

Financial and Economic Health in European Member States: A Rational Management Theory

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Received: December 15, 2016

Accepted: February 20, 2017

Online Published: March 26, 2017

doi:10.5539/ijbm.v12n4p34

URL: <https://doi.org/10.5539/ijbm.v12n4p34>

Abstract

The last decades of the European Union have been sprinkled of several instability problems, fluctuating between the growth of some State and crises of some other, without reaching an economic stability unity. Even in the presence of the Stability and Growth Pact (SGP) agreement, most of the States failed to monitor their health and gradually achieve positive results in term of Sovereign Debt exposure, economic growth and population's happiness and satisfaction. According to the Rational Management Theory, any organization (both private or public, whatever the dimension) can be managed through three specific "rational" macro-phases. A first phase is called "Planning". In this phase, all the initiatives and actions are forecasted, planned and defined coherently with the vision, the mission, the target and the budget of the organization. In the second phase, named "Execution", those actions are implemented and performed. In the third phase, titled "Controlling", is conducted a gap analysis between the deliverable and the achieved performance, therefore corrective actions can be proposed and implemented. The three phases are cyclic and backed by several documents, in particular budgeting statements and reports, accountancy and final balance statement. In this framework, the European Union members can find a map to a better managerial system, even taking into account all the complexity that characterizes a State. To evaluate the financial and economic health gauge of European Union Member States, we propose to verify if some of the most acknowledged managerial tools of financial statement interpretation can provide some gauges for economic and financial health and even predict or enhance the Deficit/GDP Ratio and the other structural ratios of the SGP. The sample is extracted from the European Central Bank Statistical Warehouse, analyzing some of the most critical accounts for the General Governments and comparing them with the most famous structural financial stability measures. The comparison will be conducted on the panel of most of the EU Member States financial and economic data for the last two decades. This contribution intends to foster the improvement and development of a set of supplementary instruments for a better management based on accounting data and strengthened by the European System of Accounts (2010 version).

Keywords: economic health, European Union, financial statement, rational management theory, stability growth pact

1. Introduction

During the last decades in European Union, several problems concerning the financial, economic and social instability rose up. A fluctuation between outstanding growth in some State and severe crises of others characterized in particular the first fifteen years of the New Millennium. Despite of the monetary and economic union, the stability has never been reached, even in the presence of the Stability and Growth Pact (SGP).

Most of the Countries continuously failed in monitoring their financial health and in gradually achieving positive results in term of Sovereign Debt exposure, economic growth and population's happiness and satisfaction. In this situation of instability, several limitations have been set and the bar has been raised more and more, in particular for those of the Countries that faced the most severe crises. The high restrictions level and the conjuncture mixed effect caused the population to pay for past errors due to a bad public money management. In this contribution we propose to verify if some of the most acknowledged managerial tools of financial statement interpretation (e.g. Current Ratio, Leverage, and similar instruments derived from financial statement data), after an adaptation, can provide some gauges for economic and financial health and even predict or enhance the Deficit/GDP Ratio and the other structural ratios of the SGP.

The sample has been extracted from the European Central Bank Statistical Warehouse, analyzing some of the most

critical accounts for the General Governments and comparing them with the most famous structural financial stability measures. The comparison will be conducted on the panel of some representative of the EU Member States financial and economic data for the last two decades.

The intention of this contribution is to foster the improvement and development of a supplementary set of managerial instruments for a better policy making based on accounting data, strengthened by the mandatory implementation of the European System of Accounts in its 2010 version ("ESA 2010 - Overview - EUROSTAT" 2016).

Section 2 describes the Stability and Growth Pact and its criticalities and introduces to Rational Management Theory based on financial statements, section 3 outlines the ESA2010 framework, section 4 defines sample and methodology, section 5 analyzes data by the means of the proposed model, section 6 concludes.

2. A Rational Management Theory (RMT) and Public Policies

2.1 Stability and Growth Pact: a policy from the EU for the Member States Community Enhancement

The Stability and Growth Pact (SGP) is an agreement pledged by the European Union members in 1997 that fixes standards and thresholds to the public expenditure policies, auditing and control. It fosters the enforcement to the requirements of the 1992 Maastricht treaty by the member states, in order to achieve a stronger integration of the market and economic substrate in the Euro zone. Referring to articles 99 and 104 of the Treaty of Rome, establishing the European Economic Community, it implements a reinforcement of the Deficit and Public Debt watch policies and an infringement procedure for the excessive deficit situations.

In particular, it sets the maximum deficit of a member state at 3 percent points of the Gross Domestic Product (GDP) and the maximum stock of sovereign debt at 60 percent of the GDP. In the case of threshold overrun, the European Union should send a first early warning to the member state or an actual reprimand. The member state can counter to the warning, suspending temporarily the procedure; in case of inactivity, the member state will be fined.

This implies that the member states should achieve and maintain a budgetary position 'close to balance or in surplus' in the medium term. In order to comply with these rules, the member state must follow a strict fiscal discipline, providing the necessary space to automatic stabilizers.

The SGP has been criticized by several authors, both academics and professionals (Beetsma and Uhlig 1999; Buti 2007; Buti, Eijffinger, and Franco 2003; Buti, Franco, and Ongena 1997; Haan et al. 2003; Schuknecht et al. 2011), since it causes to reduce financial disposal for investment and growth policies and generates conflict of interest in the member states. The criticisms of the SGP can be overtook by enhancing the transparency of the balance sheet data and accounting of the member states and using more efficient and alternative financial sustainability analysis tools.

2.2 Rational Management Theory

The management of any organization, whether it is private or public, small or big, profit oriented or not for profit, is conceived through a complex process of continuous implementation of decisions and policies. Each of the single decision is built up through a sub-process, that has been also called Rational Management based on financial statements (Puddu 2008; Puddu 2010; Puddu 2011) that can be divided in three separate macro phases.

In the first phase the decision is conceived on the basis of perspective and retrospective data, by means of financial and non-financial resources allocation forecast. This phase, called of Planning, is particularly important in order to define, broadly speaking, the vision and the mission of the organization and, more specifically, defining the target and the related budget (Bhushan & Rai 2007). In the public sector management, in particular, in this phase the policy makers attempt to enhance the accountability of the decision makers and operators, and lays the foundations for any resource consumption. In particular, none of the resources that is not allotted can be consumed, and each consumption must correspond to an authorization (Potter and Diamond 1999). In order to achieve this accountability and the capability of authorization, a perspective financial statement (or budget) must be generated. In this financial statement any resource allocation is indicated and defines the maximum resources that can be used for the organization management.

The second macro phase, that naturally follows the planning one, consists in the execution of the forecasted activities. This phase, called of Execution, is founded on the budget allocations and is composed of a continuous process of unitary decisions that must generate continuous recording for actual resources consumption. The orderly, continuous and thorough recording is called accounting and permits to generate timely, precise and effective data prospectuses to enhance further decisions and gap analyses. In particular, several accounting systems

have been created and developed for the public sector, and almost all of them lay their foundations on the double entry accounting system of financial, economic data recorded on accrual basis (even if some of the actually applied systems are still only financial-data-driven and on cash basis). The use of a shared accounting system can enhance the decision making, the stakeholder-driven disclosure and the comprehensibility of the organization's activity, namely leading to a lower information asymmetry level and allowing other organization to generate synergies through linked policies.

The third step of decision making is represented by a phase of Controlling. In this phase, any organization must take under consideration what the budget forecasted and conduct gap analyses on the deliverables expected from the budget statement with the actual execution results recorded in accounting. This phase, generally crucial for the private sector and its stakeholders' information requirements, is way less considered in the public sector, despite being it really important for a better decision making and proper accountability of the policymakers. The control phase generally exploits financial statement and accounting prospectus to achieve better comprehension of what caused differences between the forecasted and the actual performance of the organization.

A Rational management based on financial statements acknowledges the three phases and the related documentation to be produced for accountability and better policymaking in a circular vision, and is repeated on the whole at least yearly. This process enhances the potential efficiency and effectiveness of an organization and contributes to the creation of a clearer map of the actual value generation through the organization's activity. Thus, a rational management is always focused on People and their requirements (Puddu 2010) and the value generation can be considered both under the economic/financial dimension and the non-financial one, in order to maximize all the results and meet all the stakeholders' requirements and needs.

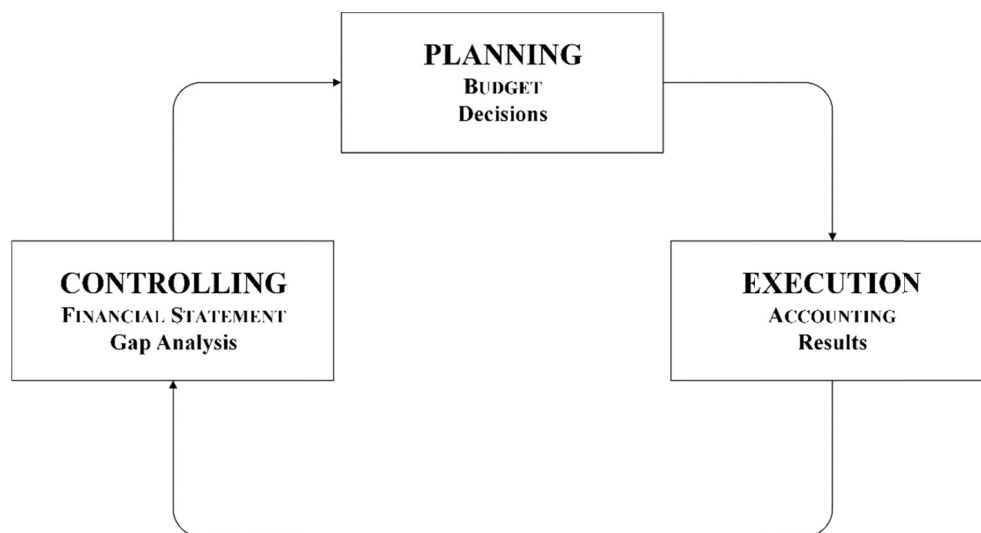


Figure 1. RMT cycle - source: our adaptation (from Puddu 2008)

2.3 SGP and RMT: Two Acronyms, Two Paths

In this theoretical framework of threefold subdivision of the management, the implementation of the SGP thresholds is conducive of a profound influence on the policies of the member states. As seen, the European Union is capable of penalizing a Country by the means of a single ratio based on only two "bottom-lines", which are the GDP and the Deficit, without any regard to expansive and positive long-term impact policies. In particular, it occurs because the focus of the European Union is concentrated only on the third phase of the Rational Management, the Controlling's one. This signifies to analyze only a final result, which is influenced by a great number of policies in plenty of sectors and subjects, overlooking to other two similarly important moments of the decisional process.

By this perspective, the Stability and Growth Pact measures ought not to be the one and only gauge of the financial health of a Nation, but it is necessary to find some alternative solutions to manage wealth and wellness in the member States, to conduce to a better, and synergic, growth.

3. The European System of Accounts (ESA 2010)

3.1 Introduction

The European System of Accounts (ESA 2010) is an accounting methodology for National and Regional Accounting (EUROSTAT 2016). It consists of a coherent ensemble of accounts that proposes a quantitative and monetary description of the economic activity. It is a useful support for the structural and dynamic characteristics of an economic system such as a Nation, and it fulfills the requirements of forecasting, monitoring and analysis for the policy makers and the economic politics. The system is based on a series of identity (one-to-one) relations. Each member of the relation can be considered as the section of an account for financial incomes, outflow, revenues and expenditures through schemes that trace the enterprises system of accounts. This identity is also recognizable as a double entry accounting system.

The main purpose of the ESA is to classify the complex economic activity of a National organization and summarize it in a close number of fundamental categories and report it in a consistent macroeconomic framework.

The ESA identifies:

- The economic institutional units and their groupings;
- The operations of sectors and branches and the related economic flows and stocks.
- A system of accounts for the flows and stock variations, including
 - Current operations accounts;
 - Assets account
- A framework for the interdependencies between institutional units, by the means of three input-output tables.

Each unit of each sector performs operations that are conducive of income creation, allocation, redistribution and consumption. The accounts for current operations balance with the public savings, that are the primary source of accumulation. Other accounts record the variations that intervene into the assets and liabilities of the State and of each sector and conduce to the measurement of the National equity, that is structured in sub-accounts.

The input-output tables analyze the relations between the different economic sectors (or their aggregates), providing a thorough description of the resources production and consumption processes and the related financial flows generation.

3.2 Operators

The operators are those institutional units that have – or are capable of having – a complete system of accounting and have decisional autonomy for their main activity. The ESA groups them in five institutional sectors on the basis of the main qualities of the activity, in order to describe the income, expenditure and financial flows and the equity variations. The first category is represented by non-financial corporations and quasi-corporations, that produce goods and services for sale. A second category is composed by the financial corporations (banks and insurance), namely the intermediaries in finance and insurance. Both of these two categories are profit and equity-accumulation oriented. A third category includes the public administration and general government, that produces mainly services not intended for sale (e.g. public utilities), redistribute the National income and wealth (through fiscal policies) and contribute to the collective consumption and accumulation. A fourth category includes the private social institutions devoted to families (parties, labor unions, religious organizations, cultural and sports associations, philanthropy and caring institutions), that produce services not intended for sale but for private consumption. The fifth and last category includes families and households, that consume goods and services produced by the other sectors, but can also produce (enterprises) and accumulate equity. The ESA provides also a definition for the homogeneous productive unities, that are groupings of similar activities based on a shared European nomenclature (NACE) in order to describe the production process and allow input-output analyses.

A further distinction is given between the resident and non-resident operators, depending on whether they have their center-of-interest in the economic territory of the Nation, or of the Union, or not.

3.3 Flows and Stocks

The accounting system of the ESA is organized in two accounting dimensions: the former are the flows, which are the (financial) effects of a series of events in a period of time; the latter are the stocks, which are the dimension of an account (asset or liabilities) at a given point of time (generally speaking, at the start or at the end of the accounting period).

The flows have a threefold origin:

- production and destination of goods and services;
- operations on distribution and redistribution of income and wealth;
- financial asset acquisitions and divestitures;

plus, a residual category for those operations that are not related to the previous (depreciations, non-produced financial assets exchanges). Each operation can have a counterpart or not; in the first case, for each cash or good/service flow there is an offset flow of the same amount; in the second case (e.g. pension and welfare payments) there is not a direct offset: those operations are called “transfers”.

The stocks are classified into:

- produced non-financial assets: tangibles, intangibles, inventories and valuables;
- non-produced non-financial assets: tangibles (such as land plots, mines, hydrogeological resources, and more in general natural resources), and intangibles (goodwill, patents, leases, and so on);
- financial assets: gold, currencies, deposits, shares, bonds, loans, insurances, etc.

3.4 Sequence of Accounts

The ESA 2010 sequence of accounts is divided into macro categories. The first macro-category is composed by the current accounts. This macro category includes

- The “production” account, which shows the transactions relating to the production process;
- The “distribution and use of income” accounts, to analyze the primary distribution, the generation of income, the allocation of primary income and the redistribution in kind or use of the income, and includes:
 - The “primary distribution of income” account;
 - The “generation of income” and the “allocation of primary income” accounts;
 - The “entrepreneurial income” account;
 - The “allocation of other primary income”, the “secondary distribution of income” accounts and the “redistribution of income in kind” account;
 - The “use of income” (gross, of disposable and of adjusted disposable income) accounts

The second macro-category is represented by the accumulation accounts. Those are flows accounts, recording the various causes of changes in assets and liabilities and related net worth, which includes:

- The capital account, for measuring the acquisitions and disposals of non-financial assets, the variation in net worth and the capital transfer, and includes:
 - The “change in net worth due to saving and capital transfers” account;
 - The “acquisitions of non-financial assets” account;
- The “financial” account, to record the variations in financial assets;
- The “other changes in assets” and “other changes in volume of assets” accounts and the “revaluation” account, that includes the “neutral holding gains and losses” and “real holding gains and losses” accounts.

A third macro-category is composed by the balance sheets, that includes the opening balance sheet, the variation in balance sheets and the closing balance sheet. This threefold structure is also coherent with the formerly recalled Rational Management Theory.

4. Sample and Methodology

The most acknowledged financial statement analysis tools, such as current ratio and equity/asset (also known as financial leverage) ratio, are normally considered as primary gauges of financial health and sustainability. In a government balance sheet, the members of the ratio are not so easy to retrieve, in particular when we come to a standardized accounting framework such as ESA2010. In this contribution, we propose to compare some balance sheet stock to analyze its relation with the Deficit/GDP ratio through a graphical and descriptive comparison.

Our sample is extracted from the European Central Bank’s (ECB) statistical data warehouse (ECB-SDW)(“ECB Statistical Data Warehouse” 2016). The ECB-SDW consents the extraction of a pivot Excel worksheet containing the entire database, related to a more or less specific topic, depending on the selected proxies. We retrieve, in particular:

- Data related to Euro Area Accounts, and in particular the stocks of assets and liabilities, with quarterly frequency, from the “Financial balance sheets and non-financial assets”;
- Data related to the Deficit/Surplus, with quarterly and annual frequency.

The extracted databases are generated (and maintained) by the ECB through the implementation of the European Standard of National and Regional Accounts in its 2010 version. In particular, the retrieved data is related to the operator/unit “General Government”, including both the Central and the Regional units.

The assets and liabilities, both financial and non-financial, are selected from the Quarterly Sector Accounts (QSA) with the following proxies:

- Frequency: quarterly, reducing the selection to the 2nd and the 4th quarter (i.e., June 30th and December 31st of each year from 2004 to 2015) [on QSA the proxy is called Q];
- Adjustment indicator: the data are adjusted neither seasonally nor on calendar basis [proxy N];
- Counterpart area: we consider the operations with all the World (all units) [proxy W0];
- Reference sector: General Government [proxy S13];
- Counterpart sector: Total economy [proxy S1];
- Consolidation: yes [proxy C];
- Accounting Entries: (net acquisition of) assets [proxy A] and (net incurrence of) liabilities [proxy L];
- Stocks, Transactions, Other Flows: we take under consideration the Closing Balance Sheet positions and stocks [proxy LE];
- Currency denominator and Unit of measure: all currencies [proxy _T], the unit of measure is the Domestic Currency [proxy XDC];
- Valuation and Prices: the valuation is based on the ESA [proxy S] at current prices [proxy V], without transformation [proxy N];
- Instruments and assets classification: we consider the total Assets and Liabilities [proxy F];
- Countries: we took under considerations all the countries of the European Union (28 countries).

The first sample is composed by 497 entries considering both assets and liabilities, at each date, for each Country. We calculated the ratio between Assets and Liabilities, multiplying it by 100 to obtain a percent value, for each Country under consideration.

The second sample is related to the Deficit/Surplus to Gross Domestic Product ratio, extracted from the ESA Deficit/Surplus database in the Government Finance Statistics section of the ECB-SDW. Applying the same Country and date proxies, the sample results to be composed by 672 entries. This dataset is larger than the former because some Country data for assets and liabilities hasn't been recorded for some of the years we took under consideration.

In order to compare the retrieved data, we merged the samples by date and Country, eliminating those entries that have missing data in one of the two datasets. This operation results in a dataset of 497 entries, sorted by date and Country.

The comparison is both graphical and statistical; by the means of a mono-variate classic linear regression model with the OLS estimator, where the model is

$$DGDPRATIO = \beta_0 + \beta_1 ASLI$$

where DGDPRATIO stands for Deficit/GDP Ratio, which is set to be the dependent variable, and ASLI stands for Assets/Liabilities ratio, which is set to be the explanatory variable. The comparison and the regression have been divided by Country.

The dataset, data key and data descriptive statistics can be found in the appendixes.

5. Comparative Data of EU28

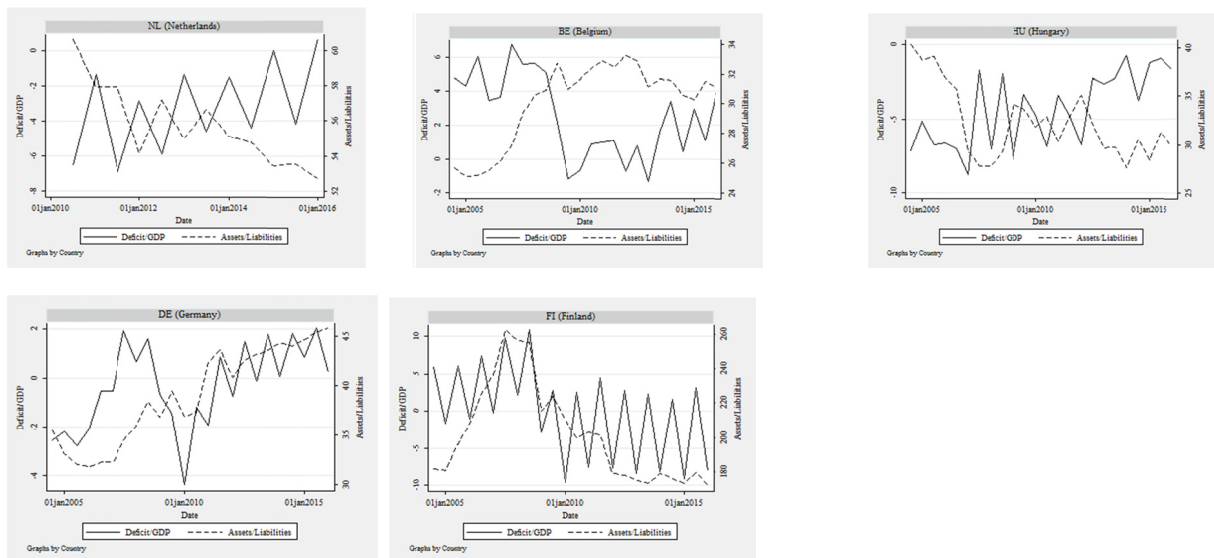
We propose hereunder the comparative data between the selected variables with both the methodologies. The data are sorted by significance of the coefficient (*p*-value at least smaller than 0.05) and adaptability of the model (*R*-squared value). (Note 1)

The results of the model applied to Netherlands, Belgium, Hungary, Germany and Finland resulted in a statistically significant correlation between the Assets/Liabilities ratio and the Deficit/GDP ratio and a *R*-squared value greater

than 0.25. The correlation is negative in the first three countries and positive in the last two countries.

Table 1. Relevant and significant regression estimates

	$y = dgdpratio$	Coeff. (β)	Std.Err.	t	P>t	[95% Conf. Interval]	Significant?
NL	ASLI	-0.7385	0.2555	-2.8900	0.0160	-1.3078 -0.1691	*
	intercept	37.9365	14.2576	2.6600	0.0240	6.1686 69.7043	
	R-squared	0.4551					
	Root MSE	1.9765					
BE	ASLI	-0.5663	0.1464	-3.8700	0.0010	-0.8699 -0.2627	**
	intercept	19.5847	4.4271	4.4200	0.0000	10.4034 28.7661	
	R-squared	0.4048					
	Root MSE	1.9194					
HU	ASLI	-0.3777	0.1178	-3.2100	0.0040	-0.6221 -0.1334	**
	intercept	7.8079	3.8287	2.0400	0.0540	-0.1322 15.7480	
	R-squared	0.3185					
	Root MSE	2.1241					
DE	ASLI	0.1885	0.0651	2.8900	0.0080	0.0534 0.3236	**
	intercept	-7.6901	2.5599	-3.0000	0.0070	-12.9989 -2.3813	
	R-squared	0.2758					
	Root MSE	1.5108					
FI	ASLI	0.1100	0.0402	2.7400	0.0120	0.0267 0.1933	*
	intercept	-22.3072	8.1774	-2.7300	0.0120	-39.2662 -5.3483	
	R-squared	0.2543					
	Root MSE	5.5586					

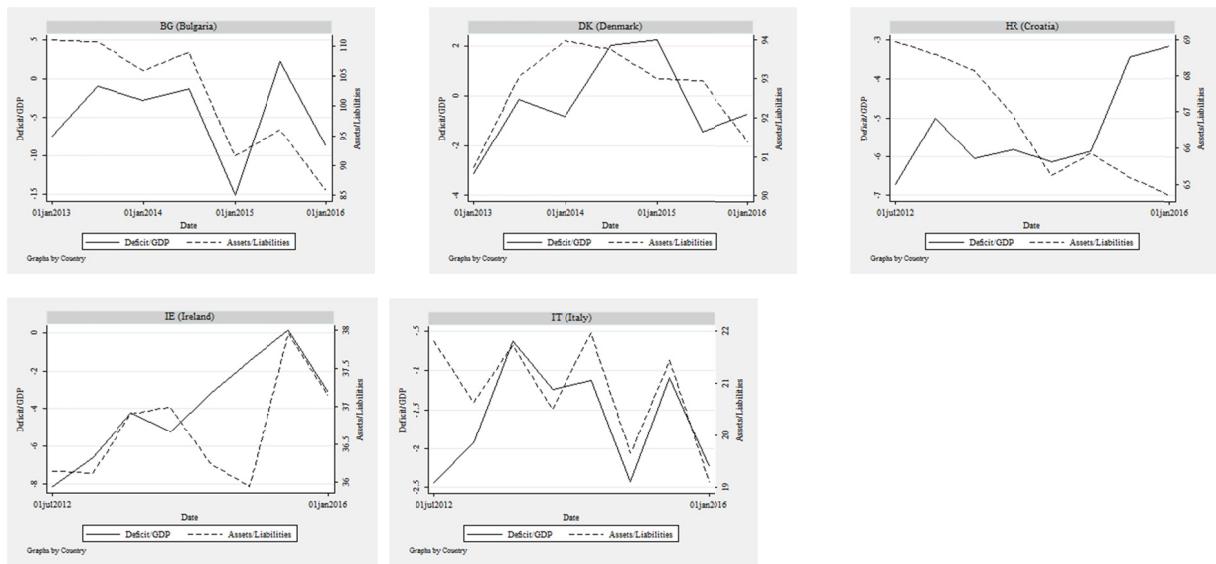


Figures 2. NL – BE – HU – DE – FI comparative graphs

When coming to Denmark, Croatia, Italy, Ireland and Bulgaria, the R-squared value is still greater than 0.2. At the same time, the *p*-value for the β coefficient of Assets/Liabilities ratio is greater than 0.1, so that the correlation is not statistically significant. The correlation is, in these cases, positive except in the case of Croatia.

Table 2. Relevant and not significant regression estimates

	<i>y = dgdpratio</i>	Coeff. (β)	Std.Err.	t	P>t	[95% Conf. Interval]	Significant?
DK	ASLI	0.9771	0.5513	1.7700	0.1370	-0.4402 2.3943	
	intercept	-90.8631	51.1097	-1.7800	0.1360	-222.2446 40.5185	
	R-squared	0.3858					
	Root MSE	1.6302					
HR	<i>y = dgdpratio</i>	Coeff. (β)	Std.Err.	t	P>t	[95% Conf. Interval]	Significant?
	ASLI	-0.4643	0.2536	-1.8300	0.1170	-1.0847 0.1561	
	intercept	25.6909	16.9153	1.5200	0.1800	-15.6995 67.0812	
	R-squared	0.3585					
IT	<i>y = dgdpratio</i>	Coeff. (β)	Std.Err.	t	P>t	[95% Conf. Interval]	Significant?
	ASLI	0.3707	0.2228	1.6600	0.1470	-0.1745 0.9160	
	intercept	-9.3684	4.6531	-2.0100	0.0910	-20.7542 2.0173	
	R-squared	0.3157					
IE	<i>y = dgdpratio</i>	Coeff. (β)	Std.Err.	t	P>t	[95% Conf. Interval]	Significant?
	ASLI	2.0328	1.3604	1.4900	0.1860	-1.2960 5.3617	
	intercept	-78.5627	49.9109	-1.5700	0.1670	-200.6902 43.5648	
	R-squared	0.2712					
BG	<i>y = dgdpratio</i>	Coeff. (β)	Std.Err.	t	P>t	[95% Conf. Interval]	Significant?
	ASLI	0.2761	0.2272	1.2100	0.2790	-0.3080 0.8602	
	intercept	-32.8399	23.1435	-1.4200	0.2150	-92.3321 26.6522	
	R-squared	0.2279					
	Root MSE	5.6914					



Figures 3. DK – HR – IE – IT – BG comparative graphs

For the remaining 18 countries, both the R-squared value and the p -value of the β_1 coefficient smaller than the aforementioned thresholds, so the model is to be considered not significant in those cases.

The graphs regarding those countries can be found in the appendix.

6. Conclusion

At a first glance, from the graphical analysis emerges a way weaker influence from external factors on the Assets/Liabilities rather than on the Deficit/GDP ratio, which presents a highly volatile evolution.

The double quantitative and graphical analysis shows also how the Assets/Liabilities compositions can in some cases have a correlation with the Deficit/GDP ratio. This correlation tends to be negative in Netherlands, Belgium, Hungary and Croatia, whilst in Germany, Finland, Denmark, Italy, Ireland and Bulgaria it tends to be strictly positive. This could mean that the influence of the investments and funding composition could affect separately the SGP's ratio. In order to enhance the comprehension of these phenomena, further studies must be conducted, focusing on the composition of the numerator and denominator of the Assets/Liabilities ratio, both temporally and by source and nature of each entry. Moreover, more extensive analyses and quantitative researches have to be conducted in order to define some more suitable variables to be considered for public sector financial analysis, management and decision making.

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Appendix

Appendix A – Data key table

Table 3. Country key

AT	Austria	HU	Hungary
BE	Belgium	IE	Ireland
BG	Bulgaria	IT	Italy
CY	Cyprus	LT	Lithuania
CZ	Czech Republic	LU	Luxembourg
DE	Germany	LV	Latvia
DK	Denmark	MT	Malta
EE	Estonia	NL	Netherlands
ES	Spain	PL	Poland
FI	Finland	PT	Portugal
FR	France	RO	Romania

GB	United Kingdom	SE	Sweden
GR	Greece	SI	Slovenia
HR	Croatia	SK	Slovakia

Appendix B – Descriptive statistics table

Table 4. Descriptive statistics

Country	Variable	Obs.	Mean	Std. Dev.	Min	Max
AT	<i>dgdpratio</i>	20	-1.3190	1.8430	-4.9732	1.5242
	<i>ASLI</i>	20	51.6313	2.1071	47.3440	55.8248
BE	<i>dgdpratio</i>	24	2.5258	2.4333	-1.3269	6.7418
	<i>ASLI</i>	24	30.1249	2.7341	25.0959	33.2646
BG	<i>dgdpratio</i>	7	-4.8440	5.9128	-15.1126	2.2196
	<i>ASLI</i>	7	101.4081	10.2251	85.7285	111.0076
CY	<i>dgdpratio</i>	7	-5.5917	4.7304	-11.5370	0.3819
	<i>ASLI</i>	7	57.2156	1.8050	55.2018	60.0387
CZ	<i>dgdpratio</i>	16	-2.8865	2.8103	-9.3638	0.7812
	<i>ASLI</i>	16	84.9585	24.4071	59.8940	145.9148
DE	<i>dgdpratio</i>	24	-0.3354	1.7362	-4.3818	2.0138
	<i>ASLI</i>	24	39.0192	4.8371	31.8227	45.7740
DK	<i>dgdpratio</i>	7	-0.2921	1.8989	-3.1208	2.2328
	<i>ASLI</i>	7	92.6953	1.2071	90.7196	93.9850
EE	<i>dgdpratio</i>	12	0.9046	1.5579	-1.0517	3.6704
	<i>ASLI</i>	12	328.9517	42.9769	287.6881	420.3725
ES	<i>dgdpratio</i>	24	-8.1182	5.7696	-18.1906	1.3166
	<i>ASLI</i>	24	49.3592	6.4872	40.8253	63.1230
FI	<i>dgdpratio</i>	24	-0.1243	6.2955	-9.6005	10.8294
	<i>ASLI</i>	24	201.6686	28.8629	171.9460	262.6207
FR	<i>dgdpratio</i>	24	-2.0212	1.8916	-5.8188	1.0525
	<i>ASLI</i>	24	50.5351	5.6984	43.8392	63.0064
GB	<i>dgdpratio</i>	24	-7.6502	2.8881	-13.3334	-3.9553
	<i>ASLI</i>	24	38.8694	4.2564	31.1362	43.8816
GR	<i>dgdpratio</i>	7	-8.9192	10.2200	-30.0807	-2.1997
	<i>ASLI</i>	7	32.8413	6.5661	24.4493	41.1142
HR	<i>dgdpratio</i>	8	-5.2747	1.3142	-6.7209	-3.1471
	<i>ASLI</i>	8	66.6945	1.6948	64.6895	68.9592
HU	<i>dgdpratio</i>	24	-4.3888	2.5164	-8.7928	-0.7476
	<i>ASLI</i>	24	32.2891	3.7595	27.5744	40.3356
IE	<i>dgdpratio</i>	8	-3.9952	2.6900	-8.1628	0.1280
	<i>ASLI</i>	8	36.6817	0.6891	35.9406	37.9596
IT	<i>dgdpratio</i>	8	-1.6357	0.7027	-2.4375	-0.6198
	<i>ASLI</i>	8	20.8585	1.0651	19.0963	21.9666
LT	<i>dgdpratio</i>	24	-4.4777	5.3249	-22.4122	2.9562
	<i>ASLI</i>	24	98.8040	38.6802	56.0930	160.2165
LU	<i>dgdpratio</i>	24	1.9338	2.7384	-3.3904	6.6301
	<i>ASLI</i>	24	353.9913	107.7086	240.3856	531.1871
LV	<i>dgdpratio</i>	24	-5.1003	6.6096	-17.0820	3.3460
	<i>ASLI</i>	24	96.6562	26.8940	62.7812	140.5902
MT	<i>dgdpratio</i>	24	-2.0621	3.1948	-9.3529	4.2108
	<i>ASLI</i>	24	39.8568	2.5184	35.0024	45.2743
NL	<i>dgdpratio</i>	12	-3.2335	2.5529	-6.9527	0.6571
	<i>ASLI</i>	12	55.7504	2.3321	52.7040	60.6172
PL	<i>dgdpratio</i>	24	-6.0168	2.6958	-12.8871	-2.6992
	<i>ASLI</i>	24	58.9628	8.0648	47.2208	73.4945
PT	<i>dgdpratio</i>	24	-6.7301	4.2391	-18.4889	-0.6234
	<i>ASLI</i>	24	39.1144	3.1552	33.9515	47.1394

Country	Variable	Obs.	Mean	Std. Dev.	Min	Max
RO	<i>dgdpratio</i>	18	-5.2829	4.0237	-11.4360	1.6719
	<i>ASLI</i>	18	93.1522	37.1445	61.2658	174.4914
SE	<i>dgdpratio</i>	24	0.3521	3.5492	-4.7283	6.6415
	<i>ASLI</i>	24	122.3980	15.2392	88.8404	142.8542
SI	<i>dgdpratio</i>	24	-4.9096	7.9813	-40.4032	1.1291
	<i>ASLI</i>	24	105.7867	18.9104	82.0888	141.4996
SK	<i>dgdpratio</i>	7	-3.8062	1.9239	-6.8656	-1.5418
	<i>ASLI</i>	7	60.3726	1.8429	57.9057	63.1434

Appendix C – Dataset

Table 4. Dataset

Country	Date	DEFICIT / GDP %	AS/LI %
AT	30/06/2006	-1.5309	55.2774
AT	31/12/2006	-0.1724	51.9799
AT	30/06/2007	-0.3009	55.8248
AT	31/12/2007	1.4130	53.5285
AT	30/06/2008	-0.6288	53.6962
AT	31/12/2008	-0.1425	51.0806
AT	30/06/2009	-3.5643	52.3863
AT	31/12/2009	-4.9732	49.5252
AT	30/06/2010	-2.8798	47.3440
AT	31/12/2010	-1.1341	50.2128
AT	30/06/2011	-1.5497	49.4567
AT	31/12/2011	-2.1520	49.1955
AT	30/06/2012	-3.1638	51.1124
AT	31/12/2012	0.3792	51.2992
AT	30/06/2013	-1.8131	51.0021
AT	31/12/2013	1.5242	50.8350
AT	30/06/2014	-0.4061	50.7820
AT	31/12/2014	-4.9211	51.2513
AT	30/06/2015	-0.4925	53.9019
AT	31/12/2015	0.1295	52.9351
BE	30/06/2004	4.7587	25.6626
BE	31/12/2004	4.3256	25.0959
BE	30/06/2005	6.0291	25.1572
BE	31/12/2005	3.4445	25.4867
BE	30/06/2006	3.6572	26.1477
BE	31/12/2006	6.7418	27.1897
BE	30/06/2007	5.5879	29.4194
BE	31/12/2007	5.6410	30.6014
BE	30/06/2008	5.0958	30.9530
BE	31/12/2008	2.1633	32.7620
BE	30/06/2009	-1.1689	30.9825
BE	31/12/2009	-0.6768	31.6413
BE	30/06/2010	0.8756	32.3919
BE	31/12/2010	0.9801	32.9216
BE	30/06/2011	1.0661	32.4657
BE	31/12/2011	-0.7338	33.2646
BE	30/06/2012	0.7909	32.8826
BE	31/12/2012	-1.3269	31.1675
BE	30/06/2013	1.5963	31.6698
BE	31/12/2013	3.4223	31.5863
BE	30/06/2014	0.4081	30.6214

Country	Date	DEFICIT / GDP %	AS/LI %
BE	31/12/2014	2.9601	30.2954
BE	30/06/2015	1.0756	31.5189
BE	31/12/2015	3.9043	31.1128
BG	31/12/2012	-7.3900	111.0076
BG	30/06/2013	-0.9095	110.6800
BG	31/12/2013	-2.7466	105.8503
BG	30/06/2014	-1.2406	108.9946
BG	31/12/2014	-15.1126	91.5361
BG	30/06/2015	2.2196	96.0596
BG	31/12/2015	-8.7280	85.7285
CY	31/12/2012	-11.2524	60.0387
CY	30/06/2013	-4.1323	58.3886
CY	31/12/2013	-11.5370	57.7953
CY	30/06/2014	0.3819	57.9073
CY	31/12/2014	-5.8863	55.4511
CY	30/06/2015	-0.2767	55.7262
CY	31/12/2015	-6.4395	55.2018
CZ	30/06/2008	-0.6566	145.9148
CZ	31/12/2008	-5.5659	116.0474
CZ	30/06/2009	-3.1016	113.8862
CZ	31/12/2009	-7.0407	102.7690
CZ	30/06/2010	-2.0716	95.2136
CZ	31/12/2010	-5.6564	89.6805
CZ	30/06/2011	-1.0829	82.2926
CZ	31/12/2011	-4.2036	81.1550
CZ	30/06/2012	-0.9919	77.8599
CZ	31/12/2012	-9.3638	71.2108
CZ	30/06/2013	-0.8055	66.1559
CZ	31/12/2013	-0.7238	68.2818
CZ	30/06/2014	-0.6087	63.8038
CZ	31/12/2014	-3.6091	59.8940
CZ	30/06/2015	0.7812	63.6896
CZ	31/12/2015	-1.4835	61.4805
DE	30/06/2004	-2.5593	35.4719
DE	31/12/2004	-2.2080	33.0800
DE	30/06/2005	-2.7869	32.0507
DE	31/12/2005	-2.0726	31.8227
DE	30/06/2006	-0.5151	32.2439
DE	31/12/2006	-0.5286	32.2593
DE	30/06/2007	1.8927	34.5027
DE	31/12/2007	0.6691	35.9372
DE	30/06/2008	1.5586	38.4614
DE	31/12/2008	-0.6736	36.8035
DE	30/06/2009	-1.4441	39.4838
DE	31/12/2009	-4.3818	36.9238
DE	30/06/2010	-1.1971	37.2958
DE	31/12/2010	-1.9336	42.3169
DE	30/06/2011	0.8398	43.5761
DE	31/12/2011	-0.7613	40.8775
DE	30/06/2012	1.4511	42.5767
DE	31/12/2012	-0.1441	43.0991
DE	30/06/2013	1.7776	43.5750
DE	31/12/2013	0.0743	44.2868
DE	30/06/2014	1.7980	44.0075

Country	Date	DEFICIT / GDP %	AS/LI %
DE	31/12/2014	0.8415	44.6465
DE	30/06/2015	2.0138	45.3877
DE	31/12/2015	0.2409	45.7740
DK	31/12/2012	-3.1208	90.7196
DK	30/06/2013	-0.1528	93.0655
DK	31/12/2013	-0.8093	93.9850
DK	30/06/2014	2.0300	93.7538
DK	31/12/2014	2.2328	93.0082
DK	30/06/2015	-1.4544	92.9626
DK	31/12/2015	-0.7701	91.3725
EE	30/06/2010	-1.0003	296.1333
EE	31/12/2010	1.4148	371.2596
EE	30/06/2011	3.6704	374.0393
EE	31/12/2011	-1.0517	420.3725
EE	30/06/2012	1.7207	367.0345
EE	31/12/2012	-1.0065	319.6952
EE	30/06/2013	1.4851	308.1052
EE	31/12/2013	-0.9844	310.0947
EE	30/06/2014	1.2348	287.6881
EE	31/12/2014	2.4380	303.2009
EE	30/06/2015	1.5526	289.9831
EE	31/12/2015	1.3818	299.8142
ES	30/06/2004	-3.5563	41.1101
ES	31/12/2004	-0.9667	42.4681
ES	30/06/2005	-2.2880	44.2958
ES	31/12/2005	0.9342	48.8651
ES	30/06/2006	-1.2133	51.9754
ES	31/12/2006	1.3166	56.6207
ES	30/06/2007	-1.8182	59.7006
ES	31/12/2007	-0.8382	63.1230
ES	30/06/2008	-7.3443	60.4721
ES	31/12/2008	-9.5233	58.2634
ES	30/06/2009	-15.8952	54.9789
ES	31/12/2009	-13.6362	51.3814
ES	30/06/2010	-12.9253	49.8650
ES	31/12/2010	-12.1725	48.1154
ES	30/06/2011	-12.3588	48.5725
ES	31/12/2011	-14.4124	46.2304
ES	30/06/2012	-13.7528	47.4440
ES	31/12/2012	-18.1906	48.1024
ES	30/06/2013	-12.1782	47.3802
ES	31/12/2013	-8.3667	45.5174
ES	30/06/2014	-10.8504	45.0212
ES	31/12/2014	-8.5947	42.5087
ES	30/06/2015	-8.4781	41.7845
ES	31/12/2015	-7.7281	40.8253
FI	30/06/2004	5.8721	181.2389
FI	31/12/2004	-1.6685	180.6135
FI	30/06/2005	6.0841	195.7860
FI	31/12/2005	-1.0926	208.0377
FI	30/06/2006	7.3163	225.3914
FI	31/12/2006	-0.2174	237.1742
FI	30/06/2007	9.7592	262.6207
FI	31/12/2007	2.2152	256.4996

Country	Date	DEFICIT / GDP %	AS/LI %
FI	30/06/2008	10.8294	255.3548
FI	31/12/2008	-2.9221	215.3396
FI	30/06/2009	2.8084	224.2974
FI	31/12/2009	-9.6005	210.5156
FI	30/06/2010	2.5397	199.7337
FI	31/12/2010	-7.5838	202.6818
FI	30/06/2011	4.4571	201.2072
FI	31/12/2011	-7.7532	178.7882
FI	30/06/2012	2.7324	177.8009
FI	31/12/2012	-8.4733	174.7579
FI	30/06/2013	2.3288	173.1650
FI	31/12/2013	-8.1290	178.8415
FI	30/06/2014	1.6248	175.8756
FI	31/12/2014	-9.1753	173.2441
FI	30/06/2015	3.1517	179.1357
FI	31/12/2015	-8.0874	171.9460
FR	30/06/2004	-2.3390	51.4812
FR	31/12/2004	0.2019	50.9380
FR	30/06/2005	-2.2013	51.8987
FR	31/12/2005	0.0838	54.3060
FR	30/06/2006	-1.3076	55.6353
FR	31/12/2006	1.0525	58.4379
FR	30/06/2007	-0.0959	63.0064
FR	31/12/2007	-0.2147	61.8547
FR	30/06/2008	-0.4376	58.4084
FR	31/12/2008	-2.2802	53.1913
FR	30/06/2009	-5.8188	51.1797
FR	31/12/2009	-3.9062	50.4829
FR	30/06/2010	-5.2538	48.3877
FR	31/12/2010	-4.1370	49.4284
FR	30/06/2011	-4.2268	48.9422
FR	31/12/2011	-2.2377	45.4829
FR	30/06/2012	-4.3041	45.7034
FR	31/12/2012	-1.3829	44.2983
FR	30/06/2013	-2.6327	44.7593
FR	31/12/2013	-0.9986	46.3468
FR	30/06/2014	-2.6104	46.2294
FR	31/12/2014	-0.8224	44.2000
FR	30/06/2015	-3.0022	44.4052
FR	31/12/2015	0.3638	43.8392
GB	30/06/2004	-5.6079	43.5960
GB	31/12/2004	-4.9354	42.1649
GB	30/06/2005	-3.9553	43.8816
GB	31/12/2005	-5.9890	42.7543
GB	30/06/2006	-5.3562	43.8118
GB	31/12/2006	-4.1804	41.6958
GB	30/06/2007	-4.6985	43.0194
GB	31/12/2007	-4.7458	41.1985
GB	30/06/2008	-6.2305	40.9297
GB	31/12/2008	-9.2551	41.8092
GB	30/06/2009	-12.8990	40.9051
GB	31/12/2009	-13.3334	39.2869
GB	30/06/2010	-10.5578	41.6399
GB	31/12/2010	-11.8502	41.3150

Country	Date	DEFICIT / GDP %	AS/LI %
GB	30/06/2011	-9.5558	40.4278
GB	31/12/2011	-9.3846	34.6589
GB	30/06/2012	-11.6582	35.1862
GB	31/12/2012	-9.6931	35.5991
GB	30/06/2013	-5.7345	35.4443
GB	31/12/2013	-8.6041	34.7702
GB	30/06/2014	-6.8109	34.1626
GB	31/12/2014	-6.6620	31.1602
GB	30/06/2015	-5.8672	32.3108
GB	31/12/2015	-6.0399	31.1362
GR	31/12/2012	-6.3895	41.1142
GR	30/06/2013	-30.0807	38.9774
GR	31/12/2013	-2.1997	37.1498
GR	30/06/2014	-2.4642	32.6175
GR	31/12/2014	-3.0250	30.2938
GR	30/06/2015	-4.0961	24.4493
GR	31/12/2015	-14.1789	25.2874
HR	30/06/2012	-6.7209	68.9592
HR	31/12/2012	-5.0121	68.6014
HR	30/06/2013	-6.0571	68.1443
HR	31/12/2013	-5.8224	66.9070
HR	30/06/2014	-6.1427	65.2312
HR	31/12/2014	-5.8624	65.8537
HR	30/06/2015	-3.4331	65.1696
HR	31/12/2015	-3.1471	64.6895
HU	30/06/2004	-7.1506	40.3356
HU	31/12/2004	-5.1582	38.7164
HU	30/06/2005	-6.7356	39.1363
HU	31/12/2005	-6.6636	36.8950
HU	30/06/2006	-7.0606	35.7021
HU	31/12/2006	-8.7928	29.2301
HU	30/06/2007	-1.7295	27.7689
HU	31/12/2007	-7.0204	27.7319
HU	30/06/2008	-1.9773	29.2467
HU	31/12/2008	-7.7129	34.2082
HU	30/06/2009	-3.3461	33.6866
HU	31/12/2009	-4.7542	31.8686
HU	30/06/2010	-6.8958	32.8618
HU	31/12/2010	-3.3779	30.3574
HU	30/06/2011	-4.7145	32.9139
HU	31/12/2011	-6.7547	35.1058
HU	30/06/2012	-2.2646	32.2113
HU	31/12/2012	-2.6612	29.6392
HU	30/06/2013	-2.2414	29.7059
HU	31/12/2013	-0.7476	27.5744
HU	30/06/2014	-3.7349	30.5465
HU	31/12/2014	-1.2283	28.4036
HU	30/06/2015	-0.9146	31.2983
HU	31/12/2015	-1.6932	29.7942
IE	30/06/2012	-8.1628	36.1480
IE	31/12/2012	-6.6438	36.1185
IE	30/06/2013	-4.2516	36.9028
IE	31/12/2013	-5.2328	36.9938
IE	30/06/2014	-3.1986	36.2517

Country	Date	DEFICIT / GDP %	AS/LI %
IE	31/12/2014	-1.4981	35.9406
IE	30/06/2015	0.1280	37.9596
IE	31/12/2015	-3.1015	37.1386
IT	30/06/2012	-2.4375	21.8042
IT	31/12/2012	-1.9177	20.6493
IT	30/06/2013	-0.6198	21.7309
IT	31/12/2013	-1.2399	20.5153
IT	30/06/2014	-1.1183	21.9666
IT	31/12/2014	-2.4311	19.6574
IT	30/06/2015	-1.0931	21.4483
IT	31/12/2015	-2.2280	19.0963
LT	30/06/2004	-2.8422	127.4852
LT	31/12/2004	-2.8169	127.4771
LT	30/06/2005	0.5069	132.9780
LT	31/12/2005	-3.7009	131.7311
LT	30/06/2006	2.9562	142.5315
LT	31/12/2006	-5.6128	147.4198
LT	30/06/2007	-0.8570	160.2165
LT	31/12/2007	-4.5837	150.5032
LT	30/06/2008	-2.1825	147.9764
LT	31/12/2008	-8.5079	134.5443
LT	30/06/2009	-10.3869	115.2667
LT	31/12/2009	-12.3217	92.6398
LT	30/06/2010	-7.5911	81.0570
LT	31/12/2010	-8.8013	76.1044
LT	30/06/2011	-4.8723	70.3263
LT	31/12/2011	-22.4122	61.9212
LT	30/06/2012	-2.1687	57.8999
LT	31/12/2012	-4.3399	57.0317
LT	30/06/2013	-1.3942	56.0930
LT	31/12/2013	-1.2409	56.5194
LT	30/06/2014	-2.5986	58.9046
LT	31/12/2014	-1.1344	60.1980
LT	30/06/2015	1.7404	61.2796
LT	31/12/2015	-2.3020	63.1906
LU	30/06/2004	0.2632	461.2274
LU	31/12/2004	-3.2656	430.9876
LU	30/06/2005	1.7718	453.3892
LU	31/12/2005	0.3989	458.6943
LU	30/06/2006	6.2395	473.4933
LU	31/12/2006	-0.5228	479.9080
LU	30/06/2007	6.1468	498.1925
LU	31/12/2007	4.3246	531.1871
LU	30/06/2008	6.6301	522.4964
LU	31/12/2008	3.9088	362.1335
LU	30/06/2009	2.3898	357.6893
LU	31/12/2009	-3.3904	383.1946
LU	30/06/2010	2.1934	294.3668
LU	31/12/2010	-1.3190	286.8486
LU	30/06/2011	4.0354	278.3000
LU	31/12/2011	0.0168	257.7731
LU	30/06/2012	2.0026	245.0709
LU	31/12/2012	-0.5001	248.9373
LU	30/06/2013	3.3457	242.6151

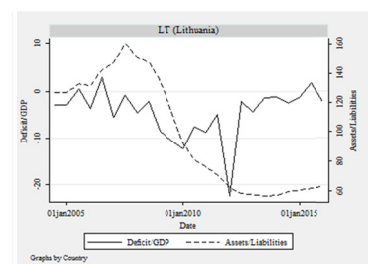
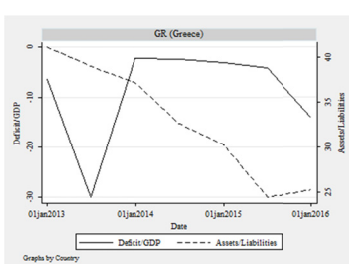
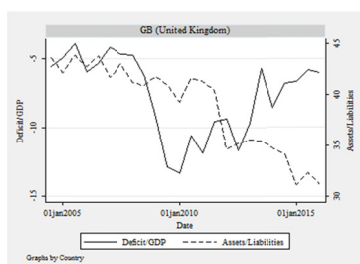
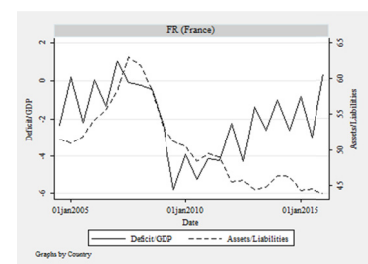
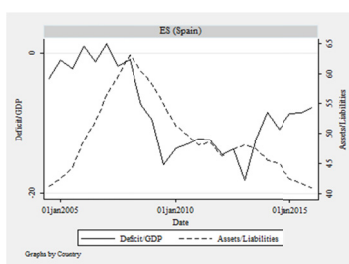
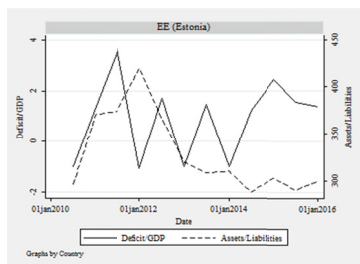
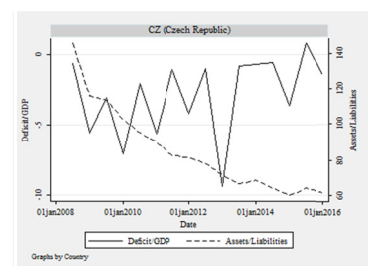
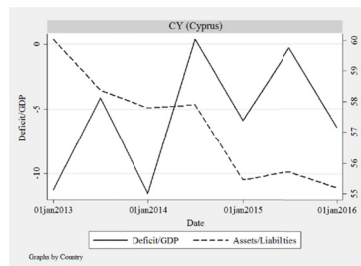
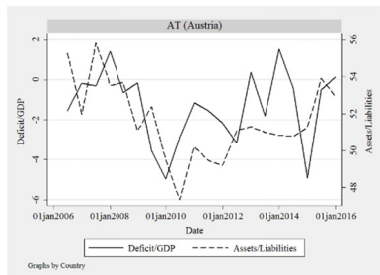
Country	Date	DEFICIT / GDP %	AS/LI %
LU	31/12/2013	0.7153	251.4335
LU	30/06/2014	3.8050	243.5671
LU	31/12/2014	1.4697	240.3856
LU	30/06/2015	4.3043	244.4820
LU	31/12/2015	1.4462	249.4174
LV	30/06/2004	-1.9583	134.1597
LV	31/12/2004	-7.0366	125.8414
LV	30/06/2005	3.3098	140.5902
LV	31/12/2005	-8.9997	129.6722
LV	30/06/2006	3.0086	134.1290
LV	31/12/2006	-9.2170	121.8826
LV	30/06/2007	2.2672	128.8418
LV	31/12/2007	-5.9506	122.1931
LV	30/06/2008	1.1484	112.6033
LV	31/12/2008	-14.2968	105.9704
LV	30/06/2009	-6.0786	99.9165
LV	31/12/2009	-16.5436	88.4956
LV	30/06/2010	-4.2240	87.9392
LV	31/12/2010	-17.0820	76.9341
LV	30/06/2011	1.5458	76.8565
LV	31/12/2011	-13.1482	71.4410
LV	30/06/2012	0.7537	72.1241
LV	31/12/2012	-10.7165	74.8607
LV	30/06/2013	3.3460	75.2525
LV	31/12/2013	-8.4184	71.8685
LV	30/06/2014	1.7717	72.7937
LV	31/12/2014	-10.1353	68.3079
LV	30/06/2015	0.8728	64.2937
LV	31/12/2015	-6.6259	62.7812
MT	30/06/2004	-9.3529	39.8322
MT	31/12/2004	1.8703	38.9126
MT	30/06/2005	-5.3425	38.8795
MT	31/12/2005	1.8294	41.8607
MT	30/06/2006	-0.5470	39.6816
MT	31/12/2006	-1.7132	37.2180
MT	30/06/2007	-3.0887	40.7122
MT	31/12/2007	-1.1361	40.1520
MT	30/06/2008	-4.4928	39.7328
MT	31/12/2008	-2.3706	35.0024
MT	30/06/2009	-5.2818	38.8434
MT	31/12/2009	-0.2406	36.5593
MT	30/06/2010	-4.7992	38.1668
MT	31/12/2010	-3.4644	37.4539
MT	30/06/2011	-4.9531	40.3619
MT	31/12/2011	-0.6026	38.6486
MT	30/06/2012	-4.8581	43.6322
MT	31/12/2012	-2.7804	42.5522
MT	30/06/2013	-2.1712	44.4517
MT	31/12/2013	1.4688	42.8347
MT	30/06/2014	-3.5322	45.2743
MT	31/12/2014	3.7616	38.5601
MT	30/06/2015	-1.9030	39.2445
MT	31/12/2015	4.2108	37.9958
NL	30/06/2010	-6.4808	60.6172

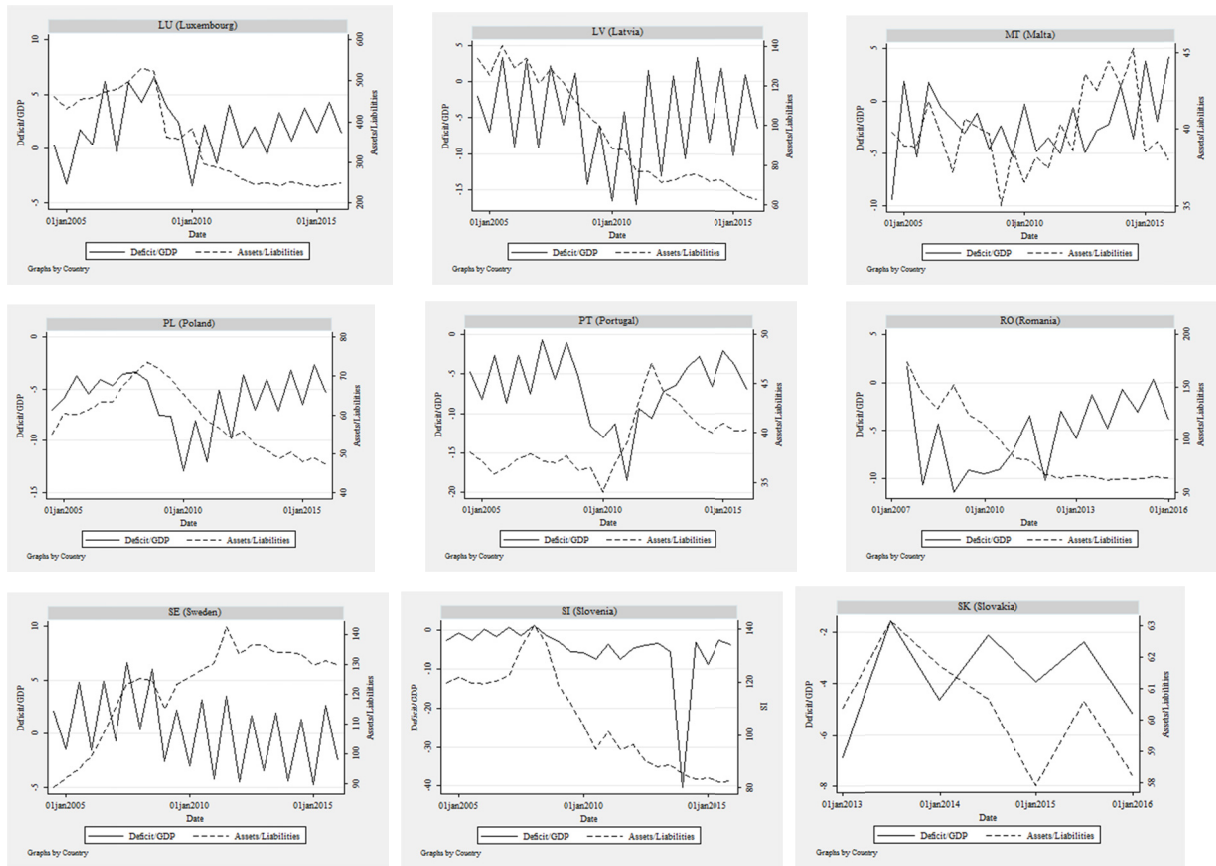
Country	Date	DEFICIT / GDP %	AS/LI %
NL	31/12/2010	-1.3281	57.9115
NL	30/06/2011	-6.9527	57.9387
NL	31/12/2011	-2.8195	54.1507
NL	30/06/2012	-5.8882	57.1726
NL	31/12/2012	-1.3224	54.9773
NL	30/06/2013	-4.5919	56.6432
NL	31/12/2013	-1.4928	55.0977
NL	30/06/2014	-4.4129	54.7690
NL	31/12/2014	0.0093	53.4512
NL	30/06/2015	-4.1787	53.5713
NL	31/12/2015	0.6571	52.7039
PL	30/06/2004	-6.9757	55.1158
PL	31/12/2004	-5.9220	60.3978
PL	30/06/2005	-3.7176	60.0868
PL	31/12/2005	-5.4854	61.2802
PL	30/06/2006	-4.0591	63.3264
PL	31/12/2006	-4.6602	63.4202
PL	30/06/2007	-3.5679	67.4573
PL	31/12/2007	-3.3555	70.8397
PL	30/06/2008	-4.1171	73.4945
PL	31/12/2008	-7.5529	71.7785
PL	30/06/2009	-7.6504	69.2492
PL	31/12/2009	-12.8871	65.3850
PL	30/06/2010	-8.0387	61.9671
PL	31/12/2010	-12.0368	58.4765
PL	30/06/2011	-5.0688	56.6408
PL	31/12/2011	-9.7484	54.0342
PL	30/06/2012	-3.6329	55.8387
PL	31/12/2012	-6.9754	52.2149
PL	30/06/2013	-4.0871	50.9762
PL	31/12/2013	-7.0999	48.7117
PL	30/06/2014	-3.2320	50.3504
PL	31/12/2014	-6.4788	47.9279
PL	30/06/2015	-2.6992	48.9159
PL	31/12/2015	-5.3555	47.2208
PT	30/06/2004	-4.7723	38.0192
PT	31/12/2004	-8.1638	37.0800
PT	30/06/2005	-2.6461	35.7926
PT	31/12/2005	-8.6226	36.4693
PT	30/06/2006	-2.6582	37.3706
PT	31/12/2006	-7.4636	37.8616
PT	30/06/2007	-0.6234	37.1411
PT	31/12/2007	-5.6364	36.9122
PT	30/06/2008	-1.0387	37.6334
PT	31/12/2008	-5.4514	36.1745
PT	30/06/2009	-11.5561	36.4742
PT	31/12/2009	-13.0260	33.9515
PT	30/06/2010	-11.3692	36.8773
PT	31/12/2010	-18.4889	38.9987
PT	30/06/2011	-9.3609	43.3020
PT	31/12/2011	-10.5893	47.1394
PT	30/06/2012	-7.0973	44.1821
PT	31/12/2012	-6.4368	43.3739
PT	30/06/2013	-4.1164	41.9502

Country	Date	DEFICIT / GDP %	AS/LI %
PT	31/12/2013	-2.7700	40.6690
PT	30/06/2014	-6.6231	40.0160
PT	31/12/2014	-2.0345	40.9466
PT	30/06/2015	-3.8905	40.1632
PT	31/12/2015	-7.0866	40.2478
RO	30/06/2007	1.6719	174.4914
RO	31/12/2007	-10.6238	144.2159
RO	30/06/2008	-4.3368	129.6691
RO	31/12/2008	-11.4360	152.3045
RO	30/06/2009	-9.1190	124.1330
RO	31/12/2009	-9.5327	114.0784
RO	30/06/2010	-9.0664	99.2138
RO	31/12/2010	-6.9065	82.1874
RO	30/06/2011	-3.4428	80.7380
RO	31/12/2011	-10.1932	66.9656
RO	30/06/2012	-2.9633	63.4061
RO	31/12/2012	-5.8582	65.7207
RO	30/06/2013	-1.2385	64.8146
RO	31/12/2013	-4.7823	61.2658
RO	30/06/2014	-0.7220	62.8236
RO	31/12/2014	-3.0428	62.4557
RO	30/06/2015	0.4008	64.6788
RO	31/12/2015	-3.9013	63.5771
SE	30/06/2004	2.0968	88.8404
SE	31/12/2004	-1.4558	92.1019
SE	30/06/2005	4.8259	95.0230
SE	31/12/2005	-1.5672	99.1821
SE	30/06/2006	4.8852	106.9950
SE	31/12/2006	-0.6397	115.5805
SE	30/06/2007	6.6415	123.7134
SE	31/12/2007	0.4609	125.3179
SE	30/06/2008	6.0085	124.8284
SE	31/12/2008	-2.5832	115.1091
SE	30/06/2009	2.1861	123.4694
SE	31/12/2009	-3.0049	125.7642
SE	30/06/2010	3.2018	128.3234
SE	31/12/2010	-4.2359	130.6187
SE	30/06/2011	3.4656	142.8542
SE	31/12/2011	-4.5056	133.4867
SE	30/06/2012	1.7138	136.7239
SE	31/12/2012	-3.4385	136.4807
SE	30/06/2013	1.9259	134.1783
SE	31/12/2013	-4.3464	134.2479
SE	30/06/2014	1.3710	133.5135
SE	31/12/2014	-4.7283	129.9716
SE	30/06/2015	2.6503	131.2378
SE	31/12/2015	-2.4784	129.9891
SI	30/06/2004	-2.6162	119.9775
SI	31/12/2004	-0.6572	121.9931
SI	30/06/2005	-2.7678	119.9384
SI	31/12/2005	0.3072	119.6670
SI	30/06/2006	-1.7957	120.5847
SI	31/12/2006	0.7258	122.8044
SI	30/06/2007	-1.4108	133.5144

Country	Date	DEFICIT / GDP %	AS/LI %
SI	31/12/2007	1.1291	141.4996
SI	30/06/2008	-1.4388	134.7117
SI	31/12/2008	-2.8687	118.8862
SI	30/06/2009	-5.6570	111.9367
SI	31/12/2009	-5.8388	103.7873
SI	30/06/2010	-7.4325	94.6482
SI	31/12/2010	-3.5808	101.2964
SI	30/06/2011	-7.5361	94.4647
SI	31/12/2011	-4.5997	96.2251
SI	30/06/2012	-3.8625	89.9945
SI	31/12/2012	-3.4395	87.8542
SI	30/06/2013	-5.6162	88.6717
SI	31/12/2013	-40.4032	85.1375
SI	30/06/2014	-3.0354	83.0547
SI	31/12/2014	-8.7132	83.6371
SI	30/06/2015	-2.7551	82.0888
SI	31/12/2015	-3.9685	82.5068
SK	31/12/2012	-6.8656	60.3614
SK	30/06/2013	-1.5418	63.1434
SK	31/12/2013	-4.6474	61.7156
SK	30/06/2014	-2.0808	60.6680
SK	31/12/2014	-3.9280	57.9057
SK	30/06/2015	-2.3721	60.6025
SK	31/12/2015	-5.2076	58.2115

Appendix D – Graphs of remaining 18 EU Member States





Figures 4. Descriptive statistics

Note

Note 1. The model and the graphs are computed with STATA 13.

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