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Contents

1. Introduction

Eleven years after its foundation, the European Monetary Union (EMU) is at a crossroads. The financial crisis has exposed the weakness in its institutional setup and the lack of coordination between individual countries. Notwithstanding the focus of the debate among policymakers and the media on public finances, a much larger threat had been developing, namely the buildup of severe external imbalances between EMU Member States. Unless policymakers act to correct them in a sensible way, the European economy will remain paralyzed with respect to growth rates and employment over the next few years in the best case. In the worst case, however, it could undergo deflation and recurring recessions. We attempt to analyze how current account imbalances came about, and we discuss the different policy options for the future including the consequences for future growth.

Requirements for the functioning of EMU Chapter 2 gives a short general introduction into the requirements for the functioning of a monetary union. It proceeds to discuss the specific problem of economic governance in EMU that arises from the fact that the political will was to create a monetary union without (large) permanent fiscal transfers from stronger to weaker regions. In this form, a monetary union does not allow for permanent current account imbalances. Two conclusions are reached regarding the specific set-up of economic governance implemented in EMU. Firstly, it is found that major deficiencies are present in the existing governance structure (Stability and Growth Pact). Secondly, other coordination requirements, that, if absent, pose a major threat to the coherence of EMU, have been entirely overlooked or ignored, such as the problem of large current account imbalances.

Economic Developments 1999-2009 Chapter 3 presents and discusses the external imbalances that have built up gradually with the help of macroeconomic data. We provide reasons for their emergence. Basically, interest rates convergence[1] was not fully accompanied by inflation rates convergence and has therefore laid the ground for current account imbalances. These developments were facilitated by the fact that the respective economic strategies of surplus and deficit countries did not offset, but aggravate the imbalances. Differences in economic growth and in the competitiveness of firms have been the result. In order to provide a coherent macroeconomic picture, the financial balances approach (in German: Saldenmechanik) is used to relate current account balances to private sector saving and public deficits.

[1] see figure A.3 in the appendix

Repairing economic governance in EMU and solving current account imbalances Since a failure of the economic governance of EMU has been established in chapter 2, chapter 4 proceeds to present and discuss the reform options to governance in order to both correct current imbalances and prevent future ones from arising. The most influential proposal has been put forth by the European Commission in September 2010. It focuses on reforming the Stability and Growth Pact for public deficits and recommends to introduce a similar procedure for external deficits[2]. A set of other proposals from policy analysts, economists and other contributors is discussed thereafter, including the formation of a full economic government for the euro zone.

Concerning economic governance, we arrive at the conclusion that a simple tightening of the Stability and Growth Pact that is demanded by many economists will not resolve the euro zone crisis. Instead, either a transfer mechanism needs to be established (in which case current account deficits could continue) or a consistent exit strategy based on macroeconomic cooperation needs to be developed (in order to restore balanced current accounts). This latter strategy strongly depends on the cooperation of the current account surplus countries, which should expand their demand by increasing wages and public expenditure. Unless such cooperation takes place, the unavoidable adjustment that current account deficit countries have to undergo will be even more painful, and will weigh heavily on European growth prospects in this decade.

Along the way, and standing a bit on its own, we present the main features of a full-fledged solution of the current euro zone crisis.

Model analysis In order to not only discuss the above mentioned economic consequences verbally and empirically, we use Stock-Flow Consistent (SFC) models on the theoretical side. They are useful as they are able to extend the static financial balances approach of chapter 3 to a dynamic analysis. Chapter 5 introduces Stock-Flow Consistent (SFC) models on a general level as they are usually not part of the standard economics curriculum. Chapter 6 discusses those two-country SFC models relating to the euro zone that we need for our analysis. The models are used to analyze both the emergence of current account imbalances and their resolution. In as far as possible, the different suggested reforms of economic governance in chapter 4 are discussed with respect to their ability of resolving current account imbalances in the models.

The theoretical conclusion of the model analysis in chapter 6 is the same as the verbal one provided in chapter 4. Fiscal policy restraint in the deficit countries will restore balanced current accounts (asymmetric fiscal policy solution). However, unless the current account surplus countries run expansive fiscal policy (symmetric fiscal policy solution) at the same time, the path and new equilibrium of GDP will be lower in the adjustment

[2]It is important to note what this thesis leaves out. Not discussed will be, among other things, the European Stability Mechanism (ESM) and the European Financial Stability Facility (EFSF), the IWF-Eurogroup rescue packages for Greece and Ireland, and ECB actions in the financial crisis including their purchase of government bonds on the secondary market. While these are very important aspects of the euro zone crisis, we focus our attention on the current account balances, their evolution, and the macroeconomic context thereof (fiscal policy, wage policy). Simple time and space constraints are another reason for not discussing these important issues in detail.

process for both the deficit and the surplus countries. Alternatively, fiscal transfers from the surplus to the deficit country cannot resolve current account imbalances, but would lead to a sustainable and stable solution as well.

For the actual European situation, this means that unless Germany and other surplus nations expand their domestic demand by increasing public consumption and wages, the outlook for unemployment and GDP growth in the deficit countries will be very unfavorable in the coming years. The social and political consequences of a non-cooperative solution are unforeseeable, and may well result in further resentment by the people against the EU and the current political system.

2. Economic Governance in the EMU

In this chapter, we lay the groundwork for the subsequent chapters. We introduce the policy framework of the euro zone and document its failure. Also, we analyze the Stability and Growth Pact.

2.1. The basics of monetary union

Implications of monetary union The single most important cost[1] of joining a monetary union for a country is the loss of its own currency. In relinquishing this privilege, a country gives up a powerful instrument of economic policy, namely national monetary policy. Therefore, it will neither be capable of setting its own short-term interest rate nor of changing the external value of its currency by revaluations or devaluations (exchange-rate policy).

Using a simple theoretical model, De Grauwe (2005, Chap. 1[2]) analyses two countries faced with an asymmetric demand shift. The shock leads to higher demand in one country (which faces rising inflation as a result) and lower demand in the other country (which faces higher unemployment). If the two countries are on a fixed exchange rate, exchange rate or interest rate setting can be used to bring about the necessary adjustment. If, however, the two countries happen to be in a monetary union, other equilibrating mechanisms are necessary to correct the disequilibrium. De Grauwe (2005, p.7) mentions two requirements for a successful management of such a shock: sufficient *wage flexibility* and sufficient *mobility of labor*. If nominal/real wages are rather rigid and there is only limited mobility of labor[3], it can be very difficult and painful for countries to adjust once hit by an asymmetric shock.

Idiosyncratic national institutions complicate monetary union Demand shocks causing differing inflation rates may arise in the form of exogenous events (e.g. an exogenous shift in preferences of consumers), but also as shocks coming from policy itself. Wage, fiscal and monetary policies as well as regulation changes are possible sources of shocks. In order to minimize them, a government needs to maintain a tight control over the relevant economic policies in their countries. Historically, many governments have found themselves unable or unwilling to exercise this control. Naturally, differing labor relations, diverse fiscal and governance traditions and different political systems are responsible for

[1] Not much will be said of the benefits of monetary unions since this would be a topic on its own. Much of this section is based on the very understandable book of Paul DeGrauwe (De Grauwe, 2005, see).
[2] which is based on the seminal contribution of Mundell (1961)
[3] There is also the problem of different languages in EMU.

varying outcomes. Germany has a tradition of persistent wage restraint (wage increases below productivity and inflation increases). As a result, its competitiveness (measured in unit labor cost) has constantly increased. Other countries like France, Spain or Italy have very different economic and social traditions, also in wage-setting. Higher wage increases have frequently led to higher inflation rates in these countries, impairing the competitive position of their firms, in particular the export sector.

Flexible exchange rate For those countries on a flexible exchange rate with Germany, the deterioration in their relative competitive position is frequently set off through a depreciation of the exchange rate (see Flassbeck and Spiecker (2007, p. 127-130) showing this for the USA and Germany). As the German currency appreciates the competitive gain is wiped out, thus restoring the original relative competitive positions.

Fixed exchange rate However, for countries maintaining a fixed exchange rate with Germany, exchange rates do not bring immediate relief following a German policy of wage restraint. Instead, the stronger competitive position of German relative to foreign firms leads to a gain in markets shares of German firms both in the foreign and domestic markets and an equal loss in market shares of foreign firms. Thus, Germany incurs a current account surplus and the foreign country suffers a current account deficit.

In order to avoid monetary chaos among close trading partners, many European countries have striven to fix their mutual exchange rates. Germany has historically played the role of the anchor currency with other countries fixing their exchange rate to the German mark (European Monetary System). In a system without close coordination of economic policies, current account imbalances may go on for a while (a few months to years), but will eventually exert speculative pressure on the current exchange rate[4]. National central banks frequently had to give in to market pressures[5] and decided to ask for a devaluation in the EMS [6]. Realignments were very common, and the EMS and its predecessors soon became de facto adjustable rate regimes instead of truly fixed exchange rate regimes.

Monetary union In a monetary union, exchange rate revaluations are impossible. Therefore, member countries have to be very wary with respect to their economic policies.

[4] since a persistently repeated yearly current account deficit cannot go on forever. The deficit country would see ever larger parts of its home corporate sector disappear as their production is substituted by cheaper imports from Germany. Also, the net financial asset position of the deficit country vis-à-vis Germany would continuously worsen, meaning that they acquire more and more debt that cannot be paid back to Germany.

[5] Two central banks which cooperate and decide on a certain fixed exchange rate can fix this rate indefinitely as each central bank can „print“ their own currency in unlimited amounts to exchange it for foreign currency inflows, stabilizing any appreciation tendencies of the exchange rate. However, in case of the asymmetric EMS with Germany as the anchor currency, the stabilizing burden was solely with the other participating countries. They could prevent an appreciation of their currency (as does China today with respect to the US-Dollar) by printing their own money. However, they could only prevent a depreciation of their currency as long as they had foreign reserves in the form of German marks (DM). If market pressure is too strong, a devaluation is inevitable unless Germany were to agree to support the exchange rate.

[6] see Ungerer (1990, p. 55) for an overview of exchange rate realignments in the EMS

However, as will be shown in chapter 3, many countries have discontinued the rather close coordination in the run-up to EMU. Also, the introduction of EMU *itself* has led to large shocks such as decreased borrowing costs for some countries resulting in different internal dynamics. This has led to *unprecedented external imbalances* as a result of distinct competitiveness developments. Unless countries are willing to give up on EMU and exit it in order to devalue, correcting this untenable situation will require more courageous and full-fledged solutions than in the past.

2.2. A Monetary Union without a transfer mechanism: Three safeguards

A typical Monetary Union is embedded in the judicial and economic framework of a country (like any nation-state monetary union). Participating regions are usually subject to the same tax rates and government expenditures through a federal budget that, in case of asymmetric shocks, ensure income transfers from the stronger to the weaker region.

The European Monetary Union[7] (EMU), however, was created with the intent of establishing a monetary union *without* a permanent transfer mechanism[8], and leaving the sovereignty for economic policies largely in the hands of national governments. This set-up was chosen due to the (understandable) German unwillingness to potentially be obliged to pay the bill of other Member States, and due to a general unwillingness of national governments to cede their power to the supranational level.

2.2.1. Economic governance in EMU

Kösters (2009) and Baldwin and Gros (2010) give a short overview of the economic policy framework of EMU. In creating a common currency, nominal exchange rates were irrevocably fixed. A centralized monetary policy was set up („one size fits all“) committed to the goal of price stability. Both instruments were henceforth unavailable as adjustment tools at the national level.

Constraints on fiscal policy The danger of setting up a monetary union without a fiscal union was voiced in two major concerns (Baldwin and Gros, 2010, p. 2-3): That „governments might be tempted to run up unsustainable debts and push the ECB to inflate them away [leading to a failure of its price stability target], or to run up high levels of debt that would create negative spillovers for others“ (ranging from higher government interest costs to the cost of a subsequent bailout).

Although the sovereignty and responsibility for fiscal policy was left with the Member States, it was bound by the Stability and Growth Pact (SGP) and its well-known limits

[7] A nice website devoted to the long history of the idea of a common currency in Europe is `http://ec.europa.eu/economy_finance/emu_history/index_en.htm`. For the history of European Monetary Integration in book form (Ungerer, 1997, see)

[8] see Flassbeck and Spiecker (2005, p. 2)

to public deficits and debt. Baldwin and Gros (2010, p. 3) describe *three safeguards* for fiscal policy in EMU:

Stability and Growth Pact The SGP, as the most important pillar, was intended to keep deficits below 3 % of GDP in normal times and debt levels below or at least heading towards 60 % of GDP (see also section 2.3).

ECB independence The independence of the ECB was supposed to protect it from political pressures to inflate away debt and risk price stability[9]. Also, it was explicitly forbidden from financing the deficits of Member States directly[10].

No bailout clause The *no bailout clause* in the treaty (TFEU, 2008, Art. 125) was supposed to insure that no government would have to guarantee or finance the debt of other governments.

Thus, exchange rates and monetary policy as a national stabilization tool and an insurance against shocks and recessions were gone, and fiscal policy severely constrained. Within this framework of thought, fiscal policy is supposed to act rather as an allocation than a stabilization tool.

Apart from concerns with respect to the ECB as described above, the economic rationale in limiting the room for fiscal policy manoeuvre was the enforcement of „urgently needed structural reforms [that would make] prices and wages more flexible and thus enhance the adaptability of the economies"(Kösters, 2009). Structural policy[11] was supposed to do the trick and substitute for all three hitherto existing adjustment tools. In addition, incomes policy (wage setting) was made responsible for the goal of high employment, with the ECB and fiscal policy only ascribed a marginal role for these goals. It was believed that only structural policies could eventually increase potential growth rates, and that there was no active need for stabilization as economies would eventually revert to their long-run potential growth rate in any case.

Thus, both structural policy and incomes policy were made responsible for a goal (employment and growth) that they are ill-suited to achieve, with the most effective instruments (fiscal and monetary policy) abdicated from their responsibility for it. The rules of the Maastricht Treaty and of the single market meant that Member States agreed to *systems competition* since single market rules, free movement of labor and capital as well as the country of origin principle (choice of regulations) were introduced (Kösters, 2009). This was supposed to bring about a higher degree of systems competition than elsewhere in the world, inducing pressure for structural reforms and thus making Europe the most competitive and dynamic world economy. Measured against its very own goals, this strategy has been a failure[12].

[9] as the Germans wanted to ensure that the ECB would closely resemble the Bundesbank in order to continue its tradition of comparably low inflation rates

[10] This actually leaves a loophole that has been used in the current crisis. While the ECB may not purchase government bonds in the primary market, it may do so in the secondary markets.

[11] Lisbon Strategy, its successor EU 2020, and national action plans

[12] with the GDP growth performance of EMU actually lagging behind other similar regions of the world such as the US

Figure 2.1.: Euro zone setup according to Baldwin and Gros (2010)

Policy	Policymakers	Goal and rationale
Monetary	EU: ECB	Price stability
	National: none	
Fiscal	EU: Eurogroup + no bailout clause + no ECB national bond purchase	Allow room for national macro stabilisation, but avoid spillovers (e.g. drive up borrowing cost, or default possibility)
	National: Member governments with coordination via SGP and Eurogroup	
Banking & financial market regulation	EU: EU directives and coordinating bodies (EBA)	Maintain stability of banking system and financial markets to avoid crises
	National: Supervision: member governments with loose coordination (colleges)	
Competitiveness	EU: none	If banks and financial markets are stable, current account imbalances are not an issue
	National: Differs across member countries: markets, social dialogues, and wage norms	
Structural reform	EU: Lisbon Strategy, now EU 2020	Boost flexibility to improve the fit of the one-size-fits-all monetary policy
	National: National action plans	

Baldwin and Gros (2010, Table 1, p. 2)

Graph 2.1 is taken from Baldwin and Gros (2010) and subsumes the policy framework of the eurozone. It also includes banking and financial market regulation, which were left to Member States. The lack of attention for this policy area may be explained, as the authors argue, by the economic *received wisdom* of the time, assuming that financial markets would work perfectly.

Current account balances In the notion of the euro zone founders, markets and especially financial markets are efficient and work. Also, banks are supposed to be stable. Given these two premises, current account problems do not really exist as current accounts are merely the outcome of rational consenting individuals deciding on borrowing and lending relations. What follows is a disregard for current account imbalances as presented in chapter 3.

It is astonishing that policymakers who had for decades dealt with speculative exchange rate attacks that at times were justified (due to unbalanced current accounts between two countries) or unjustified (due to overshooting or irrational financial markets at times of uncertainty)[13] would believe in benevolent, efficient and stable financial markets and be completely ignorant of the need to actively manage current account balances (by national policy packages).

2.3. The Stability and Growth Pact: Essence and a history of broken rules

The essence of the pact The Stability and Growth Pact (SGP) was agreed upon in 1997 by the Council on the initiative of the then German Minister for Finance Theo Waigel[14].

The legal groundings of the SGP can be found in the Treaty on the Functioning of the European Union (TFEU, 2008, Art. 121 and 126) as well as Protocol 12 annexed to the Treaty specifying the Excessive Deficit Procedure (TFEU - Protocol 12, 2008), and in two Council Regulations from 1997 including their amendments in 2005, when the pact was reformed (Council Regulation No 1466/97, 1997; Council Regulation No 1467/97, 1997)

Economic essence The SGP stipulates that budgetary policies of EU Member States are assessed against the following two criteria:

- whether the ratio of the planned or actual government deficit to gross domestic product exceeds the reference value of 3% of GDP at market prices[15]

[13] see Ungerer (1997)

[14] see the official document European Council (1997), and Interview with Hubert Védrine (2008) for background information on the negotiations. All relevant legal texts at one glance can be found on the website of the Directorate General for Economic and Financial Affairs: `http://ec.europa.eu/economy_finance/sgp/legal_texts/index_en.htm`.

[15] unless: — either the ratio has declined substantially and continuously and reached a level that comes close to the reference value, — or, alternatively, the excess over the reference value is only exceptional

- whether the ratio of government debt to gross domestic product [at market prices] exceeds a reference value of 60%, unless the ratio is sufficiently diminishing and approaching the reference value at a satisfactory pace

We abstract from the details of the political procedure[16], which include Council decisions and notes, Commission proposals and stability programmes submitted by Member States and focus on the economic essence. Three additional points, however, are noteworthy:

Medium-term budgetary objective In the preventive arm (Council Regulation No 1466/97, 1997, Art.2), a *medium-term budgetary objective* (MTO) is defined, where „each Member State shall have a differentiated medium-term objective for its budgetary position... They shall provide a safety margin with respect to the 3% of GDP government deficit ratio; they shall ensure rapid progress towards sustainability and, taking this into account, they shall allow room for budgetary manoeuvre, considering in particular the needs for public investment". For euro area countries, „the country-specific medium term budgetary objectives shall be specified within a *defined range between – 1% of GDP and balance or surplus*, in cyclically adjusted terms, net of one-off and temporary measures." Basically, the Member States themselves define the MTO (within the boundaries), while the Commission and the Council check whether it is ambitious enough and whether progress towards it is sufficient. Thus, in theory, the overall fiscal policy framework is quite strict, especially for euro area countries.

Corrective arm The corrective arm is specific in TFEU (2008, Art. 126) and Council Regulation No 1467/97 (1997).

As the Council, based on a report by the Commission, decides after an overall assessment[17] that an excessive deficit exists and that the country is placed under an Excessive Deficit Procedure (EDP)[18], it adopts a recommendation to the concerned Member State to correct the excessive deficit (TFEU, 2008, Art. 126 6). Effective action by the Member State to correct the deficit needs to be taken within six months, and the deficit should be corrected following the year of its identification (unless there are special circumstances as is the case with the crisis now). In the recommendation made by the Council, it „shall request that the Member State achieves a minimum annual improvement of at least 0,5% of GDP as a benchmark, in its cyclically adjusted balance net of one-off and temporary measures, in order to ensure the correction of the excessive deficit within the deadline set in the recommendation" (Council Regulation No 1467/97, 1997, Art. 3 (4)). If the Member State fails to persistently put into practice its correction, the Council may give

and temporary and the ratio remains close to the reference value

[16] laid out in Art. 126 (TFEU, 2008) and two regulations: Council Regulation No 1466/97 (1997); Council Regulation No 1467/97 (1997)

[17] There are exceptions in that a deficit can be *exceptional and temporary* when either a severe economic downturn occurs or an event outside the control of the Member State happens. A *temporary* deficit is present when the deficit is already projected by the EC to go back to below 3%.

[18] Note that the corrective part including fines is focused on the deficit only (not on the debt level). This should be changed according to the Commission proposals presented in section 4.1

out another recommendation and set a time limit for taking measures to remedy the situation (TFEU, 2008, Art. 126 9). Finally, if the Member State continues not to comply, several non-financial sanctions are possible.

Sanctions for euro area members For euro area members, *financial* sanctions can be applied in the case of non-compliance. They range from non-interest bearing deposits to fines, where a fixed component (0.2% of GDP) and a variable component depending on the amount of the deficit can lead to a maximum deposit/fine per annum of 0.5% of the country´s GDP. (Council Regulation No 1467/97, 1997, Article 11). Deposit interest (or fines) that were to come in as revenue would be distributed to all countries under no EDP[19].

A history of broken rules The numbers of Table 2.1 provide the background to the story about the SGP. While the framework has seen a couple of excessive deficit procedures, sanctions have never been imposed. The SGP was also weakened in 2003-04 when a vote came up on the council to establish that neither France nor Germany had taken adequate measures to reduce their deficits. The two countries (among others) had found themselves in budgetary trouble when the downturn in the early 2000s had a longer duration than expected, and the Commission embarked on a rather strict interpretation of the pact, willing to force the countries to take corrective action despite the slump.

The Commission proposals could not find the required majority (France and Germany had organized that) and different Council conclusions were passed (Council of the European Union, 2003). The spirit of the pact was thus broken even by Germany, its fiercest advocate (back in the 1990s and today) [20].

The framework of the SGP also turned out to be powerless when creative bookkeeping (accounting fraud) is committed as Greece has done. Greece reported in 2009 that its deficit had been much higher than projected, and that it had reported wrong numbers to the Commission. A sovereign debt crisis followed.

2.3.1. Current developments and current fiscal policy stance

Due to the financial crisis, as of September 2010, 24 out of 27 Members of the European Union have a deficit of over 3 percent and are subject to an excessive deficit procedure (EDP)[21]. All of the relevant (in size) eleven euro zone countries depicted in table 2.1

[19] see Council Regulation No 1467/97 (1997, Article 16)

[20] The Commission took the matter to the European Court of Justice, which ruled that while the Council has a right not to confirm Commission recommendations, it cannot simply confirm its own recommendations since the right for initiatives for recommendations lies within the power of the Commission (European Court of Justice, 2004). The strict interpretation of the pact by the Commission remained politically inconsequential and powerless. Nonetheless, both political power and economic reason was on the side of the nation states France and Germany, and the pact was subsequently adjusted in 2005 to meet the needs for sensible economic policy even during slumps or downturns. The advocates of a more flexible pact had won out as both economic reason and political reality prevailed.

[21] The notable exceptions being Sweden, Estonia (adopting the euro in 2012) and Luxembourg. The deficit of the latter has been above 3 percent in 2009 and will be in 2010. But since it is temporary in

Table 2.1.: Public deficits and excessive deficit procedures

				Overview of ongoing excessive deficit procedures		
	Number of 3% deficit violations from 2000-2007	Previous excessive deficit procedure open (now closed) since 1999	Sanctions taken in previous open procedures	Date of the Commission report (Art.104.3/126.3)	Council Decision on existence of excessive deficit (Art.104.6/126.6)	Current deadline for correction
Austria	1	none	none	7 October 2009	2 December 2009	2013
Belgium	0	none	none	7 October 2009	2 December 2009	2012
Finland	0	none	none	12 May 2010	13 July 2010	2011
France	3	2003-07	none	18 February 2009	April 27, 2009	2013
Germany	4	2002-07	none	7 October 2009	2 December 2009	2013
Greece	8	2004-07	none	18 February 2009	April 27, 2009	2014
Ireland	0	none	none	18 February 2009	April 27, 2009	2014
Italy	5	2005-2008	none	7 October 2009	2 December 2009	2012
Netherlands	1	2004-05	none	7 October 2009	2 December 2009	2013
Portugal	4	2002-04, 2005-08	none	7 October 2009	2 December 2009	2013
Spain	0	none	none	18 February 2009	April 27, 2009	2013

Source: European Commission, Baldwin et al.(2010)

have an open EDP open.

As a consequence, consolidation efforts have dominated the debate in Europe, which appears to be much less the issue in other parts of the world (US, Japan, China). If countries were to abide by the Stability and Growth Pact, all of Europe is set for fiscal restraint as tax rates rise and pure government spending (excluding interest rates and automatic stabilizers) is stalled[22]. Some countries have been forced to save even more by the markets (this group includes the so-called PIGS: Portugal, Ireland, Greece and Spain). However, the success of these consolidation programs is rather doubtful, since cutting government expenditures will most likely negatively affect GDP growth[23].

2.3.2. Evaluation: The Stability and Growth Pact has failed

By and large, the pact can be considered a failure in many respects.

Private debt The Pact has remained impotent in several respects. In the Greek case, accounting fraud had been committed (tolerated by some senior EU-officials, who at least partially knew what was going on in Greece).

In Spain and Ireland, private bank debt hikes due to housing bubbles and unproductive investment and use of credit made a pact on public debt irrelevant. Also, according to the pact, Spain and Ireland have been role models with their low public debt to GDP ratios of approximately 40% and 25% in 2007, respectively. As such, the big debate (Munchau, 2010) between political decisions before the application of sanctions or an automatic rules-based application of sanctions without political interference is irrelevant to the real problems, which include financial market reform (tighter regulation) and current account imbalances, but exclude fiscal profligacy as this is not the major problem of EMU (except for Greece).

The pact as such will never be able to serve its purpose in a satisfactory manner, since government budget deficits do not depend only on government willingness to save and „act prudently“[24] Especially important factors to consider as well would probably be the interest-growth differential, lower GDP growth and the resulting lower tax revenues. Too high government expenditures were not the cause for the current crisis, and neither were too high government budget deficits (except for Greece). On the contrary, Ireland and

an exceptional situation and necessary measures have been taken, the Commission has decided that Luxembourg has abided by the treaty. For details, see `http://ec.europa.eu/economy_finance/sgp/deficit/countries/index_en.htm`

[22] see Mathieu and Sterdyniak (2010) for an overview of planned fiscal impulses of Member States according to their Stability Programmes.

[23] It is also somewhat contradictory that in the recession of 2008, the European Commission was proud to announce an EU-wide stimulus package, giving the necessary discretionary fiscal impulses and letting automatic stabilizers work. Two years later, when the recession is returning to many euro zone countries, restrictive (discretionary) fiscal policy is applied, essentially counteracting automatic stabilizers.

[24] Indeed, even as the author is from Austria (with quite sound fundamentals), naming costly unjustified privileges of special interest groups and wasteful expenditures is an easy task, and necessary investment into the future remains neglected. Still, one would have to show that this has been less in earlier times, where public debt ratios were still lower.

Spain have, by all measures, acted very prudently fiscally as they were close to balance or even ran surpluses in the years preceding the crisis. A large part of current budget deficits is due to debt conversion of private banks´ debt into public debt, e.g. the 32% projected record deficit of Ireland in 2010. However, it would make no sense to actually punish Ireland for its deficit now as demanding fines would only aggravate the situation.

Market disciplining has failed From past experiences, it can be concluded that the idea that financial markets discipline Member States of EMU has failed. The interest rates on government bonds have remained rather flat with an extremely small spread between Germany and all other euro area nations, indicating a non-existence of country risk as perceived by financial markets. During the crisis, this has markedly turned around to the opposite, even driving interest rates so high that countries would not be able to refinance themselves sensibly on the market.

Therefore, while before the crisis financial markets did not discipline (with higher interest rates) individual states, during the crisis individual states were driven into bankruptcy, and a sort of collective punishment (given the uncertainty over the true state countries are in) took place driving up interest rates. Countries where doubts arose over the level of their public debt and future growth perspectives was subject a large increase in refinancing costs.

If EMU was meant to function through market discipling, in that countries with unsound policies feel the consequences of their actions in a *timely* manner, it has been a complete failure. Instead, the overshooting of financial markets has exacerbated the existing problems.

Ignoring foreign debt and current account imbalances It is not by accident that all of the troubled countries suffer from high current account deficits and high foreign debt. Apart from ignoring private debt developments, the pact also ignores unsustainable foreign debt, as it does not take a holistic look on the economy (including financial balances and net wealth as provided in chapter 3).

Chapter conclusion In this chapter, we have shown that the set-up of EMU governance is flawed in many respects. Most importantly for our case, the policy framework does not address the real problems of EMU (current account imbalances) but instead restricts other target ratios (Stability and Growth Pact). We will now turn to the economic analysis on what has happened since 1999 (chapter 3) before we turn to the reform proposals for EMU governance (chapter 4).

3. Economic Developments in the Euro Zone 1999-2009

In the years preceding the introduction of the new currency, policymakers were working hard to achieve both the self-imposed convergence criteria and the kind of real and nominal convergence that would be required for the functioning of the monetary union. However, while in the advent of EMU, the outlook on convergence appeared to be bright and satisfactory, since then, individual Member countries have seen quite divergent developments. Having discussed the basic economic governance principles of EMU in chapter 3, we now proceed to discuss economic developments in the euro zone empirically, especially regarding the evolution of current account imbalances. As we establish the facts in this chapter, we will then be able to discuss reform proposals for the euro zone and the different ways of rebalancing current accounts in the subsequent chapters, both verbally and theoretically.

The key hypothesis of this chapter will be that the individual countries in EMU have not yet started to adapt to the new situation of being a member of a larger monetary union, which requires close coordination, discipline and demands a loss in sovereignty with respect to economic policy making. Instead, each Member State has followed their own (largely unsustainable) growth model regardless of the consequences on the euro zone as a whole. First and foremost, this has led to unsustainable current account imbalances, which in turn have been a major reason for the current euro crisis.

The following indicators of economic developments will be discussed for the largest eleven Member States of the euro zone[1]: Real GDP growth, real GDP growth per capita, demand-side contributions to real GDP growth, and, of capital importance to our discussion, current account balances both as totals and split into sub-items. Apart from this basic discussion and to provide for coherence with the subsequent chapters, the sectoral accounts both in flows (household saving, non-financial corporations saving and the government balance) and stocks (private wealth, net foreign asset position, and government debt) will be presented.

The underlying implicit assumption in this discussion will be that economic policy (incomes, fiscal, monetary and regulatory policy) has a major impact on economic outcomes.

[1]Thus, this leaves out Slovenia, Slovakia, Luxembourg, Malta, Cyprus and Estonia (since 2011). This quantitative (in terms of GDP size) cut-off has been made in order to keep the discussion to a reasonable size.

3.1. Current account balances and price competitiveness

Current account imbalances have been a widely discussed topic on the world level as huge imbalances between China, Japan, the oil-rich countries and the US, UK, Spain and other countries have evolved. The focus, however, has not been on the euro zone or Europe as their total accounts have been almost perfectly balanced.

Nevertheless, several studies have examined the enormous current account imbalances in between euro zone countries, such as European Commission - DG ECFIN (2009), European Commission - DG ECFIN (2010), Ederer (2010), Dullien (2010), RMF (2010a) and RMF (2010b).

Euro zone current account balances The usual discussion with current account imbalances starts with one or another form of figures 3.1 and 3.2, depicting the current account balances of the major eurozone members. As can be inferred from the graphs, two distinct groups with respect to current account balances have evolved over time.

Finland, the Netherlands, Germany, Belgium and Austria have experienced a current account surplus for most of the years, while Italy, Ireland, Spain, Greece and Portugal[2] have seen a deficit.

Surplus countries Within the current account surplus countries, Belgium and Finland have started with the largest surpluses in the euro area[3] in 1999, but have since been on a sustainable path of decreasing surpluses. On the contrary, Germany and Austria have joined EMU with a small deficit, and the Netherlands with an already sizable surplus[4]. Until the current crisis, Germany and the Netherlands have been on an unsustainable path with strongly mounting current account surpluses (9.3% in 2006 for the Netherlands, 7.7% in 2007 for Germany). Austria´s balance has risen as well over the years, but not by as much. The country with the most balanced performance over the entire period is France, although it is suffering from an increasing deficit in recent years.

Deficit countries As shown in figure 3.2, the situation in the deficit countries is quite diverse. Italy and Ireland have started out EMU with a small surplus of 0.7% and 0.3% in 1999, respectively, which turned into deficits of 3.5% and 5.2% in 2008. Much worse has been the evolution of current account deficits for the Spanish, Portuguese and Greek economies. Portugal had a boom due to low interest rates already in the late 1990s, and therefore joined EMU with a huge CA deficit of 8.5% which worsened up to 12.2% in 2008. Spain and Greece, while in a deficit situation from the beginning (-2.9% and -5.6%), found themselves with ever larger deficits culminating in 10% for Spain in 2007 and 14.6% for Greece in 2008. For these two countries, CA deficits of this magnitude have not been recorded before[5].

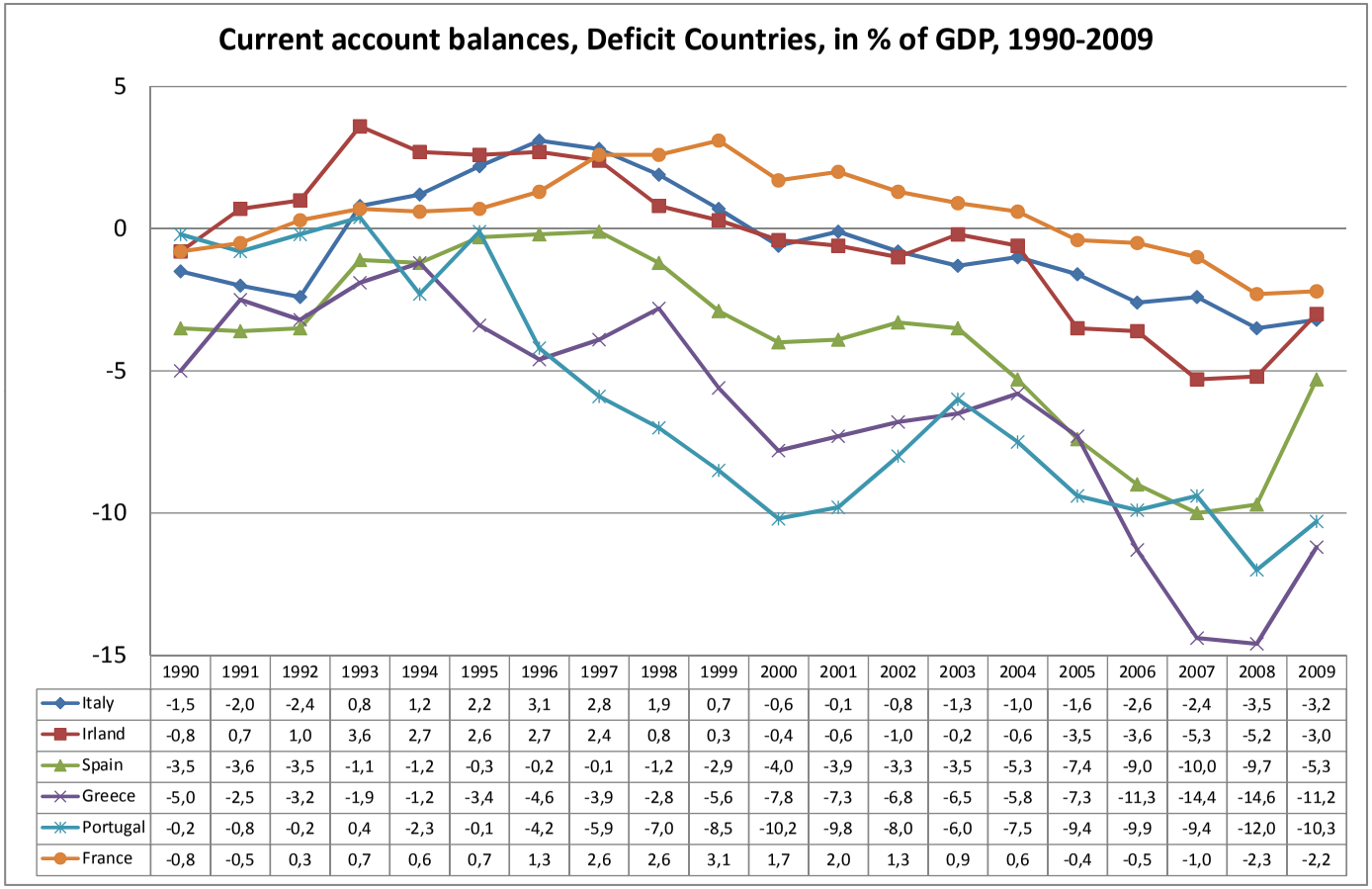
[2] the so-called PIIGS in the media

[3] euro area here referring to the countries included in the analysis

[4] It should be noted that due to the sheer size of the German economy, its imbalance is naturally the most important one in the euro zone among the surplus countries.

[5] since the 1960s, see figures A.15 and A.15 in the appendix.

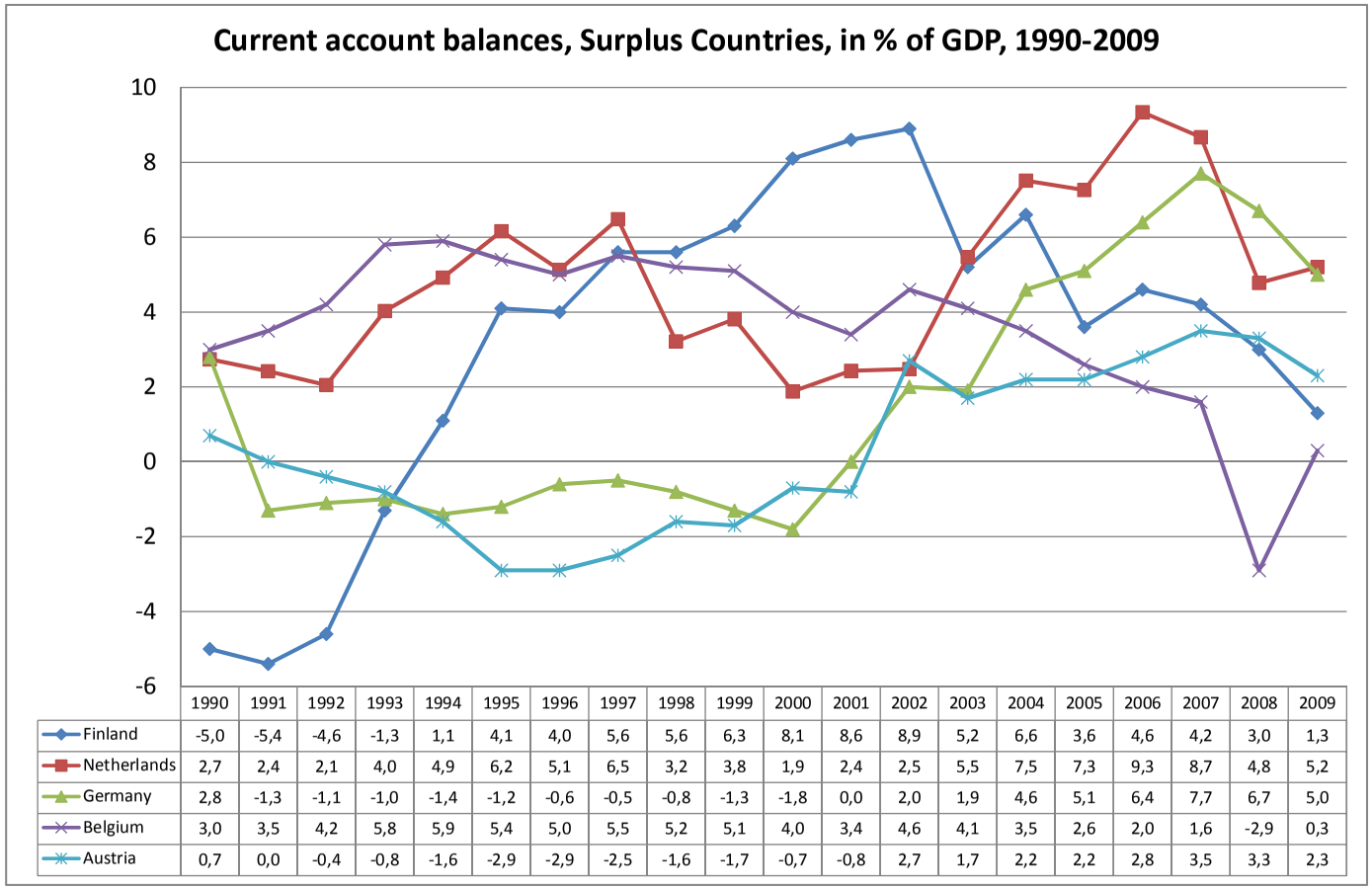
Figure 3.1.: Current Account Balances, Deficit Countries



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Italy	-1,5	-2,0	-2,4	0,8	1,2	2,2	3,1	2,8	1,9	0,7	-0,6	-0,1	-0,8	-1,3	-1,0	-1,6	-2,6	-2,4	-3,5	-3,2
Irland	-0,8	0,7	1,0	3,6	2,7	2,6	2,7	2,4	0,8	0,3	-0,4	-0,6	-1,0	-0,2	-0,6	-3,5	-3,6	-5,3	-5,2	-3,0
Spain	-3,5	-3,6	-3,5	-1,1	-1,2	-0,3	-0,2	-0,1	-1,2	-2,9	-4,0	-3,9	-3,3	-3,5	-5,3	-7,4	-9,0	-10,0	-9,7	-5,3
Greece	-5,0	-2,5	-3,2	-1,9	-1,2	-3,4	-4,6	-3,9	-2,8	-5,6	-7,8	-7,3	-6,8	-6,5	-5,8	-7,3	-11,3	-14,4	-14,6	-11,2
Portugal	-0,2	-0,8	-0,2	0,4	-2,3	-0,1	-4,2	-5,9	-7,0	-8,5	-10,2	-9,8	-8,0	-6,0	-7,5	-9,4	-9,9	-9,4	-12,0	-10,3
France	-0,8	-0,5	0,3	0,7	0,6	0,7	1,3	2,6	2,6	3,1	1,7	2,0	1,3	0,9	0,6	-0,4	-0,5	-1,0	-2,3	-2,2

Source: OECD

Figure 3.2.: Current Account Balances, Surplus Countries



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Finland	-5,0	-5,4	-4,6	-1,3	1,1	4,1	4,0	5,6	5,6	6,3	8,1	8,6	8,9	5,2	6,6	3,6	4,6	4,2	3,0	1,3
Netherlands	2,7	2,4	2,1	4,0	4,9	6,2	5,1	6,5	3,2	3,8	1,9	2,4	2,5	5,5	7,5	7,3	9,3	8,7	4,8	5,2
Germany	2,8	-1,3	-1,1	-1,0	-1,4	-1,2	-0,6	-0,5	-0,8	-1,3	-1,8	0,0	2,0	1,9	4,6	5,1	6,4	7,7	6,7	5,0
Belgium	3,0	3,5	4,2	5,8	5,9	5,4	5,0	5,5	5,2	5,1	4,0	3,4	4,6	4,1	3,5	2,6	2,0	1,6	-2,9	0,3
Austria	0,7	0,0	-0,4	-0,8	-1,6	-2,9	-2,9	-2,5	-1,6	-1,7	-0,7	-0,8	2,7	1,7	2,2	2,2	2,8	3,5	3,3	2,3

Source: OECD

The implosion of economic activity and world trade in the financial crisis has reduced both surpluses and deficits in the period 2007-2009, but cannot eliminate the current account imbalances altogether as many of the underlying drivers have remained intact (see below).

Persistent current account imbalances (flows) are reflected in the net foreign assets position (the corresponding stock). The net foreign asset position of a country indicates whether a country is a net creditor or a net debtor to the rest of the world. A notorious (current account) surplus country will typically have built up a large positive net foreign asset position. Conversely, a deficit country will display a large negative foreign asset position after years of current account deficits.

Net foreign assets The cumulative past current account balances of euro zone countries largely determine their actual net foreign asset position (NFA) as shown in figure 3.3[6]. Persistent current account deficits are unsustainable over the long run as the net foreign asset position deteriorates continuously. This means that foreign countries accumulate ever larger net claims on a persistent deficit country. At some point, foreigners (in the form of banks or financial markets) will begin to doubt the repayment ability of the country under scrutiny. Unless it can pay bills in a money it has control over[7], foreigners will simply decline to give any more credit[8], which will lead to a balance of payment crisis. In the past, these crises have been resolved in different ways[9], but when pressures got too tight, devaluations of the currency took place, either devaluing foreign debt (if denominated in the home currency) or at least creating the basis for repayment by restoring the competitiveness of the tradables sector[10].

It is important to note that for a country that is a large net lender (creditor), its large positive NFA position may lead to some unease, for if the net debtor defaults on its liabilities towards the net lender, the foreign assets acquired by the lender (if in the form of financial assets) become worthless. The net lender has then delivered actual goods and services in exchange for worthless paper. Also, a current account (CA) surplus means that the domestic population could consume more resources from other countries (see also section 3.6).

Therefore, one of the four major economic goals[11] of a national economy is a balanced

[6] NFA positions are also affected by revaluations of existing assets and liabilities such that NFAs are not simply the accumulation of past CA balances.

[7] For example, the United States government, having the dollar as the world reserve currency and major imports (oil) facturated in dollars, can always simply print those dollars to acquire goods. They cannot go broke since they are always able to pay their liabilities. This is one of the key ideas of Modern Monetary Theory (Wray, 1998). The only way they could actually have to default on their liabilities is if people were to lose trust in the dollar and a run on the currency were to happen. However, the dollar is also backed by US military and political power which assures that the dollar remains the world currency for oil and commodities trading.

[8] in a very disruptive, sudden event like a panic

[9] for a monetary history of Europe including the history of monetary crises, see Ungerer (1997)

[10] Real debt is higher when nominal debt is denominated in foreign currency and the exchange rate is depreciated. Unless real debt becomes too high, the improved competitiveness restores debt repayment abilities.

[11] in the German original: Magisches Viereck

current account (as a flow variable). The corresponding stock (NFA position) should ideally be zero percent of GDP. Alternatively, given a certain positive or negative NFA position, it is in the interest of a country not to let its NFA over (nominal) GDP ratio explode[12].

As shown in figure 3.3, the current account situation is reflected in the net foreign asset (NFA) position relative to GDP[13]. Greece, Spain and Portugal have built up very high negative NFA positions[14]. Counterparts to these negative positions can be found in the very positive NFA to GDP positions of the Netherlands and the sizable position of Germany[15], which is most important simply due to its weight in the eurozone.

Current account reversals In order for the major debtor countries within the eurozone to stabilize (or rather decrease) their negative NFA positions (the external debt), their current accounts have to reverse into surpluses[16].

The definition of the current account balance is such that: Balance of current transactions with the rest of the world = Net exports of goods and services at current prices + Net exports of services at current prices + Net primary income from the rest of the world[17] + Net current transfers from the rest of the world.

Natural adjustment via the trade balance Examining the CA balance at this more disaggregated level permits a discussion of several options on how to best achieve a CA reversal. Naturally, a reversal of the largest balance of net exports would do the trick. In as far as growth has been collapsing in CA deficit countries during the crisis, this reversal has already occurred in 2009 and 2010 and happens automatically. However, as Ederer (2010) argues, unless competitiveness divergences (see below) are corrected, current account deficits (and surpluses) will remain in place. Also, it has been very costly in terms of unemployment and GDP in the deficit countries. There are basically

[12] with GDP being a rough measure for the national ability to repay the debt

[13] Net foreign assets are a part of net financial assets in national accounts. Of course, net financial assets are only the monetary part of wealth (debt) that an economy has built up, and other important parts of national wealth are either not measured (human capital) or suffer from measurement problems (capital stock). But net foreign assets do show the financial debt (or wealth) that an economy has acquired versus the rest of the world. Whether the financial liabilities a CA deficit country has engaged in are sustainable can only be judged knowing what the funds have been invested in (in increasing the capital stock of certain sectors, or in other forms of partially unmeasured wealth like human capital). If funds are invested in the build-up of an export-oriented industry, CA deficits may be justified, as the future export industry will be able to service the debt. If funds are used up for private consumption or invested into unproductive capital, CA deficits and the corresponding increase in foreign debt will have been unjustified (even if only identifiable with the benefit of hindsight).

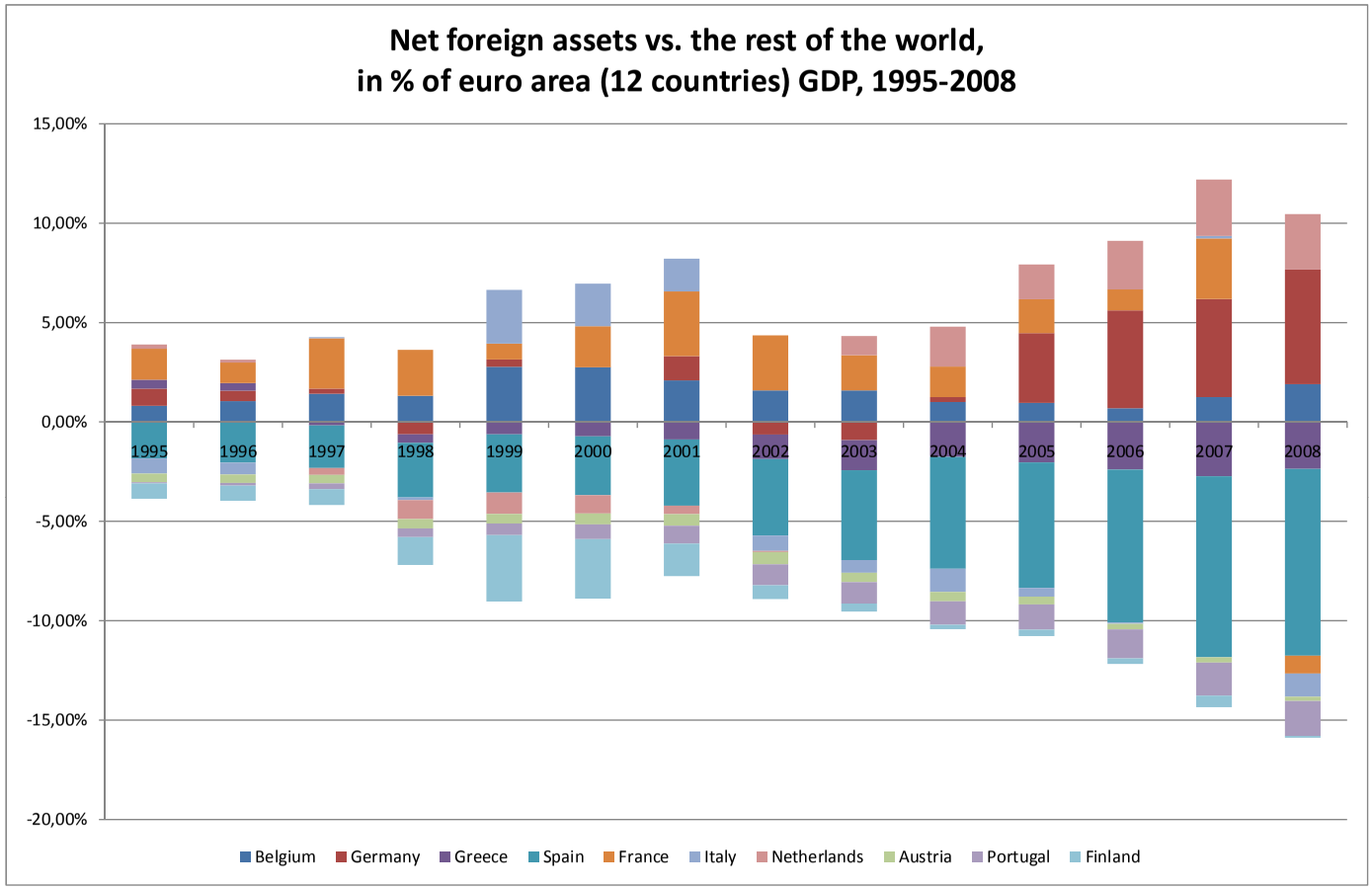
[14] see figure A.43, A.39 and A.42. Italy is doing very well according to NFA positions, and data for Ireland were unavailable at Eurostat.

[15] see figure A.38 and A.41 in the appendix

[16] The required surpluses to stabilize the respective NFA position at their current level (to stabilize the debt) can in theory be calculated by using difference equations for debt dynamics. Any current account surplus above that will reduce the debt stock, see also section B in the appendix.

[17] with Net primary income from the rest of the world = Net investment income + Net compensation of employees

Figure 3.3.: Net financial assets, Euro Area



Source: Eurostat

two options on how to do achieve a CA reversal in the euro zone, as will be explained in section 4.6.2.

Other sources of reversal However, it is interesting to see that apart from this, several other items on the balance could help reverse it. One could also increase net current transfers (such as transfers received from the EU-budget) to help achieve a CA surplus, or introduce new transfers (such as an EU-wide unemployment insurance) that would provide net payments to the CA deficit countries (see also the proposals in section 4.4).

Another natural adjustment mechanism for the current account is outward labor migration from the deficit countries leading to an increase of remittances (which constitutes net current transfers) to the deficit countries[18] While this mechanism has played a role historically for some countries[19], it is doubtful that surplus countries would like to induce labor migration to their countries, and that the migration would be large enough to permit a long run solution of the CA problem.

A (favorable) net capital transaction would take place if a country were to default on its debt (public or private) and part of it was held by foreigners[20].

Having discussed the developments and components of current account balances, we may now turn to the reasons for these developments.

3.2. Divergence in real exchange rates and inflation rates in a monetary union

In principle, the success of a product on international markets depends on a variety of factors, among those are the price, the quality, the image of the product and the number of competitor firms with similar products. Soft factors like the timeliness of delivery and customer service also contribute to the international competitiveness of a firm. On an aggregate level, for the total national economy, one of the most likely impact factors is the cost situation (reflected in prices) of the exporting sector. Price changes (national inflation rates and wage rates) affect large parts of an economy and therefore the relative success of many firms at once.

The most obvious indicator for measuring a country´s international competitiveness is the evolution of the real effective exchange rate[21]. Within the euro area, nominal

[18] While the compensation of employees to foreigners and from foreigners is recorded in the net primary income balance (which is dominated by property income), remittances are recorded in the net current transfers balance (Brümmerhoff, 2002, Chap. 9).

[19] In the 1980s, Portugal´s net current transfers amounted to up to 10 percent of GDP, but have decreased to roughly two percent since. Also in Greece, from 1960 to 1995, the services sector and the net current transfers balance contributed equally to offset the negative balance on goods, see figure A.19 in the appendix.

[20] Technically, this would only appear in the balance of payments, since capital transactions are not part of the current account balance. It would show up in the Net borrowing balance (B9) in the national accounts, which is also shown in the balance of payments and financial balances figures in the appendix.

[21] The real effective exchange rate (REER) of a country is defined by the weighted average of the nominal exchange rates multiplied by the domestic price level divided by the foreign price level. An increase

exchange rates are irrevocably fixed since there is the same currency. Thus, the relative price levels (differing inflation rates over time) entirely determine the value of the real effective exchange rate.

REER developments in euro area countries The real effective exchange rates of euro zone member countries relative to the original EU-15 are shown in figure 3.4[22]. The German economy has become much more competitive relative to other euro zone member states, with Austria partially following its lead. France and Belgium have lost competitiveness versus Germany and Austria, but gained relative to other member countries, which have seen even larger price increases over the last years. The so-called PIIGS[23] are found within this group, but also the Netherlands. In comparing the current account positions and changes from 1999 to 2009 and the corresponding REER changes from 1999 to 2009, it is fair to say that Belgium, Finland and France have been on a sustainable track reducing their current account surpluses from 1999 through appropriate developments in REER. All other members, be it the surplus countries (Germany[24], Austria,

in the REER is equal to a loss of competitiveness.

[22] Thus, these are not only intra-EMU REER. But those yield the same overall picture. Also, as European Commission - DG ECFIN (2010, p. 9-12) demonstrates, REER measures based on different price deflators (GDP, Unit labor costs, export prices) all show similar developments.

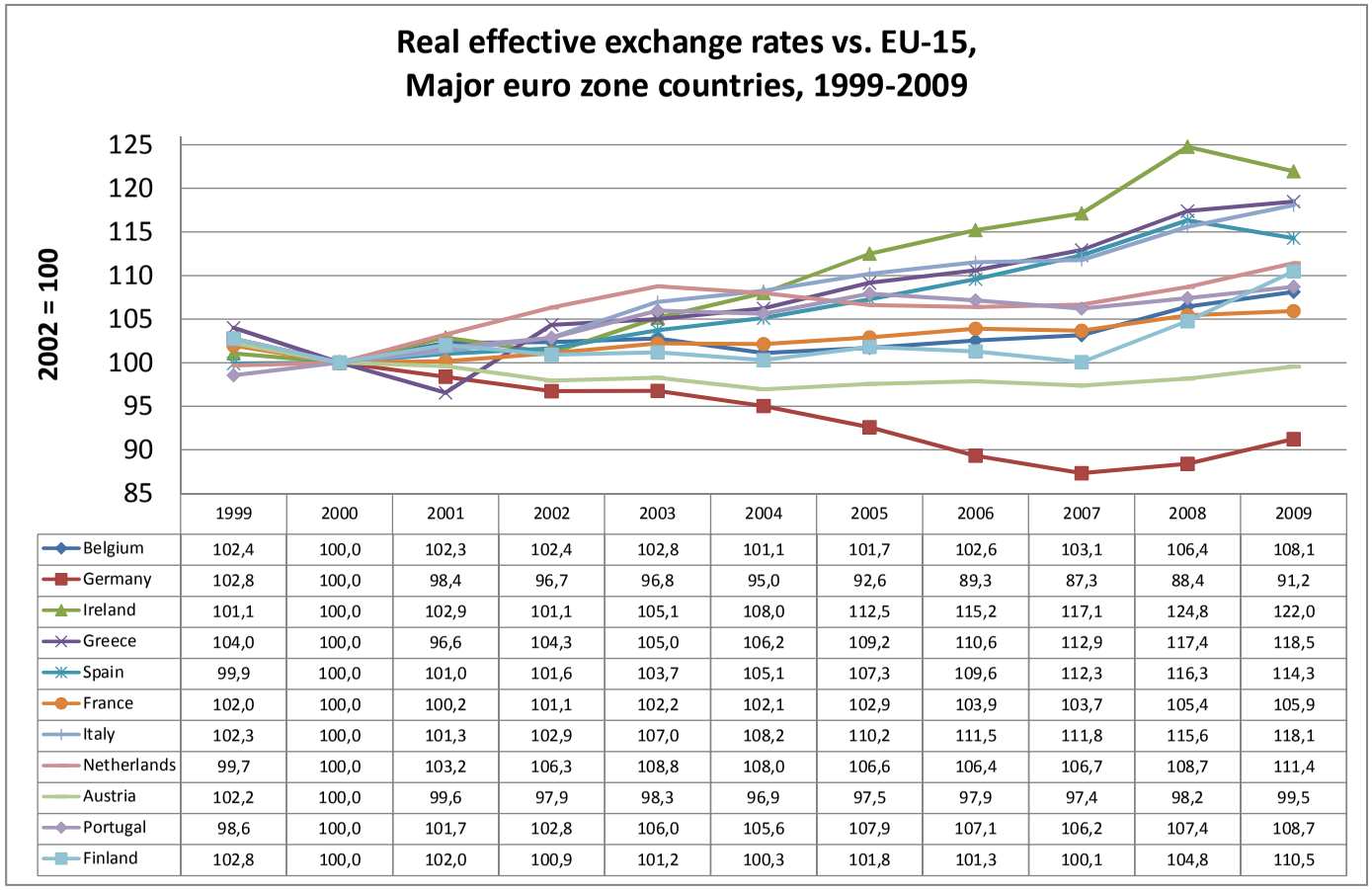
[23] Portugal, Ireland, Italy, Greece and Spain

[24] A point should be made on Germany to demystify a popular myth repeatedly heard and read in public and expert forums. The myth is that Germany, following unification, has lost its competitiveness due to the shock, and thus had to implement wage restraint in the subsequent years in order to restore international competitiveness. The case is made that the REER of Germany appreciated markedly from 100.6 (index 2000, Source: AMECO) to 119.2 in 1995 due too rapidly increasing wages.

The REER appreciation is undisputed. By looking at current account balances in conjunction with REER developments, however, the story of a loss of competitiveness appears to be very wrong. Not in the sense that there was not a loss in competitiveness, there was indeed. But this loss only restored a balanced current account, which had previously been in surplus. German unification therefore only made up for the same kind of wage imbalances that we observed in the 2000s.

Letting the data speak, we find that West Germany had built up a CA surplus of up to 4.5 percent in the years immediately preceding unification. West Germany hence started into unification with quite a sizable current account surplus. Since East Germany was a net importer in the process of unification, West Germany increased its (total) current transfer payments (relative to GDP) from -1.18% in 1989 to -5.16% in 1991, the last year with separate records. During this time, net exports in goods and services increased slightly from 4.92% to 5.41%. As a result of these developments, the (overall) West German current account balance decreased from a rather high surplus of 4.61% in 1989 to 0.40% in 1991, and (with the East German CA in the negative) left the unified Germany with a modest CA deficit of of -1.35% in 1991. Clearly, a modest (even if persistent) CA deficit of below two percent (the highest deficit of the unified Germany has been -1.63% in 2000) cannot really be called a devastating international competitive position as implied by the story of lost German competitiveness. Until today, East Germany still runs a large deficit, making the implicit surplus of West Germany even larger. Thus, it can be concluded that at no point in the 1990s/early 2000s Germany´s (even less West Germany´s) international competitiveness had been at stake and had to be regained. While wage increases in the early 1990s were one factor among many to cause the collapse of East German industry, they did not impair the competitiveness of the West German economy.

Figure 3.4.: Real effective exchange rates, Major euro zone countries



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Belgium	102,4	100,0	102,3	102,4	102,8	101,1	101,7	102,6	103,1	106,4	108,1
Germany	102,8	100,0	98,4	96,7	96,8	95,0	92,6	89,3	87,3	88,4	91,2
Ireland	101,1	100,0	102,9	101,1	105,1	108,0	112,5	115,2	117,1	124,8	122,0
Greece	104,0	100,0	96,6	104,3	105,0	106,2	109,2	110,6	112,9	117,4	118,5
Spain	99,9	100,0	101,0	101,6	103,7	105,1	107,3	109,6	112,3	116,3	114,3
France	102,0	100,0	100,2	101,1	102,2	102,1	102,9	103,9	103,7	105,4	105,9
Italy	102,3	100,0	101,3	102,9	107,0	108,2	110,2	111,5	111,8	115,6	118,1
Netherlands	99,7	100,0	103,2	106,3	108,8	108,0	106,6	106,4	106,7	108,7	111,4
Austria	102,2	100,0	99,6	97,9	98,3	96,9	97,5	97,9	97,4	98,2	99,5
Portugal	98,6	100,0	101,7	102,8	106,0	105,6	107,9	107,1	106,2	107,4	108,7
Finland	102,8	100,0	102,0	100,9	101,2	100,3	101,8	101,3	100,1	104,8	110,5

Source: AMECO (29 Nov 2010)

Netherlands[25]) and the deficit countries have been on an unsustainable path since their widening current account imbalance positions have been caused or reinforced by losses in price competitiveness (REER).

3.3. Unit labor costs

Wage developments are the main driver of prices since they are typically the largest cost factor in a developed economy. As such, wage changes relative to productivity changes are the major reason for price pressures felt by the corporate sector. If, during a certain period, wages rise, but productivity does not increase by as much, firms see a deterioration of their cost situation. These cost pressures are then passed on to consumers (whenever possible) through higher prices[26].

Similar to the indicator of REER, nominal unit labor costs (ULC) are a measure of competitiveness (they measure the pressure on the domestic price level[27]).

What, then, is the optimal unit labor costs development? We use the exposition in the next section to explain the optimal path.

3.3.1. The optimal unit labor cost path in a monetary union

This section will give an overview of the theoretical background against which we wish to assess the performance of the different European Monetary Union (EMU) member states with respect to ULCs. It will draw largely on a series of articles by Heiner Flassbeck and Fredericke Spiecker[28].

Participating countries in EMU must neither live beyond nor below their means[29]. In economic terms, a country´s absorption (demand) should equal its production. If this is not the case, current account surpluses/deficits are incurred, leading to the buildup of foreign assets/claims[30]. If the liabilities of a debtor (permanent CA deficit country) become too large, its creditworthiness will be doubted at one point, leading to a cease

[25]The Netherlands is a special case here. While its REER has appreciated markedly, which should probably have resulted in a worsening of the current account balance, the current account balance has moved into surplus even more.

[26]Implying the notion that absolute wage levels do not say much about the competitive situation of a firm. If a high-wages firm A pays its employees 10% more in salaries than a low-wages firm B does (assuming the same number of employees in both firms), but labor productivity in firm B is 20% higher, then high-wages firm B is more competitive and profitable than low-wages firm A.

[27]In national accounting, *nominal* unit labor costs (ULC) are calculated as the ratio of the compensation of employees to real GDP, giving an indicator of the pressure of wages on the price level. Dividing the compensation of employees by the *nominal* GDP instead yields *real* unit labor costs, providing a measure of the real cost burden of firms, i.e. what part of the increase in the compensation of employees cannot be passed on to sales prices (thus, reducing firm´s profits). Also, real ULC are equal to the (unadjusted) wage share measuring the share of the compensation of employees of GDP.

[28]see Flassbeck (1997), Flassbeck and Spiecker (2005), Flassbeck and Spiecker (2007) and Flassbeck and Spiecker (2010)

[29]The German phrase „über seine Verhältnisse leben“ features continuously in the political debate both in Germany and Austria.

[30]A more detailed theoretical exposition is given below with the help of financial balances identities.

in foreign lending to that country. Thus, it will not be able to meet its obligations. The creditor country (permanent CA surplus) will then have to write down its claims. To avoid this outcome, the participating countries have to follow some basic rules.

They have to agree to the implicit idea that a change in the monetary value of the currency over time (inflation or deflation) is not a sensible means of economic policy. In addition, a change of the monetary value in space (different inflation rates between countries) should neither be a means of policy. Thus, Member States need to agree to a common target inflation rate for the Monetary Union, to which they abide collectively *and individually*: Inflation rates need to be the same across all participating countries in order to keep the competitive position of their respective firms intact[31]. A higher than target inflation rate would lead to a deterioration in the competitive position, and a lower than target inflation rate would lead to an improvement. However, over time, both is inadmissible for the monetary union to last.

The best way to avoid inflationary or deflationary pressures is to stick to the rule that a country should not live beyond or below its means: Real labor and real capital income should grow at the same rate as total factor productivity. The factor income (of capital and labor) then increases such that the additional purchasing power can absorb the additional production. labor contracts are the most decisive variable in this respect since they are negotiated in advance of production, with profits being the residual after production. However, labor contracts are negotiated in nominal terms, not real terms. To bargain over future real wages, the parties need to have an idea of the future inflation rate. However, since the inflation rate itself is determined to a large extent by labor contracts, it is best for both bargaining parties to agree on a political goal for the inflation rate, which, in case of EMU, clearly should be the inflation target of the ECB which is about 1.9 percent[32]. Formally, nominal wages should be set according to the following rule:

$$\underbrace{\frac{\Delta W}{W_{-1}}}_{\text{Growth Rate of Aggregate Nominal Wages}} = \underbrace{\pi_{Target}}_{\text{Inflation Rate Target}} + \underbrace{Prod_{Trend}}_{\text{Trend Growth Rate of Labor Productivity}} \tag{3.1}$$

This rule ensures that *nominal unit labor costs rise in line with the inflation target.* Adhering to it is indispensable for a stationary price development. Where labor costs rise stronger than the inflation target, a deteriorating cost situation for firms induces them to increase their prices by even more resulting in a (positive) deviation of inflation from target. If wages were increased by less than the rise in labor productivity, firms would experience a better than expected cost situation leading to a lower inflation rate[33] and higher profits. At the same time, however, firms will have trouble selling their products since consumption depends on nominal wages[34]. Due to the improved cost situation, they might find relieve in stronger exports, but this cannot compensate for the slump in

[31] starting out from a balanced current account

[32] *below, but close to two percent*

[33] assuming a certain degree of competitive pressure

[34] As firms owner normally have a lower propensity to consume, anything that the firm saves on wages

domestic demand as long as domestic demand is a much larger fraction of total demand than foreign demand.

Nominal unit labor costs developments in EMU ULC developments show a similar picture as REER, and are depicted in Figure 3.5. In addition to actual ULC movements, a line depicting the ECB inflation target is shown in order to be able to estimate the deviation from the optimal path. As is evident in the figure, ULCs in Germany have barely risen at all until 2008. On the contrary, in Spain, Ireland, Portugal, Italy and Greece, ULCs have been way above target (ranging from 123 to 133 in 2008)[35]. Wage increases relative to labor productivity have thus been too high in the so-called PIIGS and too low in Germany and Austria. Due to the crisis, as Ederer (2010) notes, a partial correction has occurred in 2007-2009 and is expected to continue as Germany and Austria are growing quite strongly in 2010, while the so-called PIIGS remain in or reenter recession, having an effect on the wage level.

3.4. Causes and consequences of inflation differentials

The part of current account balances that is not caused by differing growth rates[36] is very likely to be caused by the divergence in inflation rates and gains or losses of price competitiveness. Contrary to the „cleaning“ effect of the recession (at least for the correction of current accounts) as the reversal of growth differentials tends to have effects on current accounts and inflation rates, the cumulative effect on the price level of differing inflation rates in the past decade is unlikely to disappear within a short period. Options to avoid an unfavorable outcome due to persistent competitiveness deviations are discussed in section 4.6.2.

Apart from the already discussed *effect on price competitiveness*, high (low) relative inflation rates have *another major effect*: they lower (increase) *real interest rates*, given that in a monetary union, monetary policy sets the same nominal refinancing interest rate (overnight rate) for all banks.

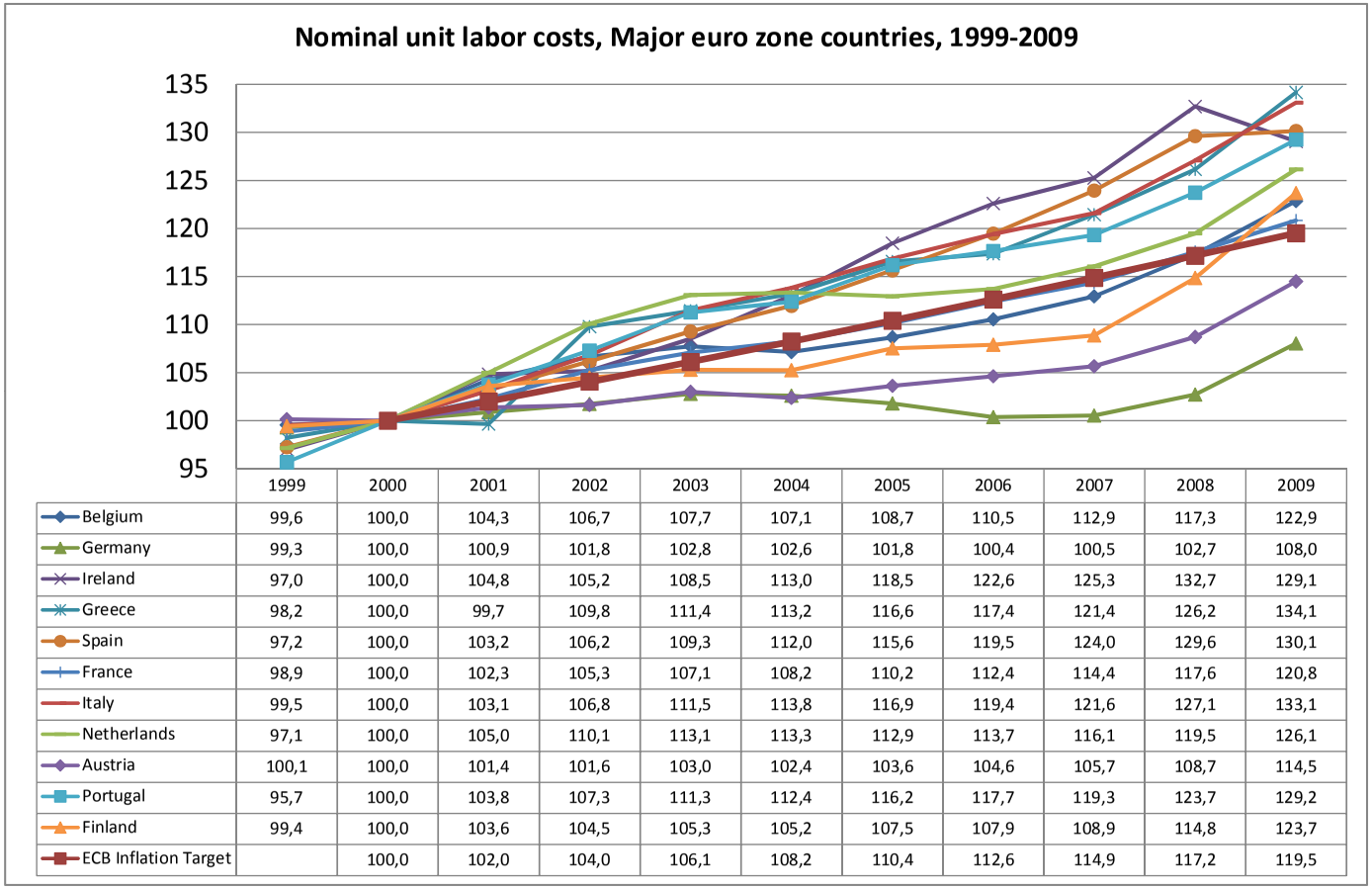
Thus, for countries experiencing low wage increases over several years (Germany, Austria), which translate into low price increases, loans taken out with a fixed nominal interest rate demand more real resources for repayment when inflation rates are low. For countries experiencing higher price increases, the opposite is true, as can be seen in figure 3.6. For CA surplus countries from 1999 to 2007, real interest rates have been consistently higher than for CA deficit countries with their higher inflation rates. Spain and Ireland have even seen negative real interest rates for some years. This has fueled the construction and private lending booms in these countries. Germany, on the other

and may distribute as dividends to owners will cause a fall in the total consumption propensity of the economy.

[35] A somewhat puzzling case is the Netherlands, with above the line ULC and REER increases *and* high CA surpluses.

[36] where Spanish imports will grow at a higher rate than Spanish exports if Spain experiences higher GDP growth than its major trading partners, leading to a current account deficit

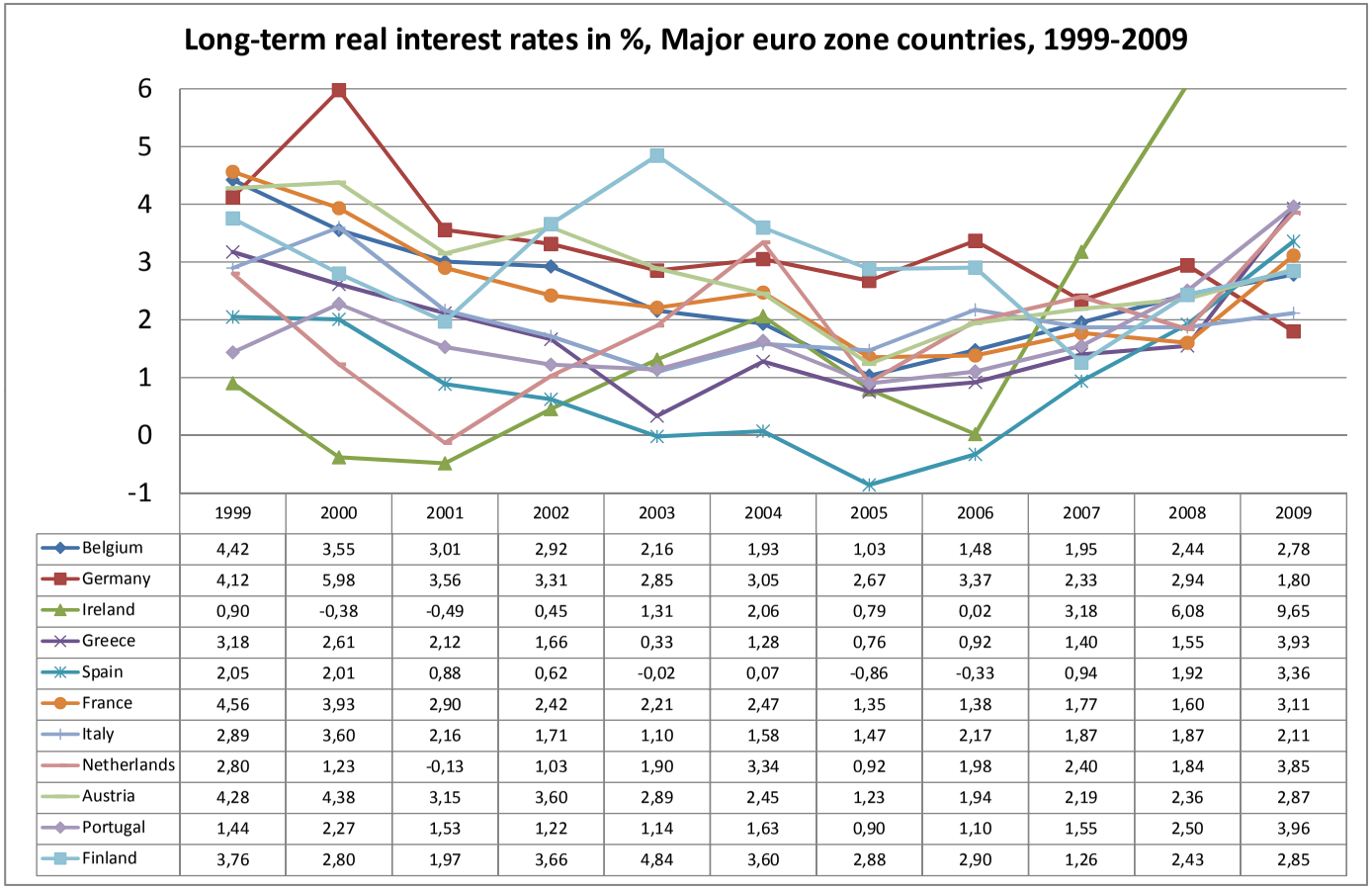
Figure 3.5.: Unit labor costs, Major euro zone countries



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Belgium	99,6	100,0	104,3	106,7	107,7	107,1	108,7	110,5	112,9	117,3	122,9
Germany	99,3	100,0	100,9	101,8	102,8	102,6	101,8	100,4	100,5	102,7	108,0
Ireland	97,0	100,0	104,8	105,2	108,5	113,0	118,5	122,6	125,3	132,7	129,1
Greece	98,2	100,0	99,7	109,8	111,4	113,2	116,6	117,4	121,4	126,2	134,1
Spain	97,2	100,0	103,2	106,2	109,3	112,0	115,6	119,5	124,0	129,6	130,1
France	98,9	100,0	102,3	105,3	107,1	108,2	110,2	112,4	114,4	117,6	120,8
Italy	99,5	100,0	103,1	106,8	111,5	113,8	116,9	119,4	121,6	127,1	133,1
Netherlands	97,1	100,0	105,0	110,1	113,1	113,3	112,9	113,7	116,1	119,5	126,1
Austria	100,1	100,0	101,4	101,6	103,0	102,4	103,6	104,6	105,7	108,7	114,5
Portugal	95,7	100,0	103,8	107,3	111,3	112,4	116,2	117,7	119,3	123,7	129,2
Finland	99,4	100,0	103,6	104,5	105,3	105,2	107,5	107,9	108,9	114,8	123,7
ECB Inflation Target		100,0	102,0	104,0	106,1	108,2	110,4	112,6	114,9	117,2	119,5

Source: AMECO (20 Apr 2010)

Figure 3.6.: Real interest rates, Major euro zone countries



	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Belgium	4,42	3,55	3,01	2,92	2,16	1,93	1,03	1,48	1,95	2,44	2,78
Germany	4,12	5,98	3,56	3,31	2,85	3,05	2,67	3,37	2,33	2,94	1,80
Ireland	0,90	-0,38	-0,49	0,45	1,31	2,06	0,79	0,02	3,18	6,08	9,65
Greece	3,18	2,61	2,12	1,66	0,33	1,28	0,76	0,92	1,40	1,55	3,93
Spain	2,05	2,01	0,88	0,62	-0,02	0,07	-0,86	-0,33	0,94	1,92	3,36
France	4,56	3,93	2,90	2,42	2,21	2,47	1,35	1,38	1,77	1,60	3,11
Italy	2,89	3,60	2,16	1,71	1,10	1,58	1,47	2,17	1,87	1,87	2,11
Netherlands	2,80	1,23	-0,13	1,03	1,90	3,34	0,92	1,98	2,40	1,84	3,85
Austria	4,28	4,38	3,15	3,60	2,89	2,45	1,23	1,94	2,19	2,36	2,87
Portugal	1,44	2,27	1,53	1,22	1,14	1,63	0,90	1,10	1,55	2,50	3,96
Finland	3,76	2,80	1,97	3,66	4,84	3,60	2,88	2,90	1,26	2,43	2,85

Source: AMECO (20 Apr 2010)

hand, was suffering from very high rates, inappropriate for the state of its economy back then.

3.5. Overall growth performance

3.5.1. Real GDP growth

In the past section, it became obvious that the surplus in the current account of some countries was rooted in their wage restraint, giving them a competitive advantage.

However, price competitiveness did not help overall growth performance (in terms of real GDP and real GDP per head, as shown in tables 3.1 and 3.2). Since wages are the largest source of income for households, consumption depends crucially on it. This in turn leads to sluggish domestic demand (see section 3.5.2 on demand contributions below), which overcompensates the better export performance in surplus countries. Germany has been among the weakest-growing countries in the euro zone, while the bubble economies of Greece, Spain and Ireland have been the fastest-growing. The second channel (real interest rate effects) has contributed its share depressing domestic economies of surplus countries and fueling booms in CA deficit countries.

Table 3.1.: Real GDP Growth in Eurozone countries

	Real GDP, Average Growth Rate 1999-2009	Real GDP, Average Growth Rate 1999-2007	Real GDP, Average Growth Rate 2007-2009	Real GDP, Absolute Increase in %, 1999-2009	Real GDP, Average Growth Rate 1990-2009	Real GDP, Absolute Increase in % 1991-2009
Ireland	4,31%	5,29%	-5,09%	59,07%	5,30%	181,05%
Greece	3,38%	4,15%	0,01%	44,13%	2,63%	68,15%
Spanien	2,79%	3,41%	-1,42%	35,28%	2,63%	68,15%
Finland	2,23%	2,73%	-3,38%	27,44%	1,82%	43,46%
Austria	1,83%	2,25%	-0,83%	22,12%	2,13%	52,41%
Netherlands	1,82%	2,22%	-1,04%	21,90%	2,36%	59,42%
Belgium	1,69%	2,08%	-1,05%	20,31%	1,84%	43,99%
France	1,65%	2,02%	-0,92%	19,71%	1,67%	39,25%
Portugal	1,14%	1,40%	-1,33%	13,32%	2,12%	52,10%
Germany	0,90%	1,10%	-1,91%	10,30%	2,30%	22,73%
Italy	0,59%	0,72%	-3,20%	6,68%	0,96%	21,10%

Source: AMECO (20 Apr 2010)

3.5.2. Growth contributions: Two growth regimes

Growth contributions to real GDP growth can help establish the notion of a certain *growth regime* of a country. Traditionally, in Austria and Germany, unions were eager to

Table 3.2.: Real GDP Growth per capita in Eurozone countries

	Real GDP per capita, Average Growth Rate 1999-2009	Real GDP per capita, Average Growth Rate 1999-2007	Real GDP per capita, Average Growth Rate 2007-2009	Real GDP per capita, Absolute Increase in %, 1999-2009	Real GDP per capita, Average Growth Rate 1990-2009	Real GDP per capita, Absolute Increase in % 1991-2009
Greece	3,01%	3,86%	-0,29%	34,63%	2,07%	48,48%
Ireland	2,57%	4,04%	-6,18%	20,80%	4,04%	102,12%
Finland	1,90%	3,17%	-3,84%	18,66%	1,45%	42,61%
Austria	1,40%	1,84%	-1,19%	12,95%	1,66%	31,30%
Spain	1,39%	2,12%	-2,82%	11,66%	1,76%	33,74%
Netherlands	1,34%	1,74%	-1,49%	11,38%	1,81%	36,17%
Belgium	1,18%	1,67%	-1,82%	10,07%	1,42%	27,13%
European Union (15 countries)	1,03%	1,81%	-2,41%	8,90%	1,26%	25,24%
France	1,00%	1,39%	-1,45%	8,46%	1,12%	21,81%
Germany	0,92%	1,44%	-1,66%	8,44%	1,02%	19,94%
Portugal	0,70%	0,91%	-1,46%	4,36%	1,81%	27,87%
Italy	0,07%	0,92%	-3,91%	-0,68%	0,65%	10,13%

Source: AMECO (20 Apr 2010)

acquire most or all of the increase in labor productivity and inflation increases through their wage demands. Given constant employment, this would ensure real wage gains in line with GDP growth. However, since the 1970s, this favorable model has to a large extent been given up as a power shift between unions and employers following increased unemployment in the 1970s and 1980s took place. It was replaced by two different growth strategies that started out well before the start of the euro zone, but manifested themselves mostly afterwards.

The German *Exportweltmeister* When examining growth contributions to German real GDP growth (figure A.4 in the appendix), a remarkable shift becomes obvious: While growth in the 1990s and the decades before has been quite balanced, with private consumption and investment contributing the largest part to overall real GDP growth, net exports constitute the major contribution to GDP growth since 2000. As, among others, Joebges et al. (2010) argue, this developments has burdened workers and induced stagnation for the domestic economy. But by being able to keep real wages stagnant, the German export-led industry has achieved a tremendous amount of price competitiveness (see figure 3.2 and 3.3). However, given the size of the German domestic market, the net estimated net effect is of this policy is negative for both employment and growth.

Apart from Germany, many other countries have followed this *mercantilistic* strategy that aims to conquer market share and achieve export growth regardless of the consequences for the domestic economy[37]. Globally, China follows a similar strategy [38], while in the euro zone the Netherlands, Austria and probably Finland can be said to follow such a strategy[39]. This is not only evident from growth contributions, but also from current accounts and the broader picture given below in the financial balances and net financial assets section (see section 3.6). In Germany, the priority of export over domestic absorption has been complemented and reinforced by high real interest rates (through the low inflation rate due to low wage increases) which dampened investment. At the same time, several political and legal actions have been taken to destroy the so-called German model of Rheinian capitalism. A tentative but incomplete list would include the abolishment of the tax governing sales of enterprises (a prohibitive tax rate of 45%) such that banks could sell their equity in industrial assets (firms), the promotion of temporary employment (with insufficient rights and pay), the introduction of the Hartz-reforms, especially HartzIV[40], the reduction of employer´s contributions to social security as well as the reduction of mandatory contributions to the unemployment insurance (both decreasing total compensation of employees) while financing the revenue shortfall through an

[37] see also Artus (2010), Joebges et al. (2010), Joebges et al. (2010), Hein and Truger (2007) or Horn et al. (2010)

[38] Although for China, as a developing county, export-led growth is in principle a good idea. Contrary to Germany, however, the Chinese authorities have recognized that a rebalancing of their economy is necessary and desirable both for their domestic needs and the global economy. The result has been a large stimulus package (compare this with the slow and insufficient German response to the crisis).

[39] We term it a strategy no matter whether the underlying political, economic and social developments have been concisely planned by someone or occurred rather by coincidence.

[40] decreasing replacement income, increasing the fear of downward social mobility (thus increasing household savings), and weakening union power

increase in value added tax (VAT) from 16% to 19%[41], and numerous reforms to decrease corporate taxes[42]. Looking at the sum of these measures[43] in combination with the wage restraint exercised, it is hard to believe that anything but price competitiveness[44] has caused the remarkable net export performance of Germany. This has been reinforced by the relative fall in imports (compared to exports) as wage restraint made wage earners consume less.

Don´t look back: Reckless debt financing in Spain and Ireland The major problem in Spain and Ireland (as the most salient West European[45] representatives of this growth model) has been *private* debt. While the focus of the European Commission has always been on public debt, and Ireland and Spain both had *low and decreasing* levels thereof[46] up until 2007, it did praise them as a role model for other nations concerning both fiscal discipline and the dynamism of their economies (including their flexible labor market institutions of course). It turned out, as some have predicted, that these debt-based housing and financing booms would come to an end, and the former role model nations would be hovering over the abyss. For Spain, since 1998, growth contributions of net exports have been negative, while public consumption and investment have made up for it. The same can be said for the boom Portugal has experienced (Blanchard (2007) and figure A.9 in the appendix). Cheap financing conditions (low long-term interest rates) for both governments and banks, ample credit by banks, and a lack of financial regulation and insufficient risk attitude due to EMU membership have made possible construction and consumption booms in Ireland and Spain, and public debt increases in Greece, and thus the financing of current account deficits for this long.

An interesting analysis is provided by Dullien (2010, p.26). As can be inferred from table 3.3, the reasons for current account deficits are quite diverse across countries. Common to all countries, however, is the fact that the Balassa-Samuelson effect[47] is not responsible for the high current account deficits[48]. The housing bubble played a role in

[41] Financing the state has thus been shifted from the export industry (paying employer´s contributions) to the domestic industry and importers (since the export industry does not pay the domestic VAT).

[42] among those, in 2001, Germany ended the year with corporations not having paid taxes but instead having received money from the state in total.

[43] Despite the high rate of unemployment at times, it is self-evident that Germany never had a problem of public debt. The political elite simply chose to voluntarily lower taxes for corporations in order to distribute funds from the state to the private sector.

[44] It is indeed hard to imagine that it is the good quality products that makes for German success on world markets. While it is certainly true that Germany does produce excellent products with a focus on investment goods and machinery (helping them also in the crisis), it is hard to believe that German industry had not been capable of producing these kinds of products in the late 1990s to 2000 when its current account was still slightly negative.

[45] besides Great Britain

[46] roughly 25% and 40% at their best

[47] where countries with lower productivity run a current account deficit to import e.g. more productive machines in order to increase their productivity in the catching-up process. If a current account deficit were to occur for this reason, it would be nothing to worry about.

[48] Only in Greece expenses for investment in plant and machinery and spending on education and research can account for part of the current account deficit. Nonetheless, only a third of the deficit can be explained this way. In Portugal and Ireland, investment in plant and machinery actually had a

Table 3.3.: Contributions to changes in current account balances, 1999-2007, selected euro zone countries, in percentage points of GDP

	Portugal	Ireland	Greece	Spain	Germany
Investment for plant and machinery (Equipment investment)	1,9	2,0	-2,3	0,2	-0,2
Non-residential construction	0	-1,7	0,7	-1,84	1,0
Education, Research and Development	-0,3	0	0,6	0,3	0,5
Residential Construction	1,5	-5,3	-0,1	-4,4	1,6
Government expenditures	1,5	-3,0	-2,7	4,4	1,4
Other (including cost divergences)	-6,9	1,9	-7,8	-7,5	4,2
Sum(Change in Current account balance)	-2,3	-6,1	-11,6	-8,8	8,5

Source: Dullien (2010, p.26), see details for the calculations there

Spain and Ireland. Budget policy caused part of the deficit in Greece and Ireland, but was actually very offsetting in Spain and Portugal to prevent an otherwise even higher current account deficit. However, the largest part of the deficit (except for Ireland) was due to other factors. These factors are hard to disentangle, but the two most important factors are likely to have been cost divergences (worse competitiveness) and demand factors like a preference for lower savings in the deficit countries.

3.6. Financial Balances, Net wealth and the Financial Balances Approach

In this section, we present the so-called financial balances approach[49], which helps to understand the causes of developments in growth and financial balances.

3.6.1. Financial Balances in theory

The current account balance is not simply an isolated balance, but can be derived from certain national accounts identities that may help to find its drivers[50].

From the expenditure approach to GDP, we know that

$$GDP = C + I + X - M \tag{3.2}$$

where GDP equals total consumption C, total investment I and exports X minus imports M.

relieving effect on the current account balance, contrary to what the Balassa-Samuelson effect would predict.

[49] in german: Saldenmechanik

[50] see Brümmerhoff (2002, p.175-176), Brecht et al. (2010), ESA (1995, Chap.8)

Gross national income (GNI)[51] is simply

$$GNI = GDP + NIA \tag{3.3}$$

where NIA stands for net income from abroad[52].

We also know from national accounts that gross national income plus net current transfers (CT) to the rest of the world equals disposable income Y^D:

$$GNI + CT = Y^D \tag{3.4}$$

and disposable income can then be used for either consumption or saving (S):

$$Y^D = C + S \tag{3.5}$$

Combining these three equations, we find that

$$Y^D = GDP + NIA + CT \tag{3.6}$$

and therefore, using the expenditure approach (equation 3.2), we may rearrange

$$\begin{aligned} GDP &= C + I + X - M \\ Y^D - NIA - CT &= C + I + X - M \\ Y^D - C - NIA - CT &= I + X - M \\ S - I &= X - M + NIA + CT \end{aligned} \tag{3.7}$$

where the right-hand side equals the current account balance and the left-hand side equals total domestic saving minus total domestic investment.

Finally, by dividing the domestic sector into a private (subscript p) and a public sector (Gov), and then further dividing the private sector into a household sector (HH), non-financial corporations (NFC) and financial corporations (FC), we arrive at an identity that is valid each period[53]:

$$(S_p - I_p) + (S_{Gov} - I_{Gov}) + (S_{RotW} - I_{RotW}) = 0 \tag{3.8}$$

or, equivalently,

$$\underbrace{(S_{HH} - I_{HH}) - (S_{NFC} - I_{NFC}) - (S_{FC} - I_{FC})}_{\text{Net saving of the private sector}} + (S_{Gov} - I_{Gov}) = (I_{RotW} - S_{RotW}) \tag{3.9}$$

[51] primary distribution of income account in the national accounts

[52] equal to net compensation of employees from abroad and net property income from abroad

[53] RotW stands for Rest of the World

which is equal to the differences between income (I) and expenditures (E) for each sector

$$(I_{HH}-E_{HH})-(I_{NFC}-E_{NFC})-(I_{FC}-E_{FC})+(I_{Gov}-E_{Gov}) = (E_{RotW}-I_{RotW}) \quad (3.10)$$

where the net saving of the household sector (or any other sector) is equal to its saving minus investment (or alternatively its income minus expenditures). The net saving of the public sector is equal to the government balance (revenues minus expenditures, total tax revenues minus government expenditures). The net spending (negative net saving) of the rest of the world is equal to the current account balance (see equation) 3.7), which gives (renaming parts of equation 3.9):

$$\underbrace{(S_{HH}-I_{HH})-(S_{NFC}-I_{NFC})-(S_{FC}-I_{FC})}_{\text{Net saving of the private sector}}+\underbrace{(T-G)}_{\text{Gov. deficit}} = \underbrace{(X-M+CT+NIA)}_{\text{Current account}} \quad (3.11)$$

Several points need to be made to interpret this flow identity. Firstly, it is an ex-post identity that is observed after all adjustments have been made while the desired ex-ante net saving (financial balances) of each sector cannot be directly observed. For example, assume that the non-financial corporations sector wishes to increase its net saving by investing less and saving more out of profits. The desired net saving $S_{NFC}-I_{NFC}$ of the NFC-sector and the desired net saving of the private sector therefore increase. Since it simply invests less, the private sector can force the other sectors to adjust initially. The public sector balance worsens, as tax revenues fall short of expected revenues, and the current account balance surplus rises as import growth decelerates due to less investment and consumption by the domestic private sector. Thus, the two sectors (public and foreign) need to decrease their net saving for the identity to hold. The question remains at what level of GDP the adjustment will take place[54].

The direction of an adjustment can be grasped when equating the income and expenditure approach to GPD

$$W+P+T = C_p+I_p+G+X-M \quad (3.12)$$

where W stands for wages, P for profits and T for indirect taxes. We then rearrange according to equation 3.8, where we get

$$(W+P-C_p-I_p)+(T-G) = X-M \quad (3.13)$$

It is obvious that when the private sector reduces C_p and I_p in order to increase its net saving, government tax revenues will fall. If the government decides it does not wish to incur a deficit (following a balanced-budget rule) and cuts spending G, then it is clear that either a current account surplus results (the foreign sector relatively buys more) or wages and profits have to fall accordingly. In practice, both would happen, depending on the openness of the economy and the relative size of the rest of the world sector.

[54] see Godley et al. (2007), UMKC New Economic Perspectives Blog - Various Authors (2009), Krugman (2009)

Financial Balances with two countries As should be more than obvious, if there is no foreign sector, then

$$(W + P - C_p - I_p) + (T - G) = 0 \tag{3.14}$$

is true. When rearranged, this gives us

$$(W + P - C_p - I_p) = (G - T) \tag{3.15}$$

Thus, whenever the private sector wishes to net save more by cutting private investment and spending, it can only succeed if the public sector goes into deficit. If the latter refuses to do so, cutting back public spending and investment when taxes fall, it forces upon the private sector a phase of profit reduction (leading to layoffs and a lower wage sum) until the private sector financial balance returns to balance again. That, however, will be at a lower GDP level, since either side of counting GDP (via income approach $W + P + T$ or expenditure approach $C_p + I_p + G$) will yield a lower nominal GDP[55].

It is easy to picture this closed economy as a rather closed economy like the euro zone, with a flexible exchange rate to most of the rest of the world which would tend to offset any current account balance changes from falling wages via the exchange rate.

Then, with a North (N) and a South (S) region of the euro zone, the private sector balances and incomes depend on the actions of the public sector in both countries in a recession where the private sectors try to increase their net saving.

$$(W^N + P^N - C_p^N - I_p^N) + (W^S + P^S - C_p^S - I_p^S) = (G^N - T^N) + (G^S - T^S) \tag{3.16}$$

If both governments start to cut back spending when tax revenues fall in order to reduce their budget deficit, then the recession will continue in the private sector and lower GDP growth will be attained, leading either to an ultimate failure of consolidation efforts or a very low level of GDP.

$$\underbrace{(W^N + P^N - C_p^N - I_p^N) + (W^S + P^S - C_p^S - I_p^S)}_{\downarrow} \underbrace{=}_{\Leftarrow} \underbrace{(G^N - T^N)}_{\downarrow} + \underbrace{(G^S - T^S)}_{\downarrow} \tag{3.17}$$

As the net spending of one region is the net saving of the other region and vice versa (equal to the respective current account balances), the same equation can also be written as

$$(W^N + P^N - C_p^N - I_p^N) + (T^N - G^N) = -((W^S + P^S - C_p^S - I_p^S) - (T^S - G^S)) \tag{3.18}$$

Assume a situation where the North is in surplus

$$\underbrace{(W^N + P^N - C_p^N - I_p^N) + (T^N - G^N)}_{>0} = -\underbrace{(W^S + P^S - C_p^S - I_p^S)}_{<0} - \underbrace{(T^S - G^S)}_{<0} \tag{3.19}$$

[55] assuming stable prices, which, upon recession, would rather tend to fall exacerbating the effect

then, if the South decides to consolidate and the North retains its current fiscal stance initially, $(T^S - G^S)$ will fall, and so will the South current account deficit $(W^S + P^S - C_p^S - I_p^S) + (T^S + G^S)$ as not all of the public consolidation is burdened upon the private domestic sector of the South, but some falls on the North region, where GDP will decline as well (albeit probably by much less than in the South). Thus, the North current account surplus will fall as well.

Of course, the analysis presented above is a static (one-period) analysis. Models which extend the arguments made above to a dynamic analysis are presented in chapter 6.

The ideal financial balances picture Traditionally, the savings of the household sector are above its investment expenditures (in buildings largely), therefore it runs positive net savings. These net savings are channeled to the non-financial corporate sector, which, as a net lender, needs the funds to be able to invest more than it saves (run negative net savings) to build up the capital stock and produce the largest part of national output. The financial corporations usually run quite a balanced account. The rest of the world balance should, in developed economies, be equal to roughly zero for a healthy financial balances picture.

Despite being mere identities, sectoral financial balances are very useful for analysis since they show the preconditions under which certain developments can or cannot take place[56].

3.6.1.1. Stocks: Net wealth

Net financial wealth (net financial assets, NFA) is the stock correspondent that piles up in response to the financial balances flows of each period[57]. The household sector typically has a large stock of net wealth (positive net financial assets), while the government and non-financial corporations sector are in debt (negative net financial assets), as is the case for most major euro zone countries[58]. The sector rest of the world (RotW) is shown from the point of view of the rest of the world such that a positive NFA position of the rest of the world in the e.g. Spanish figure indicates two things: a) that the rest of the world has more assets than liabilities with Spain and b) that the total domestic Spanish economy (private and public sector) has a negative NFA position versus the rest of the world and is therefore in debt to the rest of the world.

Stable net financial assets A condition for an „equilibrium“ is that financial balances evolve such that net financial assets to GDP ratios are either stable or at least non-

[56] Marterbauer (2010) uses the approach to discuss the few viable options to increase GDP and employment and consolidate the budget for the lean years to come following the financial crisis. Godley (1999) and Papadimitriou and Wray (1998) have used this approach to foresee a severe recession in the medium term already in 1999, while others like the Congressional Budget Office were projecting 10 years of budget surpluses.

[57] including revaluations of the existing stock

[58] In Finland, the government sector is in surplus. In several other surplus countries such as Germany and Austria, the corporate sector has turned into surplus recently, made possible by low wage increases and current account surpluses. Figures can be found in section A.4 in the appendix.

exploding for each sector (see section B in the appendix for a formal exposition).

This means that e.g. the non-financial corporations sector can acquire as much nominal debt each year as it wishes, as long as this increase in debt is then used for productive purposes (subsequently increasing GDP). The same is true for government. If high growth results out of the net financing decisions taken (depicted at the very aggregate level in financial balances) for the domestic economy[59], and therefore the NFA-to-GDP ratio for the total economy remains stable, an efficient and sustainable use of finance is likely. Thus, NFA-to-GDP ratios are a longer term measure for the sustainability of financing decisions[60].

Through this view, it is also apparent that nominal GDP growth can be linked to financial balances[61] according to the financial balances view (such as in UMKC New Economic Perspectives Blog - Various Authors (2009) or Schulmeister (1996)). In a recession, when the corporate sector refuses to engage in new financing contracts in order to consolidate their financial position (let cash flows come into, but undertake no more investment), GDP growth is set for free fall. This will happen unless the government sector intervenes and takes over part (or all) of the financing necessary to create additional output[62]. This is then reflected in the typical behavior of an increasing public deficit during the recession, offsetting or slowing down the fall in GDP (Marterbauer, 2010).

3.6.2. Empirics of Financial Balances

As can be considered normal[63], households run a permanent surplus and provide funds, while either non-financial corporations and the state alternate in using those funds. During recessions, the private sector (corporations) desires to increase their nominal net saving, driven by higher savings and lower investment. As capacity utilization declines, the current capital stock is not fully utilized, decreasing the incentive to expand it (engage in new investment). As sales expectations for the near to medium future collapse, new investment projects are also held back as their expected present value (future cash flows from profits/sales) diminishes. At the same time, the debt relative to current profits has increased for corporations (as the latter have fallen), raising entrepreneurs´ alertness

[59] public and private sector: household sector, non-financial and financial corporations and the public sector, only excluded is the rest of the world

[60] Assume an ex-post increase in nominal GDP of 5% in a closed economy in a given year. If ex-ante financing for the total economy has been such that ex-post both domestic assets and liabilities have increased by 5%, the financing is likely to have been efficient ex-post as ratios have remained constant. If, on the contrary, the increase in nominal GDP of 5% is accompanied by an ex-post domestic financing of 10%, and this outcome is repeating itself in multiple periods, then the situation is likely to be unstable in the long run, as liabilities for some economic actors evolve such that the ability to repay them may be questioned. Take financial liabilities to be the net loans the corporate sector has to pay back. Or take a decrease in net assets of the households sector as some part of the household sector that is going into debt. Then GDP represents the ability to pay back those liabilities since GDP is the sum of profits for the corporate sector and wages for the household sector.

[61] in German: Saldenmechanik

[62] Part of this takes places automatically as automatic stabilizers offset the decrease in income to the unemployed (social expenditures) and firms (lower tax revenues).

[63] This section is based on Marterbauer (2010), Minsky (1985), UMKC New Economic Perspectives Blog - Various Authors (2009)

concerning their debt ratio (which would, if not repayable with current and future profits, lead to financial trouble or default). This increases desired net saving out of profits.

Empirics of Financial Balances and current accounts Financial Balances for the major euro zone member countries may be found in section A.4 in the appendix. The euro area account shows what one would expect as described above, as shown in figure A.22 in the appendix. The foreign sector is in balance.

Deficit countries For the deficit countries, a remarkable common phenomenon is the decreasing or even negative balance of households in relation to GDP[64]. Instead of being net savers, the household sector became a net spender and went into debt (relative to GDP). In Greece the household sector acquired net debt of as much as of 13% of nominal GDP only in 2006, while the number was not much lower in Ireland (9.9%). Less pronounced was the level in Spain with a net debt of 2.4% in 2007, yet the shift in yearly household net assets acquisition from 5.29% in 1995 to -2.4% in 2007 is remarkable. A similar shift could be observed in Portugal before euro zone entry from 1995 to 1999, when net saving of households fell from 5.3% to 0.9%. A sharp correction has set in since 2007, also due to the fall in nominal GDP. All of the lavish spending coincided with external deficits. The behavior of the corporate sector, however, is quite different for each country, with surpluses in Ireland and Greece, and deficits in Portugal and Spain, where the latter two countries have also seen a correction of corporate saving which has increased relative to (falling) nominal GDP. During their spending, credit and house price bubbles, all countries have posted strong growth, which has come to an end with the crisis, where the government balance sharply turns into deficit.

Italy has fared better, apart from the very disappointing growth performance. There is no huge external deficit, and although households had to reduce their saving in the 1990s to permit the success of the consolidation efforts by the Italian government to fulfill the Maastricht criteria, they have not reduced their balances further, probably due to better financial regulation and slightly higher real interest rates.

Surplus countries As with the deficit countries, the surplus countries share a few common characteristics, but each has their own story (see section A.4 in the appendix). The external surpluses have made possible positive net saving for corporations in all surplus countries, some which have been in surplus for quite a while as in Belgium and Finland. The corporate sector has only recently gone into surplus in Germany (2003) and the Netherlands (with the large surpluses over 6% occurring since 2002). However, while the household sector in the Netherlands runs a balanced account since 2000, probably indicating too little net saving, the household sector in Germany has increased their net saving from 2.9% in 1994 to 6.3% in 2005. The Dutch experience of household debt is shared by Finland, albeit on a larger scale with households even running a small deficit[65]. The same pattern, a current account surplus accompanied by thriftier households and

[64] see figure A.33 for Spain, A.28 for Greece and A.29 for Ireland in the appendix

[65] Finland also had the highest fall in nominal GDP in 2009 of all the surplus countries reviewed here

corporations, can be observed in Austria, although there the corporate sector hovers around the zero balance.

Sectoral net financial assets developments The most movement in net financial asset positions over all countries can be observed with the rest of the world balances, which reflect current account imbalances (see section A.5 in the appendix). Germany has moved from a perfectly balanced position vs. the rest of the world of -0.45% of GDP in 1999 to a net creditor position of 15.52% in 2007 and 26.41% in 2009. The shift in the Netherlands has even been greater, from net debt of 17.8% of GDP to a net wealth position of 42.7% of GDP. Austria has reduced its net debt position markedly as well. The opposite happened in Spain, Portugal and Greece: The Spanish NFA to GDP position worsened from -22.8% in 1995 to -79.3% in 2008.

Developments in corporate debt have been parallel to net foreign asset developments. While the Dutch corporate sector[66] has reduced their net debt to GDP from 154% in 2000 to 48% in 2008, Spanish corporations have increased theirs from 96% in 2002 to 157.5% in 2007.

Household net assets yield a corresponding picture to financial balances developments. German households have built up net assets to GDP, while Spanish, Greek, but also Dutch households have reduced their net asset holdings (have gone more in debt or seen their wealth shrink).

Chapter conclusion In this chapter, we have presented the facts about the main economic developments in the euro zone. In the last part, we have used the financial balances approach in a very rudimentary way to interpret current account balances as counterparts to private and public sector developments. This will be taken to a theoretically more satisfying dynamic level in chapter 6.

The foundation for the following chapter has been laid in that we know now what has gone wrong and why. In the next chapter, we will present reform proposals for economic governance which attempt to address the economic situation the euro zone is facing today.

[66] The German corporate sector, contrary to the Dutch, has kept their ratio constant despite financial balances surpluses in recent years, probably due to revaluations or high real interest rates on their debt.

4. Exit from Current Account Imbalances and Reform Proposals for EMU Governance

So far, the preceding chapters have discussed the economic governance in the euro zone including its deficiencies as well as the economic developments in the euro zone. Combining the results of both chapters, we present and evaluate proposals to reform economic governance in EMU and to correct current account imbalances in this chapter.

Future of EMU In a recent vox-eu.org publication (Richard Baldwin and Laeven, 2010), several economists make proposals for the future of EMU. While they differ on quite a lot of points, the authors unanimously agree that the Eurozone rescue is not finished (Baldwin and Gros, 2010, p.1), and that only a temporary solution has been found by the introduction of the safety net.

Even before its creation, there has been a deep divide among policymakers and economists on how to design the necessary encompassing economic policy framework for the European Monetary Union. The basic problem is that independent, sovereign countries that form a monetary union need to run national economic policies that are consistent with their membership in the union.

Some have declared early on that a monetary union without a political union (fiscal union) is incomplete and will eventually run into problems. Ignoring these voices, the actual policy framework with the Stability and Growth Pact has been constructed by European leaders so as to deliberately avoid fiscal transfers and a full political union.

In this chapter, we will review the proposed solutions to both *improve economic governance* in the EMU and to *restore external balances* (which are interconnected). While we evaluate the proposals on the grounds of their adequateness to solve both problems, we do that regardless of their political feasibility.

There is a great divide among policymakers and economists with respect to the causes and cures of the euro zone crisis, as the discussion in various forums shows[1] [2]. At first,

[1] for the discussion among economists, see the recent Vox-EU book (Richard Baldwin and Laeven, 2010) and the sections below, for the dispute among policymakers, see the press reporting on the Task Force for Economic Governance of van Rompuy and the reform of the Stability and Growth Pact

[2] This chapter has been written in October 2010. Since the final resolution of the euro zone is an ongoing issue with new solutions coming out regularly, it is potentially an endless topic. It has therefore been decided to keep the cut-off point for this section in mid-October. Even as the discussion is not as up-to-date as it should be, the key ideas and problems have remained the same since October. As such, the proposals of the European Commission were just out and heavily discussed and therefore receive appropriate room in the thesis. The van Rompuy Task Force had already been at work,

we will present the „official“ solution to the governance problems by the European (see section 4.1), to then explore other proposals and policy options by experts in the rest of the chapter.

4.1. European Commission

Following the dramatic events in Greece in the Spring of 2010, a need for reform was clearly felt by (national) European governments and the European Institutions. The European Commission has formulated their views on necessary reforms after the Greek and Eurozone crisis in two communications on 12 May (European Commission, 2010g) and 30 June (European Commission, 2010h), and based on those, formulated six draft proposals for legislative documents (European Commission, 2010b,f,d,a,e,c).

The European Council (see European Council, 2010, p. 2) also decided to establish a Task Force[3] in order to address „measures needed to reach the objective of an improved crisis resolution framework and better budgetary discipline, exploring all options to reinforce the legal framework“. However, we limit our discussion to the draft proposals of the European Commission[4].

The Commission proposals in detail In its first document, the Commission sets out a „three pillar approach to reinforcing economic policy co-ordination“ (European Commission, 2010g, p. 3), with a „more demanding approach proposed for the euro area“.

- Reinforcing compliance with the Stability and Growth Pact and deeper fiscal policy coordination
- Surveillance of intra-euro area macroeconomic and competitiveness developments
- An Integrated economic policy coordination for the EU: a „European Semester“

These pillars are further elaborated and separated in the second Communication to effectively include five areas of action (European Commission, 2010h):

- Broader macroeconomic surveillance

but the Final Report was not out yet and is therefore not discussed here. The same is true for the compromises found on the level of heads of state and at the ECOFIN, and changes to the EU-Treaty. We also leave out the ESM and EFSF for reasons of space, as this would open up the vast issue of sovereign insolvency.

[3]The Task Force is chaired by the President of the Council, Herman van Rompuy, and consists of representatives (mostly Ministers for Finance) of all 27 Member States of the European Union, the European Commissioner for Economic and Monetary Affairs, Olli Rehn, the President of the European Central Bank, Claude Trichet, and the Prime Minister of Luxembourg, Jean-Claude Juncker, in his function as head of the Eurogroup. It resembles closely the Council of the European Union on Economic and Financial Affairs (ECOFIN). See van Rompuy (2010b,e,a,d) for press statements for the meetings held.

[4]The *van Rompuy Task Force* reported to the European Council with its Final Report on October 21 2010 (van Rompuy, 2010c) Unfortunately, this chapter has been finished in mid October, therefore a discussion of the final compromise cannot be included here.

- National fiscal rules
- Increased Focus on Public Debt and Fiscal Sustainability in the SGP
- Effective enforcement of economic surveillance through appropriate sanctions and incentives
- The co-ordination cycle under the European Semester

The Commission proposes (European Commission, 2010h, p. 3) a broader macroeconomic surveillance scheme to integrate „all relevant policy areas“ and look jointly at fiscal policy, macroeconomic imbalances and growth-enhancing structural reforms. Thus, apart from the already existing surveillance of fiscal policy in form of the Stability and Growth Pact, two new areas of policy-making shall be monitored, macroeconomic imbalances and structural reform implementation. The first one is rooted in the current problems in the Eurozone (see Chapter 1) as well as in the Greek crisis, while the second comes from the long standing theme of structural reforms to increase potential growth as argued in the Lisbon Agenda, which will be followed by the Europe 2020 targets. The macroeconomic imbalance framework is discussed in section 4.1.1. The new framework with stricter enforcement proposed for the Stability and Growth Pact, is reviewed in section 4.1.2.

4.1.1. Broader surveillance of intra-euro area macroeconomic and competitiveness developments

Roughly along the lines of the Stability and Growth Pact (SGP), a two-stage mechanism for macroeconomic imbalances is proposed including a 'preventive' and a corrective' arm. The draft for the procedure is laid out in European Commission (2010e), and would need to be adopted as a Council Regulation by the Council. The enforcement mechanism supposed to ensure compliance of Member States with the procedure is laid out in a separate document (European Commission, 2010c).

4.1.1.1. Excessive imbalances procedure

Imbalances in the sense of the document would be „macroeconomic developments which are adversely affecting, or have the potential to affect, the proper functioning of the economy of a Member State or of economic and monetary union, or of the union as a whole“ (European Commission, 2010e, p. 10). The regulation is based on a preventive arm (Chapter II in the document), required to detect imbalances, and a corrective arm (Chapter III), which would actually be the *excessive imbalance procedure*.

Preventive arm In the preventive arm[5], the Commission will establish a scoreboard with a set of macroeconomic and macrofinancial indicators for all Member States[6].

[5] see (European Commission, 2010e, p. 11-12)

[6] The scoreboard will include both external and internal indicators and will be made public. The following indicators are mentioned in the document as examples: Current account balances, net

Alert mechanism The Commission shall update the values for the indicators on the scoreboard at least on a yearly basis. As the indicators are released, a Commission report would accompany them. This is to bring 'judgment' into the mechanic indicators. In the report, the Commission would then identify which Member States are „affected by, or at risk of, imbalances".

In-depth review After discussion of the report in the Council and the Euro Group, the Commission would prepare an in-depth review for each Member State it considers affected by, or at risk of, imbalances.[7] If the Commission concludes out of its report that a country is experiencing imbalances, the Commission would inform the Council and propose recommendations to be adopted by the Council.

Corrective arm The corrective arm is what is actually named the *excessive imbalance procedure*. As a Member State is identified as experiencing imbalances by the Commission, the Commission would recommend to the Council to open an „excessive imbalances procedure" for a Member State. If the Council, on the basis of the recommendation by the Commission, declares a Member State to experience excessive imbalances, it would also issue recommendations for the Member State on how to correct these („policy recommendations to take corrective action"), including the details of actions that need to be taken as well as a deadline for them.

As with the SGP, a Member State subject to the procedure must submit a corrective action plan within a deadline including policy details of intended or implemented policies and a timetable for their implementation. The Council then assesses this plan on the basis of a Commission proposal within two months of submission. If the plan is considered, the Council adopts an opinion and endorses the plan. If it is considered insufficient, the Council invites the Member State to amend its corrective action plan within a new deadline. If a *euro area* Member State fails twice to submit a plan that the Council deems sufficient, the enforcement mechanism including a fine is triggered (see below).

The Commission would monitor the implementation of the plan and could even carry out surveillance missions to the Member State, and the Member State would have to submit progress reports.

On the basis of a Commission report, the Council would then conclude whether the Member State has taken the recommended action it promised to take in the corrective action plan. Again, the Member State will be in good standing (the procedure held in abeyance) if this assessment is positive. Once imbalances have been corrected, the Council closes the EIP on a proposal by the Commission. If the assessment is negative,

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foreign asset positions, real effective exchange rates based on unit labor costs and a GDP deflator, increases in real house prices, government debt, and the ratio of private sector credit to GDP. Alert thresholds would then be defined for each indicator, possibly calculated on simple statistical concepts such as the 75 and 25 percentile of the statistical distributions of each variable (across countries and across time). However, the premise for this mechanism to work is that the expert analyses conducted on the grounds of certain economic theories is correct. This cannot be taken for granted at all, as the recent financial crises has proven.

[7] A distinction between *imbalances* and *severe imbalances* is made. The report would also be published.

the Council, on a proposal by the Commission, would adopt revised recommendations (on a recommendation from the Commission) and set another deadline. If the Member State fails twice to effect the policy recommendations it has committed to, the enforcement mechanism including a fine is triggered.

Enforcement measures The enforcement measures listed in European Commission (2010c) are actually only a single sanction. Only for *euro area* countries[8], a yearly fine of 0.1% of GDP[9] is imposed by the Council (upon a Commission proposal), if two successive deadlines have been set and the Council concludes that the Member State has not complied with respect to either the submission of an insufficient corrective action plan or in taking the necessary corrective action it has committed to within the deadline.

The fine is adopted automatically on a Commission proposal unless the Council decides, by qualified majority[10], to reject the proposal within ten days.

The fine can be returned to the Member State[11], reduced or canceled in specific circumstances.

Revenues that the EU accrues from these fines would constitute other revenue and „be distributed in proportion to the share in the total gross national income of the eligible Member States, between Member States whose currency is the euro and which are not subject of an excessive imbalance procedure .. and do not have an excessive deficit [under the SGP] ..“ (European Commission, 2010c, Article 4).

Evaluation Assuming that the Pact will be applied this time (there have not been any fines so far) and the EIP introduced, interest (earned on deposits lodged with the Commission) and fines would come in from countries under procedures (be it the EDP or the EIP). These fines constitute other revenue and would be distributed in proportion to their share in the gross national income[12] to those (euro area) Member States which are neither subject to an EDP or an EIP. This means that fines and interest on deposits are redistributed from countries with current account deficits to current account surplus countries, which is the *opposite* kind of fiscal transfer that would be needed to mitigate the current account imbalances. It is not far-fetched to say that the EIP could reduce the time between severe current account deficits and the loss of financial market confidence (a lending stop). Of course, a fine that aggravates the a critical situation is not a very credible policy instrument, since in the event, it may not be sensible to apply it.

It is interesting to note that the policy recommendations the Council would issue could concern a broad spectrum of policies such as „macroeconomic policies, wages and labor markets as well as the functioning of goods and services markets and macro-prudential policies“(European Commission, 2010h, p. 4). Thus, even if further reaching proposals

[8]This is possible under Article 136 of the Treaty for the functioning of the European Union (TFEU - Protocol 12, 2008, p. 60)

[9]of the respective Member State´s GDP of the preceding year

[10]where the country under review cannot take part in the vote.

[11]On a pro rata temporis basis, if the Member State takes the necessary action within the course of the year.

[12]In the SGP until now, it is GDP according to which fines would be distributed.

for a full political union are not realized, the European Union is at least moving towards improved coordination and further economic governance in some form.

A final, but very important point needs to be made on the issue of which Member state would be placed in an „excessive imbalance position". While it is obvious that the scheme would be applied to countries with large current account deficits, it remains to be seen whether the excessive imbalance position would be assigned to countries with large surpluses as well. For example, Germany or the Netherlands have had rather extreme imbalances relative to their GDP (see also chapter 3)[13]. Given the small hints in the Commission Communications, this does appear to be unlikely. The outcome of it will be a political issue though. Unless the surplus countries are included in the procedure as well, the procedure may do more harm than good to European growth, employment and national debt developments (see also section 4.6.2).

4.1.2. Reinforcing compliance with the Stability and Growth Pact and deeper fiscal policy coordination

Reinforcing fiscal discipline and compliance with the Stability and Growth Pact has been a major objective in the Commission communications before the summer of 2010. The Commission has published four formal proposals on September 29 2010 to translate their intentions into law. Three of them would reform the Stability and Growth Pact, and are proposals for regulations by the Council and the European Parliament: European Commission (2010b) amends Council Regulation No 1466/97 (1997), which governs the preventive part of the SGP. European Commission (2010f) amends Council Regulation No 1467/97 (1997), which governs the corrective arm of the SGP. European Commission (2010d) is a new regulation that modifies the enforcement procedures of the SGP (the sanctions and fines system to ensure compliance with the pact). Finally, the fourth document is a proposal for a Council directive (European Commission, 2010a) that introduces requirements for budgetary frameworks of the Member States, such as the introduction of numerical fiscal rules by each Member State[14].

We proceed to discuss all four documents.

4.1.2.1. National Fiscal Frameworks

Mainly in response to the experience with Greece, the Commission wishes to strengthen domestic fiscal frameworks[15] as the national counterparts to the SGP. There are several

[13] The French minister for finance Christine Lagarde has publicly criticized the German policy of wage restraint several times.

[14] for the general underlying economic idea, see section 4.5

[15] A 'budgetary framework' according to the Commission proposal (European Commission, 2010a, Art. 2) „means the set of arrangements, procedures and institutions that underlie the conduct of budgetary policies of general government, in particular: (a) systems of budgetary accounting and statistical reporting; (b) rules and procedures governing the preparation of forecasts for budgetary planning; (c) numerical fiscal rules, which establish a permanent constraint on the conduct of fiscal policy expressed in terms of a summary indicator of budgetary performance, such as the government budget deficit, borrowing, debt, or a major component thereof; (d) budgetary procedures comprising procedural rules that regulate the budget process at all stages; (e) medium-term budgetary frameworks as a specific

new features. Among those are rules about statistics and forecasts, but economically interesting are the following:

- National fiscal rules
- Switch to multi-annual budget planning
- Comprehensiveness of frameworks covering the whole general government finance

National fiscal rules Chapter IV of the directive states that Member States should introduce national fiscal rules to ensure that the domestic fiscal frameworks reflect the Treaty obligations, in line with the SGP reference values on the deficit and debt and the Medium-Term budgetary objective. The rules and credible enforcement mechanisms shall be codified by national law.

While we leave the details to the document[16], we note that these national fiscal rules need to be at least as stringent as the SGP is. Thus, in the minimum case, those rules amount to little more than the actual SGP, only that they would probably move the public discourse about failing to comply with the SGP closer to the national level since national laws are broken as well in case of non-compliance, which would probably receive increased attention by the press. However, (over)ambitious countries could introduce stricter rules than the SGP[17], in which case a general tightening of the fiscal stance could be the result.

Multi-annual budget planning and Comprehensiveness of frameworks A medium-term budgetary framework shall be established alongside the adoption of a fiscal planning horizon of at least three years (Chapter V), and annual budget planning shall be consistent with it. While increased planning over the longer term appears warranted, all these frameworks are of course subject to the predictability of variables such as GDP, government expenditures and especially tax revenues.

The comprehensiveness of the budgetary framework is ensured by the provision that all government sub-sectors shall have numerical fiscal rules in place. Also, all extra-budgetary funds and operations shall be integrated into the regular budgetary process, and (also for sub-sectors) Member States shall publish information on contingent liabilities with potentially large impact on public budgets, including government guarantees, non-performing loans and (potential) liabilities stemming from public corporations.

set of national budgetary procedures that extend the horizon for fiscal policy making beyond the annual budgetary calendar, including the setting of policy priorities and of medium-term budgetary objectives; (f) arrangements for analysis to enhance the transparency of elements of the budget process, including inter alia the mandate of independent national budget offices or institutions acting in the field of budgetary policy; (g) mechanisms and rules that regulate fiscal relationships between public authorities across sub- sectors of general government".

[16] only roughly: Rules should include a target definition, monitoring of compliance by an institution in the field of budgetary policy, consequences in the event of non-compliance and escape clauses (such as a recession).

[17] As the Germans have done with their debt brake, limiting the yearly net new borrowing to a value close to a balanced budget.

These provisions (including the fiscal rules) need to be implemented by 31 December 2013 according to the Commission proposal.

4.1.2.2. Preventive arm

The preventive arm of the SGP is reformed by European Commission (2010d).

Principle of prudent fiscal policy making The preventive arm of the SGP is meant to ensure that Member States follow prudent fiscal policies. While the medium-term budgetary objectives are retained, they are complemented by a new principle of prudent fiscal-policy making, which is specified in more detail than the original MTOs (where only a blurry „significant deviation" led to recommendations)[18]. The principle is supposed to ensure that annual expenditure growth should not exceed a prudent medium-term rate of growth of GDP (taking account of measures on the revenue side) and that revenue windfalls are allocated to debt reduction.

Deviation from the principle In reviewing Member States compliance with the SGP in the past, the Commission believes that progress towards MTOs has been generally insufficient (European Commission, 2010b, p. 4). Thus, the Commission proposals define quite clearly when a deviation from prudent fiscal policy is considered significant: if the deviation has a total impact on the government balance of at least 0.5% of GDP in one year or at least 0.25% in two consecutive years.[19] Failure to comply to the principle could

[18] The principle in detail is described in Art. 5: „Fiscal policy-making shall be considered prudent and thereby conducive to the achievement of the medium-term budgetary objective and its maintenance over time if the following conditions are satisfied: (a) for Member States that have achieved the medium-term budgetary objective, annual expenditure growth does not exceed a prudent medium-term rate of GDP growth, unless the excess is matched by discretionary revenue measures; (b) for Member States that have not yet reached their medium-term budgetary objective, annual expenditure growth does not exceed a rate below a prudent medium-term rate of GDP growth, unless the excess is matched by discretionary revenue measures. The size of the shortfall of the growth rate of government expenditure compared to a prudent medium-term rate of GDP growth is set in such a way as to ensure an appropriate adjustment towards the medium-term budgetary objective; (c) discretionary reductions of government revenue items are matched either by expenditure reductions or by discretionary increases in other government revenue items or both. The prudent medium-term of growth should be assessed on the basis of projections over a ten-year horizon updated at regular intervals."

[19] Details are found in the new Art. 6: „2. In the event of a significant deviation from prudent fiscal-policy making referred in the fourth subparagraph of Article 5(1) of this regulation, and in order to prevent the occurrence of an excessive deficit, the Commission, in accordance with Article 121(4) of the Treaty may address a warning to the Member State concerned. A deviation from prudent fiscal policy making shall be considered significant if the following conditions occur: an excess over the expenditure growth consistent with prudent fiscal policy-making, not offset by discretionary revenue-increasing measures; or discretionary revenue-decreasing measures not offset by reductions in expenditure; and the deviation has a total impact on the government balance of at least 0.5% of GDP in one single year or of at least 0.25% of GDP on average per year in two consecutive years. The deviation shall not be considered if the Member State concerned has significantly overachieved the medium-term budgetary objective, taking into account the presence of excessive macroeconomic imbalances, and the budgetary plans laid out in the stability programme do not jeopardise this

result in a Commission warning and Council recommendation to take corrective action.

Already at this stage, for euro area countries, this recommendation would already be backed by an enforcement mechanism of an interest-bearing deposit of 0.2% of GDP lodged with the Commission. There need not be a violation of the deficit criterion for the enforcement to apply, a deviation of the principle of prudent fiscal policy making is enough.

Evaluation While the principle allows for a temporary deviation in case of a severe economic downturn of a general nature, it does not allow for sufficient government stimulus in normal times or (non-severe) downturn times[20]. The principle departs from the assumption that medium-term growth (over a ten-year horizon) is relatively constant and independent (enough) from government expenditure, otherwise the whole principle cannot be applied sensibly. If a country wishes to violate the principle and e.g. increase government spending (while leaving taxes unchanged) in order to increase its medium-term growth rate, it will (given the constant forecast of the medium-term growth rate) be subject to the procedure. The notion that fiscal policy cannot create growth, but only structural reforms can, is retained.

There is another shortcoming in the principle of prudent fiscal policy. The ultimate goal of the principle is arguably the stabilization of the government debt to GDP ratio (for debt dynamics, see Ley (2009)). On the surface, it makes sense to say that if the government balance is at its MTO (assuming the MTO to be 0%, a balanced budget), the government needs to offset any expenditure change by a change in revenue[21]. But the focus on the overall government balance neglects an important factor. As the government balance can be split into the primary balance and interest payments on debt, a real interest increase will demand a similar increase in the primary balance. Thus, whenever financial markets decide (due to different risk considerations or simple panic) to demand higher interest rates from a government at given inflation rates, the principle simply assumes that the government cuts other government expenditures to equilibrate the primary balance. Whether this is realistic, or, even if it is, whether this a a „prudent“ policy remains highly doubtful, as government expenditure that does not go to interest payments certainly has a larger impact on domestic GDP than the part serving interest payments (probably even to foreign owners of bonds). A vicious circle could be the result, where higher market interest rates demand government expenditure cuts, which then decrease GDP and lead to an exploding debt stock as interest rates remain high

objective over the programme period. The deviation may be equally not considered in case of severe economic downturn of a general nature. 3. In the event that the significant deviation from prudent fiscal-policy making persists or is particularly serious, the Council, on a recommendation from the Commission, shall address a recommendation to the Member State concerned to take the necessary adjustment measures. The Council, on a proposal from the Commission, shall make the recommendation public.“

[20] Although much will apply on the application of the principle. To unravel the possible consequences, we assume a strict adherence to the principle in this discussion.

[21] see Ley (2009, p. 4, Equ. 16) for the formula. Following this rule would imply, given a positive growth rate, that a reduction in the debt to GDP ratio would occur through the „growth dividend“, basically because GDP rises while the budget is balanced.

and growth stagnates.

4.1.2.3. Increased Focus on Public Debt and Fiscal Sustainability in the SGP

The Commission proposals regarding the corrective part of the SGP (the excessive deficit procedure) are presented in European Commission (2010f). To recall, the goal of the SGP is to „avoid gross errors in budgetary policies, which might put at risk the sustainability of public finances and potentially endanger EMU. This translates into the obligation for Member States to avoid excessive government deficits, which are defined against a numerical threshold for deficit (3% of GDP) and debt (60% of GDP or sufficiently declining toward it). The excessive deficit procedure (EDP) that implements the ban on excessive deficits provides for a sequence of steps, which, for euro-area countries, include the eventual imposition of financial sanctions".

In the Explanatory Memorandum preceding the legal text of the reform proposal, the Commission explains that „while the deficit and the debt criterion are in principle on an equal footing, and persistently high levels of debt arguably represent a more serious threat to public finance sustainability than occasionally high deficits, in practice the '3% of GDP' threshold has been the almost exclusive focus of the EDP, with debt playing a marginal role so far" (European Commission, 2010f, p. 4). Thus, it wishes to make „operational [the debt criterion], notably through the adoption of a numerical benchmark to gauge whether the debt ratio is sufficiently diminishing toward the 60% of GDP threshold." Specifically, a debt-to-GDP ratio above 60% is to be considered „sufficiently diminishing and approaching the reference value [60% of GDP] at a satisfactory pace .. if the differential with respect to reference value ohas reduced over the previous three years at a rate of the order of one-twentieth per year". In practice, this would mean that a country with 120% debt would have to reduce its debt by giving a significant negative impulse in the first three years of 3%, 2,85% and 2,71% of GDP, respectively, which is normally detrimental to GDP growth.

However, the whole procedure would be rather judgmental, as there is no automatic placement in an EDP if the criterion is not met, since other factors such as low nominal growth (real growth plus inflation) would be evaluated as well.

Evaluation The result of the modified corrective arm with a stronger focus on government debt would mean that the Commission would exercise a tighter grasp on the fiscal policy of Member States. Effectively reducing debt will, in most cases, require primary surpluses by Member States, which will slow down GDP growth. If all countries at once cut government expenditures, this may lead to a collapse of European growth for the next decade. The economic reasoning for this is provided in chapters 3 and 6.

Thus, the Commission proposal can be said to be either unrealistic (as simultaneous debt consolidation of all countries markedly reduces GDP growth rates) or realistic only if there is a private debt boom which would offset the negative consequences on GDP. However, such a boom is undesirable as it has caused the current problems of Spain and Ireland.

4.1.2.4. Effective enforcement of economic surveillance through sanctions and incentives

While the SGP has been in effect since the beginning of EMU and several countries have been subject to an EDP, sanctions have never been applied. Especially after the rejection of EDPs against Germany and France in 2005 it was hard to see how sanctions could ever be enforced in the future. This was especially true in the case of Greece. The Commission concludes that „..sanctions arguably come into play too late in the process to represent an effective deterrent against gross fiscal policy errors, not least because the financial situation of the country concerned may have deteriorated so much as to make the threat of a fine less credible at the very time when it should become real" (European Commission, 2010f, p. 5). Therefore, it aims to strengthen the credibility of the SGP through a „more rules-based application of sanctions" by introducing a new „sanctions toolbox". In a suggested regulation governing sanctions for *euro area* Member States the European Commission (2010d) proposes three kinds of sanctions: In addition to the already existing interest-bearing deposit (which may be converted into a fine) (Council Regulation No 1467/97, 1997, Section 4), a non-interest-bearing deposit and an additional fine are introduced. Sanctions would kick in much earlier.

Interest-bearing deposit Already in the preventive arm, an interest-bearing[22] deposit of 0.2% shall be imposed by the Council if a country were to deviate persistently or significantly from the principle of prudent fiscal policy making. At this stage, the Commission may also issue a warning to the Member State concerned[23].

Non-interest-bearing deposit As soon as the Council decides that an excessive deficit exists, a non-interest-bearing deposit of 0.2% of GDP shall be imposed on the Member State. If the Member State already has an interest-bearing deposit lodged[24] with the Commission, it would be converted into a non-interest-bearing deposit[25].

Fine A fine of 0.2% would already be imposed earlier by the Council, when it makes its recommendations public that the Member State has not taken effective action in response to the initial Council recommendations in the EDP[26]. If there exists a non-interest-bearing deposit, it shall be converted into the fine.

Larger Fine Already existent in the SGP until now, the Council may, as long as the Member State persists in failing to put into practice the recommended corrective action

[22] The interest-rate reflecting the Commission credit risk and the relevant investment period. The interest is not lost to the Member State.

[23] However, the warning cannot lead to a conviction before the European Court of Justice in this case because the Stability and Growth Pact is exempt from this follow-up of the Commission warning in case of non-compliance.

[24] If the decision is taken to abrogate the procedure, the deposit will be returned.

[25] The accrued interest would be paid back to the Member State

[26] Until now, after making the recommendation public, the Member States would have another two months to respond and take effective action.

within a time limit, impose a fine of 0.2% of GDP as a fixed component and a variable component depending on the size of the violation of the deficit and debt criterion[27]. The maximum of any single fine, however, is limited to 0.5% of GDP. After imposing this fine, the Council may intensify the sanctions at each following year that the recommendations have not been met by imposing another fine of the size of the variable component mentioned above.

Another important point of the proposals is the introduction of a *reverse voting mechanism*: „At each step of the EDP, the Commission will make a proposal for the relevant sanction, and this will be considered adopted, unless the Council decides to the contrary by qualified majority within ten days. The size of the non-interest-bearing deposit or the fine could only be reduced or canceled by the Council unanimously or based on a specific proposal from the Commission on grounds of exceptional economic circumstances or following a reasoned request by the Member State concerned.“ (European Commission, 2010d, p. 5-6)

Another part of the sanctions regime envisioned by the Commission are its plans (European Commission, 2010h) to use the EU-Budget as a sanctioning tool. As regards the corrective arm (when an EDP is in place), the Commission had proposed a complement to the already existing possibilities of deposits and fines: A two-step approach was suggested in the Commission Communication:

Establishment of EDP Once an EDP has been established, commitments of payments related to multiannual programmes would be suspended. This would have no immediate effect, as payments would still be made to allow for effective remedial action to be taken by the Member State.

Non-compliance with recommendations to correct excessive deficit If the Member State failed to take remedial action (not complying with the initial recommendations by the Council), payments would be canceled for a specific year leading to a definitive loss of money.

The financing side would then contribute to a redistribution from countries with „unsound“ fiscal policy to those with „sound“ fiscal policy. Fines paid by non-compliant countries in an EDP automatically reduce the contributions of the other Member States to the EU-Budget.

Changes to the multi annual financial framework would only be incorporated in the 2011 proposals for the next framework. Possible disciplining tools could be expenditures related to cohesion policy, common agricultural policy and the fisheries fund. If a Member State were to fail its obligations under the SGP, it would have to continue paying the expenditures to its citizens, but not get reimbursed through

[27] see European Commission (2010f, Art. 12): „The variable component shall amount to one tenth of the difference between the deficit as a percentage of GDP in the preceding year and either the reference value for government deficit or, if non compliance with budgetary discipline includes the debt criterion, the general government balance as a percentage of GDP that should have been achieved in the same year according to the notice issued under Article 126(9) of the Treaty“.

the EU-Budget. It remains to be seen whether the Commission can really get these proposals through.

So far, the preventive arm of the SGP has not seen any sanctions. Unless an excessive deficit of over 3 Percent had occurred, no sanctions action to influence the Member State´s fiscal policy could be taken, e.g. when a Member State would experience a real GDP growth rate of 4 Percent (good economic times) and still have a deficit of 2.5 Percent of GDP.

4.1.2.5. A European Semester

One measure originally proposed by the Commission that is already decided[28] on is the introduction of a European Semester. The key idea is to present the cornerstones of the national budget as well as the underlying macroeconomic assumptions to the European Union bodies before enacting them in national law. This would give the Commission and the Council a chance to comment on and influence the budgetary decisions beforehand and not only in retrospect as was the case up to now. Corrections can thus be demanded in a more timely manner.

The European Semester will cover all elements of economic surveillance including the SGP coverage and macroeconomic stability, with the following timetable[29]:

January The cycle starts with an Annual Growth Survey (AGS) by the European Commission, reviewing economic challenges for the EU and the euro area.

February The European Council provides strategic guidance on policies by the end of the month.

April Having taken into account the strategic guidance, Member States will submit their Stability and Convergence Programmes and their National Reform Programmes, so that the Commission can assess them simultaneously.

July Based on Commission assessments, the Council may issue country specific policy guidance.

Rest of the year Member States finalise their national budgets.

January of next year The Commission assesses whether Member States took EU guidance into account in their national budgets for the upcoming year.

Following the official proposals we discuss a whole set of other proposals, some have much in common with the EC proposals and have influenced them, while others are completely different (e.g. a European economic government).

[28] see Council of the European Union (2010)

[29] see also `http://ec.europa.eu/economy_finance/articles/euro/documents/com_367_european_semester_en.pdf`

4.2. Proposals to fine current account deficits

Two proposals have been made to complement (Dullien and Schwarzer, 2009) or replace (Horn et al., 2010) the Stability and Growth Pact with a procedure to fine external imbalances. These proposals preceded the excessive imbalance procedure the Commission has suggested. We therefore use this section to discuss in depth the economic reasoning behind and the advantages of such a procedure. Given the discussion in section 2.3.2, the underlying principle of these proposals makes much sense, however, there remain doubts about the operational effectiveness of such a pact[30].

Dullien and Schwarzer Dullien and Schwarzer (2009) suggest a new „external stability pact“ to amend the current fiscal framework (SGP) in the EU.

External balances would not be allowed to exceed 3 percent, either as a deficit or as a surplus. Contrary to the SGP, this would be a symmetric requirement since, as the authors argue, a bilateral current account imbalance is always produced by both countries. The surplus country absorbs too little relative to its production and the deficit country too much. Furthermore, „it is almost impossible for deficit countries to correct their current account when demand in surplus countries remains weak over the long term“ (Dullien and Schwarzer, 2009, p.6). Deprived of exchange rate policy, Member States would have to use fiscal and wage policy as well as other national economic policies to achieve a sufficiently balanced current account[31].

Monitoring Current account developments should be monitored under a new pact similar or identical to the SGP, with an excessive imbalance leading to warnings by the Commission, policy recommendations by the Council and eventually sanctions in case of repeated non-compliance. The authors also suggest that the Commission should play a greater role in applying the mechanisms of the (old and new) pacts, since Member States represented in the Council have in the past refrained from imposing sanctions on other Member States, fearing sanctions for themselves since they were in a similar situation. As an additional measure, the debt developments in the financial sector should be monitored to detect risks that are not apparent in the current account.

Dullien and Schwarzer (2009, p. 2) argue that despite the fiscal framework of the SGP, the European Commission did not foresee the extreme debt increases that have taken place in the past months. A major reason for this is that private debt has been neglected in the country analyses. But since no country can allow its banking system or large parts of the corporate sector to go bankrupt, it will likely bail them out in case of trouble (when they have acquired too much debt), possibly leading to a huge debt load for the public sector, even threatening state solvency. However, politically it is unthinkable

[30] since the SGP did not work well as fines were never applied

[31] The value of 3 percent derives from the mathematics of debt dynamics (see also Annex B). If a country undergoes a yearly balance of payments deficit of 3 percent, and assuming an average yearly nominal GDP growth of 5 percent, it will stabilize its external debt to GDP ratio at 60 percent. (Dullien and Schwarzer, 2009, p. 6) argue that any level below this threshold may be seen as an acceptable debt level from the past experience with balance-of-payments crises.

that a euro zone Member State goes bankrupt (e.g. Greece). Thus, there is an implicit guarantee by each Member State to both back its private sector and all the other Member States´ public debt. Each Member State should therefore have a genuine interest in debt developments of other Member State, be it public, private or external. By monitoring fiscal and external balances, one will observe risks in the development of private sector debt as well [32].

Advantages Three advantages of the „external stability pact" are offered:

Broader coordination of economic policies could be achieved Through the institutionally set pact, Member States would be forced to coordinate their economic policies (wage, fiscal and other policies) more than they have done in the past. Although there have been informal talks and coordination in the Euro Group, its implementation has not been satisfactory at the national level. Coordination of policies would be most markedly felt with wage policy. By setting national legislation and influencing private sector wages through public sector wages, national governments would have to actively shape wage policy so as to reduce imbalances.

Taking into account externalities of national policies on other Member States Member States would be obliged to take into account the consequences on other Member States when designing their economic policies. As a surplus country, Germany could not decrease non-wage labor costs and increase the value added tax when already experiencing a current account surplus unless it also used expansionary fiscal policy to compensate for the competitiveness effect of the former measures.

National economic policy autonomy remains While coordination would be required, Member States would keep autonomy over their economic policies. To suppress the external effects of its construction boom, Spain could alternatively have increased taxes, specified legal lending limits for mortgage loans, revert to land use planning or have social partners exercise wage restraint.

Horn et. al Horn et al. (2010) go a step further than Dullien and Schwarzer (2009) and suggest to altogether replace the SGP with a pact based on external balances. In their proposal, external balances need to remain below 2 percent[33]. Again, symmetry is required, thus surplus countries would equally be subject to external imbalance procedures. Interestingly, policy recommendations would be concentrated on government expenditure paths [34].

[32] see also section 3.6

[33] Assuming an average nominal GDP growth rate of 4 percent, limiting external balances to 2 percent would keep the external debt or assets of each country under 50 percent of GDP

[34] Broadly along the lines of the SGP and Dullien and Schwarzer (2009), the IMK proposes a four-step procedure (assessment, analysis, recommendations for correction, sanctions), where a country in an excessive imbalance position would be given a recommendation to correct the imbalance within three years, monitored by the Commission. The country would face no prescriptions concerning the concrete means (policies) to achieve the correction. If, however, the imbalance still continues

The reason for replacement As the authors argue, the deficit rules of the SGP have not served their purpose well in the last years. Firstly, in an extreme situation like the current crises, the rules of the pact have to be deferred. Budget deficits in general are not subject to government control, but determined by a multitude of factors. Secondly, the creditworthiness of the state and the whole country depends more on the current account balance than on the public deficit.

4.3. A European economic government

We now turn to proposals that discuss the idea of new institutions in in the EU or the euro zone which would either lead to an economic government (this section) or to income transfers (see section 4.4). Both of these would make the current account imbalances less pressing a problem.

An old French idea The idea of a European economic government is discussed in Strassel (2009), who reflects upon the issue in the light of Franco-German relations. The 'gouvernement economique' is an old French idea, and basically represents a political consensus in France[35]. While there is no formal official proposal, the statements by President Sarkozy and other French leaders have made clear two key components of a *gouvernment economique* concerning the *what* and *why*: Regular meetings between the Euro-Group countries, not only at the finance ministers level as is done before Ecofin Councils, but at the level of heads of state to install a counter-balance to the ECB.

The underlying reason according to Strassel (2009, p. 2-3) for an economic government is the deep dissatisfaction with the policy set-up of EMU, where the basic French idea is one of flexibility and freedom of political solutions. On the other side rest the Germans, with their long-standing focus and tradition of stability and rules-based economic policies. To the inconvenience of the French, Germany has decisively shaped the European institutions and legal frameworks such as competition policy, the role model of the Bundesbank for the installation of the ECB and the introduction of the Stability and Growth Pact[36]. The view of Germany on the French idea hence is one of rejection and disregard,

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after three years, sanctions would take the form of mandatory policy recommendations in terms of fiscal policy. A surplus country would have to increase its level of public expenditure, while a deficit country would have to cut its expenditure to a lower level. This expenditure path in the form of a prescription would be pronounced for three years initially and would remain valid for three years even if the external balance were to reenter the limit of 2 percent before the end of the period. If, despite the effort, the imbalance has not been corrected after the period of three years, prescriptions are made for another period. The expenditure path is the crucial element for adjustment.

In general, government expenditures are assumed to have a greater multiplier on the GDP than tax changes (consider, however, Wagenknecht (2010)), as the former are required to bring about the adjustment and the latter may only serve to exercise a certain control over the budget deficit. The authors have in mind the *Haavelmo theorem*, where, given a balanced budget, a simultaneous increase in government expenditure and tax revenues leads to a higher GDP.

[35] As Strassel reminds us, the establishment of the Euro-Group as a first step towards a European economic government had been accomplished by the Jospin government in 1997.

[36] On the latter, see Interview with Hubert Védrine (2008)

as they consider the proposals as a French attempt to undermine both the SGP and the independence of the ECB.

As Strassel (2009, p. 4) notes, the economic crisis has rather confirmed the French view of the world, because much political flexibility is demanded on political systems nowadays, where banks have been nationalized, debt crises overcome and many quick and expensive solutions enacted. The rules of economic governance in the euro zone have proven rather pointless as no rule-based system would have been able to foresee and react adequately to all the developments of the recent months. Thus, the crisis resolution (aids to the banking sector, economic stimulus programs[37]) has been done by national governments and programs. This is harmful when it comes to fiscal policy, which works best when coordinated within the Union, and is the effective policy tool left since monetary policy cannot do much to spur growth in the current crisis.

Heise and Görmez Heise (2010, p. 12-13) give a very negative outlook on the possibilities of an economic government as well. Although it has become clear in the course of the crisis that the current EMU policy mechanisms dealing with shocks and external imbalances are insufficient, there has been no movement towards deeper European Integration that would necessarily imply the loss of some national sovereignty by transferring it on the European level. The *window of opportunity* is thus about to disappear. At the same time, there is „no cultural basis for a distinct financial equalization mechanism“, e.g. horizontal fiscal transfers (Heise and Görmez Heise, 2010, p. 10).

Institutions to include Nevertheless, a European economic government, according to Heise and Görmez Heise (2010, p. 8-9), should include the following institutions:

- An independent EU-budget above the amount of the actual (roughly) one percent of EU-GDP including the possibility of the EU to issue its own debt in the financial markets.
- A determination of the EU fiscal stance at the European level that national governments have to execute (while retaining sovereignty over the composition of national budgets)[38].
- A better coordination of macroeconomic policies: A supranational fiscal agent (e.g. the heads of state) could be a counterparty to the ECB and other macroeconomic agents at a revived and upgraded European Macroeconomic Dialogue (EMD)[39].
- A better coordination of (collective) bargaining policy needs to take place, not only to correct imbalances but also to integrate the social partners in the EMD. A

[37] Despite the proposals of a European Economic Recovery Plan, the plan has been rather small and consisted of the sum of all individual and independent national plans

[38] The authors emphasize that a sustainable growth-oriented fiscal strategy needs to be implemented, otherwise the communalization of fiscal policy may be used to push trough austerity policies against the will of nations.

[39] One may even formulate at least some kind of exchange rate strategy, a complete lack thereof being present at the moment.

European economic government could then also define a European legal framework for strikes and wage bargaining, giving incentive to stronger European corporatism.

- A creation of a European mechanism for horizontal fiscal transfers or other central mechanisms that would redistribute resources from current account surplus to deficit countries.

Governance and government A general point made by Heise and Görmez Heise (2010, p. 7) seems noteworthy. The authors insist on the division between the term *governance* and *government* in their analysis. In a nutshell, *government* is a hierarchic decision making and enforcement entity, where decisions are commanded to subordinate civil servants, which are obliged to implement those decisions. The provision of public goods is helped by a central regulatory authority and the access on financial means[40]. In contrast, *governance* refrains from hierarchic relations in defining and enforcing goals. Rather, it is based on communication and negotiations, where a consensus has to be found. As such, either a higher decision-making cost is associated with it or the adhesion to the consent is far from incessant.

Almost all of the proposals in the current debate aim at broadening *governance*, often with a certain emergency character.

In need of positive integration Another impediment to an economic government is that the general architecture of European Integration so far resembles the political preference for national sovereignty and the economic primacy of forming a common market (*negative integration*) (Heise and Görmez Heise, 2010, p. 13). The only major step towards a *positive integration* has been the creation of EMU with a common currency, where there is one central institution with central decision competency. However, at the basis of the ECB also lies the fundamental concept of increasing the pressure on national regulations via systems competition (instead of creating further EU institutions to regulate the common market) (Karrass, 2009)[41].

4.4. Income transfers

This section describes proposals that have been made in the light of the inadequateness of European economic (policy) integration. Heise and Görmez Heise (2010) list some of them as being part of a possible *economic governance* reform intended for EMU[42]. The overarching idea of many of these proposals is to establish some form of *income transfers*, as full-fledged monetary unions (typically embedded in political unions) involve automatic transfers across regions, where regions experiencing good economic times transfer resources to regions experiencing bad times.

[40] Associated with *government* are low costs of decision-making (achieving compromise), but a high cost of legitimization.

[41] The background thereof is certainly a fundamental belief in a „neoliberal“ concept of the superiority of market solutions over political solutions.

[42] as opposed to an economic government

The broader perspective One mechanism to alleviate the pain to residents of countries hit by negative shocks is to allow for income transfers to those countries. Indeed, in the absence of such transfers, the cost for joining or being in a monetary union may become too high: the required price deflation to correct for a shock may imply an elevated unemployment rate for some years that the country considers to be too costly. However, it is not clear a priori why the country that has not been hit or that has gained from the asymmetric shock should voluntarily accept to pay for those interregional transfers[43]. Interregional transfers without further sufficient policy action may sometimes lead to a perpetuation of the shock if only the shock, the differences in economic development or the past policy mistakes made are large enough[44].

An non-exhaustive list of proposals Dullien and Schwarzer (2007) make several proposals on how to implement a transfer union (income transfers) with regard to stabilization policy. They note that the EMU has been designed without an instrument for automatic fiscal stabilization. Given that a positive macroeconomic environment is conducive to productivity growth and structural reform (Dullien and Schwarzer, 2007, p. 4), instruments that bring about fiscal stabilization are absolutely needed. They also argue that in any economic entity, fiscal stabilization should happen on the highest possible level, and not in its sub-units. This leads them to suggest three instruments to remedy the underperformance of automatic stabilizers in EMU:

EU-budget Making the EU-budget sensitive to the cyclical situation of the recipient country, and allowing it to go into debt.

EU unemployment scheme Setting up an EU-wide unemployment insurance scheme

EU corporate tax Introducing an EU corporate tax upon revision of the budget

EU-Budget As Dullien and Schwarzer (2007, p. 9) note in discussion of the EU-budget, „there is currently no expenditure devoted to *stabilization* purposes“. The bulk of the expenditure of the budget, which is rather small anyways (roughly 1% of EU-GDP), deals with redistribution, as the common agricultural policy and cohesion policy together make up roughly 70% of the budgetary outline 2007-2013 (the current six year program), with allocative expenditure (Lisbon Agenda, administrative costs, EU International role) being rather minor. All expenditure follows multi-annual programs which follow other objectives than cyclical stabilization[45].

[43] In absence of inter*regional* transfers, inter*generational* transfers are listed as shock buffers by De Grauwe (2005, Chap. 2.2, p.9 ff.): A government should increase its debt to cushion its residents from the shock. Governments in a monetary union and with already high levels of debt may find it difficult to resort to this insurance scheme though. A further insurance mechanism would be financial integration, where bondholders of the gaining country that hold bonds of the country that is hit hard will suffer a capital loss and thus share the burden. However, this is only an effect for the wealthier part of the population since unemployed people are less likely to hold a lot of bonds.

[44] e.g. the complete failure of monetary union in the reunited Germany to bring about growth in the east, the continuous transfer problems in Italy and the current heated debate about transfers in Belgium.

[45] although redistribution to underdevelopped regions is very positive, there may also be problems to it: As Dullien and Schwarzer (2007, p. 9-10) argue, Spain has received more than 1% of GDP as

Most important is the fact that the EU-budget is not allowed to go into debt or at least draw down from reserves accumulated earlier. Each shortfall of revenues[46] is filled via the own-resources system where resources are extracted from Member States.

On the expenditure side, Dullien and Schwarzer (2007, p. 10) suggests that one could condition the speed of disbursement for investment spending such as infrastructure spending to the business cycle. On the revenue side, they propose the introduction of common EU-taxes (or at least elements thereof). While in terms of stabilization properties, a personal income tax would be most suited, the authors bring forward the introduction of a minimum level of taxation for corporations as a second best solution (an EU corporate tax) to finance the budget[47]. Instead of VAT and other sources of revenue (Member States contributions), the EU would be financed by this tax, and Member States would get to keep their contributions. Since the tax is cyclical, the EU would need to be allowed to build up reserves in an economic upswing and draw down on them in a downswing, with debt accumulation possible.

Unemployment insurance An alternative stabilization mechanism would be the introduction of an EU-wide[48] unemployment insurance system[49]. Part of the national systems would be replaced by the EU-scheme. Under this scheme (Dullien and Schwarzer, 2007, p. 11), for all employees in Europe, a limited payroll tax would be collected on wages (until a certain limit of e.g. two percent). From this money, employees which have paid contributions for more than a year and then become unemployed would be allowed to draw benefits of half their salary up to a limit and for a period of six months. Again, each nation could still have its national unemployment system on top of the EU-system. The advantage of this system would be twofold: Firstly, the estimated overall amount of money required for a meaningful stabilization of fluctuations in GDP is very small[50]. Secondly, the system would only compensate for cyclical unemployment and not structural unemployment (as only those can receive payments who have been regularly employed for a certain period of time and benefit duration of the EU-part is limited to six months)

There are several other proposals which have been made in the past to introduce a (cyclically) redistributive or stabilization element to the EU-budget, among them (Dullien and Schwarzer, 2007, see discussion in) proposals to base an EU-wide corporate tax on cash flows and a redistribution mechanism based on GDP changes.

structural funds from 2000-06, going to specific sectors of the economy, in this case, the already overheating construction sector. The money is spent with a predetermined speed, and not with respect to the cycle. This could thus lead EU funds to first amplify a national boom and then expire once the boom has burst.

[46] e.g. customs tariffs and a part of VAT, which are most insensitive expenditures to the cycle as consumption remains rather stable over the business cycle

[47] This would not impair the ability of single countries to levy an additional corporate tax on profits in their jurisdiction. Also, the EU-wide revenue from corporate income tax is roughly what is needed to finance the budget.

[48] Both proposals could also be applied to the euro area only.

[49] The inspiration for this particular proposal certainly comes from the US experience, where national unemployment insurance and a large mobility of workers constitute the major adjustment tools within the US monetary union

[50] see references in the paper

Credit-growth tax An interesting proposal is made by Nauschnigg (2010). He argues for a variable credit growth stabilization tax on all new private sector credit when credit growth is deemed excessive, e.g. compared to nominal GDP growth [51]. This would offset financial bubbles, especially with a variable tax rate that may be lifted if credit growth does not respond enough to the tax. Revenues could be used to pay for the crisis or fund a cyclical stabilization fund, where countries would build up reserves in the boom phase to avoid overheating and which could be used in the bust.

4.5. National fiscal rules and Independent Fiscal Councils

In a volume recently published on Vox-EU.org (Richard Baldwin and Laeven, 2010), several authors have suggested an introduction of independent fiscal councils, a committee of experts, to decide on fiscal policy matters (Burda and Gerlach (2010); Eichengreen (2010); Fatás and Mihov (2010); Lane (2010); Wyplosz (2010)).

Despite the experience of Spain and Ireland which had been lauded by the European Commission for their exemplary fiscal policy and their low debt ratios, many of these experts believe that tightening the Stability and Growth Pact is the most important lesson of the euro zone crisis. Some even believe that current account surplus countries are not to blame at all for the current imbalances (such as Bundesbank (2010)).

National fiscal rules In this line of thought, Wyplosz (2010) proposes to establish fiscal rules on the national level because sovereignty over fiscal policy has remained at the national level.

It is interesting to first note what he suggests should not be done:

- Do no waste time trying to strengthen the SGP, as strengthening means sanctions, but those cannot really be imposed on democratically elected governments.
- A meaningful government of Europe will not emerge as citizens are not willing to give up much sovereignty at the moment (see the saga of the Constitution and the ratification of the Lisbon Treaty)

As a consequence, for the euro zone not to break up, „we absolutely need to establish, once and for all, fiscal discipline in every Eurozone country“. Since fiscal policy remains a prerogative of every national government and parliament, the implication is that the SGP must be decentralized to where the authority lies. National institutions need to be adopted that bind the budgetary process.

Wyplosz (2010) considers the German-debt brake to be a good precedent, and suggests that each government should be invited by the European Institutions to submit its own proposed solution on fiscal discipline. The EC or an ad hoc committee under the EU-presidency would then vet the different plans, and only countries that until a certain

[51] This makes much sense if one considers that of all credit creation, a part is affecting GDP and the rest is not (e.g. a bank gives out a credit to an investor who uses it to speculate in derivatives). An large increase in the latter part can thus be inferred to be bubble financing, for details see Werner (2005)

deadline transcribe plans (which pass the perusal) into their legal structure would receive a commitment by the EFSF and the ECB to guarantee their debt. The European Court of Justice would then be empowered to judge whether fiscal policy violates the newly-installed laws of each country.

Along similar lines, Burda and Gerlach (2010) propose a two-pillar reform:

Establishment of an independent committee of fiscal experts Such a 'Fiscal Stability Board' would monitor and subject under scrutiny fiscal developments as well as proposed consolidations. The council would need to be comprised of extra-national, non-political European experts[52] [53].

A new pact with teeth: A tax or surcharge on public debt The authors argue that the cost of borrowing for eurozone countries is currently artificially low because they do not reflect the bailout insurance implicit in Eurozone membership. They propose a tax of 1% on debt which would apply on all debt above the 60% threshold.[54]

According to the proposal, the return of the surcharge would be paid to the Commission which would return the revenues on a pro-rata basis as a rebate of countries´ annual contribution to the EU.

It should be noted that this would imply a transfer mechanism from countries with high public debt (and probably current account deficits) to countries with low public debt (and probably current account surpluses), exactly the opposite of the income transfer that would be required to stabilize EMU. Since these would also be recorded in the balance of payments, it would directly worsen the current account deficit that deficit countries face.

Fiscal council proposals are also made by Fatás and Mihov (2010), who are against rules for two reasons. First, they are usually abandoned due to political demand[55] and second, they produce highly procyclical downturns and further exacerbate the collapse

[52] In the actual formulation of his proposal, the annual audit of national budget plans and fiscal accounts by extra-national, non-political European experts is a distinct pillar. One wonders what the author would consider the European Commission to have done in the past, producing a regular bulky 300-pages volume doing exactly what the authors propose, see `http://ec.europa.eu/economy_finance/publications/european_economy/public_finances_emu_en.htm`

[53] On a related sidenote, one wonders who the authors of these proposals have in mind to be placed onto these councils.. But, to be more serious, such a committee can either be made up of experts with the same ideology, in which case it is rather harmful, or they can be made up of experts of different ideologies and opinions, in which case the nomination process will decide on the majority of the committee. This would be a kind of supreme court on fiscal policy, but is this really a wise thing to install?

[54] However, the first 60% of GDP newly rolled over on would not be subject to the surcharge, presumably to let countries adjust. Unfortunately, it is not totally clear from the proposal whether the tax applies on new debt when issued and the level of public debt is above 60%, or whether it is a yearly tax on the debt level above the threshold, in which case a country that does not roll over debt in a year would not pay the tax. Also, what about debt that is simply rolled over although the public debt of a country is on a diminishing trajectory? This would be punished as well.

[55] Which is also true for the allegedly sound Germany: One of the first actions of the new *conservative* government in Germany in 2009 was the discussion of a shadow budget to avoid official deficits, especially since the debt brake had, although not yet in effect, been enacted right before the election.

of demand during recessions[56]. Furthermore, the current rules do not bring about the necessary surpluses during good years. To both allow for countercyclical policy and flexibility, a *constrained discretion* on fiscal policy should be introduced in the form of bringing judgment to numerical rules through an Independent Fiscal Council. A similar point, but with a slightly different emphasis and a focus on the Irish experience is made by Lane (2010)[57].

Evaluation of fiscal councils In evaluating the proposals, it remains to be said that these proposals fall short of the heart of the problem (foreign and private debt), but would instead only worsen the recession if implemented in a counterproductive and restrictive way such as the German debt brake. The authors also show a surprising ignorance of current account imbalances.

The general mistrust in governments on the side of these authors is misplaced, since part of the problem has been government (Greece) or too little thereof actually, and part of it has been the private sector (Spain, Ireland). Reforming the government and the private sector and making sure that all expenditure is used in a sensible, welfare-enhancing way is a task that all groups in a country need to strive for, but, it is quite unclear why an appointed group of experts would do a better job, while democratic accountability would suffer (as there would be no elections for these positions).

4.6. Rebalancing current accounts through cooperation and governance?

4.6.1. How to achieve coordination

As mentioned in the introduction to this chapter, the basic problem of a monetary union of the EMU-type is that independent, sovereign countries need to run national economic policies that are consistent with their membership in the union. Also, the union as a whole needs to run a growth-friendly and sustainable economic policy.

In principle, as long as countries are disciplined enough (and governments have the necessary authoritative power to control the national economy, even against stakeholders and special interest groups in the national economy), there need not be new institutions or a euro zone government. This also means that they need to set aside their national interest in many regards.[58] Close cooperation between politicians could be observed in

[56]The authors have in mind US states, also in the current crisis, where US states with their balanced budget rules have counteracted the expansionary policy of the federal level.

[57]He notes that in Ireland, during the asset bubble, high asset prices increased tax revenues, e.g. taxes on and related to property and property transactions, and that Ireland should have run a surplus of approximately five percent of GDP. Fiscal Councils could thus monitor fiscal policy w.r.t. output, but also asset prices and the sectoral composition of output. The question would then be, why should fiscal policy balance what other policy means could achieve much better, namely government regulation on housing, financing practices, etc.

[58]Or what they perceive as their national interest. Also differing subgroups that come to power and represent different parts of the people in a country must first and foremost respect the principles of EMU before advocating their national interest. Policies consistent with EMU are discussed in

the years of the run-up to EMU, where everyone tried to achieve the common, overriding goal of achieving EMU-accession criteria. Such an attitude is required at all times (unless closer forms of cooperation like an economic government are founded).

Coordination so far In order to achieve the coordination required with regard to monetary, fiscal and wage policy on the European level, several institutions need to work together. The euro group has been an informal (now also formal) forum for coordinating policies. While it appears that the group has been monitoring and discussing imbalances for a while, as has the Commission, policy recommendations have not been followed adequately (or the diagnosis not accepted) so as to provide a sufficient reversal of current account trends. Similarly, the Commission has not been influential enough to effect the necessary policy changes.

Other forums, such as the European Macroeconomic Dialogue (EMD)[59], which is potentially more comprehensive since the ECB *and* social partners are on board (wage policy), have played no role in the coordination process.

4.6.2. Restoring balanced current accounts

How to reverse current account developments?

Based on the analysis in section 3.3.1, an evident scenario for an exit strategy is thus 'simply' the reversal of unit labor cost developments. Germany and other surplus countries have to let the wages of their workers rise by more than productivity for a protracted period of time, and deficit countries have to undergo a competitive devaluation.

In principle, two scenarios seem plausible for the future of EMU, as Ederer (2010, 287-288) explains.

Deficit countries bear the burden of adjustment In the first scenario, an asymmetric adjustment takes place. Deficit countries bear the burden of adjustment alone, while surplus countries do not change their policies. As Ederer notes, „this scenario corresponds to the widespread perception that the deficit countries' problems are exclusively their own fault and that, consequently, they have to solve them alone". However, in view of the very low growth rates of German wages and prices, a strong and persistent fall in wages and prices of the deficit countries would be required, and the adjustment would still take years even in case of a deflation of two percent each year.

In this scenario, domestic demand remains weak in the euro zone and in particular in the deficit countries. GDP growth therefore falls short of rates observed in other (comparable) parts of the world. A gradual reduction of current account imbalances occurs, but depresses economic performance at the same time. Government debt consolidation will be difficult, if not impossible in this environment. As Dullien and Schwarzer (2010,

chapter 3.

[59] originally introduced on demand of the French against the resistance of the Germans. In 1998-2000, the German (short-time) minister for finance Oskar Lafontaine and his secretary of state Heiner Flassbeck tried to give a more prominent role to the EMD to coordinate policies, but these efforts were terminated when Hans Eichel replaced Oskar Lafontaine.

p. 17-19) argue with the aid of simulations, the government debt developments of deficit countries can be very different depending on the respective policies of surplus countries, with much lower government debt increases in the case of expansive policies in surplus countries. Social and political unrest and opposition could be the result of policies where deficit countries alone bear the burden of adjustment.

In addition, surplus countries boost demand In the second scenario of Ederer (2010), deficit countries deflate, but surplus countries boost their domestic demand (fiscal policy) as well. Also, wages and prices rise faster than in the preceding years. This enables the deficit countries to adjust their competitiveness faster, as they are helped by stronger imports of the surplus countries, and thus a smaller absolute adjustment is needed for deficit countries[60].

The rebalancing of the current account is then achieved at higher growth rates and in a non-deflationary environment[61]. Political opposition to this scenario will be lower as well.

How to achieve a competitive disinflation Blanchard (2007) discusses several adjustment options for Portugal, a country that has experienced a private spending boom[62] in the accession to the euro and is in a slump since. The current account deficit has remained large and productivity growth has been miserable.

In order to restore competitiveness, the most likely scenario is one of *competitive disinflation*, a period of high unemployment until competitiveness has been reestablished and the current account deficits reduced. In order to avoid the high unemployment cost during the transition (and possibly thereafter), Blanchard considers two policy interventions to bring about the same competitiveness adjustment, but with less unemployment[63]:

- Increase in productivity growth
- Lower nominal wage growth

The first option, an increase in productivity growth that is not fully reflected in wages, is certainly „the most attractive one“ (Blanchard, 2007, p. 2). Given the low level of income relative to top EU countries, this appears achievable in theory for most deficit countries. In practice, things seem to be a lot harder though, and even with dramatic reforms, productivity growth is unlikely to increase overnight (Blanchard, 2007, p. 8).

[60] see also Goodhart and Tsomocos (2010) who arrive at the same conclusion. As a remedy, they suggest a tax on capital outflows.

[61] For a theoretical, model-based discussion of these points, see section 6.4.3 and 6.1.

[62] The situation is similar to what other countries experienced after the introduction to the euro. In Portugal, from 1992 to 2001, both nominal and real interest rates were reduced by massive amounts (from 16% to 4% and from 6% to 0% due to lower inflation and the perceived elimination of country risk leading to interest rate convergence. Expectations were such that accession to the euro would lead to faster convergence in terms of growth, leading to an increase in both consumption and investment. Due to the boom, unemployment decreased and wage growth accelerated, while productivity growth remained limited.

[63] Blanchard discusses other options such as outward migration and fiscal policy in either direction but concludes that there is no other way out when trying to keep the unemployment cost low.

The second, less benign option is lower nominal wage growth and is targeted on avoiding a recession and thus unemployment bringing about the necessary adjustment dynamics[64]. However, Blanchard notes that with an environment of low wage growth both in Portugal and the EU in general, a large decrease would be required.

He discusses two ways to achieve lower nominal wage growth (provided unions can be convinced to cooperate):

A nominal wage freeze A nominal wage freeze (0% wage growth) while productivity keeps rising would probably psychologically be easier to accept than nominal wage cuts, but is unlikely to achieve much since the competitiveness gap is too large to be compensated in a few years.

One-shot decrease in nominal wages If workers accept a large nominal wage cut, competitiveness could be restored at once.

There is one qualification to the nominal wage cut option. If the goal is to keep unemployment as low as possible during the transition phase, a nominal wage cut works in an adverse way. Nominal wage cuts will cause a fall in real wages and a resulting fall in consumption, leading to a domestic slump. Blanchard (2007, p. 17) opts for a combination of policies to bring about the best result. Workers may be convinced to accept a nominal wage cut (to restore competitiveness) in exchange for a pledge to use fiscal policy to offset much of the domestic demand slump. A problem with persistent low wage increases is that they trigger deflation expectations, which lead to (given nominal interest rates set by the ECB) negative ex-ante real interest rates, causing a decline in investment expenditure[65]. For this reason, a large nominal wage cut at once appears to be a more favorable option[66], since negative ex-ante real interest rates are not present in this scenario[67].

4.7. Other proposals

There are several other proposals that include the German Council of Experts (Sachverständigenrat, 2009) and Bofinger and Ried (2010), which, in essence, argue for a stricter SGP. A good literature source for reform proposals from before the crisis can be found

[64] Given the Great Recession in 2008-09 and for many deficit countries also in 2010 and probably in 2011, unemployment will do the job regardless of policy.

[65] Basically, decreases in nominal wage growth have the same effect as a devaluation, but this specific effect is an important difference between the two.

[66] Another potential problem mentioned by the author is that firms in the non-tradables sector might not pass on the wage decreases into lower prices but simply raise their margins. The solution could be that either wage and price cuts are coordinated, or that workers receive an ex-post increase in wages (after the cut) contingent on the amount of deflation that was not passed on, e.g. if workers´ wages are cut by 10%, but firms lower prices by only 5%, then workers should get a wage increase of (slightly over) 5% for wages to be on par with prices again.

[67] Negative ex-post real interest rates only appear in the period of and shortly after the cut. But the outlook is positive, and unless entrepreneurs have cash-flow difficulties, entrepreneurs should invest since investment can be expected to be profitable.

in the overview over 101 proposals (Fischer et al., 2007, see). For reasons of space and limitations to the capacity of a single human, they cannot all be elaborated. However, we wish to shortly elaborate on two more proposals that have featured prominently in the discussion, namely „Eurobonds“ and the idea of a permanent resolution mechanism.

4.7.1. Common European bonds

The proposal of issuing *common euro bond* has been revived by several authors in several flavors recently, such as Mabbet and Schelkle (2010), Delpla and von Weizsäcker (2010), De Grauwe and Moesen (2009), and carrying the most weight politically, Juncker and Tremonti (2010).

Mabbet and Schelkle (2010, p. 82)[68] develop the idea of „a Eurobond with a common interest rate that that would provide financing for deficits approved within the fiscal framework. Determining the quota for lending overall and from this facility could be a way for the Eurogroup to coordinate fiscal policies and reward compliance“.

The rationale for this proposal is that euro zone governments cannot let the market dictate their fiscal policy, especially, but not only, when financial markets attack a country for the wrong reason, with bad timing or dramatic consequences[69]. In particular, it is hard to answer the question: „Why should be we believe the market this time?“ posed by De Grauwe (2009), when it has been so wrong misjudging credit risk in the past and then started panicking in 2010.

The creation of a common financing facility would have the following advantages (Mabbet and Schelkle, 2010, p. 83):

- It could be an entry point for closer fiscal coordination in normal times and create incentives for countercyclical fiscal policy in good times. Also, it could begin to provide the basis for addressing the problem of fiscal policy coordination to tackle imbalances within the eurozone.

- *Access* to the Eurobond would be *governed by compliance with the European fiscal framework*. Member states would have to agree annually – or more frequently if economic circumstances so require – on the overall volume of bonds to be issued and the share of each member state. This would determine, within reasonable margins of error, the appropriate fiscal stance for EMU as a whole, based on the projected cyclical phase for the euro area. By determining the quota and thus the contribution of each country to the overall stance, the facility could take account of the fact that we still have asynchronous business and asset market cycles in the monetary union.

[68] A large part of the article is devoted to the Greek case, as is a large part [p. 64-95] of this informative issue of *Intereconomics* on crisis resolution in the euro zone, where inter alia the relative benefits of a European Monetary Fund or an involvement of the IMF are discussed. For reasons of space and focus, we cannot outline the debate here.

[69] Indeed, it is quite disturbing that bank departments decide on the possibilities of fiscal policies of individual countries (with direct consequences for the employment of millions of people).

- The bond issue would be *guaranteed collectively* by the member states, and all would pay the *same interest rate*. Given that the Eurobond should not have any country names attached to it, a suitable issuer would be the European Investment Bank rather than national treasuries.

As the authors argue, „For many eurozone countries, a Eurobond could set a valuable ceiling to spreads, even though it is possible that Germany or the Netherlands could always obtain financing more cheaply.“[70]

Mabbet and Schelkle (2010) present the most complete proposal of a euro bond in terms of furthering European Integration. Less thorough, but, given the current „nationalistic“ political climate (meaning no income transfers and no transfer of sovereignty on a higher level), more feasible proposals are found in De Grauwe and Moesen (2009) and Delpla and von Weizsäcker (2010)[71].

4.7.2. A permanent resolution mechanism

The creation of a permanent debt resolution mechanism is especially on the agenda of the German government (Bundesministerium der Finanzen, 2010), which made it a part of its nine-pillar plan on its vision of the reform of the SGP and European governance. It wishes to dissolve the EFSF after its current limit of three years. Instead, a permanent debt resolution mechanism should supersede it to permit an orderly procedure for sovereign default[72].

A second point that differs from the Commission proposals is the deprivation of voting rights in the European Council for those Countries which infringe upon the rules of EMU in particular severeness (SGP and cheating with statistics).

However, this is not a permanent sensible solution without a change in economic policies towards current accounts, as it is unthinkable that every country that loses against German competitiveness is forced to go broke eventually (with a haircut on their debt), undergo a period of competitive disinflation with high unemployment and social unrest, and restart the race that they can potentially only lose[73]. Also, this option has (so far) been rejected for Greece as German and French banks hold high levels of Greek government debt which could, in the event of default, potentially cause another banking crisis in both Greece and its creditor nations[74].

[70] As the authors argue, more subtle implications of the bond would be: „The Eurobond conditions would send a signal to markets that could raise spreads for countries which had used up their access rights, so that borrowing to finance an excessive deficit might systematically begin to carry an interest rate penalty. However, member states who do this may find their share in the Eurobond allocation reduced in the next period; in other words the variable national quotas can be used to sanction those who do not stay within the agreement. The Eurobond would thus represent a start in giving EMU's fiscal framework some pecuniary substance in contrast to the current oversupply of blaming and shaming.“

[71] The differences are significant, as no major redistribution mechanism is entailed in those proposals. The details are spared here for reasons of space.

[72] As mentioned earlier, a detailed discussion of the ESM and EFSF and the rescue packages is not part of this diploma thesis.

[73] since the initial capacity for suffering (from low wages) seems to be larger in Germany

[74] or at least require even more funds for banks' recapitalization, which are already high anyway in the

4.8. Conclusive Remarks and a possible solution

4.8.1. General conclusion

As Boone (2010) notes, „all euro countries, in one form or another, have benefited from the common currency without considering what it takes to maintain the quality of this common good. .. There is a significant lack of coordination among countries which seek their own advantages out of the euro without any long term strategy. The question for the euro zone thus is how to reinforce economic governance? Two factors will be determinant. How to ensure that member states care about their common good, the euro? This leads us directly to the second question of how to force countries to direct their economic policies towards the common objectives. Do we need a common finance base (either in form of a bigger EU budget, a European Monetary Fund or emission of common Euro bonds) and, in this case, what sort of revenues to finance such a base, what tax system? It is the degree of integration of the euro zone countries that needs to be reconsidered.“

We cannot agree more with her interpretation. We find that further European Integration including fiscal transfers would be most effective to solve the current imbalances in a sustainable way. Given the difficult climate and the tedious negotiations for the last treaty, second-best solutions could be the introduction of excessive imbalance procedures that include surplus countries on an equal footing. However, introducing a rule also requires a serious commitment of individual countries to follow it - not only formally, but also in its spirit. Therefore, a change in thinking and the attitude towards other euro zone members is indispensable, geared towards cooperation and at looking at the euro zone as one community and one people. We also find that simply tightening the rules of the SGP will not work, since it may lead to a deflationary bias as governments cut spending and put the already weak growth prospects for the next decade at risk. In essence, prescribing sensible economic policies should be the aim of the European Council, the euro group and the Commission. National governments need to run more consistent policies with EMU, especially fiscal and wage policies[75].

4.8.2. Cornerstones of a full-fledged solution to current EMU problems

In this section, we attempt to shortly present a full-fledged solution to the current EMU-problems. We admit that the whole complex of the European Stability Mechanism, sovereign debt buyers´ strikes on financial markets and the issue of sovereign insolvency have not been discussed in this thesis for reasons of space and time, yet we wish to present a short solution for the sake of completeness. It includes the following proposals:

1. Ignore the new SGP and run expansive fiscal policy in growth-enhancing, produc-

German case

[75] But also, or actually most important, financial market regulation needs to prevent a second crisis like the one we are in right now, since it has been the major catalyst and basement for the severity of the trouble.

tive sectors of the economy where labor is unemployed[76]

2. Monetize government debt if necessary
3. For each illiquid or insolvent country, determine on an individual basis whether a haircut on government debt is necessary
4. Possibly Include another round of bank recapitalization (with the help of the Eurosystem), and make contracts with the banks on credit supply to the real economy
5. Make low long-term interest rates possible for the government through monetization
6. Restore competitiveness through a reversal of unit labor cost developments (appropriate wage and fiscal policy) in an expansive environment
7. Regulatory policy needs to make sure that housing bubbles or other financial market bubbles can no longer occur; shrink or split up large investment banks

A stricter SGP? Unless it is ignored in political implementation, the Stability and Growth Pact in its current and tightened version is a danger to European recovery from the crisis, as the European Council continuously seals negative fiscal impulses for the coming years (also for current account surplus countries) which will be a major impediment for a favorable business cycle and medium to long term growth, leading to the danger of a sharp increase in persistent unemployment (hysteresis). Clearly, the change to an employment-friendly growth regime is still a long shot. The crisis has not yet been deep enough for the elites to give up many of their central convictions, such as the systems competition approach inherent to EMU, the belief that the ECB should not buy government bonds and the idea that governments need to be subject to often irrational financial market control.

Monetization of government debt and low interest rates for governments The monetization of government debt is necessary, as current solutions for Greece and Ireland are inconsistent. If they have to pay interest rates of 6% in the „rescue package“, they have to have nominal growth of at least 6% or a primary surplus, according to debt dynamics (see section B in the appendix). These growth figures are, however, unlikely for the years to come, and the required primary surplus will continuously weaken economic activity. Thus, making finance available at lower rates is indispensable. But financing countries such as Germany and Austria (with a Triple A rating) can only get money on the markets themselves at roughly 3%, and any guarantees given will impinge upon their own credit rating and interest rates. Thus, as the ECB is the only actor that can provide funds with no interest cost to them (as they are the issuer of the monopoly currency of the euro zone[77]), it should directly fund the states, just as a regular central bank does. While

[76] for policy proposals for Austria, see Schulmeister (2010) and Österreichisches Institut für Wirtschaftsforschung (2006)

[77] for the power of the central bank as the monopoly issuer of currency, Wray (1998, see)

it should not buy up debt on the secondary market, it should guarantee all new debt placed on the markets by individual countries with a fixed price and interest rate such that all *new* debt which cannot be placed on the market is taken up by the ECB[78].

Then, a fiscal policy that states wish to conduct can be done irrespective of financial markets´ decisions. The leaders of the euro zone (heads of state, finance ministers, unions and employers associations leaders, ECB) would then be free to discuss which policies they see fit to save economic activity and reduce unemployment in the coming years.

Regulatory policy and banking recapitalization in case of a haircut (again with the help of the ECB) need to be another important step in reducing the likelihood of further crises.

[78]The terms ECB and European System of Central Banks (ESCB) are used synonymously. It is weird enough that in a primary auction of government debt of a euro zone member, foreign central banks (like the Chinese or Japanse central bank) are allowed to buy and hold euro zone government debt, but the ESCB is not allowed to do so. This passage in the EU-Treaties should be discarded.

5. An Introduction to Stock-flow Consistent Models

Having discussed current account imbalances empirically (chapter 3) within the background of the EMU policy framework (chapters 2and 4), we approach the issue from the theoretical side with the aid of Stock-Flow consistent models (SFC models). Since these models are not within the standard economics curriculum, they are introduced in this chapter. Eventually, this is done to provide the basis for chapter 6, where SFC models are used to explain and discuss the current euro zone current account imbalances including their reversal.

Section 5.1 attempts to give legitimation to the modeling strategy employed in SFC models, while section 5.2 dives into the basic building blocks and common principles of SFC models. Readers familiar with the basics of SFC models may skip this chapter altogether.

5.1. Relevance and principles of SFC models

Bezemer (2009) argues that the claim (excuse) used by mainstream academia and policy organizations (IMF, Fed, OECD) that „No one saw this coming“ (referring to the current financial crisis) is easily proven wrong as it is „not difficult to find predictions of a credit or debt crisis in the months and years leading up to it, and of the grave impact on the economy this would have - not only by pundits and bloggers, but by serious analysts from the world of academia, policy institutes, thank tanks and finance“ (Bezemer, 2009, p. 3). He makes a compelling point[1] stating that „the recession may be viewed as a natural 'experiment' in the validity of economic models“. Analyzing two different strands of models, mainstream equilibrium models and accounting (flow-of-fund) models, he finds that only researchers and analysts using the latter models were capable of seeing problems with the current growth model before the advent of the financial crisis. The latter models are the „shared mindset of those analysts who worried about a credit-cum-debt crisis followed by recession, before policy and academic establishment did“, and that therefore „change is likely to come from those models which did lead their users to anticipate instability“.

Key features of these models according to Bezemer (2009, p. 12) are (a) the circular flow of goods and money, (b) a separate representation of stocks (inventories, wealth and debt) and flows (goods, services and funds), (c) explicit modelling of the financial sector as distinct from the real economy, so allowing for independent growth and contraction

[1] for a short summary of the paper see Vox-EU: `http://www.voxeu.org/index.php?q=node/4035`

effects from finance on the economy, (d) non-optimizing behavior by economic agents in an environment of uncertainty, and (e) accounting identities (not the equilibrium concept) as determinants of model outcomes in response to shocks in the environment or in policy.

Principles of SFC Models Stock-flow consistent models (SFC) of the type presented in the standard reference book by Godley and Lavoie (2007b) are part of these accounting (flow-of-fund) models which enabled their users to predict the crisis (see e.g. Godley (1999)). Besides this very significant success, SFC models have several advantages according to Godley and Lavoie: They are rooted in the social accounting matrices with double entry booking principles that were the basis for the creation of national accounts. A consistent set of national and sectoral balance sheets is used, where every financial asset has a counterpart liability, and „budget constraints for each sector describe how the balance between *flows* of expenditure, factor income, and transfers *generate counterpart changes in stocks* of assets and liabilities“ (Lavoie and Godley, 2001, p.2-3)[2]. Altogether, this creates a comprehensive set of accounts in the sense that „everything comes from somewhere and everything goes to somewhere“. More formally, all stocks and flows can be fitted into matrices in which all columns and rows sum to zero. The main advantage of this method is that accounting errors cannot pass unnoticed and all implications of a model are worked out.

As SFC models are Post Keynesian in nature, they include several of the fundamental beliefs most Post Keynesian authors hold, such as endogenous money or fundamental uncertainty (which is represented by quantity adjustment rather than price adjustment and the presence of buffer stocks in Godley and Lavoie type models). An overview of the features of these models, the relevant seminal contributions, and the economic theories they are based on is provided by Godley and Lavoie (2007b, Chap. 1 and 13) and Silva and Dos Santos (2008).

Therefore, it appears worthwhile to examine what SFC models can tell us about the imbalance situation in the euro zone (see chapter 6). Before that, however, we need to introduce their main features.

5.2. Basic building blocks of SFC models

A stock-flow consistent model is typically built upon the grounds of a sectoral balance sheet matrix and a transactions flow matrix[3]. These are merely accounting identities and not a model, as no behavioral equations have been introduced. But they do provide the framework to make sure that the model is consistent and that all implications of the model are worked out.

[2] Italics were not used in the original source.
[3] see Godley and Lavoie (2007b, Chap. 2)

5.2.1. Balance sheet matrix

SFC models[4] make a distinction between the different sectors of the economy. The four sectors of the closed economy[5] include households, the production sector, the financial sector and the government sector. The government sector can itself be split into two subsectors: The pure government sector and the central bank[6].

The example of the household sector Assets and liabilities of all sectors are listed in the (sectoral) balance sheet matrix. In order to shed light onto the distinction between a conventional balance sheet of a sector and its representation in the balance sheet matrix used in SFC-models, a comparison of balance sheets for the household sector is provided in Table 5.1.

Table 5.1.: Comparison of a typical stylized household balance sheet and the same household balance sheet in a SFC model

Typical household balance sheet				Households balance sheet in a balance sheet matrix	
Assets	1000	**Liabilities**	1000	Tangible capital	+600
Tangible capital	600	Loans	200	Bills	+100
Equities	100	Net Worth	800	Cash	+100
Bills	100			Deposits	+100
Money deposits	100			Equities	+100
Cash	100			Loans	-200
				Net Worth	-800
				$\sum$	0

In a conventional balance sheet of households (left hand side of table 5.1), the difference between assets and liabilities constitutes their net worth, that is, households´ net wealth,

[4]The main reference for this section is Godley and Lavoie (2007b, Chap. 2.2)

[5]To depict an open economy in SFC-models, there is no foreign sector. Instead, a second economy with each of the four sectors is introduced in the balance sheet matrix.

[6]Although the central bank is only a small part of the government sector, a separate representation of it may be preferable due to its important role in setting monetary policy.

which is usually positive as they earn more than they spend. This item (net wealth) is consequently added to the liability side to satisfy the general accounting principle that balance sheets ought to balance.

However, in a typical balance sheet matrix of a SFC model, all the elements on the asset side of the conventional balance sheet will be entered with a plus sign, while all the elements on the liability side will be entered with a negative sign. Therefore, net worth (although positive) will be entered with a negative sign as well. These conventions ensure that all the rows and columns of the balance sheet matrix sum to zero to provide coherence and consistency.

It is important to note that all the items (except inventories) in the balance sheet matrix are evaluated at market prices. This is especially relevant for firms[7], where in standard business accounting practices items are often evaluated at historical cost[8]. Concerning tangible assets, this means that every tangible asset is reported at its replacement value[9], and every financial asset is evaluated at its current value on the financial markets. In the case of firms, the measured net worth depends on Tobin´s Q[10], but bears no practical significance[11].

The sectoral balance sheet matrix for all sectors In principle, an infinite amount of assets/liabilities could be listed in the matrix and it could be assumed that all sectors own a share of all assets. Nonetheless, the actually listed assets and liabilities will depend on the model employed.

Table 5.2.: Simplified sectoral balance sheet, closed economy

	Households	Production firms	Banks	Government	Central Bank	$\sum$
Tangible capital	$+K_h$	$+K_f$				$+K$
Bills	$+B_h$		$+B_b$	$-B$	$+B_{cb}$	0
Cash	$+H_h$				$-H$	0
Deposits	$+M_h$		$-M$			0
Loans	$-L_h$	$-L_f$	$+L$			0
Equities	$+E$	$-E_f$	$-E_b$			0
Net Worth	$+NW_h$	$+NW_f$	$+NW_b$	$+NW_g$	0	$-K$
$\sum$	0	0	0	0	0	0

[7] A second complication with firms is the treatment of equities, which are technically not a liability of the firm. In this approach, they are treated as if they were.

[8] The price paid at the time that the assets and liabilities were purchased.

[9] The price it would cost to produce this real asset now.

[10] For a detailed explanation see Godley and Lavoie (2007b, Chap. 2.2.2, especially p. 29-30)

[11] Also, in typical SFC models, it plays no role since no behavioral equation depends on it.

Table 5.2 presents a simplified sectoral balance sheet matrix. Again, all assets are denoted with a plus sign, and all liabilities with a minus sign. The table reads as follows: In *row* 2, bills have been issued by the government (government liabilities), and bought by households, banks, and the central bank (which then hold them as assets in their books). In *column* 5 (central bank), the central bank has issued currency (liabilities with a negative sign) as it needed to finance the purchase of government bills (the central bank´s assets with a plus sign).

The matrix of the balance sheet follows a simple essential rule: All the columns and rows that deal with financial assets must sum to zero. The only row that may not sum to zero is the row dealing with tangible capital (the stock of equipment, machines and inventories accumulated by firms in the production sector and the stock of dwellings of the household sector). A tangible (real) asset appears only in a single entry of the balance sheet (that of its owner). In all the sectoral columns, the sum of all components represents net worth, the last entry, with a negative sign[12]. By this, it is ensured that all columns sum to zero. The summation of rows yields zero only if no tangible capital is present. Finally, the summation of the row of net worth yields a sum, which is equal to the net worth of the economy[13]. For the total (closed) economy, its net worth is equal to its capital stock (tangible capital, the *real* assets). Financial net worth does not exist for the total economy, since each asset of someone is necessarily the liability of someone else.

5.2.2. Transactions-flow matrix

Even more relevant than the balance sheet matrix is the *transactions-flow matrix*[14]. This matrix records all the monetary transactions that are occurring in an economy during one period. Again, the principle that all rows and columns sum to zero applies, and the same sectors as in the balance sheet matrix are present. For columns, the zero sum rule has an economic meaning in that it represents the budget constraint of each sector.

Entries with a plus sign reflect sources of funds for the sector (income), and entries with a minus sign stand for uses of funds of the sector (expenditure)[15]. Figure 5.1 presents an example of a transactions-flow matrix. The production firms sector, the banks sector and the central bank both have a current and a capital account. For instance, in the firms sector, the need for this intra-sectoral division arises as income spent on goods (I_f) by firms is at the same time a receipt of income for other firms within the sector. Thus, firms´ investment expenditures would be netted out if they were not accounted for by an extra capital account.

[12] Net worth of households will be positive, thus leading to a negative entry, and net worth of the government negative (government debt), thus leading to a positive entry.

[13] with a negative sign, since net worth needs to have a negative sign to fulfill the accounting logic of the matrix. The net worth of the economy as such is of course positive.

[14] This section is based on Godley and Lavoie (2007b, Chap. 2.4 and 2.3).

[15] Note that the meaning of the plus and minus signs is different in the balance sheet and transactions-flow matrix. The acquisition of a financial asset has a plus sign in the balance sheet matrix, as one would expect. In the transactions-flow matrix, it has a negative sign since it is a use of funds.

Figure 5.1.: Example of a Transactions-Flow matrix

	Households	Production firms		Banks		Government	Central Bank		
	(1)	Current (2)	Capital (3)	Current (4)	Capital (5)	(6)	Current (7)	Capital (8)	Σ
Consumption	$-C$	$+C$							0
Investment	$-I_h$	$+I$	$-I_f$						0
Govt. exp.		$+G$				$-G$			0
Wages	$+WB$	$-WB$							0
Profits, firms	$+FD_f$	$-F_f$	$+FU_f$						0
Profits, banks	$+FD_b$			$-F_b$	$+FU_b$				0
Profit, central Bk						$+F_{cb}$	$-F_{cb}$		0
Loan interests	$-r_{l(-1)} \cdot L_{h(-1)}$	$-r_{l(-1)} \cdot L_{f(-1)}$		$+r_{l(-1)} \cdot L_{(-1)}$					0
Deposit interests	$+r_{m(-1)} \cdot M_{h(-1)}$			$-r_{m(-1)} \cdot M_{(-1)}$					0
Bill interests	$+r_{b(-1)} \cdot B_{h(-1)}$			$+r_{b(-1)} \cdot B_{b(-1)}$		$-r_{b(-1)} \cdot B_{(-1)}$	$+r_{b(-1)} \cdot B_{cb(-1)}$		0
Taxes – transfers	$-T_h$	$-T_f$		$-T_b$		$+T$			0
Change in loans	$+\Delta L_h$		$+\Delta L_f$		$-\Delta L$				0
Change in cash	$-\Delta H_h$				$-\Delta H_b$			$+\Delta H$	0
Change, deposits	$-\Delta M_h$				$+\Delta M$				0
Change in bills	$-\Delta B_h$				$-\Delta B_h$	$+\Delta B$		$-\Delta B_{cb}$	0
Change, equities	$-(\Delta e_f \cdot p_{ef} + \Delta e_b \cdot p_{eb})$		$+\Delta e_f \cdot p_{ef}$		$+\Delta e_b \cdot p_{eb}$				0
Σ	0	0	0	0	0	0	0	0	0

Source: Godley and Lavoie (2007b, p. 39, Figure 2.6)

The matrix reads as follows: The aggregate household sector (first column) receives funds (marked with a plus sign, as these are sources of funds or income of the sector) from their wages (wage bill WB), distributed profits from both firms and banks, interest on deposits and bills households hold, and new loans taken out. The sector uses funds (spends them) on consumption, investment (on dwellings), interest payments on loans, taxes (net of transfers), new holdings in cash, deposits, bills and new equities bought. All in all, this sums to zero. The first row reads the same way, only that transactions take place between sectors: The household sector spends on consumption, and the firm sector receives this exact amount as income.

Matrix explained The matrix consists of two parts:

The first part The first part (from consumption to taxes) is based on a conventional income and expenditure matrix and records all transactions[16], with a few additions such as making explicit interest payments (where the flow of interest payments depends on the relevant interest rate and on the stock of assets held at the opening of the production period). Also, households´ investment in housing is explicit, which it is not in the standard national accounts (Godley and Lavoie, 2007b, p. 33-34). After all income and expenditure has been conducted, a financing surplus or deficit remains[17], which will usually be positive in the case of households. Households need to put the remaining money somewhere, which is reflected in the second part of the matrix (see below). On the contrary, firms will usually have a financing deficit, where they have to take out new loans from banks or sell new equities or bonds to cover it.

The second part The financing deficit or surplus that sectors have needs to come from somewhere or go somewhere. This is depicted in the second part of the matrix. Take the example of households. After (usually) ending up with a surplus from all their transactions, they have to invest[18] their money somehow. In table 5.1, their financing surplus is used to buy bills (from both banks and the government sector) and equities. They receive some funds by taking out new loans, and hold the residual as either cash or deposits at the bank[19].

This second part is also the flow equivalent of the balance sheet matrix (see section 5.2.1).

The full-integration matrix While the balance sheet matrix records the opening stock of wealth in the beginning of the current period for each sector (or equivalently the closing stock of wealth at the end of the previous period, and the transactions-flow matrix

[16] from the standard NIPA: national income and product accounts

[17] In the national accounts, this is the B.9 entry, see e.g. Chapter 6 for households and Chapter 8 in Lequiller and Blades (2006).

[18] in German: „anlegen“ and not „investieren“, since it is purely financial wealth, tangible capital investment into dwellings has already been accounted for in the investment row.

[19] Of course, while already being complex, this is still a simplified matrix. For instance, bonds issued by corporations do not exist.

records all the transactions that have happened in the current period for each sector, it should be possible to move from the opening stock of wealth in the current period to the closing stock of wealth in the current period (accounting for the transactions-flow matrix). However, capital gains are still absent. Only through introducing a *full-integration matrix* such as in figure 5.2, the full link in time between the two stocks can be established[20].

The full-integration matrix takes the opening stock of net worth of the individual sectors, adds or subtracts all changes in net assets arising from transactions (the second part of the transactions-flow matrix[21] and adds or subtracts all changes in net assets arising from revaluations (capital gains) to eventually receive the closing stock of net wealth of the individual sectors. Finally, the summation of net worth (last row) yields the value of the stock of tangible capital[22].

5.2.3. The equilibrating principle

While the matrices explained in sections 5.2.1 and 5.2.2 that go with a particular SFC model themselves can say nothing about how the system is motivated (how it works), they do describe the identities that need to be fulfilled in every solution of the model. Contrary to the short-run analysis of Keynesian models (IS-LM), where only the flow changes from one period to the next are considered, SFC models have a long-run equilibrium that the model eventually converges to[23]. SFC models are therefore the extension of short-period analysis to the long run. For instance, in the IS-LM model and starting with a balanced budget, the government decides to run a deficit (increase G) in order to increase Y* once. This can only be a short-run solution, as it cannot repeat itself for a large number of periods (or indefinitely): While Y* will remain constant after the initial increase, the deficit that has developed will cumulate and lead to an ever-rising level of government debt in successive periods. Thus, „the problem with the standard textbook story is that it deals with flows, while not taking into account the impact of flows on stocks - and the subsequent impact of stocks on flows“ (Godley and Lavoie, 2007b, p. 71). Until a steady state has been reached, short-run flows will generate changes in stocks.

Steady-states and stationary states When is a long run solution, a *steady state*, reached? A *steady state* is a state where the key variables remain in a constant relationship to each other, including both flows and stocks. In a growing economy, a steady

[20] This type of system is also found in ESA 95.

[21] The only difference is that all entries are with a plus sign in the full integration matrix instead of the minus sign they had in the transactions-flow matrix. The reason is simply that in the transactions-flow matrix those entries were uses of funds (therefore the minus), while they add to wealth in the full integration matrix (therefore the plus sign). Also, note that an additional row called *changes in tangible capital* is introduced in the full-integration matrix that ostensibly is not present in the second part of the transactions-flow matrix. Ignoring inventories (which we do in these matrices), this row simply corresponds to the investment row in the transactions-flow matrix. For details on both issues see the relevant section in Godley and Lavoie (2007b).

[22] Note that an increase in the value of the stock of tangible capital may also arise due to (justified or speculative) capital gains.

[23] For an easy and simple model to better understand the principles explained here see Godley and Lavoie (2007b, Chap. 3)

Figure 5.2.: Example of a Full-integration matrix

		Households	Production firms	Banks	Government	Central bank	Σ
		(1)	(2)	(3)	(4)	(5)	
	Net worth, end of previous period	NW_{h-1}	NW_{f-1}	NW_{b-1}	NW_{g-1}	0	K_{-1}
Change in net assets arising from transactions	Change in loans	$-\Delta L_h$	$-\Delta L_f$	$+\Delta L$			0
	Change in cash	$+\Delta H_h$		$+\Delta H_b$		$-\Delta H$	0
	Change in deposits	$+\Delta M_h$		$-\Delta M$			0
	Change in bills	$+\Delta B_h$		$+\Delta B_h$	$-\Delta B$	$+\Delta B_{cb}$	0
	Change in equities	$+\Delta e_f \cdot p_{ef} + \Delta e_b \cdot p_{eb}$	$-\Delta e_f \cdot p_{ef}$	$-\Delta e_b \cdot p_{eb}$			0
	Change in tangible capital	$+\Delta k_h \cdot pk$	$+\Delta k_f \cdot pk$				$+\Delta k \cdot pk$
Change in net assets arising from revaluations	Capital gains in equities	$+\Delta p_{ef} \cdot e_{f-1}$ $+\Delta p_{eb} \cdot e_{b-1}$	$-\Delta p_{ef} \cdot e_{f-1}$	$-\Delta p_{eb} \cdot e_{b-1}$			0
	Capital gains in tangible capital	$+\Delta pk \cdot k_{h-1}$	$+\Delta pk \cdot k_{f-1}$				$\Delta pk \cdot (k_{h-1} + k_{f-1})$
	Net worth, end of period	NW_h	NW_f	NW_b	NW_g	0	K

Source: Godley and Lavoie (2007b, p. 44, Figure 2.7)

state is achieved when the key ratios are constant (e.g. government debt over GDP, private wealth over GDP), thus the underlying variables grow at the same rate. In an economy without growth, a steady state is also a *stationary state* since the levels of the variables are constant (e.g. government expenditures are equal to tax revenues, leaving government debt unchanged).

A property of the stationary state is that consumption must be equal to disposable income (not when converging to the stationary state, but as soon as it is reached, they are equal) in SFC models. Thus, there is no saving (no change in financial stocks) in the long run equilibrium[24]. Let us assume the simple accounting identity that households´ aggregate consumption must be equal to their aggregate disposable income minus their aggregate saving, which is equal to the change in the stock of wealth[25]:

$$C = YD - \Delta V_h \tag{5.1}$$

Then, in the stationary state, where the change in stocks is zero[26], ΔV_h is equal to zero, thus consumption equals disposable income.

Also, let us assume a consumption function of the following form typically found in Godley and Lavoie SFC closed economy models[27]

$$C_d = \alpha_1 \cdot YD + \alpha_2 \cdot V_{h-1} \tag{5.2}$$

where aggregate household consumption demand C depends on their aggregate disposable income YD and the wealth stock V[28] (accumulated past savings) at the beginning of the period[29].

Combining those two equations, one receives

$$(C =)YD - \Delta V_h = \alpha_1 \cdot YD + \alpha_2 \cdot V_{h-1} \tag{5.3}$$

which, after reformulation, becomes

$$\Delta V_h = (1 - \alpha_1) \cdot YD - \alpha_2 \cdot V_{h-1} \tag{5.4}$$

and, defining $\alpha_3 = (1 - \alpha_1)/\alpha_2$, yields

$$\Delta V_h = \underbrace{\alpha_2}_{\text{Partial adjustment parameter}} \cdot \underbrace{\alpha_3 \cdot YD}_{\text{Deviation of actual wealth } V_{h-1} \text{ from long run wealth target } V_T} \tag{5.5}$$

This equation is a partial adjustment function and can be interpreted as follows (Godley and Lavoie, 2007b, p. 75): Wealth „is being accumulated at a certain rate determined

[24] we are in a model without growth

[25] Since old and new saving will be held in the form of stocks such as cash, deposits, bills, dwellings, etc..

[26] provided it is a no growth model

[27] The example presented here is taken from Godley and Lavoie (2007b, Chap. 3). Only the important parts to understand the concept are presented here, while the full model is left to their book.

[28] The wealth component in the consumption function is required for stable solutions in no growth models, but not necessarily in models with growth.

[29] This is the reason for the subscript -1 with the wealth variable V.

by the partial adjustment parameter α_2, towards some desired proportion α_3 of income". $\alpha_3 \cdot YD = V_T$ can be interpreted as a wealth target. This target for the wealth to income ratio is the *stock-flow norm* of households implicit in the consumption function presented above.

Given the existing stock of wealth in the beginning of the period, households find out their disposable income of the period to then determine their target level of wealth V_T. Assume that households wish to hold 150 percent of their current disposable income as wealth, but they have only 100 percent actual wealth in the beginning of the current period. They will then save in order to achieve the target ratio sometime in the future. If their actual wealth were 200 percent, they would dissave (spend) as they would feel that they had saved too much in the previous periods. The intuition underlying this principle is simple: If you find find that your wealth has reached a very high level, you start to spend more. Equally, if you have no savings, you start to accumulate some in order to have some precautionary reserves.

Stock-flow norms are crucial to SFC models: the main results are conditional on the behavioral axiom that stock variables will not change indefinitely as ratios to related variables (Godley and Lavoie, 2007b, p. 76)[30].

The same principle holds for the government sector in a SFC model without growth. Government expenditures need to be equal to revenues in the stationary state (so as to keep government debt constant). Government debt may be positive in the starting situation and rise or fall subsequently in the adjustment process, but in the long run equilibrium, it needs to be constant[31]. A similar principle can be formulated for firms: They would wish to hold their debt to cash flow (profits) ratio constant in order to be able to both invest and not let their debt become too high[32].

Shocks in model variables The interesting part of (dynamic) SFC models in a steady state is to use shocks of either exogenous variables to the model (as non-interest-related pure government spending) or parameters (like the propensity to consume[33]) to cause deviations from the steady state. Since SFC models use historic time, there is no absolute exogenous equilibrium to which the economy will revert back eventually (as is the case with the standard Real Business Cycle and New-Keynesian models), but, typically, a new steady state will be the result of the shock. Thus, both the analysis of the new steady state (e.g. a higher level of GDP) and the dynamics of convergence to the new steady state are of interest. Questions like „how does higher government spending affect GDP and government debt" or „how does an increase in the propensity to import affect GDP, government debt levels and current accounts" can be answered, fully taking into account

[30] As Godley and Lavoie write on p. 77, if one accepts the relative stability of consumption functions and their α-coefficients, then one accepts the relative stability of stock flow norms in the case of households. Indeed, if stock-flow norms were to exist, and they are found to be unstable in actual economic data, one may be tempted to conclude that an unsustainable process is developing.

[31] or in terms of a model with growth: real inflation-adjusted government debt needs to grow in line with GDP, see also Annex 3.4 in Godley and Lavoie (2007b)

[32] for firm behavior, see Minsky (1985)

[33] the α parameters in the consumption function above

stock and flow consequences on the total economy.

Chapter conclusion We are now done with the introduction of SFC models. Thus, we can proceed to using these models for our cause in the next chapter.

6. Two-country Models of the Euro Zone

As we have introduced SFC models in the last chapter, we are now ready to proceed to the theoretical part of this diploma thesis. The following chapter is aimed at giving a theoretical model-based foundation to the arguments made in previous chapters about restoring current account balances while minimizing growth losses. In as far as the existing models allow for, we also discuss the policy options outlined in chapter 4.

Open economy SFC models SFC models have been extended to introduce the open economy (e.g. Godley and Lavoie (2007b, Chap. 6 and 12)). Typically, two-country models are built, but some three country models exist as well. In order to fully capture the implications and repercussions of the system, an SFC open economy model is not really open, but, taken as a whole, is a closed system of two or three countries. In practice, this means a large increase in the number of equations, since each of the countries or regions needs to have their own set of equations. Some of them include variables from the other country (trade equations: imports and exports, as well as financial market equations where households are allowed to hold assets from and governments allowed to issue liabilities to the other country).

In order to bring the static financial balances analysis of section 3.6 in chapter 3 to a dynamic level, we use SFC models for the eurozone.

6.1. A two country model of the euro zone

With the increasing interest in SFC models in recent years, several open economy models have been constructed, but only few of them have referred explicitly to the euro zone. A paper most relevant to our cause is Lavoie (2003). Godley and Lavoie (2007b, Chap. 6 and 12) provide a more thorough exposition of the different cases so that much of the following discussion will be implicitly or explicitly based on the Godley and Lavoie book.

The models as such are simplistic in the sense that they abstract from many (possibly relevant) side-effects to prove their points. Limitations[1] include a lack of the whole production sector (firms) with investment expenditure, prices are constant, there is no financial sector (banks) and no private money (Lavoie, 2003, p.99-101). The model also typically abstracts from explicit wage bills and wage bargaining which would be especially relevant as explanations to the current EMU disequilibria. Real interest rate differences cannot possibly arise if there are no price changes. Another feature of most of the models is that they are Post-Keynesian and illustrate, for the most part, a world as it could be. The best example is that government bills and bonds are kept at a constant price (and

[1] These are all features that have been modeled in more complex closed economy (one country) models.

interest rate) by the central bank, which, while possible, is not a realistic depiction of government financing in EMU. To be fair, the authors do relax these assumptions and sometimes try to change the equations so as to illustrate a bill and bond market closer to its current form as well, but this is usually not the center of attention. Despite all the simplifications of the models presented here, they are still very useful to get a basic understanding of the current disequilibria in the euro zone.

6.2. The evolution of disequilibria

Godley and Lavoie (2007b, Chap. 6 and 12), or Lavoie (2003) for the euro zone show how disequilibria evolve.

The starting point of the model analysis is a full stationary steady state, in which both the government budgets and the balance of payments of both countries are balanced. Both countries are assumed to be identical with respect to the initial state, income, wealth and model parameters[2]. Then, one model parameter is modified at some point in time (representing the shock) and the transition towards the new steady state is examined.

Interestingly, a shock in a parameter (e.g. the South propensity to import) in open-economy models *with fixed exchange rates and in monetary unions* will not generally lead to a *full* stationary (or *super-stationary*) state observed in one-country models, but only to a *quasi-stationary* state, in which „some of the main variables or ratios are still changing. It is impossible for the state to persist indefinitely“ (Godley and Lavoie, 2007b, p. 195). What will happen is that although the (private) net accumulation of assets (NAFA)[3] becomes zero (required for a stationary state) and there is no more change in income levels of both countries, other variables such as the government deficit and the current account balance remain in disequilibrium (permanent deficit or surplus). As Godley and Lavoie (2007b, p. 179) note, „while economic forces will drive the economy to the point where the government budget deficit (or surplus) for the North region is exactly equal to the trade deficit (or surplus) of the North region, *nothing will lead the system towards balanced trade*“. Only in special cases a *super-stationary* state can be achieved where trade and budgets are balanced.

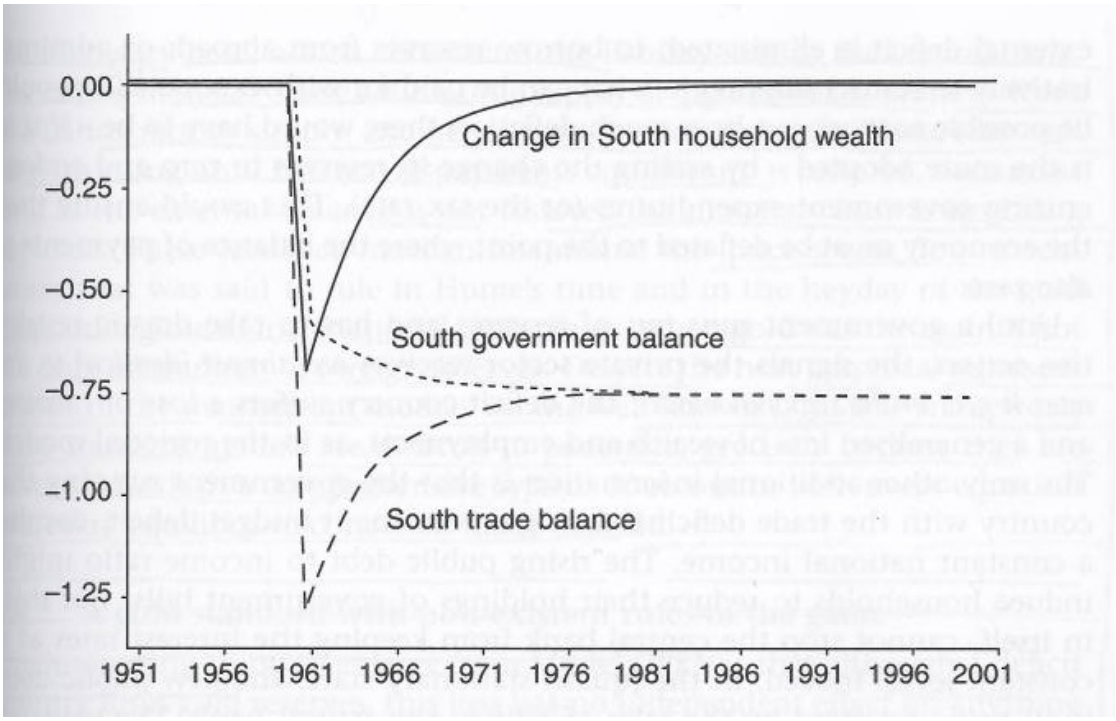
An elaboration of the statement above can be given through the identity for each country that $NAFA = PSBR + CAB = 0$. When NAFA is zero in the new steady state, the public sector borrowing requirement is equal to the current account balance: $-PSBR\,(= Gov.Balance^4) = CAB$. The South, having experienced an increase in its propensity to import, suffers from a twin-deficit: a current account balance deficit and a government deficit of equal size. This is depicted in figure 6.1.

In the model, the stocks corresponding to the flow variables behave accordingly. While the private wealth stock plunges by a large amount at first, it falls by less and less in the subsequent periods until the change in wealth stops and a new stock equilibrium with a

[2]For simplicity. This need not be the case, the only requirement for an initial steady state is that the government budget and balance of payments of each country is balanced.

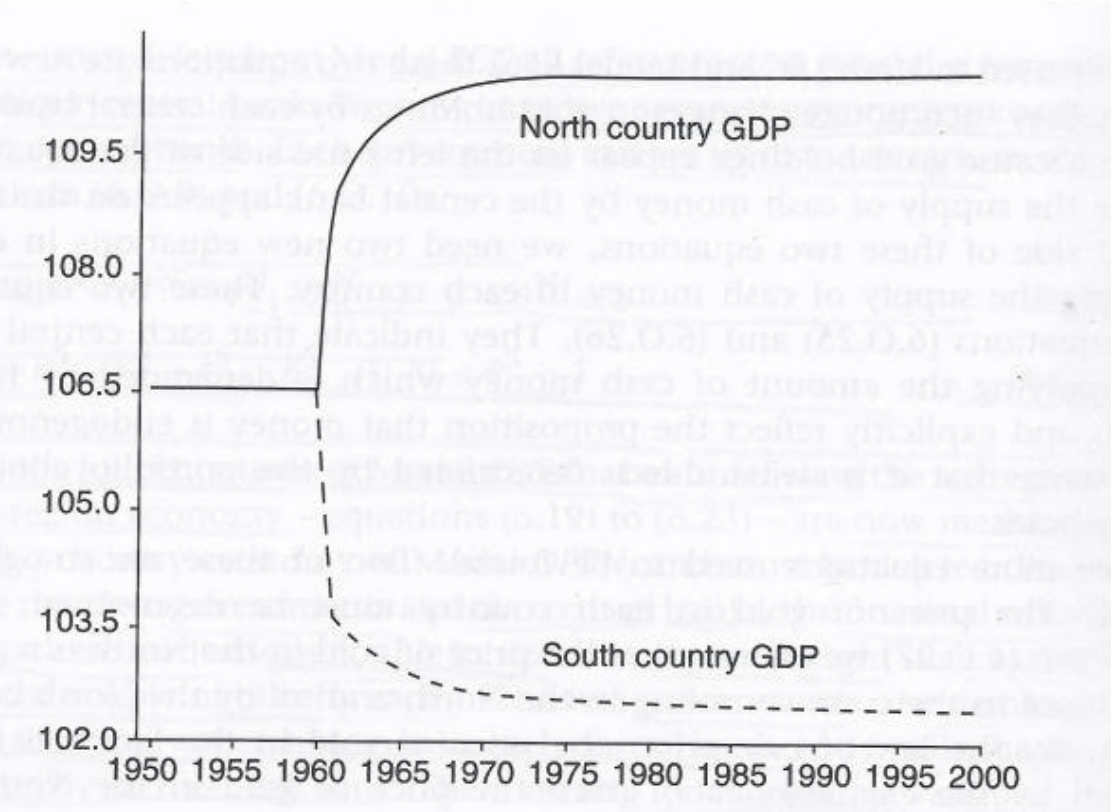
[3]This is the change in financial assets (wealth) of households or household saving. Firms which contribute to private sector net saving are not existent in these two-country models.

Figure 6.1.: Evolution of financial balances of the South country - net acquisition of financial assets, government balance, trade balance, following an increase in the South propensity to import



Source: Godley and Lavoie (2007b, p. 195, Figure 6.9)

Figure 6.2.: Evolution of GDP in the North and South countries, following an increase in the South propensity to consume



Source: Godley and Lavoie (2007b, p. 194, Figure 6.8)

lower private wealth stock has been attained. In contrast, the net foreign asset position decreases indefinitely and the government debt of the South rises forever. This is clearly not a sustainable situation.

Godley and Lavoie (2007b, p. 182) strongly emphasize that „in the steady state, or rather, in a stationary state without growth, and excluding any third party, it is impossible for both regions of a country, or for both countries of a monetary union, to simultaneously enjoy government budget surpluses“ or *current account surpluses*. This result has a very important practical implication for the euro zone. Given a balanced euro zone current account with the rest of the world, current account deficits countries in the euro area (Spain, Portugal, Greece) can only achieve future surpluses when current account surplus countries like Germany are willing to give up their deficits.

The next subsection discusses different causes of the evolution of disequilibria, and the subsequent section explains why this quasi-stationary state cannot go on forever.

6.3. Different causes of disequilibria: different parameters change

In the SFC open-economy model literature, different parameter changes can lead to different (quasi or super) stationary states. The change in the import propensity of one country has already been mentioned. Other interesting possibilities include a change in the consumption propensity of one country and an increase in government spending of one country[5].

6.3.1. Increase in import propensity of South

An increase in the import propensity of the South (as described above) leads to a negative current account and a negative commensurate government balance in the South once the new steady state is attained[6]. Income (GDP) in the South is permanently lower in the new stationary state, as can be inferred from figure 6.2. The mirror image occurs in the North.

As Lavoie (2003, p. 118) notes, it is „an interesting feature of the present model .. that it clearly shows that the deficit of the South government has nothing to do with excessive government expenditures. The South (pure) government expenditures are no different from what they are in the other county. The deficit[7] arises entirely out of the decision of the South households to import a larger proportion of products from abroad.“

[5] Also analyzed, but not examined here is a change in liquidity preferences (households wish to hold more interest-bearing bills relative to cash), which leads to the same dynamics as in the import propensity case discussed below, only with a positive NAFA during the transition. Since this scenario is not overly important for our purposes, we leave it with that.

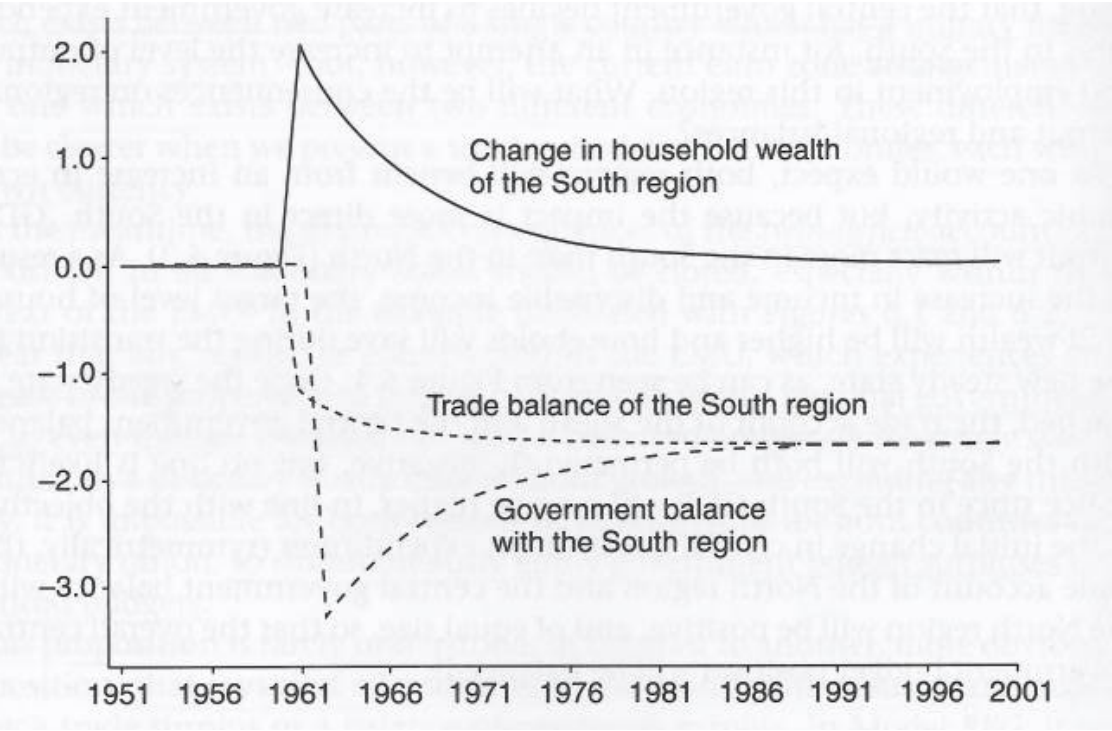
[6] Transition dynamics may be slightly different depending on the model and its parameters.

[7] The government deficit is caused entirely by the dynamics of recession: Tax revenues fall and government expenditure on debt servicing rises.

6.3.2. Increase in government spending of South

An increase in the pure government expenditure in the South causes the same result with respect to the current account balance and the government balance as does the import propensity change: Both balances turn negative in the quasi-stationary state (and during transition), as is shown in figure 6.3[8]

Figure 6.3.: Evolution of balances of the South region - NAFA, government balance, trade balance, following an increase in the government expenditures of the South region



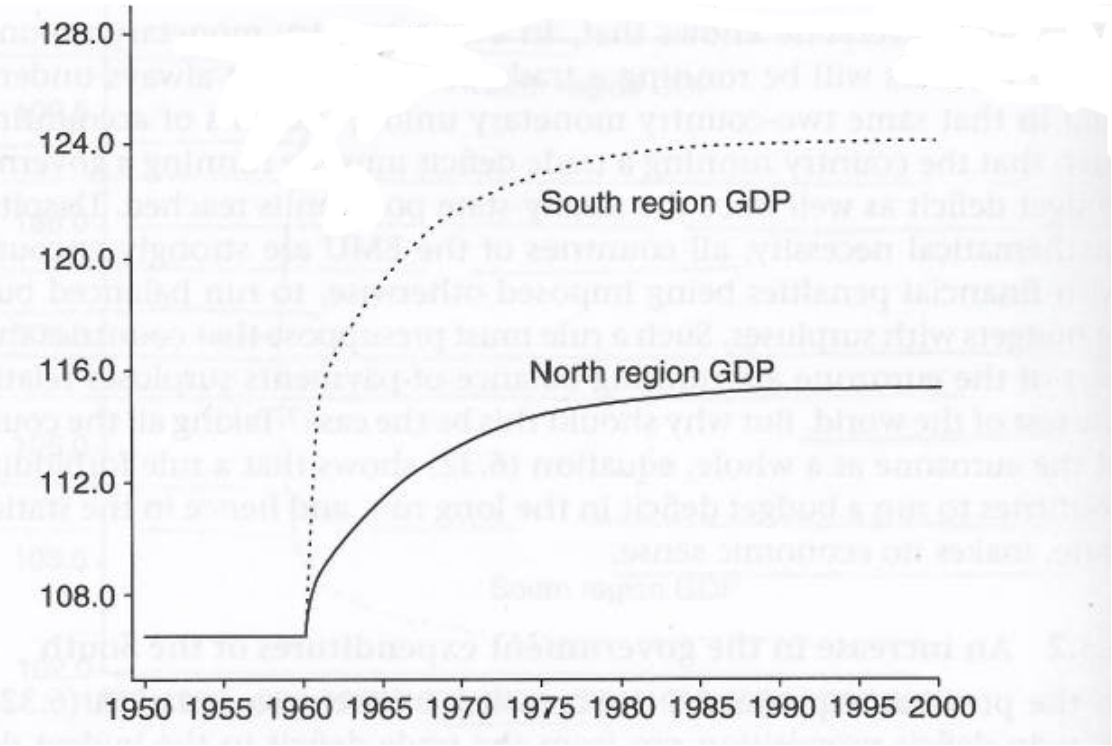
Source: Godley and Lavoie (2007b, p. 184, Figure 6.4)

However, the outcome is different in terms of income. The higher pure government spending increases the level of activity in the South, leading to a higher GDP. The North can profit from the increase in the South´s activity, and the North GDP rises as well, albeit by a smaller amount[9] (see figure 6.4). If the model were a regional model (see section 6.6.4 below), this would be the end of the story. However, in a monetary

[8] Both graphs are actually taken from the regional model with a central government (Godley and Lavoie, 2007b, Chap. 6), but depict the same transition to the quasi-stationary state as a model with two separate countries would.

[9] By assumption, both countries have the same starting import propensities. If, e.g. the North had an unrealistically low import propensity and the South a very high one, the North GDP might rise higher than the South GDP since the North would appropriate much of the increase in South government expenditures.

Figure 6.4.: Evolution of GDP in the South and the North regions, following an increase in the government expenditures in the South region



Source: Godley and Lavoie (2007b, p. 184, Figure 6.3)

union without a permanent income transfer mechanism[10], the increase in the South´s government spending only leads to a temporary local GDP increase, since the balance of payments remains negative, which has to be resolved after some time.

Two options to resolve this situation seem straightforward and will be discussed in subsequent sections: Either the South decreases its pure government expenditure, or the North increases its government expenditure too.

6.3.3. Increase in consumption propensity of South

An increase in the consumption propensity of the South[11] leads to qualitatively quite different results than the scenarios discussed above: A quasi-stationary state does not result out of a change in the consumption propensity.

Interesting developments can be observed with the two countries´ incomes and especially the new stationary state. GDP increases in the short run in both countries (by more in the South), but decreases in the long run in the new stationary state (again by more in the South). In economic terms, the South experiences a sudden boom with a successive soft landing, while the North experiences a moderate increase in activity and only a very minor decrease in the stationary state. The results become more obvious when we recall that in the model, there is only consumption and government spending as sources of demand while investment is lacking. An increase in the consumption propensity therefore drives a consumption boom, which, however, reduces wealth accumulation by households in the South. A typical adjustment process for SFC models takes place. In the long run, the private wealth stock declines. As a consequence, consumption out of wealth declines by even more than the original increase in consumption caused by the increase in the propensity to consume out of income, leading to an eventual slight fall in long-run GDP. This counter-intuitive result[12] for a Post-Keynesian model unfolds because there is no investment dynamics that could propagate the initial consumption boom[13]. During the transition to the new stationary state, the balance of payments is negative (as one would expect), while the government balance is positive due to the increase in GDP. What is most remarkable about the increase in the propensity to consume is that it does not lead to a quasi-stationary state. Instead, a full stationary state (superstationary state) is attained, where the balance of payments and the government balance are balanced. This is quite counter-intuitive at first since a consumption boom is a demand expansion just like higher government spending is (which causes a quasi stationary state). But government spending is an exogenous variable in the model. Consumption and saving, however, are endogenous variables experiencing a feedback mechanism that ensures that an equilibrium is reached.

[10] see the discussion in sections 2.2 and 4.4

[11] To be exact, that is an increase in the propensity to consume out of current income, the α_1 parameter. α_2, which is the parameter reflecting the propensity to consume out of wealth, remains constant.

[12] which is the opposite of the paradox of thrift described by Keynes

[13] More sophisticated one-country models, such as Godley and Lavoie (2007b, Chap. 11), have both effects. In the end, an increase in the propensity to consume has no long-run effect at all on the level of GDP since the two effects offset each other.

6.4. The instability of the quasi-stationary state

In a regime with fixed-exchange rates or a monetary union without transfer mechanisms, the quasi stationary state cannot go on forever[14]. It is implausible that there can be an ever-increasing debt to GDP ratio and a persistent large current account deficit without a crisis following suit. The most important question both in the „real world“ and in the model is how these deficits (especially the current account) are financed.

In the Godley and Lavoie gold standard model (Godley and Lavoie, 2007b, Chap. 6), in which the central banks each hold gold reserves, the country in the deficit situation (in the quasi stationary state) will finance the deficits by acquiring ever more government bills and paying out gold to the foreign country central bank (international trade is settled in gold). Eventually, it will run out of gold reserves[15][16]. This leaves the deficit country government with three options:

1. Deflate demand to the point where the balance of payments deficit is eliminated (endogenize fiscal policy through tax rates or pure government spending changes)
2. Borrow reserves from abroad (gold or foreign currency reserves)
3. Administer imports to what can be paid for by exports

Regarding the specific provisions in EMU, options 2 and 3 are legally impossible. Administering imports is not allowed as this would fundamentally contradict the free movement of goods principle enacted in the treaties. Borrowing reserves from abroad is also not relevant since the balance of payments deficit financing works differently in a monetary union.

6.4.1. The central bank willingness to purchase government bills

In fact, in a SFC model of monetary union, the common central bank will finance the current account deficit. The reason is that one of the Post-Keynesian properties of the models is that central banks can hold the interest rate on government bonds constant. The central bank is ready to buy any government bills that households do not wish to hold at the given interest rate. Thus, it acts as a buyer of last resort, fixing both the price and the interest rate of government bills. It guarantees that every bill that either government wishes to sell is sold at the prevailing price and interest rate.

[14] Not so in a monetary union with transfer mechanisms or a country that has two regions, see the discussion of a regional model with fiscal transfers in section 6.6.4 below.

[15] Since we are in a stationary state, the private sector will receive „no signal that anything is wrong at all“ (Godley and Lavoie, 2007b, p. 195). Also, there is no speculative attack in anticipation of the situation as has been modeled in the balance of payments crises literature since the model excludes private international capital flows for simplicity.

[16] This finding is profoundly at odds with the standard Mundell-Fleming story which does include an automatic adjustment mechanism, for more discussion on this point see Godley and Lavoie (2007b, p. 196-97).

In the model of Godley and Lavoie (2007a)[17], the Eurosystem balance sheet is such that all government bills purchases are financed by the creation of high-powered money ($H^N_{CB} + H^S_{CB} = B^S_{CB} + B^N_{CB}$)[18]. Once the twin-deficit situation occurs (with the South government deficit 'financing' the South current account deficit), the North stock of government debt decreases and the South stock increases. Households, impervious to fears over government default[19], hold bills only according to the rate of return. The composition of the ECB´s balance sheet hence changes in that it buys all the additional South government bonds that households do not wish to hold and releases all North government bonds that households demand. Thus, it acquires an ever larger amount of South government bonds, whereas its holdings of North bonds are declining[20]. The high-powered money provided to households is left unaffected (also the amount of it held in each country, contrary to the bills´ situation). This is shown in figure 6.5.

To conclude, as long as the common central bank is willing to accommodate the required changes in its asset structure, the quasi stationary state is stabilized.

The central bank unwillingness to purchase bills However, if the central bank refuses to finance the current account deficit, there are two possible courses of action for the South government:

1. The South government reduces its pure expenditures (endogenous government expenditures)

2. The bill rate on the market for South government bonds becomes endogenous

These solutions are discussed in the next two sections.

6.4.2. Endogenous interest rate

At any point in the quasi stationary state, when the central bank refuses to fix the interest rate on South government bonds, the rate starts to float according to the laws of supply and demand (in the case of the model: household supply and demand), as shown in figure 6.6. The result is that the rise in the interest rate generally *fails* to establish a stationary state, instead, the model explodes. The reason is that as a higher interest rate increases the borrowing cost of government leading to a higher budget deficit. As ever more bonds are sold on the market by the South government each period, with the demand for them constant at the previous period´s interest rate, an ever higher interest

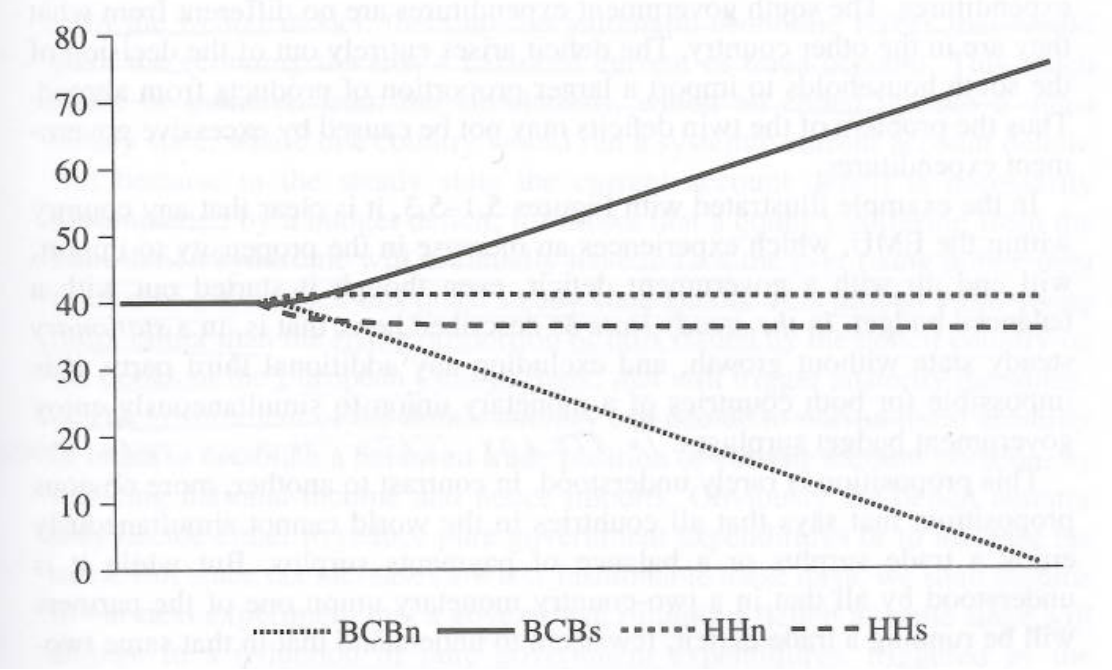
[17] Lavoie (2003) complicates the exposition through introducing bonds which are also subject to capital gains or losses. While the analysis is complicated in Godley and Lavoie (2007a) even more by the introduction of a third country, we still stick with this paper abstracting from the third country.

[18] with H^N_{CB} representing the North high-powered stock of money and B^N_{CB} representing the stock of government bills of the North held by the central bank

[19] Even if they were, the system would not fundamentally change. The process described in the following sentences would only proceed in an accelerated way.

[20] Of course, this can only go on for as long as there are North bonds for the central bank to release to households.

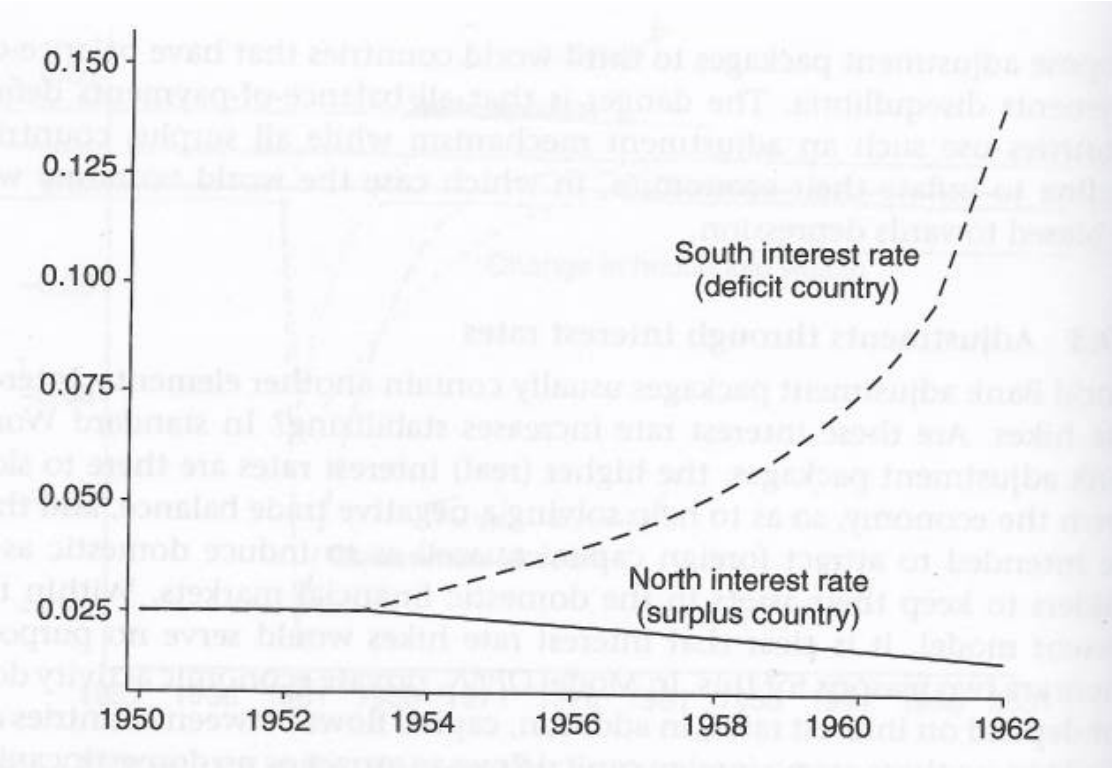
Figure 6.5.: Evolution of central bank balance sheet components as the central bank keeps the price of bonds constant, following an increase in the import propensity of the South



Source: Lavoie (2003, p. 117, Figure 5.3)

rate is needed to clear the market. Thus, the interest rate on South government debt explodes[21].

Figure 6.6.: Evolution of interest rates on government bonds without a central bank that stabilizes government bond prices, following an increase in the South propensity to import



Source: Godley and Lavoie (2007b, p. 206, Figure 6.14)

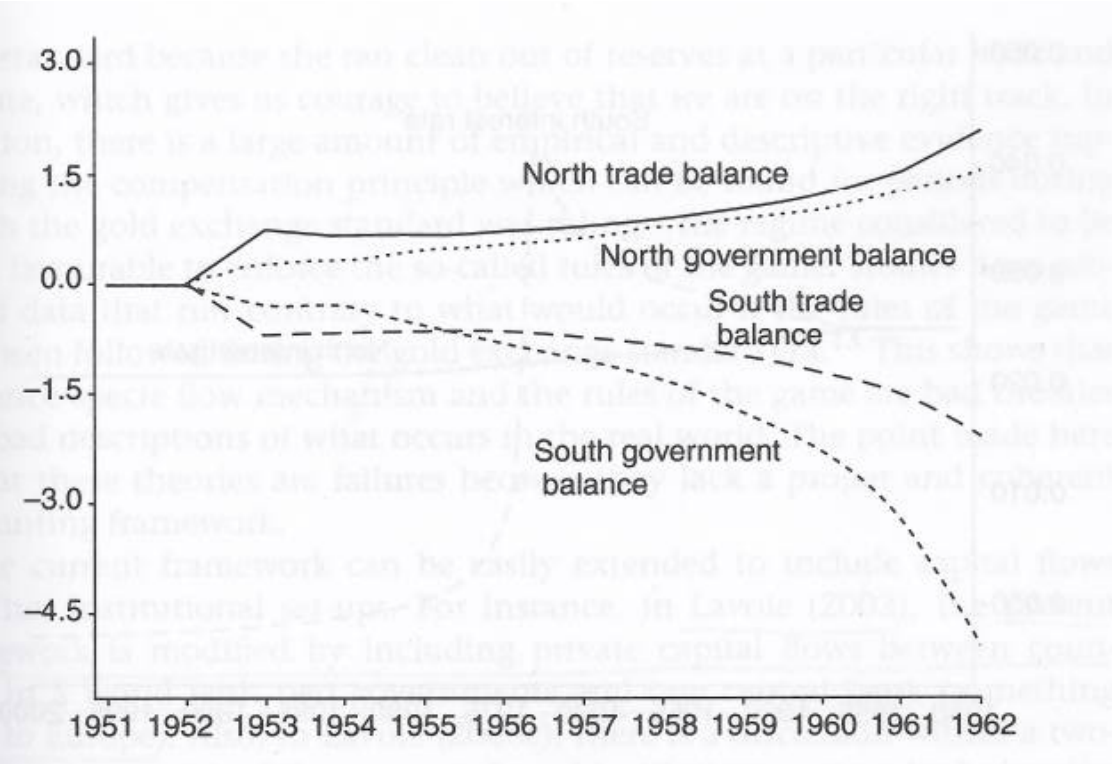
As shown in figure 6.7, a current account deficit results since high interest payments to households help to keep up import demand[22]. Generally, one may conclude that endogenous interest rates lead to an explosion of the model, and only in very rare cases to a stationary state.

6.4.3. Endogenous fiscal policy

An alternative solution to letting the interest rate float is that fiscal policy becomes endogenous[23]. Once the central bank stops acquiring any more South government bills, the fiscal stance of the South government will depend on how many extra bills it can

[21] Pure government expenditure is kept constant all the time, only the interest-related expenditures explode.
[22] This is a stylized presentation, since each model differs in its variables and dynamics.
[23] This corresponds to the deflate demand option mentioned on page 99.

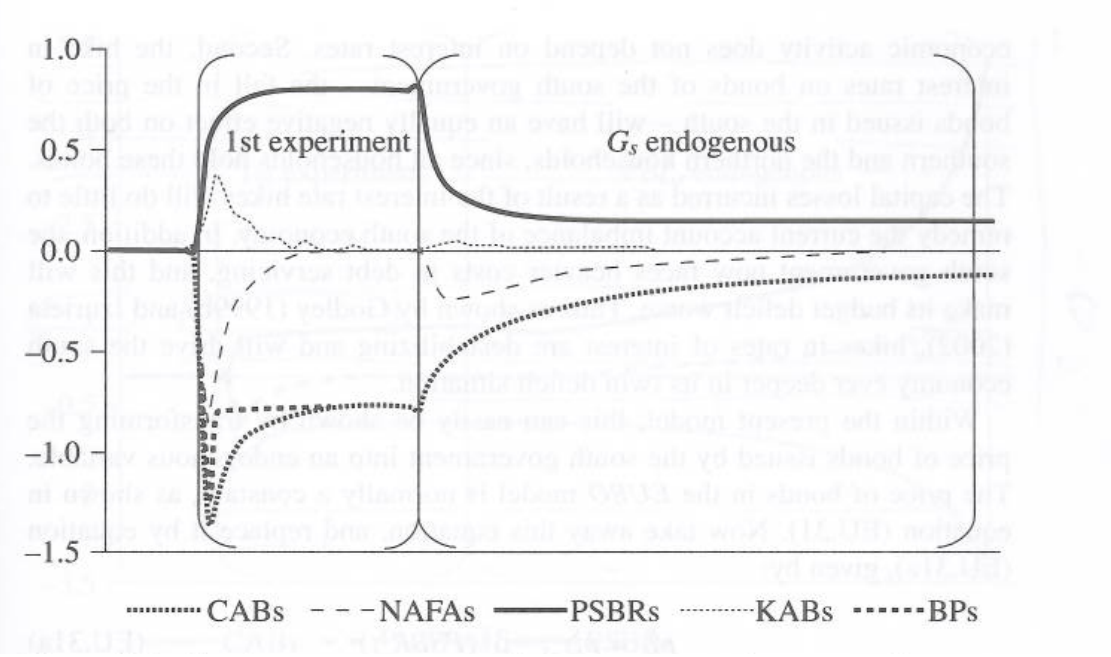
Figure 6.7.: Evolution of trade and government balances of both countries, following an increase in the South propensity to import and endogenous interest rates



Source: Godley and Lavoie (2007b, p. 207, Figure 6.15)

unload on financial markets (to households). The South government is therefore financially constrained in that it only runs a deficit if financial markets are willing to take in bills at the given interest rate, and runs a balanced budget if otherwise. Thus, the new endogenous variable needs to be pure government expenditure[24]. The endogenous (falling) government expenditure in reaction to the shock will lead to a fall in income in the South, from which it will not recover. In another sense, the fiscal policy is highly effective though: The reduced income helps to resolve the current account deficit and brings back the economy to a super-stationary state, as can be seen in figure 6.8[25]. While government debt does rise during the transition, it levels out at a new higher level.

Figure 6.8.: South government expenditures become endogenous: Effect on financial balances



Source: Lavoie (2003, p. 121, Figure 5.5)

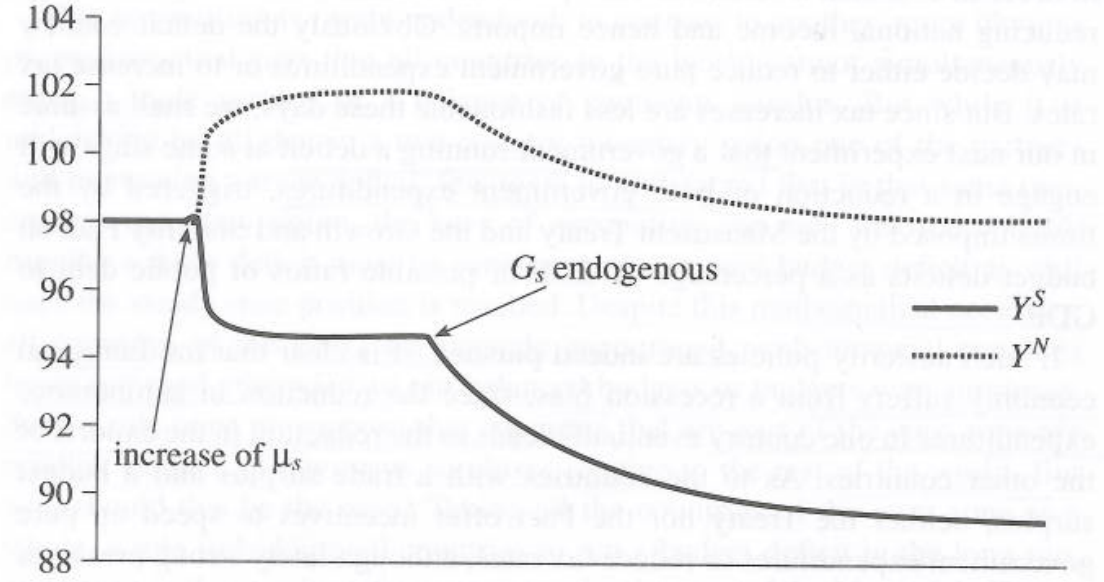
Thus, fiscal cutbacks do lead to a viable solution in the model. However, the South income is now permanently lower in the new stationary state. Also, the consequences for the euro zone taken as a whole (North and South) are not favorable. Since the burden of adjustment is solely on the the deficit country, the euro zone suffers: While the North income has increased during the period of current account deficits of the South due to

[24] Alternatively, tax rates could be made endogenous in the model, but this is usually not done.

[25] The balance of payments (BP) is split into the current account balance (CAB) and the capital account balance (KAB) in the Lavoie (2003) model, from which this graph is taken. The private sector borrowing requirement (PSBR), the government deficit, is positive, implying a negative government balance. The twin deficit situation is therefore present as well. In the new superstationary state, the South runs a trade balance surplus in order to offset the capital account.

its export performance, it falls back to normal[26] when the South is forced to operate its deflationary policies (see figure 6.9).

Figure 6.9.: South government expenditures become endogenous: Effect on output of both countries



Source: Lavoie (2003, p. 120, Figure 5.4)

Total European GDP has therefore fallen, and there are no winners, only some losers. Lavoie (2003, p.121) calls this asymmetric adjustment burden a „deflationary bias“[27].

During the crisis in 2010, this is quite the situation we did observe in Greece, Ireland, Spain and Portugal. Also, if rules proposed by the European Commission are enacted, which put the adjustment burden solely on the deficit countries, the „deflationary bias“ situation is manifested, and Europe might be headed for another decade of slow growth.

6.5. Rules for government expenditure

This section discusses government expenditure rules, where fiscal policy is used to offset the shocks discussed in section 6.3. It is useful to explore these rules in greater detail to understand the more benign options available to the euro zone explained in section 6.6.

Several rules for government expenditure can be experimented with in the typical Godley and Lavoie models. The model may either start with these rules in place or they may set in at some point in the historical time of the model[28]. A convincing

[26] above or below the level of the past stationary state, depending on the exact specifications

[27] This corresponds to the discussion of Ederer (2010) in section 4.6.2.

[28] Thus, setting in the rules need not await a refusal of the ECB to buy any additional government debt as discussed in section 6.4.3, but it may.

benchmark to evaluate a rule is whether it can actually prevent the standard outcome of the two-country model, where the South finds itself trapped in a situation of running an unsustainable persistent current account deficit.

Godley and Lavoie (2007b, Chap.5) and Lavoie (2003) develop a fiscal policy reaction function:

$$G^S = G^S_{-1} - \beta_S \cdot (PSBR_{-1}) \quad \text{with } \beta_S > 0 \tag{6.1}$$

Equation 6.1 states that if the public sector borrowing requirement (the budget deficit) has been negative (positive) in the previous period, the government adjusts its (pure) spending downwards (upwards). Thus, the government starts to cut back spending whenever it observes a deficit.

It is interesting to explore the implications of this rule within the one country model of Godley and Lavoie (2007b, Chap.5). As shown in figures 6.10 and 6.11, in the model employed in that chapter, a decrease in the propensity to consume is followed by a sharp recession (GDP falls).

After a while, however, income reverts back to its pre-shock level and even surpasses it to reach a new higher level in the new steady state[29] (see figure 6.11). Following a shock, the model offers a determinate steady state solution.

On the contrary, if the government uses the fiscal rule mentioned in equation 6.1, the model becomes path-dependent, meaning that the new steady state depends on the history of the model[30] (the precise actions taken at any point in time by government[31]). In the concrete example, the sharp recession that is caused by the original shock (decrease in consumption propensity) ends after a while, but income does not revert back to its pre-crisis level let alone surpass it. Instead, the new steady state is one where income is lower than its pre-recession level[32] (see figure 6.10).

In the case of EMU, the following fiscal rule may be suggested (Lavoie, 2003, p.161):

$$G^N = G^N_{-1} - z_3 \cdot \beta_S \cdot (PSBR_{-1}) \quad \text{with } z3 = 1 \text{ iff } \frac{PSBR_{-1}}{Y_{-1}} > -3\% \tag{6.2}$$

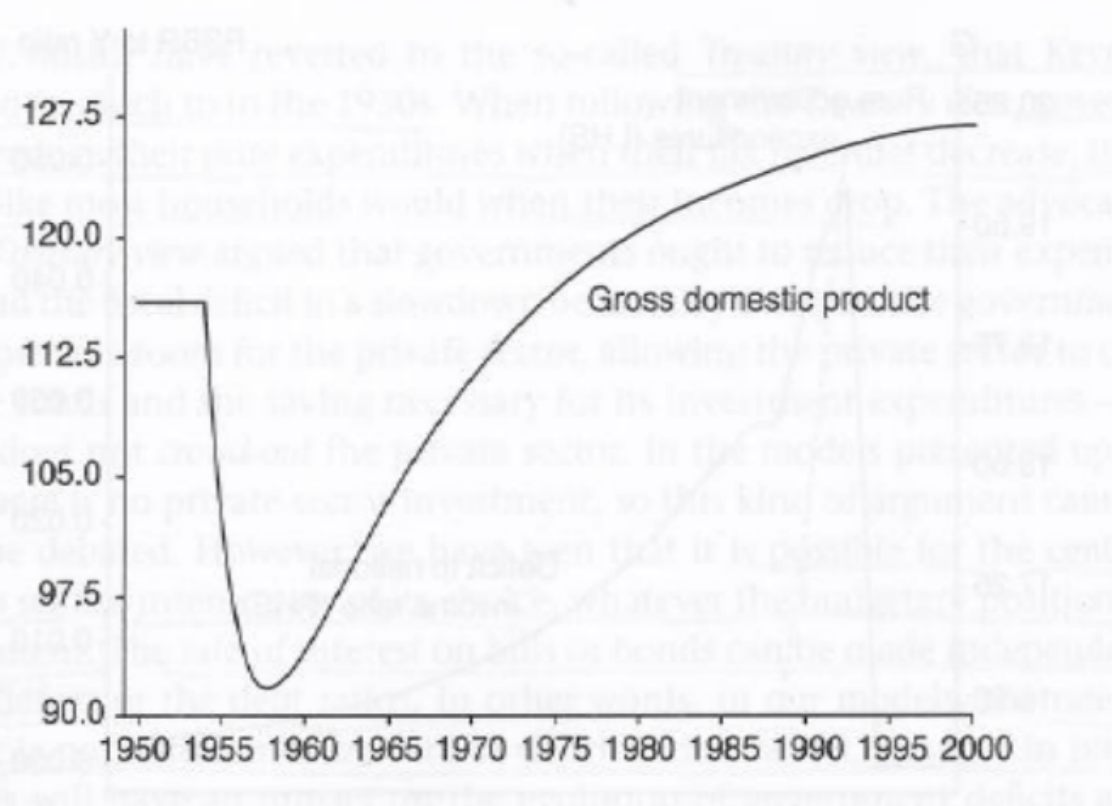
[29] This effect is due to the specific (simple) model, where government spending is the main determinant of income. An increase in the government deficit during the recession leads to an increase in government debt which stabilizes at a permanently higher level. Since government debt is also the private stock of wealth, higher interest payments out of this higher wealth in the new steady state cause a higher income level. But even if income were to reach only its previous level, the point made in this paragraph is still valid.

[30] This is an instance of hysteresis.

[31] since government expenditure, which had been exogenous to the model, becomes endogenous

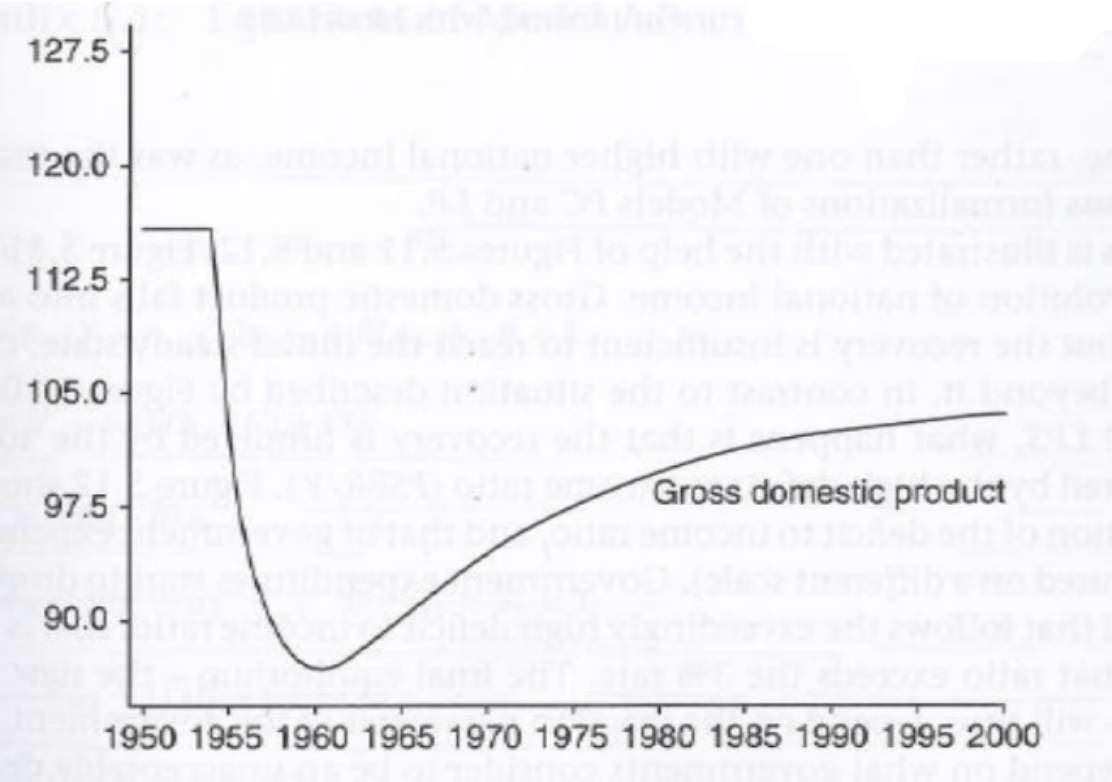
[32] The effect in the model is that as less government debt (which equals private wealth) is created in the recession due to the deficit rule, less interest income is fabricated that could offset or even overcompensate the reduction in income from consumption.

Figure 6.10.: Evolution of GDP, following a decrease in the propensity to consume out of current income, constant exogenous pure government spending



Source: Godley and Lavoie (2007b, p. 163, Figure 5.10)

Figure 6.11.: Evolution of GDP, following a decrease in the propensity to consume out of current income, endogenous pure government spending with deficit rule



Source: Godley and Lavoie (2007b, p. 163, Figure 5.11)

Equation 6.2 is similar to equation 6.1, but fiscal austerity is only triggered when the budget deficit (PSBR, private sector borrowing requirement) is greater than 3%, in line with the Stability and Growth Pact. Alternatively, a rule could be formulated where the 60% debt ratio triggers fiscal austerity, or where both criteria are taken into consideration. The adjustment requirements are one-sided, since no country with a surplus of above 3% is required to increase its government expenditure[33].

6.6. More benign resolutions of disequilibria in the model

This section presents solutions that are more benign in terms of the loss in GDP.

6.6.1. Symmetric fiscal policy

$$\begin{aligned} G^N &= G^N_{-1} - (z_3 + z_4) \cdot \beta_S \cdot (PSBR_{-1}) \\ \text{with } z_3 &= 1 \text{ iff } PSBR_{-1}/Y_{-1} > -3\% \\ \text{and } z_4 &= 1 \text{ iff } PSBR_{-1}/Y_{-1} < -3\% \end{aligned} \tag{6.3}$$

Equation 6.3 formalizes a symmetric rule, where, apart from the deficit rule, countries with a fiscal surplus above 3% are required to expand government expenditures. As should be obvious, the fiscal rules in equation 6.3 would prevent a quasi-stationary state from developing as a result to an import propensity shock (or government expenditure shock) since fiscal policy (government expenditure) automatically adjusts to account for it. The income of the North is still higher and the South income still lower in the new stationary state, but by not as much as in the case of asymmetric adjustment.

Also, if the situation of the quasi-stationary state has already been attained and government expenditure is then made endogenous, a fiscal rule of this kind would bring about the necessary current account equilibrium[34] and resolve the disequilibrium situation in a more benign way with higher incomes for both North and South in the new stationary state (relative to the asymmetric adjustment case). The symmetric adjustment instead of the asymmetric one prevents the EU economy from a bias towards depression.

Turning back to the 'real' world for a second, one cannot but notice that the surplus countries in EMU (Germany, Austria,..) have not for the most part had any government budget surplus in excess of 3% or any surplus at all, limiting the real-world relevance of the symmetric fiscal rule solution. Indeed, while in the long-run equilibria of SFC models, the relation $NAFA = PSBR + CAB = 0$ is fulfilled such that NAFA becomes zero, this is not exceedingly true in the real data of EMU countries. Thus, for all practical purposes, a rule that will be suggested below in section 6.6.3 may be more promising.

[33] Apart from the fact that given a certain trade flow in billions from Germany to Spain, this flow will be a larger part in relation to Spanish GDP than in relation to German GDP. In this case, a 3% criterium may not be ideal.

[34] In the new stationary state, due to the higher income in the North and the government debt of the South, Northern households will hold more Southern bonds than the other way round. Therefore, the South needs to have a trade balance surplus in order to pay net interest income to the North, with a balanced current account altogether.

6.6.2. Import propensity of North rises

Of course, in the quasi-stationary state, a rise in the import propensity of the North would also bring about a full stationary state. However, if the 'control' over the propensity to import is attributed to the private sector, as seems apparent, there is not much the government of the North can do[35]. Unfortunately, no SFC open-economy model related to the euro zone has wages in it to permit an analysis of this issue in terms of wage policy, where an increase in wages might very well lead to an increase of imports.

6.6.3. An alternative fiscal rule

Formalizing a fiscal rule in line with the IMK proposal (see section 4.2) that focuses on current account imbalances, which are the counterpart of the domestic economy (since $NAFA - PSBR = CAB$), could look like this:

$$G^N = G^N_{-1} + \alpha \cdot CAB_{-1} \quad \text{with } \alpha > 0 \tag{6.4}$$

Once the current account balance turns negative (positive), a restrictive (expansive) fiscal policy action would make sure (assuming a symmetric response!) that a quasi-stationary state cannot occur.

Concerning the 'real-world', this rule is more applicable as it would balance out the external balance position more directly.

6.6.4. Model with two regions

The first open-economy model in the book by Godley and Lavoie (Godley and Lavoie, 2007b, Chap. 6) is a regional model, where a common central bank *and* a (common) central government exist for two regions. These are subject to a common tax rate, but regional pure government expenditure may differ. As far as proposals for turning EMU into a full political and economic union are concerned[36], this is the closest (in model form) that one can get.

While the same quasi-stationary state results appear once the import propensity of one region rises, this situation *is* stable in the model with two regions as „no balance of payments financing problem can possibly arise“ (Godley and Lavoie, 2007b, p.180). Why is that so? The reason is that there is a central government that undertakes fiscal transfers (income transfers). Central government spending can be split into the parts of the two regions $G = G^N + G^S$, and so can tax revenues $T = T_N + T_S$. The condition for the stationary state (both old and new) is that the change in private wealth equals

[35] Although the government will have some control over it in reality, even in EMU where import restrictions are not allowed. For instance, the German policy of increasing its VAT has precisely increased the price of all goods in Germany, while leaving the export industry unaffected (since it is paying no VAT on exports). This would presumably be represented by a decrease in the propensity to import in the model.

[36] see section 4.3

zero ($\Delta V = 0$) Since government bonds are the only form of wealth (in the model), the central government budget is also balanced in both stationary states. However, due to the changes in model parameters (e.g. import propensity), the government´s operations with one region will carry a deficit while its operations with the other region will carry a surplus of equal size in the new stationary state. Government spending may also be defined as $G^N_{ST} = G^N + r_{-1} \cdot B^S_{h-1}$, where the net total government expenditures injected in the North region are equal to pure government spending in the North region and the cost of servicing the debt held by North households. Taxes are defined as $T^S = \theta \cdot (Y^S + r_{-1} \cdot B^S_{h-1})$, where the tax rate θ is applied on the regions´ income (not disposable income for simplicity) and households´ bond holdings. Combining the government spending equations and the tax equation, the total government balance of the central government with the South region is then defined as $GB^S = G^S_{ST} - T^S = G^S + (1-\theta) \cdot r_{-1} \cdot B^S_{h-1} - \theta \cdot Y^S$ [37]. Assume now that the propensity to import of the South rises, which leads to a current account deficit and a subsequent reduction in the South GDP. Already in the first period of the shock, the central government balance with the South will turn negative, since the South profits from a constant government expenditure that period (interest income from bills had already been paid out at the beginning of the period[38]), but less payments to the central government have to be made (since taxes fall in line with GDP).

Automatic stabilizers are at work here[39]. The government balance will then remain negative with the South region[40]. Hence, permanent income transfers are taking place from the North to the South. Since the disequilibrium is not resolved (quasi-stationary state), the South region has suffered a loss in wealth, and, even worse, has a permanently lower income (see figure 6.13).

These permanent income transfers allow the quasi-stationary state, which normally demands resolution after a while, to continue forever. In as far as one can analyze the current situation of EMU with those models, establishing a permanent income transfer mechanism (such as increasing the resources of the EU-Budget or establishing an EU-wide unemployment insurance as discussed in section 4.4) will not resolve imbalances in the sense of reverting the current account balances, but it will stabilize the situation such that there is no imminent danger.

paragraphA multitude of better solutions Thus, we have seen that there is more than one solution that brings better results in terms of growth than the asymmetric solution where only the deficit country adjust. Among those are an excessive imbalance procedure, more European integration with income transfers or at least a symmetric fiscal policy

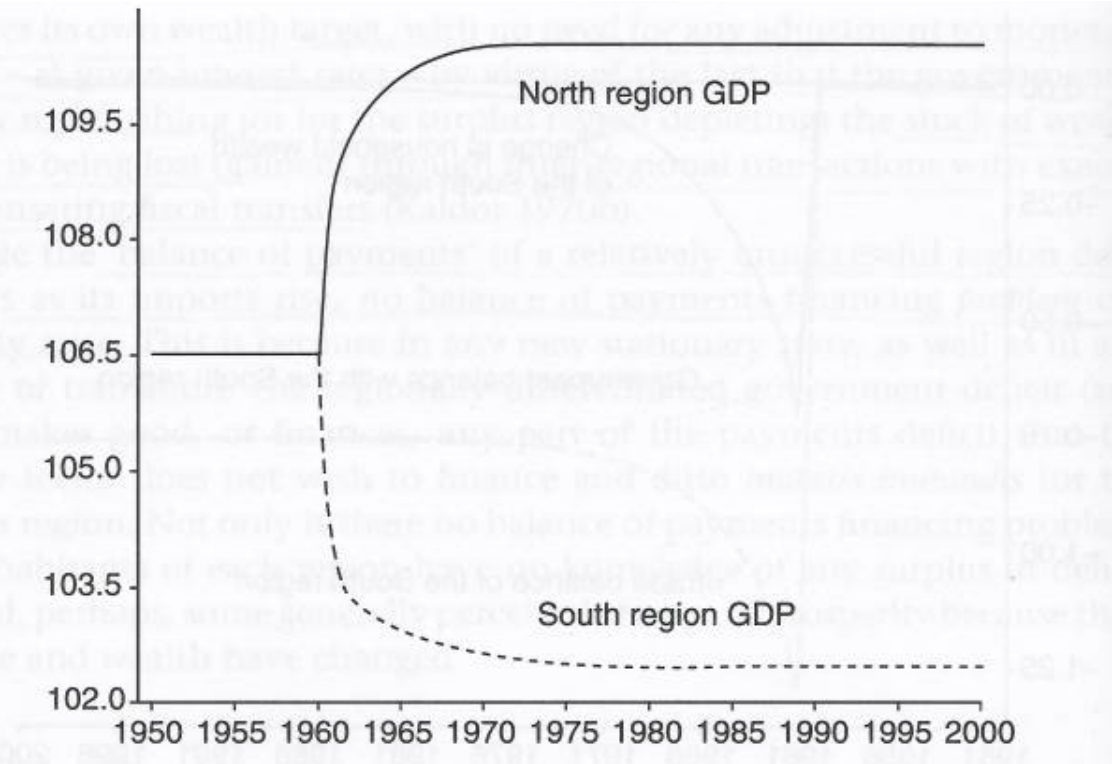
[37] The last line in the equation represents: pure government expenditure plus interest payments on bonds minus capital gains tax on those bonds minus taxes represented as a proportion of income

[38] In period two after the shock, wealth defined as $V = V_{-1} + (YD - C)$ will fall off drastically as consumption falls by less than income. After this, wealth will recover, as is shown in figure 6.12, since additional demand comes from the North which leads to an upward trajectory of the trade balance and household wealth.

[39] In reality, there will also be unemployment insurance, which could be represented by an additional variable portion of government expenditure such as $G^S_{ST} = G^S + \beta \cdot \Delta Y^S + r_{-1} \cdot B^S_{h-1}$, where the $\beta \cdot \Delta Y^S$ part could be taken as unemployment insurance expenditures. The recession in the South will then be less severe and the new stationary state will be achieved faster.

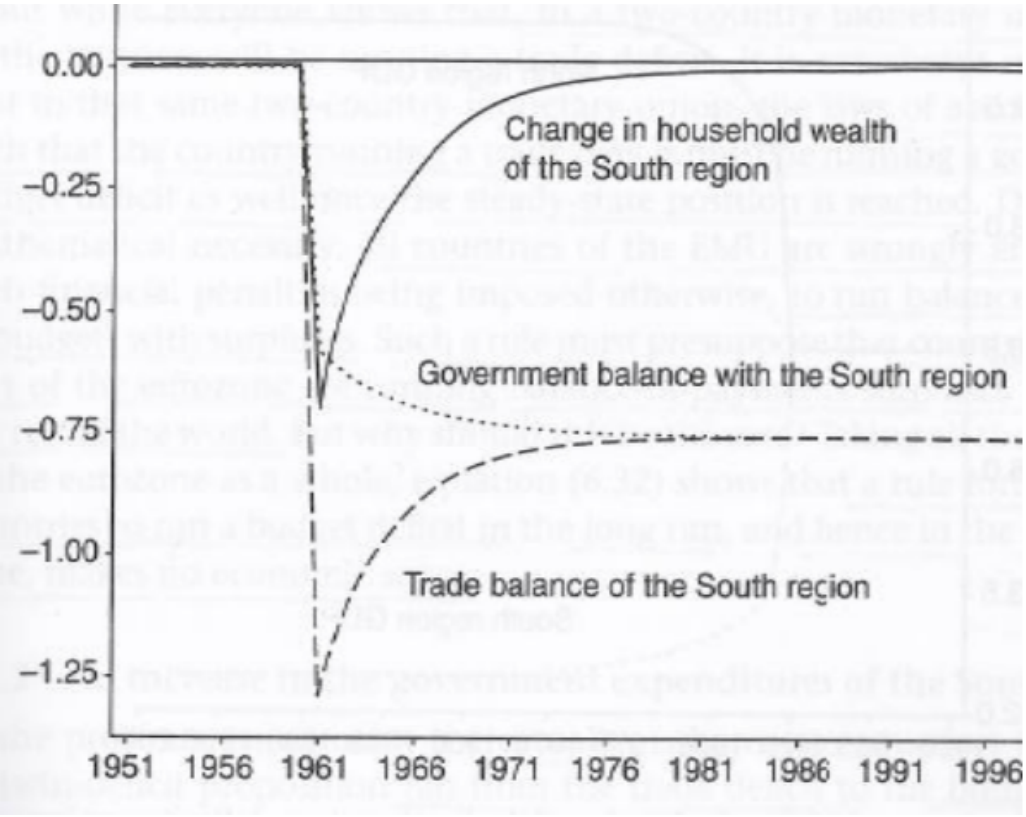
[40] Adjustment is still taking place though.

Figure 6.12.: Evolution of GDP in the North and South regions, following an increase in the propensity to import of the South region



Source: Godley and Lavoie (2007b, p. 182, Figure 6.2)

Figure 6.13.: Evolution of the balances of the South region - NAFA by households, government balance, trade balance, following an increase in the propensity to import of the South region



Source: Godley and Lavoie (2007b, p. 181, Figure 6.1)

response.

6.7. Limitations of the models

While the results of the models discussed above are illuminating, a word of caution with respect to the realism of the models should be added. There are several aspects and simplifications of the models which require critical evaluation, which has already been discussed in section 6.1. However, two further points should be made.

Government spending In the typical Godley and Lavoie SFC model, no difference is made between certain types of government spending. Government spending has one multiplier exactly, and there are no consequences on whether this spending yields an increase in productivity or welfare of the people, or whether government spending goes to rich or poor people (different consumption propensities). Certainly, this does have an effect in the real world and could fundamentally lead to specific outcomes of policy.

Also important is the construction of the models in that the more the government raises government spending, the higher is the economy´s GDP. A simple solution to all current account balance problems is therefore to simply raise government spending by the surplus country. In fact, forever raising government spending contributes to an ever higher GDP. This is certainly too simplistic, as there is no link to productivity, and there is no growth that comes independently from the private sector.

Realism for euro zone situation Since there are no price changes, wages (and real interest rates and unit labor costs) in the two-country models, major causes of the euro zone imbalances are not specifically dealt with. These factors can only be represented very indirectly through the assumption of changes in import propensities or government spending. The results *could qualitatively* be the same by assuming a change in import propensities, with the exception of the evolution of GDP in the models. As the propensity to import rises in one country, the GDP of this country falls relative to the other one. In the euro zone, however, the countries that were importing a lot were experiencing a boom, while the external surplus countries were stagnating.

6.8. Three country models

Three country models that illustrate the euro zone (either as a whole or as a two-country system) include Lequain (2003) and Godley and Lavoie (2007b).

While a thorough discussion of the models shall not be done here, a key result of these models needs to be mentioned. The introduction of a third country does not, in any way, alter the results of the two country model as long as the third country is on a flexible exchange rate. The exchange rate will adjust such that there is a balanced current account between the third country and the euro zone as a whole, while the disequilibrium within the euro zone will remain and a super-stationary state not be attained.

Of course, if the euro zone were to fix the exchange rate unilaterally at a too low value such that the euro zone as a whole and both countries individually would run surpluses with the third country, this could go on for a while and make the disequilibrium between the two euro zone countries less threatening (temporarily sustainable). Then, however, the very same situation of a stationary state that is not a super-stationary state would be created between the third country and the euro zone, which would demand resolution at some point in time. Thus, for the euro zone as a whole, exporting its way out of the recession is not going to be a sustainable long term strategy.

6.9. Chapter Conclusion

In this chapter, we have taken a closer look at two-country SFC models of the euro zone. We have seen how they depict current account imbalances: The mechanism to create imbalances from a stationary state is that one country increases its import propensity or its government spending. Although this mechanism is very crude in the existing models compared to what has actually happened in the euro zone (since they do not display wage developments independently), SFC euro zone models offer important insights on current account adjustment dynamics. As an unsustainable state has been reached where one country runs a permanent current account deficit, adjustment can occur via two channels: Either with the help or without the help of the surplus country. If the surplus country actively contributes to the adjustment through fiscal policy expansion, the negative consequences of the rebalancing can be avoided. Otherwise, the restoration of a balanced current account is associated with a large permanent loss in output both for the deficit country and the total European economy (surplus and deficit country together).

Other feasible options include income transfers from the surplus to the deficit country, which would stabilize the permanent current account imbalance. Also, a rule that administers current account deficits directly is superior to a rule that regulates fiscal policy.

These theoretical findings are perfectly in line with the previous chapters, especially chapter 4, where the same arguments have been given following a verbal line of reasoning.

7. Conclusion

Current account imbalances In this diploma thesis, we have discussed the problems that arose with the formation of the European Monetary Union (EMU) (see chapter 3). In the run-up to EMU, interest rates convergence and inflation rate convergence worked quite well, but coordination efforts were stalled once the monetary union was in place. As a result, inflation differentials have built up for two reasons. Firstly, they were a consequence of the past economic traditions of member countries. While disciplined countries like Germany ran too low inflation rates, Mediterranean countries like Greece or Spain were experiencing too low inflation rates compared to the ECB target rate. Secondly, the inherent real interest rate dynamics of inflation differentials in a monetary union aggravated the situation. Debt-driven booms were made possible in higher inflation countries as real interest rates in these countries were low given the same nominal interest rates. On the other side, wage restraint in low inflation countries further weakened their domestic economies, but massively improved the external competitiveness of low inflation countries exporting firms against their euro area counterparts. These factors have been the causes of the *unprecedented current account imbalances* in the history of European unification.

European Economic Governance unprepared The economic governance of the euro zone is the topic of chapter 2. We find that economic governance in the euro area is based on a flawed understanding of the important economic governance requirements of the euro area. Institutions such as the Stability and Growth Pact attempt to govern the wrong target ratios such as public debt to GDP ratios, while the important problems lie elsewhere, such as in current account imbalances. Chapter 4 then analyzes the different reform proposals that were put forward to address the economic governance failure. We find that several proposals are able to potentially solve or correct current account imbalances.

First of all, a current account reversal could occur through a monitoring of current account balances including fines and binding policy prescriptions to correct current accounts. However, as these proposals are based on the idea of a „Stability and Growth Pact“ for current account balances, and the pact does not have a history of working smoothly, a change in the political culture of each nation state would need to take place. Politicians would need to take seriously the European repercussions of their national policies and plan accordingly.

Secondly, a speeding up of European Integration that introduces major elements of a European economic government (with fiscal transfers and common policy making by common institutions) could solve the current account problems and make the euro survive the next decades. Alternatively, other types of income transfers such as common taxes or

an enlarged EU-budget that is allowed to go into debt could also provide the necessary fiscal transfers to current account deficit countries if no change in national economic policies occurs.

We also find that simply tightening the Stability and Growth Pact as a single measure will not do much for the future of cohesion in the euro zone, as fiscal profligacy has not contributed too much to the problems that euro area countries are undergoing today.

Along the way, we provide the cornerstones of a full-fledged solution for the euro zone problems.

Stock-flow consistent models to analyze imbalances In chapters 5 and 6, we discuss *two-country Stock-Flow consistent models of the euro area*, which are able to depict the euro zone current account problems well enough. In these models, deviations from a full stationary state may persist for a while where one country runs a surplus in the current account balance and the other one a deficit.

As a major result, imbalances can be solved by policy changes in different ways. Some solutions have negligible consequences for growth prospects, while others cause a massive permanent fall in GDP.

We find that if the current account deficit country is the only one to cut back government expenditure while the surplus country remains passive, a large fall both for the deficit country GDP and the euro area total GDP is the result. However, this outcome can be avoided if the surplus country decides to help the deficit country by expanding government expenditures. In this case, the fall in the deficit country GDP and total euro zone GDP is minimized, while the surplus country experiences a boom. Instead of a fiscal rule that adjusts government spending downwards asymmetrically when a country goes into a government deficit, in the model, either a symmetric fiscal rule or a current account rule perform with respect to total growth. In the former rule, a country running a fiscal surplus would be required to spend more. In the latter rule, targeting current accounts directly, a country running a current account deficit (surplus) would need to decrease (increase) government spending to offset the imbalance.

Alternatively, in a model with two regions, where a central government (the EU possibly) would redistribute funds, current account imbalances would not be resolved, but could go on forever due to the ongoing fiscal transfers.

Unfortunately, these models are simplistic in that they do not allow to depict wage, price and real interest rate developments to better analyze the private sector requirements (such as higher wages in Germany) for a successful current account reversal. However, in as far as an analysis is possible, the policy recommendations of the theoretical part match the recommendations of the verbal analysis perfectly well.

To sum up, the euro zone has a choice to make: Internal devaluation in the current account deficit countries will cause a strong fall in growth. Unless this is offset by expansionary policies in the surplus countries (fiscal and wage policy), the euro area is headed for a decade of stagnation, unemployment and fading trust in the cohesion of the euro zone. It is the task of policymakers to prevent this unfavorable outcome.

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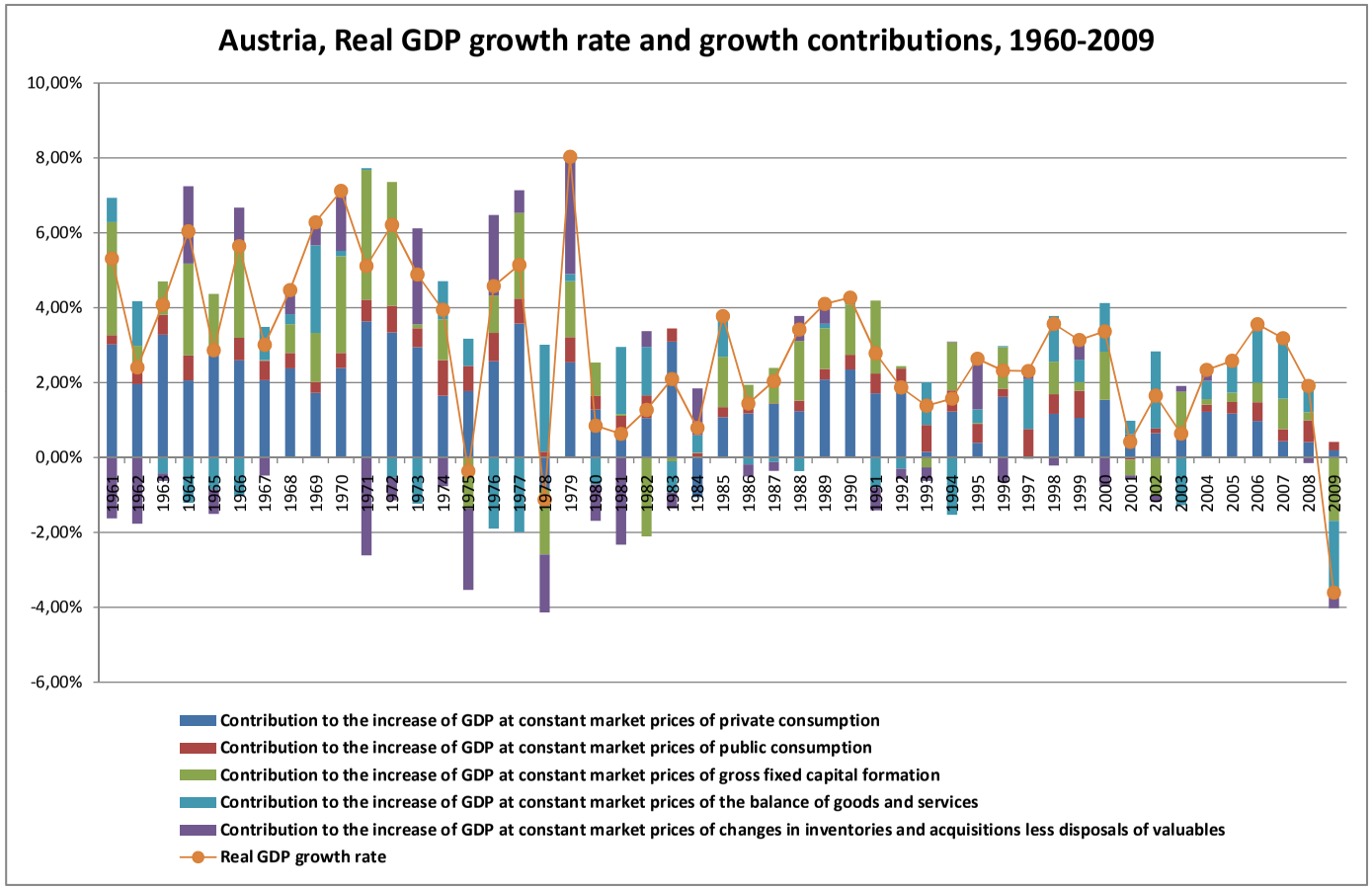
Appendices

A. Data

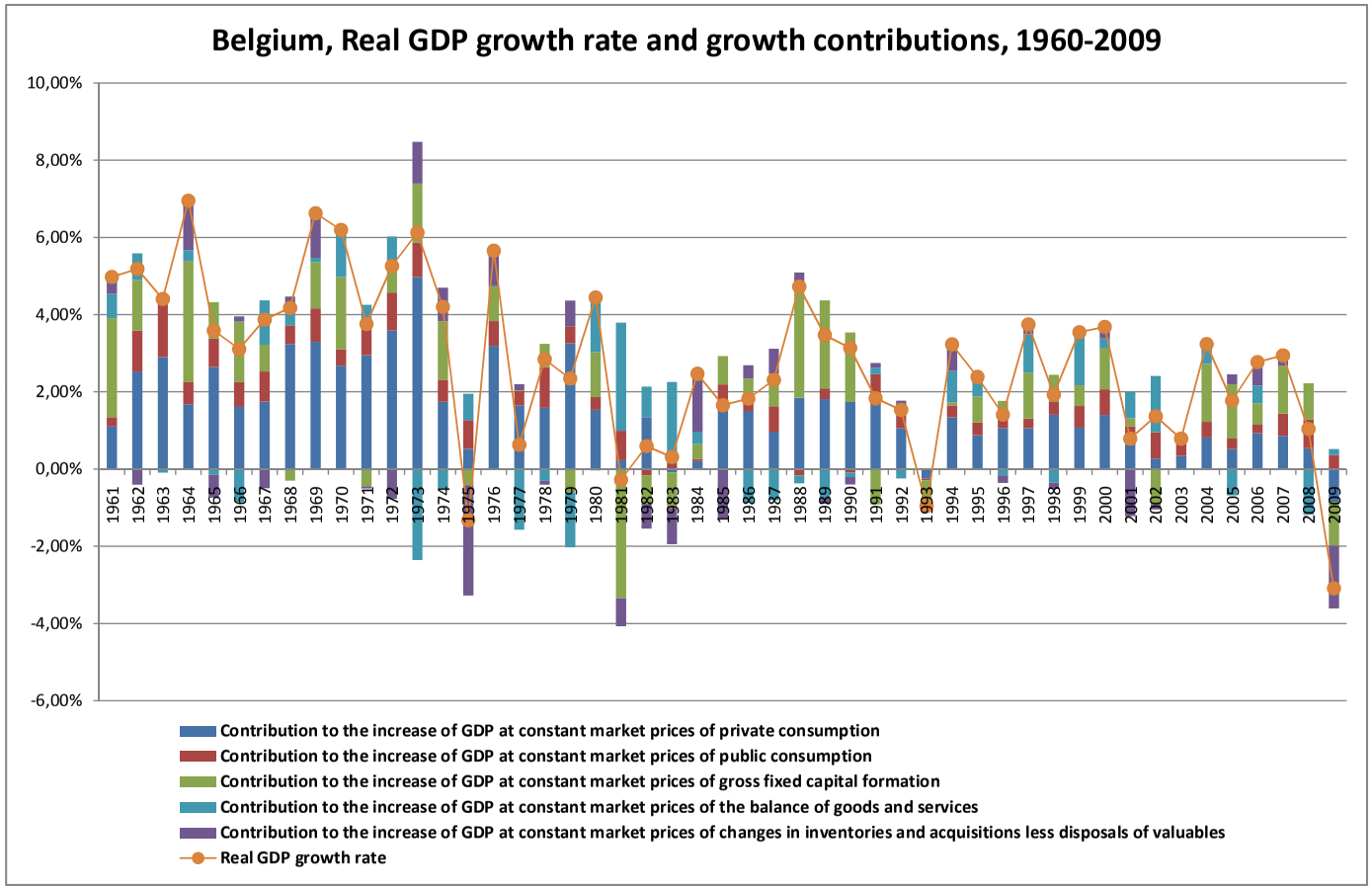
A.1. Growth contributions

Figure A.1.: Growth contributions, Austria



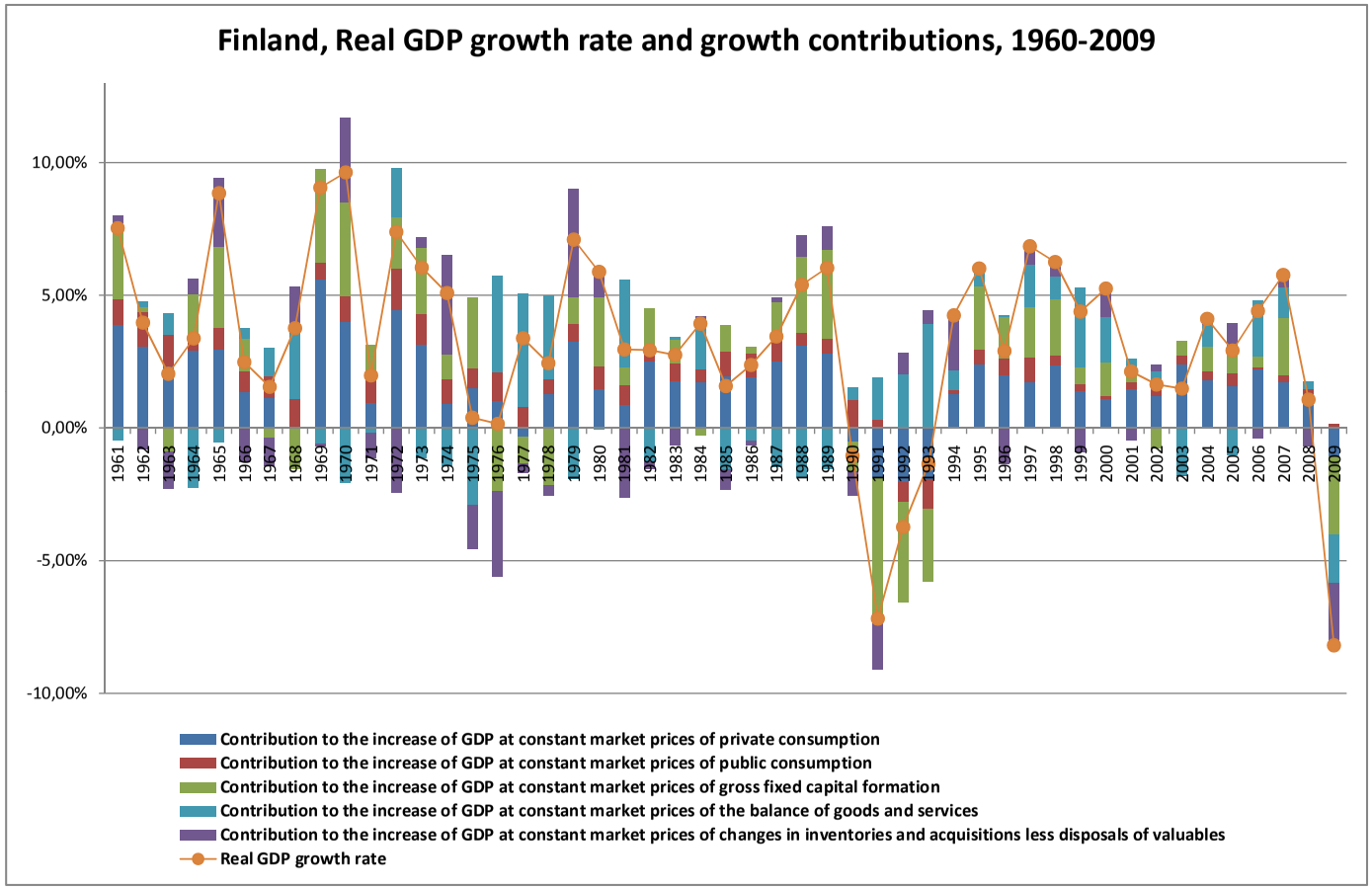
Source: AMECO

Figure A.2.: Growth contributions, Belgium



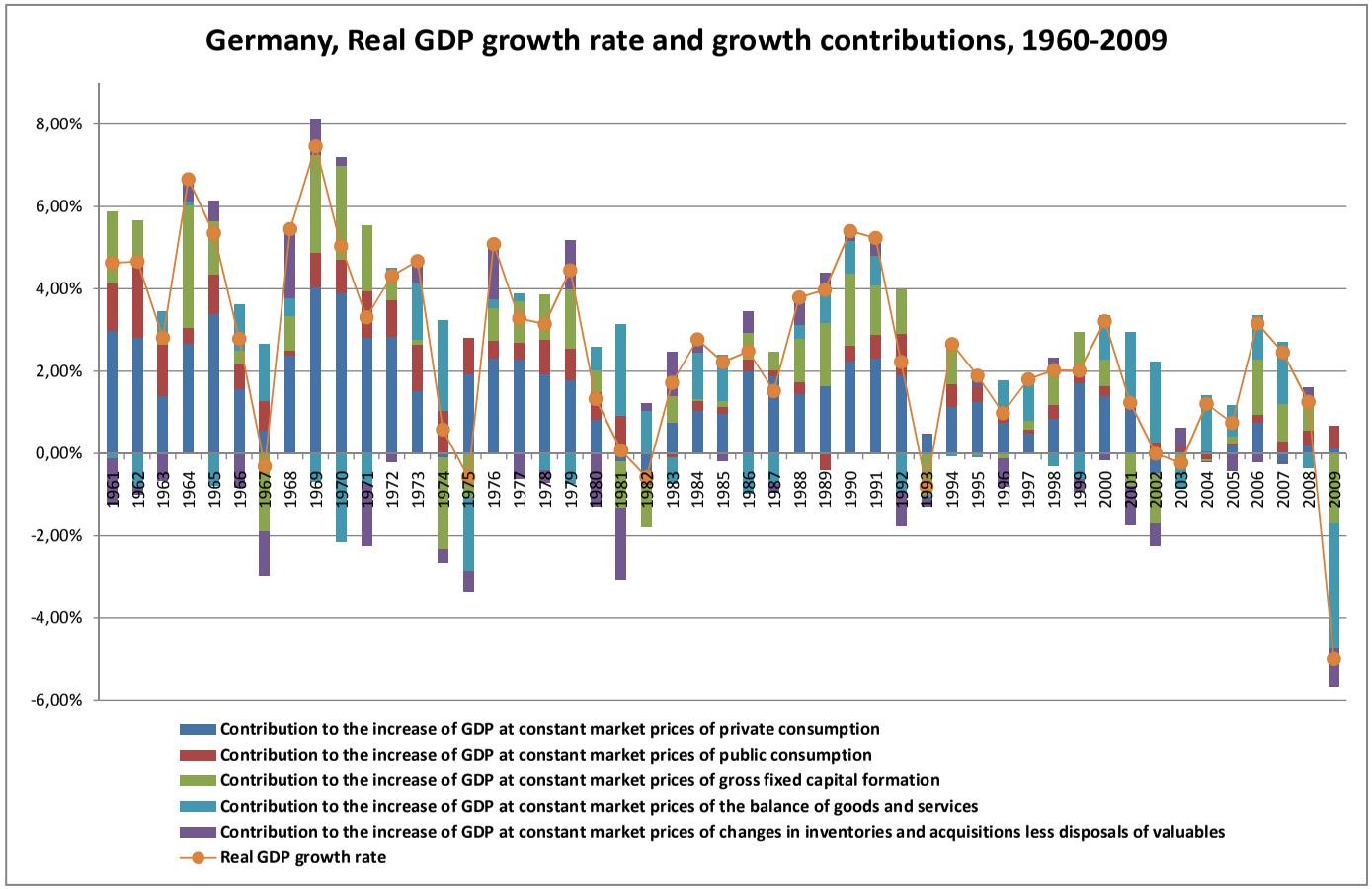
Source: AMECO

Figure A.3.: Growth contributions, Finland



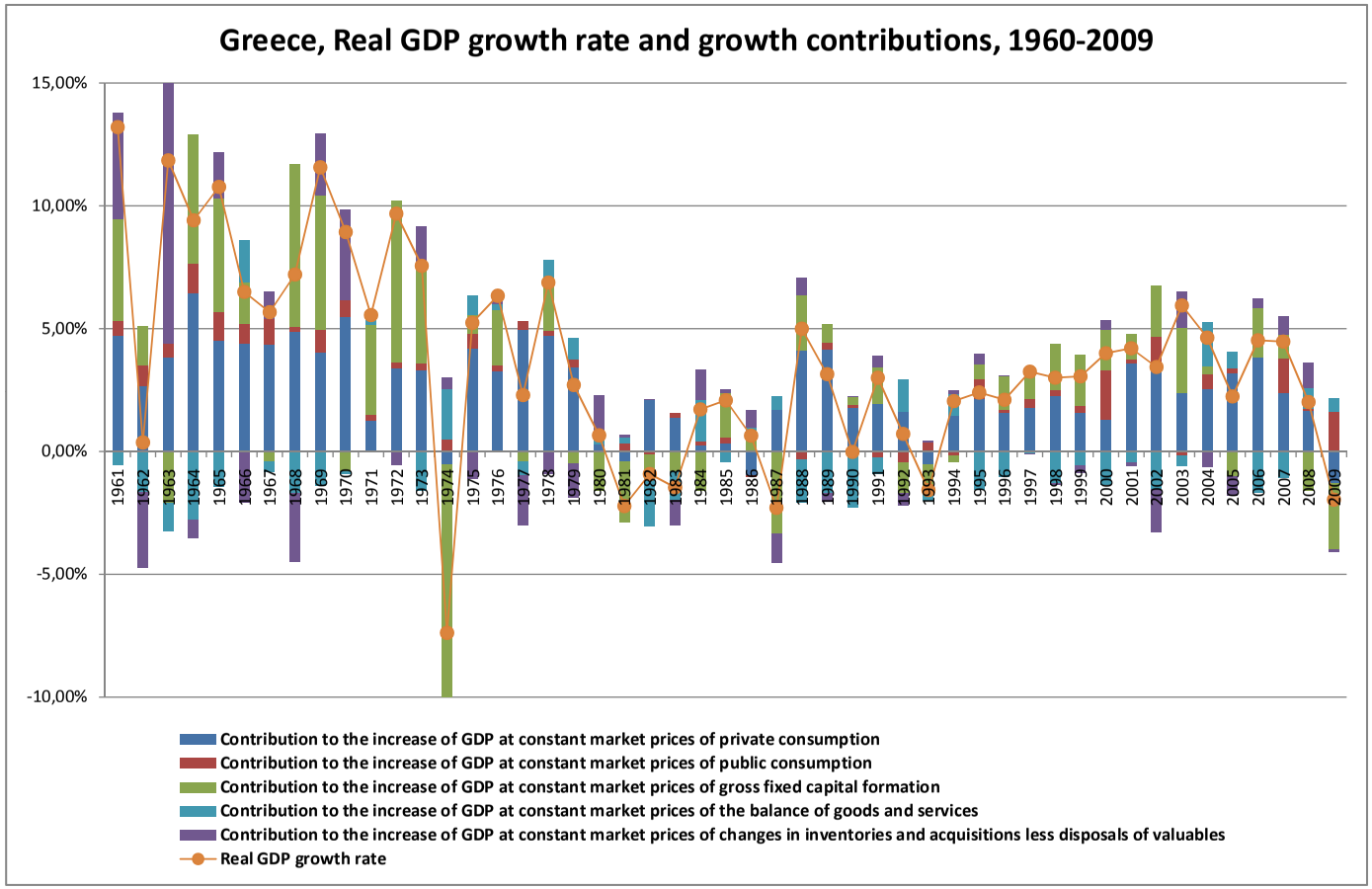
Source: AMECO

Figure A.4.: Growth contributions, Germany



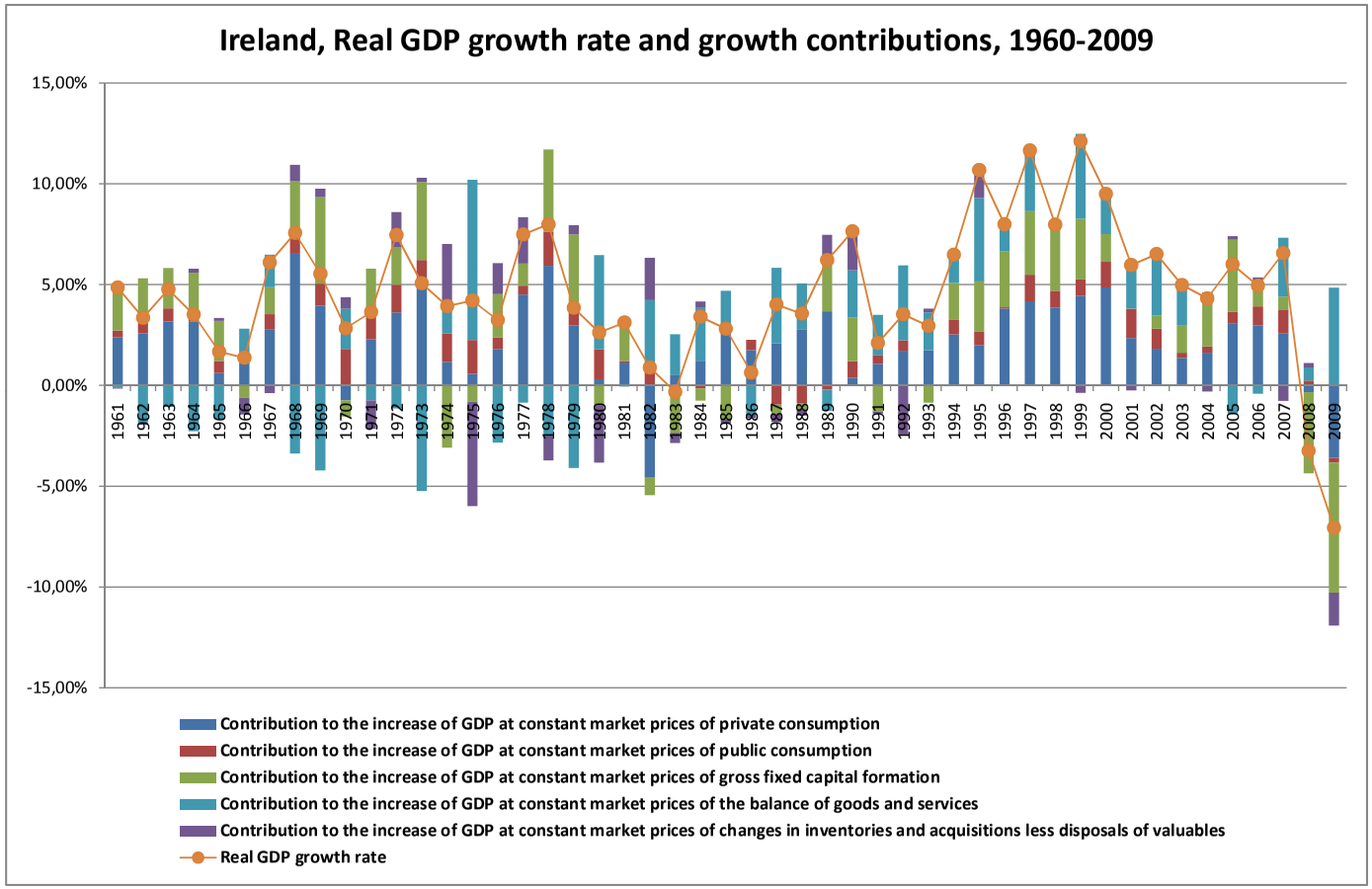
Source: AMECO

Figure A.5.: Growth contributions, Greece



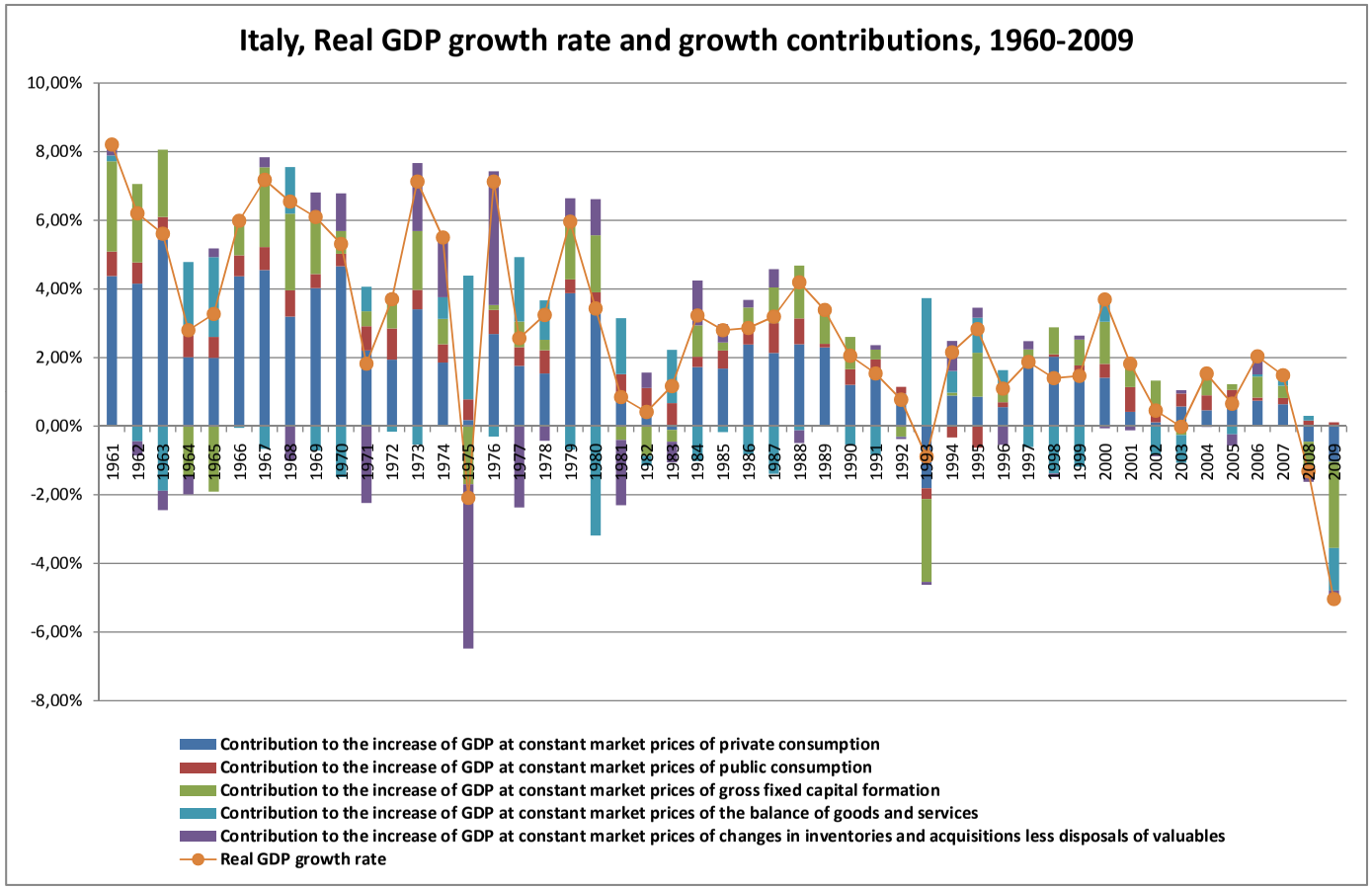
Source: AMECO

Figure A.6.: Growth contributions, Ireland



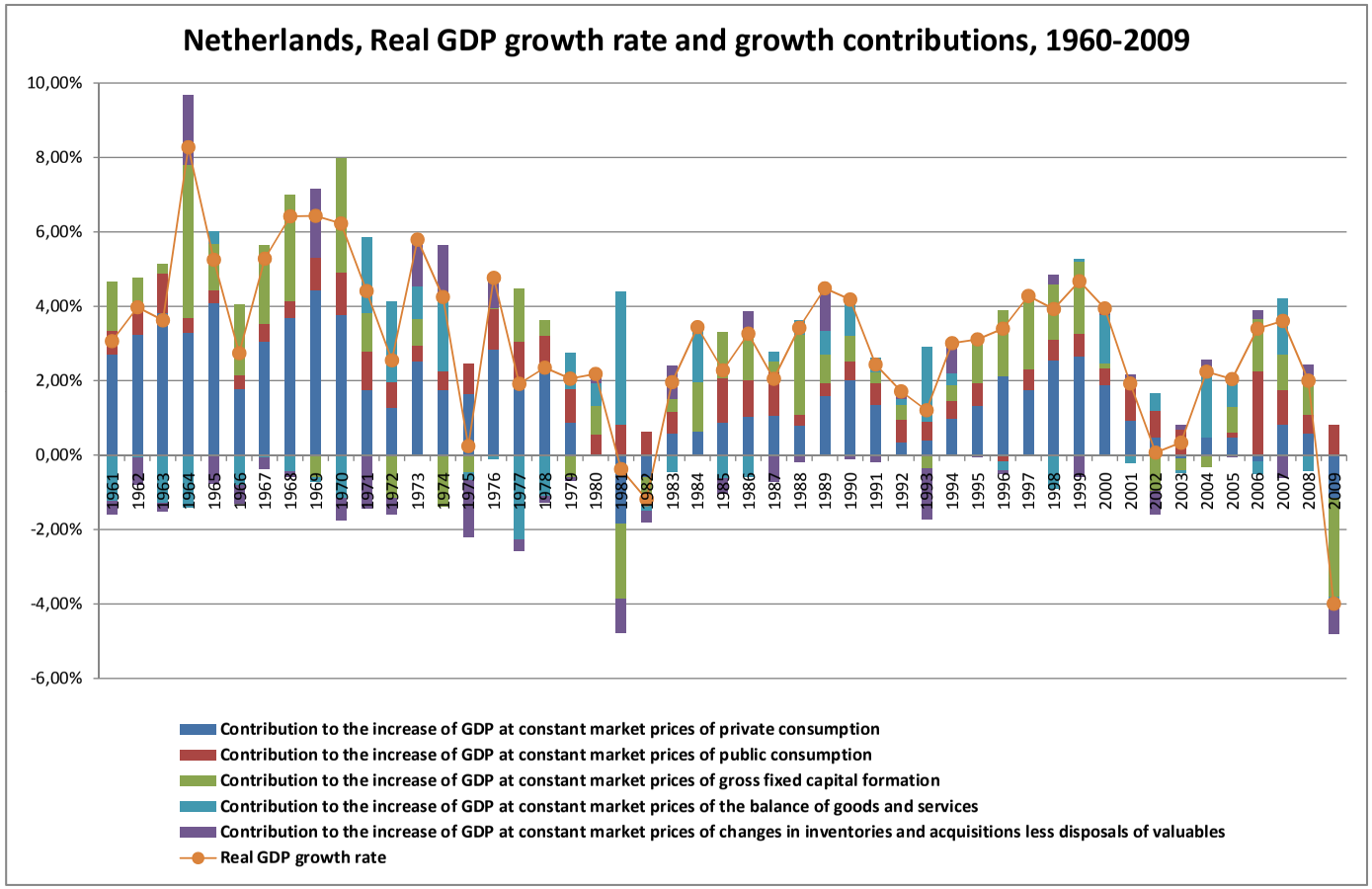
Source: AMECO

Figure A.7.: Growth contributions, Italy



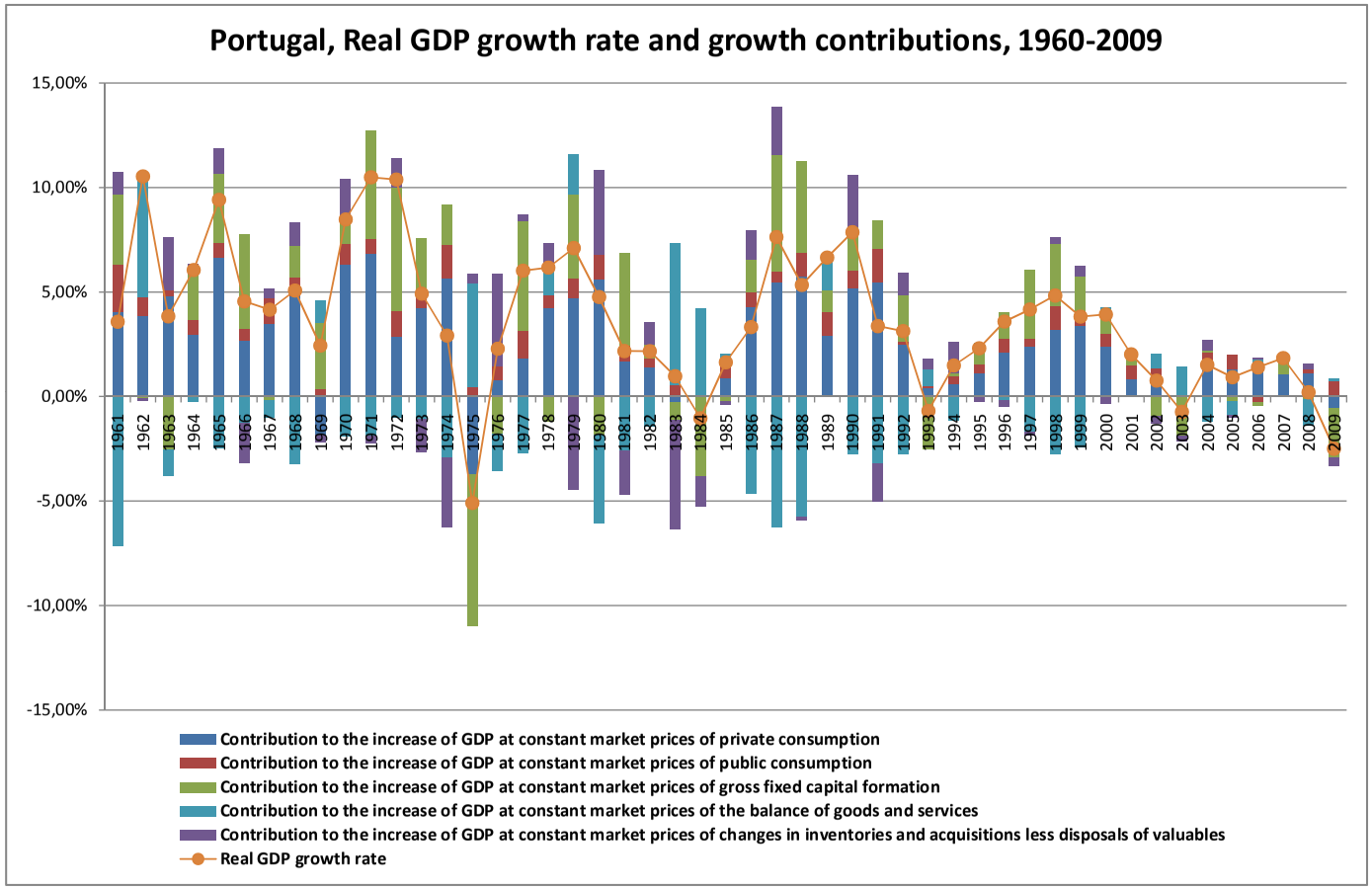
Source: AMECO

Figure A.8.: Growth contributions, Netherlands



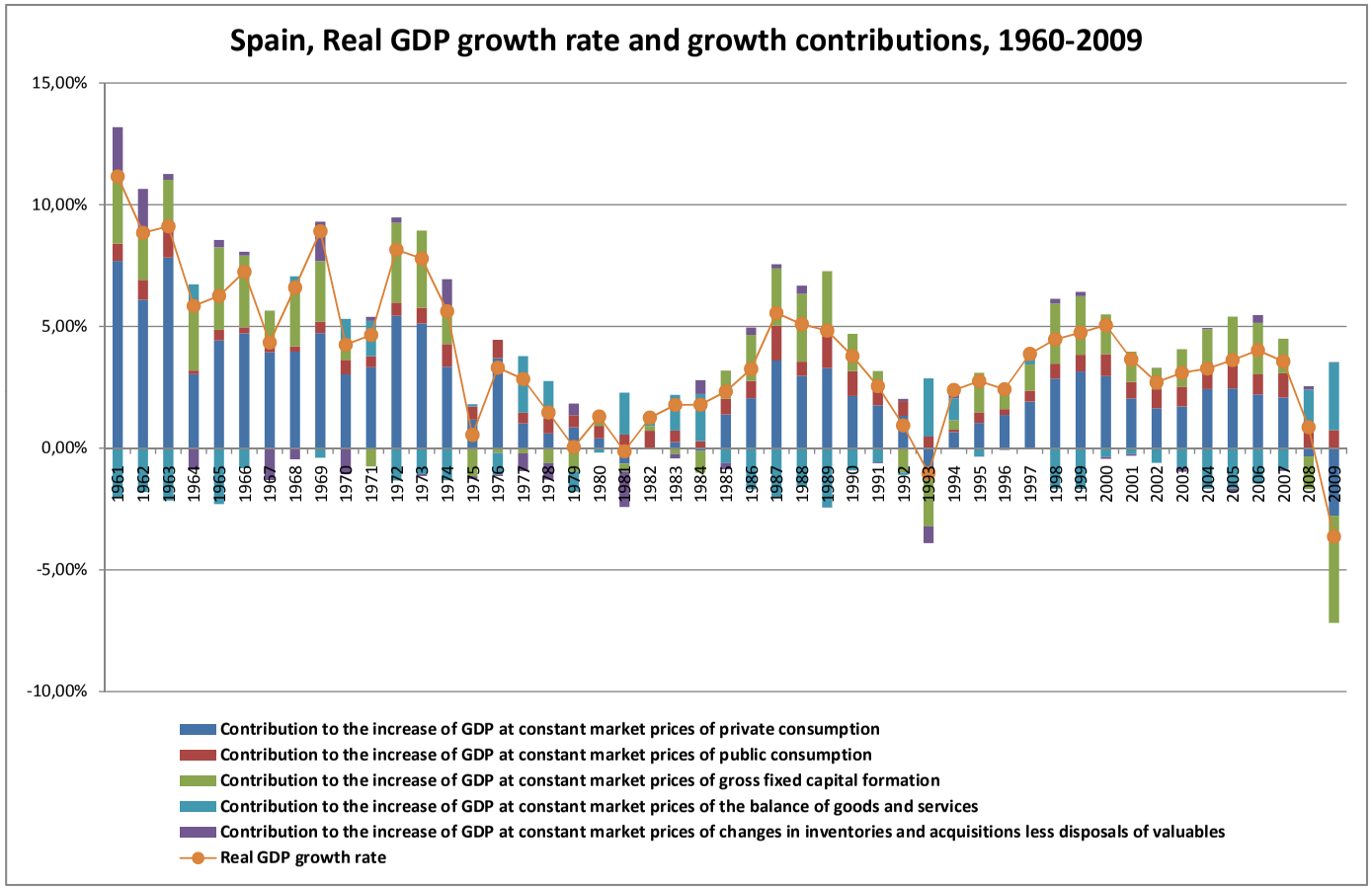
Source: AMECO

Figure A.9.: Growth contributions, Portugal



Source: AMECO

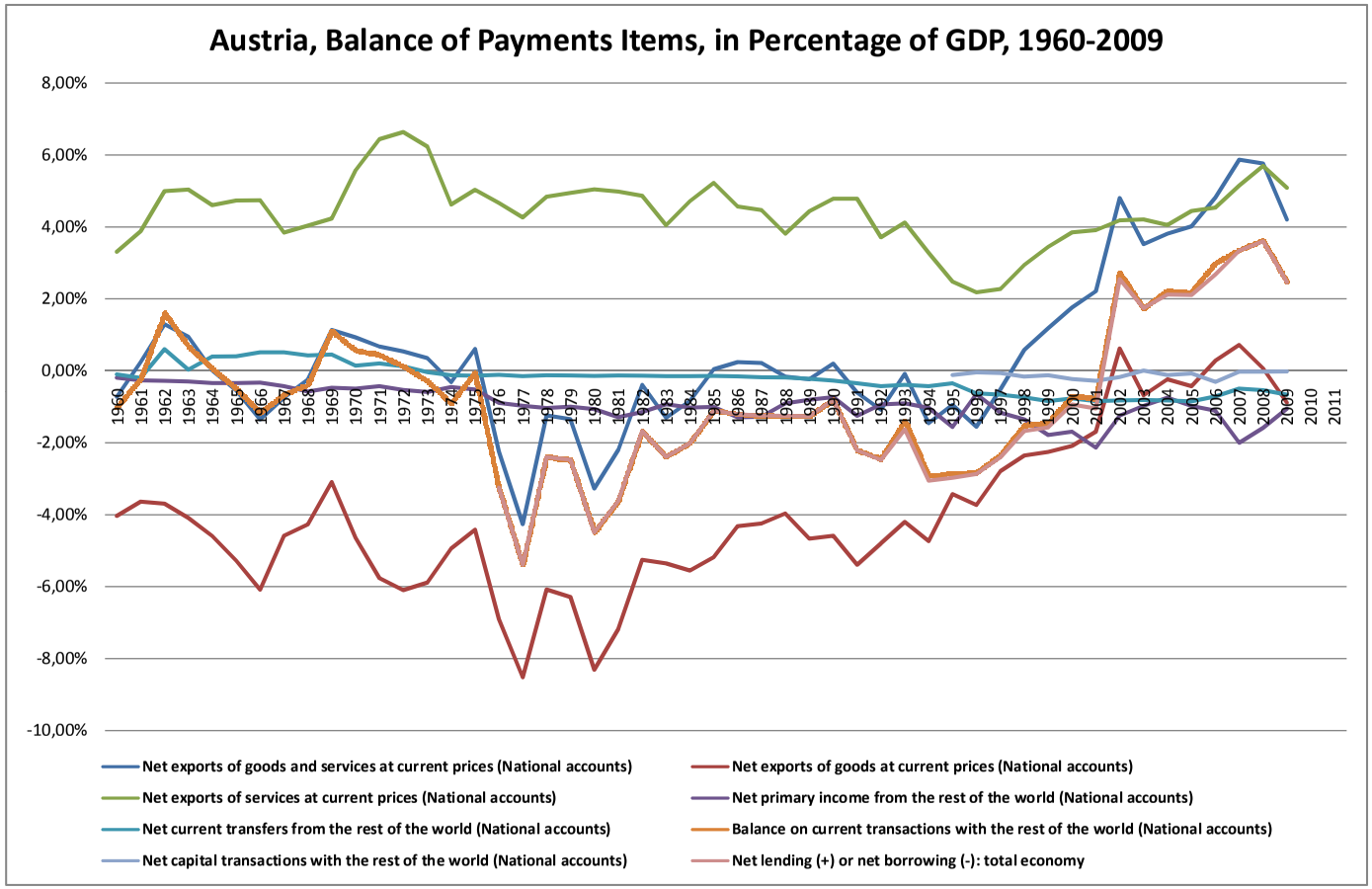
Figure A.10.: Growth contributions, Spain



Source: AMECO

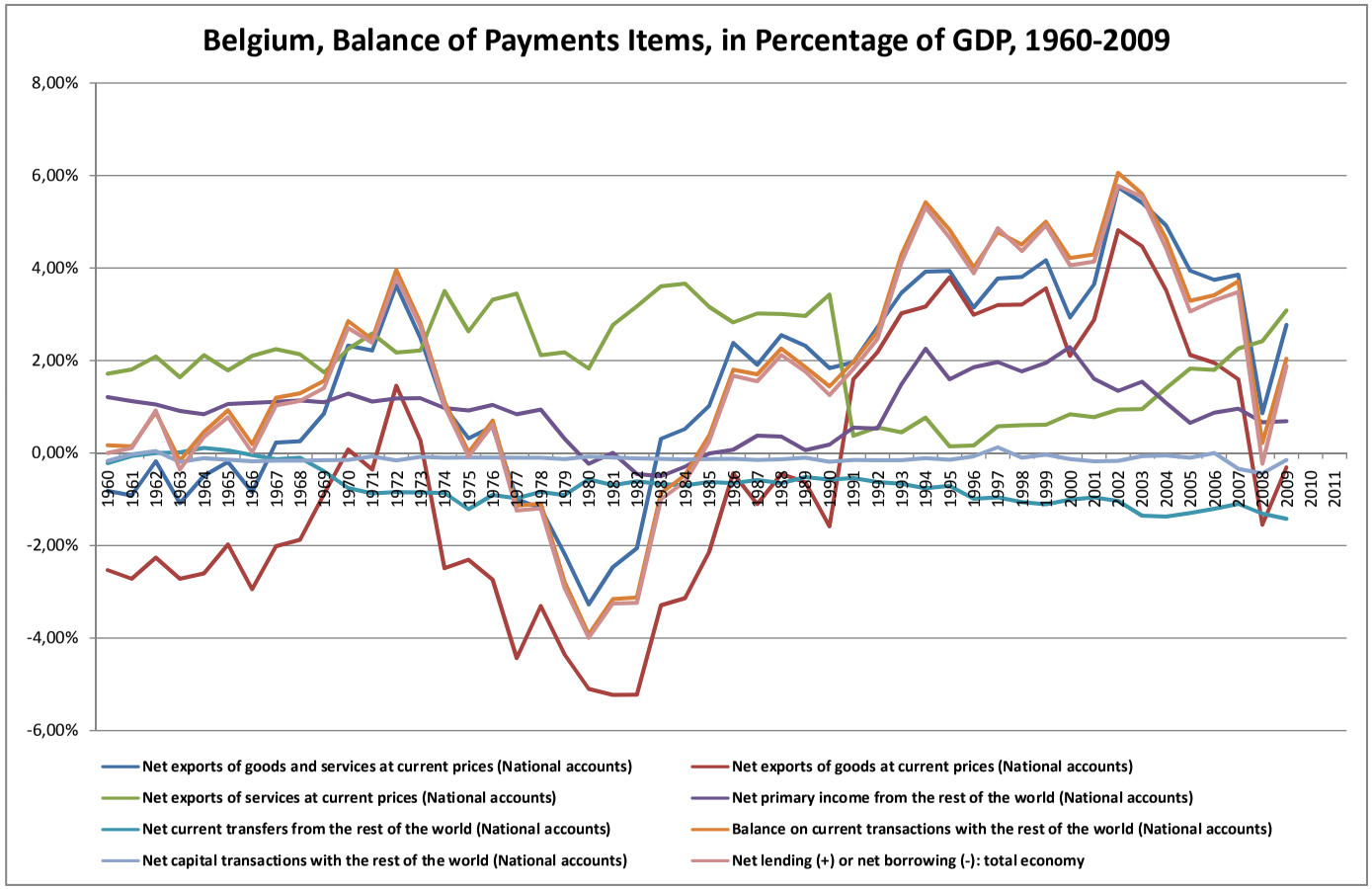
A.2. Balance of Payments

Figure A.11.: Balance of Payments Items, Austria



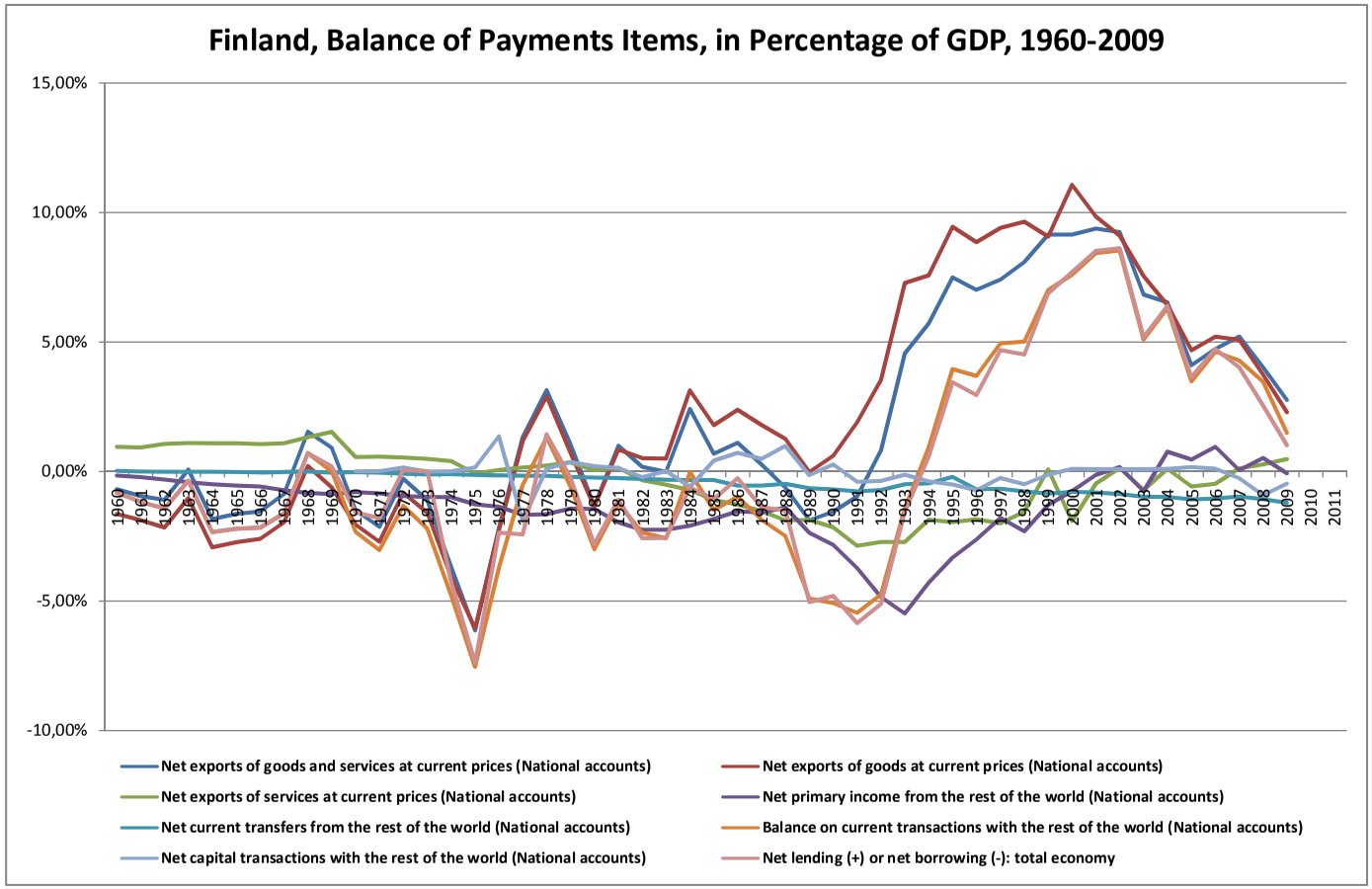
Source: AMECO

Figure A.12.: Balance of Payments Items, Belgium



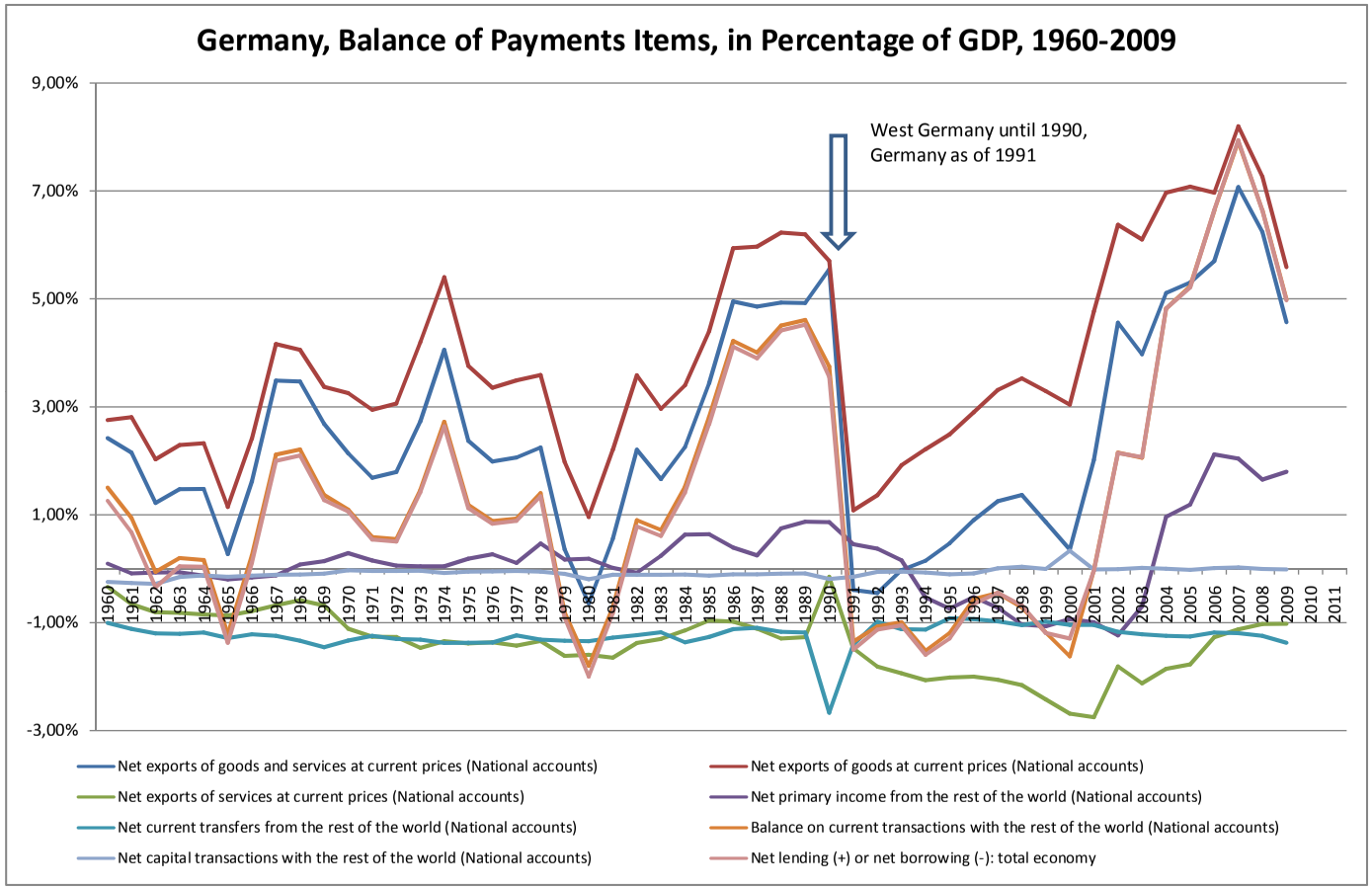
Source: AMECO

Figure A.13.: Balance of Payments Items, Finland



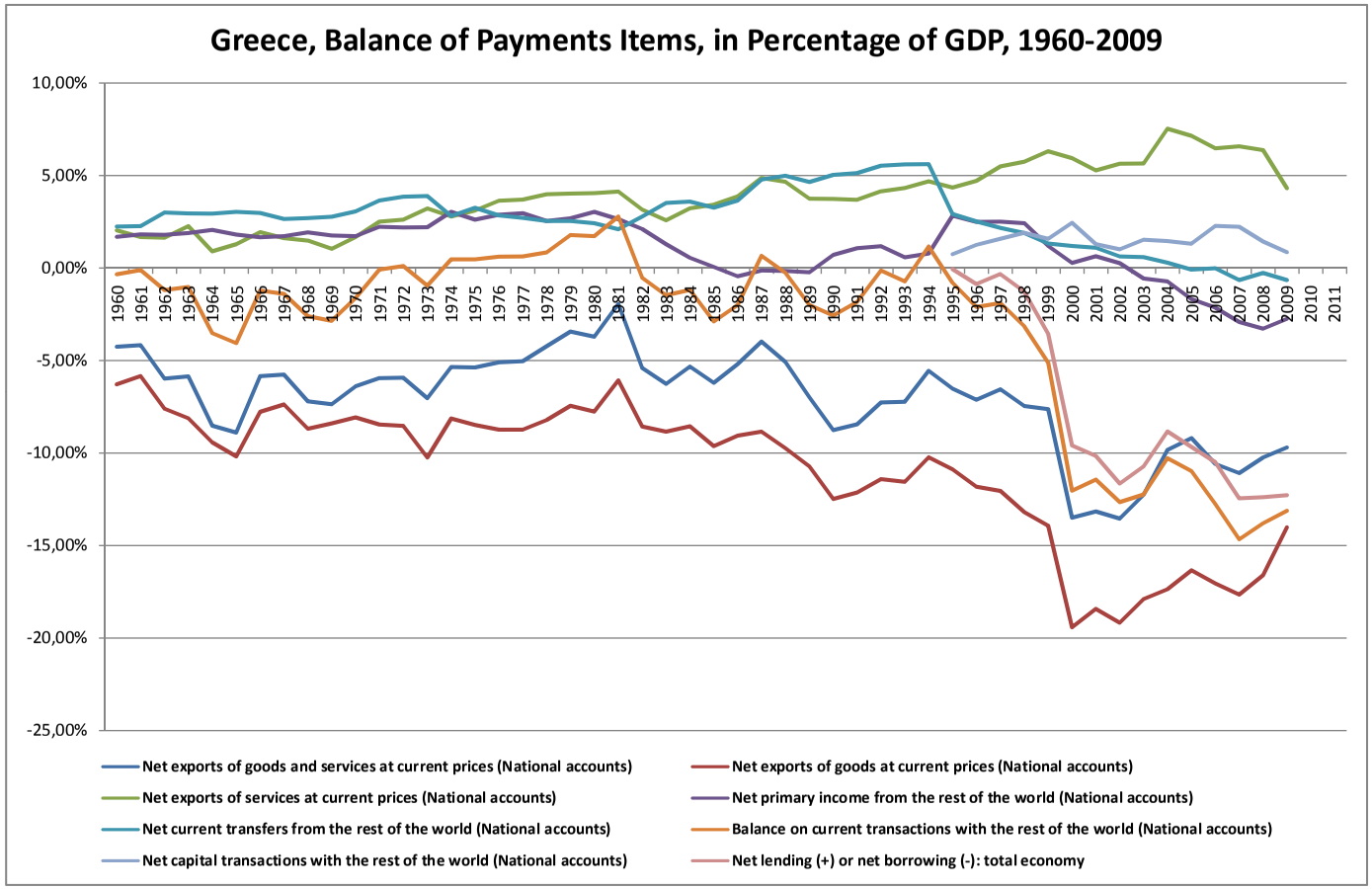
Source: AMECO

Figure A.14.: Balance of Payments Items, Germany



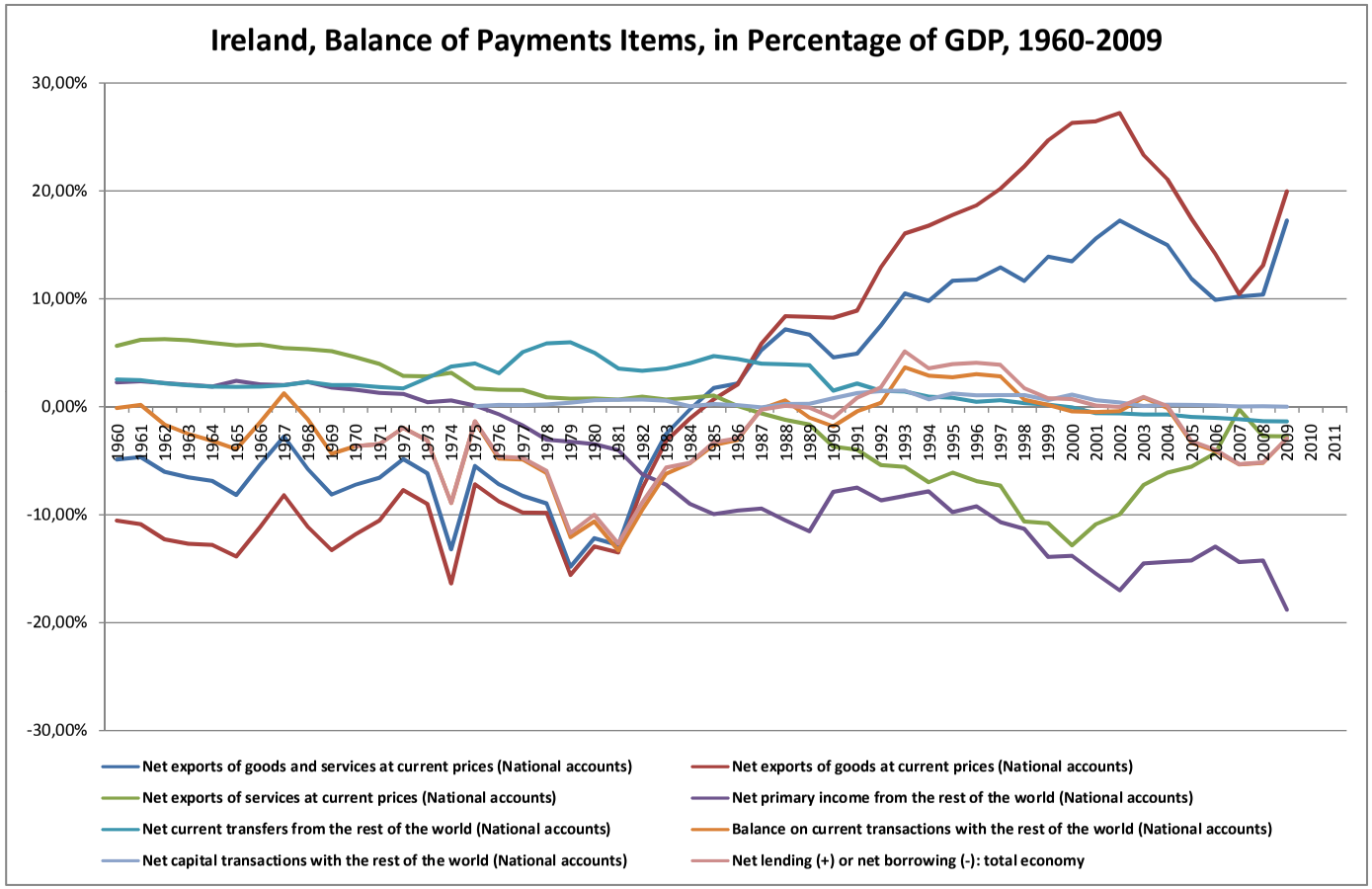
Source: AMECO

Figure A.15.: Balance of Payments Items, Greece



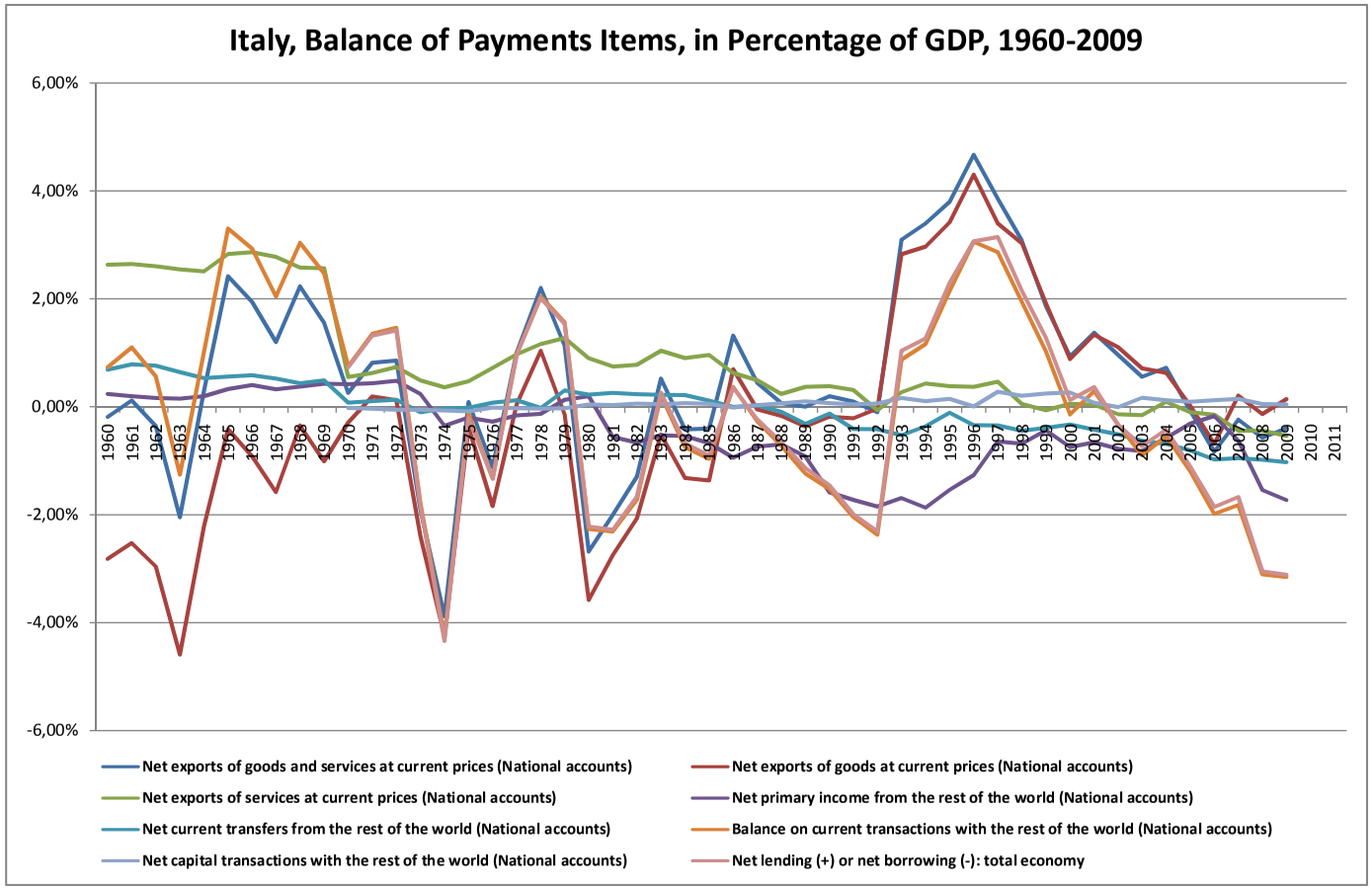
Source: AMECO

Figure A.16.: Balance of Payments Items, Ireland



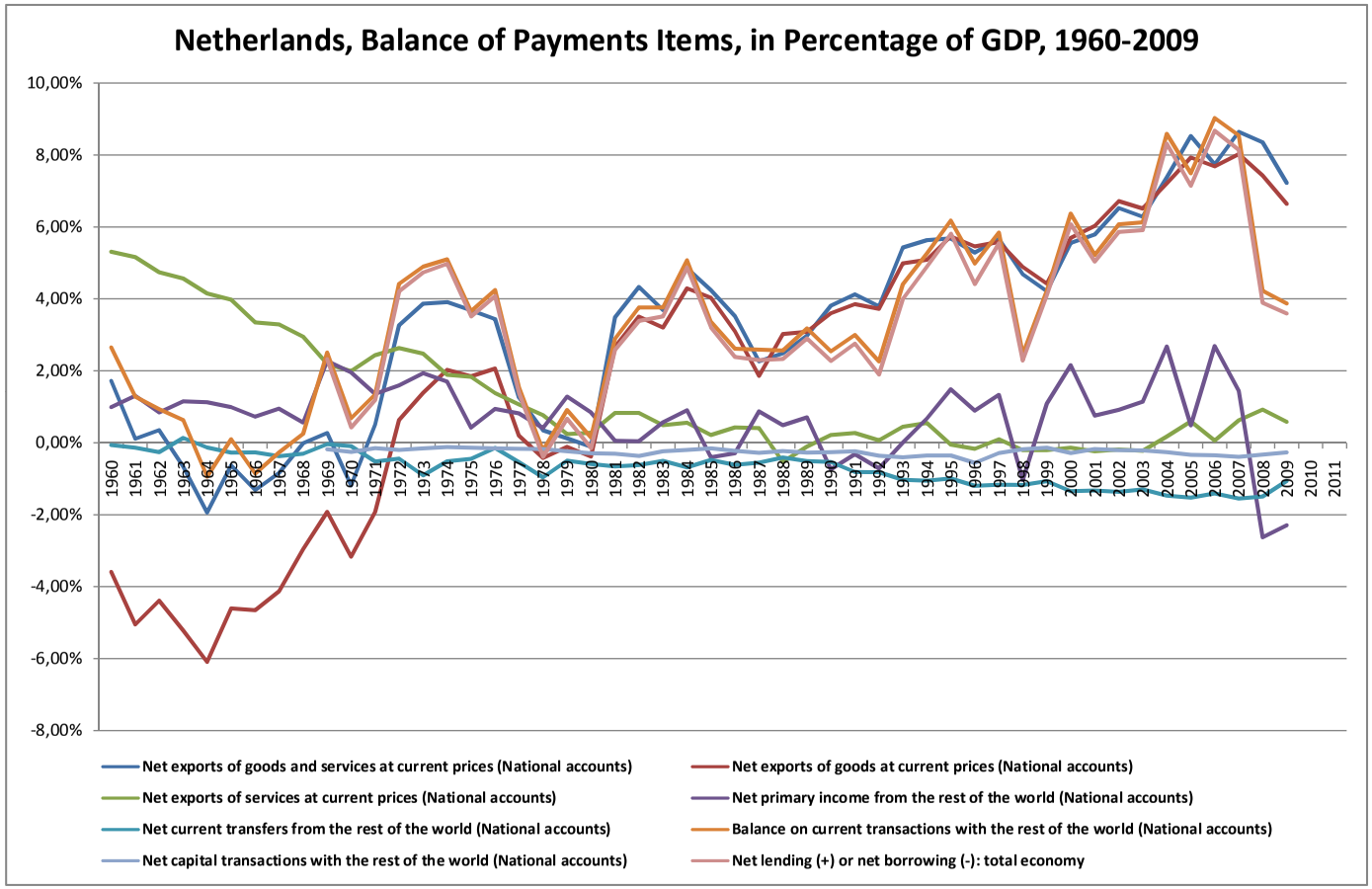
Source: AMECO

Figure A.17.: Balance of Payments Items, Italy



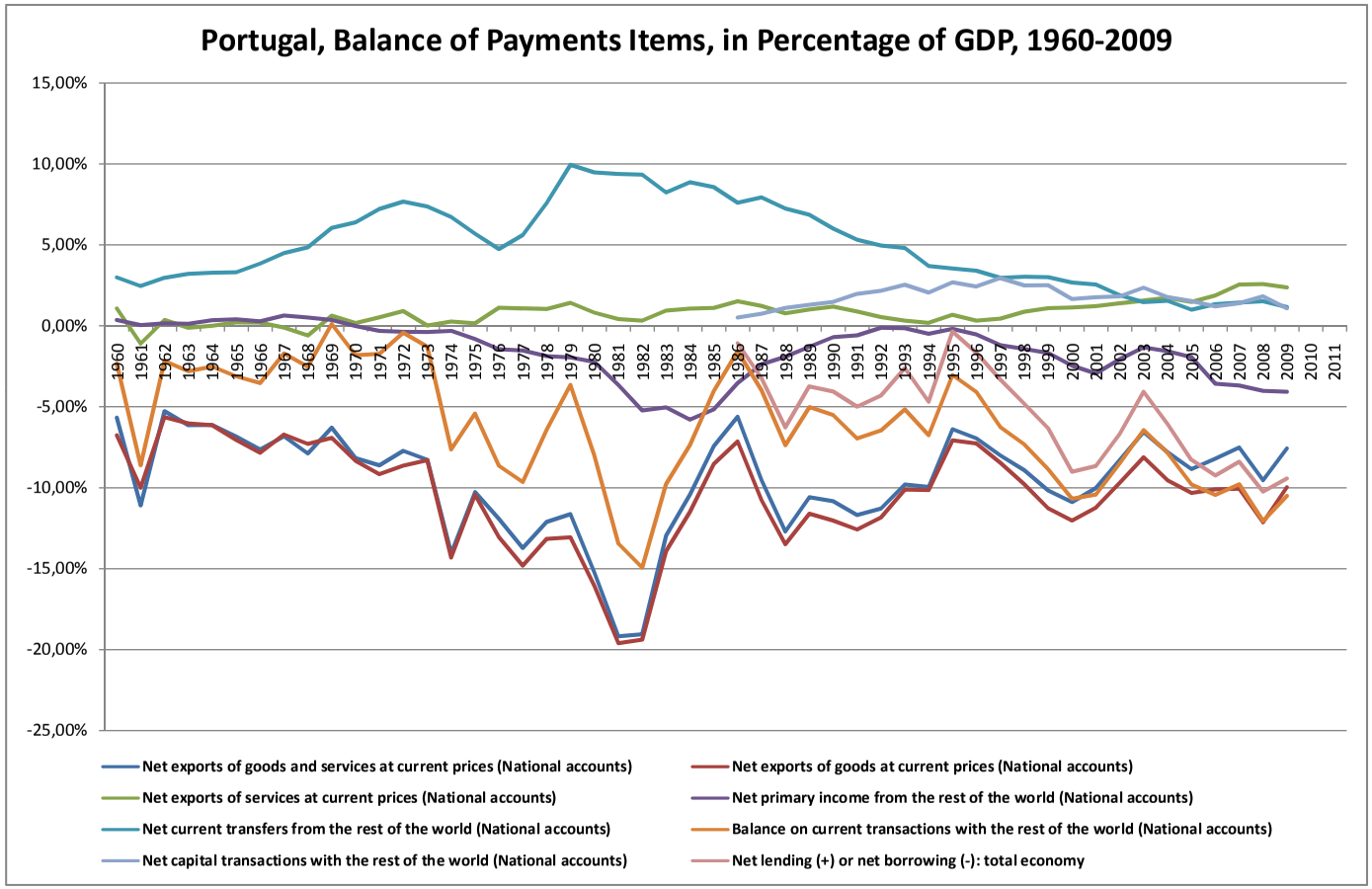
Source: AMECO

Figure A.18.: Balance of Payments Items, Netherlands



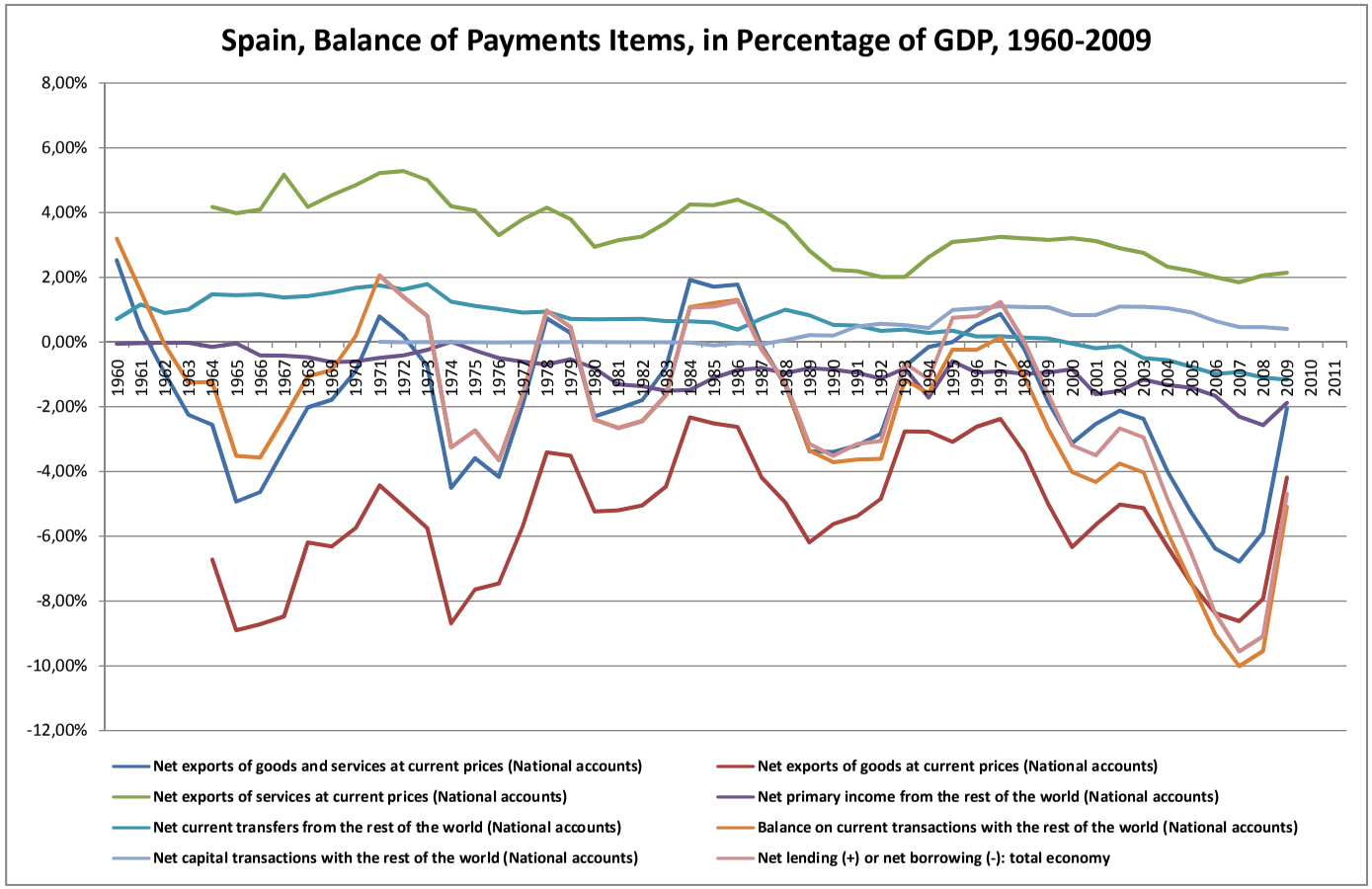
Source: AMECO

Figure A.19.: Balance of Payments Items, Portugal



Source: AMECO

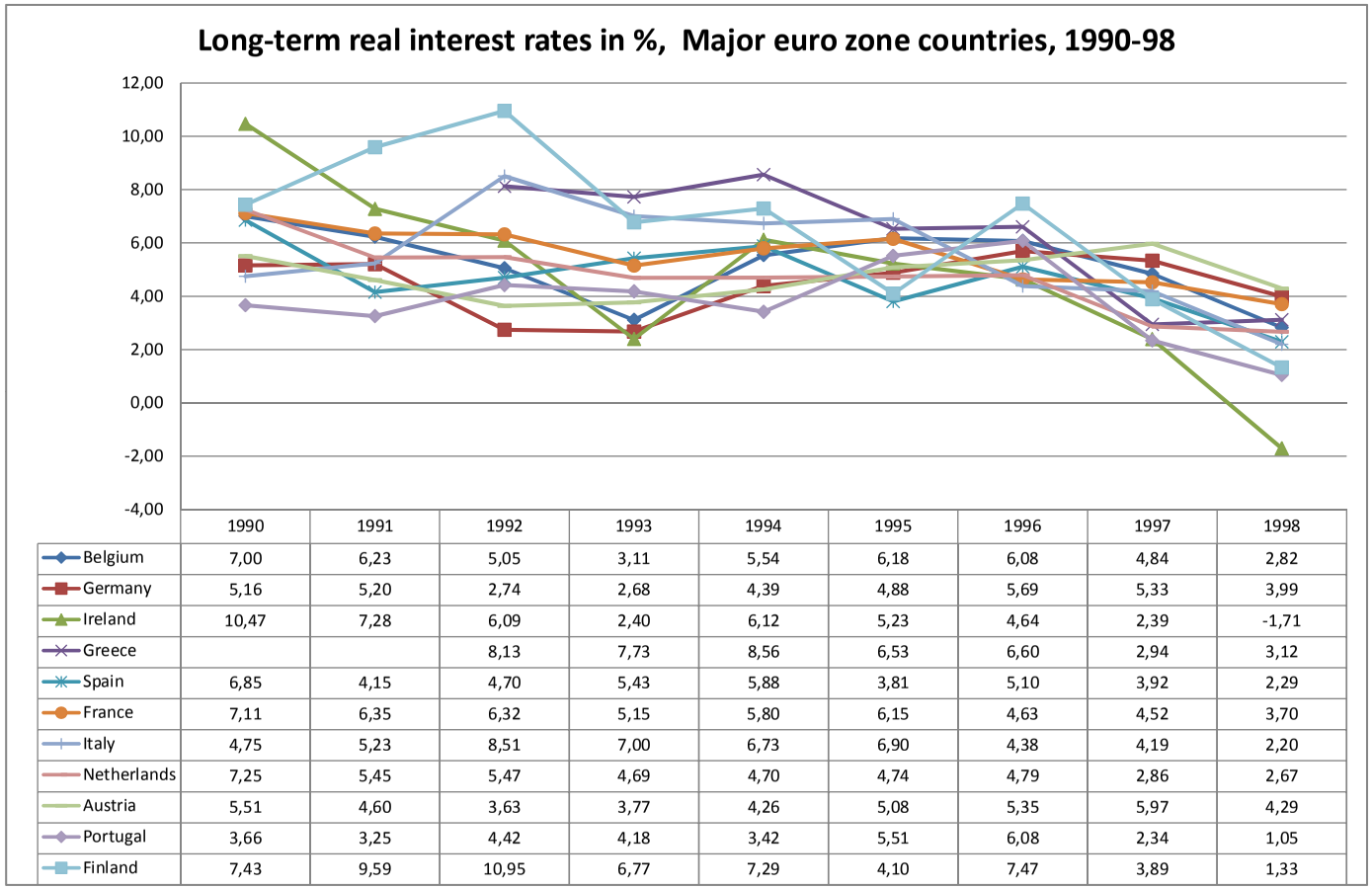
Figure A.20.: Balance of Payments Items, Spain



Source: AMECO

A.3. Real interest rates 1990-98

Figure A.21.: Real interest rate convergence, 1990-1998

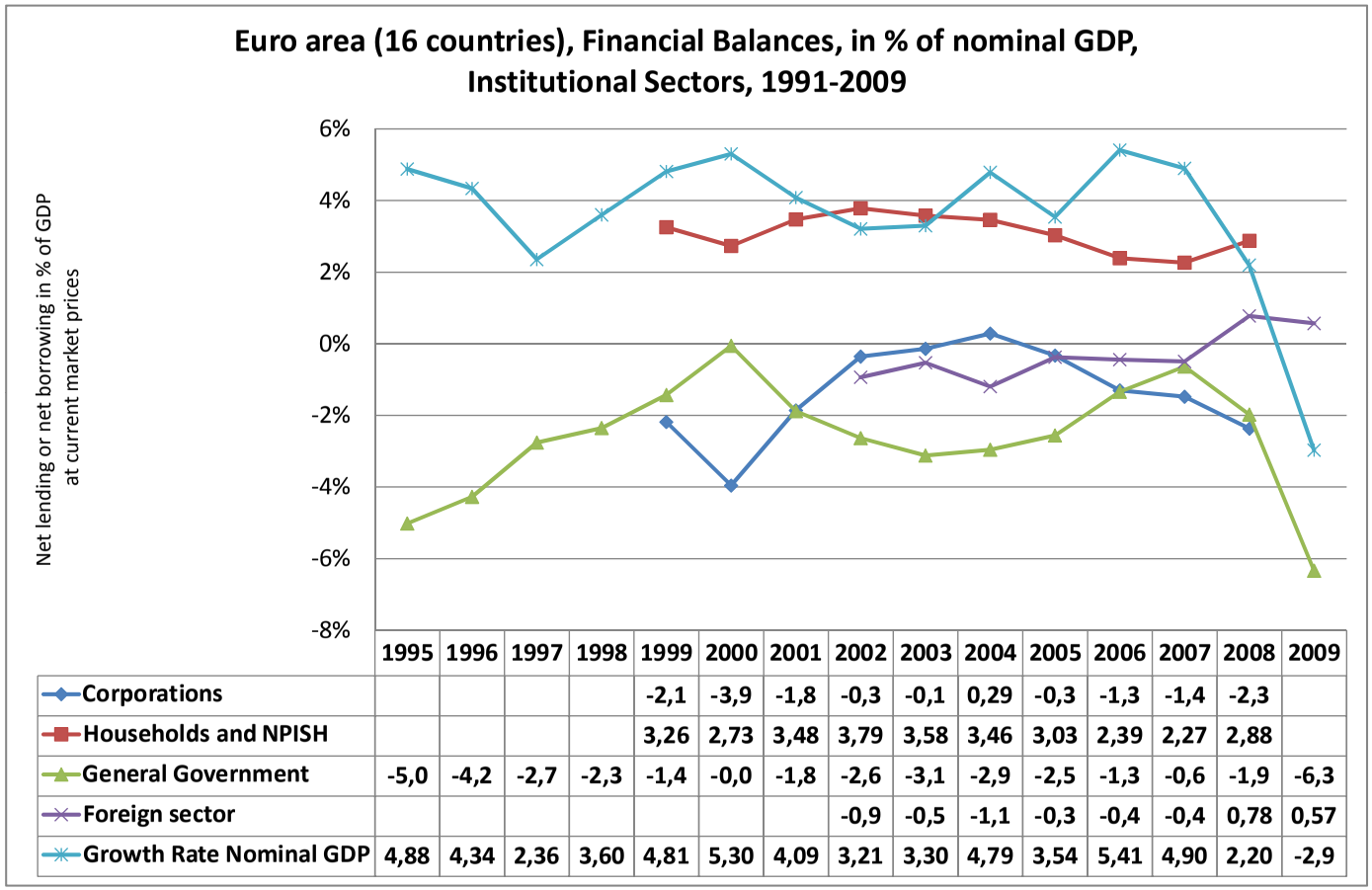


	1990	1991	1992	1993	1994	1995	1996	1997	1998
Belgium	7,00	6,23	5,05	3,11	5,54	6,18	6,08	4,84	2,82
Germany	5,16	5,20	2,74	2,68	4,39	4,88	5,69	5,33	3,99
Ireland	10,47	7,28	6,09	2,40	6,12	5,23	4,64	2,39	-1,71
Greece			8,13	7,73	8,56	6,53	6,60	2,94	3,12
Spain	6,85	4,15	4,70	5,43	5,88	3,81	5,10	3,92	2,29
France	7,11	6,35	6,32	5,15	5,80	6,15	4,63	4,52	3,70
Italy	4,75	5,23	8,51	7,00	6,73	6,90	4,38	4,19	2,20
Netherlands	7,25	5,45	5,47	4,69	4,70	4,74	4,79	2,86	2,67
Austria	5,51	4,60	3,63	3,77	4,26	5,08	5,35	5,97	4,29
Portugal	3,66	3,25	4,42	4,18	3,42	5,51	6,08	2,34	1,05
Finland	7,43	9,59	10,95	6,77	7,29	4,10	7,47	3,89	1,33

Source: AMECO

A.4. Financial Balances

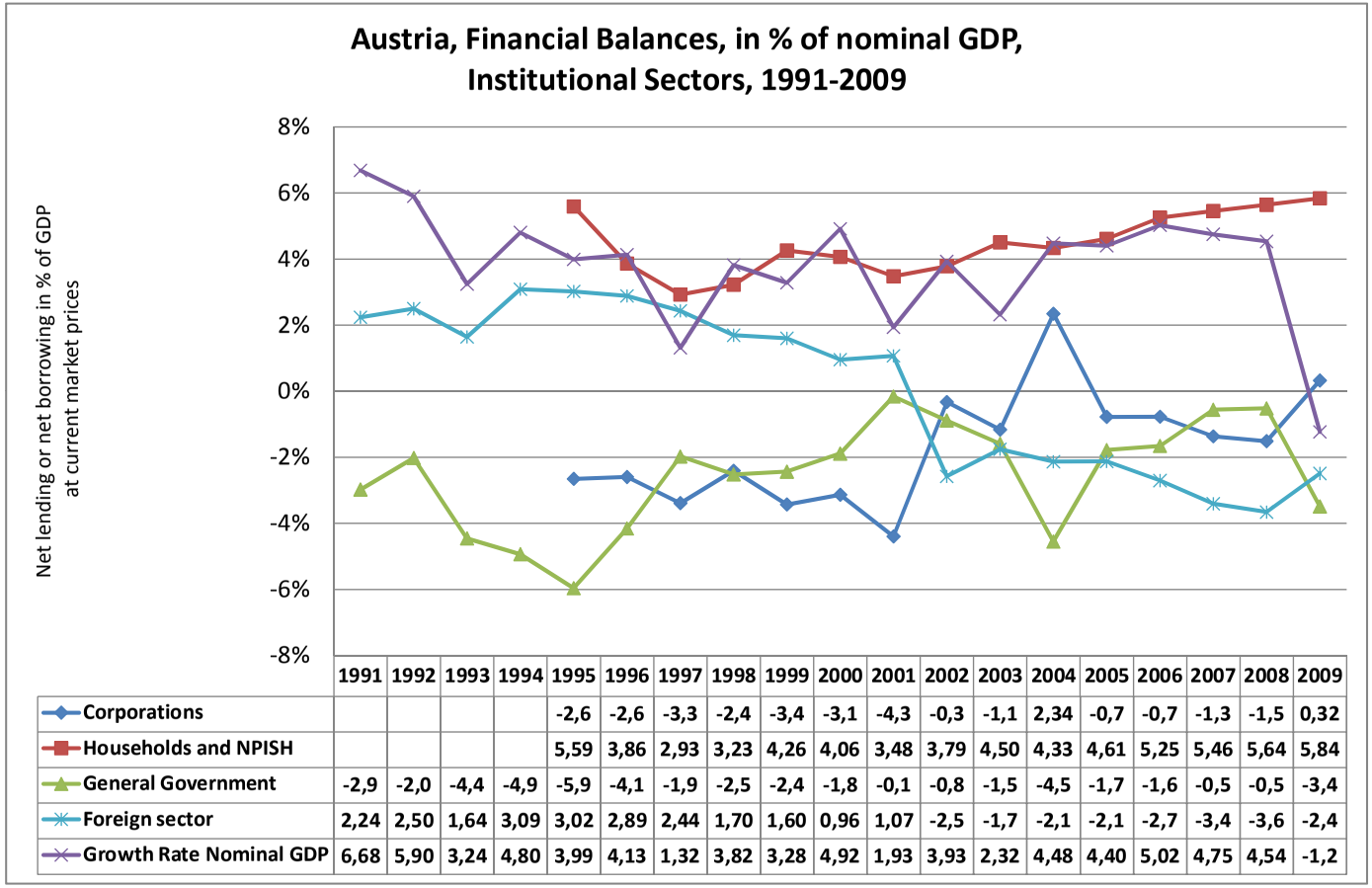
Figure A.22.: Financial Balances, Euro zone



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations					-2,1	-3,9	-1,8	-0,3	-0,1	0,29	-0,3	-1,3	-1,4	-2,3	
Households and NPISH					3,26	2,73	3,48	3,79	3,58	3,46	3,03	2,39	2,27	2,88	
General Government	-5,0	-4,2	-2,7	-2,3	-1,4	-0,0	-1,8	-2,6	-3,1	-2,9	-2,5	-1,3	-0,6	-1,9	-6,3
Foreign sector								-0,9	-0,5	-1,1	-0,3	-0,4	-0,4	0,78	0,57
Growth Rate Nominal GDP	4,88	4,34	2,36	3,60	4,81	5,30	4,09	3,21	3,30	4,79	3,54	5,41	4,90	2,20	-2,9

Source: 20 Apr AMECO

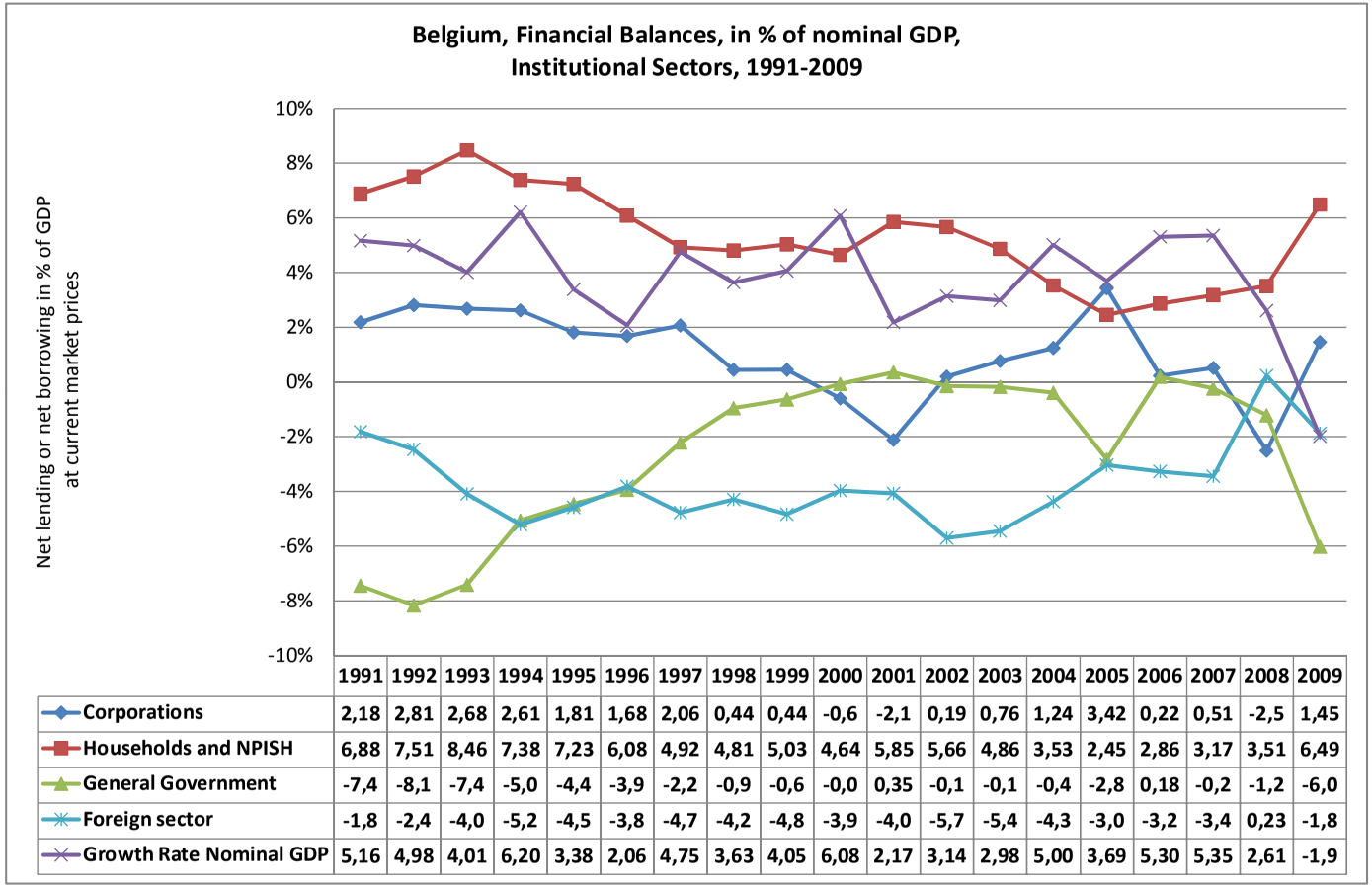
Figure A.23.: Financial Balances, Austria



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations					-2,6	-2,6	-3,3	-2,4	-3,4	-3,1	-4,3	-0,3	-1,1	2,34	-0,7	-0,7	-1,3	-1,5	0,32
Households and NPISH					5,59	3,86	2,93	3,23	4,26	4,06	3,48	3,79	4,50	4,33	4,61	5,25	5,46	5,64	5,84
General Government	-2,9	-2,0	-4,4	-4,9	-5,9	-4,1	-1,9	-2,5	-2,4	-1,8	-0,1	-0,8	-1,5	-4,5	-1,7	-1,6	-0,5	-0,5	-3,4
Foreign sector	2,24	2,50	1,64	3,09	3,02	2,89	2,44	1,70	1,60	0,96	1,07	-2,5	-1,7	-2,1	-2,1	-2,7	-3,4	-3,6	-2,4
Growth Rate Nominal GDP	6,68	5,90	3,24	4,80	3,99	4,13	1,32	3,82	3,28	4,92	1,93	3,93	2,32	4,48	4,40	5,02	4,75	4,54	-1,2

Source: 20 Apr AMECO

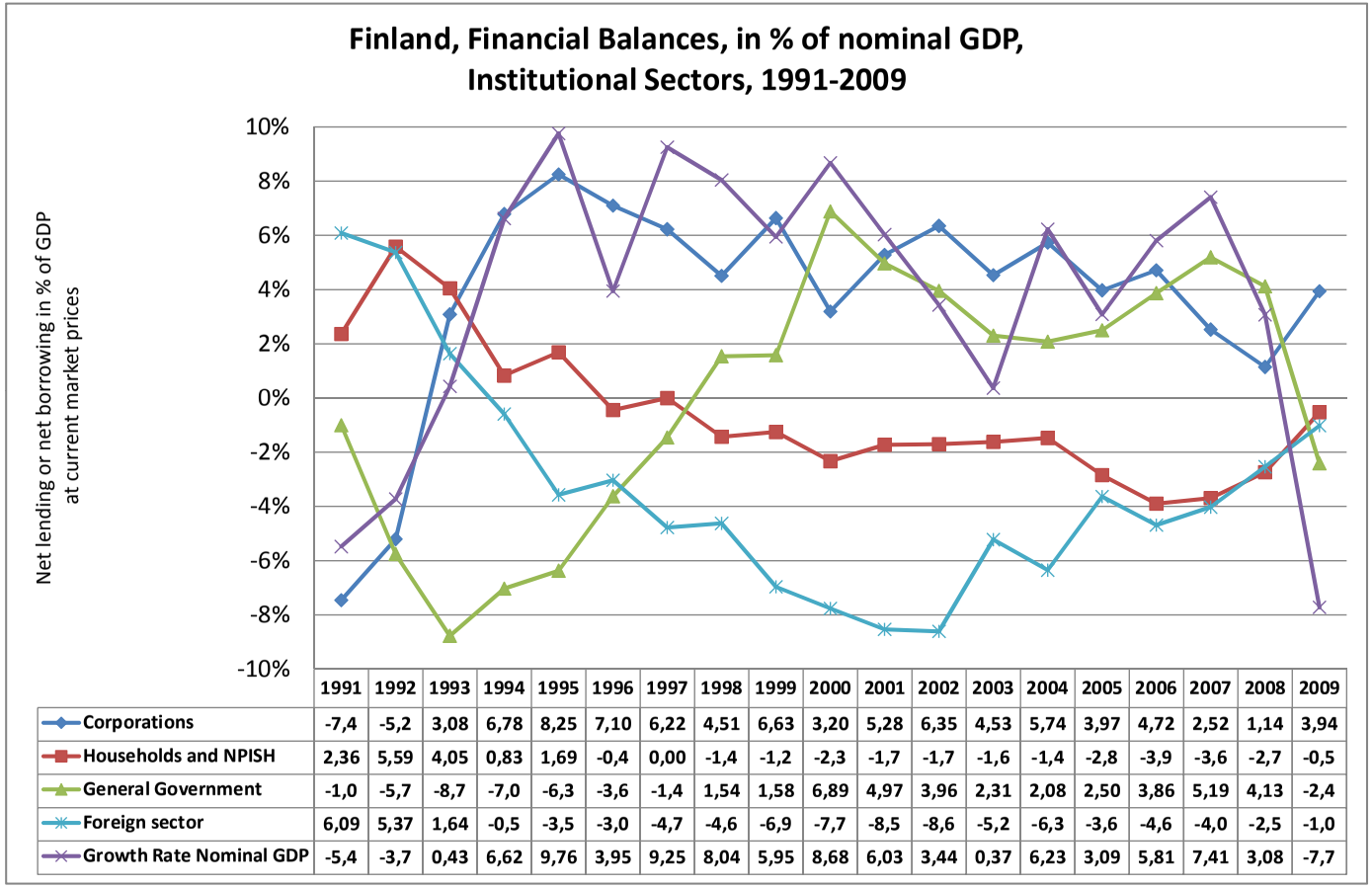
Figure A.24.: Financial Balances, Belgium



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations	2,18	2,81	2,68	2,61	1,81	1,68	2,06	0,44	0,44	-0,6	-2,1	0,19	0,76	1,24	3,42	0,22	0,51	-2,5	1,45
Households and NPISH	6,88	7,51	8,46	7,38	7,23	6,08	4,92	4,81	5,03	4,64	5,85	5,66	4,86	3,53	2,45	2,86	3,17	3,51	6,49
General Government	-7,4	-8,1	-7,4	-5,0	-4,4	-3,9	-2,2	-0,9	-0,6	-0,0	0,35	-0,1	-0,1	-0,4	-2,8	0,18	-0,2	-1,2	-6,0
Foreign sector	-1,8	-2,4	-4,0	-5,2	-4,5	-3,8	-4,7	-4,2	-4,8	-3,9	-4,0	-5,7	-5,4	-4,3	-3,0	-3,2	-3,4	0,23	-1,8
Growth Rate Nominal GDP	5,16	4,98	4,01	6,20	3,38	2,06	4,75	3,63	4,05	6,08	2,17	3,14	2,98	5,00	3,69	5,30	5,35	2,61	-1,9

Source: 20 Apr AMECO

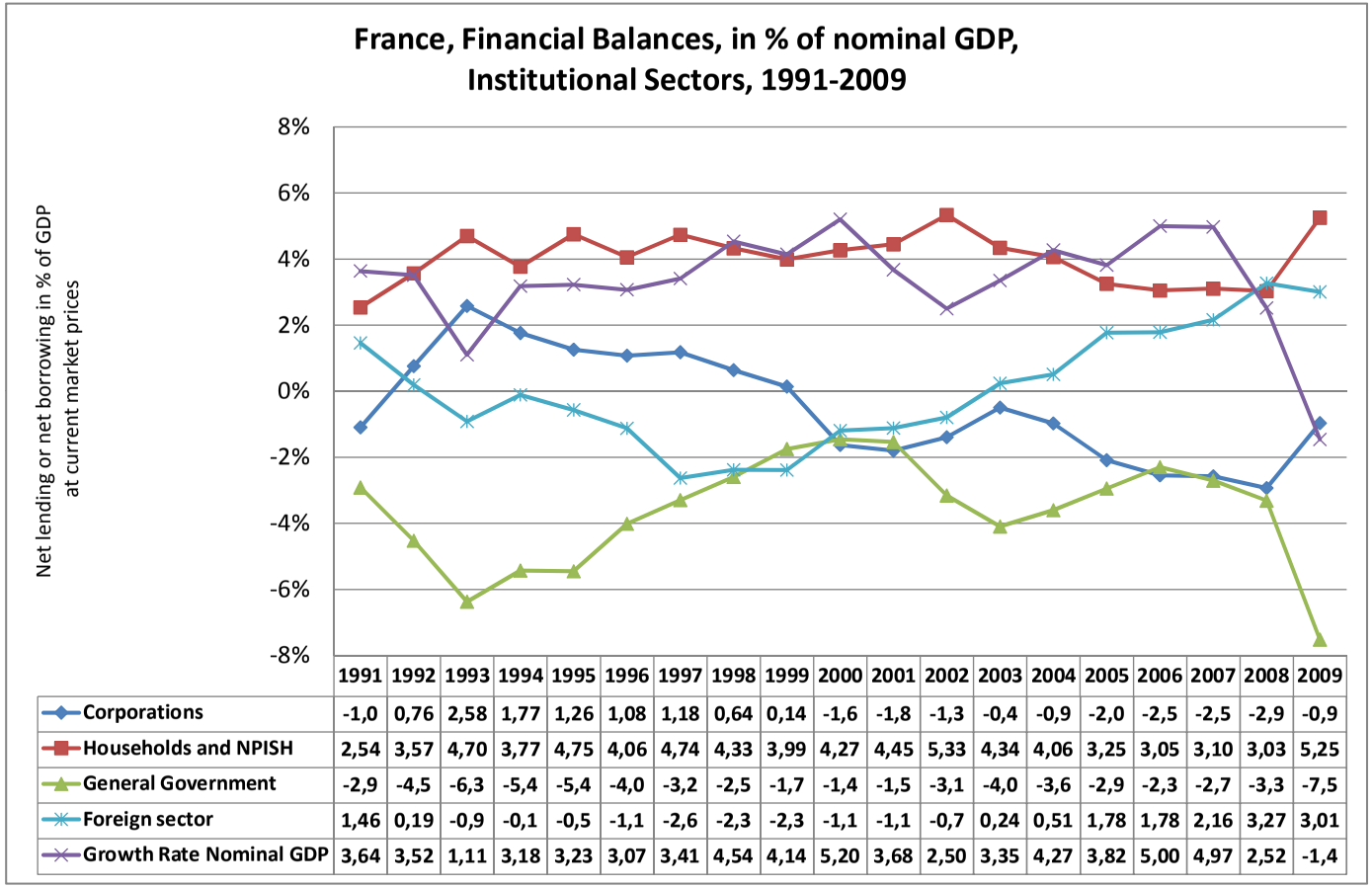
Figure A.25.: Financial Balances, Finland



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations	-7,4	-5,2	3,08	6,78	8,25	7,10	6,22	4,51	6,63	3,20	5,28	6,35	4,53	5,74	3,97	4,72	2,52	1,14	3,94
Households and NPISH	2,36	5,59	4,05	0,83	1,69	-0,4	0,00	-1,4	-1,2	-2,3	-1,7	-1,7	-1,6	-1,4	-2,8	-3,9	-3,6	-2,7	-0,5
General Government	-1,0	-5,7	-8,7	-7,0	-6,3	-3,6	-1,4	1,54	1,58	6,89	4,97	3,96	2,31	2,08	2,50	3,86	5,19	4,13	-2,4
Foreign sector	6,09	5,37	1,64	-0,5	-3,5	-3,0	-4,7	-4,6	-6,9	-7,7	-8,5	-8,6	-5,2	-6,3	-3,6	-4,6	-4,0	-2,5	-1,0
Growth Rate Nominal GDP	-5,4	-3,7	0,43	6,62	9,76	3,95	9,25	8,04	5,95	8,68	6,03	3,44	0,37	6,23	3,09	5,81	7,41	3,08	-7,7

Source: 20 Apr AMECO

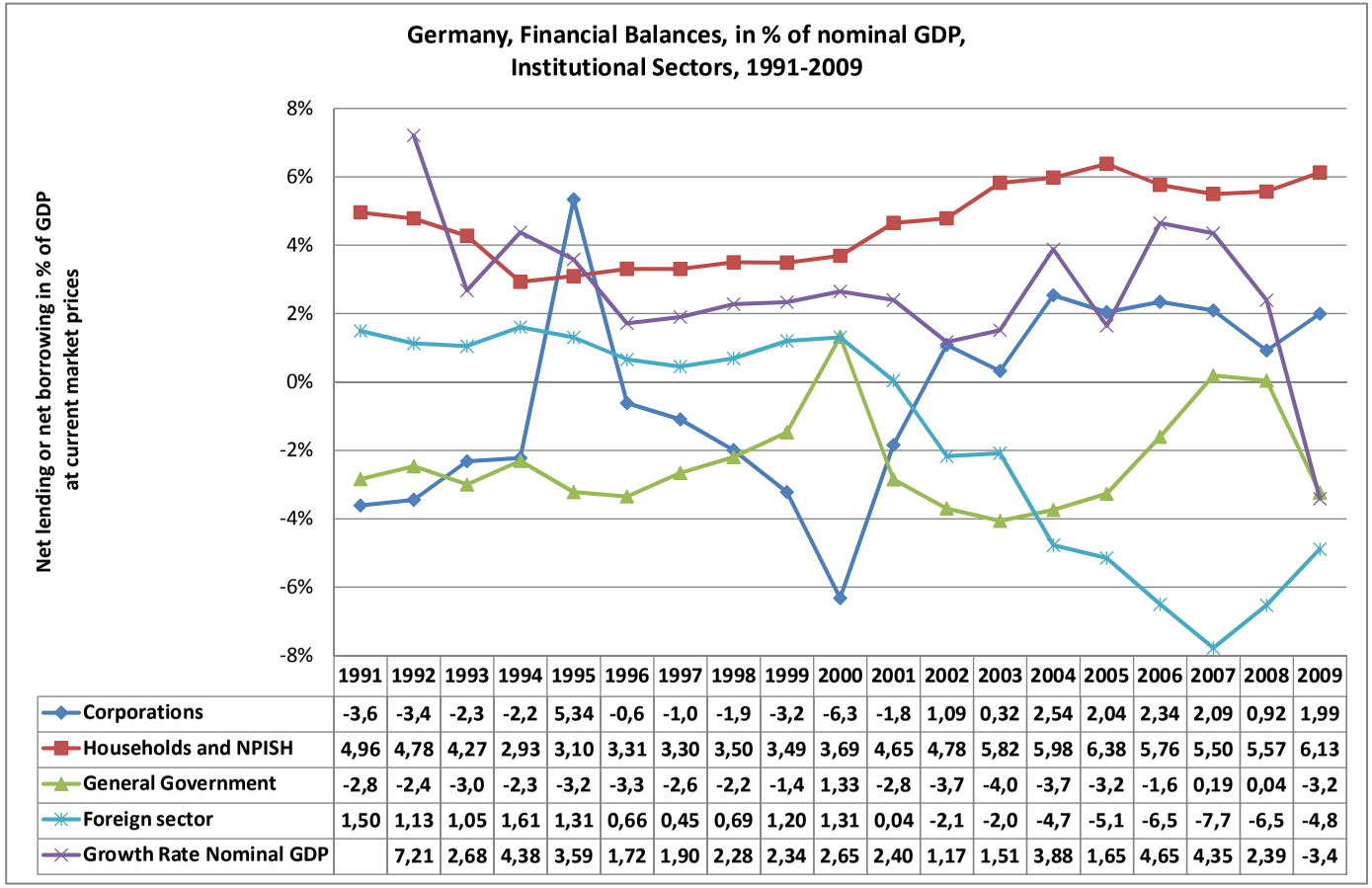
Figure A.26.: Financial Balances, France



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations	-1,0	0,76	2,58	1,77	1,26	1,08	1,18	0,64	0,14	-1,6	-1,8	-1,3	-0,4	-0,9	-2,0	-2,5	-2,5	-2,9	-0,9
Households and NPISH	2,54	3,57	4,70	3,77	4,75	4,06	4,74	4,33	3,99	4,27	4,45	5,33	4,34	4,06	3,25	3,05	3,10	3,03	5,25
General Government	-2,9	-4,5	-6,3	-5,4	-5,4	-4,0	-3,2	-2,5	-1,7	-1,4	-1,5	-3,1	-4,0	-3,6	-2,9	-2,3	-2,7	-3,3	-7,5
Foreign sector	1,46	0,19	-0,9	-0,1	-0,5	-1,1	-2,6	-2,3	-2,3	-1,1	-1,1	-0,7	0,24	0,51	1,78	1,78	2,16	3,27	3,01
Growth Rate Nominal GDP	3,64	3,52	1,11	3,18	3,23	3,07	3,41	4,54	4,14	5,20	3,68	2,50	3,35	4,27	3,82	5,00	4,97	2,52	-1,4

Source: 20 Apr AMECO

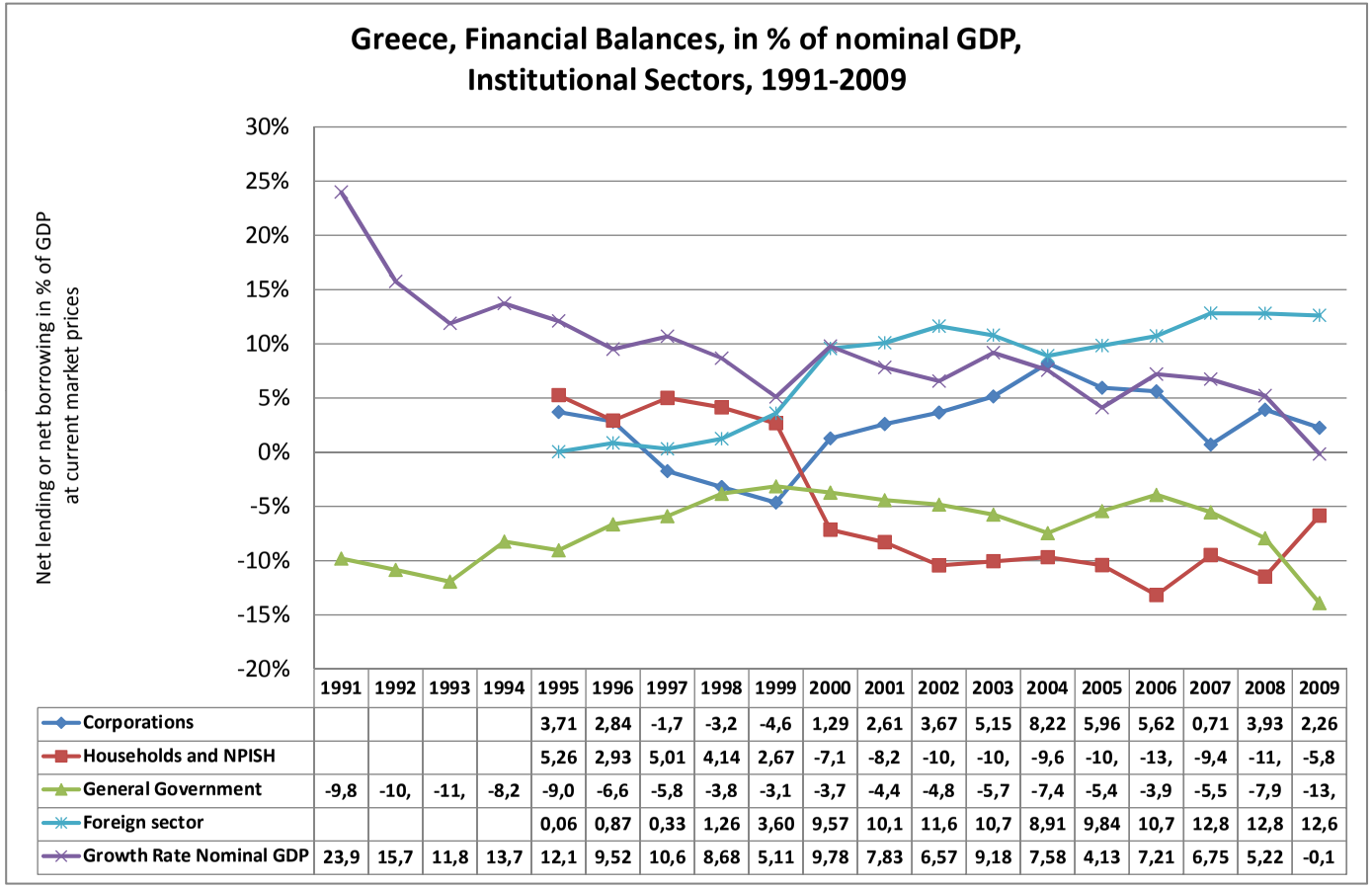
Figure A.27.: Financial Balances, Germany



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations	-3,6	-3,4	-2,3	-2,2	5,34	-0,6	-1,0	-1,9	-3,2	-6,3	-1,8	1,09	0,32	2,54	2,04	2,34	2,09	0,92	1,99
Households and NPISH	4,96	4,78	4,27	2,93	3,10	3,31	3,30	3,50	3,49	3,69	4,65	4,78	5,82	5,98	6,38	5,76	5,50	5,57	6,13
General Government	-2,8	-2,4	-3,0	-2,3	-3,2	-3,3	-2,6	-2,2	-1,4	1,33	-2,8	-3,7	-4,0	-3,7	-3,2	-1,6	0,19	0,04	-3,2
Foreign sector	1,50	1,13	1,05	1,61	1,31	0,66	0,45	0,69	1,20	1,31	0,04	-2,1	-2,0	-4,7	-5,1	-6,5	-7,7	-6,5	-4,8
Growth Rate Nominal GDP		7,21	2,68	4,38	3,59	1,72	1,90	2,28	2,34	2,65	2,40	1,17	1,51	3,88	1,65	4,65	4,35	2,39	-3,4

Source: 20 Apr AMECO

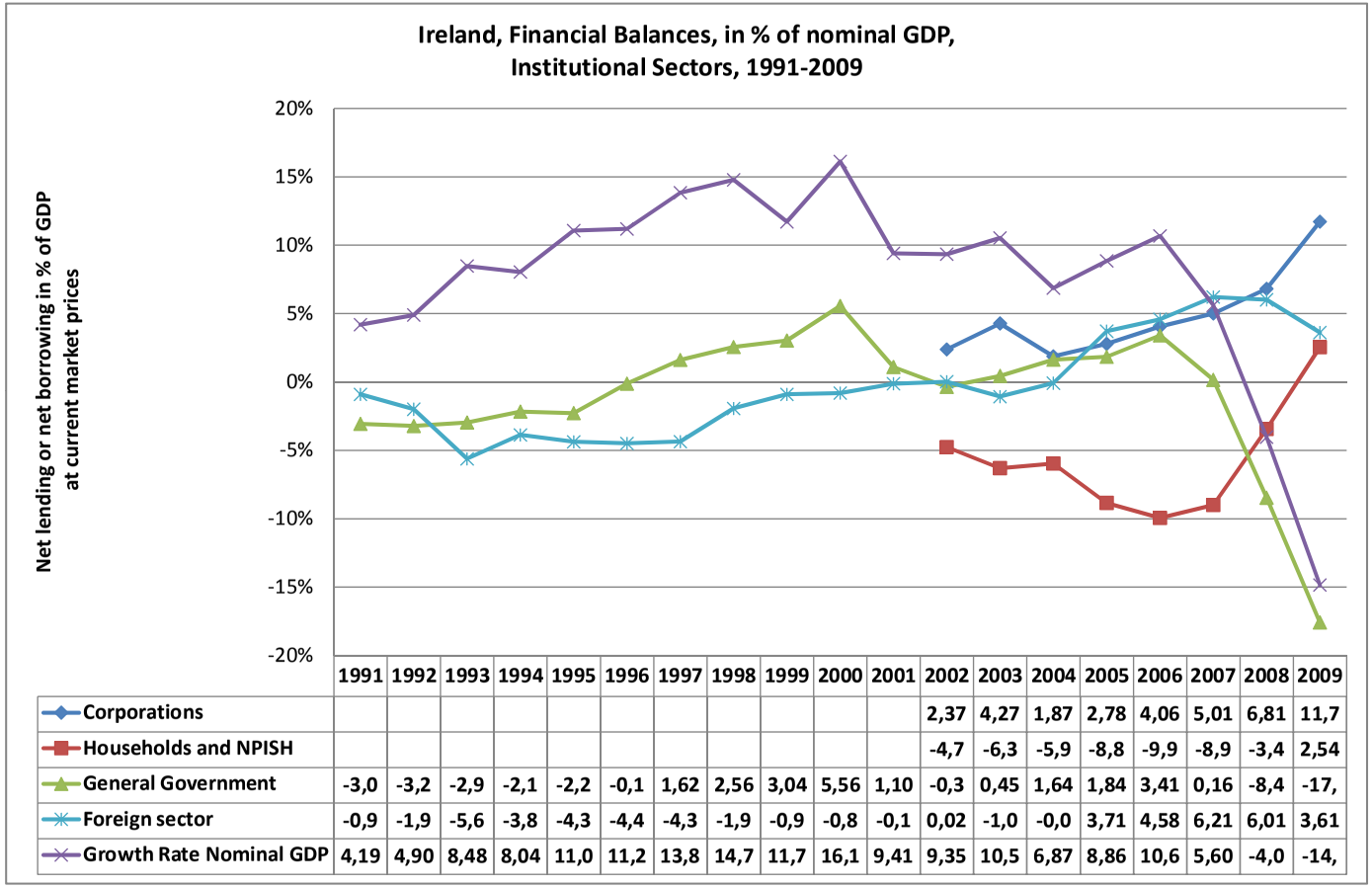
Figure A.28.: Financial Balances, Greece



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations					3,71	2,84	-1,7	-3,2	-4,6	1,29	2,61	3,67	5,15	8,22	5,96	5,62	0,71	3,93	2,26
Households and NPISH					5,26	2,93	5,01	4,14	2,67	-7,1	-8,2	-10,	-10,	-9,6	-10,	-13,	-9,4	-11,	-5,8
General Government	-9,8	-10,	-11,	-8,2	-9,0	-6,6	-5,8	-3,8	-3,1	-3,7	-4,4	-4,8	-5,7	-7,4	-5,4	-3,9	-5,5	-7,9	-13,
Foreign sector					0,06	0,87	0,33	1,26	3,60	9,57	10,1	11,6	10,7	8,91	9,84	10,7	12,8	12,8	12,6
Growth Rate Nominal GDP	23,9	15,7	11,8	13,7	12,1	9,52	10,6	8,68	5,11	9,78	7,83	6,57	9,18	7,58	4,13	7,21	6,75	5,22	-0,1

Source: 20 Apr AMECO

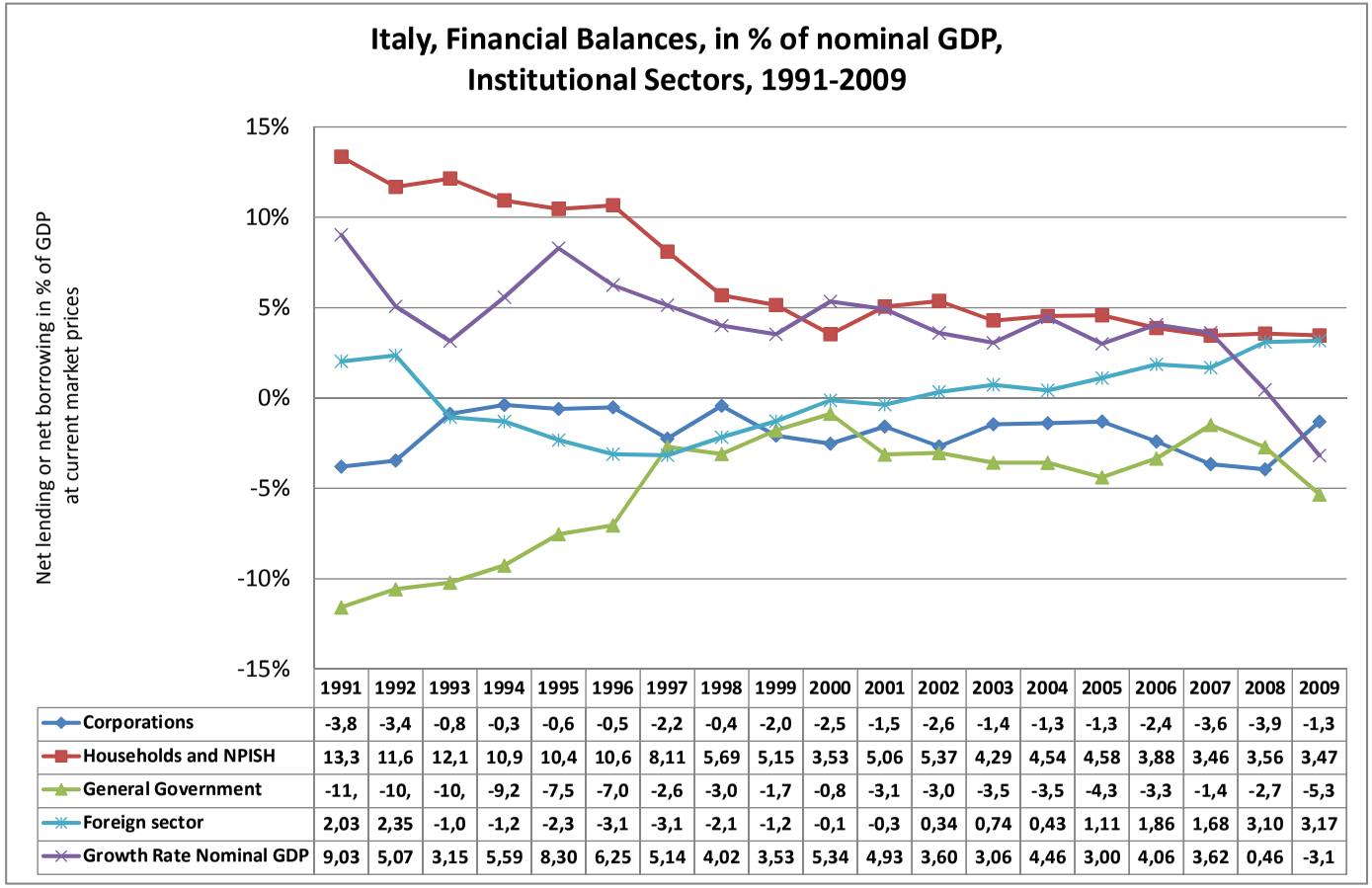
Figure A.29.: Financial Balances, Ireland



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations												2,37	4,27	1,87	2,78	4,06	5,01	6,81	11,7
Households and NPISH												-4,7	-6,3	-5,9	-8,8	-9,9	-8,9	-3,4	2,54
General Government	-3,0	-3,2	-2,9	-2,1	-2,2	-0,1	1,62	2,56	3,04	5,56	1,10	-0,3	0,45	1,64	1,84	3,41	0,16	-8,4	-17,
Foreign sector	-0,9	-1,9	-5,6	-3,8	-4,3	-4,4	-4,3	-1,9	-0,9	-0,8	-0,1	0,02	-1,0	-0,0	3,71	4,58	6,21	6,01	3,61
Growth Rate Nominal GDP	4,19	4,90	8,48	8,04	11,0	11,2	13,8	14,7	11,7	16,1	9,41	9,35	10,5	6,87	8,86	10,6	5,60	-4,0	-14,

Source: 20 Apr AMECO

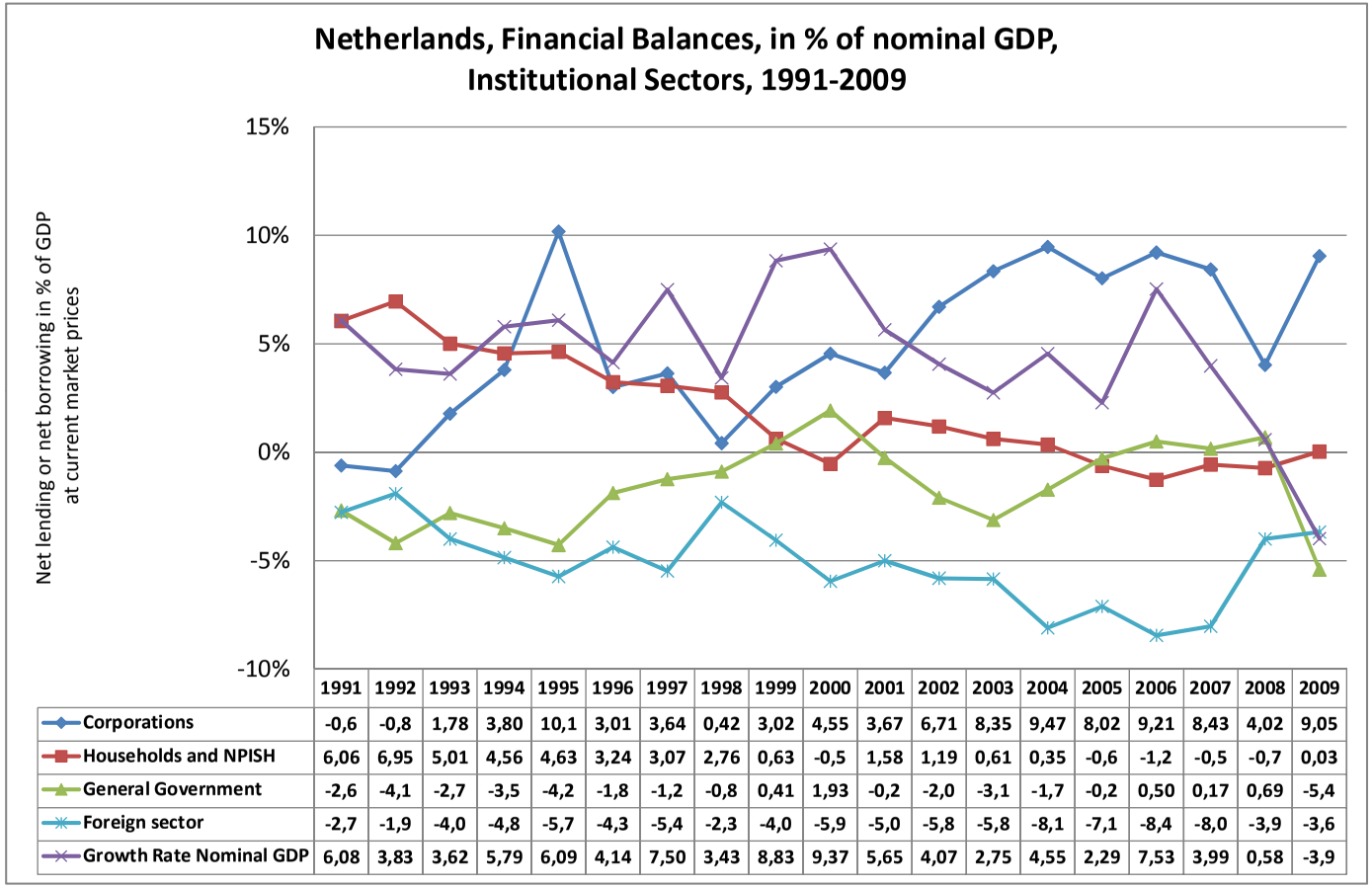
Figure A.30.: Financial Balances, Italy



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations	-3,8	-3,4	-0,8	-0,3	-0,6	-0,5	-2,2	-0,4	-2,0	-2,5	-1,5	-2,6	-1,4	-1,3	-1,3	-2,4	-3,6	-3,9	-1,3
Households and NPISH	13,3	11,6	12,1	10,9	10,4	10,6	8,11	5,69	5,15	3,53	5,06	5,37	4,29	4,54	4,58	3,88	3,46	3,56	3,47
General Government	-11,	-10,	-10,	-9,2	-7,5	-7,0	-2,6	-3,0	-1,7	-0,8	-3,1	-3,0	-3,5	-3,5	-4,3	-3,3	-1,4	-2,7	-5,3
Foreign sector	2,03	2,35	-1,0	-1,2	-2,3	-3,1	-3,1	-2,1	-1,2	-0,1	-0,3	0,34	0,74	0,43	1,11	1,86	1,68	3,10	3,17
Growth Rate Nominal GDP	9,03	5,07	3,15	5,59	8,30	6,25	5,14	4,02	3,53	5,34	4,93	3,60	3,06	4,46	3,00	4,06	3,62	0,46	-3,1

Source: 20 Apr AMECO

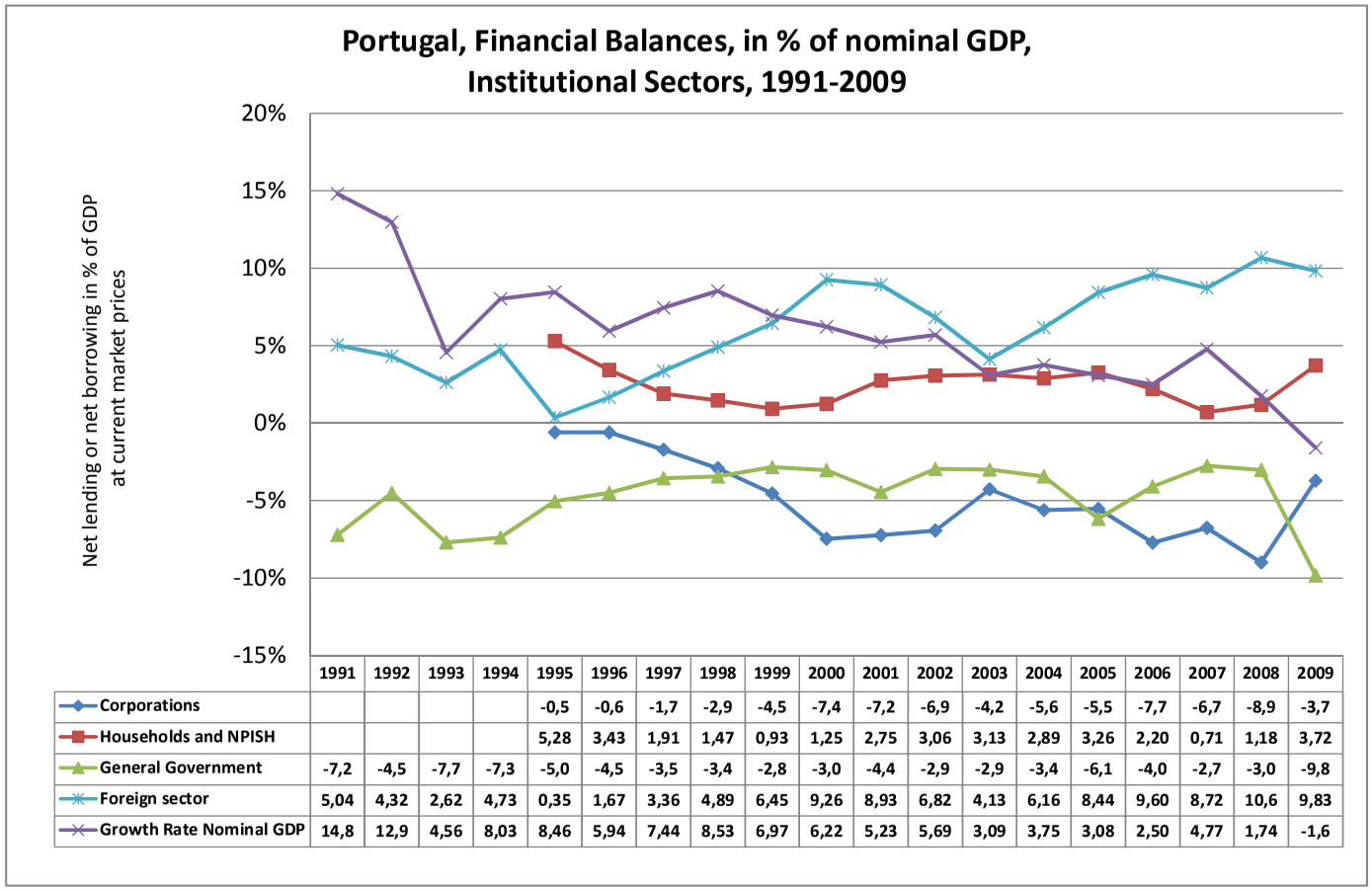
Figure A.31.: Financial Balances, Netherlands



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations	-0,6	-0,8	1,78	3,80	10,1	3,01	3,64	0,42	3,02	4,55	3,67	6,71	8,35	9,47	8,02	9,21	8,43	4,02	9,05
Households and NPISH	6,06	6,95	5,01	4,56	4,63	3,24	3,07	2,76	0,63	-0,5	1,58	1,19	0,61	0,35	-0,6	-1,2	-0,5	-0,7	0,03
General Government	-2,6	-4,1	-2,7	-3,5	-4,2	-1,8	-1,2	-0,8	0,41	1,93	-0,2	-2,0	-3,1	-1,7	-0,2	0,50	0,17	0,69	-5,4
Foreign sector	-2,7	-1,9	-4,0	-4,8	-5,7	-4,3	-5,4	-2,3	-4,0	-5,9	-5,0	-5,8	-5,8	-8,1	-7,1	-8,4	-8,0	-3,9	-3,6
Growth Rate Nominal GDP	6,08	3,83	3,62	5,79	6,09	4,14	7,50	3,43	8,83	9,37	5,65	4,07	2,75	4,55	2,29	7,53	3,99	0,58	-3,9

Source: 20 Apr AMECO

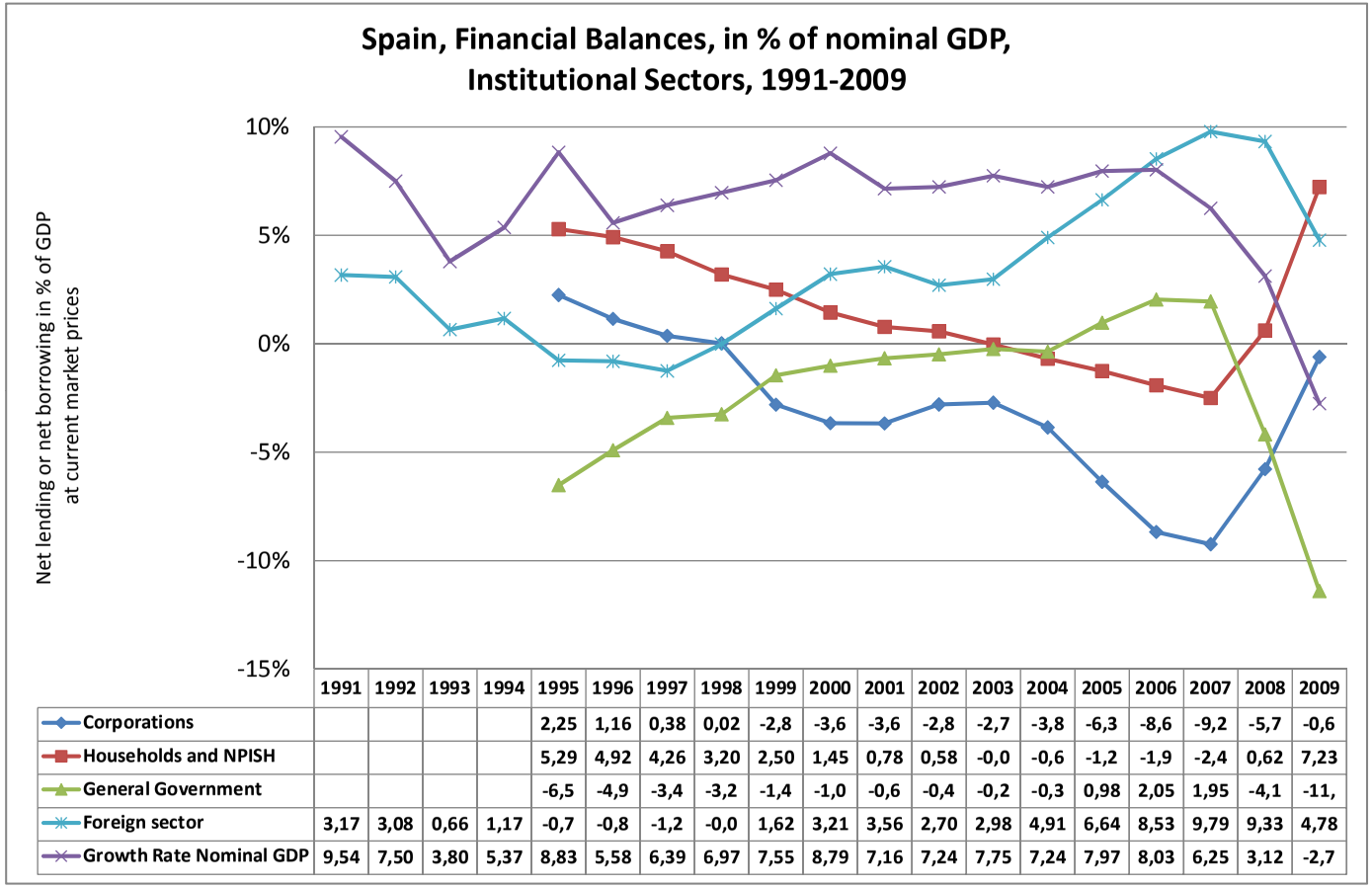
Figure A.32.: Financial Balances, Portugal



	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations					-0,5	-0,6	-1,7	-2,9	-4,5	-7,4	-7,2	-6,9	-4,2	-5,6	-5,5	-7,7	-6,7	-8,9	-3,7
Households and NPISH					5,28	3,43	1,91	1,47	0,93	1,25	2,75	3,06	3,13	2,89	3,26	2,20	0,71	1,18	3,72
General Government	-7,2	-4,5	-7,7	-7,3	-5,0	-4,5	-3,5	-3,4	-2,8	-3,0	-4,4	-2,9	-2,9	-3,4	-6,1	-4,0	-2,7	-3,0	-9,8
Foreign sector	5,04	4,32	2,62	4,73	0,35	1,67	3,36	4,89	6,45	9,26	8,93	6,82	4,13	6,16	8,44	9,60	8,72	10,6	9,83
Growth Rate Nominal GDP	14,8	12,9	4,56	8,03	8,46	5,94	7,44	8,53	6,97	6,22	5,23	5,69	3,09	3,75	3,08	2,50	4,77	1,74	-1,6

Source: 20 Apr AMECO

Figure A.33.: Financial Balances, Spain

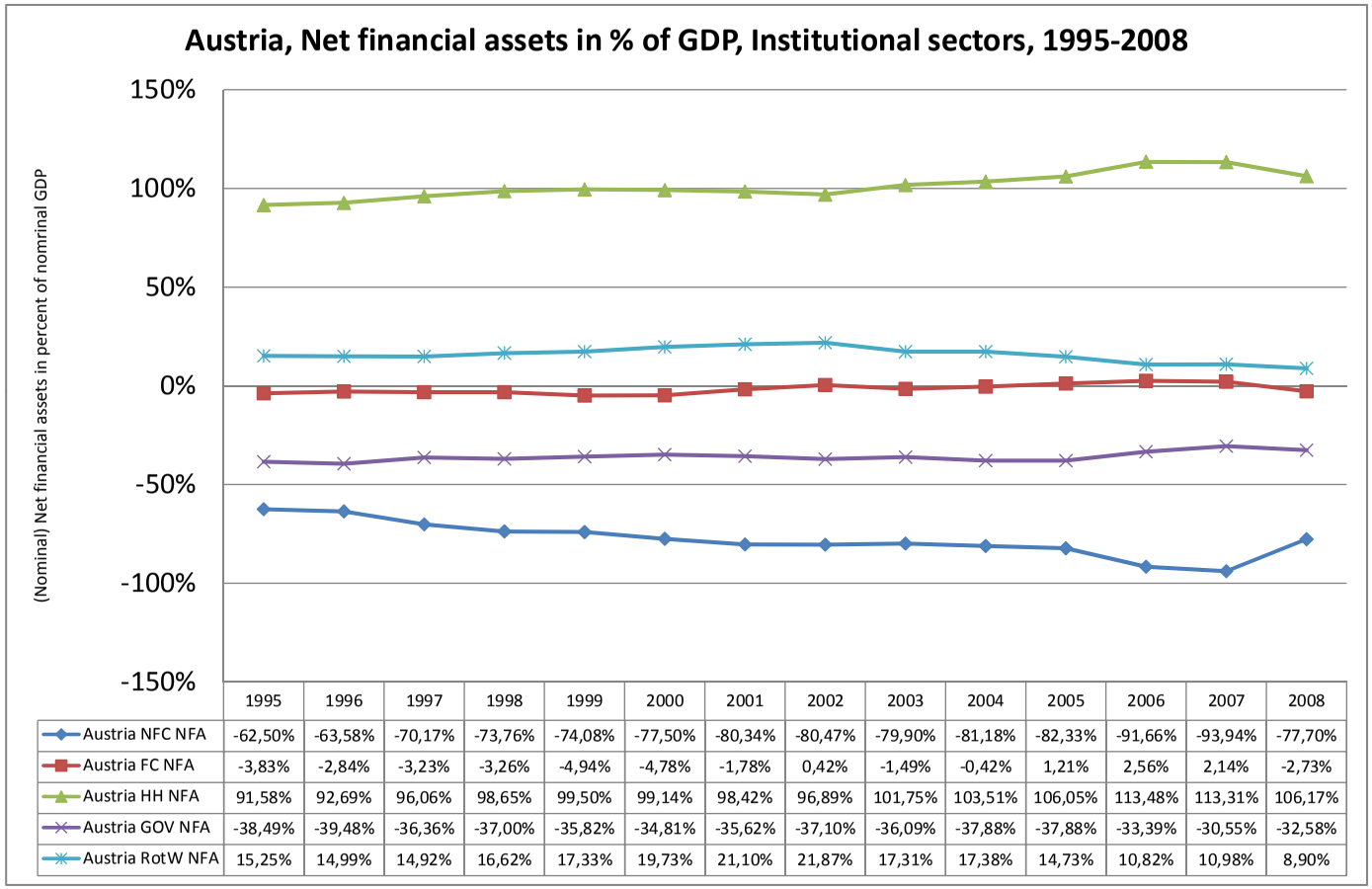


	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Corporations					2,25	1,16	0,38	0,02	-2,8	-3,6	-3,6	-2,8	-2,7	-3,8	-6,3	-8,6	-9,2	-5,7	-0,6
Households and NPISH					5,29	4,92	4,26	3,20	2,50	1,45	0,78	0,58	-0,0	-0,6	-1,2	-1,9	-2,4	0,62	7,23
General Government					-6,5	-4,9	-3,4	-3,2	-1,4	-1,0	-0,6	-0,4	-0,2	-0,3	0,98	2,05	1,95	-4,1	-11,
Foreign sector	3,17	3,08	0,66	1,17	-0,7	-0,8	-1,2	-0,0	1,62	3,21	3,56	2,70	2,98	4,91	6,64	8,53	9,79	9,33	4,78
Growth Rate Nominal GDP	9,54	7,50	3,80	5,37	8,83	5,58	6,39	6,97	7,55	8,79	7,16	7,24	7,75	7,24	7,97	8,03	6,25	3,12	-2,7

Source: 20 Apr AMECO

A.5. Net financial assets

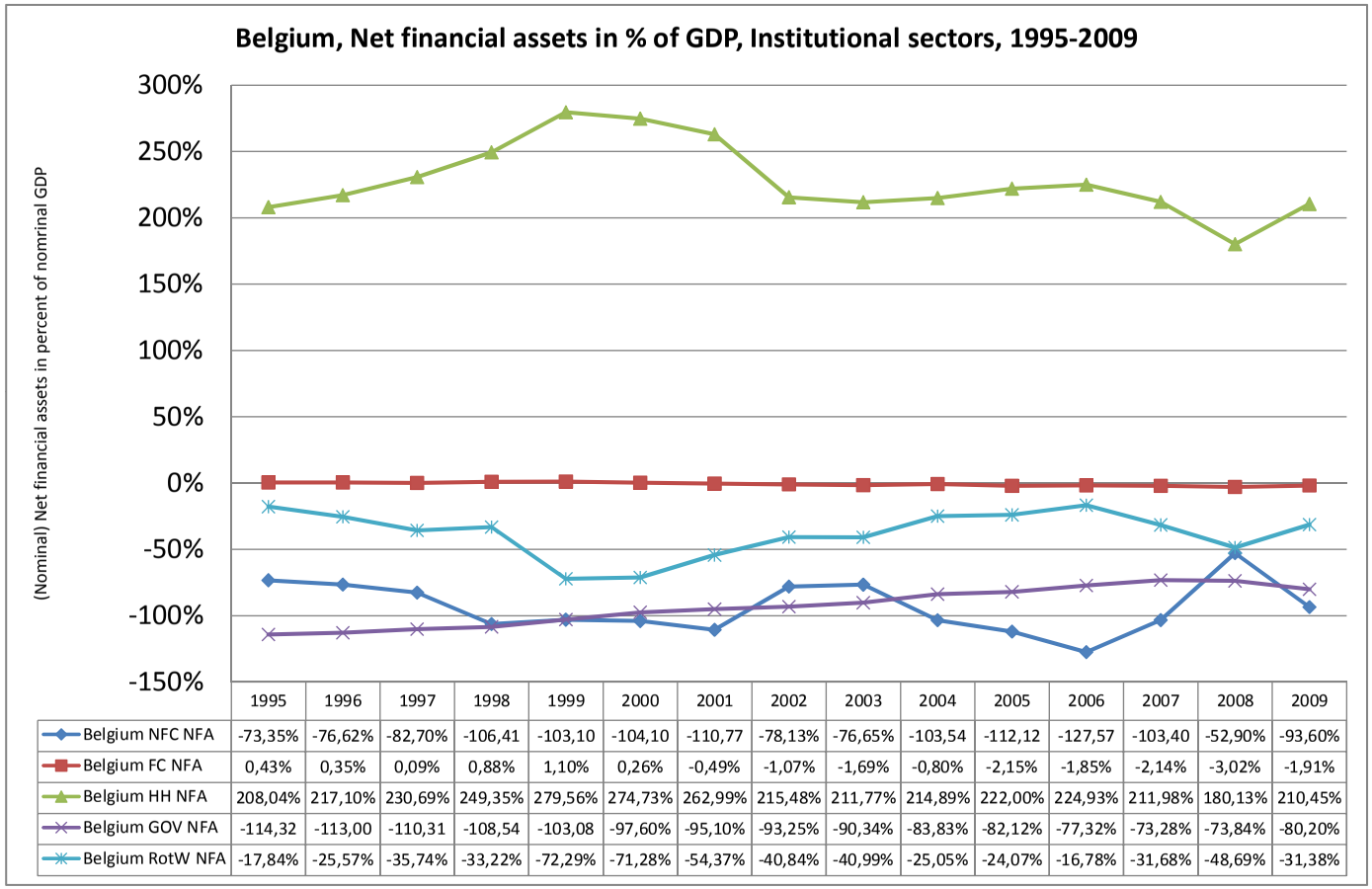
Figure A.34.: Net financial assets, Austria



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Austria NFC NFA	-62,50%	-63,58%	-70,17%	-73,76%	-74,08%	-77,50%	-80,34%	-80,47%	-79,90%	-81,18%	-82,33%	-91,66%	-93,94%	-77,70%
Austria FC NFA	-3,83%	-2,84%	-3,23%	-3,26%	-4,94%	-4,78%	-1,78%	0,42%	-1,49%	-0,42%	1,21%	2,56%	2,14%	-2,73%
Austria HH NFA	91,58%	92,69%	96,06%	98,65%	99,50%	99,14%	98,42%	96,89%	101,75%	103,51%	106,05%	113,48%	113,31%	106,17%
Austria GOV NFA	-38,49%	-39,48%	-36,36%	-37,00%	-35,82%	-34,81%	-35,62%	-37,10%	-36,09%	-37,88%	-37,88%	-33,39%	-30,55%	-32,58%
Austria RotW NFA	15,25%	14,99%	14,92%	16,62%	17,33%	19,73%	21,10%	21,87%	17,31%	17,38%	14,73%	10,82%	10,98%	8,90%

Source: Eurostat

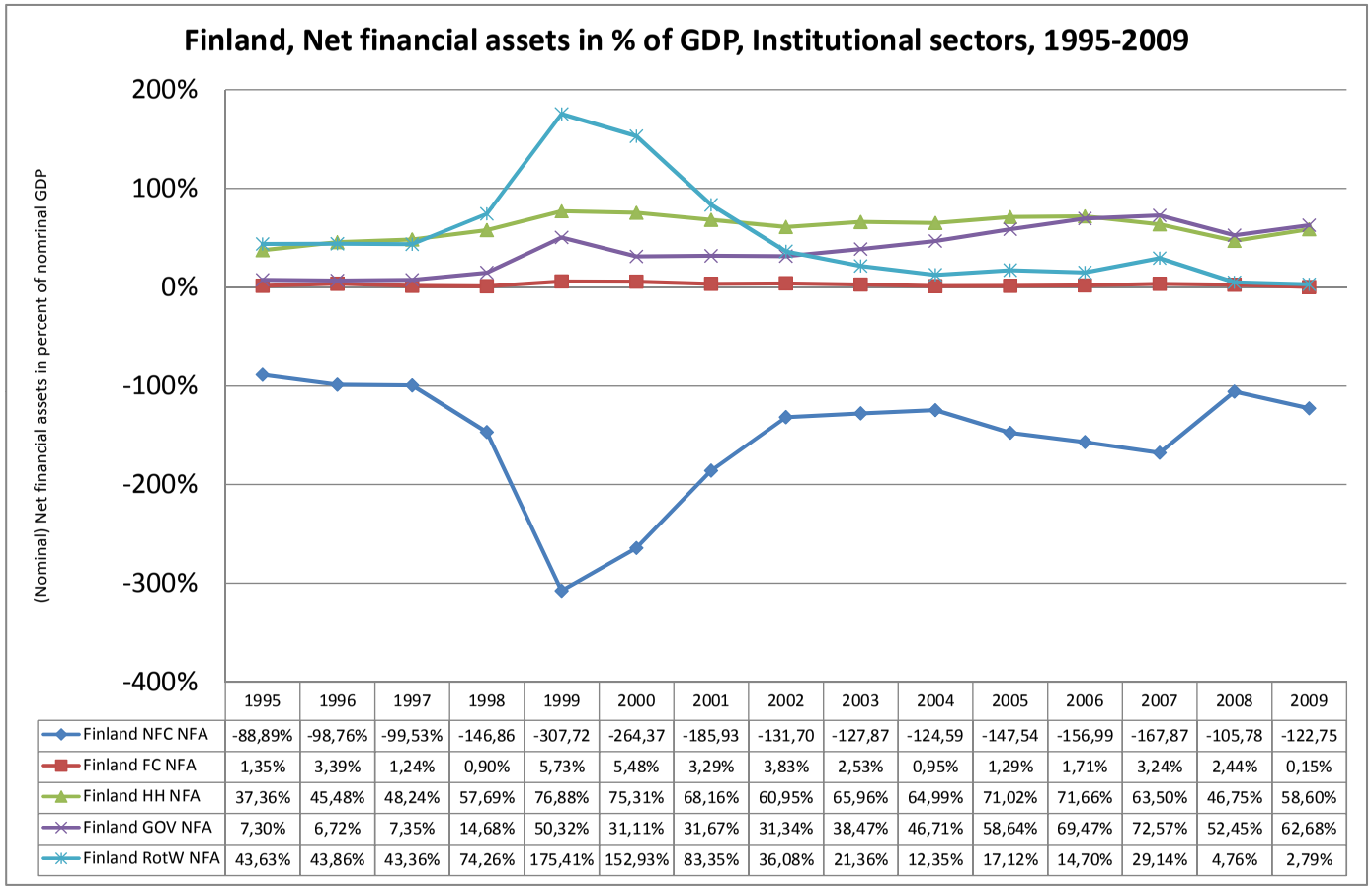
Figure A.35.: Net financial assets, Belgium



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Belgium NFC NFA	-73,35%	-76,62%	-82,70%	-106,41	-103,10	-104,10	-110,77	-78,13%	-76,65%	-103,54	-112,12	-127,57	-103,40	-52,90%	-93,60%
Belgium FC NFA	0,43%	0,35%	0,09%	0,88%	1,10%	0,26%	-0,49%	-1,07%	-1,69%	-0,80%	-2,15%	-1,85%	-2,14%	-3,02%	-1,91%
Belgium HH NFA	208,04%	217,10%	230,69%	249,35%	279,56%	274,73%	262,99%	215,48%	211,77%	214,89%	222,00%	224,93%	211,98%	180,13%	210,45%
Belgium GOV NFA	-114,32	-113,00	-110,31	-108,54	-103,08	-97,60%	-95,10%	-93,25%	-90,34%	-83,83%	-82,12%	-77,32%	-73,28%	-73,84%	-80,20%
Belgium RotW NFA	-17,84%	-25,57%	-35,74%	-33,22%	-72,29%	-71,28%	-54,37%	-40,84%	-40,99%	-25,05%	-24,07%	-16,78%	-31,68%	-48,69%	-31,38%

Source: Eurostat

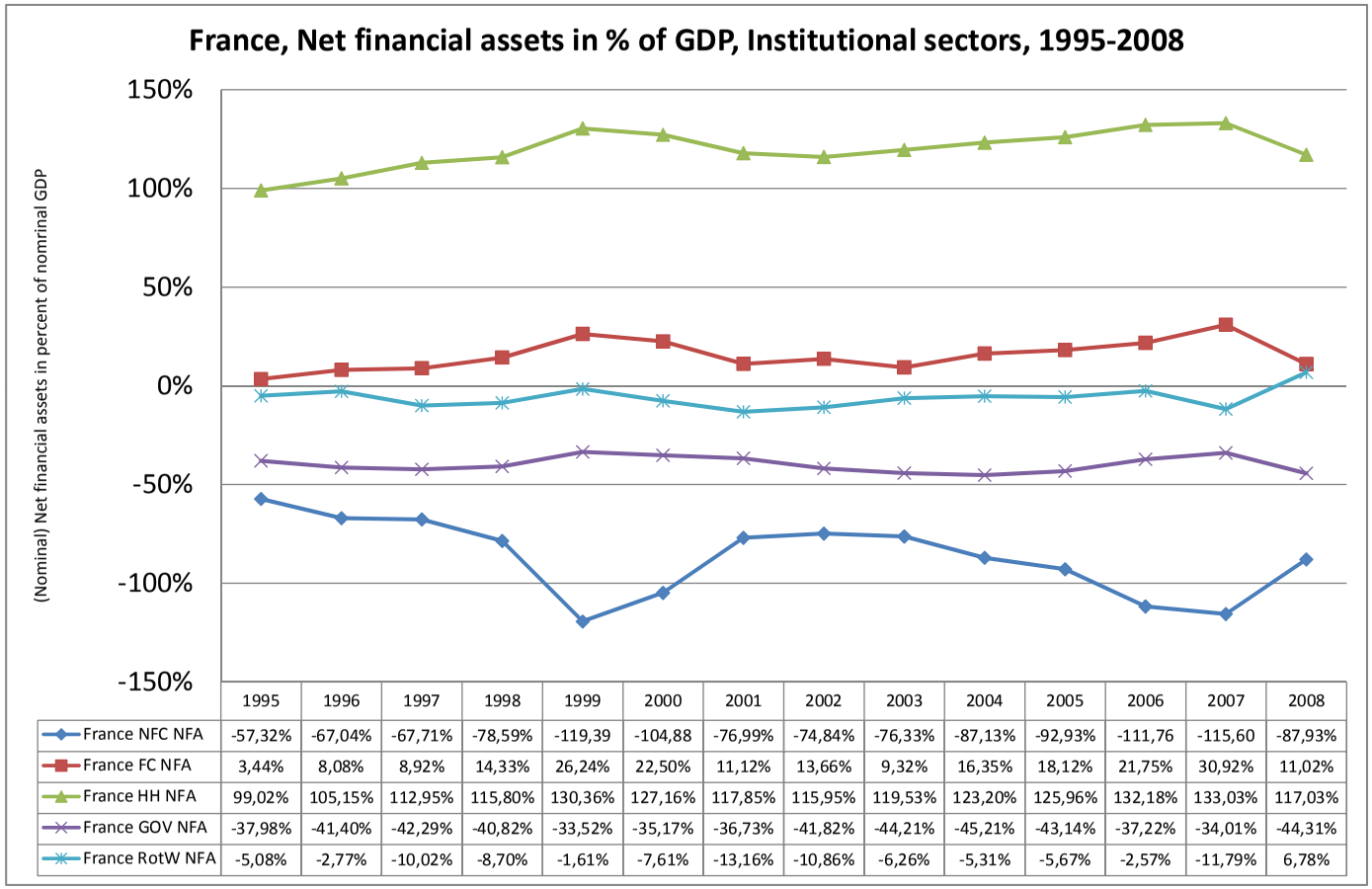
Figure A.36.: Net financial assets, Finland



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Finland NFC NFA	-88,89%	-98,76%	-99,53%	-146,86	-307,72	-264,37	-185,93	-131,70	-127,87	-124,59	-147,54	-156,99	-167,87	-105,78	-122,75
Finland FC NFA	1,35%	3,39%	1,24%	0,90%	5,73%	5,48%	3,29%	3,83%	2,53%	0,95%	1,29%	1,71%	3,24%	2,44%	0,15%
Finland HH NFA	37,36%	45,48%	48,24%	57,69%	76,88%	75,31%	68,16%	60,95%	65,96%	64,99%	71,02%	71,66%	63,50%	46,75%	58,60%
Finland GOV NFA	7,30%	6,72%	7,35%	14,68%	50,32%	31,11%	31,67%	31,34%	38,47%	46,71%	58,64%	69,47%	72,57%	52,45%	62,68%
Finland RotW NFA	43,63%	43,86%	43,36%	74,26%	175,41%	152,93%	83,35%	36,08%	21,36%	12,35%	17,12%	14,70%	29,14%	4,76%	2,79%

Source: Eurostat

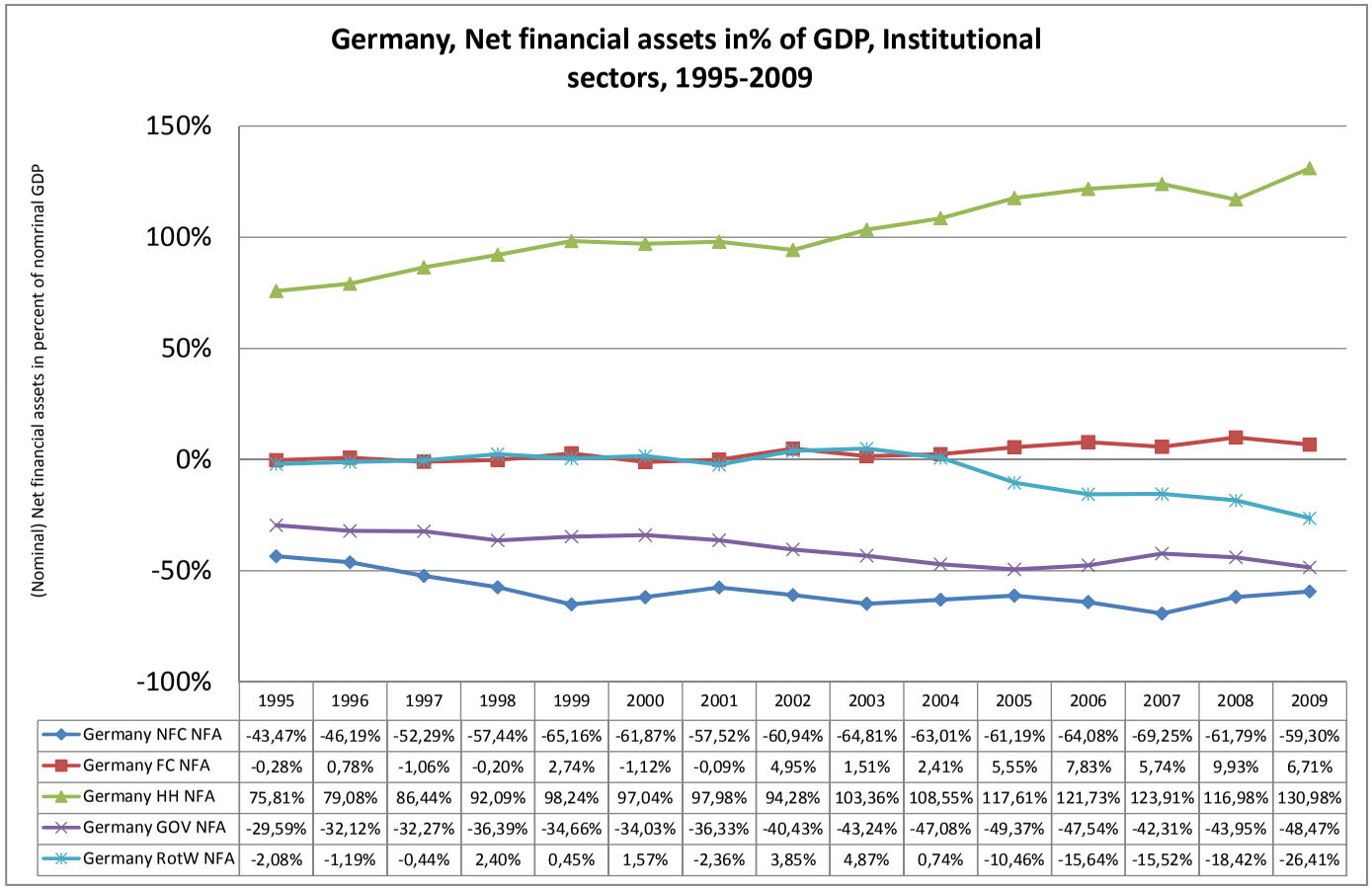
Figure A.37.: Net financial assets, France



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
France NFC NFA	-57,32%	-67,04%	-67,71%	-78,59%	-119,39	-104,88	-76,99%	-74,84%	-76,33%	-87,13%	-92,93%	-111,76	-115,60	-87,93%
France FC NFA	3,44%	8,08%	8,92%	14,33%	26,24%	22,50%	11,12%	13,66%	9,32%	16,35%	18,12%	21,75%	30,92%	11,02%
France HH NFA	99,02%	105,15%	112,95%	115,80%	130,36%	127,16%	117,85%	115,95%	119,53%	123,20%	125,96%	132,18%	133,03%	117,03%
France GOV NFA	-37,98%	-41,40%	-42,29%	-40,82%	-33,52%	-35,17%	-36,73%	-41,82%	-44,21%	-45,21%	-43,14%	-37,22%	-34,01%	-44,31%
France RotW NFA	-5,08%	-2,77%	-10,02%	-8,70%	-1,61%	-7,61%	-13,16%	-10,86%	-6,26%	-5,31%	-5,67%	-2,57%	-11,79%	6,78%

Source: Eurostat

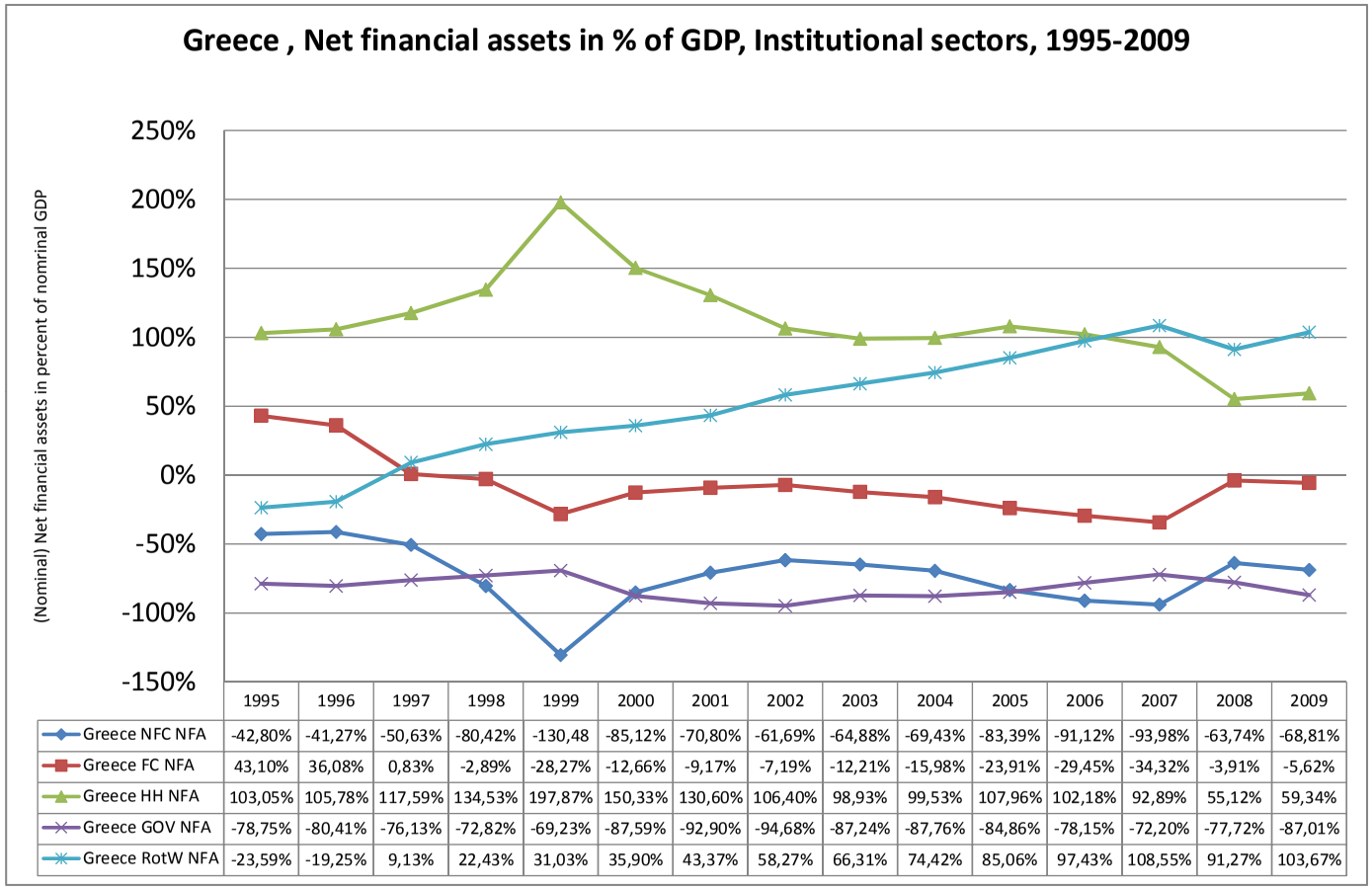
Figure A.38.: Net financial assets, Germany



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Germany NFC NFA	-43,47%	-46,19%	-52,29%	-57,44%	-65,16%	-61,87%	-57,52%	-60,94%	-64,81%	-63,01%	-61,19%	-64,08%	-69,25%	-61,79%	-59,30%
Germany FC NFA	-0,28%	0,78%	-1,06%	-0,20%	2,74%	-1,12%	-0,09%	4,95%	1,51%	2,41%	5,55%	7,83%	5,74%	9,93%	6,71%
Germany HH NFA	75,81%	79,08%	86,44%	92,09%	98,24%	97,04%	97,98%	94,28%	103,36%	108,55%	117,61%	121,73%	123,91%	116,98%	130,98%
Germany GOV NFA	-29,59%	-32,12%	-32,27%	-36,39%	-34,66%	-34,03%	-36,33%	-40,43%	-43,24%	-47,08%	-49,37%	-47,54%	-42,31%	-43,95%	-48,47%
Germany RotW NFA	-2,08%	-1,19%	-0,44%	2,40%	0,45%	1,57%	-2,36%	3,85%	4,87%	0,74%	-10,46%	-15,64%	-15,52%	-18,42%	-26,41%

Source: Eurostat

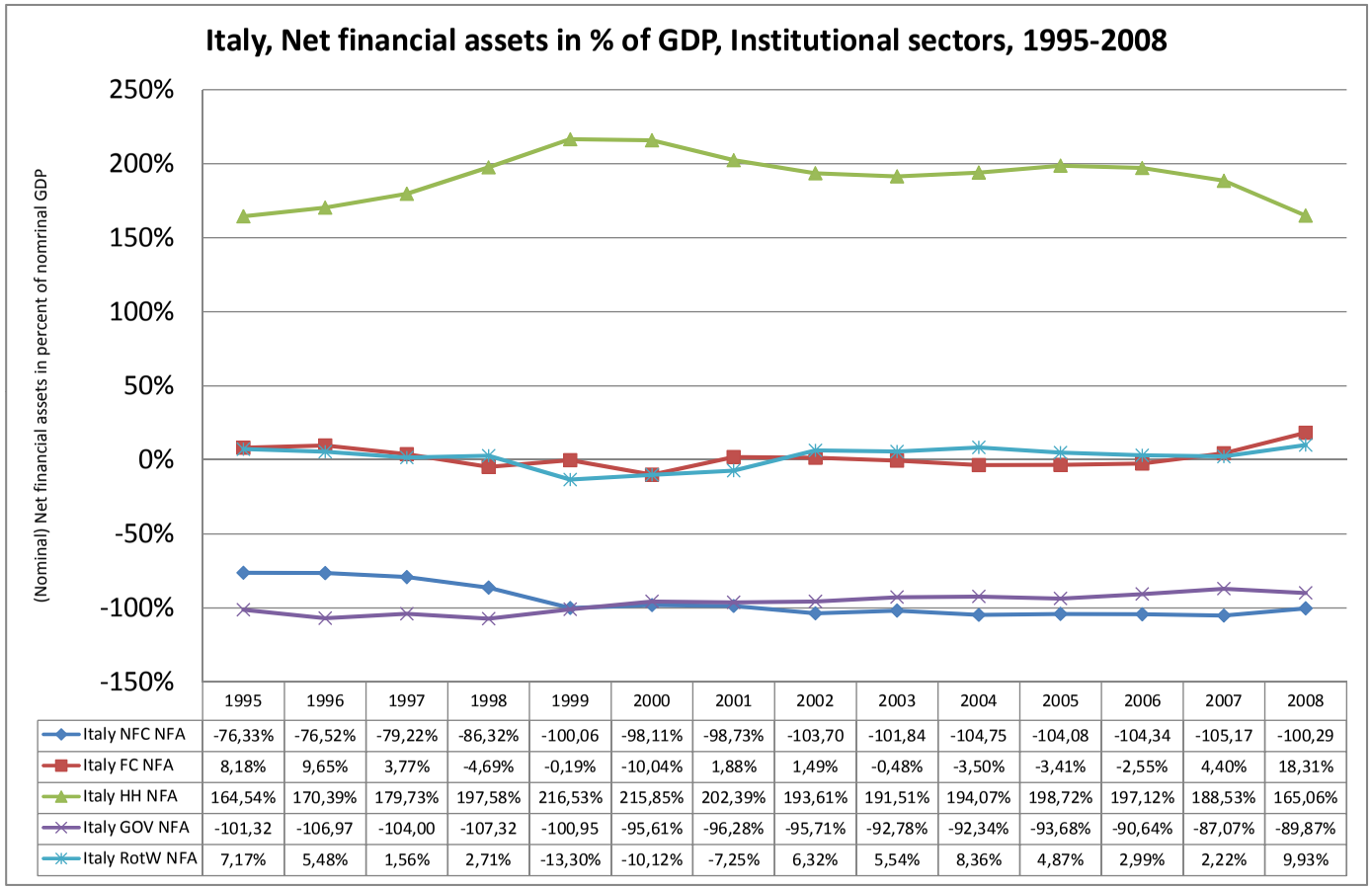
Figure A.39.: Net financial assets, Greece



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Greece NFC NFA	-42,80%	-41,27%	-50,63%	-80,42%	-130,48	-85,12%	-70,80%	-61,69%	-64,88%	-69,43%	-83,39%	-91,12%	-93,98%	-63,74%	-68,81%
Greece FC NFA	43,10%	36,08%	0,83%	-2,89%	-28,27%	-12,66%	-9,17%	-7,19%	-12,21%	-15,98%	-23,91%	-29,45%	-34,32%	-3,91%	-5,62%
Greece HH NFA	103,05%	105,78%	117,59%	134,53%	197,87%	150,33%	130,60%	106,40%	98,93%	99,53%	107,96%	102,18%	92,89%	55,12%	59,34%
Greece GOV NFA	-78,75%	-80,41%	-76,13%	-72,82%	-69,23%	-87,59%	-92,90%	-94,68%	-87,24%	-87,76%	-84,86%	-78,15%	-72,20%	-77,72%	-87,01%
Greece RotW NFA	-23,59%	-19,25%	9,13%	22,43%	31,03%	35,90%	43,37%	58,27%	66,31%	74,42%	85,06%	97,43%	108,55%	91,27%	103,67%

Source: Eurostat

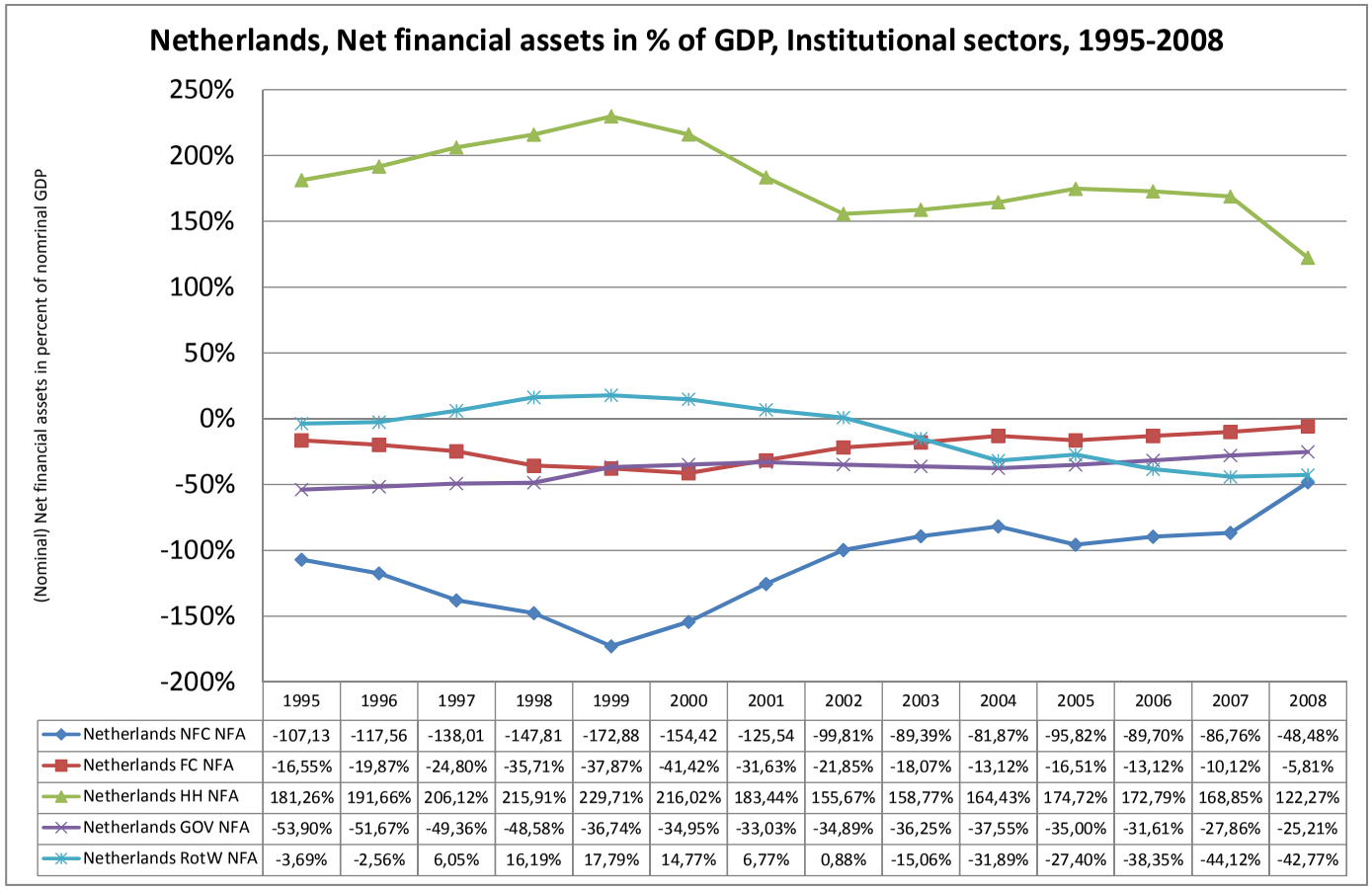
Figure A.40.: Net financial assets, Italy



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Italy NFC NFA	-76,33%	-76,52%	-79,22%	-86,32%	-100,06	-98,11%	-98,73%	-103,70	-101,84	-104,75	-104,08	-104,34	-105,17	-100,29
Italy FC NFA	8,18%	9,65%	3,77%	-4,69%	-0,19%	-10,04%	1,88%	1,49%	-0,48%	-3,50%	-3,41%	-2,55%	4,40%	18,31%
Italy HH NFA	164,54%	170,39%	179,73%	197,58%	216,53%	215,85%	202,39%	193,61%	191,51%	194,07%	198,72%	197,12%	188,53%	165,06%
Italy GOV NFA	-101,32	-106,97	-104,00	-107,32	-100,95	-95,61%	-96,28%	-95,71%	-92,78%	-92,34%	-93,68%	-90,64%	-87,07%	-89,87%
Italy RotW NFA	7,17%	5,48%	1,56%	2,71%	-13,30%	-10,12%	-7,25%	6,32%	5,54%	8,36%	4,87%	2,99%	2,22%	9,93%

Source: Eurostat

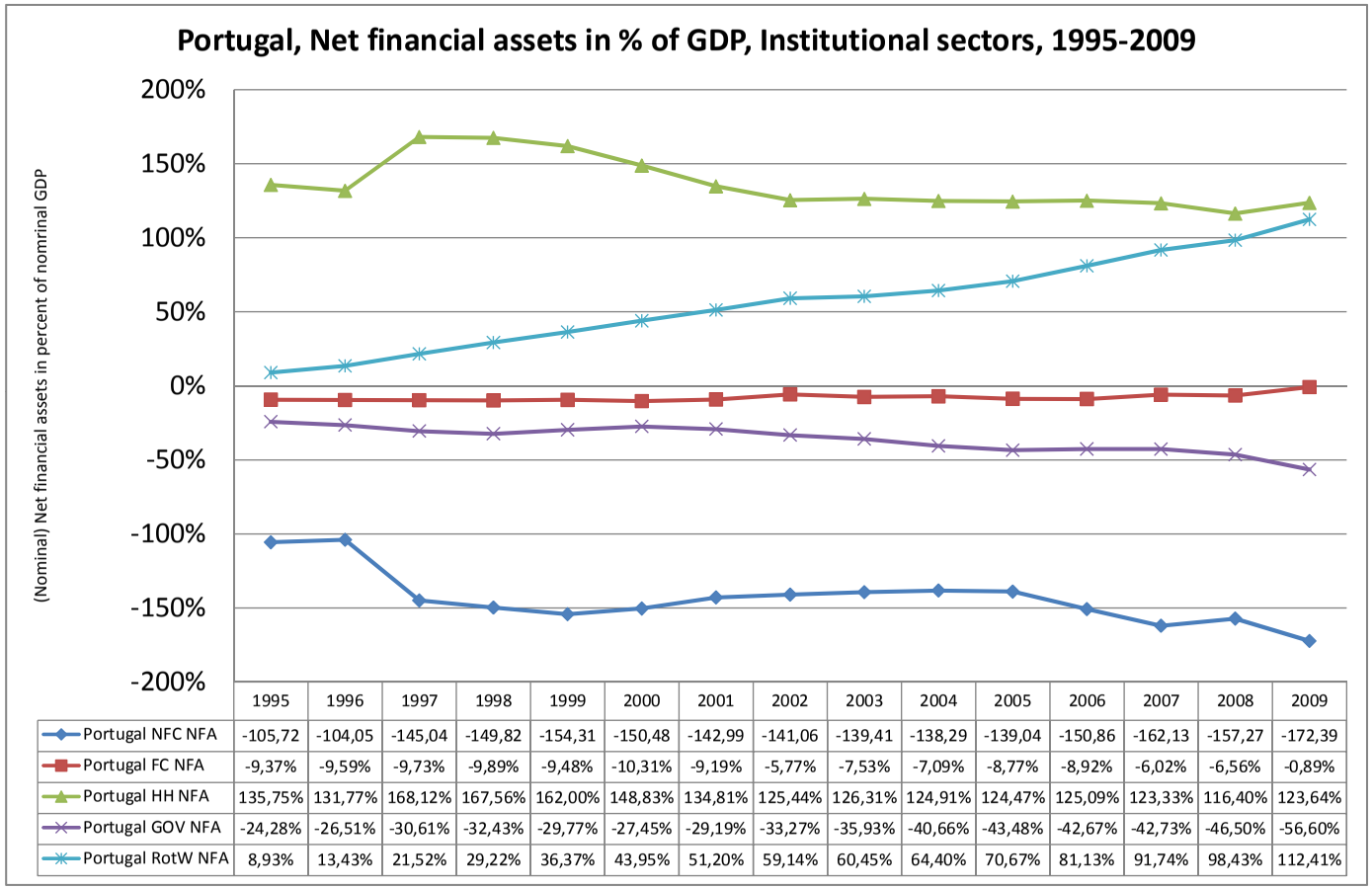
Figure A.41.: Net financial assets, Netherlands



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Netherlands NFC NFA	-107,13	-117,56	-138,01	-147,81	-172,88	-154,42	-125,54	-99,81%	-89,39%	-81,87%	-95,82%	-89,70%	-86,76%	-48,48%
Netherlands FC NFA	-16,55%	-19,87%	-24,80%	-35,71%	-37,87%	-41,42%	-31,63%	-21,85%	-18,07%	-13,12%	-16,51%	-13,12%	-10,12%	-5,81%
Netherlands HH NFA	181,26%	191,66%	206,12%	215,91%	229,71%	216,02%	183,44%	155,67%	158,77%	164,43%	174,72%	172,79%	168,85%	122,27%
Netherlands GOV NFA	-53,90%	-51,67%	-49,36%	-48,58%	-36,74%	-34,95%	-33,03%	-34,89%	-36,25%	-37,55%	-35,00%	-31,61%	-27,86%	-25,21%
Netherlands RotW NFA	-3,69%	-2,56%	6,05%	16,19%	17,79%	14,77%	6,77%	0,88%	-15,06%	-31,89%	-27,40%	-38,35%	-44,12%	-42,77%

Source: Eurostat

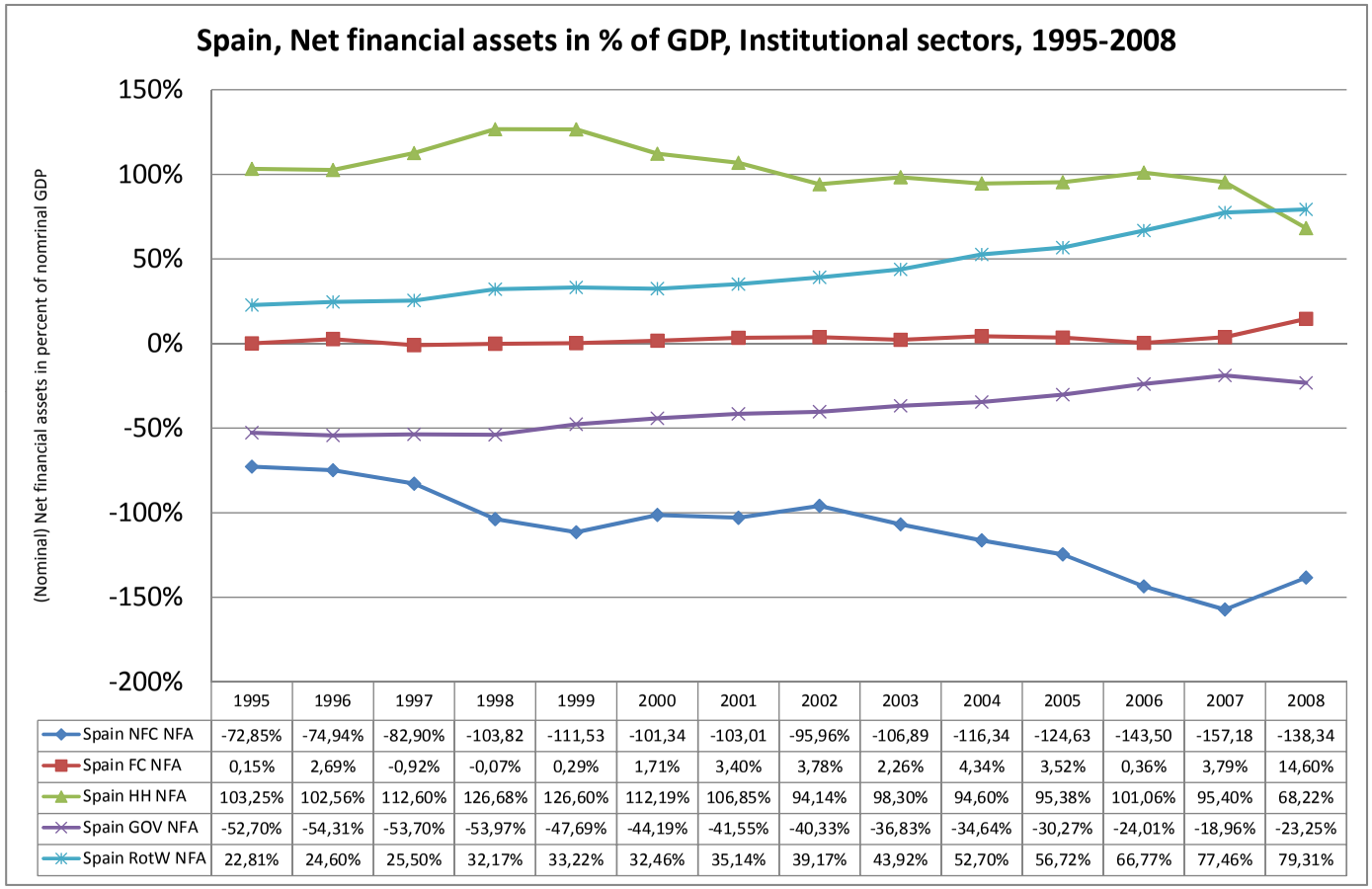
Figure A.42.: Net financial assets, Portugal



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Portugal NFC NFA	-105,72	-104,05	-145,04	-149,82	-154,31	-150,48	-142,99	-141,06	-139,41	-138,29	-139,04	-150,86	-162,13	-157,27	-172,39
Portugal FC NFA	-9,37%	-9,59%	-9,73%	-9,89%	-9,48%	-10,31%	-9,19%	-5,77%	-7,53%	-7,09%	-8,77%	-8,92%	-6,02%	-6,56%	-0,89%
Portugal HH NFA	135,75%	131,77%	168,12%	167,56%	162,00%	148,83%	134,81%	125,44%	126,31%	124,91%	124,47%	125,09%	123,33%	116,40%	123,64%
Portugal GOV NFA	-24,28%	-26,51%	-30,61%	-32,43%	-29,77%	-27,45%	-29,19%	-33,27%	-35,93%	-40,66%	-43,48%	-42,67%	-42,73%	-46,50%	-56,60%
Portugal RotW NFA	8,93%	13,43%	21,52%	29,22%	36,37%	43,95%	51,20%	59,14%	60,45%	64,40%	70,67%	81,13%	91,74%	98,43%	112,41%

Source: Eurostat

Figure A.43.: Net financial assets, Spain



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Spain NFC NFA	-72,85%	-74,94%	-82,90%	-103,82	-111,53	-101,34	-103,01	-95,96%	-106,89	-116,34	-124,63	-143,50	-157,18	-138,34
Spain FC NFA	0,15%	2,69%	-0,92%	-0,07%	0,29%	1,71%	3,40%	3,78%	2,26%	4,34%	3,52%	0,36%	3,79%	14,60%
Spain HH NFA	103,25%	102,56%	112,60%	126,68%	126,60%	112,19%	106,85%	94,14%	98,30%	94,60%	95,38%	101,06%	95,40%	68,22%
Spain GOV NFA	-52,70%	-54,31%	-53,70%	-53,97%	-47,69%	-44,19%	-41,55%	-40,33%	-36,83%	-34,64%	-30,27%	-24,01%	-18,96%	-23,25%
Spain RotW NFA	22,81%	24,60%	25,50%	32,17%	33,22%	32,46%	35,14%	39,17%	43,92%	52,70%	56,72%	66,77%	77,46%	79,31%

Source: Eurostat

B. Debt Dynamics

The following discussion may be applied on both external debt and public debt. With public debt, the corresponding primary balance is the government balance excluding interest payments. With external debt (private and public debt together), the respective primary balance is the current (external) account balance excluding interest payments. In general, debt dynamics (Ley, 2009, Eq. 2) show that for the evolution of a debt to GDP ratio, the following formula can be used:

$$\frac{D_t}{P_t \times Y_t} = \frac{(1+i_t)}{(1+g_t)\times(1+\pi_t)} \times \frac{D_{t-1}}{P_{t-1}\times Y_{t-1}} - \frac{B_t}{P_t \times Y_t} - \frac{\Delta M_t}{P_t \times Y_t}$$

where $\frac{D_t}{P_t \times Y_t}$ is the (nominal) debt to (nominal) GDP ratio, i_t the nominal interest rate, g_t the real GDP growth rate, π_t the inflation rate, $\frac{B_t}{P_t \times Y_t}$ is the primary balance (overall government balance without interest cost) and ΔM_t the part of financing that is not done through government debt issuance but monetary financing by the central bank (increasing bank reserves or currency).

After some manipulations (Ley, 2009, up to Eq. 11), the change in debt can be represented such that

$$\Delta \frac{D_t}{P_t \times Y_t} = \frac{(r_t - g_t)}{(1+g_t)} \times \frac{D_{t-1}}{P_{t-1}\times Y_{t-1}} - \frac{B_t}{P_t \times Y_t}$$

where r_t is the real interest rate and g_t is the real GDP growth rate.

A debt-stabilizing balance can be derived by setting $\Delta \frac{D_t}{P_t \times Y_t} = 0$, and then reading from the equation $\frac{B*_t}{P_t}$, the required primary surplus (including monetary financing) that is the minimum number to stabilize the debt ratio, where any larger surplus would bring down the ratio:

$$\frac{B_t*}{P_t \times Y} = \frac{(r_t - g_t)}{(1+g_t)} \times \frac{D_{t-1}}{P_{t-1}\times Y_{t-1}}$$

The interpretation of the formula is straightforward: The required primary surplus in terms of GDP to stabilize the debt to GDP ratio depends a) on the level of the debt to GDP ratio as a scale effect and b) on the real interest to real GDP growth rate

differential[1]. If this differential is zero, then the primary balance may be zero as well. If the real interest rate lies above the real growth rate, a primary surplus is required to keep the debt ratio constant. If real growth is above the real interest rate, a certain amount of Ponzi-financing is possible (the debt ratio will remain constant despite a persistent deficit in the primary balance).

[1]There is also an effect whereby a higher real growth rate lowers the required primary surplus at a given real interest to real growth rate differential.

C. Abstract: English

The *euro zone crisis* is a crisis of confidence of financial markets in the economic governance and cohesion of the eurozone. A major cause of the crisis were the unprecedented current account imbalances between euro zone member countries and the resulting divergence in net foreign assets positions since 1999. The European Monetary Union (EMU) was founded to do without permanent fiscal transfers, but this requires that large permanent current account imbalances must not occur.

With regard to policy, we first discuss the deficiencies in the current eurozone governance. Secondly, we proceed to discuss reform proposals to EMU governance that were made over the past months, among those a pact on current account imbalances or the introduction of an economic government for the euro zone. The proposals are evaluated especially in light of their ability to solve current account imbalance issues while not impinging on future growth prospects for the area.

In order to achieve a theoretical macroeconomic discussion of current account balances, we use the financial balances approach and dynamic „Stock flow consistent models“ of the euro zone. The major result of the verbal, theoretical and empirical presentation is that growth prospects in the euro zone will be unfavorable if the current account deficit countries undergo internal devaluation and cut government expenditures while the surplus countries remain passive. More favorable growth prospects are possible only when the current account surplus countries take up their European role and increase domestic demand through expansive fiscal and wage policies.

D. Abstract: Deutsch

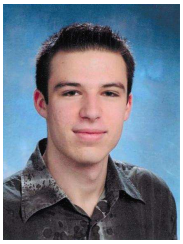
Die *Euro-Krise* ist vor allem eine Vertrauenskrise in den ökonomischen und politischen Zusammenhalt der Eurozone mit ihren bisherigen Spielregeln. Eine der Hauptursachen der Krise sind die in diesem Ausmaß noch nicht dagewesenen Ungleichgewichte in den Leistungsbilanzen der Mitgliedsländer seit 1999, sowie die sich daraus ergebenden enormen Auslandsvermögen bzw. Auslandsschulden. Das Grundproblem dabei ist, dass in einer Währungsunion, die ursprünglich ohne permanente Fiskaltransfers konzipiert wurde, auch keine permanenten Leistungsbilanzgewichte vorhanden sein dürfen.

Im Hinblick auf diese Problematik wird in der Diplomarbeit das Versagen der bisherigen Governance der Eurozone erläutert. Anschließend werden die zahlreichen Reformvorschläge der letzten Monate diskutiert, unter anderem ein Verfahren zur Korrektur und Bestrafung von Leistungsbilanzungleichgewichten oder die Einführung einer europäischen Wirtschaftsregierung. Die Bewertung dieser Vorschläge geschieht insbesondere im Hinblick auf deren Fähigkeit, sowohl die Leistungsbilanzungleichgewichte zu korrigieren als auch die Aussichten für künftiges Wirtschaftswachstum nicht gänzlich zunichte zu machen.

Um eine makroökonomische Dimension und Einordnung der Leistungsbilanzungleichgewichte zu gewährleisten ist die Saldenmechanik und deren dynamische Version, sogenannte „Stock-Flow consistent“ Modelle, besonders geeignet. Das Resultat sowohl der empirischen, verbalen und theoretisch modellbasierten Analyse ist, dass die Wachstumsaussichten des Euroraums im nächsten Jahrzehnt schlecht sind, wenn nur die Länder mit Leistungsbilanzdefiziten konsolidieren (müssen), während die Überschussländer passiv bleiben. Positivere Wachstumsaussichten gibt es dann, wenn sich auch die Überschussländer ihrer Verantwortung bewusst werden und expansive Fiskal- und Lohnpolitiken einleiten.

E. Lebenslauf

Curriculum Vitae



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Vater	Walter Picek, Firma Mediaprint
Mutter	Marina Picek, Sozialversicherungsangestellte

Ausbildung

1991 bis 2004	Besuch der Volksschule und des Gymnasiums in Wien, Matura mit Auszeichnung
Sommersemester 2003	Schüleraustausch in den USA und Abschluss mit Auszeichnung an der Anderson County High School, Kentucky
Seit Wintersemester 2004	Studium der Volkswirtschaftslehre an der Universität Wien (und der Wirtschaftsuniversität Wien)
Studienjahr 2008/09	einjähriger Erasmus-Aufenthalt an der Université Panthéon-Sorbonne (Paris I), Frankreich

Praktika & Berufstätigkeit

Sommer 2005	Praktikum in der Wirtschaftsredaktion der Tageszeitung Kurier
Sommer 2006	Praktikum bei der BAWAG P.S.K., Abteilung Volkswirtschaft & Research
Frühjahr und Herbst 2007	Mitarbeit am Österreichischen Institut für Wirtschaftsforschung (WIFO) in Wien bei Dr. Margit Schratzenstaller
Sommer 2007	Praktikum am Institut für Makroökonomie und Konjunkturforschung (IMK) der Hans-Böckler-Stiftung in Düsseldorf
Sommer 2008	Summer School des IMK in Berlin

2008/09	Mehrere Präsentationen der Studie zur „Financial Transaction Tax“ (siehe Publikationen) in Brüssel im Auftrag des Ökosozialen Forums und des Deutschen Gewerkschaftsbundes

Besondere Kenntnisse

Sprachen	Englisch (exzellent), Französisch (fließend), Latein
EDV	Word, Excel, Power Point, E-Views, Latex, R

Publikationen

Berghuber Bernd, Picek Oliver, Schratzenstaller Margit: *Perspektiven der Erbschafts- und Schenkungssteuer in Österreich*, Österreichisches Institut für Wirtschaftsforschung (WIFO), Juni 2007
http://www.wifo.ac.at/wwa/jsp/index.jsp?typeid=8&display_mode=2&fid=23923&id=29518
Schulmeister Stephan, Schratzenstaller Margit, Picek Oliver: *A General Financial Transaction Tax – Feasibility and Effects*, WIFO, Januar 2008
http://www.wifo.ac.at/wwa/jsp/index.jsp?typeid=8&display_mode=2&fid=23923&id=31819
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http://www.wifo.ac.at/wwa/jsp/index.jsp?typeid=8&display_mode=2&fid=23923&id=33940
Buczko et al.: *Ökosoziale Marktwirtschaft für eine zukunftsfähige Gesellschaftsordnung – Wissenschaftliches Hintergrundpapier*, Vienna, Juli 2010
http://www.oekosozial.at/uploads/tx_osfopage/2010_OEkosoziale_Marktwirtschaft-Hintergrundpapier_final.pdf

Extracurriculare Aktivitäten & Stipendien

Sommer 1999-2001	Sprachreisen in Südengland
2004-2010	Mitarbeit in der Studienrichtungsvertretung Volkswirtschaftslehre an der Universität Wien
März 2008	Ausbildung zum Skilehrer
Februar/März 2010	Arbeit in der Skischule Flachau sowie auf Schulskikursen

Leistungsstipendium der Universität Wien 2005
Arbeiterkammer Wien – Diplomarbeitsstipendium
Junior Fellowship – Österreichisches Institut für Wirtschaftsforschung