
Poland	0.8635	11
Portugal	0.9667	15
Russia	0.6497	15
Slovak Republic	0.7164	11
Slovenia	0.7589	15
South Africa	0.7427	15
Spain	0.9407	15
Sweden	0.1664	15
Switzerland	0.3737	15
Turkey	0.9943	15
United Kingdom	0.3094	15
United States	0.8007	15

Figure 1: Net Lending or Net Borrowing of the Institutional Sectors for the Latest Year in Proportion to the Nominal GDP
Source: OECD National Accounts Statistics

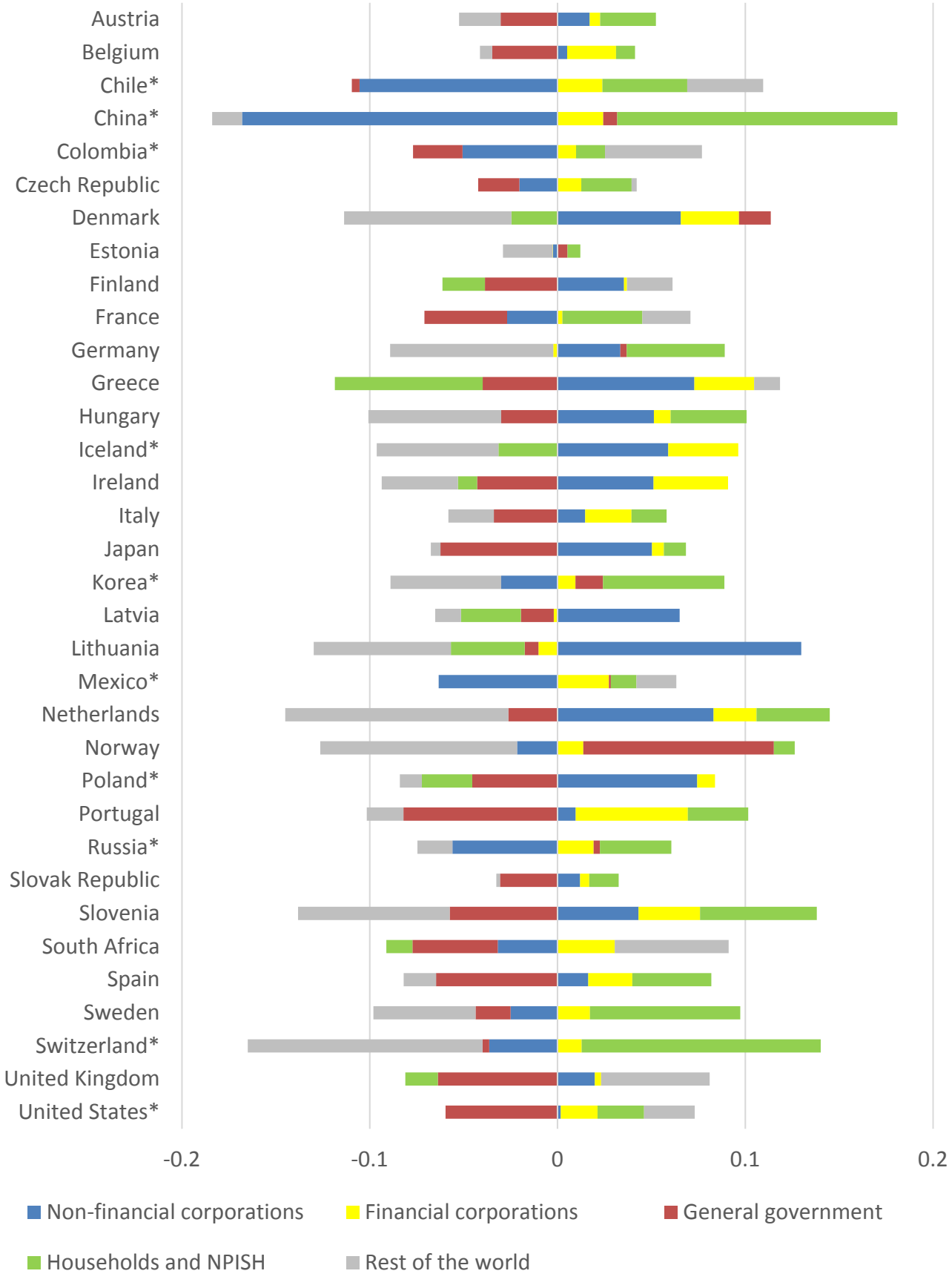
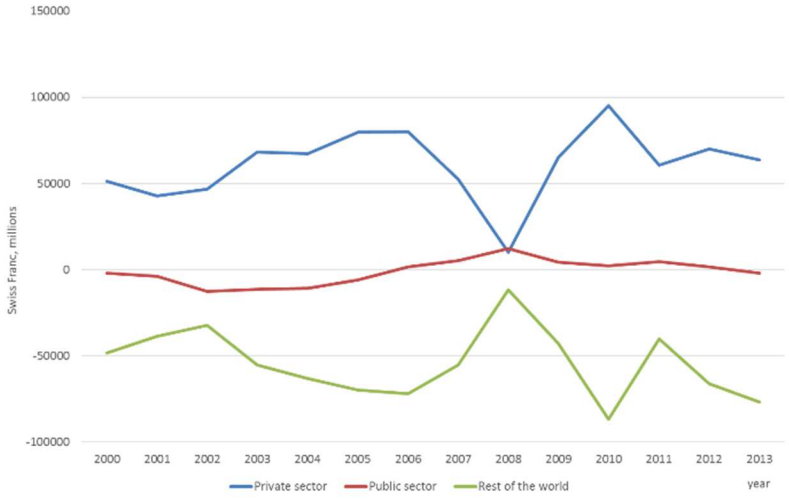
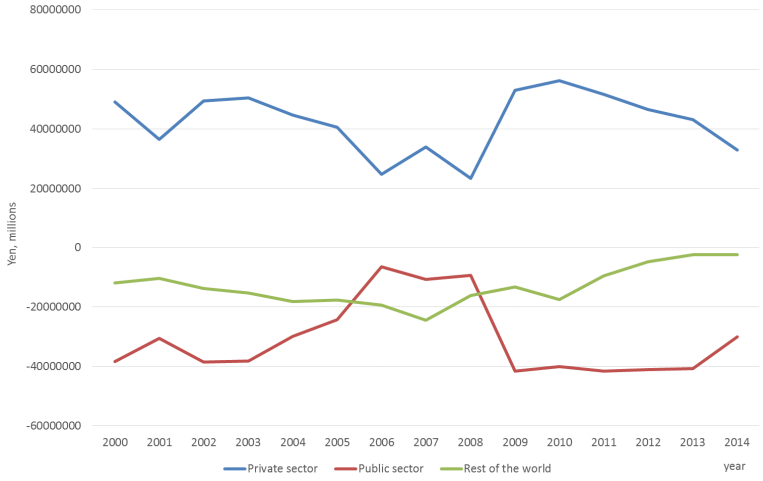


Figure 2 Net Lending or Net Borrowing of the Institutional Sectors

2-1 Switzerland



2-2 Japan



2-3 Norway

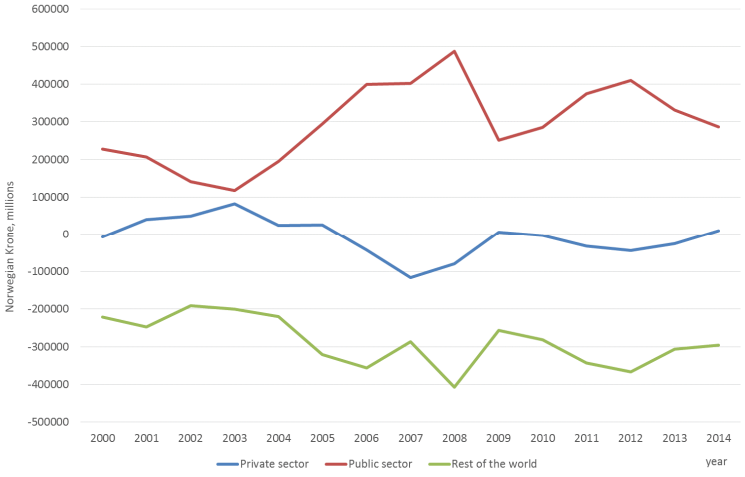
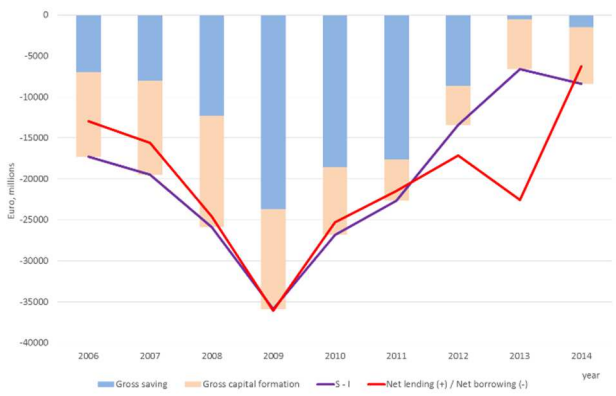
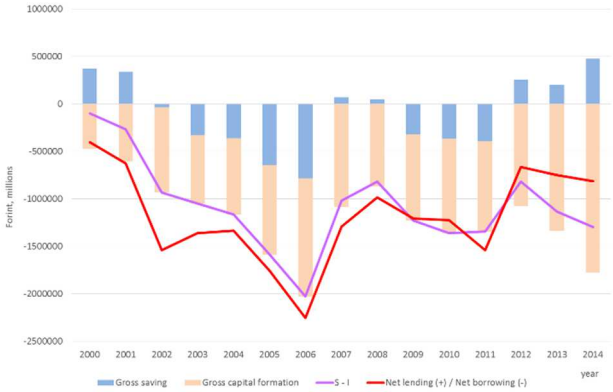


Figure 3 Composition of the Net Lending or Net Borrowing of the General Government

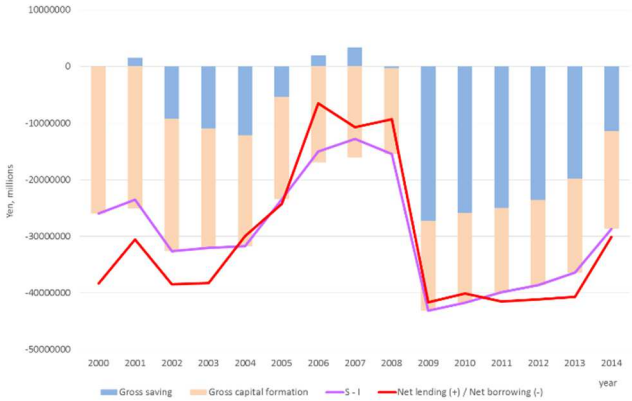
3-1 Greece



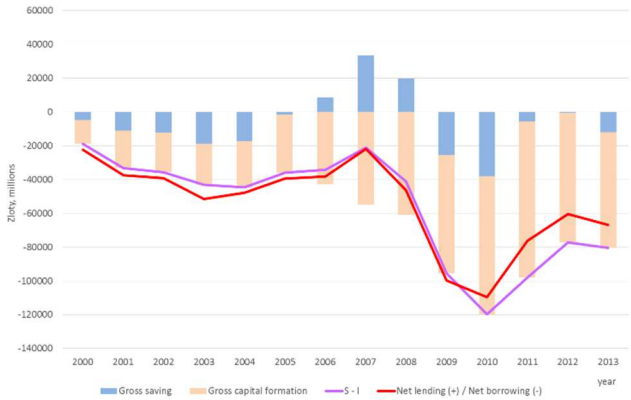
3-2 Hungary



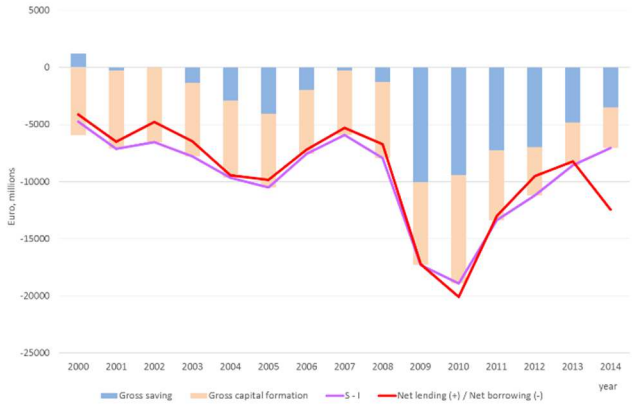
3-3 Japan



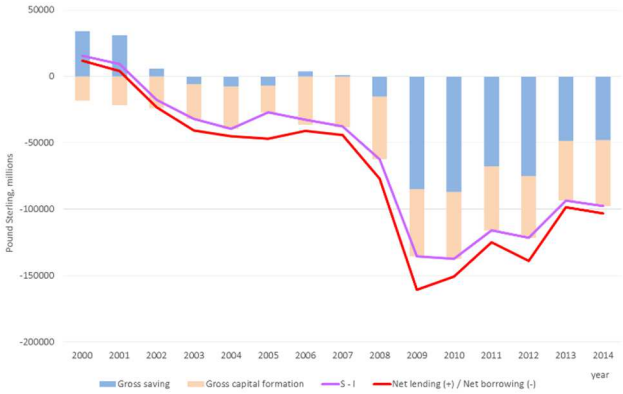
3-4 Poland



3-5 Portugal



3-6 United Kingdom



3-7 United States

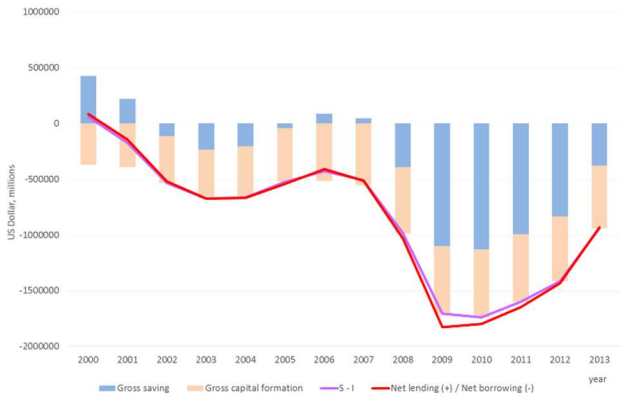
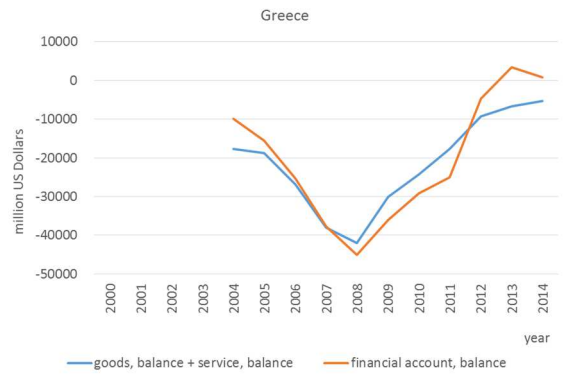
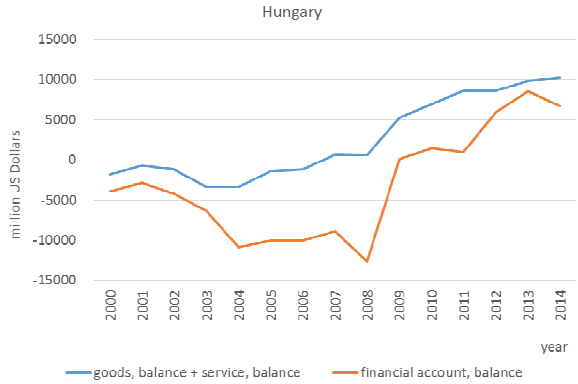


Figure 4 Fluctuations in the Trade and Financial Account Balances

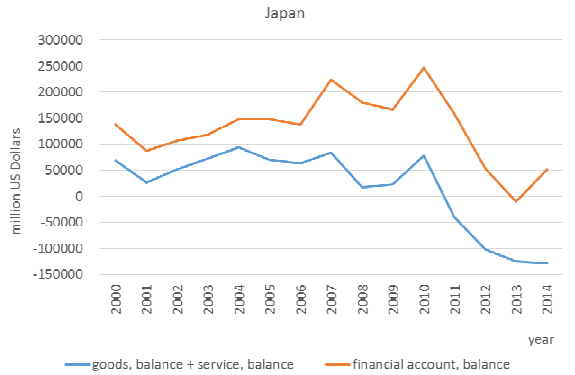
4-1 Greece



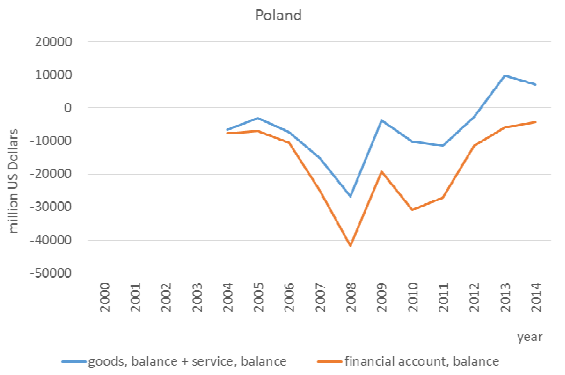
4-2 Hungary



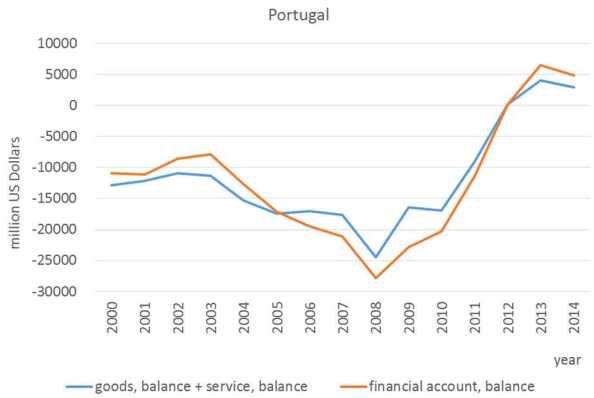
4-3 Japan



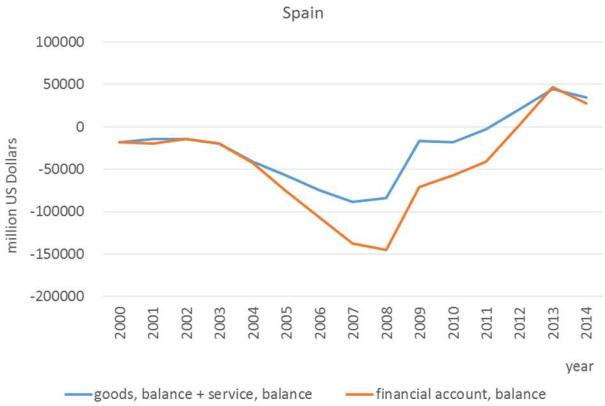
4-4 Poland



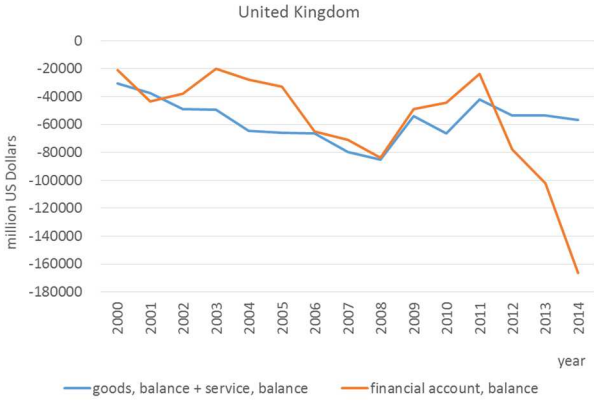
4-5 Portugal



4-6 Spain



4-7 United Kingdom



4-8 United States