



KINGDOM OF THE NETHERLANDS—NETHERLANDS

SELECTED ISSUES

April 2017

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CONTENTS

THE SURPLUS-3: ARE THERE COMMON DRIVERS TO EUROPE'S LARGEST CURRENT ACCOUNT SURPLUSES?	3
A. Introduction	3
B. Context	4
C. A Simple Macroeconomic Framework	5
D. The Netherlands: Supportive Foreign Demand and Investment, Domestic Demand Compression	7
E. Germany: Competitiveness Gains, Subdued Domestic Demand	9
F. Switzerland: Household Savings	11
G. Conclusions	13
References	18
BOX	
1. Features of The International Corporate Taxation Regime in The Netherlands	9
FIGURES	
1. Netherlands: Current Account, Saving, and Investment by Sector	14
2. Germany: Current Account, Saving, and Investment by Sector	15
3. Switzerland: Current Account, Saving, and Investment by Sector	16
TABLE	
1. Output, REER and CA Theoretical Correlation Patterns	6
ANNEX	
I. Competitiveness, External and Internal Balances, 1999–2007	17

TAX REFORM IN THE NETHERLANDS: SHIFTING THE BURDEN	19
A. Introduction	19
B. Context	20
C. Why GIMF?	20
D. GIMF's Implicit Tax Multipliers	22
E. Growth Friendly Budget Neutral Tax Reforms	23
F. Conclusion	25
References	29
FIGURES	
1. Growth Friendly Fiscal Packages (FLSE = 0.5)	26
2. Growth Friendly Fiscal Packages (FLSE = 0.2)	27
TABLE	
1. Structure of Taxation in the Netherlands, European Comparison	28

THE SURPLUS-3: ARE THERE COMMON DRIVERS TO EUROPE'S LARGEST CURRENT ACCOUNT SURPLUSES?¹

A. Introduction

1. Worries about growing external imbalances go back to well before the global financial crisis (GFC). At the time, the concern was that the large and growing external imbalances would be resorbed in a sudden and disorderly fashion. When the crisis hit, the rebalancing indeed took place, but it has remained incomplete so far. Current account surpluses have even increased further in some countries, stoking criticisms of beggar-thy-neighbor policies.

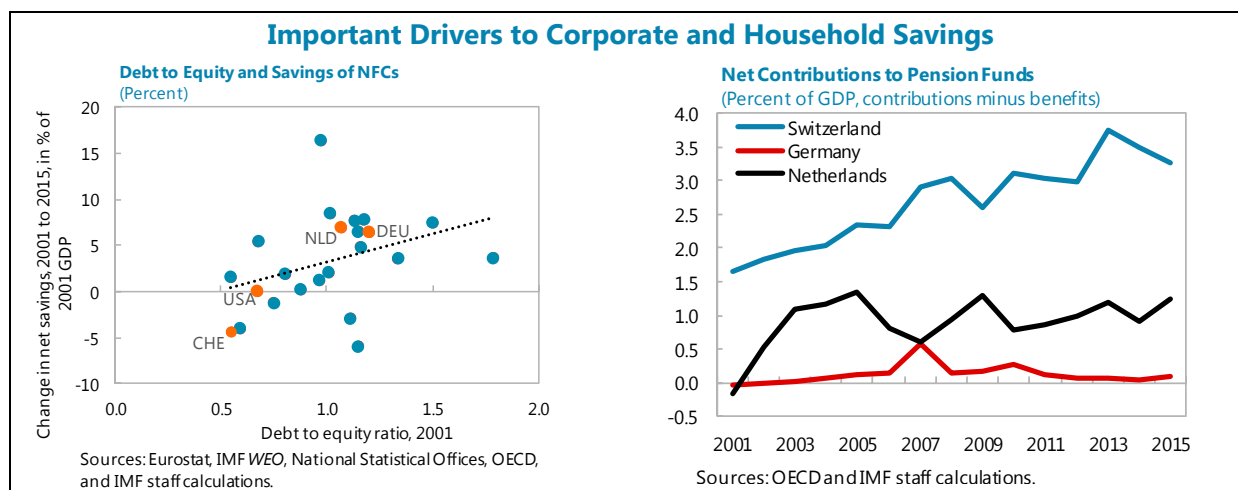
2. This paper focuses on the steady increase of the current account surpluses in Germany, the Netherlands and Switzerland—henceforth ‘Surplus 3’ (S3) countries—since the mid-1990s. Are there common drivers behind these trends or do they reflect idiosyncratic developments? Are rising current account surpluses in Germany, the Netherlands and Switzerland mainly reflecting beggar-thy-neighbor policies, strong foreign demand for their products, subdued domestic demand or a combination of these factors?

3. Identifying the drivers underlying current account dynamics requires addressing endogeneity problems related to the joint determination of exchange rate and output. Thus, our approach relies on a two-pronged strategy that combines country level analysis with an examination of summary statistics on current accounts, output gaps and real effective exchange rate developments through the lens of a simple graphical representation. The emphasis remains descriptive and positive, leaving quantitative and normative treatments to further studies.

4. The analysis suggests that the current account/trade balance’s main drivers differed somewhat before and after the GFC. Before the crisis, S3 surpluses appear to have been mainly driven by strong foreign demand, complemented by competitiveness gains in Germany (and to a lesser extent in Switzerland). After the GFC, sluggish domestic demand seems to be the main factor behind increasing current accounts in the three countries.

5. Country level analysis also suggests that S3’s upward trending trade surplus essentially reflects increasing savings, not particularly low investment. At the turn of the century, highly leveraged non-financial corporations (NFC) in Germany and the Netherlands have increasingly turned to retained earnings to finance capital formation; a trend encouraged by tighter access to credit after the GFC and new corporate income tax laws. Despite growing profits, dividend distribution has remained timid. In Switzerland, by contrast, corporate leverage was rather low beginning 2000s, and large current account surpluses are mostly explained by the household sector whose large and increasing lending/borrowing balances reflect both higher mandatory (pension) and voluntary savings (see text chart below and section F).

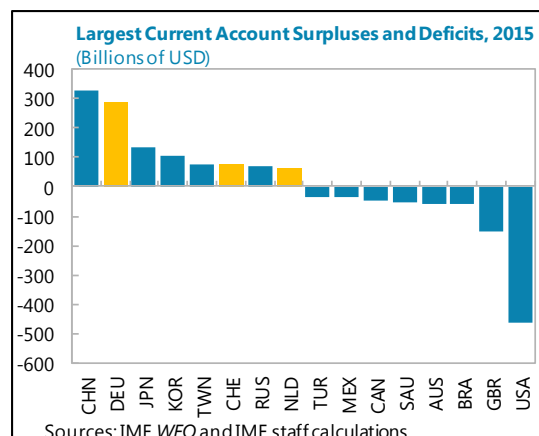
¹ Prepared by Marc Gerard, Tryggvi Gudmundsson and Jean-Marc Natal (all EUR). The authors would like to thank officials at DNB, the CPB and the Ministry of Finance for helpful comments and discussions.



6. The remainder of the paper is organized as follows. The next section summarizes the main stylized facts. Section C describes our identification strategy using a graphical representation of the current account, and sections D, E and F present country evidence in support of our general findings, with a particular focus on the Netherlands.

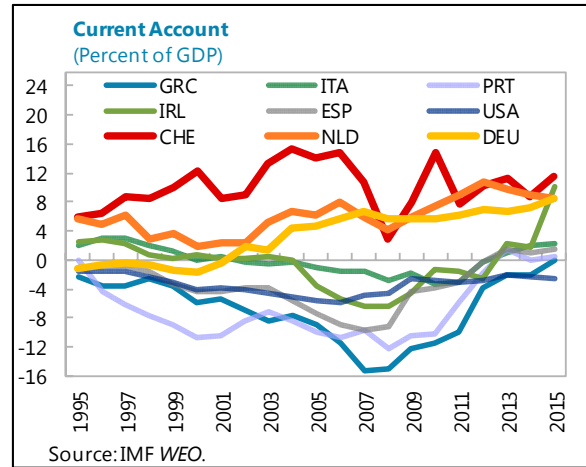
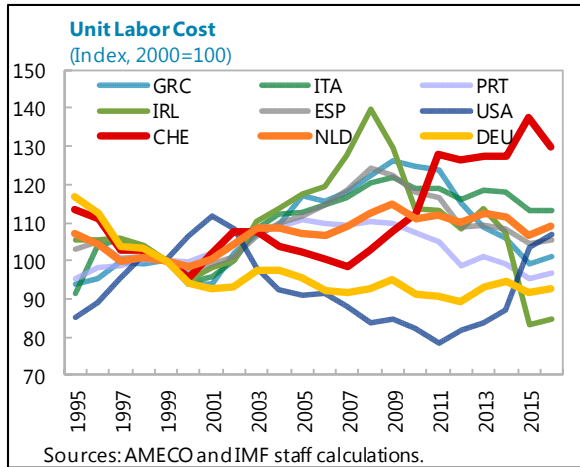
B. Context

7. CA balances have been increasing steadily since the mid-1990s in S3, with an acceleration in the early 2000s. At close to 9 percent of GDP in 2015, they were collectively almost equivalent to the size of the US CA deficit (see text chart). The rise mainly reflected steady increases in the goods trade balance with different geographical breakdown for the three countries (see panel charts in Figures 1, 2 and 3).



8. Growing external imbalances within Europe have coincided with diverging paths for the REER. Deficit countries (Greece, Ireland, Italy, Portugal and Spain—the EA5) saw their relative REER (with respect to 24 most important trading partners) appreciate with respect to surplus countries, a priori suggesting competitiveness problems (see charts below). Following the crisis, the REER gap narrowed in Europe and trade imbalances and current accounts narrowed as well.

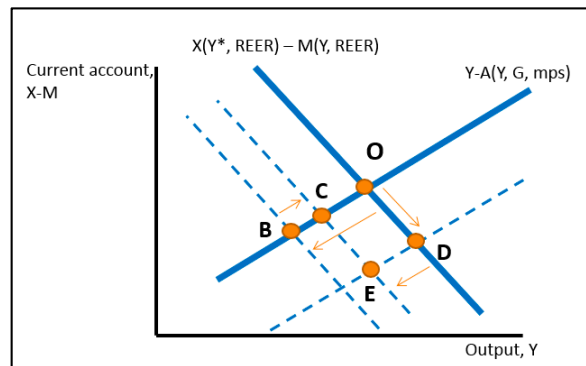
9. These co-movements raise the question of causality. While growing and then shrinking external imbalances within Europe have often been interpreted as triggered by changes in relative competitiveness, it is equally plausible that changes in relative prices may not be causal but simply reflect different cyclical developments, with booming countries featuring solid domestic demand, CA deficits and relatively high inflation. And of course, such patterns can also be driven by common third factors. To disentangle the different factors, an identification strategy is necessary. The next section presents a simple macroeconomic framework that will allow us to interpret the data.



C. A Simple Macroeconomic Framework

10. To analyze the drivers behind current account dynamics in S3 countries an identification framework is required. Following Wyplosz (2012), we rely on Dornbusch’s seminal graphical representation of income determination and the trade balance. The framework allows to identify three generic shocks—a foreign demand, a domestic demand and a competitiveness shock—based on their different implications for the correlation between income, the REER and the CA. The next section will try and match these shocks with country specific developments.

11. The Dornbusch (1980) framework emphasizes the joint determination of the current account, output, and the REER. In the text chart below, the upward schedule shows the relation between aggregate income (Y) and total national spending—the absorption A (Y,G,mps), a function of Y and exogenous shocks to domestic demand, e.g., fiscal expenditure (G) or the marginal propensity to save (mps). Under the common assumption that the propensity to spend is less than unity, an increase in income leads to higher national *net saving*, i.e. current account. The downward sloping schedule also represents the current account, but this time defined as *net exports*. An increase in income Y raises spending and therefore imports (M), hence the negative slope of the schedule. Net exports is also function of foreign income (Y*) and the real effective exchange rate (REER). Assuming the Marshall-Lerner conditions are fulfilled, a real depreciation (a decline in REER) increases exports (X) and reduces imports, improving the current account. Similarly, an exogenous increase in Y* improves the current account.



12. The framework clearly illustrates the effect of exogenous changes to domestic absorption, foreign income or the REER. Starting from current account equilibrium O in the chart above, a negative shock to competitiveness, for e.g., an exogenous increase in public sector wages that spreads to the private sector or a strengthening of wage indexation, leads to an increase in the

REER and a shift of the net export schedule to the left—or the equilibrium from **O** to **B**. Income deteriorates in the process and inflation drops as the output gap opens, inducing a partial offset of the initial REER appreciation through a Phillips curve mechanism and a shift of the net export schedule back to **C**. By contrast, an exogenous domestic demand shock—like a fiscal expansion or a drop in the marginal propensity to save—shifts the positive sloping net saving schedule to the right, and the equilibrium from **O** to **D**. The resulting increase in the output gap induces higher inflation and an appreciation of the REER. The induced competitiveness loss then shifts the equilibrium from **D** to **E**, offsetting part of the initial domestic demand-driven income growth.

13. This simple general equilibrium framework allows for an identification of the shocks underlying current account dynamics.

Different cross-correlation patterns for Y, REER and CA clearly differentiate the type of shocks driving the data. For example, an increase in foreign demand Y^* will tend to shift the net export

	Corr. (CA; REER)	Corr. (CA; Y)	Corr. (REER; Y)
Domestic demand	<0	<=0	>=0
Foreign demand	>0	>0	>0
Competitiveness	<0	>0	<0

schedule to the right, implying positive correlations between Y^* and the CA, Y^* and REER, and CA and REER as higher demand tends to bring up inflation and the REER. Table 1 below summarizes the correlation patterns theoretically implied by each shock.

14. Before the GFC, the Netherlands appears to have benefited from a positive foreign demand shock, while Germany and Switzerland enjoyed competitiveness gains.

Across European countries, the data correlation pattern suggests that growing imbalances broadly reflected divergent domestic demand cycles (see Table 1a in Annex I for detail). The text table below shows that the cross-country correlations of changes in REER (ULC-based with respect to the 24 main trading partners), output gaps (Y) and current accounts (CA) between 1999 and 2007 (column 1) can clearly be attributed to domestic demand shocks. Bubble-like behaviors magnified by low real interest rates in EA5 (Greece, Ireland, Italy, Portugal and Spain) led to rapid income and wage growth, and current accounts deteriorated. The corollary for the S3 has been a relative strong foreign demand component. The latter has played in full in the Netherlands, as shown by the overall positive correlation pattern of income, REER and current account. Over the same period, increases in trade surpluses have been magnified by simultaneous competitiveness

gains in Germany (through wage moderation) and to a lesser extent in Switzerland, manifesting themselves via negative correlations between changes in REER and the CA/output gap over the period 1999–2007.

	EUR 1/	Germany	Netherlands	Switzerland
Corr(CA; REER) 2/	-0.8	-	+	-
Corr (CA; Y)	-0.8	+	+	+
Corr(REER; Y)	0.5	-	+	-

1/ European countries include EA5 (Greece, Ireland, Italy, Portugal, Spain), Belgium, France, Finland, The Netherlands, Austria, Germany
 2/ REER = EU/U^* , for E, U^* defined with respect to weighted average of 24 most important trading partners; U is nominal unit labor cost

15. After the GFC, current account surpluses in S3 can be traced back to negative domestic demand shocks, partly mitigated by weak foreign demand and competitiveness losses. Across Europe, the data correlation pattern continues to suggest a domestic demand story in the wake of the crisis (see Table 2a in Annex I). Fiscal consolidation post-crisis and the unwinding of previous imbalances in deficit countries (EA4) still dominate the cross-section correlations.² However, despite a drop in foreign demand and a relative real appreciation, the current account surpluses in S3 countries have continued to increase. Table 1 and the text table show that this development can only be reconciled by assuming domestic demand suppression in S3 countries that more than offset the drop in foreign demand. In the Netherlands, negative correlations between the CA and REER and the CA and Y, and a positive correlation of REER and Y, suggest that a negative domestic demand shock (double-dip recession due to housing bust) has played a key role. The correlation pattern also suggests that the domestic demand suppression, indicated by the negative correlation of CA and Y, in Germany and Switzerland must have been large enough to offset the effect of a simultaneous competitiveness loss, indicated by a negative correlation between REER and Y and lower foreign demand, as shown by a positive correlation between CA and REER.

	EUR 1/	Germany	Netherlands	Switzerland
Corr. (CA; REER) 2/	-0.9	+	-	+
Corr. (CA; Y)	-0.1	-	-	-
Corr. (REER; Y)	0.1	-	+	-

1/ European countries include EA4 (Greece, Italy, Portugal, Spain), Belgium, France, Finland, The Netherlands, Austria, Germany
 2/ REER = EU/U*, for E, U,* defined with respect to weighted average of 24 most important trading partners; U is nominal unit labor cost

D. The Netherlands: Supportive Foreign Demand and Investment, Domestic Demand Compression

16. Over the last two decades, the Dutch current surplus has broadly reflected, in turn, supportive foreign demand developments and domestic demand compression. The current account surplus has steadily increased from an average 5 percent of GDP in the 1990s to a record 10.8 percent in the midst of the 2012 recession before moderating to 8.7 percent in 2015 along the economic recovery (see Figure 1). The country's current account surplus ranks fourth in Europe behind Norway, Switzerland and Luxembourg and represents about 0.6 percent of the aggregated euro area GDP. In contrast to Germany, the strengthening of the current account has taken place at a time of steady competitiveness losses, due to both euro appreciation and rapidly catching up unit labor costs following the protracted wage moderation implemented in the 1990s (Annex I). Consistent with the preceding identification analysis, this underscores the importance of foreign demand to account for the Dutch surplus until the financial crisis. In recent years, in a context where foreign demand has been subsiding, the current account surplus appears to have been mainly driven by contractionary domestic demand developments, namely a combination of increasing profit retention by multinational firms, household deleveraging and increased mandatory and precautionary savings and pro-cyclical fiscal policy.

² The EA4 deficit country sample excludes Ireland where the large improvement in the current account post GFC also reflects a sharp increase in competitiveness.

17. The current account surplus essentially reflects favorable trade developments, notably pointing to the increasing importance of re-exports. The strength of trade balance developments bears testimony to the openness of the Dutch economy, where the sum of exports and imports has averaged about 150 percent of GDP since 2010. In terms of product decomposition, goods exports mainly consist of machinery and equipment (about 30 percent of total exports over the second half of the 2000s), chemical products (about 17 percent), food products (about 11 percent) and natural gas (about 10 percent). Re-exports—largely handled by multinational enterprises—have strengthened so as to represent about 45 percent of total exports. They explain about a quarter of the trade surplus, pointing to the significant position of the Rotterdam port as a major transit location for European trade flows. Importantly, re-exports appear to increasingly account for the bulk of high value added goods such as pharmaceutical products or office machinery. By contrast, domestically produced exports such as food products tend to be concentrated in lower value added segments or to be directed to saturated markets, thus gradually losing market shares. In terms of geographical breakdown, this contrasted situation is reflected in the fact that the largest share of the Dutch trade surplus is achieved with European partners, including Germany, while the country records a large and increasing deficit with the rest of the world, notably China. Throughout the period, the services balance has been small and negative, in contrast to the substantial inward and outward flows of intellectual property and business services traded by multinational enterprises (see Figure 1).

18. The lion's share of the savings-investment surplus is accounted for by the non-financial corporate sector, highlighting the role of foreign income and retained earnings in net profit determination. In terms of savings-investment balance, the most noticeable development over the 2000s has been the sharp rise of the non-financial corporate (NFC) sector surplus, whose net lending-borrowing position peaked at above 9 percent of GDP in 2012. Against the backdrop of declining share of investment to GDP, following a trend common to other advanced economies, the NFC surplus appears mostly attributable to the sharp increase in net savings, which reached about 20 percent of GDP in 2012 (Figure 1). This net savings position has likely been largely influenced by multinationals, which account for about 40 percent of total employment and two thirds of private turnover in the country. Even though no precise breakdown is available, the balance sheets of multinational enterprises seemingly reflects a combination of increased profitability and low profit distribution, both of which appear to have been influenced by favorable tax incentives (see box on international corporate taxation). Indeed, while the net operating surplus of foreign multinationals has been mechanically boosted by increasing global trade over the 2000s, their net profit seems to also have been boosted by strong dividends and interest payments received from foreign subsidiaries, exempted from domestic corporate income tax under the equity holding and participation exemptions. Moreover, owing to the prevailing exemption on capital gains tax, net savings of both foreign and domestic firms has typically been channeled back into share buyback and equity asset purchases instead of being distributed as dividend income—thus contributing to the overall deleveraging trend. Overall, the large and increasing net savings position of the NFC sector corresponds to a situation where national savings have been diverted away from domestic capital formation and toward equity foreign direct investment instead.

Box 1. Features of The International Corporate Taxation Regime in The Netherlands

Further to its position as a well-established global financial center and a strategic seaport location, the Netherlands offers a favorable international corporate taxation framework that makes it an attractive location for headquarters of multinational enterprises. Its main features include:

- The double ‘participation exemption’, i.e. the non-taxation of both dividends paid by foreign subsidiaries and capital gains on the disposal of foreign equity;
- Low withholding tax rates on interests, royalties and service fees to foreign subsidiaries, including those located in non-EU countries, complemented by a comprehensive double taxation treaty (DTT) network;
- Advanced tax rulings and pricing agreements, bilaterally negotiated with the Ministry of Finance and kept confidential, even vis-à-vis the Parliament;
- A special regime for holdings, which notably provides for low taxes on interest received from loans to foreign subsidiaries

Furthermore, foreign firms can also benefit from various subsidies available to Dutch firms, such as on innovation activities (patent box).

19. In recent years, the current account surplus has also been driven by household deleveraging and increasing pension contributions. In contrast to the corporate sector, the net lending position of the household sector has hovered below the euro area average throughout the 2000s, even including mandatory second pillar occupational pension contributions. In the years leading up to the crisis, non-mandatory net savings even fell in negative territory under the effect of strong investment in housing accompanied by excessive leverage (see Figure 1). Since the GFC, deleveraging pressures following the fall in housing prices coupled with uncertainties regarding the financial situation of the pension funds have resulted in a sharp rebound of precautionary savings to about 5 percent of disposable income, notwithstanding the increase in premiums triggered by the need to preserve solvency ratios in the pension system.

20. The government sector has played a pro-cyclical, albeit limited role in curtailing domestic demand in recent years. Following the consolidation episode of 2004–05, fiscal policy turned slightly expansionary in the boom years leading up to the crisis, before becoming more pro-cyclical in structural terms over the period 2010–13, thus only marginally adding to domestic absorption. Public investment has been sluggish throughout the 2000s, peaking at 4.3 percent of GDP under the EU-led discretionary stimulus package in 2009–10 before gradually declining below its long-term average at 3.5 percent in 2015—still above euro area average.

E. Germany: Competitiveness Gains, Subdued Domestic Demand

21. The German current account surplus started to open up in 2000, against the backdrop of accelerating foreign demand and steady competitive gains. Figure 2 suggests that all sectors—households, non-financial corporations and government—have contributed to the accumulation of net foreign assets. Before 2000, households’ net savings were typically channeled towards the government and NFCs leaving the current account broadly balanced. After 2000, though, both NFC and government have been consolidating, gradually directing national savings towards the acquisition of foreign assets.

22. The widening current account surplus is mainly due to the trade balance. Germany has been running a trade surplus with the rest of the world since the beginning of the 1980s. In the run-up to the GFC, net exports to euro area deficit countries (EA5) and the rest of the world accelerated strongly. While exports to the euro area have been shrinking fast thereafter, it was not enough to curb the positive trade balance trend as net exports to the rest of the world have been increasing even faster. In 2015, net exports to the rest of the world formed the bulk of Germany's trade surplus, with net exports to the rest of the euro area (including deficit countries) broadly balanced.

23. The identification analysis of section C suggests that wage moderation played an important role in explaining the rising surplus pre-crisis. Table 1a in Annex I shows that Germany's relative (to the main 24 trading partners) competitiveness (REER-ULC) gains could largely be attributed to significant improvements in real unit labor cost (u/u^*). This particular development helps explain the rapid increase of the trade balance, bolstered by accelerating foreign demand worldwide. However, wage moderation and competitiveness gain cannot explain the further increase in the current account after 2009.

24. Post-crisis, negative domestic demand shocks played the leading role. Despite a sharp decline in foreign demand and a slight appreciation of the REER, the German current account surplus has continued to ratchet up post-crisis. Table 2a in Annex I shows that competitiveness gains have been partly unwound from 2009 to 2015, which leaves domestic demand shocks—households, NFCs and government—as the sole driver of the rising current account surplus.

25. A closer look at the sectoral level reveals that both households and NFC lending/borrowing balances have increased. In Germany, the households saving rate is very stable (see Figure 2). German households do not seem to engage in consumption smoothing behaviors and basically consume a quasi-fixed proportion of their disposable income each period. Household investments, on the other hand, fluctuate much more, in line with the housing cycle. Thus, following the post-reunification boom, the increase in household net lending/borrowing from mid-90s to mid-2000s mainly reflected consolidation in the housing market. Since then, households net lending/borrowing have been gradually declining as residential investment has picked up pace again.

26. However, one of the most remarkable development of the last 10 years is the shift of the NFC sector from being a net borrower to becoming a net lender. Since 2001, firms have been increasingly relying on retained earnings for investment—a likely reaction to the dot-com crash that particularly affected highly-leveraged German companies (see text chart in the introductory section). At the same time, tightening of financial conditions and important reforms of capital income taxation in 2000 and 2008 (see Keen, 2002) have raised investors' incentives to 'save inside the firm', increased the relative costs of debt finance over equity finance (decreased the debt bias), and also propped up the attractiveness of retained earnings with respect to new equity issuance (see Spengel et al., 2012). Finally, in Germany, private occupational pensions are mainly provided directly by firms, which have had to increase reserves since the early 2000s to cope with increased liabilities due to an aging labor force and lower discount rates. The so-called 'book

reserves' have increased by about 100bn euros since 2000, potentially explaining about 20 percent of the increase in NFCs' net savings (Bundesbank, 2016).³

27. Fiscal consolidation is also likely to have played an important role. The government savings-investment balance switched from a traditionally negative contribution of about 2 percentage points of GDP on average since the 1980s to a neutral position in 2011 and a slightly positive contribution in 2015. This means that all sectors of the economy (with the tiny exception of the financial sector) are now net savers.

28. As in most advanced economies, the investment to GDP ratio has been trending down since the beginning of the 1990s. Among the most often cited factors are i) a global decline in the relative price of investment goods, ii) tighter credit conditions and iii) a deterioration of expected return to capital (see WEO 2006, 2014). But the investment decline has not been particularly fast in international comparison in Germany, in particular once net FDI channeled by multinational firms through foreign subsidiaries are accounted for (see Figure 2).

F. Switzerland: Household Savings

29. The Swiss current account has exhibited a substantial surplus for several decades, with the last annual deficit recorded in 1980. The surplus has averaged 11 percent of GDP since the turn of the century and has been quite resilient with economy-wide savings at a fairly steady level of over 30 percent. Investments have similarly been quite stable and did not deteriorate to the same extent as in many other advanced economies in the post-crisis period.

30. The significant current account surplus has also endured despite a sharp appreciation of the exchange rate in recent years (see Figure 3). Before the GFC, the REER was quite stable as significant surpluses on the current account were largely offset by capital outflows and the CHF was used as a global funding currency. However, the GFC resulted in substantial capital inflows, reflecting Switzerland's status as a safe haven and the shrinking interest-rate differential with other countries. These flows have led to a massive appreciation of the Swiss franc—by almost 45 percent in effective terms since the onset of the GFC in 2008—with no material effect on the current account despite a simultaneous drop in foreign demand. Consistent with the identification analysis in section C, this pattern suggests an even more drastic contraction of domestic demand.

31. Although the balance of the current account has remained large, its composition has shifted somewhat. In the early 2000s, the bulk of the current account surplus was attributable to hefty primary income and services surpluses, with the financial sector figuring prominently in the latter category. Since the onset of the financial crisis, however, the balance of international trade in goods has played an increasingly important role, reaching $\frac{3}{4}$ of the current account surplus in

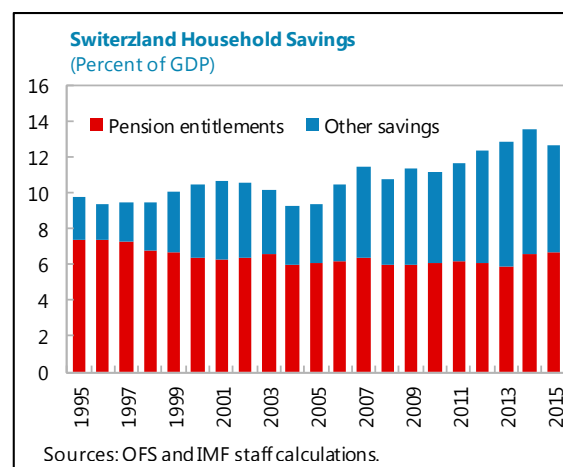
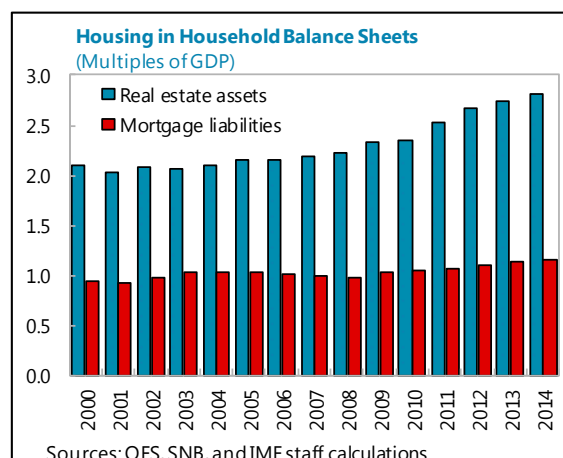
³ Higher NFCs' net savings theoretically do not have to translate into current account surpluses as households, ultimate owners of the firms, may be expected to consume the extra-savings. However, empirical evidence (see WEO 2006) suggests that the propensity to consume out of dividends is larger than out of increased financial wealth, especially when it takes the form of equity shares. Shareholders may regard equity gains as partly temporary and a fraction of them may be foreign nationals.

2015 (see Figure 3). Within the trade balance, chemicals have been particularly prominent due to the presence of large multinational companies. In 2015, the trade surplus of the chemicals industry alone amounted to 7.1 percent of GDP. Finally, the surplus from financial services, which accounts for the bulk of the overall services surplus, has trended downward since the financial crisis, alongside financial sector deleveraging and a reorientation of bank business models towards less balance sheet intensive activities.

32. While the widening trade balance surplus suggests subdued domestic demand, the resilience of the current account also points to structural factors. Looking at the sectoral breakdown of the current account reveals that, unlike in Germany and the Netherlands, NFCs do not contribute to the economy's net lender position; the bulk of the net external surplus lies with households. In fact, the households' net lending-borrowing balance has exceeded the economy's total external balance each of the last five years (see Figure 3). This development mainly reflects household net savings which have risen as a proportion of disposable income from a low of 14 percent in 1996 to 19 percent in 2015.⁴

33. There are likely multiple causes for high and increasing savings by households. A good place to start is the housing market. Following the GFC, restrictive zoning laws and historically low interest rates have resulted in rapidly increasing house prices, which led the authorities to introduce various macroprudential measures (e.g., cap on the use of second pillar pension savings to finance house purchase, countercyclical buffers). Confronted with tighter financing conditions and sluggish supply, households have had to channel ever larger parts of their disposable income into equity financing of existing housing, instead of financing new residential projects through higher mortgages (Figure 3): non-mandatory savings have increased in lockstep with the value of real estate assets on households balance-sheets since 2012.

34. Mandatory savings have also played a role as pension entitlements account for roughly half of total household savings. Demographic challenges and declining interest rates have required increasing net contributions to pension funds over the last 15 years (see text chart in the introductory



⁴ Note that the sectoral decomposition of net lending-borrowing balances must be taken with a grain of salt. In Switzerland, the sum of the sectoral balances can be quite different from the total current account balance. Qualitatively, though, the message remains.

section) as pension funds' balance-sheets had to be shored up while pension entitlements remained roughly constant—just under 7 percent of GDP in 2015.

35. Other sectors have played a much smaller role in Switzerland's savings-investment imbalances. Government investment exceeded savings in the pre-crisis period, but have since been broadly balanced. Unlike in Germany and the Netherlands, there is no sign of a deleveraging cycle for NFCs, which exhibited only limited debt burdens compared to peers at the turn of the century (see text chart in the introductory section). NFCs have not contributed significantly in either direction to the country's net lending balance.

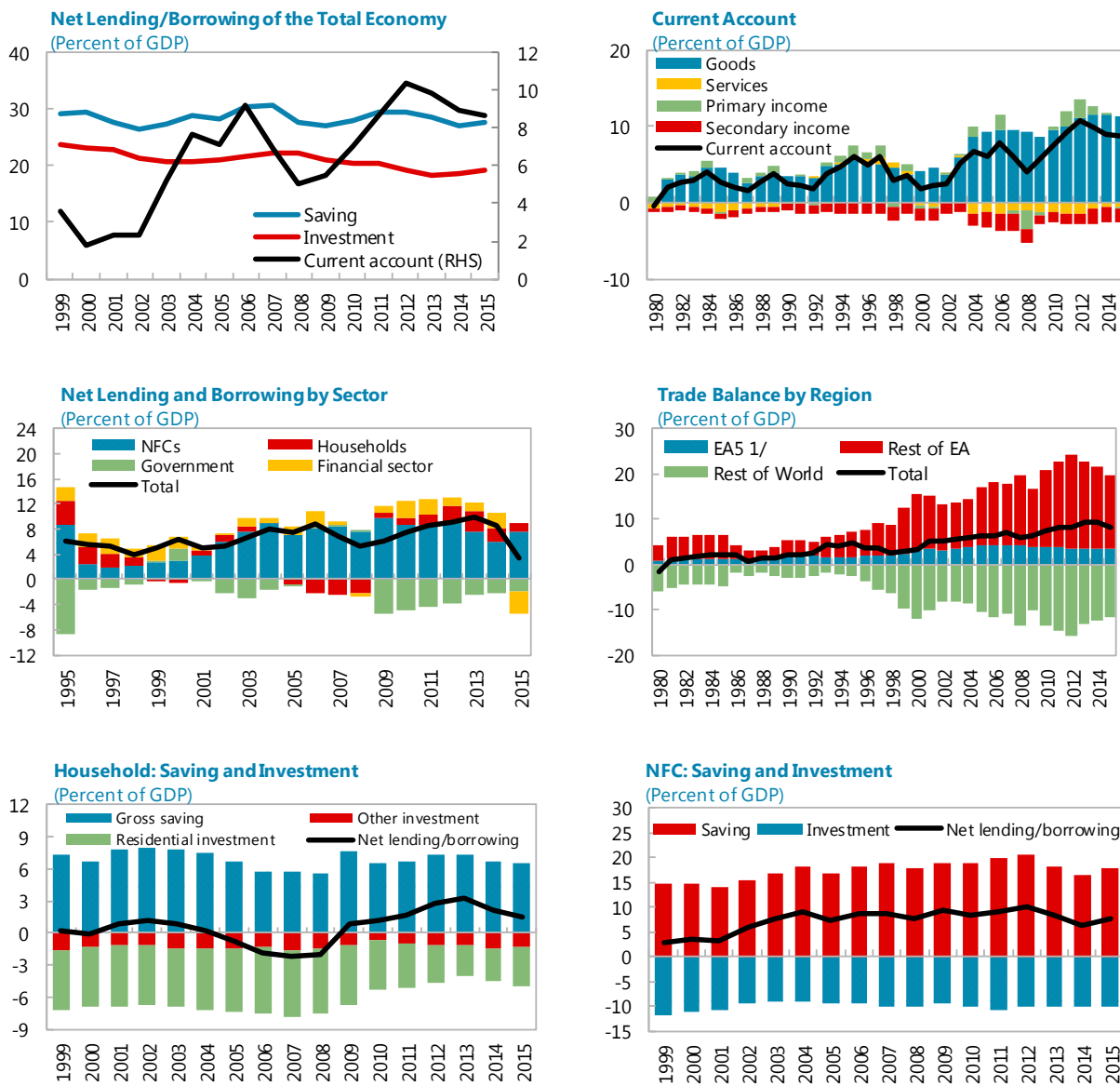
G. Conclusions

36. Identifying the drivers behind current account developments is key to designing the right policies to lean against excessive imbalances. We side-step the normative analysis and rely on descriptive statistics and country level data to better understand the dynamics of the three largest current account surpluses in Europe. We reach 5 main conclusions.

- There are common drivers to the large current account surpluses in the Netherlands, Germany and Switzerland—the S3—but they have changed since the global financial crisis (GFC).
- Before the GFC, rising imbalances mainly reflected unsustainable demand development in countries with large and increasing external deficits, that coincided, in the case of Germany, with large competitive gains due to the wage moderation policy of the early 2000s.
- After the GFC, continuously rising current account surpluses mainly reflected subdued demand developments in the S3.
- In the Netherlands and Germany, non-financial corporations (NFCs) seem to be behind the rising surpluses. At the turn of the century, highly leveraged NFCs started to increasingly rely on retained earnings to finance capital formation; a trend encouraged by tighter access to credit and fiscal incentives. Increasing corporate profits have not been converted into dividends, keeping a lid on consumption.
- In Switzerland, households savings appear to explain the bulk of the current account surplus, as both mandatory and voluntary savings have been on an increasing trend since 2000. Trending net contributions to pension funds since 2000 and rising equity contribution for house purchases are plausible drivers.

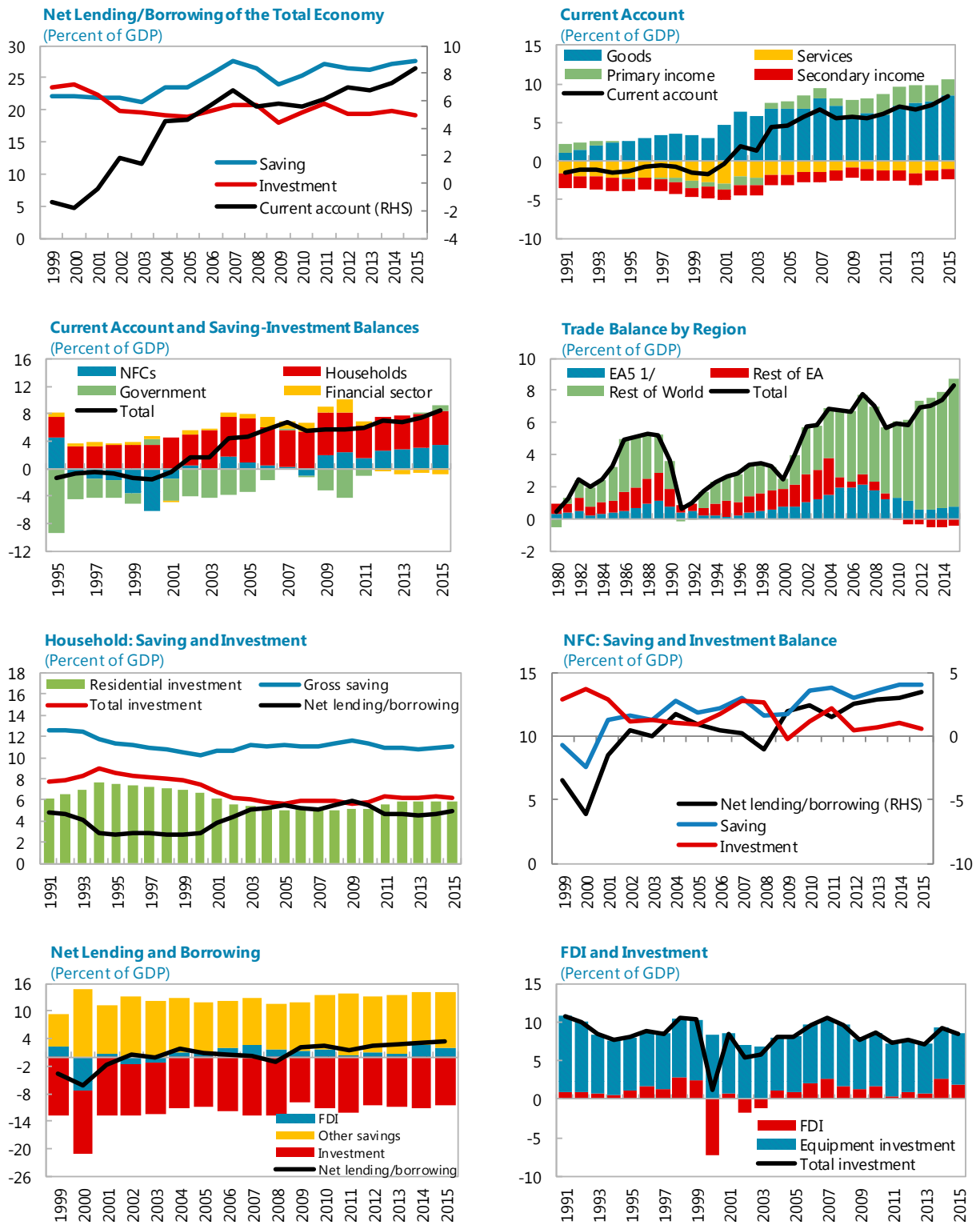
37. A deeper understanding of firms' and households' motives behind trending net savings would require a more in depth analysis of micro data, which we reserve to future studies.

Figure 1. Netherlands: Current Account, Saving, and Investment by Sector



Sources: CBS, EC, Eurostat, IMF BOP database, IMF DOTS, and IMF staff calculations.

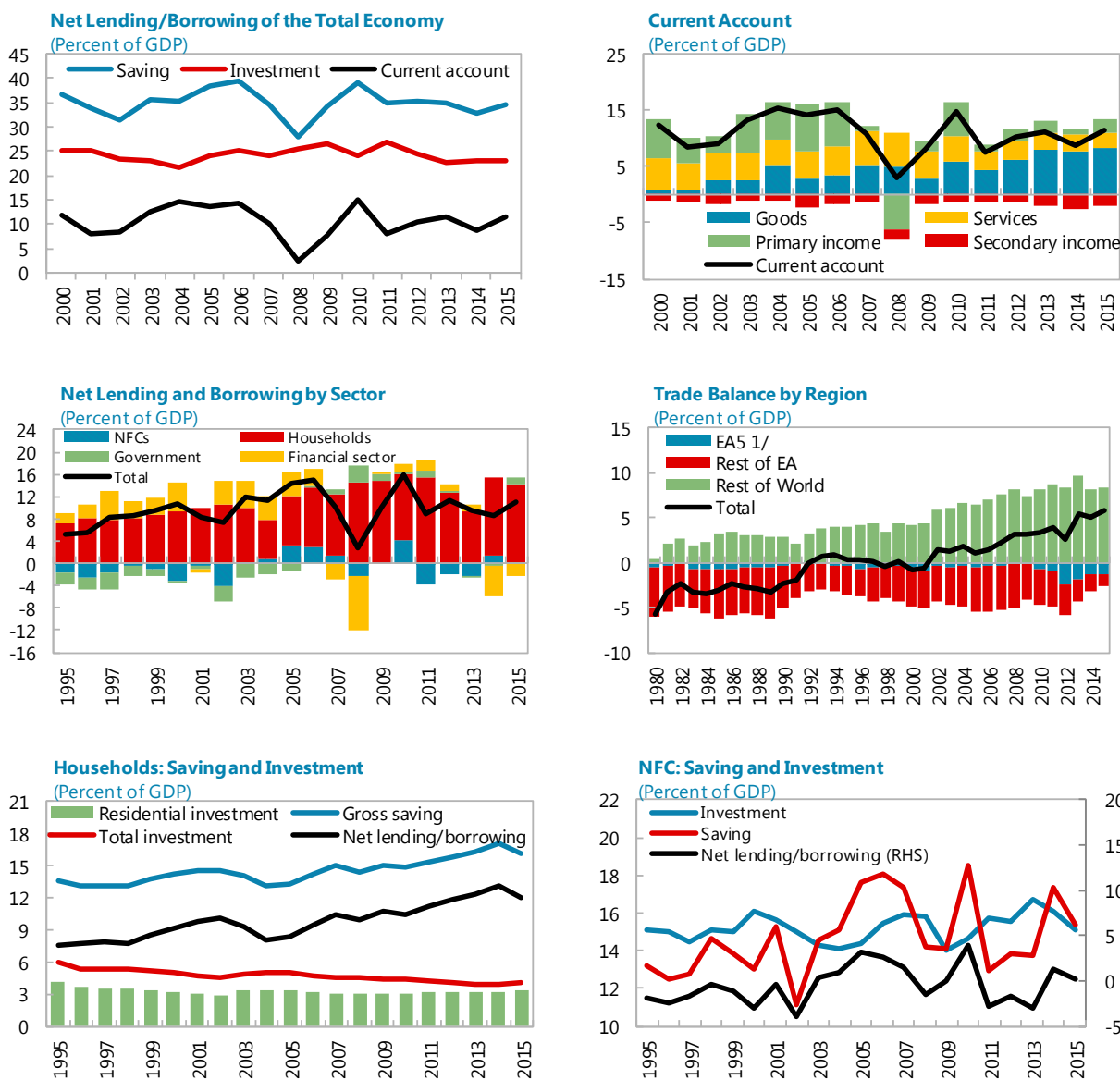
Figure 2. Germany: Current Account, Saving, and Investment by Sector



Sources: Bundesbank, Destatis, EC, and IMF staff calculations.

1/ Greece, Ireland, Italy, Portugal, Spain.

Figure 3. Switzerland: Current Account, Saving, and Investment by Sector*



Sources: CBS, EC, Eurostat, IMF BOP database, IMF DOTS, and IMF staff calculations.

*/ The statistical difference between *total* net lending and borrowing and the *sum of the sectors* has been distributed across the sectors by keeping relative proportions constant.

Annex I. Competitiveness, External and Internal Balances, 1999–2007

1. The following two tables contrast the evolution of unit labor costs (ULC) based REER, the current account and the output gap of the largest European countries, Switzerland and the US before and after the global financial crisis (GFC). Changes in the REER-ULC can be decomposed into the sum of changes of real relative unit labor costs $u/u^* = [U/P]/[U^*/P^*]$, for U the nominal unit labor cost, and CPI based real effective exchange rates EP/P^* . E, U* and P* are weighted indices of the 24 most important trading partners for each of the listed countries. Changes in u/u^* can be seen as exogenous changes in competitiveness originating in the labor market, while EP/P^* show product market based changes in competitiveness that could be either exogenous or endogenous (Phillips curve induced). In all tables a positive change in REER denotes appreciation.

Table 1a. Pre-Crisis Developments of Internal and External Balances					
Changes in CA, REER-ULC and the output gap 1999-2007, % change					
	REER-ULC (1)=(2)+(3)	u/u^* (2)	EP/P^* (3)	Current account (4)	Output gap (5)
Greece	16.9	9.5	7.5	-22.8	11.4
Spain	17.9	-0.6	18.5	-14.2	6.3
Ireland	24.6	2.5	22.2	-14.1	5.9
Belgium	4.9	-0.3	5.1	-5.6	2.3
Portugal	9.4	-2.7	12.1	-5.4	1.0
USA	-11.8	2.3	-14.1	-4.4	1.2
France	8.0	3.2	4.8	-4.1	2.4
Italy	15.9	5.4	10.5	-3.1	4.7
Finland	3.8	1.5	2.3	0.5	4.8
Netherlands	9.1	-1.4	10.4	5.3	1.0
Austria	1.2	-2.8	4.0	7.6	2.2
Switzerland	-1.0	na	-1.6	7.7	3.5
Germany	-7.6	-4.5	-3.1	9.6	3.1

Sources: AMECO, European Commission, and staff computations

Table 2a. Post-Crisis Developments of Internal and External Balances					
Changes in CA, REER-ULC and the output gap 2007-2016, % change					
	REER-ULC (1)=(2)+(3)	u/u^* (2)	EP/P^* (3)	Current account (4)	Output gap (5)
Finland	6.3	5.7	0.6	-3.9	-6.4
Belgium	-0.4	-0.4	-0.1	-1.3	-2.7
France	-2.0	2.9	-5.0	-0.9	-2.2
Austria	0.9	1.8	-0.9	-0.6	-3.3
USA	21.7	-1.0	22.8	1.7	-2.0
Italy	-3.2	0.8	-3.9	3.6	-2.5
Germany	2.2	3.9	-1.8	4.0	-2.2
Netherlands	-0.3	3.9	-4.3	4.2	-2.2
Switzerland	38.1	na	34.8	4.4	-4.0
Portugal	-11.8	-9.9	-2.0	9.7	-0.8
Spain	-12.1	-4.1	-8.1	11.7	-3.0
Greece	-16.6	-5.4	-11.2	15.2	-7.0
Ireland	-31.7	-18.1	-13.6	19.7	3.0

Sources: AMECO, European Commission, and staff computations

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TAX REFORM IN THE NETHERLANDS: SHIFTING THE BURDEN¹

A. Introduction

1. This short paper studies and quantifies the likely macroeconomic effects of growth friendly tax reform options in the Netherlands. The note is a follow-up to last year's selected issues paper on tax reform in the Netherlands, which reviewed the main features of the Dutch tax system and sketched the contours of a hypothetical reform of the tax system.² This time around, the focus is on quantification. We use the Global Integrated Monetary and Fiscal model—GIMF—a multi-country, dynamic general equilibrium model to try and quantify the macroeconomic effects of various budget neutral fiscal reforms aimed at shifting the burden of taxation away from labor and towards property and consumption (VAT), a central recommendation of last year's consultation.

2. The main conclusion from this exercise is that even a budget neutral shift of the tax burden away from labor can have sizable positive effects on growth and employment. First, fiscal policy is particularly effective in a currency union as monetary policy is not much influenced by developments in a single economy. Usual crowding out effects are replaced by crowding in effects, as real interest rates tend to be pro-cyclical when nominal interest rates are quasi-fixed. Second, labor income tax (LIT) is one of the most distortionary forms of taxation. By discouraging labor supply, LIT inflates product wages (wages paid by firms), weighing down on firms' profits and investment. Shifting the burden towards less distortionary revenue sources boosts labor supply, capital accumulation, and potential output.

3. The effects remain significant even if the elasticity of labor supply is assumed to be low—as is arguably the case in the Netherlands. A drop in the labor income tax (or employees' social contributions) props up labor supply and triggers general equilibrium effects that also boost investment and labor demand, magnifying the initial impulse. Although the magnitude of the stimulation depends on the value of labor supply elasticity, it remains significant even with fairly low calibrated values. In the following, we systematically document the impact of various tax reforms under high and low elasticity alternatives, acknowledging the uncertainty surrounding estimates of labor supply elasticity in the Netherlands.

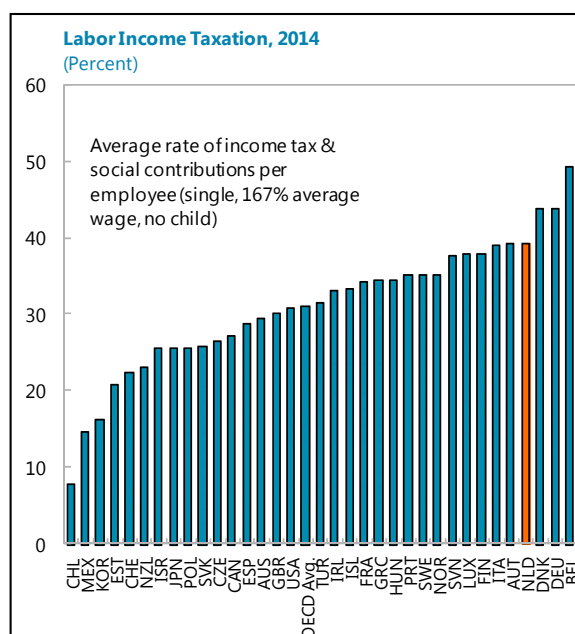
¹ Prepared by Jean-Marc Natal. The author would like to thank Bas Jacobs, and officials at the Ministry of Finance of the Netherlands for useful suggestions. Particular gratitude goes to Benjamin Carton (RES) and Dirk Muir (APD) for effective coaching with Dynare-GIMF and inspiring discussions.

² See "Tax Reform in the Netherlands: Moving Closer to Best Practices", in the Selected Issues paper for the 2015 Article IV Consultation for the Netherlands (IMF Country Report No. 16/46).

B. Context

4. The taxation system is particularly unbalanced in the Netherlands, where labor income taxation and social contributions are doing the heavy lifting. The system combines a very progressive and elevated labor tax scale with poor tax and benefit incentives for low income workers to join the labor force. Also, the level of social contributions paid by Dutch employees is one of the highest in Europe, while at the same time, the contribution of indirect taxation (VAT) and personal capital income taxation, in particular on housing, is among the lowest.³

5. By discouraging labor supply, the current tax system tends to shrink the tax base and overload taxpayers. Significant efficiency gains could, in principle, be achieved by shifting the tax burden away from labor and towards consumption and housing, which is the most subsidized item of the Dutch tax system. Housing (property) tax is the least distortionary instrument and the tax base is particularly large in the Netherlands. Minor increases in owner-occupied housing taxation could generate a lot of fiscal revenues. Table A shows that tax revenues on personal capital income are actually negative, reflecting the large subsidy on home ownership via mortgage interest deductibility and low taxation of imputed rents.



C. Why GIMF?

6. GIMF is a global dynamic general equilibrium model widely used inside and outside the IMF to analyze the implications of a vast range of policies (fiscal, monetary and financial) for growth, inflation, and the public and external accounts. Its multi-country, multi-goods structure allows a general equilibrium analysis of global interdependence and spillover effects of alternative fiscal policies, including through financial spillovers associated with the effect of debt on global interest rates. In GIMF, both households and firms (divided into the tradable and non-tradable goods sectors) are forward-looking and partly base their decisions on intertemporal maximization of utility and profit. Firms produce tradable and non-tradable intermediate goods, which are combined with imported tradable intermediate goods to produce final goods for consumption and investment, both private (which are also internationally traded) and public. The model features full intertemporal stock-flow consistency and various nominal and real frictions such as sticky prices and wages, real adjustment costs, financial frictions.⁴

³ See The Netherlands Staff Report, 2016 and the Selected Issues paper “Tax Reforms in the Netherlands: Moving Closer to Best Practices”, for the 2015 Article IV Consultation for the Netherlands (IMF Country Report No. 16/46)

⁴ See Kumhof et al. (2010).

7. Due to its non-Ricardian features, GIMF is particularly well-suited to analyze tax reforms. GIMF is based on the Blanchard-Weil-Yaari's seminal overlapping generations (OLG) framework which results in a significant departure from Ricardian equivalence. This framework also has important implications for the impact of fiscal policy and structural changes on global savings and the equilibrium long-term interest rate. The non-Ricardian nature of the OLG households is complemented and enhanced by the presence of liquidity-constrained (LIQ) consumers. They directly consume their wage income every period, as well as any transfers they receive from the government. LIQ households are assumed to represent 25 percent of total households in advanced economies and 50 percent in emerging markets.⁵

8. GIMF also features important non-linearities. The endogenous response of monetary policy is key for the transmission of fiscal shock to the economy. At the zero interest rate lower bound (ZLB), fiscal consolidation is bound to have a larger detrimental effect on growth and employment as monetary policy will not be able to accommodate contractionary fiscal impulses. Inflation and inflation expectations would also tend to drop faster in this conjunction, increasing real interest rates, the cost of capital, and the public and private debt burdens.

9. The model's fiscal rule maintains a stable long-run debt-to-GDP ratio. Fiscal policy is conducted using ten different instruments: government consumption, government investment (infrastructure spending), general and targeted lump-sum transfers, consumption tax (VAT), corporate income tax, labor income tax, employer and employee social security contributions, and property tax. In each region, monetary policy follows a standard CPI-inflation-forecast-based interest rate reaction function, which in regards to the Netherlands, responds exclusively to euro area wide developments.

10. The model has been calibrated to reflect the Netherlands' great ratios and long-term fiscal characteristics. A 3-country version of GIMF has been calibrated around the three regions' (Netherlands, rest of euro area (ROA), and rest of the world (ROW)) great ratios in the steady state (e.g., trade shares, labor and capital shares, etc...).⁶ Given the focus on fiscal policy in the Netherlands, steady-state tax revenue to GDP ratios for the different tax instruments have been computed based on published 2013 values.⁷

11. Note, however, that GIMF abstracts from important distributional issues and the complexity associated with the co-existence of different employment status in the Netherlands. Therefore, the policy simulations reported in sections D and E should be understood as reflecting average effects for given aggregate labor supply elasticity. There is also no differentiation between extensive and intensive margins as employment is measured in terms of total hours worked.

⁵ The share of LIQ consumers may be higher in the Netherlands as voluntary savings are usually considered low in the country. Assuming a higher share of LIQ agents would magnify all non-Ricardian effects.

⁶ See Kumhof et al. (2010) and Anderson et al. (2013) for further details

⁷ See Taxation Trends in the European Union, 2013

D. GIMF's Implicit Tax Multipliers

12. Overall, tax multipliers are smaller than 1 in the short to medium run, but could rise above 1 in the longer term for permanent tax changes. The table below shows the effect of a *permanent* increase in capital, labor, consumption and property tax revenues on real GDP. In each case a permanent increase in budget surplus (or decrease in deficit) of 1 percent of GDP—corresponding to about 20 percent drop in long-term debt to GDP—is engineered by permanently increasing tax revenues by the same amount.⁸ The effect on output depends on the type of tax instrument, the horizon in years and the elasticity of labor supply. There is quite a bit of uncertainty surrounding the value of labor supply elasticity in the Netherlands (Vlasblom, 2001, Bloemen, 2010, Bargain et al., 2011, Jongen et al., 2014), thus the table shows two sets of results simulated under a high labor supply elasticity assumption (Frisch labor supply elasticity—FLSE—of 0.5) and a low elasticity assumption (FLSE = 0.2).⁹ As expected—with the notable exception of capital income taxation (CAPIT)—the lower the FLSE, the smaller the multipliers, especially in the long term.¹⁰

13. Even in the case of a low FLSE, permanent changes in tax rates have non-negligible effects on output and employment. This outcome can be explained by the fact that country level fiscal policy is particularly effective in a currency union as monetary policy is not responsive to developments in a single economy. *Crowding-out* effects that usually follow fiscal impulses are replaced by *crowding-in* effects, as real interest rates tend to be pro-cyclical if nominal interest rates are fixed. For instance, an increase in capital income taxation depresses demand and prices, and push inflation expectations downwards. Because nominal interest rates are set at the euro area level, they will remain quasi-fixed following a Netherlands' based fiscal shock, pushing real interest rates up in the Netherlands, which further weighs on domestic demand.

1 Percent of GDP Permanent Fiscal Consolidation										
	GDP Effect - level % deviations (FLSE = 0.5)					GDP Effect - level % deviations (FLSE=0.2)				
	T+1	T+5	T+10	LT	Max	T+1	T+5	T+10	LT	Max
Labor Income	-0.2	-0.4	-0.5	-0.7	-0.7	-0.2	-0.2	-0.3	-0.3	-0.3
Social security (employees)	-0.2	-0.4	-0.5	-0.7	-0.7	-0.2	-0.2	-0.3	-0.3	-0.3
Social security (employers)	-0.6	-0.4	-0.3	-1.2	-1.2	-0.5	-0.3	-0.3	-0.6	-0.6
Property	-0.2	0.8	0.5	0.0	0.9	-0.2	0.5	0.2	0.0	0.5
VAT	-0.2	-0.2	-0.3	-0.4	-0.4	-0.2	-0.1	-0.2	-0.2	-0.2
Excise	-0.2	-0.2	-0.2	-0.4	-0.4	-0.2	-0.1	-0.2	-0.2	-0.2
Capital income	-0.7	-0.4	-1.4	-1.4	-1.5	-0.7	-0.5	-1.7	-1.4	-1.7

⁸ As debt to GDP declines, so does interest rate payments which are redistributed to households in the form of general transfers so as to maintain fiscal consolidation at exactly 1% of GDP per year.

⁹ CPB 2014 concludes that the combined (extensive and intensive margin) labor supply elasticity is 0.17, close to our lower bound simulations.

¹⁰ For CAPIT, the multiplier is larger when the FLSE is smaller. An increase in CAPIT increases the price of capital for firms pushing down investment and leading to a drop in the marginal productivity of labor. Labor demand also drops (although less than investment demand) until unit labor costs drops back and adjusts to the higher cost of capital. The more elastic the labor supply, the less will wages have to drop for labor supply to adjust and the smaller will be the impact on LIQ consumption and output. It is a transitory effect though. The final impact is unaffected by the value of the FLSE.

14. Capital income taxation (CAPIT) has the largest effect on employment and output, followed by social security contributions (SSC) and labor income tax (LIT). Distortionary tax measures that directly affect capital accumulation and labor supply have the largest effects on output and employment, especially in the long term. CAPIT is the most distortionary as it tends to directly discourage capital accumulation and therefore penalizes the whole path of future consumption by pushing down labor demand, real wages, and potential output. Similarly, LIT discourages participation in the labor market and weighs on potential output. However, the fiscal multiplier is smaller than for CAPIT as higher LIT triggers both an income effect, which stimulates labor supply, and a substitution effect which discourages it, with the latter effect being typically larger than the former for usual calibrations.

15. SSCs have differentiated effects on the economy depending on whether they are collected at the employees' level (akin to LIT) or the employers' level. The difference arises from general equilibrium effects involving both labor supply and demand, wages, LIQ consumption, inflation expectations and the real interest rate.¹¹ In the case of employers' SSC, higher tax tends to increase firms' marginal costs, depress profits, and therefore reduces their total demand for all factors, and in particular for labor. Real wages, consumption, and investment drop as a result pushing down inflation and inflation expectations, increasing real interest rates which further depresses consumption—in particular LIQ's which depends directly on labor income—and investment in a negative feedback loop that leaves output significantly depressed. In comparison, output reacts in a more muted fashion following a rise in employees' SSC. Higher SSC discourages labor supply (substitution effect), leading to relatively higher real wages and inflation and lower real interest rate than in the case of the employer's SSC. Consumption—in particular LIQ consumption is less affected—and investment holds up better than in the employers' SSC case.

E. Growth Friendly Budget Neutral Tax Reforms

All descriptions in this section refer to the high elasticity case (FLSE=0.5) and are shown on Figure 1. The low elasticity case is a dampened version of the high elasticity case and results are shown on Figure 2. In all simulations, the monetary policy rate is assumed fixed for 3 years. Both sets of simulations are summarized via their effect on GDP in the table below.

16. We study four different budget neutral tax packages, which all amount to shifting the burden of taxation away from labor towards less distortionary alternatives. Lower labor income taxation (either via LIT or SSC) is combined with commensurate increases in consumption (VAT) or property taxes.¹² The first tax reform package (TRP1) combines a permanent drop in labor income

¹¹ In a standard partial equilibrium analysis, it is easy to show that equilibrium employment is determined by the total wedge between product wage (paid by firms) and consumer wage (received by households), and is invariant to whether the tax is perceived at the employers' or employees' level.

¹² On efficiency grounds, it would also make sense to consider a reduction in CAPIT. But capital income taxation is already quite low in the Netherlands and simple equity considerations would rather plead for an increase rather than a decrease in CAPIT. This is particularly the case for capital income taxation at the personal level which entails regressive features (see IMF, 2016). Because GIMF cannot distinguish between the taxation of capital under the *source* (corporate income tax) versus *residence* (tax on saving) principles—a key distinction in a small open economy (see Sorensen, 2007)—we leave the analysis of shifting the burden of taxation away from labor and towards savings (see IMF, 2015) to further studies.

taxation and a simultaneous increase in VAT. We assume a permanent drop of 1.2 percent of GDP in labor income tax revenue offset by an increase in VAT revenues, which corresponds to the amount (8.1 billions) that could be collected by unifying the country's multiple VAT rates (see IMF, 2015). The second tax reform package (TRP2) is a variation on the first one but where the drop in labor tax revenue is financed through an increase in property taxes. In the Netherlands, this could be achieved by either shifting housing taxation to Box 3—in essence a wealth tax—or by decentralizing some of the revenue collection to local governments which mainly rely on real estate taxes.¹³ TRP3 and TRP4 are variations on TRP1 and TRP2, but where the decline in labor income taxation is achieved through a decrease in SSC which is assumed evenly distributed between employers and employees, stimulating both labor supply and labor demand.

17. TRP1—shifting the burden of taxation away from labor income towards consumption is positive for growth and employment. TRP1 has a positive long-term effect on employment, capital accumulation, and potential output, and a short-lived positive impact on the output gap. In the high labor supply elasticity case, hours worked increase by almost 0.3 percent, which amounts to about 17'000 full-time-equivalent (FTE) jobs.¹⁴ The positive net effect can be traced back to the positive impact of TRP1 on labor supply. While in principle equivalent changes in labor income and consumption tax rates should exert the same income and substitution effects on labor supply, VAT also implicitly taxes the existing capital stock—a non-distortionary levy—making it less distortionary on balance. Higher labor supply pushes real wages, marginal costs, inflation and the real effective exchange rate (REER) down. Improved competitiveness stimulates real exports, which nonetheless increase by less than imports in the short-term. There is a slight but sustained deterioration of the current account as higher expected future output stimulates investment in the short term, while higher expected future labor income boosts consumption. The short-term positive effect of TRP1 on domestic demand also tends to be magnified by our fixed policy rate assumption.

18. TRP2—shifting the burden of taxation away from labor income towards property jolts labor supply. TRP2 has a much larger effect on output and employment than TRP1. Output increases by 0.9 percent in the long term (by year 2055) as does employment (about 45,500 FTE jobs).¹⁵ This is due to the fact that both tax measures *stimulate* labor supply. A lower labor income tax increases the opportunity cost of leisure and boosts labor supply (substitution effect larger than income effect), whereas a higher property tax decreases disposable income and also prompts higher labor supply (income effect) in the medium term. Competition on the labor market increases so much that real wages drop by more than 1 percent in the first three years, and the induced REER depreciation boosts exports. At the same time, lower inflation increases real interest rate and

¹³ Note that the property tax is modelled as a drop in lump sum transfers targeted at OLG households. Lower transfers lead to less leisure consumption and higher labor supply. Given the absence of a residential sector in GIMF, the property tax does not distort investment in construction and can be thought of as a tax on unimproved land.

¹⁴ Dutch worked 9,856 million hours in 2015 (CBS) in total and OECD estimates that they worked an average of 1,420 hours (which includes full time part-time, part-year, self-employed, paid and unpaid overtime, etc...). An increase of 0.3 percent in hours worked amounts to 20'822 jobs if we assume a constant number of average hours worked per year or 16,422 full time equivalent jobs assuming 40 hours per week and 7 weeks of paid leave per year (OECD).

¹⁵ In the low elasticity of labor supply case (FLSE=0.2), the effect on employment is about half. About 21,500 FTE jobs would be created by 2055, and only half of that by 2025.

temporarily holds back OLG consumption, investment and imports. The trade balance improves temporarily and the current account permanently.

19. Real wages increase in TRP3 and TRP4, as lowering employers' SSC stimulates labor demand. In these two variants the labor tax wedge is trimmed by exonerating both employers and employees from part of their SSC. We assume that fiscal revenues from employers' and employees' SSC are reduced by 0.6 percent of GDP each. This revenue shortfall is compensated by increasing VAT (TRP3) and property tax (TRP4) revenues by 1.2 percent of GDP, like in TRP1 and TRP2. As expected, TRP4 is the most effective at boosting output and employment (about 80'000 FTE).¹⁶ Cutting employers' SSC props up labor demand and compounds the positive effects on labor supply of lower employees' SSC contributions and higher property taxation. In both experiments, the REER depreciates despite an increase in real wages (ex-SSC) as firms' real marginal costs drop following the drop in employers' SSC. But the REER depreciation is too small to compensate for the short term increase in consumption and investment and the current account deteriorates despite an increase in exports.

GDP effect of budget neutral fiscal packages										
	Frisch labor supply elasticity = 0.5					Frisch labor supply elasticity = 0.2				
	T+1	T+5	T+10	LT	Max	T+1	T+5	T+10	LT	Max
TRP1	0.1	0.2	0.3	0.3	0.3	0.0	0.2	0.1	0.1	0.1
TRP2	0.1	1.4	1.2	0.9	1.5	0.0	0.8	0.5	0.4	0.9
TRP3	0.3	0.4	0.4	0.7	0.7	0.2	0.2	0.3	0.3	0.4
TRP4	0.3	1.5	1.3	1.4	1.5	0.1	0.9	0.6	0.6	0.9

F. Conclusion

20. Growth-friendly and budget neutral tax reforms should be considered and studied in countries like the Netherlands, where unused productive capacities are scarce and the fiscal space relatively small. This short paper shows that these reforms may have long-lasting positive effects on output and employment. By shifting the burden of taxation away from labor towards less distortionary alternatives, significant efficiency gains can be reaped. In this regard, dropping social security contributions in favor of higher property taxation would bring the largest benefits.

¹⁶ Job creation is more modest in the case of the lower labor supply elasticity (FLSE = 0.2); TRP4, the most expansionary option, yields only about 40,000 FTE in the long-term (by 2055), and about half this amount by 2025.

Figure 1. The Netherlands: Growth Friendly Fiscal Packages (FLSE = 0.5)

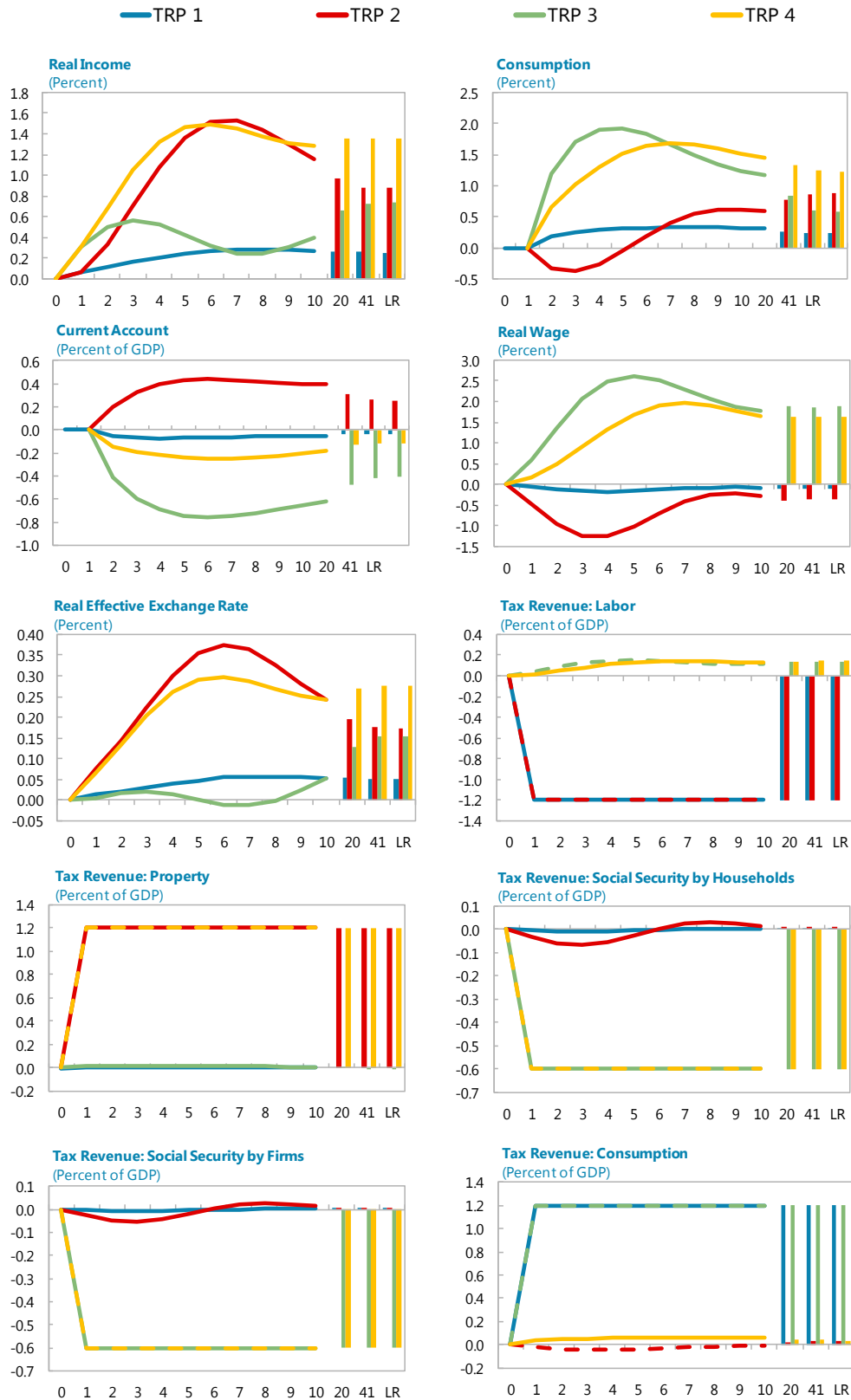
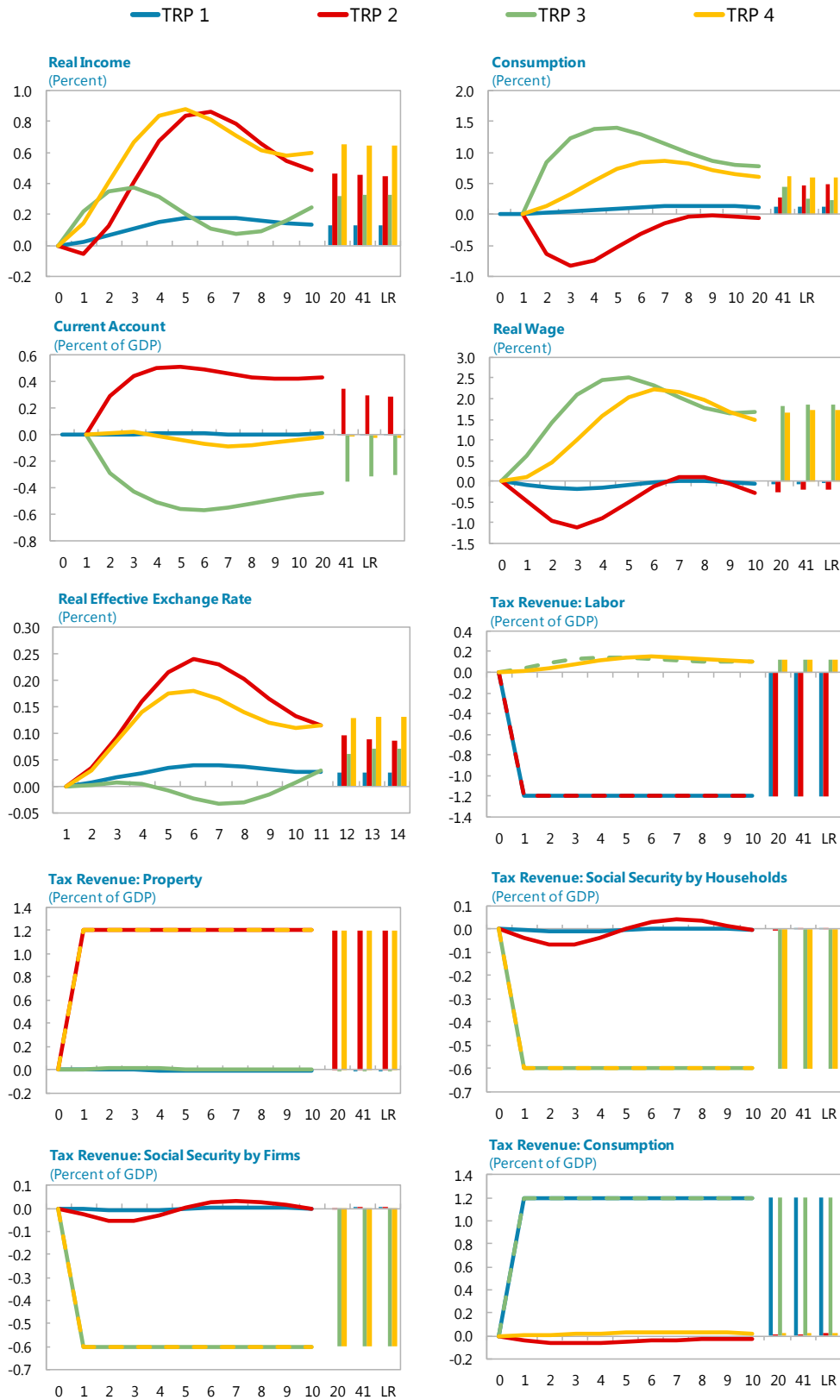


Figure 2. The Netherlands: Growth Friendly Fiscal Packages (FLSE = 0.2)



	2007	2008	2009	2010	2011	2012	2012	
							Ranking	Bil. Euros
A. Structure of revenues								
Indirect taxes	13	12.7	12.2	12.5	12	11.9	22	71.1
VAT	7.5	7.3	7	7.3	6.9	7	24	41.7
Excise duties	2.4	2.4	2.3	2.3	2.2	2.2	26	13
Other taxes on products (incl. import duties)	2	2	1.8	1.8	1.6	1.5	8	8.9
Other taxes on production	1	1.1	1.2	1.2	1.2	1.2	14	7.5
Direct taxes	12.2	12	12.1	12.2	11.7	11.2	13	67
Personal income	7.4	7.2	8.6	8.5	8.1	7.7	13	45.9
Corporate income	3.5	3.4	2.1	2.3	2.2	2.1	20	12.7
Other	1.3	1.3	1.4	1.4	1.4	1.4	6	8.3
Social contributions	13.5	14.5	13.8	14.2	14.8	16	2	95.8
Employers	4.5	4.8	4.9	5	5.1	5.4	19	32.6
Employees	6.1	6.6	5.9	6	6.4	7	2	41.7
Self- and non-employed	2.9	3.1	3	3.1	3.3	3.6	1	21.4
Total	38.7	39.2	38.2	38.9	38.6	39	11	233.8
B. Structure by economic function								
Consumption	11.6	11.4	11.1	11.4	11.1	11	20	66.1
Labour	19.8	20.7	21.1	21.4	21.7	22.4	8	134.5
Capital	7.3	7.1	5.9	6.1	5.8	5.6	19	33.3
Capital and business income	4.7	4.6	3.5	3.7	3.5	3.4	20	20.3
Income of corporations	3.5	3.4	2.1	2.3	2.2	2.1	20	12.7
Income of households	-0.9	-1	-0.9	-0.9	-1	-1	28	-6.2
Income of self-employed	2.1	2.2	2.2	2.3	2.3	2.3	7	13.8
Stocks of capital wealth	2.6	2.5	2.4	2.4	2.2	2.2	12	12.9
Source: Eurostat, Taxation Trends in the European Union, 2014								
¹ The ranking reflects relative levels of revenue-to-GDP ratios for each revenue source among the EU-28, with rank 1 being the highest ratio.								

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