FISCAL DISCIPLINE, TRANSPARENCY AND FISCAL GOVERNANCE: A STRUCTURAL EQUATION MODEL APPROACH

De Simone Elina*

VERY PRELIMINARY AND INCOMPLETE

*Department of Economic Studies "S. Vinci" and CRISEI - Parthenope University, Naples, Italy and Department of Social Sciences- University of Naples L'Orientale. Email: elina.desimone@uniparthenope.it

1. Introduction

The rise in public debt-to-GDP ratios across many EU Member States has triggered a wide discussion on factors behind the sustainability of public finance. An extensive literature suggests that the institutional framework of budgetary processes has important effects on fiscal outcomes in the sense that "better institutions", reducing the margin for unproductive spending (Poterba & von Hagen, 1999), are connected with better fiscal performance, i.e. lower deficits/debt levels (Alesina & Perotti, 1996). In sum, it is claimed that budgetary institutions and fiscal performance are strongly correlated (Debrun & Kumar, 2007).

Concerning fiscal governance two aspects seem to matter mostly: fiscal transparency (Alt & Lassen, 2006) and fiscal governance (Hallerberg et. al., 2009).

According to the Economic and Financial Affairs of the European Commission "National fiscal governance, or domestic fiscal frameworks, can be defined as those rules, regulations and procedures that influence on how budgetary policy is planned, approved, carried out and monitored" (http://ec.europa.eu/economyÿfinance). Transparency, in its former definition, is "openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections" (Kopits & Craig, 1998, p.1).

The rising importance of fiscal transparency, as part of budgetary institutions, is directly linked to solve a problem of governance in public finance: "The insight that institutions matter for choices and outcomes is the basis for the increased focus during the past two decades on principles of good governance, of which transparency of government is a prominent part"(Alt, Lassen & Rose, 2006);

Fiscal transparency is considered as part of institutional arrangements that "can play a role in helping contain the widely observed penchant of policymakers for excessive deficits" (Debrun & Kumar, 2007, p. 479). Fiscal transparency, minimizing fiscal illusions (Puviani, 1903), is deemed a fundamental tool for obtaining governments' fiscal sustainability: "transparency in government operations is widely regarded as an important precondition for macroeconomic fiscal sustainability, good governance, and overall fiscal rectitude.. [and] is a necessary condition for sound economic policy". (Kopits & Craig, 1998, p. 1-2).

Fiscal governance, similarly, "connotes a broad perspective on the institutions, that is, the system of procedures (or fiscal institutions) in place to make budget" (Hallerberg et.al., 2009, p.4): like transparency, fiscal governance has become a "buzz-word" in public policy as ," there is a fast expanding strand in the economic literature, reaching well beyond the realm of fiscal policy, highlighting the importance played by the quality of rules and institutions for economic outcomes" (Larch, 2009, p. 8).

Both fiscal governance and fiscal transparency interplay with the contemporary politics and macroeconomic conditions in determining the fiscal outcome in each country. "The actual choice of the instruments for financing the government activity, and more in general its size and the balance of fiscal policy, are shaped by political actors" (Ricciuti, 2002, p. 2). Government partisanship, as well as features of the political party system and of government institutions are deemed responsible of fiscal profligacy as many theories "identify the characteristics of governments and institutions that vary across national systems and that might affect the supply of fiscal responsibility and determine the actual design of the fiscal budgeting process" (Leachman et.al., 2007). However, relationship between these variables are still somewhat loose in the literature as, in some cases, reverse causality my be hold true as well as omitted variables bias (Hameed, 2005; Fabrizio & Mody, 2006). Using a PLS-SEM model on data concerning 25 European countries in the period 1999-2006 we want to assess if fiscal discipline is mostly a matter of economic conditions or institutions. Aim of our paper is to model macroeconomic conditions, contemporary politics and fiscal institutions as separate entity, treating them as latent variables, supposing that their characteristics are only partially determined by the associated indicators, and to explore the relationship between budgetary outcomes, economic cycle and political and fiscal structures.

Preliminary results suggest that, albeit macroeconomic conditions are the first cause of balanced budgets, however budgetary institutions, mostly fiscal transparency and rules, may have a role determining fiscal discipline (Fabrizio & Mody, 2006) and help to limit the extent of government spending and therefore the government's ability to manipulate public finance (Alt & Lassen, 2006). However, as fiscal institutions are as well affected in some way by fiscal outcomes, reforming budgetary process may be hard when countries are experiencing high deficits.

2. The interplay between politics, budgetary institutions and fiscal discipline: definition, causes and indicators

In recent years the problem of "fiscal discipline", meant as a budgetary control of the fiscal behavior of the government (von Hagen & Harden, 1995), is a prevailing problem in contemporary politics. Looking at Europe's Economic and Monetary Union (EMU) the strong fiscal discipline foundations are becoming even stronger.

As Hallerberg *et. Al.,* underline, "a growing body of empirical and theoretical literature suggests that the institutions governing the budget process are important determinants of a country's fiscal performance" (Hallerberg *et. Al.,* 2007). Similarly, in Ayuso et. Al. (2007, p.657), we read that: "A large body of empirical literature has tackled the empirical analysis of the common problem by focusing on the impact of the procedures, arrangements and rules that surround fiscal policy making. The idea is that the common pool problem can be reduced in the presence of an appropriate system of fiscal governance".

According to this literature, "reforms in political institutions or, less radically, measures aimed at improving "fiscal governance", i.e., the overall system of arrangements, procedures, institutions that underlie fiscal policy making" (Ayuso *et.al.,* 2007) help solving the co-ordination failures behind the common-pool dilemma as the main source of deficit/debt bias.

In particular, "transparency in the budget process, the strength of the fiscal bureaucracy and a "top down" approach to budgeting are key to fiscal discipline" (Leachman *et.al.,* 2007 p. 374). Being part of the modern

accounting principles[1] behind performance budgeting, fiscal transparency is often associated to audit under the general label of accountability (Posner, 2006) as transparency and accountability are important, not only for the tasks of competent economic authorities, but also in order to reduce their incentives to be fiscally irresponsible and thus be able to control their budget deficits (Rogoff, 1990) minimizing the fiscal illusion that may affect the actual degree of representativeness of the plurality of interests involved in the democratic institutional system (Puviani, 1903)[2]

As Bastida *et.al.* underline, the definitions of budget transparency have three essential elements: "(1) the release of budget data (systematic and timely release of all relevant fiscal information); (2) an effective role for the legislature (scrutinize budget reports, discussing and influencing budget policy, holding government accountable); and (3) an effective role for civil society through the media and nongovernmental organizations" (Bastida *et.al.*, 2009, p. 404).

In general, transparency is commonly used to denote the total disclosure of financial and non financial information regarding governments' decision-making procedures and transactions, the roles of various State bodies, the terms used in the budget law in a timely and systematic way (Kopits and Craig, 1998)[3]. Albeit it is a well-known and used term, definition of transparency is not so straightforward: not only because of the difficulty in defining difference between expenditure side and revenue side, but also between transparency and process transparency (De Simone, 2009).

The majority of works on fiscal transparency, as part of the budgetary institutions, belongs to the political economy domain[4] using a class of models known as political agency models, which were created by Barro (1973) and Ferejohn (1986). These models are developed in an incomplete contract framework where transparency acts as a commitment device to "tie the hands" of policymakers tempted by deviations from socially optimal choices. The main empirical conclusions of this literature are that increasing transparency reduces debt accumulation and the scope for generating political budget cycles. The bottom line of the research is the ongoing debate on the sustainability of public finances in EU where a change in the partisan politics seem to be preferred to acceptance of strict fiscal rules.

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[1]   In continental European countries, for a long length of time, several "classical" principles have guided budget processes and its related laws that are universality, unity, specificity, and annuality. These are mainly principles associated with ex ante budget processes and relate primarily to the early stages of the budget cycle – preparation, presentation and adoption of the budget by the legislature. Given the relatively less emphasis on incorporating into law the budget principles associated with the later stages of the budget cycle there has been a focus on these budget reporting requirements, – accountability, transparency, stability and performance that are associated particularly (but not exclusively) with ex post budget processes (Oecd, 2004).

[2] Puviani defines fiscal illusion a misperception by individuals of the total amount of tax burden and of the benefit returned for public expenditure. Fiscal illusion is part of political illusion, namely erroneous political judgments by social masses. Misperceptions about the means (taxes and public expenditures) the State uses to achieve its aims can consist either of overestimation or underestimation by citizens of the sacrifice of tax burden and the benefits of public expenditure with respect to their objective value. Puviani argues that most fiscal illusions work by obscuring the real cost of public goods and services and overestimating their utility (optimistic illusions) (Fausto, 2010)

[3]   Kopits and Craig definition of fiscal transparency is still the most cited one: "openness toward the public at large about government structure and functions, fiscal policy intentions, public sector accounts, and projections. It involves ready access to reliable, comprehensive, timely, understandable, and internationally comparable information on government activities … so that the electorate and financial markets can accurately assess the government's financial position and the true costs and benefits of government activities, including their present and future economic and social implications" (Kopits & Craig, 1998)

[4] As Von Hagen points out, the essential problems of the political economy of public finances are two, that are "the principal-agent relationship between voters (the principals) and politicians (the agents). The second is the common pool problem of public finances" (Von Hagen, 2005, p. 2).

An higher transparency is a way of creating what Powell e Whitten (1993), define "*clarity of responsibility*", and makes observers more able to distinguish effort from opportunistic behaviour or stochastic factors. If transparency "reduces the ability of a government to engage in creative accounting and illuminates, as much as possible, tradeoffs between present and future tax burdens" (Leachman *et. al.*, 2007, p. 374), "a deliberate lack of fiscal transparency is often attributable to a government's attempt to escape public scrutiny of its behaviour (...exploiting the fiscal illusion of voters)" (Kopits *et. al.*, 1998, p.1). Transparency in the budget process helps reducing the spending bias due to fiscal illusion, limiting the opportunities for politically motivated budget making, and, subsequently, solves the possible conflict between governments and voters. Hence, the literature observed shows a direct relation between democracy (better governance as better fiscal performance) and transparency level: "Fiscal transparency allows voters, interest groups, and competing political parties to observe—or infer with better precision—causes and consequences of a government's fiscal policy, either directly or through the media" (Alt *et.al.*, 2006a, p. 531).

Alt *et. al.* (2006a) explore explanatory factors for politicians implementing more transparent budget procedures: they found that transparency decreases debt accumulation, that party orientation affect fiscal outcome as right-wing governments tend to have higher deficits than left-wing governments, and that increasing political polarization increases debt accumulation. In another paper the same authors show that bigger electoral cycles[5] are evident in less transparent and more polarized systems: "Higher polarization countries, everything else equal, have significantly higher deficits in election years, while higher transparency countries, again holding everything else equal, have significantly higher surpluses" (Alt *et.al.* (2006b, p. 541).

The related assessments of transparency are meant as effectiveness indexes that measure the level of fitness with international fiscal rules/best practices that facilitate the objective of sound government finances.

There are several transparency measures, provided both by international institutions and developed in academic papers. The empirical research on fiscal transparency is limited, but also growing (Von Hagen, 1992; Hameed, 2005; Kauffmann and Bellever, 2005; Alt &Lassen, 2006) Evidence of transparency is also a reference tool for advisors. For example, IBP (International Budget Partnership); Oxford Analytica (www.oxan.com), www.globalintegrity.org and estandardsforum.com Freedom House, (www.freedomhouse.org). International Country Risk Guide (www.prsgroup.com). Transparency International (TI), (www.transparency.org). Global Integrity (www.globalintegrity.org). The Open Budget Initiative (www.openbudgetindex.org) are the most cited source of indicators of transparency in the budget process based on the compilation of survey/questionnaires by business people and on expert assessments. The objective of these indexes is to provide a rating tool for assessing some aspects of public finances. Together with the diffusion of several indexes, international organisations that include public financial management as part of their mandates provide a third source of standard setters for budget systems and laws associated with them. Such organisations include the IMF, the OECD and the World Bank. (IMF, 1998, 2001 and 2007; OECD, 2002). Any standards issued by such organisations are clearly not legally binding but can provide firm guidance to national authorities formulating budget system law. The normative impact of standards of international organisations does not depend on their legal status, but on their substance and the authoritativeness of the organisation issuing the standards.

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[5] During election years, governments at all levels often engage in a consumption binge, in which taxes are cut, transfer are raised and government spending is distorted toward projects

Concerning the functioning of fiscal governance, Hallerberg et al. (2007) identify two basic institutional approach: delegation approach and the contract approach (Hallerberg & von Hagen 1999) according to the division of power among institutions involved in the budgeting process.. Moreover, some scholars (Von Hagen, 1992; Alesina *et.al.* 1999) argued that a massive involvement of Parliament in the budgeting process leads to worst fiscal performances: this is why they support a centralised or hierarchical decision making process with a strong role of the finance minister as the sole "guardian of budgetary rectitude and fiscal discipline" (Santiso, 2005, p.9), and able to "enforce fiscal restraints, avoid large and persistent deficits and implement fiscal adjustments more promptly" (Alesina *et.al.*1999, p. 17). "A strong position of the prime minister or finance minister in government, or government negotiations producing a set of binding targets early in the process; a parliamentary process with strong limits on amendments, votes proceeding item-by-item on expenditures and a global vote on the total size of the budget preceding the parliamentary debate; a large degree of transparency of the budget, an execution process with limited flexibility for the SMs and a strong position of the finance minister vis-a-vis the SMs." (von Hagen *et.al.*, 1995, p. 776) are the solutions that this literature describe to overcome the problem of spending bias and obtain fiscal discipline. The perils of high party polarization, high government turnover, frequent elections, multiparty coalitions (in Parliamentary systems), and divided government (in Presidential systems) that scholars associate to greater fiscal irresponsibility are commonly described as "the fragmentation problem" (Leachman *et.al.*, 2007, p. 373).

According to Ayuso et.al. (2007) measures devised to improve fiscal governance concern: "First, the procedural rules laid down in law or constitution that govern the elaboration and implementation of the annual budget law and fix the respective powers of the various actors taking part in the budget process. The main objective of reforming budgetary procedures is to reduce the extent of the common pool problem. Second, numerical fiscal rules which fix targets and ceilings for fiscal aggregates or set benchmarks for the conduct of fiscal policy. The purpose in this case is to replace the discretion of fiscal authorities prone to deficit bias with ex ante rules. Third, independent fiscal institutions (Fiscal Councils) other than government and Parliament that play a role on the conduct of fiscal policy by providing inputs or recommendations on fiscal policy issues" (Ayuso et.al., 2007, p. 652). There are several measures of fiscal governance/budgetary institutions, according to the characteristics of the budgetary process in each stage, the type of fiscal rules, the role of finance minister and the amendment power of parliament and the mechanisms of control (Von Hagen 1992; Hallerberg et al. 2001, Gleich, 2003; Yläoutinen 2004; Hallerberg, et al. (2007, 2004). Among the political determinants of fiscal governance there are type of government, ideological distance, party fragmentation and the electoral system (Hallerberg *et.al.* 2007).

In Fabrizio and Mody (2006), relationship among political, structural, budgetary institutions and fiscal discipline are synthesized as follows (see fig.1)
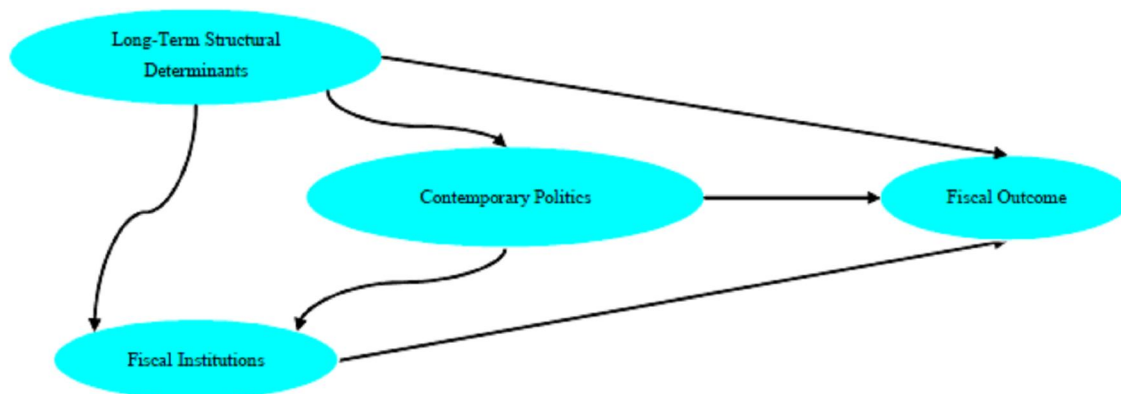
Fig. 1 determinants of fiscal performance (source: Fabrizio and Mody, 2006

"First, of greatest interest to policymakers, the quality of institutions continues to matter strongly in determining fiscal outcomes, even when we consider a variety of conditioning variables. Second, contemporary politics is important and appears to trump the economic conditioning variables" (Fabrizio and Mody, 2006, p. 6.

In the following of the paper we will try to explore these relationship by means of a structural equation model.

3. The approach

According to the literature review, it is difficult to disentangle budgetary institutions, mainly in the form of fiscal transparency and fiscal governance attributes, political variables and macroeconomic context. Moreover, scholars blame a lack of consideration of endogeneity problems in the study of fiscal institutions: "Institutions drive economic conditions, but at the same time economic conditions can influence institutions. Endogeneity makes it difficult to claim causality between fiscal transparency and performance variables, but it is still useful to show correspondence between them" (Hameed, 2006, p.5). Moreover, there is a strong possibility of omitted variables (Fabrizio & Mody, 2006, p.693) in the study of the relationship between budget institutions and fiscal performance.

A structural equation model (SEM) can provide useful information about the relationship between political setting, transparency, fiscal governance and fiscal discipline. The SEM models political setting, macroeconomic variables, fiscal transparency-governance and fiscal discipline as four distinct latent variables. The idea of modelling these phenomena as latent variables follows from considering them as "complex structures" where their effective meaning is only partially represented by the relative indicators.

Albeit SEM models are commonly used in marketing literature, recent application can be found also in the economic policy domain (Buehn and Schneider, 2009). Our analysis aims at further contributing to the literature on political economy of budget deficit by isolating the effect of macroeconomic context, political setting and fiscal governance in affecting fiscal discipline meant as primary balance ("that is, the balance most under the control of the national authorities", Fabrizio and Mody, 2006, p. 703). Previous analysis have all utilized panel data regressions to analyze the effect of each domain on fiscal behavior (Debrun & Kumar, 2007), by using each political, economic and fiscal governance variable as separate explicative variables. Using PLS SEM model we deal with the problem of omitted variables and we can investigate the effect of each domain separately.

Our measurement model partially follows the one expressed by Fabrizio and Mody (2006). However, as we are dealing with short term analysis we do not explore relationship between macro structure, politics and budgetary institutions as they exhibit longer pace of change.
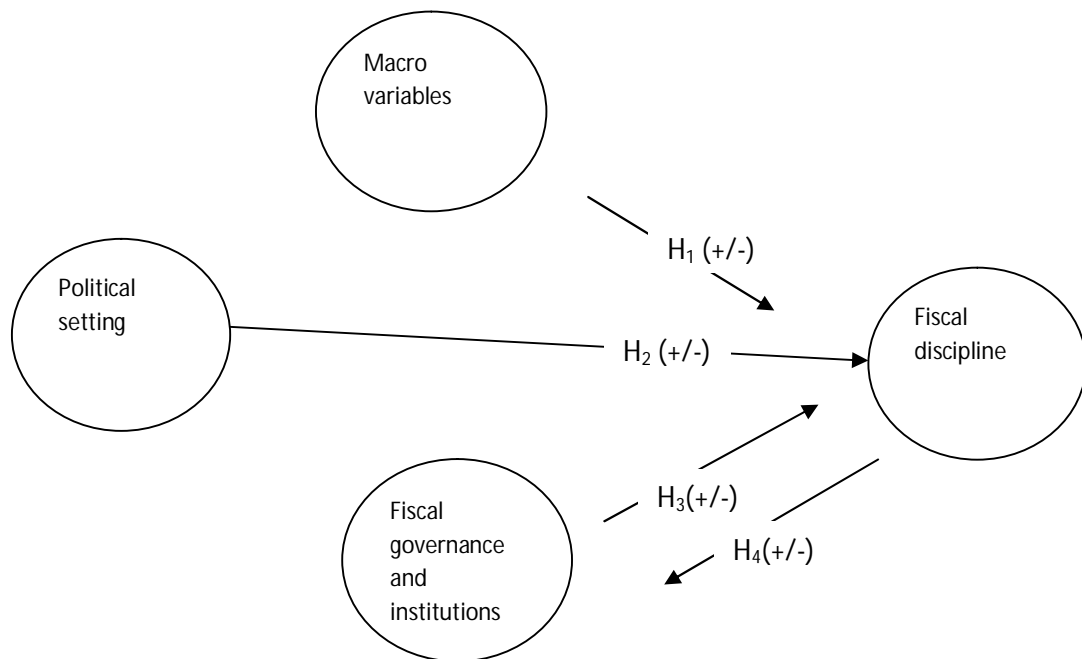
Hence we posit that:

H_1: Macroeconomic variables affect fiscal discipline

H_2 Political setting affect fiscal discipline

H_3 Fiscal discipline is affected by budgetary institutions

H_4 Budgetary institutions are caused by fiscal discipline

The last two hypotheses will be tested in two different models as they are concerned with different direction of causality. Justification for a double check follows from a difficult judgment concerning the roots of fiscal discipline and institutions, as already emphasized from the political economy literature (Hameed, 2005, Fabrizio and Mody,2006).

6. Empirical Application

Data analysis and results

In the application of the structural equation model, we data for 25 European countries (except Malta and Cyprus) in the period (1999-2006). All construct were measured using existing and tested scale or publicly available data. As indicators of each construct we used average values for the period 1999-2006 except for three variables which are time invariant like fiscal transparency (taken from Kauffman and Bellver, 2005), fiscal illusion (Mourao, 2006) and delegation index (Hallerberg et.al, 2007, Fabrizio and Mody, 2010 and Albuquerque, 2010). All data is publicly available and is mostly taken from Ameco Databased and Ifo's

Database for Institutional Comparisons in Europe (DICE) which is a very useful secondary source of data published on research papers or in official statistics.. Table A.1 in the Appendix presents a comprehensive overview of the variables, definitions, and data sources.

Figure 2 and 3 – which plots EU fiscal rule index and the index of government fragmentation against primary balance for the 25 European countries provide some preliminary evidence of the relationship between politics, fiscal governance and fiscal discipline. As can be seen from figures, relationship between the two measures is quite indefinite.

The relationships between constructs were analyzed using structural equation modeling using the Partial Least Squares (PLS) approach which is better suited to causal modeling when sample size is small and models are complex (Hullnad, 1999, Esposito Vinzi et. Al., 2010). For testing of both the measurement and the theoretical models, Partial Least Squares (PLS) using SmartPLS (Ringle et al., 2005). PLS does not require multivariate normal distribution and is especially suitable for the analysis of small samples. Moreover, as an alternative to the classical covariance-based approach, PLS-PM is claimed to seek for optimal linear predictive relationships rather than for causal mechanisms thus privileging a prediction-relevance oriented discovery process to the statistical testing of causal hypotheses. From the standpoint of data analysis, PLS-PM may be also viewed as a very flexible approach to multi-block (or multiple table) analysis which arises when a few sets of variables are available for the same set of samples (Esposito Vinzi et.al. 2010, p. 2). As we are dealing with explanatory combination of indicator variables underlying the latent construct PLS-PM latent variables are more naturally defined as emergent constructs (with formative indicators (Diamantopoulos, 2006) rather than latent constructs (with reflective indicators).

The standardized beta coefficient for each path in the model was obtained from the PLS algorithm in SmartPLS. A Statistical significance of each path in the theoretical model was determined by the t-value on a bootstrapping technique with 500 iterations. Results showed that macro economic framework is negatively related to fiscal discipline (b= -0.42; t= 3.48, p=.00); political setting is positively related to fiscal governance (b=0.23, t=1.65, p=.00) while fiscal governance affects positively fiscal discipline (0.35, t= 7.57 p=.00).

Concerning significance of each indicators in each constructs, the results add further support to the formative model as the three domain predict fiscal discipline well (R^2=0.56, while with reflective measurement model R^2=0.49) and the majority of outer item coefficients have the right signs and adequate t-statistics (see table 2).

All macro indicators are significant except openness and sign are consistent with previous literature (Fabrizio & Mody, Hallerberg et, al 2009).

Concerning political setting, only persistence of right wings government seems to be significant, while fragmentation index has negative sign (-0.28) but with lower t value (0.85).

Finally, all fiscal governance variable are significant, except economic and institutional transparency. It is interesting to note that fiscal illusion display the highest t value (4.95) as it concerns the effort in minimizing the spending bias.

If we consider that the direction of causality can flow from fiscal performance to budgetary institutions (Hameed, 2005), we consider the measurement model in fig. 4.

Results showed that macro economic framework is still negatively related to fiscal discipline but with higher (b= -0,57; t= 2.97, p=.00); political setting is positively related to fiscal governance (b=0.23, t=1.5, p=.13) while fiscal discipline affects positively fiscal governance (b=0.56, t= 11.90 p=.00).

Albeit these are very preliminary results we conclude that fiscal governance effectively matter in disciplining public finance. However it is also evident that sound public finances create the conditions for better budgetary institutions, which means that stricter fiscal rules and minimization of fiscal illusion may become a difficult objective when public finances is not performing well.

7. Preliminary conclusion

The relationship between fiscal governance, transparency and fiscal discipline has been extensively explored by the political economy literature which has emphasized that contemporary politics as well as budgetary institutions like forms of fiscal governance and fiscal discipline matter in determining fiscal outcomes. However, this literature has also underlined that directions of causality are not clear among these constructs as well as high is the risk of omitted variables. In this paper we propose to use Structural Equation Models (SEM) approach to better understand the effect of each separate domain on fiscal discipline, modeling them as latent variables, as we suppose that they are complex phenomena which can be only partially represented by the measures proposed by the literature. Starting from Fabrizio and Mody's (2006) analysis, we suggest to model contemporary politics, macroeconomic conditions and fiscal governance and transparency as different constructs and to analyze separately their effect on fiscal discipline meant as budget balance. We propose two measurement model which differ in the direction of causality between fiscal governance and fiscal outcomes, as these latter can be greatly affected by the reverse causality problem (Hameed, 2005).

Our very preliminary analysis confirm that macroeconomics matters mostly in determining fiscal outcomes, that politics can play a role (mostly if right wings party last at government) but that fiscal institutions can help ensuring budget balance, where strength of fiscal rules, separation of powers in the budget process (delegation index) and minimization of fiscal illusion seem to exercise a great role. However, fiscal institutions seem more to be affected than to affect fiscal outcomes. This result may suggest that adoption of stricter rules and more disciplined budgetary process can be harder when countries experience deficit problems: as a matter of fact present EU policymaking, where a change in the partisan politics seem to be preferred to acceptance of strict fiscal rules, confirm that sustainability of public finances in EU is a far from resolved issue.

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Appendix

Tab. 1 Description of variables

| Label	Variable description	Source
av_right_wing	Proportion of years from 1999–2006 with a right-wing party in office	Alt and Lassen (2006). Cesifo Dice World Bank (2010), Database of Political Institutions (DPI), Washington 2010.
primary_balance	Average Net lending (+) or net borrowing (-) excluding interest of general government. Expressed as percentage of GDP (1999-2006)	Ameco database
checks&balance	Legislative and Executive Indices of Electoral Competitiveness. Takes values from 1 to 16. Higher values translate into more electoral competitiveness and tighter controls faced by governments.	Cesifo Dice and World Bank (2010), Database of Political Institutions (DPI), Washington 2010.
delegation_index	Captures the quality of budget institutions through the three phases: at the preparation stage; at the approval stage and, at the implementation stage	Hallerberg et al. (2007), and Fabrizio and Mody (2010), Albuquerque (2010)
Ec/Institutional Transparency 2004	Economic and institutional transparency composed indicator based on 13 different sources.	Kauffman and Bellver (2005)
elec	Number of parliamentary elections in 1999-2006	European Election Database http://www.nsd.uib.no
fisc_ill	Composite indicator as the result of a construction that aimed to measure the degree of national Fiscal Illusion through a combination of the various instruments (variables) that produce the phenomenon according to the literature. Higher values of the index reveal higher patterns of Fiscal Illusion	Mourao (2006)
herf_index	Herfindhal index of parties sharing in government equal to The sum of the squared seat shares of all parties in the governmen	Cesifo Dice and World Bank (2010), Database of Political Institutions (DPI), Washington 2010.
infl_rate	average rate of inflation (1999-2006)	Ameco database
lagged_debt	General government consolidated gross debt (t-1): Excessive deficit procedure (based on ESA 1995) (UDGG). Expressed as percentage of GDP	ameco database
openness	average ratio of merchandise trade (exports plus imports) to GDP.	Ameco database
realGdpgrowth	? Logarithm of real gross domestic product (1999-2006)	Ameco database
standfisc_ruleindex	composite indicator obtained by aggregating scores assigned to five criteria: (1) the statutory base of the rule, (2) the room for revising objectives (3) the mechanisms of monitoring compliance and enforcement of the rule, (4) the existence of pre-defined enforcement mechanisms, and (5) media visibility of the rule	European Commission, Directorate for General Economic Affairs
unemp_rate	average rate of unemployment (1999-2006)	Ameco database
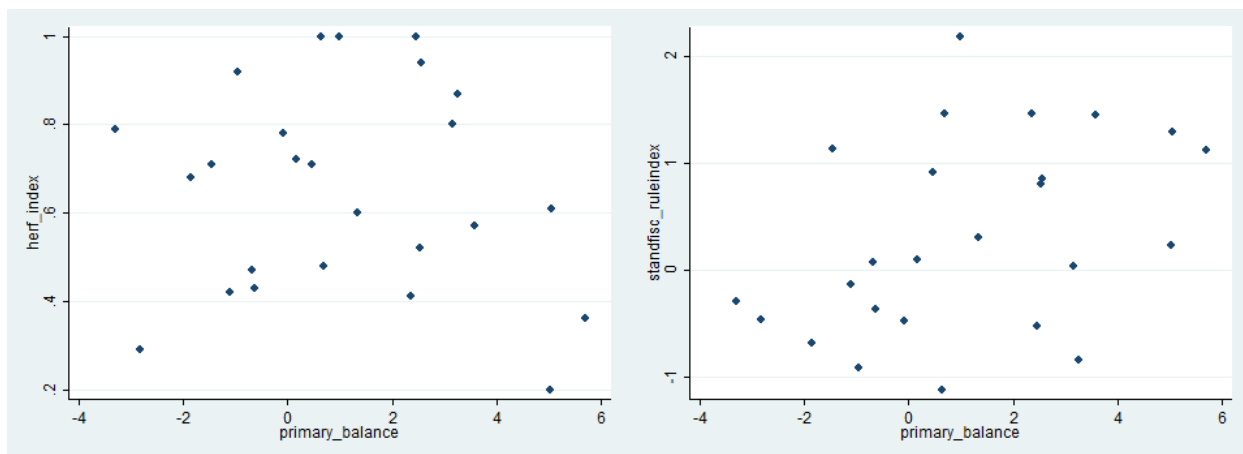
Figure 2-3 relationship between politics, fiscal governance and fiscal discipline
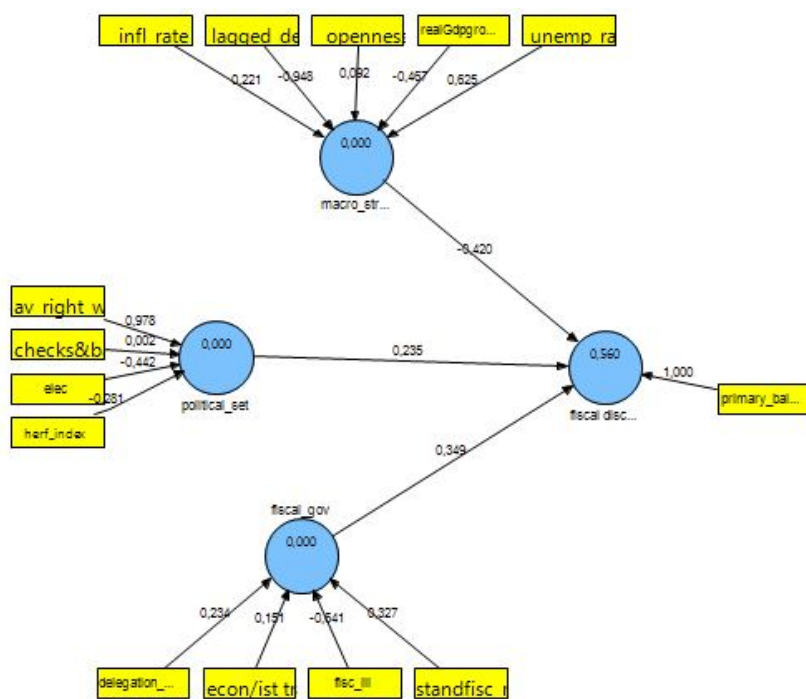
Tab. 2 model 1 and partial least squares results

construct	manifest variable	weights	t values
political_set	av_right_wing	0.98	1.99
	checks&balance	0.00	0
	elec	-0.44	1.27
	herf_index	-0.28	0.85
fiscal_gov	delegation_index	0.23	1.62
	econ/ist transp	0.15	1.02
	fisc_ill	-0.64	4.95
	standfisc_ruleindex	0.33	2.05
macro_struct	infl_rate	0.22	2.05
	lagged_debt	-0.95	2.73
	openness	0.09	0.7
	realGdpgrowth	-0.47	2.2
	unemp_rate	0.63	3.24
fiscal discipline	primary_balance	1000000.00	0

Table 3 assessment of the measurement model 1
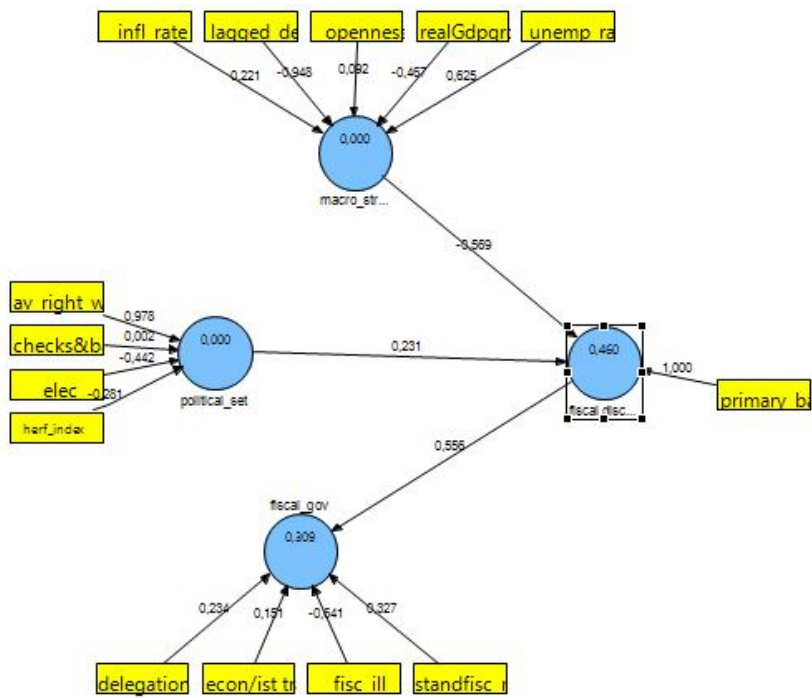
Fig 3 Model 2 and PLS results

construct	manifest variable	weights	t values
political_set	av_right_wing	0.99	1.99
	checks&balance	0.00	0
	elec	-0.44	1.3
	herf_index	-0.28	0.85
fiscal_gov	delegation_index	0.23	1.58
	econ/ist transp	0.15	1.11
	fisc_ill	-0.64	5.1
	standfisc_ruleindex		1.97
macro_struct	infl_rate	0.22	2.02
	lagged_debt	-0.95	2.52
	openness	0.09	0.7
	realGdpgrowth	-0.47	2.09
	unemp_rate	0.63	3
fiscal discipline	primary_balance	1000000.00	

Tab. 4 Assessement of the measurement model 2