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Abstract

The present paper treats the issue of economic foundations, on which political power rests, and the specific problem of public debt in the developed countries. Starting from the general question: "Why do rich governments borrow so much?" the paper develops a model of political power based on the possession of capital, and on the transformation of public possession into private property rights. Empirical investigation follows, in a sample of 21 countries, demonstrating that there is an objectively existing transfer of capital from public borrowing to private property rights; that transfer is connected mostly to the property of non-productive assets, and goes beyond the easily inferable relation to net exports. That the transfer from public borrowing to private property rights is strongly correlated with the relative dispersion or concentration of power in the political system. We are witnessing a progressive withdrawal of public finance and public borrowing as a means of transferring capital, with a simultaneously growing idiosyncrasy (cross-sectional variance) of fiscality.

Keywords: fiscal policy, public debt, political power, political systems, property rights, institutional economics, macroeconomics

Introduction

Politicians use to do things that economists qualify as stupid. That is a plain social fact. Saying that a given public policy, regarding economic matters, is “politically driven” is almost an insult. Yet, treating the political side of public governance as simply “irrational” is irrational in itself. Politics are a set of patterns of behaviour, and said patterns have emerged on the grounds of some social changes. From the economic point of view, fiscal policy is maybe the most controversial field of public governance.

According to the “Fiscal Monitor”, issued by the International Monetary Fund in October 2013, reducing public indebtedness is one of the major challenges that the global economy is currently facing. Restrictive fiscal policies that lead to that purpose are socially painful, sometimes pro-cyclical, and politically risky (if not suicidal). Most of the current research focuses on the short-term, cyclical outcomes of fiscal restrictions. Yet, another issue is even more important: how durable and sustainable are the fiscal outcomes of these policies? If we succeed in reducing public indebtedness by five per cent of GDP today, what is the likelihood of that being a durable gain? Will the public sector stay mean and lean for decades or will it behave according to a post-diet-yoyo pattern?

The theory of economics, at least the contemporary one, seems to be dominated by the confrontation of two standpoints. On the one hand, there is the economic mainstream with the assumption that public debt is a burden to the economy. (e.g. Meade 1958¹; Modigliani 1961²; Diamond 1965³). On the other hand, some *vota separata* to that mainstream opinion has been expressed, for example, by the early post-keynesians: Abba Lerner (Lerner 1943⁴) and Alvin H. Hansen (Hansen 1945⁵). Later developments, based on the so-called „Ricardian equivalence“, and brought forth mostly by Robert Barro (Sraffa 1951⁶; Barro 1974⁷, 1979⁸, 1986⁹, 1987¹⁰, 1989a¹¹, 1989b¹²), with

¹ Meade, J., E., 1958, Is the National Debt a Burden, Oxford Economic Papers, Volume 10, Issue 2 (Jun., 1958), pp. 126 - 150

² Modigliani, F., 1961, Long-Run Implications of Alternative Fiscal Policies And the Burden of the National Debt, Economic Journal, no. 71, pp. 730 - 755

³ Diamond, P., E., 1965, National Debt in a Neoclassical Growth Model, The American Economic Review, volume 55, issue 5 (Dec., 1965), pp. 1126 - 1150

⁴ Lerner, A., 1943, Functional Finance and The Federal Debt, Social Research, Vol. 10, No. 1 (FEBRUARY 1943), pp. 38-51

⁵ Hansen, A., H., 1945, Three Methods of Expansion through Fiscal Policy, The American Economic Review, Vol. 35, No. 3 (Jun., 1945), pp. 382-387

⁶ Sraffa, P., 1951, The Works and Correspondence of David Ricardo, Volume IV, Pamphlets and Papers, 1815 - 1823, „Funding System“, Cambridge, Cambridge University Press

noticeable contribution from the part of James Buchanan (Buchanan 1976¹³; Buchanan, Wagner 1977)¹⁴.

Against the background of those opposed views upon the burdensomeness of public debt, a third scholarly stream is to notice, which points at the mutual relationship between public debt, and the distribution of wealth across the private sector. A first glance at that aspect of the matter comes from Adam Smith in person, who argued that public debt emerges and gains in importance when, and only when the private sector accumulates a certain critical amount of capital. Beyond that critical amount, there is more capital that can be used by typical business ventures, and lending to the government, with low risk and constant interest rate becomes a substantial source of capitalistic revenues. In the same time, the necessity of changing the policy of taxation, in order to pay back the public debt, creates a spiral-like connection between debt and taxes. Consequently, the whole social structure changes as public debt grows¹⁵. Interestingly enough, that path of thinking seems to have had been largely neglected by the posteriority, with the „burden or no burden” dilemma taking the lead. It is to note that Franco Modigliani, cited above, with his very original approach, seems to have returned to that intuition of connection between public debt, and private assets. Yet, Gregory Mankiw seems to have really blown the dust off that Smithsonian approach. Starting from earlier research of other scholars (Hall 1978¹⁶; Shea 1995¹⁷; Parker 1999¹⁸; Souleles 1999¹⁹; Kotlikoff, Summers 1981²⁰; Wolff 1998²¹), Mankiw traced a relatively simple model, in which he attempted

⁷ Barro, R.J., 1974, Are Government Bonds Net Wealth?, *Journal of Political Economy*, no. 82, November/December 1974, pp. 1095 - 1117

⁸ Barro, R.J., 1979, On The Determination of the Public Debt, *Journal of Political Economy*, no. 87, October 1979, pp. 940 - 971

⁹ Barro, R.J., 1986, U.S. Deficits Since World War I, *Scandinavian Journal of Economics*, 1986, vol. 88 no.1, pp. 195 - 222

¹⁰ Barro, R.J., 1987, Government Spending, Interest Rates, Prices and Budget Deficits in the United Kingdom, 1701 - 1918, *Journal of Monetary Economics*, September 1987, no. 20, pp. 221 - 247

¹¹ Barro, R.J., 1989, *The Neoclassical Approach to Fiscal Policy*, w: Barro, R.J. (ed.), 1989, *Modern Business Cycle Theory*, Cambridge, Harvard University Press

¹² Barro, R.,J., The Ricardian Approach to Budget Deficits, *The Journal of Economic Perspectives*, Vol. 3, no. 2, Spring 1989, pp. 37 - 54

¹³ Buchanan, J., 1976, Barro on The Ricardian Equivalence Theorem, *Journal of Political Economy*, no. 84, April 1976, pp. 337 - 342

¹⁴ It is to note that some scholars question the well-founded of attributing the concept of „Ricardian equivalence” to David Ricardo’s work. See for example: O’Driscoll, G.P., 1977, The Ricardian Nonequivalence Theorem, *Journal of Political Economy*, no. 85, February 1977, pp. 207 - 210

¹⁵ That Adam Smith’s theory is expressed in the third chapter („On public debts”) of the fifth book in his treaty.

¹⁶ Hall, R.,E., 1978, Stochastic Implications of the Life Cycle - Permanent Income Hypothesis: Theory and Evidence, *Journal of Political Economy*, December 1978, 86(6), pp. 971- 87

¹⁷ Shea, J., 1995, Union Contracts and the Life - Cycle/Permanent - Income Hypothesis, *American Economic Review*, March 1995, no. 85(1), pp. 186 -200.

¹⁸ Parker, J., 1999, The Response of Household Consumption to Predictable Changes in Social Security Taxes, *American Economic Review*, September 1999, no.89(4), pp.959 -973

¹⁹ Souleles, N., S., The Response of Household Consumption to Income Tax Refunds, *American Economic Review*, September 1999, no. 89(4), pp. 947-958

²⁰ Kotlikoff, L., J., Summers, L. H., 1981, The Role of Intergenerational Transfers in Aggregate Capital Accumulation, *Journal of Political Economy*, August 1981, no. 89(4), pp. 706-732

to prove that the accumulation of public debt is closely matched, and functionally linked to the accumulation of private property rights in the wealthiest layers of society (Mankiw 2000²²).

The main line of confrontation in the economic doctrine, as for public debt, is whether it is a burden for the economy or not. At best, with the Robert Barro's view, we can assume that debt is economically neutral. Keeping all that in mind, let's have a look at some stylized facts about public debt. At the end of 2011, only fourteen countries, among the 188 reported, did not have any gross public debt, i.e. their public sectors did not have any financial liabilities (IMF 2012²³). The total value of the global, gross public debt at the end of 2011 was of 55 trillions of USD, which corresponded to some 79% of the global GDP. Six countries owed over 80% of that total, namely: Japan, United States, Germany, Italy, France, and United Kingdom. The richest borrow the most, so to say. The question is: what for? Why? Are they all so irresponsible? Another, interesting stylized fact comes from the observation of the geography of the net public debt. At the end of the 2011, 89 countries out of the 188 reported by the IMF did not have any explicit net debt. The most interesting are those countries, whose governments are indebted in gross terms, yet have public reserves of financial assets way above their gross debt or close to: Saudi Arabia, Kazakhstan, Norway, Sweden, Finland, Denmark, Jamaica, Erytrea, and Cote d'Ivoire. Those, who clearly have plenty of cash, borrow still more. Once again, the question returns: what for and why?

One of the goals of the present paper is to develop a synthesis of the purely economic approach to public debt with the political one. The chief thought of that path is taken from Max Weber (1947²⁴; 1978²⁵), namely that a full explanation of social phenomena requires not only to draw a normative model of rational behaviour recommended in the given case, but also to explain the motives that push social actors to depart from that model. The theory of politics is traditionally attached to two concepts, both taken from the Weber-Parsons tradition, namely: action and system (besides the already cited works of Max Weber, the following seems relevant: Parsons, Shills 1951²⁶; Parsons

²¹ Wolff, E. N., 1998, Recent Trends in the Size Distribution of Household Wealth, *Journal of Economic Perspectives*, Summer 1998, no. 12(3), pp. 131-150

²² Mankiw, N. G., 2000, The Savers-Spenders Theory of Fiscal Policy, *American Economic Review*, no. 90(2), pp. 120-125.

²³ World Economic Outlook April 2013, the database, available at www.imf.org

²⁴ Weber Max, 1947, *The Theory of Social And Economic Organisation*, translated by A.M. Henderson and Talcott Parsons, New York, Oxford University Press

²⁵ Weber, M., 1978, *Economy and society: An outline of interpretive sociology*, University of California Press.

²⁶ Parsons, T., Shills, E.A., 1951 [ed], *Toward a General Theory of Action*, Cambridge, Harvard University Pressm 1951

1937-1949²⁷). Action is marked by purpose (or motive, according to the strict Max Weber's terms). Actions form a system, when we can observe a phenomenon of advanced self-explanation in a set of actions; any action can be explained by its relation to other actions of the set, and there is a clear frontier, beyond which we do not need to go for explanation (although, of course, we could). Nicklas Luhmann used the term of "operational closure" to describe that capacity of a system to be self-explanatory (Luhmann 1992²⁸). Hence, in order to explain the accumulation of huge public debt in otherwise rich and stable democracies, we are about to define a self – explanatory set of actions that can form an operationally closed system. Action and purpose make strategies. This brings us back to the theory of games and allows the bridging from political sciences to economics. We can assume that there is such an operationally closed system of political strategies, in the sense of Nicklas Luhman's systems theory, which allows the accumulation of public debt as a rational means to accumulate political power. That assumption is confronted with a substantial body of research in political sciences, which proves quite convincingly that some characteristics of the political system are crucial for the accumulation of public debt. The trait that seems particularly important is the relative dispersion of political power, for example among various veto players. The greater that relative dispersion of political powers within the national, political system, the greater the propensity of the government to accumulate public debt (see for example: Tsebelis 2002²⁹; Perroti, Kondopoulos 2000³⁰; Roubini, Sachs 1989³¹; von Hagen, Harden 1995³²; Hallerberg, 1999³³).

We face a paradox at the junction of economics and politics. Having accumulated more public debt than predecessors did is a typical ground for criticism in politics. It can even become a pretty reliable way to lose political power in the next elections. Why, then, have the politicians in charge, in the richest countries of the globe, been doing something so suicidal? One possible answer is: to promote social outcomes, that taxes didn't suffice to finance. This is the "distress" logic of public borrowing: governments

²⁷ Parsons, T., 1937, *The Structure of Social Action*, McGraw-Hill, 1949 by The Free Press

²⁸ Lumann, N., 1992, Operational Closure and Structural Coupling: The Differentiation of The Legal System, *Cardozo Law Review*, Vol. 13, pp. 1419 - 1441

²⁹ Tsebelis, G., 2002, *Veto players: How political institutions work*, Princeton University Press.

³⁰ Perotti, R., Kontopoulos, Y., 2000, *Fragmented Fiscal Policy*, Mimeo, Columbia University

³¹ Roubini, N., Sachs, J., 1989, Government Spending and Budget Deficits in the Industrialized Countries, *Economic Policy*, 8, pp. 700-32

³² Von Hagen, J., Harden, I.J., 1995, Budget Processes and Commitment to Fiscal Discipline, *European Economic Review*, 39 (April): 771-79

³³ Hallerberg, M., von Hagen, J., 1999, Electoral Institutions, Cabinet Negotiations, and Budget Deficits within the European Union, in: Poterba, James, von Hagen, J., Eds. *Fiscal Institutions and Fiscal Performance*, Chicago: University of Chicago Press: 209 - 232.

borrow because they have to, in order to achieve wealth for their citizens. It is not quite clear why any substitution of private capital to the public one couldn't do the job, but let's assume that this is a possible explanation. The second possible answer is: governments borrow because they can, and the richer the whole society is, the more they can borrow, and they use this opportunity.

At this point it is worth to notice that the great majority of economic literature devoted to the topic of public debt tacitly assumes that in the action of public borrowing, the government is the active part, whilst the capital markets are rather passively reacting. After all, sovereign debt is a low risk asset... Conversely to that commonly assumed attribution of roles, the present paper returns to the old thesis of Adam Smith, that public debt emerges and accumulates because of the development of capital markets. Adam Smith stated that public borrowing emerged when the private sector had accumulated a surplus of capital, temporarily not used in financing business strictly spoken. The owners of that surplus looked for employing those assets in a profitable way, which, in turn, created favourable conditions for governments (monarchs in Adam Smith's times) to become more and more prodigal, and to borrow more and more from private creditors.

In other words, in the Smithsonian approach we think in terms of a balance sheet and assume that borrowing is always the broke cousin of lending. Does it matter at all? Let's illustrate the problem with the example of consumer loans. If monetary statistics show that households have been increasingly borrowing, the most immediate explanation of any economist is that it is because banks are lending more, thus the supply of money is greater. Further, in that path, we could conclude that maybe the interest rates should go up. No serious economist would assume that the dominant cause of the growing borrowing from the part of households is their deteriorating material status. No serious economist would assume that households borrow more because they are in such a financial distress. They borrow more because banks lend them more – that's the canonical (and rational) approach. Yet, in the case of public debt, for some reason, reason does not work any more. When governments borrow more, we tend to assume that they do so because they have their back against the wall. There is not really a crowd of economists claiming that governments borrow more because creditors lend them more, and that the capital market is the spiritus movens of public borrowing.

There is a deeper logic behind that Smithsonian thesis that public borrowing is mostly driven by the supply of capital from the private sector. Instead of seeing public debt outstanding as the cumulative outcome of more or less random flows of borrowing, we see it as a balance sheet. Public debt has to have a mirroring set of assets financed with that debt. What are these assets? In other words, what durable, capital goods are created on the grounds of public borrowing? Are they property rights? Are they public goods?

All those theoretical questions have practical implications. From the practical point of view, the distinction is between fiscal policies that effectively work and those that do not. If we assume that the accumulation of public debt is the outcome of financial distress of governments in carrying out their public mission, the logical way of slowing down their run toward the fiscal cliff is to cut on the public mission, in other words to drive the whole society into the conservative paradise. Yet, the obvious drawback of such policies is that politically they are seldom enforceable, unless the government wants to have a popular upheaval to handle (e.g. the case of Greece or Spain). Besides, social cuts usually bring about the loss of jobs, which deteriorates the tax base, and further contributes to worsen the fiscal balance.

If, conversely, we assume that public borrowing is mostly driven by the capital market, i.e. by a pressure to transfer capital from one place in that market to another place, with the help of specific, low-risk contracts connected to public borrowing, the recipe changes. Find a substitute way of transferring capital with minimum risk, or increase the risk connected to public borrowing, and public borrowing might become useless, or at least much less attractive. The present paper goes definitely in this direction. It takes anew the old Smithsonian hypothesis of public debt being pushed by the capital markets. To that, the author adds a development on the previously cited research of Franco Modigliani. Modigliani very convincingly showed that there is a clear, financial transfer from public debt to private wealth. More exactly, it is the transfer from the net public debt to the differential between savings and investment, or $S - I$. The present paper takes that Franco Modigliani's thesis in a broader sense, places it in the context of the Smithsonian thesis, and follows the impact of fiscal decisions upon the accumulation and allocation of property rights. The reason of referring to property rights is twofold. Firstly, staying into Franco Modigliani's spirit, it is just as much about balances as about flows. Both savings, and investment are flows that alter the balance of assets. Secondly, turning to the Smithsonian approach, we assume that public debt accumulates mostly

because private providers of capital want to lend. Yet, “wanting” is imprecise from the point of view of a social scientist. Assessing what people want is essentially psychological in its method, i.e. it is almost impossible to aggregate the “wanting” at the scale of a social system. Yet, social sciences have a set of concepts appropriate for that purpose, namely the theory of games, and its pivotal concept of strategy. Strategies, in turn, are not oriented on assets as such, but on the rights to those assets. It is not indifferent whether I rent a house, or own it. In both cases, I possess the asset, but only in the latter case, I have full benefits out of that possession. This is the reason for referring to property rights.

In the next chapter, a theoretical model is introduced. Its purpose is to create a logical path starting at the questions and doubts mentioned above, leading through econometric research and further to developing conclusions about public governance. The model is followed, in another chapter, by the presentation of empirical research connected to the topic.

The theoretical model

“Economists should cease proffering policy advice as if they were employed by a benevolent despot, and they should look to the structure within which political decisions are made.”
James Buchanan (1987³⁴)

In the present model, the logic adopted is that of advancing gradually from weak assumptions to stronger ones. The weak assumptions are those, which give the basic logical frame to empirical research and allow the selection of data and methodological tools for such research. As we add stronger and stronger assumptions to the model, it is possible to make the connection between the results of empirical research conducted by the author, and that of other researchers. In other words, strengthening the assumptions of the model serves to anchor the findings of empirical research in the acquis of social sciences.

We can safely, and weakly assume that the way society works may be represented as a social game with imperfect information, in the sense presented by John Harsanyi

³⁴ Buchanan, J.,M.,. 1987, The Constitution of Economic Policy, The American Economic Review, vol. 77, Issue 3 (June, 1987), pp. 243 - 250

(Harsanyi 1953³⁵; 1966³⁶; 1967³⁷; 1968³⁸). We can also weakly assume that strategies played by social actors can be meaningfully characterized by the expected outcomes, the actual outcomes, and the modalities of action used. We distinguish three subsets of social actors, namely those striving to acquire private property rights, those aiming at developing political power, and those oriented on creating public goods understood as positive social outcomes, e.g. reduction of the infantile mortality. Let's designate those sets, respectively, as $M = \{i_1, i_2, i_3, \dots, i_m\}$ as for action oriented on acquiring property rights, $N = \{j_1, j_2, j_3, \dots, j_n\}$ as for action oriented on the development of political power, and $O = \{k_1, k_2, k_3, \dots, k_z\}$. Note that these subsets are usually overlapping (see, for example, the U.S. political system), and they are complex structures themselves. Corporations and financial trusts aim at acquiring property rights, as well as their executives do as private persons. In the same manner, politicians operate within political parties, coalitions etc., and each of these structures takes steps to develop its political power.

Thus, among all the strategies practiced by social actors, within the given social system, one can distinguish three subsets, namely strategies oriented on the acquisition of property rights, or $S(PR)$, those oriented on the development of political power, or $S(PP)$, and those aiming the creation of public goods or $S(PG)$. All are mixed strategies, made of pure ones, in the sense proposed by John Nash (Nash 1950a³⁹; 1950b⁴⁰; 1951⁴¹; 1953⁴²). Pure strategies are defined as pairs made of a particular goal combined with a particular modality of action.

Fiscal decisions, namely taxation, public borrowing and public spending, are pure modalities of action that some social actors, especially those, who already have some political power, use to achieve various outcomes. For example, taxation may be used to increase political support, to promote some particular property rights, or create some particular public goods. We also assume that aggregate savings of the society are a quantitative measure of incremental change in the value of the total set of private

³⁵ Harsanyi, J.C., 1953, Cardinal Utility in Welfare Economics and in the Theory of Risk - Taking - The Journal of Political Economy, 1953, vol. 61, issue 5, pp. 434 - 435

³⁶ Harsanyi, J.C., 1966, A General Theory of Rational Behavior in Game Situations - Econometrica, 1966, vol. 34, no. 3, pp. 613 - 634

³⁷ Harsanyi, J.C., 1967, Games With Incomplete Information Played by "Bayesian" Players. Part I: The Basic Model - Management Science, 1967, vol. 14, no. 3, pp. 159 - 182

³⁸ Harsanyi, J.C., 1968, Games With Incomplete Information Played by "Bayesian" Players. Part II: Bayesian Equilibrium Points - Management Science, 1968, vol. 14, no. 5, pp. 320 - 334

³⁹ Nash, J.F., 1950, Equilibrium Points in n - Person Games - Proceedings of the National Academy of Sciences of the United States of America, vol. 36, no.1, pp. 48 - 49

⁴⁰ Nash, J.F., 1950, The Bargaining Problem, Econometrica, vol. 18, no.2, pp. 155 - 162

⁴¹ Nash, J.F., 1951, Non - Cooperative Games, The Annals of Mathematics, Second Series, vol. 54, issue 2, pp. 286 - 295

⁴² Nash, J.F., 1953, Two - Person Cooperative Games - Econometrica, vol. 21, issue 1, pp. 128 - 140

property rights. Similarly, aggregate investment is a quantitative measure of the way this incremental change of property rights is further allocated between productive assets, and the non-productive ones. On the other hand, creation of public goods is possible to estimate as incremental change in the so-called social indicators, as used, for example, by the World Bank.

On the grounds of those weak assumptions, we state a **general hypothesis** that *there exists such a set of political strategies, whose players' modalities of action consist in fiscal decisions and which bring significant changes in aggregate saving, and aggregate investment, as well as in the creation and the distribution of public goods.*

Now, we start adding stronger assumptions. The capacity to bring, through fiscal decisions, significant changes in the set of property rights means economic power.

Any hierarchical, social structure – states and corporations included - is able to sustain itself over long periods of time if it has both legitimation, and economic power. Legitimation is defined qualitatively, and quantitatively. On the one hand, it is a set of basic rights, and a set of actions to which the government is entitled. On the other hand, the qualitative scope of legitimation can be translated into some kind of quantitative index. Legitimation is grounded both in past communicative, political action (Habermas 1975⁴³, 1979⁴⁴, 1996⁴⁵), and the actual, normative quality of the social order in place (Rawls 1999⁴⁶). Economic power is grounded in the actual control over flows and balances of capital, both financial and physical. Of course, defining political power with reference to economic power is also very much related to the works of Karl Marx. In that Marxist, social mechanism of capital transfer, the powers of public agents have the social role of quasi-property rights. The constructive possession of capital by public agents relies on the general principle of the sovereignty of the state. It is probably the strongest possible case of constructive possession. Besides the powers expressly written in the law, there is a whole set of discretionary powers. The latter emerge whenever the law allows decisional freedom to public agents, either on purpose, or by unwanted collision of legal rules. Those discretionary powers are directly proportional to the amount of capital that public agents have possession of within their discretionary freedom. Thus, it

⁴³ Habermas, J., 1975, Legitimation Crisis, translated by T.McCarthy, Boston, 1975

⁴⁴ Habermas, J., 1979, Communication and the Evolution of Society, translated by T.McCarthy, Boston 1979

⁴⁵ Habermas, J., 1996, Between Facts and Norms. Contributions to a Discourse Theory of Law and Democracy, MIT Press, Cambridge, Massachusetts, translated by William Rehg, Second Printing

⁴⁶ Rawls, J., 1999, A Theory of Justice. Revised Edition, The Belknap Press of Harvard University Press, Cambridge, Massachusetts

is to assume that the distribution of discretionary public powers across the social system significantly influences the set of property rights.

For any social agent, governments included, legitimacy and economic power can remain in three possible relations to each other. The hypothetical, perfect state of nature is equilibrium, in which economic power is just what the social agent needs to fulfil their legitimate rights and prerogatives, and, correspondingly, the actual legitimation is just what is needed in order to exploit the economic power at hand. With a hint of simplification, real political power is to find in that equilibrium zone, or at least in the zone of legitimation and economic power overlapping each other. Legitimation changes slowly, at the pace of legal change, which can take hundreds of years in some cases, decades at best. Conversely, economic power changes quickly, sometimes within weeks. Governments can acquire or lose economic power significantly faster than they can change the scope of their legitimacy, as the former is very much in the swift hands of the executive power, whilst the latter depends mostly on the much steadier actions of the legislative and judiciary branches. If we attempt to see political power in quantitative terms, we can speak of a certain amount of it, possible to achieve through various combinations of legitimation, and economic power. Thus, some kind of indifference curve may be traced, showing various possible structures of a given amount of political power, regarding its footing in legitimation, and in the control of capital.

The public sector of any given country is an organization, or, if we take local governments into account, a semi-hierarchical network of organizations. In that sense, the state is not a monolith, but a structured political community. What we can call the behaviour of the state is the outcome of a multitude of individual strategies, through which every single subject belonging to the public sector maximizes their discretionary, political power on the grounds of a given combination of legitimation, and economic power. A game-theoretic approach can be used to model the transformation of individual strategies into collective political action. The present paper mostly taps from the John Harsanyi's theory of games with imperfect information (Harsanyi 1953⁴⁷; 1966⁴⁸; 1967⁴⁹; 1968⁵⁰). The public sector is financed by a flow of capital from the

⁴⁷ Harsanyi, J.C., 1953 Cardinal Utility in Welfare Economics and in the Theory of Risk - Taking - The Journal of Political Economy, 1953, vol. 61, issue 5, pp. 434 - 435

⁴⁸ Harsanyi, J.C., 1966, A General Theory of Rational Behavior in Game Situations - Econometrica, 1966, vol. 34, no. 3, pp. 613 - 634

⁴⁹ Harsanyi, J.C., 1967, Games With Incomplete Information Played by "Bayesian" Players. Part I: The Basic Model - Management Science, 1967, vol. 14, no. 3, pp. 159 - 182

private sector in the form of taxes and public borrowing, and redistributes that flow. Each public agent maximizes the utility derived from the temporary possession of that capital, just in the same manner as the agency theory assumes it as for the private sector (Berle, Means 1932⁵¹; Wilson 1968⁵²; Berhold 1971⁵³; 1973⁵⁴; Jensen, Meckling 1976⁵⁵; Fama, Jensen 1983⁵⁶). As formalised in the equation (1), at any given moment t there is a stream of public expenses PE_t , financed by taxes T_t and public debt PD_t accumulated at the moment t (i.e. the “fresh” public borrowing). The temporary possession of capital absorbed under the form of public debt leads to the emergence of temporary political profits PL_t in the public sector, as well as temporary financial profits F_t in the private sector. These current, temporary profits modify the set PR_{t-1} of property rights, in place before their emergence. New property rights emerge, namely PR_t , and it influences further transfers of capital, i.e. further public borrowing PD_{t+1} , and further taxation T_{t+1} .

$$(PE_t = PD_t + T_t) \rightarrow (PL_t ; F_t) \rightarrow (PR_{t-1} \rightarrow PR_t) \rightarrow (PE_{t+1} = PD_{t+1} + T_{t+1}) \quad (1)$$

In that Marxist, social mechanism of capital transfer, the powers of public agents have the social role of quasi-property rights. The constructive possession of capital by public agents relies on the general principle of the sovereignty of the state. It is probably the strongest possible case of constructive possession. Besides the powers expressly written in the law, there is a whole set of discretionary powers. The latter emerge whenever the law allows decisional freedom to public agents, either on purpose, or by unwanted collision of legal rules. Those discretionary powers are directly proportional to the amount of capital that public agents have possession of within their discretionary freedom. Thus, it is to assume that the distribution of discretionary public powers across the social system significantly influences the set of property rights.

⁵⁰ Harsanyi, J.C., 1968, Games With Incomplete Information Played by “Bayesian” Players. Part II: Bayesian Equilibrium Points - Management Science, 1968, vol. 14, no. 5, pp. 320 - 334

⁵¹ Berle, A., A., Means, G., C., 1932, The Modern Corporation and Private Property, New York, Macmillan Publishing Co, 1932

⁵² Wilson, R., 1968, On the Theory of Syndicates, Econometrica, vol. 36 (January), pp. 119-132

⁵³ Berhold, M., 1971, A Theory of Linear Profit Sharing Incentives, Quarterly Journal of Economics, vol. LXXXV (August), pp. 460-482

⁵⁴ Ross, S., A., 1973, The Economic Theory of Agency: The Principal’s Problems, American Economic Review, vol. LXII (May), pp. 134-139

⁵⁵ Jensen, M., C., Meckling, W., H., 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, Journal of Financial Economics, (October), vo. 3, no. 4, pp. 305 - 360

⁵⁶ Fama, E., F., Jensen, M., C., 1983, Separation of Ownership and Control, Journal of Law and Economics, Vol. XXVI, June

At any given moment t , the current set of property rights is the outcome of a social game, played by k players⁵⁷, who participate in public borrowing and in its redistribution. At the moment t , each player j plays an individual strategy $S_t(j)$, defined by both the expected, and the actual property rights. Equation (2) formalizes these strategies. At the moment $t-1$ each player formulates expectations as for: a) the future, individual, political (pl_{t-1}^*) and financial (f_{t-1}^*) profits coming from the expected property rights b) the acquisition price of future assets (c_{t-1}^*), and c) the future, expected transaction costs tr_{t-1}^* connected to these assets. Those expectations lead to actions, which, in turn, lead to the formation of an actual set of property rights owned by the player j at the moment t , characterized by analogous variables, namely: political profits pl_t , financial profits f_t , acquisition price c_t , and transaction costs tr_t . The relationship of these actual profits and costs to the expected ones defines the consistency of the player's strategy. Players seek consistent strategies, i.e. they maximize consistency in the first place, expected gains coming as secondary. In the next step, i.e. in the passage from the moment t to the moment $t+1$, players formulate their strategies on the grounds of past consistency, i.e. on the grounds of the $\frac{f_t + pl_t - c_t - tr_t}{f_{t-1}^* + pl_{t-1}^* - c_{t-1}^* - tr_{t-1}^*}$ ratio. As experience accumulates, at the moment $t+1$ each player acquires a modified set of property rights, and again, the strategic consistency is evaluated on the grounds of the $\frac{f_{t+1} + pl_{t+1} - c_{t+1} - tr_{t+1}}{f_t^* + pl_t^* - c_t^* - tr_t^*}$ ratio. This leads to formulating further expectations etc.

$$S_t(j) = \left(\frac{f_t + pl_t - c_t - tr_t}{f_{t-1}^* + pl_{t-1}^* - c_{t-1}^* - tr_{t-1}^*} \rightarrow \frac{f_{t+1} + pl_{t+1} - c_{t+1} - tr_{t+1}}{f_t^* + pl_t^* - c_t^* - tr_t^*} \right) \quad (2)$$

Each individual strategy $S_t(j)$ is defined by a function of consistency $CS_t(j)$, as shown in the equation (2a).

$$CS_t(j) = \left(\frac{f_t + pl_t - c_t - tr_t + f_{t+1} + pl_{t+1} - c_{t+1} - tr_{t+1}}{f_{t-1}^* + pl_{t-1}^* - c_{t-1}^* - tr_{t-1}^* + f_t^* + pl_t^* - c_t^* - tr_t^*} \right) \quad (2a)$$

⁵⁷ The concept of player herein is quite broad. For example, a politician may be a minister, and a private owner in parallel. As a minister, he takes actions that influence private property rights, and as a private owner, he develops a strategy too. Besides, players do not have to be individuals; they can be organisations. Hence, there can be players inside players, so to say.

Fiscal policy is grounded in the aggregate consistency of strategies played by all the public agents taken together display, possible to represent mathematically as the integral of individual consistencies, or $\int_{j=1}^k CS_t(j)$. The combination of taxes T and public borrowing PD is the outcome of their respective, aggregate consistencies from the public agents' standpoint, namely of $\int_{j=1}^k CS_t(j; PD)$, and $\int_{j=1}^k CS_t(j; T)$. This is formalized in the equation (2b).

$$\frac{\int_{j=1}^k CS_t(j; PD)}{\int_{j=1}^k CS_t(j; T)} \rightarrow \frac{PD_t}{T_t} \quad (2b)$$

The respective consistencies of taxation, and public borrowing tend to display significant disparity. The outcome of taxation is highly uncertain. As legal rules of taxation are voted, public agents formulate expectations as for the future tax base and its average rate of taxation. It sums up, by and large, to predicting the taxpayers' future economic and legal patterns of behaviour, which, in turn, are the outcome of fiscal policy. A vicious circle appears, and the more radical are the current changes in tax regulations, the more vicious it becomes. Conversely, public borrowing is a highly predictable set of contracts, whose conditions are greatly standardized by the practices of the capital market. **As public agents maximize consistency in the first place, their strategies will be naturally oriented on maximizing public borrowing within the available limits, and on considering taxation only as the necessary tool to finance the resulting, residual value of public expenses, impossible to cover with debt.**

Property rights encompass three types of assets: productive (ex. machinery), real unproductive (ex. land), and financial (ex. securities). For productive assets are highly specific and not really liquid, they display the highest transaction costs. By contrast, the highly liquid and unspecific financial assets generate the lowest transaction costs, real unproductive assets coming in the middle between the two. Individual strategies focused on the acquisition of property rights to productive assets give an aggregate outcome measured by the aggregate investment " I ". Conversely, individual acquisitions of the real unproductive and financial assets sum up to the aggregate surplus of savings over investment, or " $S - I$ ". Equation (3) formalizes this assumption, with z

corresponding to a hypothetical past moment when the accumulation of the present set of property rights started.

$$PR_t = \sum_{t-z}^t \left(\int_{j=1}^k I + \int_{j=1}^k S - I \right) \quad (3)$$

The strategies of public agents influence the formation of property rights in three manners. As public agents, at the bottom line, are also private ones (all public functionaries are citizens, too) they use the financial profits derived from the redistribution of public funds to acquire property rights. Secondly, the enforcement of discretionary powers held by the public agents frequently leads to important investment decisions in the private sector. Public procurement is maybe the best example. Thirdly, public debt consists mostly of securities, which are the object of property rights too. They are financial assets with low transaction cost, relatively low yield, but a very low risk. The more sovereign bonds is there in circulation, the lower is the reference level, in individual strategies of property rights, as for consistency, and expected financial profits. A substantial presence of public debt in the capital market tends to bias individual strategies of property rights towards high aversion to risk, high liquidity, low transaction costs, and low expected profits. Such strategic preferences mean more money spent on financial assets, and on the real unproductive ones, at the detriment of productive assets. In other words, it means more $S - I$, and less I . In the same time, significant public borrowing gives to public agents more discretionary power, and increases their appetite for risk, as there is more to gain in terms of said power. Thus, substantial public debt favours relatively conservative strategies from the part of private agents as for their property rights, and relatively risky strategies from the part of public agents, as for the enlargement of their discretionary power.

The consistency of public agents' strategies, as for discretionary power grounded in public borrowing, modifies the strategies of private agents as for property rights. Equation (4) gives a synthetic expression of a social system, in which fiscal decisions shape private allocation regarding the type of assets acquired, which, in turn, brings an aggregate result at the level of investment I , and the private surplus $S - I$. The resulting set of property rights further shapes fiscal decision etc.

$$\frac{\int_{j=1}^k CS_t(j; PD)}{\int_{j=1}^k CS_t(j; T)} \rightarrow \left[\left(\int_{j=1}^k I + \int_{j=1}^k S - I \right)_t \rightarrow \left(\int_{j=1}^k I + \int_{j=1}^k S - I \right)_{t+1} \right] \rightarrow \frac{\int_{j=1}^k CS_{t+1}(j; PD)}{\int_{j=1}^k CS_{t+1}(j; T)}$$

(4)

Equations (1) – (4) allow formulating another, more specific hypothesis, namely that **individual strategies of public agents, aiming at maximizing discretionary power that results from the possession of capital absorbed in the form of public debt, modify the strategies used by private agents regarding the acquisition of property rights.**

The obvious question at this point is about the limits of that pattern of social change. Up to what point public debt may be accumulated? The model implicitly assumes that there is convergence of interests between the public, and the private agents, as everybody gains something through the redistribution of public debt. Let's study more in detail that issue, with a general focus on the possible conflicts of interests. There are two cases when such a conflict is likely to appear: public default in payment, and restrictive fiscal policy. Payment default may take several shapes, ranging from the soft rolling-over of the debt (conversion of one set of bonds into another, so as, at the bottom line, the creditor is paid back with bonds, not with money) up to the so-called public bankruptcy. Whatever is the exact case of default, it sums up to a specific strategy of the indebted government, consisting in discriminating its liabilities into categories regarding their priority of payment. It is to note that what is commonly called public bankruptcy is a bankruptcy *de iure*, not *de facto* (Eaton, Gersovitz 1981⁵⁸). The government does not lose liquidity; it simply leads the aforementioned discrimination of liabilities to a point, in which in order to keep liquidity in internal redistribution of capital it suspends completely the payment of other liabilities. Whatever the exact shape of public default, it sums up to a group of private creditors being outnumbered by all the other creditors and stakeholders. Interestingly enough, whilst the soft rolling-over of public debt frequently encounters vigorous opposition of at least some creditors, public bankruptcy usually results in the creation of exceptional financial packages of further loans to the government in default. Most creditors put strategic consistency at the head of their priorities and above all take care of not destabilizing the situation.

⁵⁸ Eaton, J., Gersovitz, M., 1981, Debt with Potential Repudiation: Theoretical and Empirical Analysis, *The Review of Economic Studies*, vol. 48, No.2, (Apr. 1981), pp. 289 - 309

Regarding restrictive fiscal policy, one assumption is to make right from the start: they are not initiated because of moral judgments in the lines of: “it is better to be mean than profuse”. International political pressure is the key motive force. That pressure is, in a sense, an anticipated prevention of the possible default, i.e. of discrimination among liabilities. Some creditors take care of forcing the government to reduce the stream of benefits to all the stakeholders more or less equally. Once again, we have one group of creditors that enters into a conflict of interests with all the other stakeholders. Yet, this time, that precise group outnumbers the others.

The type of individual strategies as for property rights marks the frontier between the conflicted groups of interest. Some private agents prioritize the consistence of investment in sovereign bonds. When they perceive that consistency as threatened by the government’s excessive indebtedness, they start preventive action. Should they succeed, restrictive fiscal policy is implemented. If they fail, public borrowing continues unaltered, with the eventual default in view.

Whilst governments tend to be considered as the most reliable debtors, they also have the strongest position in the possible conflict with their creditors. There is a strong, legal asymmetry based on the principle of *sovereign immunity*. States are sovereign, and equal to other states. Ordinary tribunals cannot pronounce any binding verdict as for the enforcement of claims resulting from public debt. Governments may deliberately limit their sovereignty through contracts, but they cannot be forced to do that (see for example: Brownlie 2003⁵⁹). During the whole of the 19th century, and for the best of the 20th century, the principle of sovereignty had been an absolute barrier to the enforcement of any claims connected to public debt. It was not earlier than in the 1970-es that the law changed, first in the US, then in the United Kingdom and other developed countries, allowing selective waiving of sovereign immunity (Buchheit 1986⁶⁰, 1995⁶¹). The principle of sovereignty has also its procedural equivalent, known as *the act of state*. The *act of state* principle assumes that the courts of any given country have no jurisdiction over the acts of other countries’ governments. As a procedural rule, and at the difference of sovereign immunity, the *act of state* principle cannot be waived, but, in

⁵⁹ Brownlie, I., 2003. *Principles of Public International Law*, 6th ed. New York: Oxford University Press

⁶⁰ Buchheit, L. C., 1986, *Sovereign Immunity*, *Business Law Review* (February), pp. 63-64

⁶¹ Buchheit, L.C., 1995, *The Sovereign Client*, *Journal of International Affairs* 48 (Winter), pp. 527-540

the same time, does not influence the legal enforceability of claims (Power 1996⁶²; Lee 2003⁶³; Sturzenegger, Zettelmeyer 2006⁶⁴).

The real influence of creditors upon the political course of the indebted government, the principle of sovereign immunity taken into account, determines the limit of public indebtedness. In other words, the accumulation of public debt lasts until an influential enough group of creditors forces the government to implement restrictive fiscal policy. Debt defaults, contrarily to the common opinion, do not necessarily put a brake to indebtedness. In that context, some change seems to emerge still it does not regard sovereign debt as such yet. It is about the investor-state dispute settlement clause included in over 2500 bilateral investment treaties signed by more than 174 countries. That clause, allowing international arbitration in legal disputes between foreign private investors and their host governments, has been giving rise to a quickly increasing number of cases, and verdicts (for more details, see for example: Franck 2007⁶⁵). Whilst not concerning directly the issue of sovereign debt, those cases seem to be symptomatic for a new pattern of legal approach to sovereign immunity.

Now, we add even stronger assumptions about the political system. We imagine **two, alternative political games**. The first alternative is that the aggregate impact of fiscal decisions upon private property rights is proportional to the political power of the strongest political players. In other words, the more concentrated is political power, the greater the impact of fiscal decisions upon private property rights. This is the world of mighty dictators. The second, alternative game makes the impact of fiscal decisions upon private property rights proportional to the number of political players with any political power, or veto players according to Tsebelis (Tsebelis 2002). This game finds the best description in the French saying “the more of us join in, the more fun we all have”.

The above distinction leads to formulating the last hypothesis, namely that **the impact of fiscal decision upon private property rights is significantly related to the relative dispersion of political power within the political system**.

The next chapter presents empirical research, conducted by the author in order to verify the hypotheses stated in the theoretical model.

⁶² Power, P. J., 1996, ‘Sovereign Debt: The Rise of the Secondary Market and Its Implications for Future Restructurings, Fordham Law Review 64, no. 6, pp. 2701-2772

⁶³ Lee, P., 2003, Central Banks and Sovereign Immunity, Columbia Journal of Transnational Law 41, pp. 327-396

⁶⁴ Sturzenegger, F., Zettelmeyer, J., 2006, Debt Defaults and Lessons from a Decade of Crises, The MIT Press Cambridge, Massachusetts London, England

⁶⁵ Franck, S., D., 2007, Empirically Evaluating Claims About Investment Treaty Arbitration, North Carolina Law Review, vol.86, str. 2 - 87

Empirical research

The purpose of the empirical study, as introduced in this chapter, was to grasp quantitatively the capital in possession of the public sector, and the possible patterns of relation between said capital, and public debt. The available statistics (mostly those published by the International Monetary Fund) provide two main variables: the total of public expenditures, and the amount of debt-like financial assets held by the government. The latter variable can be computed as the difference between gross public debt, and net public debt.

Three official databases have been used, to construe a data panel of 1346 observations in total, for 77 countries (see Table 1 in the Appendix):

- a) The core of the data was made of fiscal variables, as well as variables describing the processes of capital formation, sourced from the World Economic Outlook April 2014 database, published by the International Monetary Fund. The fiscal variables, expressed as a percentage of the GDP, are: gross public debt, net public debt, general government expenditures, and general government revenue. As for capital formation, three variables have been used: private investment, gross national savings, and current account balance. All those variables have been used in the strict sense used the IMF database.
- b) Data available at <http://data.worldbank.org/topic/aid-effectiveness>, as for some selected indicators of social development⁶⁶.
- c) DPI2012 - Database of Political Institutions – as prepared by Philip Keefer, Development Research Group, The World Bank, Issued: December 2012⁶⁷.

The sample contains the biggest world debtors (US, UK, France, Germany, Italy, Japan), as well as the majority of the most indebted countries. The span of observation starts in 1980 and goes through 2012 (with the exception of Syria⁶⁸ and Greece⁶⁹). The

⁶⁶ The variables taken into account in the present research are: a) mobile cellular subscriptions (per 100 people) b) primary completion rate, total (% of relevant age group) c) proportion of seats held by women in national parliaments (%) d) mortality rate, under-5 (per 1,000 live births) e) improved sanitation facilities (% of population with access) f) incidence of tuberculosis (per 100,000 people) g) vulnerable employment, total (% of total employment) h) net migration i) life expectancy at birth, female (years) j) life expectancy at birth, male (years)

⁶⁷ The variables included into the present, compound database from the Database of Political Institutions were mostly the systemic ones, or those, which had been judged, more or less intuitively, as systemic, namely: system, and plurality. As for the detailed definitions, see: Keefer, P, 2012, DPI2012, Database of Political Institutions: Changes and Variable Definitions, Development Research Group The World Bank, Issued: December 2012

⁶⁸ Observation ends in 2010, fault of further statistics available.

⁶⁹ Observation ends in 1999, fault of reliable statistics about net debt in subsequent years. By “reliable” the author means such statistics, in which the net debt differs in value from the gross debt; all governments hold as least some financial assets

periodization of the sample, i.e. the number of countries observed each consecutive year, progressively grows until 2006 (see Table 2 in the Appendix). Earlier years are less represented than the later ones; hence have less informational content, which will be subsequently explored as for the key variables.

On the grounds of data available in the IMF database, two additional variables have been computed. Firstly, following the intuition of Franco Modigliani, the difference $S - I$, between gross national savings and private investment, as construed as another measure of capital formation. Using the $S - I$ differential is criticisable. If we adopt the strictly Keynesian point of view, $S - I$ does not exist, in fact. Then, even if one ignores the Keynesian identity $S = I$, it is easily demonstrable that the basic accounting identities that serve to compute the GDP, and the GNI, allow assuming that $S - I = \text{net exports}$. Yet, the preliminary tests showed that those allegedly obvious accounting identities do not necessarily hold as functional correlations in the sample studied. Secondly, the difference between gross public debt, and net public debt has been considered as measuring the scale of a separate fiscal phenomenon, namely the accumulation of financial assets in the public sector.

The first analytical step consisted in assessing both the long-term trends as for fiscality, and capital formation, as well as the possible bias in the assessment of those trends, due to uneven representation of particular years in the whole data panel. To that purpose, for each of those main variables median and mean value in the sample, as well as its cross-sectional variance had been computed for each year separately. The time series of the cross-sectional mean is supposed to be informative about the relative importance of the given aggregate in time. The median may indicate the prevalence of a given pattern, whilst its comparison to the mean informs about the relative heteroscedacity of the cross-sectional distribution, thus about the relative disparities in fiscal models. Variance goes in the same direction, informing how broad is the spread of tail cases in cross – sectional distributions.

The time series of each of these statistics had been linearly, OLS regressed on the number of annual observations. If the corresponding regression rendered an R^2 coefficient of determination above 0,1, the corresponding regression function was subsequently used to smooth linearly the raw time series of the given statistic. In the

deducible from the gross debt, e.g. cash balances at the end of the year. In general, the sample does not contain some countries that are most interesting regarding their indebtedness, e.g. Argentina or India. Yet, for the same reason, namely lack of data about the net debt or net debt equal to the gross one, those countries have not been included in the empirical research.

opposite case (i.e. $R^2 < 0,1$), no linear smoothing was done. In order to express all trends in a comparable manner, each time series, both raw and linearly smoothed, was transformed in a constant – base index, with the year 2000 as the base (i.e. equal to 1,00). Graphs 1 – 14, in the Appendix, show the results of that exploration for particular variables. That analytical step allows noticing a generally decreasing mean and variance of all the fiscal statistics, with the exception of the gross public debt. The latter displays a cyclically varying mean, and growing variance. It looks as if all the countries in the sample studied converged to more or less the same model of fiscality, with a steadily decreasing economic power of governments. Conversely, the pattern of gross public indebtedness seems to become more and more idiosyncratic, just as the pattern of aggregate savings. Thus, we have a sample, in which the accumulation of public debt becomes more and more idiosyncratic, just as the formation of private capital. Current fiscality of the countries studied, on the other hand, steadily converges to a narrowing band of possible states, and the central tendency of that band is rather decreasing.

The next step of analysis consisted in testing for the connection between fiscal variables, and those reflecting private capital formation. In those, and consecutive tests, the same method had been used, namely linear, OLS regression, with robust standard errors accounting for the possible heteroscedacity. The compound database used in panel data analysis contains country-level datasets displaying quite a disparate volume⁷⁰. That disparity of observation spans is the reason for not accounting for fixed effects at the country level in the subsequent econometric test. As the database combines data from various years, very probably non-stationary, it had been transformed for the purposes of statistical analysis. The values of particular variables in the initial database have been standardized, by subtracting the mean of the given column and dividing it by its standard deviation to produce a column with the mean 0 and standard deviation equal to 1. As public debt is in the very centre of the research, the important question was whether to focus on the gross debt, or on the net one. In the database used, these two variables are strongly intercorrelated, with the Pearson coefficient of correlation equal to $r = 0,872$. It is virtually impossible to put them as explanatory variables side by side in the same econometric test. Most classics tend to focus on the net debt (see for example:

⁷⁰ For example, Vietnam and Costa Rica could be studied just over two consecutive years each. Table 4, in the Appendix, presents the number of observation years for each country. Observation ends in 2012, with the exception of Syria, where the end year is 2010.

Meade 1958⁷¹, Modigliani 1961⁷²) when the central question is about the burden of debt. Yet, in this case, the general question is slightly different, namely: why the capital transfers covered by the general, legal category of public borrowing are the way they are? Intuitively, the gross debt, reflecting the total amount of capital absorbed by the public sector via that category of contracts, seems more important. Still, each test had been conducted in two versions, alternating the gross, and the net debt as explanatory variable. The general rule was that if the results for the two versions were similar, the test with gross debt was chosen as the base for further theorizing. Should the results differ significantly, especially as for the sign of the coefficient of regression, both tests were included in further inference.

Table 3 in the Appendix shows the results of regression tests between the fiscal variables as explanatory ones, and, respectively, aggregate savings, aggregate investment, and the aggregate S – I differential. Fiscal variables mean almost nothing for aggregate investment; their impact is mostly observable at the level of aggregate savings. The current account balance seems to have a decisive role in private capital formation in the sample. Surprisingly enough, public expenditure, and gross public debt tend to impact negatively the gross savings, whilst public revenues, i.e. taxation, have a strong, positive influence. Those results seem counterintuitive, yet here they are. The more taxes levied, the more private savings accumulated. As for the S – I differential, the initial intuition was correct: the current account balance (which is a good approximation of net exports), explains just a fraction of it. The accumulation of public debt seems to build up that S – I surplus; yet, once more taxation has that surprising, positive effect.

In order to contrast the impact of fiscal decisions upon private property rights with that upon social outcomes, another series of tests was conducted. Table 4, in the Appendix, shows the results of regressing linearly selected social variables on fiscal variables. Gross public debt has an undoubtedly noxious influence: the more indebted the public sector, the poorer social outcomes. Thus, the whole thesis of public borrowing serving the public mission of governments seems to be false, at least in the sample studied.

The next analytical step was to compare different political systems, in accordance with the general methodological path signalled earlier as present in the literature of political sciences. As the distinction goes along the relative concentration or dispersion of

⁷¹ Meade, J.E., 1958, Is The National Debt a Burden, Oxford Economic Papers, Volume 10, Issue 2 (June, 1958), pp. 163 - 183

⁷² Modigliani, F., 1961, Long-Run Implications of Alternative Fiscal Policies And The Burden of The National Debt, Economic Journal, vol. 71 (December 1961), pp. 730-755

political power, two discriminatory variables had been chosen from the Database of Political Institutions: system, and plurality/proportional. The “System” variable distinguishes three modalities, namely: parliamentary, assembly – elected president, and presidential. Note that the authors of the Database of Political Institutions use quite a broad definition of presidential systems, somehow exceeding the usual classification. In other words, some cases, which usually would be categorized as parliamentary, are categorized here as presidential. Anyway, typical presidential systems are considered as those with rather concentrated political power, as opposed to the more diffuse distribution of power in parliamentary ones.

The “plurality/proportional” variable refers to electoral rules in legislative elections. Plurality means that legislators are elected using a winner-take-all / first past the post rule. Conversely, proportional representation means that candidates are elected on the grounds of the percent of votes received by their party. The former is commonly associated with a relative concentration of political power in the hands of the strongest political parties, whilst the latter allows greater dispersion of power within the legislative.

Tables 5 – 8 in the Appendix show the basic statistics as for fiscal variables in the sample, broken into categories according to those two systemic attributes of political systems. Both seem relevant. Parliamentary systems tend to spend more, borrow more, and tax heavier than the presidential ones. On the other hand, proportional representation in the legislative body seems to add to that fiscal expansiveness of parliamentary systems. Parliamentary systems with proportional representation⁷³ seem to be the opposite of presidential systems with plurality in legislative elections⁷⁴, as for the concentration of political power, and the corresponding impact of fiscality. On the other hand, two outcomes seem the most meaningful on the grounds of previously conducted tests: the S – I surplus as for capital formation, and vulnerable employment in the domain of social variables. Tables 9 and 10 in the Appendix list the results of those tests. Fiscal variables shape vulnerable employment in quite a similar manner in both

⁷³ Austria 1988 - 2012, Belgium 1980 - 2012, Bosnia and Herzegovina 2003 - 2012, Bulgaria 2002 - 2012, Denmark 1995 - 2012, FYR Macedonia 2003 - 2012, Finland 1980 - 2012, Iceland 1982 - 2012, Ireland 1980 - 2012, Israel 2002 - 2012, Italy 1988 - 1993, Latvia 2000 - 2006, Netherlands 1995 - 2012, Norway 1980 - 2012, Portugal 1997 - 2012, Sweden 1993 - 2012, Turkey 2002 - 2004

⁷⁴ Bahrain 2003 - 2012, Bolivia 2000 - 2012, Brazil 2000 - 2012, Chile 1993 - 2012, Egypt 2006 - 2012, Ghana 2001 - 2012, Iran 1996 - 2012, Jordan 1990 - 2009, Kazakhstan 2002 - 2007, Kenya 1998 - 2012, Korea 2001 - 2012, Liberia 2006 - 2012, Lithuania 2000 - 2012, Malawi 2005 - 2012, Maldives 1997 - 2012, Mali 2000 - 2012, Mexico 1998 - 2012, Morocco 1996 - 2012, Niger 1995 - 1996, 2005 - 2006, Nigeria 2000 - 2012, Pakistan 2003 - 2008, Panama 2003 - 2011, Poland 2007 - 2012, Swaziland 2007 - 2012, Syria 1990 - 2010, Ukraine 1998 - 2006, United States 2001 - 2012, Yemen 2000 - 2012, Zambia 2005 - 2012

types of political systems. The implied constant term, and the role of the government's financial assets differ, though. In presidential systems with plurality in legislative elections, the level of vulnerable employment seems to be much more resilient to any fiscal decisions, and the accumulation of financial assets significantly, and adversely impacts the labour market. On the other hand, the way that fiscality shapes the accumulation of private property rights, as measured with the $S - I$ surplus, is clearly distinct, according to the type of political system. Parliamentary systems with proportional representation are associated with a strong, positive impact of public borrowing upon the $S - I$ surplus. Those cases seem to work accordingly to the hypotheses of the model. Conversely, presidential systems with plurality in legislative elections seem to work almost perfectly in accordance with the " $S - I = \text{net exports}$ " accounting identity.

Conclusion

Different political systems generate different interaction between fiscality, capital formation, and social outcomes. Thus, different political systems generate different link between strategies oriented on political power, those oriented on social outcomes, and those oriented on private property rights.

Public borrowing is essentially a transfer of capital. That capital keeps on being transferred to the richest countries in the world. The transfer is largely driven by the internal, political mechanics of these countries. Thus, the accumulation of public debt in those richest countries is an almost self-sustainable mechanism, limited mostly by the tolerance of capital markets. That tolerance is probably based on a complex set of criteria. There is the potentially non-optimal allocation of publicly borrowed money in non-productive assets in the private sector. There is the political power provided by borrowed capital. Thus, we have a flow of capital, in which strong political drivers push to non-optimal allocation of capital at the global scale. If we assume the dominance of political factors in this mechanism, logically only a substantial change in these could bring a substantial change in the long-run geography of public borrowing. A substantial political change would probably mean less veto players, more policy change, and more government stability. In other words, it would mean a possible limitation of democracy.

The income side of the fiscal equation encompasses flows, which are essentially the circulating capital of the whole economy. Taxes do diminish the individual, disposable income, but they create a flow that serves to earn more income. Public expenditures, on the other hand, seem to push private capital out of circulation. Probably there is substitution between savings and public goods created by public expenditures, and a complementarity between consumption and those public goods. In terms of Franco Modigliani's lifecycle hypothesis of savings, taxation seems to create more incentives for saving, whilst public goods bring fewer incentives.

The value added of the empirical research presented in the present paper is to carry out further the distinction between various political systems as for their fiscality. In presidential ones, or the ones with plurality, the fiscality works exactly opposite to those with parliamentary systems, and with proportionality in elections. Parliamentary systems use public debt to increase private $S - I$, and private savings, whilst the influence of fiscality upon social outcomes is problematic. In presidential systems, it is the opposite. Fiscal impact upon capital formation is at the limit of any certainty, whilst the fiscal impact upon social outcomes is strong and generally positive. In democracies with plurality in elections, the fiscal impact upon capital formation is at the limit of significance, whilst in proportional democracies there is that strong influence of public revenues upon $S - I$, savings, and opposite on private investment.

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Appendix

Table 1 Sample structure

<i>Country</i>	count	Share in the sample	<i>Country</i>	count	Share in the sample
Algeria	12	0,9%	Lebanon	13	1,0%
Australia	24	1,8%	Lesotho	8	0,6%
Austria	25	1,9%	Liberia	13	1,0%
Bahrain	23	1,7%	Libya	23	1,7%
Belgium	33	2,5%	Lithuania	13	1,0%
Belize	11	0,8%	Malawi	8	0,6%
Bolivia	13	1,0%	Maldives	16	1,2%
Bosnia and Herzegovina	15	1,1%	Mali	13	1,0%
Brazil	13	1,0%	Mexico	15	1,1%
Bulgaria	13	1,0%	Morocco	17	1,3%
Canada	33	2,5%	Namibia	7	0,5%
Cape Verde	11	0,8%	Netherlands	18	1,3%
Chile	20	1,5%	New Zealand	28	2,1%
Colombia	14	1,0%	Niger	18	1,3%
Denmark	18	1,3%	Nigeria	13	1,0%
Egypt	11	0,8%	Norway	33	2,5%
Estonia	17	1,3%	Pakistan	11	0,8%
Ethiopia	21	1,6%	Panama	10	0,7%
FYR Macedonia	14	1,0%	Peru	13	1,0%
Fiji	21	1,6%	Poland	18	1,3%
Finland	33	2,5%	Portugal	16	1,2%
France	30	2,2%	Quatar	23	1,7%
Germany	22	1,6%	Saudi Arabia	14	1,0%
Ghana	12	0,9%	Solomon Islands	10	0,7%
Greece	20	1,5%	South Africa	13	1,0%
Guyana	6	0,4%	Spain	28	2,1%
Hungary	8	0,6%	Swaziland	12	0,9%
Iceland	31	2,3%	Sweden	20	1,5%
Ireland	33	2,5%	Switzerland	30	2,2%
Islamic Republic of Iran	17	1,3%	Syria	21	1,6%
Israel	13	1,0%	Trinidad and Tobago	13	1,0%
Italy	25	1,9%	Turkey	11	0,8%
Japan	33	2,5%	Ukraine	15	1,1%
Jordan	25	1,9%	United Arab Emirates	14	1,0%
Kazakhstan	11	0,8%	United Kingdom	33	2,5%
Kenya	15	1,1%	United States	12	0,9%
Korea	12	0,9%	Uruguay	10	0,7%
Latvia	13	1,0%	Yemen	14	1,0%
			Zambia	8	0,6%
			Total	721	

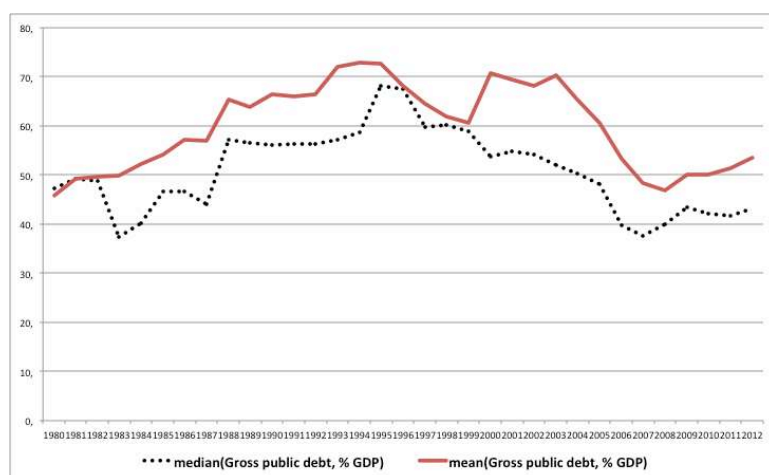
Source: author's

Table 2 Sample periodization

Year	count	Share	Year	count	Share
1980	8	0,6%	1996	33	2,5%
1981	8	0,6%	1997	35	2,6%
1982	9	0,7%	1998	39	2,9%
1983	11	0,8%	1999	44	3,3%
1984	11	0,8%	2000	57	4,2%
1985	13	1,0%	2001	62	4,6%
1986	13	1,0%	2002	68	5,1%
1987	13	1,0%	2003	70	5,2%
1988	16	1,2%	2004	70	5,2%
1989	17	1,3%	2005	73	5,4%
1990	21	1,6%	2006	74	5,5%
1991	22	1,6%	2007	75	5,6%
1992	24	1,8%	2008	76	5,6%
1993	26	1,9%	2009	76	5,6%
1994	26	1,9%	2010	76	5,6%
1995	30	2,2%	2011	75	5,6%
			2012	75	5,6%
			Total	1346	

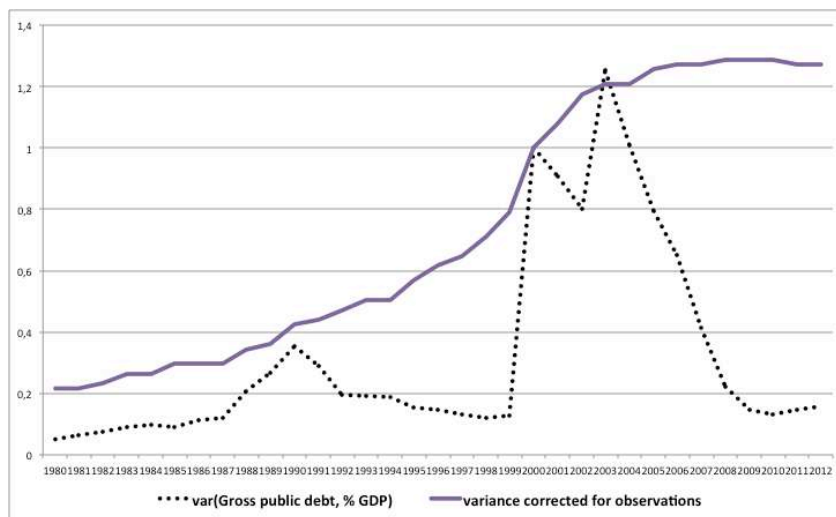
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Graph 1 Trends in the gross public debt in the sample, median and mean value year by year



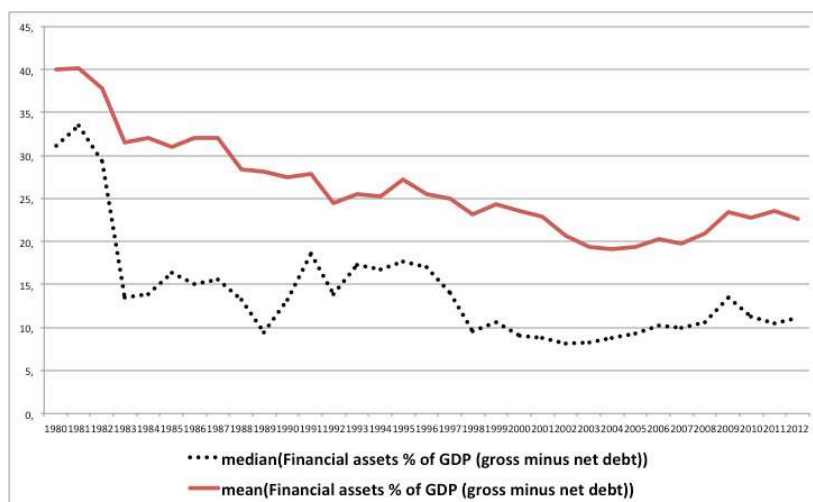
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Graph 2 Trends in the gross public debt in the sample, comparison of the raw (non-smoothed) with the linearly smoothed, cross-sectional variance. Index values, with 2000 = 1,00



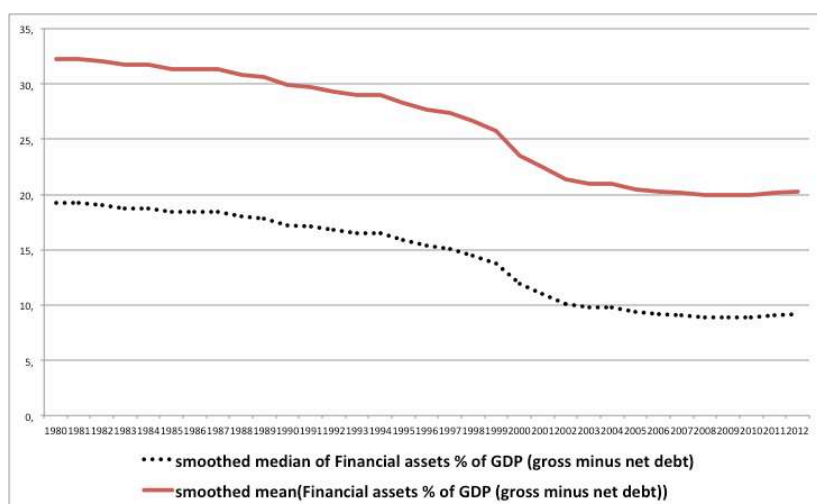
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Graph 3 Mean and median value of financial assets in public disposition



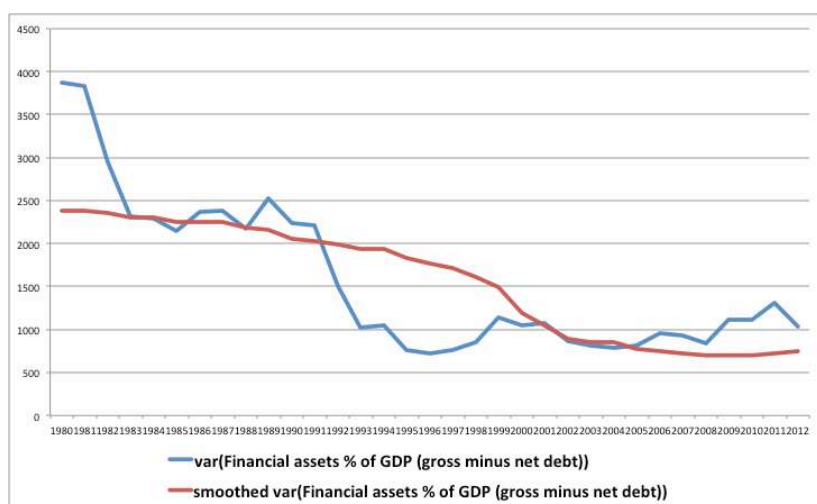
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Graph 4 Smoothed mean and smoothed median value of financial assets in public disposition



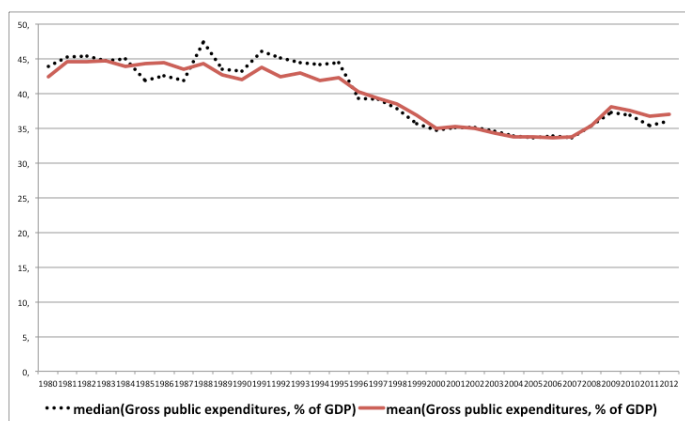
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Graph 5 Cross-sectional variance of financial assets in public disposition, raw and linearly smoothed



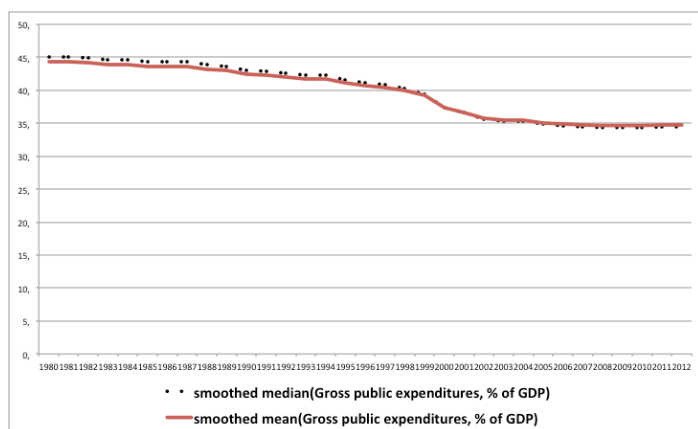
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Graph 6 Mean and median share of gross public expenditures in the GDP, in the sample studied



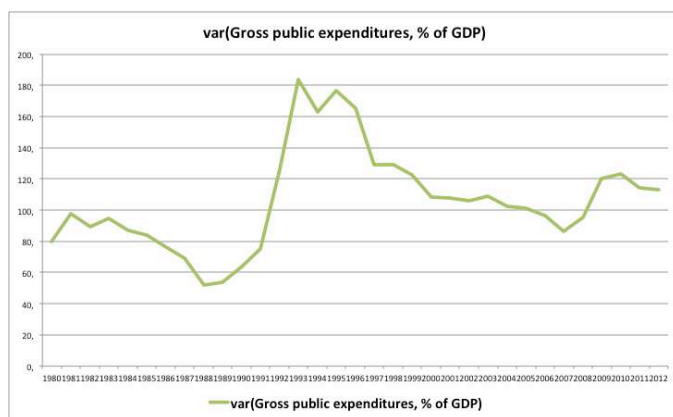
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Graph 7 Smoothed mean and smoothed median share of gross public expenditures in the GDP, in the sample studied



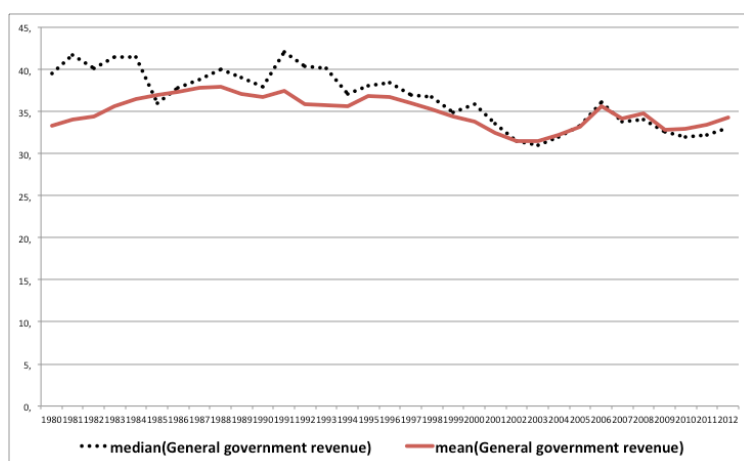
Source: author's

Graph 8 Cross-sectional variance of gross public expenditures



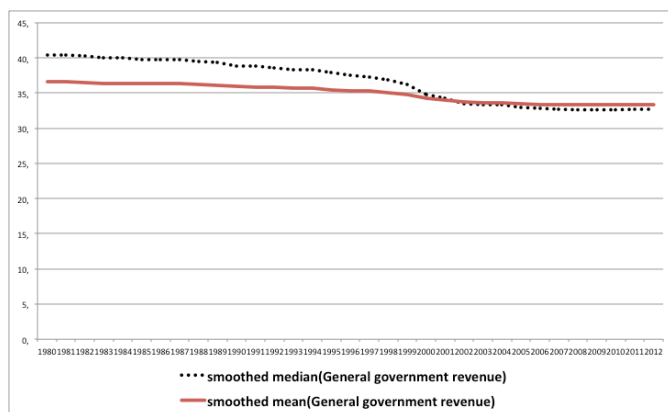
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Graph 9 Median and mean of gross public revenues, as % of GDP



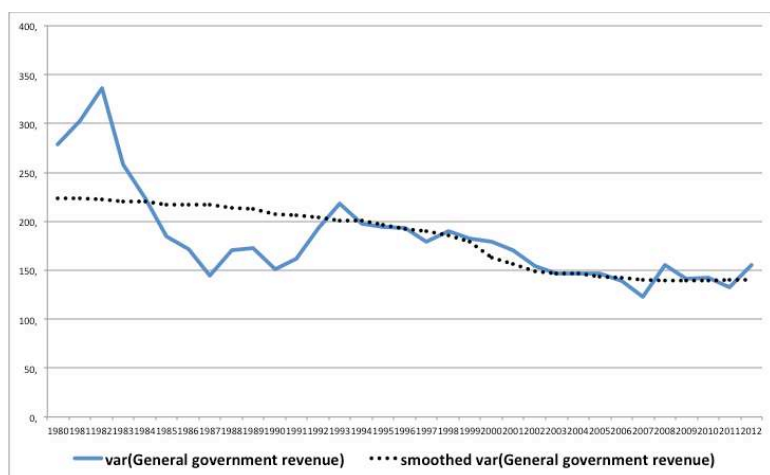
Source: author's

Graph 10 Smoothed median and smoothed mean of gross public expenditures as % of GDP



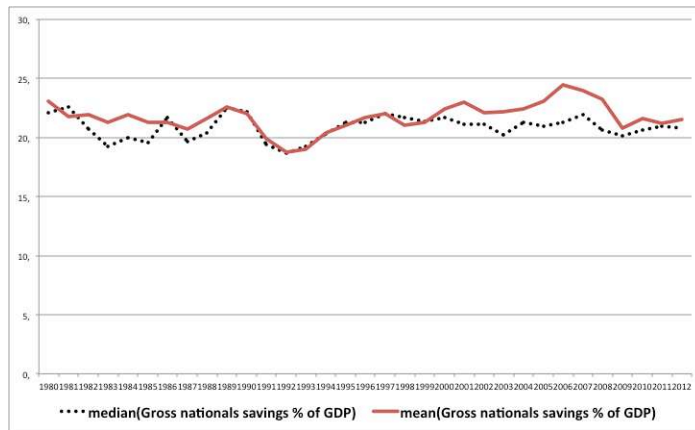
Source: author's

Graph 11 Cross-sectional variance of gross public revenues, raw and linearly smoothed, as % of the GDP,



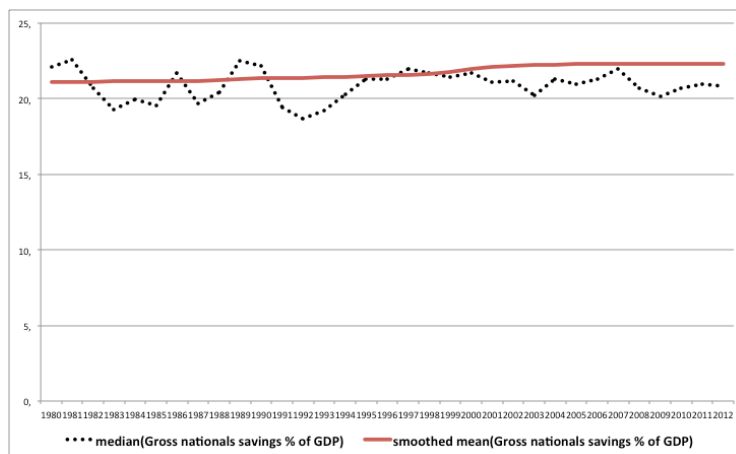
Source: author's

Graph 12 Median and mean of gross national savings, as % of GDP



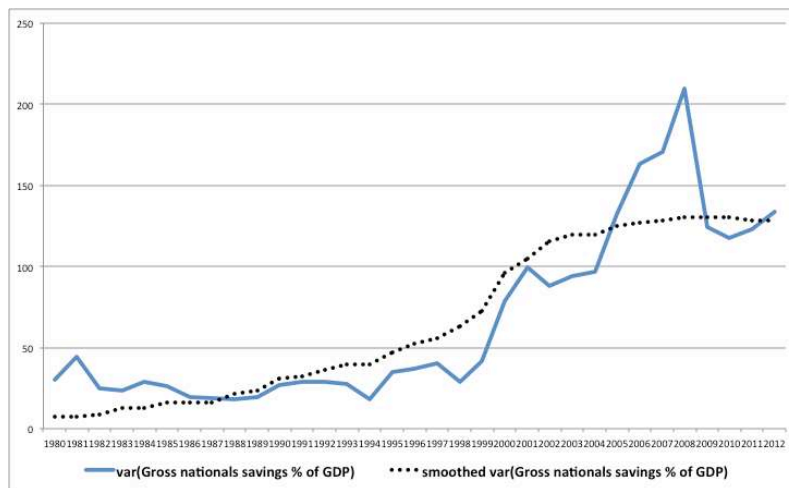
Source: author's

Graph 13 Median and smoothed mean of gross national savings, as % of the GDP



Source: author's

Graph 14 Cross-sectional variance of gross national savings as % of the GDP, raw and linearly smoothed.



Source: author's

Table 3 Results of OLS linear regression between fiscal variables and private capital formation, the whole sample

Explained variable: Gross national savings as % of the GDP, standardized values, N = 1268, R² = 0,603			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	-0,158	0,035	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	-0,006	0,019	p = 0,730
std(Gross public expenditures, % of GDP)	-0,566	0,031	p < 0,001
std(Current account balance)	0,788	0,029	p < 0,001
std(General government revenue)	0,624	0,031	p < 0,001
Constant term	- 0,011	0,018	p = 0,528
Explained variable: Private investment as % of the GDP, standardized values, N = 1268, R² = 0,076			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	-0,395	0,053	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	0,066	0,029	p = 0,023
std(Gross public expenditures, % of GDP)	-0,045	0,039	p = 0,257
std(Current account balance)	-0,121	0,04	p = 0,003
std(General government revenue)	-0,066	0,042	p = 0,117
Constant term	- 0,019	0,027	p = 0,467
Explained variable: The S – I surplus (savings minus investment) as % of the GDP, standardized values, N = 1268, R² = 0,823			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	0,087	0,023	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	-0,05	0,011	p < 0,001
std(Gross public expenditures, % of GDP)	-0,605	0,028	p < 0,001
std(Current account balance)	0,977	0,023	p < 0,001
std(General government revenue)	0,756	0,03	p < 0,001
Constant term	- 0,004	0,011	p = 0,747

Source: author's

Table 4 Results of OLS linear regression between fiscal variables and social outcomes, total sample

Explained variable: Primary completion rate, total (% of relevant age group) , standardized values, N = 828, R² = 0,130			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	-0,145	0,055	p = 0,009
std(Financial assets % of GDP (gross minus net debt))	-0,129	0,041	p = 0,002
std(Gross public expenditures, % of GDP)	0,198	0,047	p < 0,001
std(General government revenue)	0,215	0,045	p < 0,001
Constant term	0,031	0,031	p = 0,312
Explained variable: Proportion of seats held by women in national parliaments (%), standardized values, N = 1008, R² = 0,247			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	-0,118	0,033	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	0,217	0,033	p < 0,001
std(Gross public expenditures, % of GDP)	0,456	0,04	p < 0,001
std(General government revenue)	-0,044	0,044	p = 0,318
Constant term	0,067	0,028	p = 0,018
Explained variable: Mortality rate, under-5 (per 1,000 live births), standardized values, N = 1268, R² = 0,288			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	0,145	0,02	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	0,104	0,04	p = 0,009
std(Gross public expenditures, % of GDP)	-0,464	0,031	p < 0,001
std(General government revenue)	-0,09	0,03	p = 0,003
Constant term	0,009	0,024	p = 0,712
Explained variable: Improved sanitation facilities (% of population with access), standardized values, N = 1151 , R² = 0,309			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	-0,116	0,017	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	-0,023	0,032	p = 0,461
std(Gross public expenditures, % of GDP)	0,457	0,03	p < 0,001
std(General government revenue)	0,067	0,03	p = 0,027
Constant term	0,033	0,025	p = 0,184
Explained variable: Incidence of tuberculosis (per 100,000 people), standardized values, N = 1214 , R² = 0,072			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	-0,024	0,022	p = 0,278
std(Financial assets % of GDP (gross minus net debt))	-0,022	0,019	p = 0,237
std(Gross public expenditures, % of GDP)	-0,251	0,026	p < 0,001
std(General government revenue)	-0,021	0,022	p = 0,341
Constant term	- 0,012	0,027	p = 0,656
Explained variable: Vulnerable employment, total (% of total employment), standardized values, N = 776, R² = 0,391			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	0,391	0,059	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	-0,105	0,029	p < 0,001
std(Gross public expenditures, % of GDP)	-0,598	0,039	p < 0,001

std(General revenue)	government	-0,074	0,029	p = 0,012
Constant term		0,149	0,034	p < 0,001

Source: author's

Table 5 Gross public debt across political systems

Plurality/proportional representation in elections	System	Count	median(Gross public debt, % GDP)	var(Gross public debt, % GDP)	mean(Gross public debt, % GDP)
Proportional representation	Assembly-Elected President	38	30,968	567,2186667	28,60718421
	Parliamentary	326	51,822	847,7769834	57,18532515
	Presidential	102	38,541	20048,63843	69,55312745
	Missing	5	35,23	141,5773325	42,31
Plurality	Assembly-Elected President	29	102,093	2985,685614	105,0233448
	Parliamentary	384	57,252	1271,18236	63,0951901
	Presidential	342	44,986	3081,965061	56,27138304
	Missing	0			
Missing	Assembly-Elected President	2	791,624	4250,512201	745,5235
	Parliamentary	6	54,544	4,343964567	53,78183333
	Presidential	112	29,463	1782,528823	42,95429464
	Missing	0			

Source: author's

Table 6 Gross public revenues across political systems

Plurality/proportional representation in elections	System	Count	median(Gross public debt, % GDP)	var(Gross public debt, % GDP)	mean(Gross public debt, % GDP)
Proportional representation	Assembly-Elected President	38	34,723	30,59416851	32,37436842
	Parliamentary	326	44,705	306,21749	40,44866258
	Presidential	102	28,562	78,09491541	29,74111765
	Missing	5	51,669	18,9625678	50,2596
Plurality	Assembly-Elected President	29	24,166	21,9611591	22,96889655
	Parliamentary	384	36,886	76,42636257	37,45710417
	Presidential	342	25,514	47,6951815	27,01095614
	Missing	0			
Missing	Assembly-Elected President	2	11,971	0,09245	11,756
	Parliamentary	6	26,101	1,310126	26,39
	Presidential	112	33,798	168,1437483	34,10954464
	Missing	0			

Source: author's

Table 7 Gross public expenditures accross political systems

Plurality/proportional representation in elections	System	Count	median(Gross public debt, % GDP)	var(Gross public debt, % GDP)	mean(Gross public debt, % GDP)
Proportional representation	Assembly-Elected President	38	33,144	29,11514865	33,75068421
	Parliamentary	326	48,267	59,16299768	47,54094479
	Presidential	102	31,168	95,98640353	31,11404902
	Missing	5	56,631	30,2214252	55,0542
Plurality	Assembly-Elected President	29	33,245	34,21738883	32,17355172
	Parliamentary	384	39,306	77,70103166	39,92342969
	Presidential	342	28,474	53,96524678	29,30023977
	Missing	0			
Missing	Assembly-Elected President	2	12,001	0,106722	11,77
	Parliamentary	6	27,818	2,041742667	27,28333333
	Presidential	112	30,5	84,40674999	30,99758036
	Missing	0			

Source: author's

Table 8 Public financial assets across political systems

Plurality/proportional representation in elections	System	Count	median(Gross public debt, % GDP)	var(Gross public debt, % GDP)	mean(Gross public debt, % GDP)
Proportional representation	Assembly-Elected President	38	5,977	123,6170295	8,695
	Parliamentary	326	19,865	2442,475077	39,49945399
	Presidential	102	10,275	339,9008779	18,00990196
	Missing	5	3,66	1,0186228	3,5806
Plurality	Assembly-Elected President	29	3,817	80,39392549	8,176724138
	Parliamentary	384	11,484	509,6066586	19,6848099
	Presidential	342	6,692	165,8327955	10,94528363
	Missing	0			
Missing	Assembly-Elected President	2	66,586	149,921928	57,928
	Parliamentary	6	4,026	0,761369467	3,900333333
	Presidential	112	16,709	2105,688853	40,59149107
	Missing	0			

Source: author's

Table 9 Regression results in the subsample of "Presidential with plurality in legislative elections"

Explained variable: The S – I surplus (savings minus investment) as % of the GDP, standardized values, N = 335 , R ² = 0,967			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	-0,005	0,01	p = 0,639
std(Financial assets % of GDP (gross minus net debt))	-0,005	0,011	p = 0,646
std(Gross public expenditures, % of GDP)	-0,014	0,011	p = 0,185
std(Current account balance)	1,306	0,014	p < 0,001
std(General government revenue)	0,014	0,016	p = 0,377
Constant term	0,083	0,01	p < 0,001

Explained variable: Vulnerable employment, total (% of total employment), standardized values, N = 150 , R ² = 0,222			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	0,397	0,144	p = 0,007
std(Financial assets % of GDP (gross minus net debt))	0,762	0,386	p = 0,051
std(Gross public expenditures, % of GDP)	-0,858	0,39	p = 0,029
std(General government revenue)	-0,027	0,621	p = 0,966
Constant term	0,601	0,151	p < 0,001

Source: author's

Table 10 Regression results in the subsample of “Parliamentary system with proportional representation in the legislative”

Explained variable: The S – I surplus (savings minus investment) as % of the GDP, standardized values, N = 316 , R ² = 0,839			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	0,299	0,062	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	-0,051	0,014	p < 0,001
std(Gross public expenditures, % of GDP)	-0,553	0,044	p < 0,001
std(Current account balance)	0,909	0,039	p < 0,001
std(General government revenue)	0,842	0,037	p < 0,001
Constant term	- 0,182	0,035	p < 0,001

Explained variable: Vulnerable employment, total (% of total employment), standardized values, N = 262 , R ² = 0,317			
Explanatory variable	Coefficient of regression	Standard error	Significance level, as given by the T Student test
std(Gross public debt, % GDP)	0,338	0,078	p < 0,001
std(Financial assets % of GDP (gross minus net debt))	-0,115	0,015	p < 0,001
std(Gross public expenditures, % of GDP)	-0,302	0,051	p < 0,001
std(General government revenue)	0,009	0,018	p = 0,621
Constant term	- 0,113	0,059	p = 0,056

Source: author's