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Political Institutions and Fiscal Policies

A Note on Budget Rules and Fiscal Federalism

Heiko T. Burret and Lars P. Feld[1]

Introduction

Budget rules have become a widespread tool for pursuing sound fiscal policy. This particularly holds for federations as the incentives to overspend and borrow excessively are particularly pronounced if the costs of public spending can be shifted to other jurisdictions by exploiting a common pool of revenues and attracting bailout transfers. Sub-national governments might be inclined to spend less and collect taxes more eagerly if their fiscal responsibility is strengthened. Sub-national tax autonomy, a credible no-bailout clause and numeric rules restricting sub-national finances seem useful to achieve this end.

However, politicians might be tempted to relax this discipline by window-dressing and creative accounting. These measures may come in various guises of fiscal gimmickry such as the reclassification of expenditure, the accumulation of arrears, off-budget activities and shifts in fiscal responsibilities. As a result, the targeted headline indicators are temporarily embellished without actually improving the underlying fiscal position to a similar extent. While a fiscal framework that supports sub-national fiscal responsibility provides incentives to truly comply with the constraints, desirable budget rules should be equipped with features as exemplified below. Against this background we analyse the design and effectiveness of current sub-national budget rules in the United States, Switzerland and Germany.

- **Numeric limits and flexibility.** The annual budget balance should be constrained by a numeric limit that needs to be respected during budget formation, execution and closure. To grant budget flexibility, temporary deviations from the threshold should be allowed for cyclical deficits and unforeseen extraordinary situations.
- **Definitions and redemption.** To prevent a permanent use of temporary exceptions, it seems important to precisely outline a method for the calculation of the cyclical deficit component that is replicable for a professional public. Similarly, extraordinary situations should be narrowly defined and only apply if approved by a supermajority in parliament. Any deficits shall be amortized within a reasonable period of time.
- **Legal foundation.** To eliminate the easiest way of circumvention, the rule should be anchored in the constitution or a similar piece of legislation. A constitutional law may only be amended by a supermajority and cannot be overridden by laws that have been passed later (lex posterior) or that govern a more specific matter (lex specialis).
- **Coverage.** To tackle incentives to conceal the fiscal burden, the rule should cover all off-budget funds, special funds, publicly-owned entities and apply to all public accounts.
- **Correction mechanism.** A violation of the rule should trigger an automatic correction mechanism that specifies the required annual adjustment.
- **Incentives for compliance**. An independent council should monitor the budget rule and correction mechanism and examine the cyclical adjustments, budget forecasts and circumstances that trigger, prolong or end extraordinary situations. The reports must be effectively communicated in public. A non-compliance with the council's recommendations should require a supermajority in parliament.

The United States

The federal framework of the US is characterized by a strong tradition of fiscal autonomy at the sub-federal level. All 50 states have their own tax systems and authority and are relatively free to tax citizens and activities within their border. Unlike most other federal states, the US has no fiscal equalization scheme in place that is designed to reduce fiscal disparities among sub-federal jurisdictions. The fiscal responsibility of the sub-national level is enhanced by the no-bailout

[1] Walter Eucken Institut (both).

stance of the federal government, which can be traced back to the default of eight US states and one territory in the post-1837 recession. While the no-bailout position has also been adopted by US states regarding their municipalities and is shaped by Chapter 9 of the US bankruptcy code, it is not legally implemented for the states (Inman 2003).

State balanced budget rules

Due to the federal bailout denial, the bond market differentiated refinancing conditions according to the solvency of the US states such that creditors looked for signals of fiscal discipline. In the 1840s the first states adopted constitutional debt limitations (Wallis 2005). A recent survey by the National Association of State Budget Officers (NASBO 2008) reveals that all 50 US states with the exception of Indiana and Vermont operate under some kind of constitutional or statutory balanced budget requirement. In 48 states a law stipulates at least one of the following requirements: (1) the governor must submit a balanced budget, (2) the legislature must pass a balanced budget, (3) the governor must sign a balanced budget, and (4) deficits may not be carried over into the next fiscal year or biennium. Only the latter can be classified as a numeric budget constraint since the other requirements tend to be procedural rules that need to be observed at certain points during the budget process, but not at the end of the fiscal year.

In general the provisions are sparsely worded, leave room for interpretation, and vary substantially among the states. Even though some states have anchored the requirements into their constitution and obliged courts to monitor the rule, other desirable features seem to be missing for the most part. Importantly, most restrictions only apply to a fraction of the state budget (for example, general fund), leaving other funds for deficit financing. In addition, some states are allowed to borrow to balance their budget. In order to achieve a balanced budget in times of economic crisis or emergencies, almost all states have some kind of rainy day and emergency fund. General fund surpluses are mostly transferred into the rainy day fund. A supermajority vote in the legislature is only required to withdraw money from these funds in a few states. A heap of further loopholes and ways to circumvent the state debt and deficit restrictions were recently summarized by Heun (2014). Besides budget rules, many states limit the amount of (guaranteed) debt and some states require tax increases to be approved by a supermajority in the legislature.

The Advisory Commission on Intergovernmental Relations (ACIR 1987) presents a detailed documentation of state debt and budget restrictions and a stringency index that is based on the types of balanced budget provisions, its legal foundations and a subjective assessment of its importance. The maximum index score is assigned to constitutional prohibitions to carryover a deficit. In compliance with the empirical findings of the ACIR (1987), the majority of subsequent studies provides evidence that debt and deficit restrictions tend to support fiscal discipline (Table 1). Exceptions are Calcagno and Escaleras (2007) and Hou and Smith (2009) who present the opposite effect of the (statutory) requirement to submit a balanced budget.

Most studies suggest that budget deficits are particularly reduced if strong fiscal rules (that is, no-carryover provisions) are implemented (ACIR 1987; Eichengreen 1994; Alesina and Bayoumi 1996; Hou and Smith 2009, 2010). Bohn and Inman (1996) and Primo (2006) find evidence that an external enforcement of no-carryover rules through elected state courts (instead of appointed courts) tend to decrease fiscal deficits. However, Briffault (1996) questions the existence of a threat from court enforcement. According to Kiewiet and Szakaly (1996) debt limits are particularly effective if a deviation has to be approved by referenda. In addition, Hou and Smith (2010) provide recent evidence that budget rules tend to have a more significant impact the more narrowly defined the analysed budget balance is. If narrowly defined balances are considered, budget constraints also seem to matter for fiscal sustainability (Mahdavi and Westerlund 2011). Among others, Bohn and Inman (1996) conclude that the deficit is primarily reduced by means of spending cuts. In a related strand of literature, anecdotal and empirical evidence suggests that state governments have widely taken advantage of the loopholes in the fiscal rules and circumvented them by means of fiscal gimmickry (Ratchford 1941; Heins 1963; Bennett and DiLorenzo 1983; von Hagen 1991, 1992; Bunch 1991; GAO 1993; Briffault 1996; Costello, Petacchi and Weber 2012).[2]

[2] The literature on fiscal rules at least partly originated from the analyses of Proposition 13's impact on fiscal policies. This paper focuses on the effects of debt and deficit restrictions. Other related strands of literature focus on the effects of state budget rules on anti-cyclical fiscal policy and business cycles (for example, Alt and Lowry 1994; Eichengreen and Bayoumi 1994; Poterba 1994; Bayoumi and Eichengreen 1995; Levinson 1998, 2007; Sørensen, Wu and Yosha 2001; Primo 2006; Krol and Svorny 2007), on state bond yields (for example, Bayoumi, Goldstein and Woglom 1995; Poterba and Rueben 1999; Lowry and Alt 2001) and on the fiscal impact of state tax and expenditure rules and line-item veto authority (for example, Bails 1982, 1990; Abrams and Dougan 1986; Holtz-Eakin 1988; Joyce and Mullins 1991; Elder 1992; Shadbegian 1996; St. Clair 2012). Early papers on these issues are surveyed by, for example, Poterba (1995), Krol (1997), Kirchgässner, Feld and Savioz (1999), Kirchgässner (2002) or Schaltegger (2002).

Table 1

Empirical studies on the effect of debt and deficit restrictions on fiscal discipline in US states

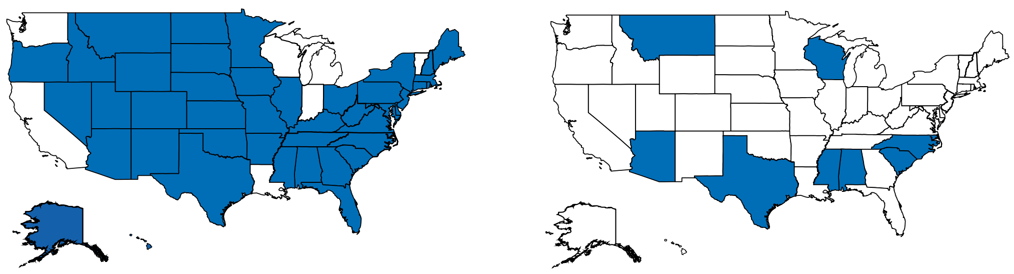
Study	States; period	Dependent variable (selection)	Fiscal rule (selection)	Support fiscal discipline*
Mahdavi and Westerlund (2011)	47 1961-2006	- Four measures of budget balance (ranging from broad to narrow) of state and local level	Stringency index of BBR (ACIR 1987) Budget rules (Hou and Smith 2006)	YES
Hou and Smith (2010)	50 1950-2004	- Six measures of budget balance (ranging from broad to narrow)	Six balanced budget requirements (Hou and Smith 2006)	YES
Hou and Smith (2009)	1979-1981 1985-2004	- Probability of reported budget surplus - Probability of general fund surplus	Four balanced budget requirements	YES for strong rules NO for weak rules
Calcagno and Escaleras (2007)	37 1971-2000	- Deficit to income ratio	Requirement for governor to submit a balanced budget	NO
Primo (2006)	47 1969-2000	- Direct state and local expenditures	No-carryover rule (ACIR 1987; Bohn and Inman 1996)	YES
Rose (2006)	43 1974-1999	- State general fund surplus, tax revenue, expenditure	No-carryover rules (ACIR 1987 and others)	YES
Chaney, Copley and Stone (2002)	48 1994-1995	- Per capita excess (deficit) of pension plan net assets available for pension benefits over pension benefit obligation	Balanced budget requirements (GAO 1993)	YES**
Penner and Weisner (2001)	N/A N/A	- Public welfare expenditures to total general expenditures - Public welfare expenditures per capita	No-carryover rules (NASBO 1999 and other)	YES
Alesina and Bayoumi (1996)	48 1990	- Average primary budget surplus to state GDP ratio (1988-1990) - Average state budget surplus to state GDP ratio (1988-1990)	Stringency index of BBR (ACIR 1987)	YES
Bohn and Inman (1996)	47 1970-1991	- State general fund deficit per capita	Stringency index of BBR (ACIR 1987) Four balanced budget requirements	YES
Kiewiet and Szakaly (1996)	49 1961-1990	- (Non-)guaranteed state debt per capita - Total state (and local) debt per capita	Five requirements on bond issuance	YES
Clingermayer and Wood (1995)	48 1961-1989	- Annual change in long-term state debt	Constitutional debt limits	No significant effect
Eichengreen (1994)	N/A 1985-1989	- General fund balance	Stringency index of BBR (ACIR 1987) Two balanced budget requirements	YES
von Hagen (1992)	N/A 1985	- State debt per capita and in relation to income - State debt growth (1976-1985)	Debt limitations Stringency of BBR (ACIR 1987)	Ambiguous
Nice (1991)	N/A 1982	- State (and local) debt per capita - (Non-)guaranteed state debt per capita	Constitutional debt limits Balanced budget requirements	YES (debt limits) No significant effect (BBR)
von Hagen (1991)	50 1985	- State debt and state debt growth (1975-1985) - Ratio of non-guaranteed to guaranteed state debt	Stringency index of BBR (ACIR 1987)	No significant effect
ACIR (1987)	50 1984	- General fund state deficit, tax revenues and long-term debt - (Non-)guaranteed state debt	Stringency index of BBR (ACIR 1987) Constitutional debt limits	YES
Abrams and Dougan (1986)	50 1980	- State and local spending per capita - State spending per capita	Balanced budget requirements (ACIR 1987)	No significant effect

* "YES" ("NO") indicates that the empirical results suggest that fiscal rules significantly support fiscal discipline (indiscipline).
** "BBR" reduces pension funding level significantly. "BBR" stands for Balanced Budget Requirements. "ACIR" stands for Advisory Commission on Intergovernmental Relations. Studies listed above may focus on further issues.

Source: The authors.

Figure 1

US States with no-carryover rule (blue)



Survey-based results (NASBO 2008) — Reading on the books (Hou and Smith 2006)

Source: Own illustration. The islands located in the south-west of the maps indicate Alaska and Hawaii, respectively.

Although the ACIR findings are widely used,[3] the data might not be accurate. For instance, the frequently employed no-carryover provision is supposed to be implemented in 36 states according to the ACIR (1987), in 39 states according to the United States General Accounting Office (GAO 1993), in 43 states according to the NASBO (2008) and in only 11 states according to Hou and Smith (2006). The records of the two latter studies vary substantially, although the data was collected almost at the same time (Figure 1). Thus, the variation in the data is not only due to the different points in time covered by the reports, but also to differences in personal interpretation, perception and knowledge of state laws, practices and court decisions. These confounding factors are likely to be more pronounced in the survey-based reports (ACIR 1987, GAO 1993, NASBO 2008) than in data collected from legal and other texts (Hou and Smith 2006). Although the issue has recently gained attention (Hou and Smith 2006, 2010; Krol and Svorny 2007; Levinson 2007; National Conference of State Legislatures 2010; Mahdavi and Westerlund 2011), the data variation does not distort the overall findings (Table 1).

While the data variation suggests that there might be some institutional variation across time, empirical research often implicitly assumes that budget rules remain unchanged. For instance, Rose (2006), Primo (2006) and Mahdavi and Westerlund (2011) employ the no-carryover rule according to data collected in 1984 by the ACIR (1987) while analysing periods from 1974–2000, 1969–2000 and 1961–2006, respectively.

Switzerland

The Swiss federal government, the 26 cantons and the 2,353 municipalities enjoy substantial fiscal autonomy and responsibility. Each level of government has the capacity to incur debt, the right to tax and can decide on its expenditure relatively independently. While disparities among cantons and municipalities are reduced by means of fiscal equalization, its redistributive impact is limited. Sub-national fiscal responsibility was consolidated by the no-bailout decision of the Swiss Supreme Court in 2003 regarding the municipality of Leukerbad. The federal fiscal framework is supplemented by direct democracy and fiscal constraints.

Cantonal balanced budget rules

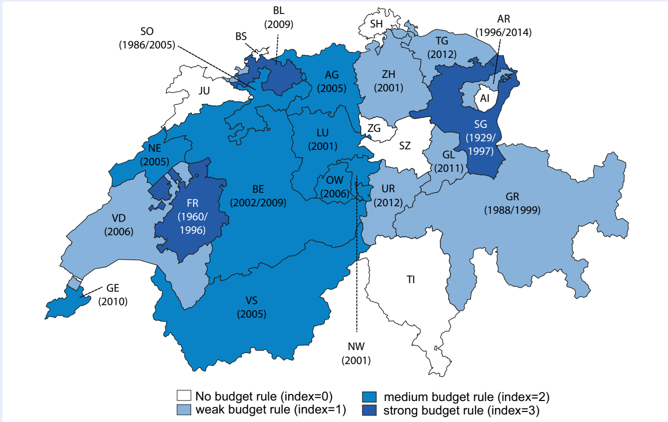
To secure financial transparency and stability the Conference of the Cantonal Ministers of Finance agreed in 1981 on a role model law for cantonal budgeting that requires a balanced budget in the medium term (article 4). At the end of 2012 all cantons apart from Appenzell Inner Rhodes, Basel-City and Jura had implemented some kind of budget rule in their constitution or budget law. The 23 cantonal budget rules vary substantially with respect to their point of introduction, design and

[3] ACIR data have also been used in related strands of literature, for example, Pogue (1970), McEachern (1978), Bayoumi and Eichengreen (1995), Bohn and Inman (1996), Sørensen et al. (2001), Fatás and Mihov (2006).

stringency. While some cantonal laws stipulate numeric annual deficit thresholds and automatic expenditure and tax adjustments, other cantons only require a balanced budget in the medium term or set loosely defined escape clauses (Conference of the Cantonal Ministers of Finance 2012). Contrary to the US states, no cantonal court has the duty to supervise the budget rules. The enforcement in Switzerland may take place through sanction mechanisms and direct democracy instead (Schaltegger 2002).

Figure 2

Cantonal budget rules: stringency and year of introduction



Source: Own illustration based on data from Feld et al. (2013) and Conference of the Cantonal Ministers of Finance (2012).

The dates indicate the year the budget rule became effective. Major revisions are specified by a second date. The cantonal fiscal rules are classified slightly differently by other studies. Abbreviations: AG Aargau, AI Appenzell Inner-Rhodes, AR Appenzell Outer-Rhodes, BE Bern, BL Basel-County, BS Basel-City, FR Fribourg, GE Geneva, GL Glarus, GR Grisons, JU Jura, LU Lucerne, NE Neuchâtel, NW Nidwalden, OW Obwalden, SZ Schwyz, SG St. Gall, SH Schaffhausen, SO Solothurn, TG Thurgau, TI Ticino, UR Uri, VD Vaud, VS Valais, ZG Zug and ZH Zurich.

The rigid budget rule adopted in St. Gall is often referred to as a role model. Its constitution stipulates that the current budget has to be balanced (article 82). According to the State Administration Law *(Staatsverwaltungsgesetz)*, the constraint is assumed to be satisfied if the budget proposal reports a deficit below three percent of the simple tax revenue. Otherwise the tax rate (tax foot) has to be adjusted. Tax cuts are prohibited as long as the non-restricted equity is below 20 percent of the simple tax revenue. A deficit at the end of the year has to be debited in the budget proposal after the subsequent year unless non-restricted equity is available. The current budget also includes public investments below CHF five million and depreciations of investment projects above that threshold. Unlike St. Gall, Ticino has rather weak budget constraints that merely require the current budget to be balanced in the medium term.[4]

The large variation in cantonal fiscal regulations is exploited by Feld and Kirchgässner (2001, 2008) and Feld et al. (2013) in order to construct a stringency index. They assign an index value between zero and three according to the number of fulfilled requirements, which are: a strong link between budget planning and execution, a numeric deficit threshold and an automatic tax adjustment. Despite the prevalence of cantonal fiscal rules, all three requirements are only met by St. Gall and Fribourg, which have already been constrained since 1929 and 1960, respectively, and since 2008 by Basel-County. The budget rule of Ticino, among others, does not satisfy any requirement, thus an index value of zero is assigned (Figure 2).

All empirical investigations to date suggest that cantonal budget rules support fiscal discipline (Table 2). In an initial study Feld and Kirchgässner (2001) find a significant negative impact of their stringency index on public debt and deficits during the years 1986-97. This index is also employed by Schaltegger (2002) who draws a similar conclusion for an extended period (1980-98). In compliance with the previous results, Feld and Kirchgässner (2008) provide evidence that strong budget rules significantly reduce both cantonal deficits and cantonal and local deficits together. Since the coefficient of the stringency index is almost similar in both deficit equations, the authors conclude that the constraints have not led to a shift in cantonal deficits to the local level. While Feld, Kirchgässner and Schaltegger (2010) study cantonal revenues as dependent variables, their fiscal rule dummy remains insignificant in all equations. Krogstrup and Wälti (2008) examine whether previous findings are driven by voter preferences. By using data from the period 1955–99 they conclude that fiscal rules continue to significantly improve cantonal deficits. A somewhat different approach is pursued by Luechinger and Schaltegger (2013). Their results suggest that fiscal rules exhibit a significant negative impact on the probability of projected and realized cantonal deficits. In a related strand of literature Feld et al. (2013) investigate the main

[4] A detailed description of cantonal budget regulations is provided by Stauffer (2001) and a more recent overview by the Conference of the Cantonal Ministers of Finance (2012).

Table 2

Empirical studies on the effect of cantonal budget rules on fiscal discipline in Switzerland

Study	Cantons, period	Dependent variable (selection)	Fiscal rule	Support fiscal discipline*
Luechinger and Schaltegger (2013)	26 1984-2005	Probability of projected and realized cantonal deficit	Budget rule dummy and stringency index (Feld and Kirchgässner 2008)	YES
Feld, Kirchgässner and Schaltegger (2010)	26 1980-1998	State and local revenues Various revenue categories	Budget rule dummy	No significant effect
Krogstrup and Wälti (2008)	25 1955-1999	Cantonal budget balance	Budget rule dummy	YES
Feld and Kirchgässner (2008)	26 1980-1998	Cantonal deficit, cantonal and local deficits together, cantonal debt	Stringency index (Feld and Kirchgässner 2001)	YES
Schaltegger (2002)	26 1980-1998	Cantonal expenditure, revenue, debt and deficit	Stringency index (Feld and Kirchgässner 2001)	YES
Feld and Kirchgässner (2001)	26 1986-1997	Cantonal expenditure, revenue, debt and deficit	Stringency index	YES

* "YES" indicates that the empirical results suggest that fiscal rules significantly support fiscal discipline. Studies listed above may focus on further issues.

Source: The authors.

drivers of cantonal yield spreads. Their results indicate that stricter budget rules and the no-bailout regime established after the Leukerbad court decision in 2003 are both associated with lower cantonal yield spreads.

Germany

The current fiscal constitution of Germany is characterized by almost no individual tax autonomy for the states and and their 11,161 municipalities, strong and complex horizontal and vertical fiscal equalization schemes and an implicit bailout guarantee. The latter was approved by the German Constitutional Court in 1992 and 2006 under the condition that a state is not capable of reducing excessive indebtedness on its own. While a reform of the fiscal equalization system is required by 2020, the current design implies a marginal tax rate on revenue of close to 100 percent in most states (Feld and Schnellenbach 2013). Compared to the US and Switzerland, the German fiscal framework seems to induce particularly strong incentives for unsound sub-national finances.

State balanced budget rules

German states have been constrained by some kind of balanced budget rule for a long time. Since a softening of the federal budget rule in 1969, most state laws allow for deviations from a balanced budget in case of spending on public investment, extraordinary needs and disturbances of the general macroeconomic equilibrium. The escape clauses have been used widely since their terms are not clearly defined and public special funds are not included. In line with this observation, a recent study reveals that only Bavaria, Hesse, Saxony and probably Baden-Wuerttemberg pursued a sustainable fiscal policy between 1950 and 2011 (Burret, Feld and Köhler 2013).

The deterioration of public finances and the persistent shortcomings of the budget rules led to the adoption of a new budget rule in the German Basic Law (*Grundgesetz*) in 2009 (Article 109 and 115). The design of the so-called debt brake is based on the Swiss debt brake. Besides provisions for the federal government, the rule requires the state budgets to be at least structurally balanced from 2020 onwards. Cyclical deficits are only allowed if the state enshrines the rule into its own legal framework and treats cyclical influences symmetrically. The states may implement escape clauses for natural disasters or extraordinary situations that are beyond the government's control and significantly affect government finances. So far a new budget rule has been incorporated into the constitution of six states and into the Budget Laws of another four states. Nevertheless, most of these provisions are still in conflict with the German Basic Law. While states' budgetary autonomy impedes a federal enforcement, a newly established independent fiscal council (Beirat beim Stabilitätsrat) has the duty to supervise compliance and unveil unsustainable developments. In order to achieve a structural budget balance by 2020 five highly indebted states receive consolidation payments totalling EUR 800 million per year. To be eligible Berlin, Bremen, Saarland, Saxony-Anhalt and Schleswig-Holstein have to reduce their structural deficit of 2010 by ten percent each year.

Despite some loopholes, the wording of the German Basic Law appears well defined and rigid. While most state budget rules do not become fully effective before 2020, the transition period has already been successful. Descriptive statistics reveal considerable consolidation progress in all states on average. In 2012 Bavaria, Mecklenburg-Western Pomerania, Saxony and Thuringia have already achieved structural budget balances, while Brandenburg, Saxony-Anhalt and Berlin have come close to striking a structural balance (Figure 3). Only Baden-Wuerttemberg, Hesse and North Rhine-Westphalia have not managed to reduce their structural deficits by a tenth each year since 2010. The situation in Saarland and Bremen seems particularly worrisome since their consolidation requirements are still substantial. The two states risk a reversal of their annual consolidation receipts of EUR 260 million (Saarland) and 300 million (Bremen) if they violate their adjustment path. However, Bremen has already reduced its structural deficit significantly.

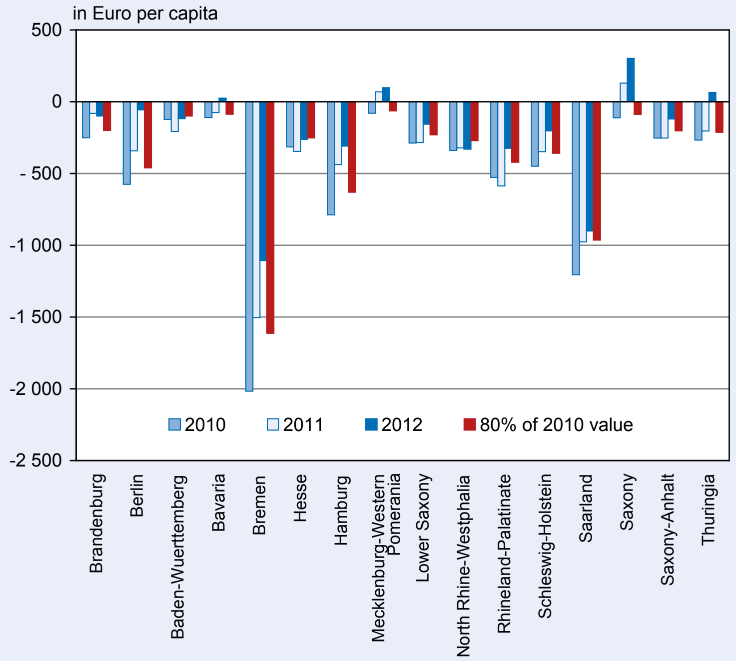
Conclusion

In all three mature federal states most sub-national governments are constrained by self-imposed budget rules. While the rigidity of fiscal rules varies crucially across the US states and Swiss cantons, almost all German states are currently operating under weak budgetary restrictions that have not proved very effective. However, from 2020 onwards German Basic Law sets stronger requirements for new state budget rules. By then the variety of sub-national fiscal rules is likely to be far smaller in Germany than in the US or Switzerland.

Empirical evidence on the Swiss cantons and US states suggests that strong budget rules exert a disciplinary influence on sub-national fiscal policies. The results are particularly robust and conclusive in the case of Switzerland, which is consistent with the observation that Swiss cantons have more stringent budget rules than the US states. The success of the cantonal constraints provides initial indications of the prospective effectiveness of the new fiscal rule in Germany for which Switzerland served as a role model. However, an

Figure 3

Structural budget balance of the German states



The structural deficit is calculated according to the method laid down in the Administrative Agreements (Verwaltungsvereinbarungen) for the states receiving consolidation assistance.

Source: Own illustration based on data from Institut der deutschen Wirtschaft Köln (2013a, 2013b).

extrapolation of the Swiss results to Germany might be misleading because the rules are integrated into a more decentralized fiscal framework than in Germany. Until the new state rule becomes legally binding, progress depends crucially on the willingness of the German states to consolidate. The reluctance of several states puts the credibility of the German debt brake at risk.

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Tax Competition and Direct Democracy in Local Public Finance – Empirical Work on Switzerland

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Introduction[2]

The subprime crisis and the current European Union debt crisis have massively increased the fiscal pressure on national governments. Although less noticeable, the crises have also had a significant impact on local public authorities. The reduction in the debt of national and state governments is very likely to imply less transfers to local authorities, or a shift in public expenditure duties to lower level jurisdictions. The challenge that lies ahead for local government is huge, especially since the latter is often the "residual claimant" in public service delivery, and often has limited access to revenue generation, relying heavily on fiscal transfers.

This paper offers an overview of work in two areas of great importance in local public finance: tax competition and direct democracy. Tax competition at the lowest tiers of government might have increased relevance since tax bases are likely to be the most mobile across smaller-scale regions. Both individuals and firms present a higher relocation elasticity if one talks about moving from one municipality to another, rather than, say, from one country to another. Similarly, direct democratic institutions are likely to be most widespread at the local level, quite simply, because they are easier to organize with a smaller number of voters.

The paper concentrates on empirical work using data on Switzerland. The country is often praised as a natural laboratory for exploring the effects of tax competition and direct democracy for a number of reasons. The country is small and fairly homogenous, it consists of three levels of government (federal, cantonal and municipal) all with noteworthy autonomy in tax setting and expenditure decisions. Similarly, direct democratic institutions are widespread and present at all levels of government. The main instruments are the citizen assembly (not present at the federal level), the initiative and the referendum. Furthermore, specific characteristics of these institutions vary widely across and within regions.

The article is not an exhaustive summary of the vast empirical work on Switzerland, but is influenced by my own research. The overarching objective is to discuss how tax competition and direct democracy influence policy decisions at the local level, and more specifically, whether they can be a force for good, making local governments more efficient and bringing policy decisions closer to citizen preferences. Overall, I would say that tax competition is alive and well, and direct democracy works!

The reminder of the article is structured as follows. The next section (*The Local Public Sector in Switzerland: Taxes, Expenditure and Institutions*) gives a short overview of the Swiss institutional context. The following section concentrates on *Tax Competition,* which is followed by a section focusing on *Direct Democracy.* In each section a short overview of the main theoretical elements is presented, followed by a discussion of empirical work. The last section offers some conclusions.

The local public sector in Switzerland: taxes, expenditure and institutions

The local public sector

Switzerland is organized as a federation with three levels of government: federal, cantonal (state) and municipal. There are 26 cantons, and roughly 2,500 municipalities that make up its 41,000 km^2 that are inhabited by just over eight million people. Thus, jurisdictions in Switzerland are small on average, both at the second and

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Table 1

Share of expenditure across levels of government (%), 2009

Expenditure Item	Federal	Cantons	Municipalities
Administration	57	23	20
Defense	91	4	5
Security	10	64	26
Economy	41	38	21
Environment	17	22	61
Social housing	1	17	82
Health	3	84	13
Culture and recreation	8	32	60
Education	9	60	31
Welfare	42	38	20

Source: Swiss Federal Department of Finance (2011).

third tier of government. The country is also characterized by the fact that it leaves a great deal of autonomy to all jurisdictions, both in terms of expenditure and revenues. The shares (for expenditure and revenues) are approximately: 30 percent federal, 40 percent cantons and 30 percent municipalities. These shares have remained remarkably stable over time.

Table 1 presents the share of spending across all levels of government for an array of expenditure items. The largest spending areas (in terms of share of the budget) at the federal level are defense and welfare. Cantons, by contrast, bear the largest shares of spending on health, security and education, while municipalities concentrate spending on the environment, social housing and culture. However, as can also be seen in the table, most areas are spread over all three levels of government.

In terms of revenue generation, cantons and municipalities rely largely on four (shared) tax bases: personal income and wealth, and corporate income and capital, with the first being the largest contributor.[3] It should be noted that municipalities, unlike most local authorities, do not rely much on property taxes, but rather on the (potentially mobile) income and wealth tax bases. Each canton has its own tax laws, defining the sets of tax schedules on these bases. Based on the legally defined basic tax rates, cantonal and municipal authorities autonomously set multipliers that define effectively applied tax rates. Hence, municipalities cannot determine the progressivity of a specific tax, which is defined by the cantonal tax law; but they can influence the level of taxes via the multiplier.[4]

Political institutions

Direct democracy is a cornerstone political institution in Switzerland. It has a century-old tradition. Probably the purest form of direct democracy is the citizen assembly ("*Landsgemeinde*"). This has been widely used for decision-making at the cantonal level for hundreds of years.[5] Besides the assembly, two main instruments of direct democracy are present at all levels of government: the initiative and the referendum. However, areas of application, conditions and use of these instruments vary widely across and within levels of government.

The citizen initiative allows citizens to bring an issue of interest to a ballot. It is worth noting that only constitutional initiatives are allowed at the federal level, while at lower-level jurisdictions initiatives can also be brought forward on other types of legislation. Whether an initiative is voted upon, generally depends on whether a sufficiently large number of signatures is obtained, or the signature requirement is reached. These thresholds vary between cantons and municipalities and they can be expressed as the number of signatures or percentage of citizens. There is even more variation in terms of referenda. First of all, referenda can be mandatory or optional. If optional, they are again linked to a signature requirement. If mandatory, a referendum can be triggered by an expenditure threshold.

At the sub-federal level the agenda setter for the direct democratic instruments is the canton. Cantonal constitutions define the availability and conditions for all jurisdictions in their constituency. Thus, besides characterizing the direct democratic instruments available for cantonal decisions, they also describe what municipalities can or cannot do. Again there is a

[3] A video of the evolution of tax rates for all municipalities in Switzerland since 1984 can be found on the website of our research network (http://www.fiscalfederalism.ch/data/video.html, accessed 03 March 2014).

[4] It should be noted that municipalities, with some exceptions, apply the same multiplier across all four tax bases, which is sometimes mandated by the cantonal tax law. In a sense, municipalities can only use one degree of freedom for all four tax bases. This feature is important in some of the empirical research discussed below.

[5] Only two cantons (Appenzell Innerhoden and Glarus) still avail of the "*Landsgemeinde*". The other cantons have abolished them over the last 150 years. However, a citizen assembly is still the highest political institution in many municipalities.

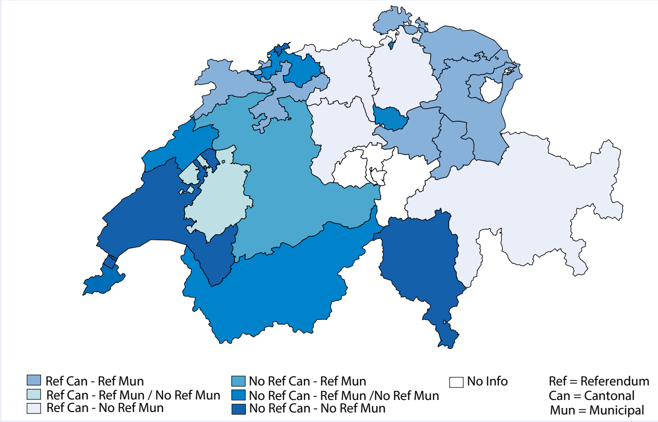
significant degree of variation across and within cantons. For the local authorities, the constitution and subsequent laws can define exactly what instruments are available, which are then applied to all municipalities in the canton. Alternatively, the constitution can establish the rules for the set of instruments available,[6] or it may leave the choice of institutions entirely up to the municipality.

To illustrate the wide variation across jurisdictions of direct democratic instruments, Figure 1 displays, at the cantonal level, the existence of mandatory fiscal referenda both at the canton and municipality (Galletta and Jametti 2012).[7]

Finally, direct democratic institutions not only exist, but they are also frequently used. Table 2 presents statistics on the use of direct democratic instruments across the three levels of government. It is worth noting that the mandatory referendum is the most widely used instrument.

Figure 1

Institutional variation in Switzerland, mandatory fiscal referendum



Source: Micotti and Bützer (2003).

Table 2

Use of direct democratic instruments

Instrument	Federal	Cantons	Municipalities*
Initiative	76	354	187
Optional referendum	67	362	337
Mandatory referendum	45	1374	2918
*Based on 91 municipalities for the period 1990-2000			

Source: Micotti and Bützer (2003).

Tax competition

Theory

The standard result of tax competition for mobile tax bases among same-level governments is well established and goes back at least to the seminal formal statements of Wilson (1986) and Zodrow and Mieszkowski (1986): uncoordinated tax setting among governments leads to inefficiently low tax rates and an inequitable shift to immobile tax bases. Each government, despite being benevolent within its own jurisdiction, does not take into account the negative "horizontal" externality that a reduction in taxes implies for other jurisdictions. The result is the frequently cited "race to the bottom" in the taxation of mobile factors. As a result, insufficient tax revenue implies that public expenditure is suboptimally low, that is, tax competition is welfare reducing. Keen and Kotsogiannis (2002) extend the basic model within a federal context. Besides the well-known horizontal externality, pushing tax rates *below* the social optimum, the authors show that if two levels of government tax the same base, another, "vertical", externality arises. When setting their taxes local (subfederal) authorities do not fully take into account the effect on the (shared) federal tax base, giving them an incentive to set tax rates that are suboptimally *high*. Indeed, if vertical externalities are strong enough, a "race to the top" can be observed in local tax rates. Keen and Kotsogiannis (2004) show that tax competition also reduces welfare in this setting, while Brülhart and Jametti (2006) show that the effect of whichever externality dominates gets stronger as the number of jurisdictions increases. In other words, if the horizontal externality dominates, tax rates decrease with a larger number of jurisdictions (more tax competition); while the inverse is true if the vertical externality dominates. More generally, the existence of vertical externalities might explain why the race to the bottom is not complete. Finally, in a federal context, benevolent upper level government can correct for the externalities if it fully controls vertical transfers and is a

[6] For example, in the canton of Vaud (with capital Lausanne) municipalities with less than 1,000 citizens have an assembly, while larger ones must have a municipal council.
[7] The map is based on a sample of around 130 municipalities. Cantons in white are not part of this sample.

Stackelberg-leader (Boadway, Marchand and Vigneault 1998) or if multiple tax bases exist (Hoyt 2001).
As a side note, the theoretical models discussed above imply that taxes are strategic complements, both if there is a race to the bottom or the top. This need not necessarily be the case and is specific to model assumptions. Indeed, de Mooij and Vrijburg (2012) show that taxes can act as strategic substitutes if the public and private goods are sufficiently close complements. We will return to this point later.

Can tax competition be a force for good? The answer is yes, if we depart from the assumption of benevolent governments. Without entering the realm of political economy, Brennan and Buchanan (1980) show that tax competition can be welfare improving if it acts as a restraint on the unfettered appetite of local jurisdictions. In other words, tax competition can tame the Leviathan. Brülhart and Jametti (2007) build a model to characterize precisely these conditions. In their model of a federation, they assume that local jurisdictions present varying objective functions, ranging from more benevolent to more revenue-maximizing functions.[8] If, for more benevolent governments, the above-mentioned vertical externalities dominate, then competition induced reductions in equilibrium tax rates of less-benevolent governments are welfare improving.

Empirical work

The large degree of autonomy enjoyed by sub-federal jurisdictions in taxation (and expenditure) decisions in Switzerland has led to a longstanding tradition of empirical studies. Switzerland is often presented as an "ideal" natural laboratory for analyzing tax competition empirically. Many studies use cantonal data, the first sub-federal layer of jurisdictions,[9] while fewer focus on the effects of tax competition at the municipal level, on which I will concentrate. Feld and Kirchgässner (2001c, 181) find that "tax competition… is relatively strong in Switzerland". Using a cross-section of the 137 largest municipalities in 1990, they analyze the effect of taxes on residence decisions by different classes of taxpayers. They find that taxes have a significant, and expected, impact on residence choices by different income groups. For example, an increase in the tax rate for high-income individuals reduces the share of this income group in the locality, *ceteris paribus*.

Thus, tax competition among local jurisdictions exists in Switzerland, but is this good or bad? A first step in this direction was undertaken by Brülhart and Jametti (2006) using their empirical test to distinguish between horizontal and vertical tax externalities among "benevolent" jurisdictions. As mentioned previously, in the model of Keen and Kotsogiannis (2002), the effect of whichever externality dominates gets stronger as the number of (symmetric) jurisdictions increases. An empirical counterpart of this theoretical measure of tax competition is the relative smallness of municipalities. Brülhart and Jametti (2006) use a pooled cross-section of up to 103 municipalities to explain the level of taxes.[10] They restrict their sample to municipalities with direct democratic participation in the tax setting process, using the assumption that direct democracy brings policy decisions closer to the preferences of citizens (to which we return below). They find that a higher degree of tax competition (a higher degree of smallness) has a positive and significant impact on the level of taxes. Thus taxes increase with more competing jurisdictions, that is, the vertical externality seems to dominate in their dataset, and taxes may be suboptimally *high*.

This is the starting point for their follow-up paper (Brülhart and Jametti 2007) to assess the welfare effects of tax competition. If vertical externalities dominate for relatively benevolent authorities, then the tax reducing effect of competition among less benevolent governments (proxied by municipalities without direct democratic participation in tax setting) is welfare improving. Brülhart and Jametti (2007) find exactly this in a panel dataset of 130 Swiss municipalities.

Finally, Parchet (2014) analyzes whether municipal taxes are strategic substitutes or complements in Switzerland. He proposes a novel identification strategy based on state-level fiscal reforms and focusing on municipalities along cantonal borders. In his sample, tax reaction functions have a negative slope, hence taxes are strategic substitutes.

Direct democracy

Theory

What are the channels through which direct democracy can shape public policy? At the outset, there is little role

[8] More specifically, local jurisdictions present objective functions with differing linear combinations of utility and revenue maximization.
[9] For example, Feld and Kirchgässner (2003).

[10] More specifically, Brülhart and Jametti (2006) use a "tax-index", i.e. a revenue-weighted average of tax rates from the four tax bases municipalities mainly access. This precisely takes into account the feature mentioned above that many municipalities choose one single multiplier to shift all four tax schedules.

for citizen participation if government is benevolent. In fiscal federalism this is nicely illustrated by the seminal contribution of Tiebout (1956). If citizens are mobile, they can "vote with their feet" and choose the jurisdiction that offers the best bundle of taxes and public services for them. Citizens then sort into communities together with individuals with similar preferences. It should be noted that differences in the level of public expenditure (and corresponding taxes) across jurisdictions are not a subject of concern, since citizens choose what they like best. Similarly, there is a limited role for direct democracy in another cornerstone of the fiscal federalism literature, namely the "Decentralization Theorem" (Oates 1972). This theorem describes the allocation of public goods and services through a trade-off between internalizing inter-jurisdictional spillovers and scale economies and catering to local preferences.

Direct democracy comes into play in situations where politicians are not necessarily benevolent, but pursue their own goals. Politicians' decisions can deviate from citizens' preferences either because politicians seek to maximize their own utility function (Tullock 1980), or because, despite being welfare maximizers, they are not able to fully apprehend constituents' preferences (Matsusaka 1992).

A first strand of the theoretical literature discusses the channel through which direct democratic institutions result in political decisions closer to citizens' preferences. Examples are Romer and Rosenthal (1979) and Gerber (1996). Essentially, direct democracy makes it possible to hold politicians accountable.[11]

The central finding is that government expenditure is usually higher than that wished for by the median voter and is never lower. The gap between median voters' preferences and policy outcome is reduced, but policy makers still have the main role in policy formation. Feld and Kirchgässner (2000) argue how the referendum can positively affect citizens' information and political action. Instead, Kessler (2005) comes to a somewhat different conclusion. She argues that in direct democratic legislation, citizens do not invest in information acquisition because their votes are unlikely to be determinant. Elected representatives thus allow the promotion of more efficient policies.

In essence, most of the theoretical results point to the fact that direct democratic participation of the citizen in the decision-making process brings adopted policies closer to the preferences of voters. Furthermore, since politicians have a tendency to increase public expenditure beyond socially optimal levels, this implies that direct democracy should have a reduced expenditure.

Empirical work

Like in the field of tax competition, Switzerland has also been used extensively to study the effects of direct democratic institutions. Again, I will focus mainly on studies of municipalities. Pommerehne (1978) was one of the first academics to highlight the negative effect of direct democracy on public expenditure. He used data on Swiss municipalities from the year 1970 to show that the availability of a referendum in a municipality reduces (excess) public service provision.

Feld and Kirchgässner (2001a,b) study in detail the outcome of several forms of direct democracy on public policy. Using data on 131 Swiss municipalities in the year 1990 they show that mandatory referendum on budget deficits entails a reduction in public debt, expenditure and revenue. Moreover, using data on 26 Swiss cantons for the period 1986–97, they find that expenditure and revenue are lower in cantons with a mandatory referendum on new spending projects.

Feld et al. (2008) test the hypothesis that decentralization is more likely under direct, rather than representative democracy. They confirm, in line with theory, the hypothesis that direct democracy fosters decentralization, both for expenditure and revenues. Funk and Gathmann (2011) revisit these previous empirical findings, using information on cantonal institutions for the period 1890–2000. In their sample, a mandatory budget referendum (their proxy of direct democracy) does not affect municipal expenditure and decentralization.

One aspect that the abovementioned studies do not consider is the full spectrum of institutions at all levels of governments. Indeed, the large institutional variation in Switzerland implies a potential vertical interaction between direct democratic instruments at the cantonal and municipal levels. Galletta and Jametti (2012), explore this avenue. They test whether the impact of direct democracy at the upper level of government depends on the degree of citizen participation at the local level. They find that cantonal fiscal referenda increase munic-

[11] For a model of political accountability in a federation (but without the presence of direct democratic institutions) see Joanis (2014) and for an empirical application thereof, see Jametti and Joanis (2011).

ipal public expenditure for localities that do not avail of a referendum, while this expansionary effect is much reduced and statistically significantly different for municipalities that also have a fiscal referendum.

Conclusions

Tax competition and direct democracy play an important role in local public finances in Switzerland. But this is not only relevant for national policy decisions. Indeed, given the small scale of the country and the large institutional variation, Switzerland can help us to understand how tax competition and direct democracy can and should be used to make local governments more efficient in choosing policies that are closer to citizen preferences, for a much wider audience.

This article offers an overview of research in tax competition and direct democracy using data on Switzerland. Both issues have one important aspect in common. They hold local politicians in check. Tax competition might be harmful in that it does not make it possible to provide the optimal level of public services to citizens, but it might also be a force for good if it tames the Leviathan.

Similarly, direct democracy might lead to unwanted outcomes if voters are able to shift the burden of public good provision to minorities,[12] but it does help to hold politicians accountable for their actions.

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[12] On the "common pool" problem of direct democracy, see for example Asatryan et al. (2013).

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Direct Democracy as a Disciplinary Device on Excessive Public Spending

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Introduction

The current debt crisis in Europe and North America raises the question of how to impose greater spending discipline on governments and politicians. In Germany, for example, a debt break at both the federal and the state level has now been incorporated into constitutional law. After 2016, net borrowing by the federal government cannot exceed 0.35 percent of GDP. After 2020, a balanced budget is also required by all German states (except in rare circumstances such as natural disasters or an exceptionally deep recession).

Do such rules or similar provisions constrain public spending? The evidence is not clear-cut (see, for example, Poterba 1997; Bohn and Inman 1996 for evidence from the United States). Past experience, most recently with the Stability Pact in the European Union, has certainly demonstrated that governments can be quite creative in circumventing such budget rules.

To increase budget discipline, a promising alternative could be direct democracy, which gives citizens more direct influence over public spending. Direct democracy has experienced a remarkable renaissance over the past few decades. The recent referendums on the new European constitution in France, the Netherlands and Ireland are a few prominent examples of this upsurge in direct voter participation, which has also become increasingly popular at the local level in Germany. Moreover, its introduction is currently being debated in such diverse contexts as in the Netherlands, South Africa and even in the European Union.

The rising popularity of direct democracy is fuelled by the belief that direct voter control may not only improve the legitimacy of political decisions, but could also slow down or even reverse the rapid growth in government spending and debt observed over the past decades. In recent work (Funk and Gathmann 2011, 2013), we evaluate the merit of these policy proposals using the exemplary case of Switzerland. Switzerland is a country with historically low government spending, which many argue is related to its intensive use of direct democracy.

More specifically, we ask whether direct democracy reduces government spending and whether direct democratic institutions at one level of government shift spending to lower levels of governments – resulting in more decentralization. Our evidence suggests that direct democracy constrains spending but its effect is more modest than previously suggested (for example Feld and Matsusaka 2003; Matsusaka 2004). We also find little evidence that direct democracy at the state level results in higher local spending or decentralization. This result suggests that state politicians cannot easily avoid the disciplining effect of direct democracy by simply shifting responsibilities to local levels of government. Overall, direct democracy seems to be a promising institutional alternative to reduce public spending when citizens are more fiscally conservative than representatives.

Direct democracy in Switzerland

Switzerland has a strong federalist system in which its cantons play an important role. In fact, all political responsibilities remain with the canton unless they were granted to the federal government in a national referendum. In 2010, 42 percent of all government spending was undertaken by the cantons, 34 percent by the federal and 24 percent by local governments. Cantons have a lot of autonomy in the provision of public goods, as well as the authority to tax labor and capital income. As a result, there is a great deal of heterogeneity in taxes, public spending, and – most importantly – political institutions across cantons. The study focuses on the di-

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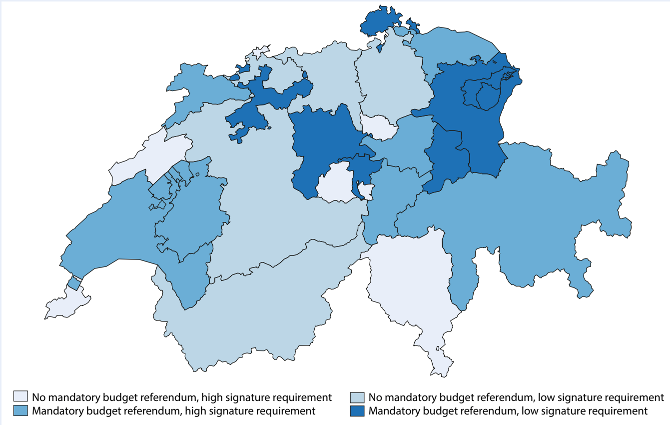
rect democratic institutions most relevant for fiscal policy: the mandatory budget referendum and the voter initiative.

Direct democracy has always played an important role in Switzerland (Curti 1900; Trechsel and Serdült 1999; Vatter 2002). The referendum and voter initiative for a revision of the federal constitution have been in place since the Swiss Confederation was founded in 1848 (Kölz 1992). Direct democracy has an even longer political tradition at the canton level. In cantons such as Appenzell, Glarus or Uri, the direct participation of citizens in town meetings goes back to the 13th and 14th century. The right to propose new laws through initiatives, for example, was already in place in Glarus, Vaud and Nidwalden in 1850 (Kölz 2004).

Figure 1

Map of direct democracy in Swiss cantons in 2000



Source: Online Appendix, Funk and Gathmann (2011).

The mandatory budget referendum (currently in place in about 60 percent of the cantons) gives citizens the power to approve or reject government projects when their (one-time or recurring) expenditures exceed a certain monetary threshold (the exact threshold is set in the canton constitution). The construction of a new canton hospital is one example of a project falling under the mandatory budget referendum. Between 1980 and 1999 alone, citizens voted on 461 expenditure referendums and approved 86 percent of the projects proposed (Trechsel and Serdült 1999).

By contrast, referendums in the remaining Swiss cantons as well as at the local level in Germany, for example, are optional. Here, citizens have to collect a certain number of signatures before a political project or decision is taken to the ballot box. Yet control over the budget is stronger with a mandatory budget referendum because voter approval is mandated by law.

The voter initiative in turn allows citizens to propose entirely new laws, for example, limits on spending growth. While all cantons in Switzerland allow for voter initiatives, there is substantial variation in the number of signatures required to get an initiative on the ballot. A lower signature requirement (measured in terms of eligible voters) imposes fewer costs on citizens to propose a decision and therefore facilitates the use of direct democracy. Hence, low signature requirements for the voter initiative strengthen voter control over political decisions. Figure 1 shows the geographic distribution of the mandatory budget referendum and signature requirement for the voter initiative in the Swiss cantons in 2000.

Political representation with direct democracy

But how exactly do the referendum and the voter initiative affect public policies? If representatives simply implemented the preferences of voters (according to the median voter theorem), direct democracy would have little impact on political decisions. With imperfect electoral competition, however, the preferences of legislators and voters may diverge and actual policies need not necessarily reflect the preferences of the median voter. This divergence could arise, for example, as a result of career concerns by politicians, lobbying by special interest groups or bargaining (log-rolling) in the legislature. Referendums and initiatives then give citizens tools to influence the policies above and beyond general elections – which tend to bring actual policies closer to those preferred by the median voter.

In a referendum, politicians propose the project and hence the amount of additional spending citizens can approve or not (Romer and Rosenthal 1979). If voters agree with the project and the proposed spending, the project is implemented. If voters decline the project in the referendum, the status quo budget (without the particular project) is implemented instead. Referendums thus constrain public spending when politicians prefer to spend more than voters (and the costs of going to the ballot are not too high).

The effect of the voter initiative on public spending also depends on the spending preferences of politicians compared to voters. When legislators spend more than desired by the median voter, the mere threat of an initiative can force legislators to implement policies closer to the preferences of the median voter (Gerber 1996). Otherwise, voters can always launch an initiative to force a reduction in public spending (as they did with Proposition 13 in California, for example). A second argument why initiatives might affect spending directly is that they allow citizens to select their preferred choice for individual policy proposals. In a purely representative democracy, citizens can only select candidates representing a whole bundle of policy proposals. Legislators' choices on non-salient issues may therefore differ from the actual preferences of the median voter (Weingast, Shepsie and Johnson 1981; Besley and Coate 2002). By launching an initiative, citizens can effectively "unbundle" a policy issue from other decisions taken.

Two insights emerge from this discussion: both a referendum and a voter initiative may constrain public spending when the costs of direct democratic participation are not too high and voters actually prefer less spending than representatives. If voters were to prefer more public spending than politicians, direct democracy could, in fact, increase government spending.

Direct democracy at the canton level may also affect spending behavior at the local level: fewer canton resources might constrain local fiscal budgets, or might affect citizens' willingness to delegate responsibilities to the canton (rather than local) level. Direct democracy could also increase local spending if canton politicians constrained by voter control at the canton level were to delegate responsibilities to the local level. In that case, higher spending at the local level would partly offset the constraining effect of direct democracy at the canton level (Feld, Schaltegger and Schnellenbach 2008; Galleta and Jametti 2012).

Fiscal effects of direct democratic participation in Switzerland

To isolate the actual effect of direct democracy on public spending, we need to ensure that cantons are comparable along other dimensions. Most importantly, voters in cantons with stronger direct democracy might prefer less public spending than voters in other cantons. In that case, the public spending observed should also be lower in those cantons with strong direct democracy, even if direct democracy had no effect on spending whatsoever. To explore the role of voter preferences on spending, we use the fact that Switzerland also has direct democracy at the federal level. Specifically, we assembled data on all federal ballots held in Switzerland since 1890. Based on supplementary official documents, we select ballots in which voters had to decide on a measure that would increase (decrease) public expenditure, subsidies or taxes (see Funk and Gathmann 2013 for details). As citizens in all cantons decide on the same ballot, we can compare the voting preferences of cantons in which voters have more control over political decisions to those of cantons with weaker direct democracy.

Table 1 shows cantonal voter support for increases in public spending relative to the Swiss average. The table demonstrates that voters in cantons with strong direct democracy are more fiscally conservative than voters in other cantons. Hence, voter preferences seem to shape

Table 1

Voter preferences vary by institutional regime

	Mandatory budget referendum		No mandatory budget referendum		T Statistic Mean Differences
	Mean	Std. Dev	Mean	Std. Dev	
% Support for more government	1,35	7,42	1,93	9,42	5,9
% Support for higher spending	-2,45	8,21	3,47	9,99	8,4

Notes: The table reports the weighted mean and standard deviation of voter support for more government (higher spending, taxes or subsidies) and higher public spending. The summary statistics are shown separately for cantons with and without a mandatory budget referendum and weighted by the size of a canton's electorate. Voter support in federal propositions is calculated as the support (in percent) in each canton's electorate for a proposition with higher implied spending or taxes and as a deviation from the Swiss average. Hence, cantons with negative numbers show less than average support for the proposition while positive numbers indicate a higher voter support than the average canton.

Source: Funk and Gathmann (2013).

institutions which, in turn, affect the size and composition of public spending.

We further collected a rich new data set with detailed information on direct democratic institutions in all Swiss cantons, which we coded from past and current canton constitutions. The long horizon of the analysis from 1890 to 2000 has the advantage that almost all cantons reformed their direct democratic institutions at least once, and often multiple times, over this period. To evaluate the public spending effects of direct democracy, our study then compares how much public spending adjusts if a canton adopted (or abolished) the mandatory budget referendum, or facilitated (impeded) voter initiatives by reducing (increasing) signature requirements, relative to public spending changes in a similar canton without a reform.

We start out with canton fixed effects to control for any permanent unobservable canton differences (like cultural differences, for example) that may also influence public spending. We further control for other observable canton characteristics such as population composition, or its economic structure, as well as our measure of voter preferences. Our fixed effect estimates suggest that the mandatory budget referendum reduces canton spending by 8.4 percent (see Table 2). An increase in the signature requirement for the voter initiative by one percent (of the eligible population) raises expenditure by 0.4 percent. In all specifications, the canton fixed effects are highly statistically significant, suggesting that cantons also differ along time-invariant unobservable dimensions.

Table 2, however, does not suggest that direct democracy at the canton level shifts spending to the local level. If anything, the voter initiative seems to be associated with more centralized spending, not less. Hence, the reduction of state expenditure through direct democracy is not offset by higher expenditure at the local level.

Figure 2 also suggests that periods of high spending (that is, overspending in the eye of the voter) increase the likelihood of adopting stronger direct democratic institutions in a canton. Thus, direct democracy is not only stronger in cantons where voters are fiscally more conservative, but periods of high spending also seem to trigger reforms to increase voter control over public resources.

Table 2

Direct democracy and government spending

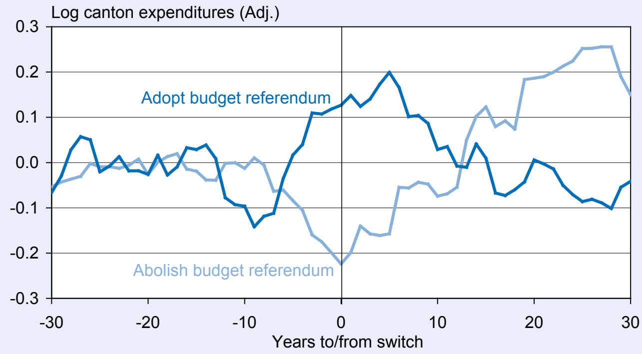
	Canton expenditure			Local expenditure		
	OLS	OLS (IV sample)	IV	OLS	OLS (IV sample)	IV
	(1)	(2)	(3)	(4)	(5)	(6)
Budget referendum	-0.084**	-0.097**	-0.107**	-0.065	-0.007	0.151
	(0.041)	(0.042)	(0.043)	(0.042)	(0.058)	(0.095)
Signature requirement initiative	0.004***	0.004***	0.014**	0.004***	0.009***	0.023***
	(0.001)	(0.001)	(0.006)	(0.001)	(0.002)	(0.007)
Other canton characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Age structure of canton	Yes	Yes	Yes	Yes	Yes	Yes
Size legislature and executive	Yes	Yes	Yes	Yes	Yes	Yes
Canton fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	2,395	2,355	2,355	2,310	2,310	2,310
R-squared	0.98	0.98		0.95	0.95	

Notes: The dependent variable is log annual canton per capita expenditures in columns (1)-(3) and log annual local per capita revenues in columns (4)-(6) over the period 1890-2000. The mandatory budget referendum is a binary variable equal to one if a referendum for large projects is mandated by law. The signature requirement for the voter initiative is measured as share of eligible voters. All specifications include log population, the percentage of the population in different age groups (20-39, 40-64, 65 and above, age 0-19 being the omitted category), the percentage of the population living in cities with more than 10,000 inhabitants, the percentage of workers employed in agriculture and industry, the log per capita federal subsidies to a canton, labor force participation rate, infant mortality rate, the per capita ownership of cars, the number of doctors per 1,000 inhabitants, the percentage of Protestants, the size of the canton parliament and the size of the canton executive as well as canton and year fixed effects. Columns (1) and (4) show OLS results; columns (2) and (5) restrict the sample to those with valid observations of the instruments. Columns (3) and (6) show instrumental variable estimates where we use the provisions for the constitutional initiative and for the mandatory budget referendum in neighboring cantons as instruments for the current direct democratic institutions in a canton. Statistical significance: ***, p<0.01, **, p<0.05 and *, p<0.1.

Source: Funk and Gathmann (2011).

Figure 2

Government spending and changes in the mandatory budget referendum



Notes: The figure shows the evolution of log canton expenditures before and after adopting or abolishing the budget referendum. Log canton expenditures are adjusted for a quadratic time trend and canton fixed effects.

Source: Authors' calculations.

To address this concern of reverse causality, that is the possibility that public spending results in institutional reforms rather than the reverse, we use an instrumental variable approach. Since all direct democratic participation rights are set down in the constitution, institutional reform necessarily requires a change in the canton's constitution. Our first instrument measures how difficult it is for voters to amend the canton's constitution. As a second instrument, we use changes in direct democracy in the neighboring cantons. Both instruments affect the provision of direct democracy in a canton, but are plausibly unrelated to a canton's public spending. Empirical identification of the causal effect of direct democracy on public spending is then achieved by instrumental variables combined with canton fixed effects.

The instrumental variable estimates show that the budget referendum decreases canton spending by 12 percent. In addition, a one percent lower signature requirement for the initiative decreases canton spending by 0.4–1.4 percent. Overall, these results suggest that direct democracy works as a constraining tool even after we account for voter preferences, other institutional differences and the endogeneity of direct democratic institutions.

Conclusion

Our recent work clearly supports the view that direct democracy might not only increase the legitimacy of political decisions, but also act as an effective tool to reduce public spending. In the Swiss context, voters in cantons with stronger direct democracy do indeed prefer less spending than voters in cantons with weaker participatory institutions. Direct democracy improves the representation of these fiscally more conservative voter preferences in actual political decisions. Both the mandatory budget referendum and the voter initiative are effective tools for reducing public spending, even after accounting for differences in voter preferences and the fact that direct democracy is itself a product of voters preferring more political influence.

We also show that direct democratic institutions at the canton level play a limited role in the vertical structure of government. Neither the budget referendum nor the voter initiative decentralizes spending to the local level. Hence, we find little evidence for the concern that representatives can circumvent the tighter voter control over public spending by shifting spending to lower levels of government.

As such, direct democracy seems a promising institution for countering overspending and excessive debt. There are, however, a few caveats to this conclusion: first, not all political decisions lend themselves to a ballot vote as the issue needs to be framed as a simple yes/no vote (which is not always possible). Further, citizens need to be able to make an informed decision which is difficult when the issue is very complex. Finally, voters also need to be well-informed through supporting material that is accessible to all eligible voters. Yet, the example of Switzerland and other countries with direct democracy shows that these caveats can not only be overcome but that citizens deciding directly at the ballot actually contribute to a vibrant democratic culture.

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Electoral Rules and Municipal Finances: Evidence From Two Reforms in Italy

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Introduction

Local finance offers an important testing ground for analyses of fiscal policy and political economics. The sheer number of local communities and the fact that many institutional features can be taken as common across localities inside a single country make the results of empirical analysis of local governments more convincing than either single case studies or inter-country comparisons (Besley and Case 2003). Moreover, local governments are often affected by reforms that can be taken as exogenous with respect to the local community. Hence, one can hope to use these episodes to cast light on important and unresolved issues in economics. Italy is a good case in point. At the beginning of the 1990s, local finance in Italy was affected by two reforms that deeply changed both the politics and the funding of local governments.

The electoral reform

Institutional details

Until 1993 municipal governments in Italy were ruled by a proportional parliamentary system. Citizens voted for party lists to elect the legislative body (that is, the city council); the council subsequently appointed the mayor and the municipal executive office. Since the electoral reform (Law 81/1993), the mayor has been directly elected by citizens, together with the legislative body and with rules that guarantee the mayor a supporting majority in the council. The municipal council can still dismiss the mayor, but then the council is also forced to resign and new elections need to take place. The rationale of the reform, in line with what was occurring at the same time for all other levels of government in Italy (Bordignon and Monticini 2012; Bordignon and Turati 2009) was to make the mayor directly accountable to citizens and to increase his/her grip on the council, eliminating the instability that had characterized previous municipal governments.[3]

The new electoral rule also discriminates between municipalities below and municipalities above 15,000 inhabitants.[4] In the former, the mayor is elected in a *single round* under plurality rule; in the latter, s/he is elected with a *runoff system*. More specifically, below the threshold, candidates are supported by a list only (made up by a single party or coalition of parties), the candidate that gets plurality becomes mayor, and the list supporting the winner gets 2/3 of the seats in the municipal councils.[5] Above the threshold, parties (or coalitions) present lists of candidates for the council and support a candidate for mayor. There are two rounds of voting. In the first round, voters cast two votes: one for a mayoral candidate and one for a party list. If a candidate gets more than 50 percent of the votes in the first round, s/he is elected. Otherwise, the two best candidates run against each other in a second round (which takes place two weeks after the first round). In this second round, the vote is only over the mayor, not the party lists. As in the single round system, the rules for the allocation of council seats entail a majority premium for the lists supporting the winning candidate for mayor.

What is of interest here is the sharp discontinuity in electoral rule at the 15,000 threshold. Interestingly, while many relevant factors such as the number of councillors, mayor's and councillor's wages, central

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[3] Indeed, in the universe of mayoral elections from 1993 to 2007, the mayor was removed because the council approved a vote of no confidence in only one percent of the cases. This is in sharp contrast with events prior to the reform.

[4] In Italy, there are about 8,100 municipalities, 90 percent of which have less than 15,000 inhabitants.

[5] The remaining 1/3 of the seats are divided among the losing lists in proportion to their vote shares. To gain seats, a list must get at least 4 percent of the votes.

government grants, etc. all vary (at different thresholds) as municipal population increases, following national regulations, no such changes occur in the interval between 10,000 and 20,000 inhabitants. Furthermore, it can be shown that no other variable referring to municipalities, like the characteristics of the population, the economy or the environment, present a similar discontinuity at the threshold level. This then gives some confidence that if there is any systematic difference in policy outcomes between municipalities above and below the threshold (inside the above interval), this can only be due to the difference in the electoral rules.

The impact of the reform: policy moderation

What effects can consequently be expected from a change in electoral rules that induce a shift from single to dual ballot systems? An extensive body of literature in political science addresses this issue. The well-known "Duverger Law", for example, predicts a clear relationship between the features of the electoral rule and the equilibrium number of political parties. Single ballot under plurality rule should lead to only two parties or two "serious candidates" running. The predictions for the runoff, however, are less clear cut, and single ballot under plurality rule is usually grouped with other electoral systems that admit a larger number of parties ("Duverger hypothesis").

Yet predictions of the equilibrium number of parties or candidates, however interesting for political scientists, are of limited importance to economists. In the end, it does not matter very much whether there is a large or a small number of parties; what counts is what these parties do. The really interesting question is therefore whether voting with one system or the other systematically changes what we expect governments to be able to do. This is an issue that has been little discussed in economic literature; and indeed, in spite of its empirical importance,[6] we know very little about the effects of the runoff in terms of policy.

In Bordignon, Nannicini and Tabellini (2013) this issue is tackled from a theoretically standpoint. The main prediction is that the runoff, in a system such as the Italian one that is characterized by an ideologically polarized electorate and by strongly extremist parties, should lead to greater *policy moderation*. This is desirable on welfare grounds, if moderate parties elicit the support of most voters, as is usually the case in Italy too.[7] The intuition is very simple and can be derived in a variety of theoretical setups. Under a single ballot system, small, extremist parties have no chance of winning and represent plurality. But if they can command the support of a large enough number of voters, they can threaten the ideologically closer moderate parties to lose the elections, if they do not accept an alliance with them. This threat is less credible under the runoff system, provided that some of the extremist voters at the final ballot are, however, willing to vote (rather than abstain), once the extremist candidate has been eliminated at the first round. The implication is that the runoff should reduce the bargaining power of the extremists, weakening their influence on equilibrium policy. It is worth noting that although this may mean, as in the original Duverger analysis, that there may be more parties or candidates running in a runoff than under the single ballot (if the moderate candidates or parties prefer to run alone in the first round),[8] this is *not* essential for our prediction. Moderate and extremist parties might still decide to run together in the elections, but as the extremist's bargaining power is reduced, the coalition will form on a less extreme platform than under the single ballot system.[9]

The argument relies on the fact that some of the extremist voters, even in the absence of their preferred candidate, might still decide to turn out at the elections (at the second ballot) and vote for the candidate they dislike less, rather than abstaining. Figure 1 shows that this is indeed the case, at least in Italy. In Figure 1 we plot the turnout in the second round for municipalities above the threshold with votes for the losers in the first round. The figure shows that voting for losers in the first round is substantial; on average, 30 percent of votes go to candidates that do not make it to the second round. Yet the drop in electoral participation in the second round is much lower, at only 15 percent on average. This means that approximately 50 percent of voters for losers turn out at the second ballot and vote for different candidates than they did in the first round.

But how can one test for moderation in policy? There is no obvious way to measure policy moderation. In

[6] The best known example is the French Presidential system. But runoff mechanisms are used extensively in many other countries in Latin America, in the US gubernatorial primary elections and in several local and regional elections. See Cox (1997).

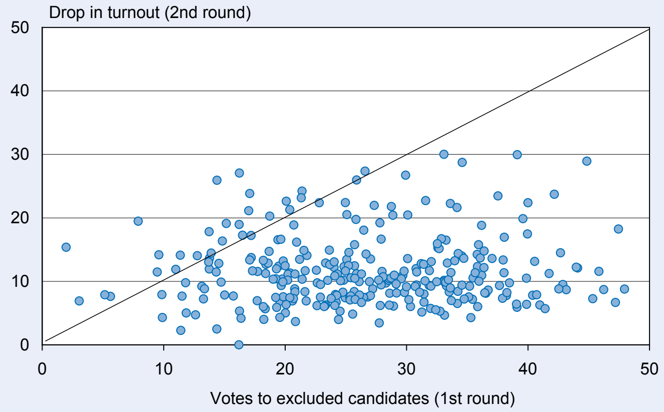
[7] Survey data show that ideological polarization of the electorate is increasing in many parts of the world. See the relevant data in World Values Survey.

[8] This is, indeed, what happens with the runoff in Italy.

[9] The argument can be derived more easily by assuming sincere voters (and strategic parties and candidates), but it holds even when assuming strategic voters, although in this case, not surprisingly, other equilibria are possible.

Figure 1

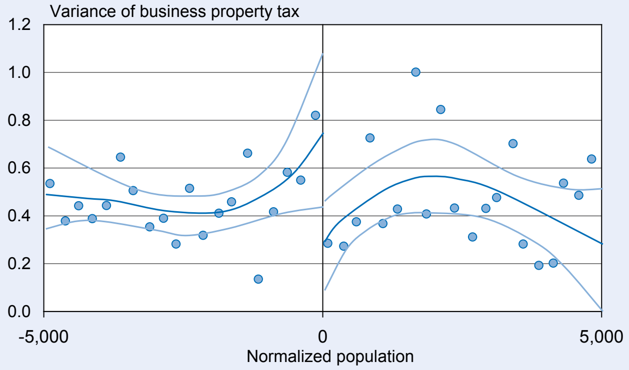
Turn out (in the second round) versus votes for losers (in the first)



Source: Bordignon, Nannicini and Tabellini (2013).

Figure 2

Impact of runoff elections on policy volatility



Dependent variable: Variance of the business property tax rate across municipalities averaged over bins of 100 inhabitants. The central line is a spline 3rd-order polynomial in the normalized population size (i.e., population minus 15,000); the lateral lines represent the 95% confidence interval of the polynomial. Scatter points are averaged over 250-inhabitant intervals. Municipalities between 10,000 and 20,000 only.

Source: Bordignon, Nannicini and Tabellini (2013).

Bordignon, Nannicini and Tabellini (2013) we take a different route, using the volatility of the main policy tool of municipalities, the property tax on real estate (ICI),[10] as an indicator.[11] This is a tax for which data show the presence of a strong partisan effect: the more leftish (rightist) a party, the higher (the lower) the property tax rate that it wishes to impose. This means, however, that municipalities above the threshold should be characterized by a lower volatility of the property tax both cross-sectional (between municipalities of the same population size) and across time for the same municipality. Intuitively, as the municipal government shifts from one side to the other of the political spectrum, the runoff should dampen the influence of the extremist parties on policy, leading to less variation in the property tax rate. This is indeed a prediction of our theory, provided that political turnover is not significantly different above and below the threshold, something that we can prove empirically. Using a RDD design, we then test if the variance of the property tax rate is statistically different above and below the threshold. The results strongly support our theory. In all exercises, the variance of the property tax shows a sharp and negative discontinuity when moving from just below to just above the threshold, dropping by 60 to 70 percent, depending on specification (see Figure 2 for an example).

The funding reform

Institutional details

The electoral reform was not the only reform introduced in Italy at the time. In the very same year, 1993, a new municipal property tax (ICI), on the value of all buildings and lands, was introduced (Law 504/1992), providing Italian cities with a large and autonomous source of tax revenue for the first time. The tax base was determined uniformly across the country (by using the national Cadastre), but municipalities were given some autonomy in the setting up of the tax rates and allowances.[12] Interestingly, the introduction of the new property tax was accompanied by an offsetting variation in grants, so that at the statutory minimal level of the new tax rate, each municipality had exactly the same resources both before and after the reform.

[10] See below for a discussion of the institutional characteristics of the property tax. Our work tests the effect on both the property tax on commercial buildings (business) and that on residence housing.

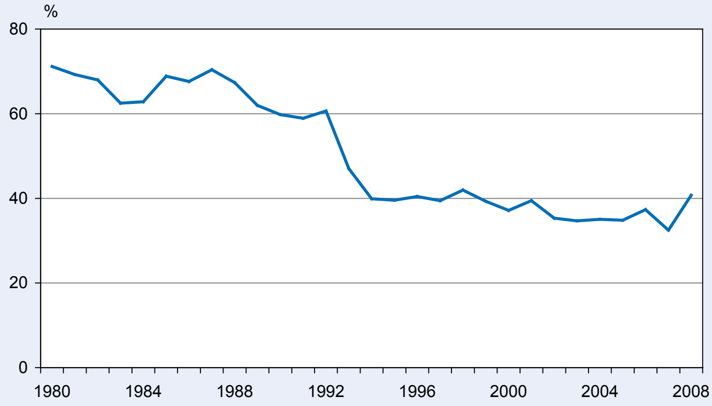
[11] For the reasons discussed above, we focus on a sample composed by all Italian municipalities between 10,000 and 20,000 inhabitants (667 towns), observed over a period of about 15 years, for a total of 2,027 mayoral terms. However, analysis on a restricted sample of towns, between 12,500 and 17,500 inhabitants, provides virtually the same results.

[12] Tax rates could be set in an interval between 0.4 percent and 0.7 percent, differentiating the rates between residential housing and commercial buildings. Municipalities could also introduce an allowance for resident house owners. See Bordignon et al. (2003) and Bordignon et al. (2010).

The reform had dramatic effects on the composition of municipal revenue. As Figure 3 shows, on average, the share of central government grants on municipal total current revenue dropped by 20 points in the year of the introduction of ICI, from about 60 to 40 percent. However, the effect was differentiated across municipalities, depending on their tax bases. For instance, in 2000, municipalities in the richer north of the country were *on average* self-financed for about 70 percent of their budget, while in the poorer south grants covered on average about 60–70 percent of total municipal expenditures.

Figure 3

Central government's transfers as a share of municipal current revenues



Source: Bordignon, Galamerio and Turati (2013).

The impact of the reform: the selection of politicians and the ex-post quality of policies

Thus, in 1993, Italian municipalities were affected by two simultaneous reforms: one (the electoral reform) that affected all municipalities in the same way, and a second reform, of the funding system, that affected municipalities very differently depending on their tax base. Intuitively, this may have had different effects on the selection of the local political class. In poor municipalities, where grants maintained a paramount role in the financing, the main task of a local politician was to guarantee that central money kept flowing to local communities. This may require different skills (for example, strong political connections with national parties) than that of a good administrator of local matters. On the contrary, in richer municipalities, where most resources now came from the local communities, administrative skills should be more important. Rational voters should then vote for different types of politicians in the two cases, and anticipating voters' behavior, different types of politicians might decide to enter (or being selected to run by parties) in the local political arena. Building on this intuition, Bordignon, Gamalerio and Turati (2013) prove theoretically, in a carrier model of politics with self-selection of politicians, that a tax decentralization reform should have very different effects in municipalities characterized by different degree of vertical fiscal imbalance (VFI). It should increase voters' welfare in rich communities, as it also attracts politicians of higher administrative skills, while it might reduce welfare in poorer communities as the quality of politicians does not change and their skills become less useful to voters.[13]

To test these ideas, we then collect an extensive data set on the personal characteristics of the mayors of the main Italian cities,[14] as well as on other economic and political features of the municipalities in the ten years around the introduction of ICI (1988–1997). We consider only mayors because of the paramount role in municipal policy that they assumed following the electoral reform. As a proxy for administrative skills we use the profession of the mayor before entering politics. As for political skills, we consider the previous political experience of the candidate before becoming mayor (including all legislative and executive positions in all local governments, and in the Italian and European Parliament). Finally, we also provide a measure for the ex-post quality of policies, by looking at two indicators commonly used in the literature: the percentage of separate waste collection, and the probability of completing the term in office.

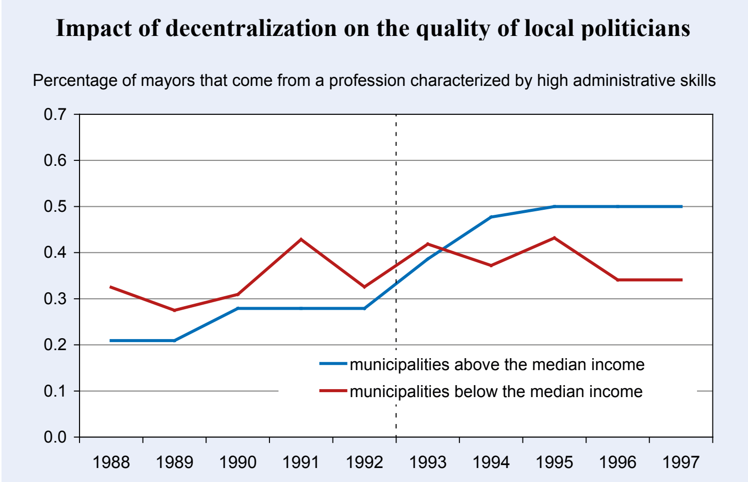
Some descriptive evidence supporting our story is provided in Figure 4, where – distinguishing between rich and poor municipalities according to median income – we plot the share of mayors coming from a profession characterized by high administrative skills.[15]

[13] The lower average quality of politicians might provide a different explanation for the common observation that decentralization usually works less well in local communities characterized by higher level of vertical fiscal imbalance. For instance, fly paper effects, financial instability and soft budget constraint problems, are typically shown to be more common in local governments that rely more on grants.

[14] The 90 cities that are also "Capoluogo di Provincia" in ordinary regions. Note that all these cities are beyond the 15,000 threshold, so that the electoral system is the same.

[15] In the figure, entrepreneurs, managers, engineers, architects, business consultants, lawyers and university professors.

Figure 4



Source: Italian Ministry of Domestic Affairs; Bordignon, Gamalerio and Turati (2013).

While this share is constant for poor municipalities, it shows a clear increase for rich municipalities after the ICI reform kicks in. This descriptive evidence is confirmed by more formal econometric analysis. Regression results using a difference-in-differences approach (where the 'treatment' is the change in the degree of VFI induced by the ICI reform), controlling for municipality and time fixed effects, and for a number of covariates, are strongly supportive of our theoretical hypotheses. The features of local politicians changed dramatically in richer municipalities after the reforms: a much larger percentage of mayors came from top administrative professions in the private sector, and these mayors were also less politically experienced. There is also some evidence that in these municipalities the higher quality of the local political class was also reflected in a higher quality of policies ex-post, and that this improvement was effectively due to a "selection effect" on local politicians, and not to a stronger "disciplining effect" in richer communities.[16] On the contrary, we observe no or very little effect of the reforms in poorer communities, both in terms of the ex-ante skills of politicians and the ex-post quality of policy.

The results do not depend on differences in pre-treatment trends. Moreover, they appear to be robust to a number of alternative stories. In particular, they hold even controlling for the degree of competitiveness in the local electoral competition, for the endowment of "social capital" at the municipal level, for the higher costs of electoral campaigns in the richest cities, and for the changing political scenario in the mid-1990s in Italy, with the birth of new political parties. More importantly, they hold even in the case of a different reform in the funding of Italian municipalities (for the introduction of a municipal surcharge on the Personal Income Tax in 1999; see Bordignon and Piazza 2010), which was implemented at given electoral rules. This suggests that it is indeed the funding reform, and not the electoral rule, that produces the different effect on the selection of the local political class.

[16] We use an institutional characteristics of the electoral reform, the introduction of a term limit on mayors, to discriminate between the two effects.

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Geography, Economics and Political Systems: A Bird's Eye View

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Introduction

As early on as in the writings of Montesquieu and Adam Smith, geography plays a preponderant role in explaining disparities in the development of nation states. Smith placed an emphasis on topography, and especially on the role of coasts and rivers in the development of regions. For Montesquieu, climate was an essential element to economic development. His theory asserted that climate may substantially influence the nature and development of human societies.

For a long time, economists did not pay attention to geography, and this field was left to sociologists, historians, and geographers. Economists have only recently started to analyze the impact of geography, and this article will examine the various avenues of research that have been taken, wherein the notion of geography mostly encompasses matters related to location, soils, and topography; but also to climate and epidemiology.

The first part of the article focuses on the relationship between geography and economics, while the second part relates geography to political systems and public economics.

Geography and economics

The field of economic geography focuses on the study of the spatial aspects of economic activities, and examines the location, distribution, and spatial organization of economic activities, taking into consideration economies of agglomeration and the effects of distances and transportation.

Among the early economic geographers, the main researchers into spatial decisions were Hotelling, Weber, von Thünen, and Christaller. Hotelling emphasized how space matters for competition between firms, Alfred Weber embodies the precursor of location theory; Christaller developed the central-place theory analyzing the centripetal forces in play between the periphery and the city; and von Thünen's cone theory focused mainly on the centrifugal forces linking the city and its outskirts, analyzing the efficient outcome of the development of the city at the core, and agriculture on its periphery.

These geographical arguments were not incorporated into mainstream economic research until the work of Krugman (1991a, 1991b), who found a way to analytically combine all of these previous elements into a single general equilibrium framework: the core-periphery model.

This core-periphery model examines the uneven development of regions and the emergence of clusters. On the one hand, there are some benefits to spatial concentration: firms have an incentive to locate in the larger market to exploit economies of scale in production, which can be due either to increasing returns or to scale externalities, including spillover effects like the backward and forward linkages.[3] These are the *centripetal forces* that explain the dynamics of clustering together.

On the other hand, there are also *centrifugal forces,* which mainly encompass the negative effect of competition between firms clustering in the same city, congestion, and the higher prices of land and rents. To close the framework, the remaining elements affecting the spatial concentration of industry and development of regions are determined by distance and transportation costs. Depending upon distance and size of transportation costs, equilibrium will either be of a mono-core, or

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[3] Some of the linkages are due to the fact that individuals have an incentive to move to big cities, where they find higher real wages and a larger variety of goods.

Table 1

The rise and fall of cities (population in thousands)

A. Fall of cities in Holland (specializing in textile)				
	1600	1700	1750	1800
Leiden	64	65	37	31
Haarlem	39	37	27	22
Amsterdam (core)	54	200	210	217
B. Rise of new cities in England (specializing in cotton)				
	1700	1750	1800	1850
Manchester	8	18	84	303
Birmingham	7	24	71	233
Sheffield	3	12	46	135
London (core)	575	675	948	2.236
C. Fall of cities in the United States (specializing in steel)				
	1900	1950	1970	1990
Pittsburgh	322	677	520	370
Gary	16	134	175	117
Youngstown	45	168	141	96
New York (core)	3.437	7.891	7.894	7.322

Note: This table highlights that the population of main cities increases over time due to strong linkage effects. But, medium-size cities rise and fall in correlation with changes in technology.

Source: Brezis and Krugman (1997, 371).

of two or more centers, with the agriculture sector on their periphery.[4]

Related to this main core-periphery framework, other subjects of research have been developed. In connection with the remarks of Montesquieu, research has shown that tropical areas prone to infectious disease are poorer than temperate zone areas due to health effects leading to lower human capital and labor productivity, as well as lower output (Gallup, Sachs and Mellinger 1999; Bloom and Sachs 1998).

As far as Smith's assertion that topography affects development is concerned, cross-country empirical research shows that GDP per capita is positively correlated with coastal proximity (Mellinger, Sachs and Gallup 2000). Moreover, 57 percent of income is generated in areas lying within 80km of the coast, while these areas account for only 13 percent of land mass (Rappaport and Sachs 2003).

The development of cities and regions is also dynamic over time. Cities first developed mostly in highly fertile regions like those near river valleys, at a time when international trade was not yet developed. Subsequently, due to trade, cities developed near the Atlantic, and in proximity to coal mines during the Industrial Revolution. Today, cities with high-quality universities are magnets for highly-skilled workers and high-tech industries.

Yet the new technologies have reduced the importance of geographic strategic position, as well as the disadvantage of residing in an interior region. The initial reason for a city's development, such as the presence of a port or suitable topography, nevertheless leads to such concentration and linkages that, despite the disappearance of this initial advantage, the city tends to remain a center, as in the case of New York and London, as shown in Table 1.[5] The stability of the big poles does not apply to medium-sized cities, whose concentration forces still rely on one or two sectors, as in the case of automobile industry based in Detroit. Historical evidence suggests that life cycles are an important aspect of urban history, and centers of population shift with economic activity, as shown in Table 1.[6]

[4] See Fujita and Thisse (2009) for a review of this theory.

[5] On geography, economic activity, and path dependence, see also Davis and Weinstein (2002), Duranton (2007), Glaeser (2008) and Bleakley and Lin (2012).

[6] See also Bairoch (1988). On the dynamics of the relative density of rural and urban areas, see Michaels et al. (2012).

This life cycle in the development of cities is related to economic activity, since the very success of an urban center in a traditional technology may put it at a disadvantage in terms of the implementation of a newer, ultimately more productive technology, as is shown in Brezis and Krugman (1997).

They highlight that when a new technology is introduced, for which this accumulated experience is irrelevant, older centers favor staying with a technology in which they are more efficient. New centers, however, turn to the new technology and are competitive despite the raw state of that technology, because their distance from the big center means that they offer lower land rents and wages. Over time, as the new technology matures, the established cities are overtaken. Therefore, during times of major technological change, medium-size cities are often overtaken by upstart metropolitan areas.

In conclusion, the new economic geography has analyzed the dynamics of clustering based on two main elements: first, the production function that displays increasing returns or knowledge externalities, and second, distance and transport costs. The new economic geography has not dealt with political variables. The following section of this article analyzes the relationship between geography and political systems.

Geography and political systems

Geography and state formation

The first question raised relating geography to political regimes was at the origin of the state itself: what causes groups of people and small communities to aggregate into political units as states, and how is this aggregation related to geographical factors?

The "hydraulic hypothesis" of Wittfogel was one of the first theories relating geography to the origin of the state. He claimed that small communities in a small geographic concentration cannot develop large-scale irrigation, and therefore several communities are compelled to merge. More generally, this theory emphasizes that small autonomous political units in a given geographic area cannot carry out the construction of infrastructure with high fixed costs, thereby leading to the formation of states. This Hydraulic Society thesis has run into difficulties since countries like China and Mexico became states long before the advent of large scale irrigation.

War and force have also been related to state formation. As Jenks (1900, 73) stated: "Historically speaking, there is not the slightest difficulty in proving that all political communities of the modern type owe their existence to successful warfare". War lies at the root of the state. However, Carneiro (1970, 1978) asserted that if warfare is a necessary condition for the rise of the state, it is not a sufficient one, and geographic elements must be added.

Carneiro highlights the importance of conditions of territorial "circumscription" in the formation of primary states. This circumscription theory claims that the development of a state will start in areas of circumscribed agricultural land, with a geographical border that does not permit inhabitants to flee rapidly in case of war and not to pay taxes to the victor. The coercive coordination due to geographic circumscription is therefore necessary for the creation of surplus, and is a causal factor in the origins of the state.

Carneiro opposes two regions with contrasting ecologies: one with circumscribed agricultural land, like the coastal valleys of Peru from which Andean coastal populations could not escape; and the other a region with extensive and unlimited land like the Amazon basin, where Amazonian populations could always disperse. Therefore, in the Amazon basin, there was no tendency for villages to combine into larger political units.[7]

The social circumscription theory, which claims that it is optimal to cluster, for purposes of both attack and defense, was adapted to this theory. It is more difficult for inhabitants in the nuclear area to escape attack than it is in the periphery, where ability to move is greater (Chagnon 1968).

As far as circumscription is concerned, Ashraf, Galor and Ozak (2010) exploited cross-country variation in the degree of geographical isolation, prior to the advent of seafaring and airborne transportation technologies, to examine its impact on the course of economic development across the globe. Their empirical investigation establishes that prehistoric geographical isolation has generated a persistent beneficial effect of cultural attributes that are conducive to innovation and thus contributed to contemporary variation in the standard of living across countries.

[7] See also Diamond (1997) who proposes the "geographical fragmentation" as an explanation for technological innovation.

Geography, institutions and state capacity

The literature linking economic growth, institutions and state capacity has mainly focused on redistributive conflicts between social classes, arguing that the power of elites and elite interconnections influence the types of institutions chosen which affects economic growth.[8] However, a new body of literature has arisen focusing on geography as an exogenous factor, which affects institutions and state capacity.

Historians such as Blockmans (1978, 1997) highlight the significant effect of geographic scale and compactness on the type of representative institutions of pre-modern European polities. Bairoch (1997) also stresses that the compactness of small states with strong regional autonomy in their political systems leads to early economic development. Along those lines, Stasavage (2010) argues that geographically compact polities can more easily sustain intensive forms of political representation. Stasavage's empirical analysis using a dataset on representative institutions in medieval and early modern Europe suggests a strong effect of geographic scale on the formation of political representation. Diamond (1997) stresses that climatic, topographic and environmental characteristics, which favored the early development of stable agricultural societies, ultimately led to immunity to diseases endemic in agricultural animals, and the development of powerful and organized states.

One line of research into the role of geography, and its interactions with historical events, and into the evolution of institution-building has focused more specifically on Africa. Nunn and Puga (2012) and Nunn and Wantchenkon (2011) consider the historical case of the slave trade and its interaction with geographic topography and distance in the African context. Nunn and Puga (2012) look at terrain ruggedness and show, as expected, that rugged terrain generally has a negative direct effect on income, and economic development as it hinders trade and most productive activities. However, in the African context, this effect is more than compensated for by an indirect positive effect associated with the protection that rugged terrain provided to those being raided during the slave trades. As income is positively associated with institution building, this suggests that ruggedness of terrain could have been a positive contributing factor for institutional development in Africa.

Nunn and Wantchenkon (2010) investigate how the historical origins of civil mistrust within Africa may be associated with the exposure to slave trade. Combining contemporary household survey data with historic data on slave shipments, they show that individuals whose ancestors were heavily raided during the slave trade exhibit less trust in neighbors, relatives, and their local government. As an instrument for exposure to slave trade, they use the historic distance from the coast of a respondent's ancestors, while controlling for the individual's current distance from the coast. These results emphasize the role of geography in the building up of social capital and civic culture in Africa and via that channel, its long-term implications for building up legitimacy and trust in public and state institutions.

In the avenue of genetic research, Ashraf and Galor (2013) established that migratory distance from Africa and therefore genetic diversity is an underlying cause of a broad spectrum of manifestations of ethnic and cultural fragmentation, and their effect on social cohesion and civil conflicts.

Acemoglu, Johnson and Robinson (2001) examine the effects of colonialism mostly in Africa, and show that geography can also affect state capacity through the legacy of colonialism, especially corruption. In colonies with an inhospitable climate and topography, very few Europeans settled, and the institutions therein were created in extractive forms, giving way to corruption and embezzlement after the end of colonialism. In colonies with more hospitable climates, large number of Europeans settled, and they therefore tended to establish governmental systems similar to those of Europe. When such colonized countries gained independence, the Europeans left them more developed and less corrupt.[9]

Focusing on the US, Galor, Moav and Vollrath (2009) establish that geographical characteristics that were complementary to large plantations generated a concentration of landownership that adversely affected the emergence of human-capital promoting institutions (for example, public schooling), and thus the pace of the transition from an agricultural to an industrial economy. This, in turn, contributed to the emergence of the great divergence in income per capita across countries. The prediction of the theory regarding the adverse effect of the concentration of landownership on education ex-

[8] See Brezis and Temin (2008) for a review on this literature.

[9] This paper does not discuss the relative role and importance of geography vs. institutions in affecting economic development. Acemoglu et al. (2002) explore the issue from the viewpoint of institutions, and Carstensen and Gundlach (2006) from the geography perspective.

penditure is established empirically based on evidence from the beginning of the 20th century in the US.

As far as state capacity and efficiency is concerned, Alesina and Spolaore (2003) discuss the size of nations and raised the importance of distance on political integration decisions. Distance matters because of how it affects the trade-off between the efficiency of provision of public goods and the differentiated preferences of agents over such goods. They emphasize that the optimal size of nations results from a basic trade-off between economies of scale and congestion. Indeed, on the one hand, there are benefits of scale associated with the provision of public goods, which are cheaper when more taxpayers pay for them and larger countries can also better internalize cross-regional externalities, or natural shocks. On the other hand, however, there is congestion and a higher heterogeneity of preferences across citizens.

As far as fiscal state capacity is concerned, Mayshar, Moav and Neeman (2013) examine geographical factors that can affect extractive institutions and state capacity, and like Wittfogel, they stress the importance of water irrigation. They claim that differences in institutions found between Upper Mesopotamia and Ancient Egypt can be explained by the degree of informal transparency in the supply of water, which affects the ability to appropriate revenues. In particular, the homogeneity of farmland and irrigation systems increased the transparency of farming, thereby increasing appropriability. It is this difference in the system of water irrigation that led to differences in the power of the state, state institutions and political systems in the Ancient world.

Finally, the geographic topography may also interact with the incentives for taxation and redistribution in societies dominated by elites with limited state capacity. As Bourguignon and Verdier (2012) emphasize, the incentives of elites to tax, redistribute, and increase state capacity are affected by the complementarities or substitutability in the production process between the factors controlled by the elite and other social groups. These technological properties of the production process are themselves naturally dependent on the geographic and climatic context in which these societies evolve. As such, geography plays a role in the way elites are induced to design policies and institutions that best fit their interests, whether they are in congruence or not with the interests of the other groups in society.

Geography, conflicts and the transition process

A well-established body of literature on international relations argues that climate, topography, and location are important determinants of state behavior. Boulding's (1962) research on conflict argues that the lower the costs of the transportation of goods, or of violence, the less likely the parties in a conflict are to have unconditional viability. Moreover, Sprout and Sprout's (1965) environmental probabilism claimed that environment and climate affects the choices and actions of players in foreign policy, which in turn affects the international political realm.

With its focus on the microeconomics of the geography of political repression, Gates (2002) develops a model showing how geography interacts with ethnicity and ideology to determine military success and to shape rebels' recruitment activities. He analyzes how this interaction affects the distance between insurgents and regimes; and how the distance between the insurgent group and the seat of government enables an insurgent group to expand.

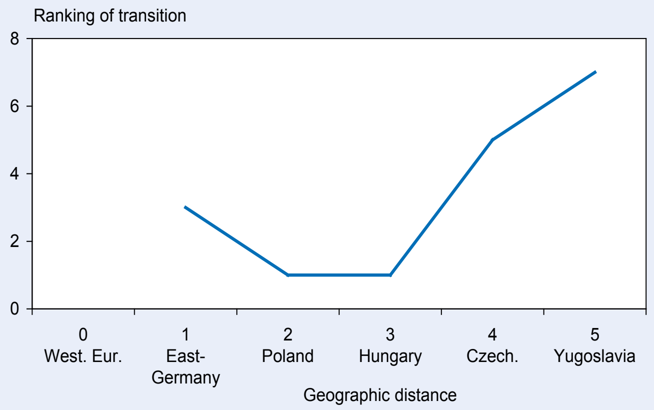
Among the first empirical studies to include variables on topography, Fearon and Laitin (2003) argue that rough terrain (area poorly served by roads, which is measured by the proportion of the country that is mountainous) is an essential opportunity for rebellion, and for translating grievance and discontent into insurgencies or civil conflict. Collier and Hoeffler (2004) added some more indicators of both forests and mountainous terrain as causal variables explaining civil wars. Their findings are weakly supporting the expected positive mountain-war correlation, whereas forests fail to generate significant effects.

The transition process in Eastern Europe constitutes another interesting example of the impact of geography and space on conflicts and the evolution of political regimes (Fearon and Laitin 1999). More specifically, the relationship between geography and conflict can be applied to the analysis of the timing of the transition process of Eastern European countries.

It is interesting to note that the sequence of political liberalizations and economic transitions observed across Eastern Europe in the late 1980s actually began in countries located further from the "free world" frontier. Indeed, although the nearest country to the West was East Germany, Poland and Hungary were the first countries to undergo a change of regime, with

Figure 1

Transition process in Eastern Europe



Source: Brezis and Verdier (2013).

the process then spreading eastward and westward (see Figure 1).

As a matter of fact, one might reasonably expect that closer proximity to the West would facilitate support for dissidence against the old regime and therefore render a shift of regime more likely. The elements that explain this "non-linearity in the process of transition" are the effect of distance and topography on the effectiveness of the army in suppressing uprisings.

In the aforementioned literature relating geography and state capacity, geography was usually introduced through its effect on the provision of public goods. In this section, geographic distance matters through its effect on the effectiveness of the army and the police in dissuading dissidents from starting a revolution. At the heart of the analysis lies the assertion that the repressive capacity of an incumbent political elite is affected by the spatial ability of dissidents to escape the regime.

Brezis and Verdier (2012) assume on the one hand that geographic distance and topography affect the costs of escaping from a country: the closer the country to the "free world", the easier it is for dissidents to escape the authoritarian regime run by the incumbent elite. All else being equal, this reduces the expected costs of dissidence, thereby stimulating stronger incentives for counter-regime activities, implying that power shifts are more likely in political regimes located closer to the "free world" frontier. This link therefore provides a first direct channel through which geography and space circumscribe the nature of political power and tend to favor democratization.

On the other hand, distance also endogenously affects the scale of repression, and this provides a second induced channel through which geography interacts with conflicts and politics. Indeed, the size of the repressive forces in a given authoritarian regime is not exogenous, but rather actually results from the choice made by the incumbent elite to remain in power. This feature implies in particular that the size of the repressive apparatus will be a function of the geographical characteristics of the country. As a matter of fact, countries with easier access to "safe havens" will face stronger repressive efforts from their elites than countries where such access is more difficult.

The rationale underlying this relationship is simple. Geographic distance and policing are substitutes from the standpoint of the expected cost of sanction as perceived by dissidents in a given country. The closer the country is to safe havens, the more likely its dissidents are to decide to flee whenever an uprising is repressed; and so the more profitable, in terms of perceived sanctions, it is for the regime to police those trying to flee. It follows that there should be more intensive policing and repressive apparatus in countries closer to the free world frontier than in countries located further from such frontier. This second induced effect of geography enters with opposite sign to the first direct channel of distance.

These conflicting effects of geography on political power shifts lie at the source of these intricate patterns of democratization processes. They may therefore explain the sequence of political liberalizations and economic transitions observed across Eastern Europe in the late 1980s, which took the form of a U-shaped function of distance, as shown in Figure 1.

In conclusion, this recent line of research into geography and political systems has emphasized the importance of topography and proximity on two fundamental dimensions of politics: the technologies of conflicts and control, and the degree of heterogeneity of preferences. Through such channels, geographic factors happen to be constraining factors for the emergence or sustainability of specific political regimes.

To date, however, the aforementioned analyzes have essentially been confined to static spatial dimensions. A future consideration of geography might include dynamical spatial effects. Important questions for future research along these lines include the implications of geography for states' competition and cooperation dynamics in international relations and how conflict or political systems diffuse from neighboring or regional states.[10]

Conclusion

This paper shows that there are many paths via which geography has shaped economic development and the formation of institutions, conflicts, and political systems. Yet, considering the fact that geography is one of the only elements that is an exogenous variable *par excellence*, it is quite striking that macroeconomics and political economy have not focused more intensely on its effects. This could change soon: with the further reduction of transportation costs (leading also to increasing costs of saturation, and to congestion), we could face the greater effects of geography on our economic and political systems. Therefore greater scrutiny on this exogenous variable will become necessary.

However, to characterize geography as an exogenous element may not hold anymore in the near future. Indeed, the new environmental economics emphasize that economic and political decisions influence our climate, our oceans, and Earth's topography; geography becomes affected by economic and political systems. As a result, geography will no longer be exogenous: geography affects political regimes, which, in turn, affects geography.

Interestingly this co-evolution process between geography and social systems may give rise to important reinforcing complementarities and generate the possibility of multiple long-run geographic-institutional equilibria, highlighting the crucial role of history and initial conditions on the dynamics of political systems in the world. Ultimately, geography cannot be disentangled from history.

[10] This diffusion effect is analyzed in Brezis and Verdier (2003) but without a geographical dimension.

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Child Benefit and Child Allowances in Germany: Their Impact on Family Policy Goals

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Introduction

Child benefit and child allowances represent a major pillar of monetary family benefits. As a part of the ex-post evaluation of monetary family benefits commissioned by the German Federal Ministry for Families, Senior Citizens, Women, and Youths and the Federal Ministry of Finance, a recent research study[2] by the Ifo Institute examines the impact of child benefit and child allowances on families and discusses the efficiency of such family policy benefits.

Research study: child benefit and child allowances

The research study considers both child benefit and child allowances and examines their effects on the following target areas: "compatibility of family and career", "safeguarding the economic stability and social participation of families", and "birth rates". To identify the effects of child benefit and child allowances on these goals, the study draws on the child benefit reform of 1996, which significantly increased child benefit. The subsequent efficiency analysis estimates the direct and indirect costs of an increase in child benefit.

[1] Ifo Institute (all), Stefan Bauernschuster: University of Passau.
[2] This article is based on the study Rainer et al. (2013). Please consult this study for more detailed information and results.

A key component of family policy

Child benefit and child allowances represent two major components of monetary family benefits within the diverse range of family policy instruments. Both benefits have existed since the 1950s and are very popular with the general public. The central importance of these benefits can also be measured by their financial volume, which is around EUR 39 billion annually and thus accounts for almost a third of the total volume[3] of all family benefits (BMFSFJ 2012).

The integral goal of both regulations is to safeguard families, as stipulated in article 6 paragraph 1 of the German constitution. In their later working lives children earn income and pay taxes and social security contributions. Child benefit and child allowances can therefore be seen as a way of acknowledging the social contributions of families to economic wealth. Moreover, family benefits are a means of compensating for the reduced economic capacity of families – due to the demands of child care and education – and thus to establish horizontal equity (Lüdeke and Werding 1996).

Historical development

Since the introduction of child benefits in the German Federal Republic in 1954 and of the child allowance in 1949, they have been subject to a number of reforms. The rules for the possibility of combining these two benefits, as well as the financing, the size of the benefit and the circle of beneficiary children[4] and/or their parents changed many times. From 1955 to 1995 child benefit and child allowances were granted at the same time with only one interruption and were referred to as a "dual system".

[3] In 2010 the total volume of all family benefits was around EUR 125 billion, and that of marriage-related benefits was around EUR 75 billion.
[4] The example of child benefit: this was paid out for the first time in 1954 for the third child and for every further child, from 1961 onwards it was paid out as of the second child and from 1975 it was paid out as of the first child.

Reform of 1996

The last major structural reform to date took place in 1996. The reform was based on the decisions of the German Constitutional Court (BVerfG) at the beginning of the 1990s.[5] In the Court's opinion, the dual system at that time did not result in full tax exemption of the subsistence level of children. However, expenditure to cover the minimum subsistence level of adults *and* children has to be completely exempt from taxation. The legislator responded to judicial demands by incorporating child benefit law into income tax law. As a result, income amounting to the combined minimum subsistence level of the parents and the children is no longer taxed. For the parents this tax-free allowance is safeguarded by taking into account the basic income tax allowance. For the children this can, since the reform, be achieved either by the deduction of the corresponding allowances in the process of taxing the parents *or* alternatively via the payment of child benefit (the so-called "options model").[6]

Since the reform took effect child benefit in Germany has been paid out as a monthly tax rebate in the context of family benefit equalisation. Parents receive child allowances that are scaled according the number of children that they have. Tax authorities check whether the tax relief generated by the child allowance is greater than the amount of child benefit. In this case the child allowance comes into effect, which is then set off against the child benefit that has already been paid out. Due to the progressive tax rate in Germany, individuals are entitled to save more taxes through the child allowance the higher their income. That is why the tax saving via the child allowance is only larger than the child benefit above a certain income level. The child allowance has no effect if the tax relief granted via the allowance is lower than the child benefit paid out. In this case this difference serves to support the family.

Overall, the option model implies that the total monetary relief generated by child benefit and child allowance are no longer income-dependent for most recipients, but only consist of the income independent fixed amount of child benefit, since the child allowance is only effective as of a high income level. The reform turned out to have the biggest overall effect on recipients with low incomes.

The child benefit reform significantly increased the nominal monetary benefits paid to families with children.[7] The annual child allowance increased by over 50 percent from EUR 2,098 (DM 4,104) annually per child before the reform to EUR 3,203 (DM 6,246) as of 1996. Between 1997 and 1999 it was set at EUR 3,534 (DM 6,912) (see Table 1). While child benefit was paid for the first child regardless of income, but was income-dependent for all further children, the entitlement to child benefit for all children was no longer coupled with parental income after the reform. Child benefit prior to the reform amounted to at least EUR 36 (DM 70) and was scaled according to income earned and the number of children in a family to a maximum of EUR 123 (DM 240) per child. These amounts are shown in Table 1. Low-earners received a top-up benefit of EUR 33 (DM 65) via additional child benefit. The child benefit and child allowance taken together meant that no

[5] Decisions by the German Constitutional Court of 29 May 1990 (BVerfGE 82, 60) and 12 June 1990 (BVerfGE 82, 198).
[6] §§ 62-78 EstG since the version in German Annual Tax Act of 11.10.1995, BGBl. I p. 1250.

[7] Until the end of 1999 child benefit was fully offset against the claim to social benefits, that is, social benefits were reduced by the corresponding amount of child benefit. Recipients of unemployment benefit and unemployment assistance received child benefit in addition to their other entitlements.

Table 1

Trends in child allowance and child benefit between 1992 and 1999

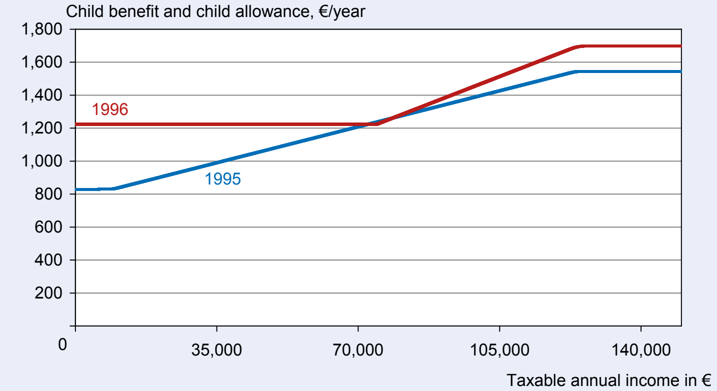
	Annual child allowance	Monthly child benefit			
Year	Per child	Child 1	Child 2	Child 3	Child 4 and further children
1992-1993+	2.098 (4.104)	36 (70)	66-36 (130-70)*	112-72 (220-140)*	123-72 (240-140)*
1994-1995+	2.098 (4.104)	36 (70)	66-36 (130-70)*	112-36 (220-70)*	123-36 (240-70)*
1996	3.203 (6.246)	102 (200)	102 (200)	153 (300)	179 (350)
1997-1998	3.534 (6.912)	112 (220)	112 (220)	153 (300)	179 (350)
1999	3.534 (6.912)	128 (250)	128 (250)	153 (300)	179 (350)

Notes: benefit per year in EUR; DM amounts in brackets; *income dependent reductions to child benefit.
+ Additional benefit amounting to EUR 33 (DM 65) for recipients of low income.

Source: BMF (2007, 2008).

Figure 1

Benefits from child benefit and the impact of the child allowance for couples with one child on an income-related basis
Benefits before and after the reform



Source: Own calculation.

recipient received less than EUR 69 (DM 135) per child in monthly benefits (Lüdeke and Werding 1996). After the 1 January 1996 child benefit for the first two children increased to EUR 102 (DM 200), to EUR 153 (DM 300) for the third and EUR 179 (DM 350) for the fourth and any further children (see Table 1).

Figure 1 summarises the size of child benefits and the impact of child allowance in the case of couples with one child before (blue line) and after the 1996 reform (red line). The "dip" in the red curve at EUR 74,933 (DM 146,556) indicates the point where income independent child benefit is replaced by the child allowance, since the tax savings through the child allowance are greater than hypothetical child benefit.

Prior to the reform, couples with one child received at least EUR 828 (DM 1,619) per year through the combination of child benefit and additional child benefit. As of 1996 they received at least EUR 1,224 (DM 2,394) per year in child benefit. The reform gains can be seen from the vertical gap between the red and blue line. The increase in monetary family benefits was very high for low-income recipients at an annual EUR 396 (DM 775). It is clear that families with a very low income profited the most from the reform. The reform gain subsequently falls steadily with rising annual income. For families with an annual income of around EUR 75,000 the reform even brought a small loss in income, as shown by the marginal area in the figure in which the blue line is above the red line. After that point the advantage steadily increases with rising income. The benefit peaks when the top tax rate is reached.

Theoretical effects

According to the neoclassical labour supply model, a rationally acting household tries to maximise the individual benefit resulting from its consumption of goods and leisure time, by optimally distributing its time between leisure activities and labour. Labour is seen as a way of generating income that can be used for the consumption of goods.

From a theoretical viewpoint the increase in child benefit in 1996 could have had several effects. Since an increase in child benefit is equivalent to an income transfer, which is paid out regardless of the labour status of the parents, one would expect it to have a negative impact on labour supply. The reasoning behind this expectation is that a given consumption plan can be implemented with fewer working hours thanks to the increase in child benefit. This should primarily benefit households with low and medium-sized incomes. For them the reform implied a considerable increase in child benefit, while the abolition of the "dual system" meant that the child allowance previously claimed was eliminated. This ultimately equalled an increase in taxation on earnings. The increase in income-independent transfer benefits, together with the discontinuation of child allowances, leads to a decrease in the number of hours worked.[8] For high earners the child benefit reform has both positive and negative work incentives. The increase in the child allowances results in greater tax relief and thus, implicitly, in an increase in net wages. This wage increase may boost the labour supply, because an hour of leisure (measured by potential wage loss) becomes more expensive. On the other hand, it is also conceivable that the implicit increase in wages is partly used to reduce working time and enjoy leisure time. The number of hours worked falls or rises depending on which of the two effects (substitution effect or income effect) dominates.

Empirical studies

The only study to date on the evaluation of child benefit in Germany is by Tamm (2010). This analysis ex-

[8] Both income and substitution effects also negatively impact their labour supply as a result.

amines the influence of child benefit on the employment of mothers with children over six years of age and a working partner. The author finds that the benefit has no impact on the basic decision of mothers to seek employment. However, the working time of mothers in employment drops by one hour. This effect is strongest for mothers with an intermediate level of education.

International studies

Two family and social policy instruments were closely scrutinised: "Earned Income Tax Credit" (EITC) in the USA and "Working Families' Tax Credit" (WFTC) in Great Britain. However, both measures target disadvantaged groups and are conditional to employment in order to establish positive incentives to work.

The EITC represents a tax credit that grants low income parents an income-dependent transfer payment (paid in addition to their wages) up to a given income ceiling. Studies show that the EITC increases the labour supply of single mothers (Eissa and Liebman 1996; Meyer and Rosenbaum 2001). In the phase-out region of the EITC reducing earnings is partly compensated by increased transfers. This is noticeable for married couples, resulting in a lower labour supply of married mothers, but not of fathers (Eissa and Hoynes 2004). The impact of the EITC on birth rates was also examined, yielding rather sobering results. Although the effects tended to be positive, their impact was very limited (Baughman and Dickert-Conlin 2003, 2009).

International studies based on British data evaluate the "Working Families' Tax Credit" (WFTC) that existed from 1999 to 2003. The benefit mainly represented a tax credit for families with children in which at least one parent worked. This parent had to be employed for at least 16 hours per week. It is therefore unsurprising that Francesconi, Rainer and van der Klaauw (2009) found positive incentives to work for those who worked less than 16 hours per week and thus did not satisfy the minimum requirement for WFTC. For secondary earners, whose partners were already entitled to WFTC, there were, by contrast, negative incentives to work. Francesconi and van der Klaauw (2007) conclude that the introduction of the WFTC increased the likelihood of single mothers working by 5.1 percent. Blundell, Brewer and Shephard (2005) add evidence regarding single fathers, who also react to WFTC with higher employment rates. Brewer, Ratcliffe and Smith (2011) examine the impact of the introduction of WFTC on birth rates. After controlling for potential individual trends in groups they find a 15 percent higher fertility rate among couples who were affected by the reform. The effect is most pronounced for first-born children and is lower for couples who already have children.

Method and impact analyses

The study presented here analyses the child benefit reform of 1996 described above and examines its impact on the compatibility of family and career, on the fertility decisions of families and – unlike existing studies – on the social participation of families and their financial stability. In this impact analysis the 1996 reform is treated as an experiment, which grants couples with children higher benefits, but denies them to childless couples. The data basis for the analyses is the longitudinal German Socio-Economic Panel, and specifically the waves of 1992 to 1998 that include the reform year of 1996, as well as a few years before and after.

The reform of child benefit and the child allowance in 1996 fulfils the basic condition for a quasi-experimental identification strategy in a difference-in-differences model (DID model): the unanticipated introduction of a measure for a specific group, or at least a substantial change in benefits at a certain point in time.[9] The size of the calculated effects of the 1996 reform cannot be directly applied to today's situation due to structural changes in the labour market. Thanks to the identification strategy, the basic reaction of families towards an increase in child benefit, which one can expect to be similar today, can be traced in a methodically sound manner. The large increase in child benefit for its recipients makes it possible, in a first step, to compare the variable of interest before and after the reform within the group of eligible claimants. However, this simple difference (first difference) cannot be causally interpreted, since it cannot be explicitly attributed to the reform of the law, but is just as likely to have been caused by a contemporary trend that was completely unrelated to the reform. Moreover, other changes could have occurred in the reform year that may have caused a leap in the variable of interest.

[9] The correct identification of the point in time of its impact is crucial to a before-and-after comparison, which is also part of the DID model. The law took effect as of 1 January 1996. Since the law was not approved by German parliament until 11 October 1995, it can be assumed that the majority of the population was not familiar enough with the reform early enough for the law to lead to reactionary behaviour prior to 1 January 1996.

To eliminate these confounding factors that are unrelated to the reform a second difference is used in the DID model in contrast to the naive before-and-after model. This second difference is the difference in the before-and-after differences (first differences) between the subsidised (parents) and the non-subsidised (childless) groups. The development of the variable of interest in the treatment group is compared with the development of the variable of interest in the control group. Under the assumption that trends in the variable of interest of both groups would have been similar without the reform, this second difference – the difference between group-specific differences over time – enables a clear attribution of effects to the child benefit reform. Using this method the effects of the child benefit reform on the various target areas is examined and presented below.

Compatibility of family and job

The first target examined is the compatibility of family and a career. There is a special focus on the changes to labour supply of mothers resulting from the reform.

As already explained above, child benefit was massively increased thanks to the child benefit reform of 1996 and the child allowance only remained relevant for the high-income earners. The scope for decision-making of families was boosted by the increase in benefits. As a result, mothers spent less time in the labour market. The design of the child benefit reform theoretically creates diverging effects along the income distribution. While high-income earners only marginally benefit from higher child allowances, the reform represents significant increases in income for low-income earners; and this has strong negative income effects on the labour supply.

The empirical results suggest that the negative employment effects of the child benefit increase are mainly materialised at the intensive margin of labour supply by mothers. Mothers with partners tend to switch from a full-time to a part-time position, with participation ratios remaining largely stable. The increase in part-time employment is statistically significant and robust. Although the decline in full-time employment is not statistically significant in all specifications, the partial results of the various heterogeneity analyses and the size of the average effects clearly suggest that the increase in part-time employment is primarily due to the decrease in full-time employment.

The pattern of a switch from full-time to part-time employment is particularly marked in households with a low-income potential, and thus particularly among families that benefitted to a large extent from the reform and can therefore be theoretically expected to suffer strong negative labour supply effects. Moreover, it emerges that mothers with two or three children in particular, who presumably no longer plan to have any further children, are responsible for the negative labour market reaction. The labour supply of fathers is not affected by the reform. No reduction in the labour supply of single mothers was found either. The less robust results (due to the smaller sample size) even point to a slight increase in employment.

A model calculation clarifies the scale of the results. Increasing child benefits by one euro per month and per child on average,[10] leads to a decrease of 0.34 percent in the full-time employment of mothers and an increase of 0.4 percent in part-time employment. This corresponds to a decline in the number of fully-employed mothers of 17,100 and a 20,300 increase in the number of mothers employed part-time.[11] The average weekly working time would fall by 0.09 hours, which would lead to an overall decline of 434,400 working hours per week.

Economic stability of families

In the empirical analysis of the effects of the child benefit reform on the economic stability of families' we use monthly gross and/or net income from earnings, annual net household income, the per capita equivalent income, as well as two poverty indicators as dependent variables. Compared to the results for the effect on labour supply, the empirical results are far less obvious, but some trends nevertheless emerge.

Generally, the financial situation of families could be expected to improve significantly through an increase in child benefit. Surprisingly, however, this is not the case. In nearly all specifications the point estimators are not significantly different from zero and thus indicate that there was no statistically meaningful reform effect on the average earnings of mothers as well as on the economic stability of households. This may partly be due to a possible estimation error. It is, however, con-

[10] In political reality an increase in child benefit typically amounts to more than one euro per month, and the corresponding effects on labour market distribution are greater. If the results are extrapolated by the actual amount of the increase, the labour supply is reduced to a far greater extent.

[11] This extrapolation applies if based on all mothers with children aged between six and under 18 years.

ceivable that own earnings adjustments and transfers work against each other in the course of the reform such that the average overall effects barely differ from zero. Various variations of the basic analysis do not yield any statistically significant results in most cases. Careful interpretations of the results of quantile regressions in gross earnings indicate that the reform tends to have a negative impact on the earnings of mothers in the lower area of income distribution.

The only heterogeneity analysis that reveals significant group differences in the reform effect is the separate analysis of single mothers. The labour supply analysis already showed that the labour supply of single mothers tended to increase as a reaction to the reform. Even if this expansion is not reflected significantly and robustly in an increase in the monthly earnings of single parents, it is nevertheless true that both average household income and the equivalent income of families with single mothers rose significantly thanks to the reform. The results thus seem to indicate an improvement in the economic stability of families with single mothers.

Social participation

The additional leisure time resulting from the reduction of labour supply could be used by mothers to participate more fully in social and societal life, to spend more time with their children, to engage in further education or simply to enjoy sufficient resting periods that have a positive effect on their life satisfaction. The study examines the social participation of families using three groups of variables.

The first group of indicators is related to use of time during leisure. The dependent variables measure the frequency of seven different leisure time activities. These include participation in cultural events (for example, concerts, theatre and talks), going to the cinema, pop concerts, dance events; active sports, socialising with friends, family and neighbours; political activity (participation in citizens' initiatives, political parties and local politics); voluntary activities in clubs, associations or social services and helping out friends, family and neighbours (neighbourly assistance).

The second group of variables contains the following seven target dependent variables: time for hobbies and other free time activities; time for doing jobs around the house, for working on the car and in the garden, time for training, further education and learning (including school and studies); for housework (washing, cooking and cleaning); time for a career or apprenticeship (times include journey to work including secondary professional activities); time for looking after children and for running errands (shopping, purchases and visiting authorities).

The last variable group complements the previous information on leisure time activities and time allocation in daily life by providing information on the subjective well-being of the individuals surveyed, which is measured by satisfaction with their current life, health, work, household activity, household income, apartment, leisure time and with their overall standard of living.

It can be stated that the child benefit reform of 1996 had no robust and significant effects on the various measures of social participation, use of time or satisfaction with certain areas of life. Positive effects were only found on sporting and cultural activities, although the latter made no impact on basic satisfaction with life. As with the analysis of economic stability, it is conceivable that this finding is due to the complexity of the individual responses to the reform.

Time spent with children is an important dependent variable in relation to the evaluation of family policy measures. In general, mothers seem to spend more time on caring for their children, which is partly due to the transfer from full to part-time work and an additional reduction in free time. However, these effects cannot be rigorously attributed to the child benefit reform due to the lack of an adequate control group, since the pattern emerging could also be explained by a general contemporary trend towards more time spent on childcare. It would naturally be of further interest how the possible increase in time mothers spend with their children impacts their well-being.

Birth rates

An increase in specific family policy benefits like the increase in child benefit in 1996 leads to incentive effects that can potentially increase birth rates. Additional financial resources for families reduce the additional costs of having more children. An increase in such benefits should therefore theoretically lead to a rise in birth rates. Empirically there is a difference between a short-term increase in the total fertility rate (calculated according to period patterns) and a real long-term increase in the actual number of children (calculated according to cohort patterns). An increase in incentives can also result in births that were already planned being brought forward. This pure tempo effect of births may increase the total fertility rate in the short-term, but not the completed number of children. At least some indication of potential tempo effects may be given by the age of mothers at the birth of their children. That is why monitoring the age of mothers at the birth of their children plays an important role in analysing the impact of an increase in child benefit on fertility. Since the child benefit reform theoretically provides fertility incentives for families both with and without children the differential impact of the child benefit reform across the income distribution is used here to define treatment and control groups. As already mentioned, low-income earners benefit more from the child benefit reform than high-earners, which is why they are also expected to show stronger behavioural reactions. However, since income itself can be influenced by the child benefit reform, the position of a family in the income distribution is approximated using the education level of both partners. Families in which at least one partner has limited education are used as a treatment group in the DID model (in a further specification families are used in which both partners have a medium level of education at most). All other couples act as a control group. The birth rates of both groups are subsequently observed over time. The implicit assumption is that both groups would have followed the same trend in birth rates without the child benefit reform. If this assumption is valid, differences in the development of birth rates in both of these groups over time can be attributed to the child benefit reform, and more specifically to the stronger increase in monetary benefits for the treatment group than for the control group.

Overall, only the results of some specifications indicate that the child benefit reform had a positive influence on birth rates. The reform was only found to have a statistically significant positive effect on the probability of a birth for the first treatment group (couples in which at least one partner has a low level of education). The result is most strongly affected and statistically significant for couples without children. No change in the age of mothers at childbirth is detected, which is why a pure tempo effect can be excluded as the cause of the impact on birth rates. However, since no significant results can be found for the specifications with the alternative treatment group (couples in which both partners have a medium level of education), the overall results should be interpreted with caution.

Efficiency analysis

After the impact analysis an efficiency analysis was carried out. This complemented the direct costs of the child benefit reform with the fiscal effects of the overall economic effects established in the impact analysis to determine which direct and indirect costs result for the state from the child benefit reform.

Direct costs include additional government expenditure per child in the form of increased child benefit. Indirect costs are follow-up costs like, for example, falling government revenue from taxes and social security contributions due to lower employment. Minimum expenditure for social transfers reduces the indirect costs. The direct and indirect costs were calculated using a hypothetical child benefit reform, which provides for an increase in child benefits of EUR 12 per child per year and/or EUR 1 per child per month. The results of these calculations are shown in detail in Table 2.

The direct costs of this hypothetical child benefit reform increase according to the number of children for whom child benefit is either paid out or an allowance is claimed. In 2010 around 17.5 million children qualified for child benefit. Based on corresponding increases in child benefit the hypothetical reform would generate annual additional costs of roughly EUR 210 million (1st line of Table 2).

The additional indirect costs of a hypothetical child benefit reform, based on the estimated results of the impact analysis, were calculated in two scenarios. In the first scenario the effects of the impact analysis are only expected to apply to mothers of 6 to 17 year-olds. In the second scenario it is presumed that the effects can be transferred to the mothers of 0 to 17 year-olds. Finally the total costs including indirect costs, which arise due to a reduction in tax revenues and social security contributions (due to the reduction in working time), as well as through lesser or greater expenditure for transfer payments, are compared to the direct costs (increase in child benefit). The resulting statistics can be seen in the last lines of Table 2. The quotient of 2.0 for the group of mothers with children aged between 6 and 17 years indicates that in the scenario of a child benefit reform whereby child allowances are increased by an average of EUR 1 per child, the costs of such a reform are around EUR 2 per child. If all mothers with children under the age of 18 are taken as a basis, the total costs of a EUR 1 increase in child benefit are between EUR 1.20 per child (lower limit) and EUR 4.10 per child (upper limit).[12]

The large range of the quotient from von 1.1 to 2.9 and/ or 1.2 to 4.1 clearly illustrates how difficult it is to estimate the exact costs of such a reform. Moreover, the fact that the quotient is greater than one in the best case scenario (lower limit) suggests that the state will incur indirect costs. On average, estimates of these indirect additional costs are at around the same level as the direct costs of an increase in child benefit. This implies that the total costs of an increase in child benefit are on average twice as high as the direct costs.

It is worth mentioning, however, that the lower work participation of mothers resulting from the child benefit reform creates time gains in families, which could help to improve welfare under certain circumstances. However, since these potential effects cannot be quantified, they could not be considered in the efficiency analysis.

Closing remarks

The results of the impact analysis show that an increase in child benefit can generate negative employment effects for mothers, which are reflected in a reduction in working hours. Mothers with partners – especially in low income households – tend to reduce their full-time employment in favour of part-time employment. Labour force participation rates remain largely stable. The economic situation of families does not change significantly through the increase in child benefit, since the adjustments in labour supply reduce the earned income of families and thus mitigate the child benefit increase. This compensation effect does not seem to apply to single mothers, and child benefit improves their financial situation. Moreover, the impact analysis shows no significant effects on various measures of social participation, use of time or satisfaction with certain areas of life. There was no conclusive evidence on the effects of a child benefit increase on birth rates since the reform either.

The efficiency analysis shows, however, that the actual costs of a child benefit increase are around twice as high as the nominal costs. Where other family policies like investment in childcare induce self-financing effects due to increases in labour supply of parents, monetary transfers like child benefit incur additional costs. The reduced working time of mothers resulting from the increase in child benefit creates indirect costs for the state: since mothers reduce their working hours if child benefit is increased, the state loses tax and social security con-

[12] Upper and lower limits are stipulated by the 90 percent confidence interval of the estimates.

Table 2

Direct and indirect costs of a fictional child benefit reform

	Direct and indirect costs (€12 per child and per year / €1 per child and per month)					
	Mothers (children 6-17)			Mothers (children 0-17)		
	Lower limit	Average value	Upper limit	Lower limit	Average value	Upper limit
Direct costs*	210.4	210.4	210.4	210.4	210.4	210.4
Lower tax revenues and social security contributions by employers*	0.0	194.9	387.7	0.0	318.5	633.5
Lower social security contributions from employers*	- 29.3	63.7	156.8	- 47.9	104.2	256.2
Additional transfer payments excluding child allowances*	53.7	- 45.6	- 144.9	87.7	- 74.6	- 236.8
Total costs (in millions of euros per year)*	234.8	423.4	610.0	250.2	558.5	863.4
Total costs / direct costs	1.1	2.0	2.9	1.2	2.7	4.1

* In millions of euros per year.

Source: Own calculations.

tributions. On average these additional indirect costs are estimated to be as high as the direct costs of an increase in child benefit.

A conclusive overall evaluation of the effects of child benefit and child allowances is beyond the scope of this study. Such an evaluation should consider additional aspects like the effects of child benefits on the well-being of children. Moreover, the weighting of the targets behind the reform cannot be objectively analysed even when compared to other uses of funding. It essentially remains a question of political considerations how the targets should be weighted and whether public expenditure is utilised in the most desired way. Impact analysis, however, can guide the search for the most efficient policies to reach the politically established goals.

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New Ranking, Old Mistakes – The "Global Go-To Think Tanks" Ranking 2013

The Think Tanks and Civil Societies Program at the University of Pennsylvania has presented the "Global Go-To Think Tanks" Ranking on an annual basis since 2008. This ranking, published at the end of January, is based on a survey of expert panelists, journalists, scholars, donors and participating think tanks. It claims to assess think tanks worldwide based on regional, functional and other criteria. According to its website, "The index has become the gold standard for think tanks around the world".[1] Seiler and Wohlrabe (2010) analyse the ranking for 2009 and identify a large number of technical and functional flaws, casting doubt on the quality of the ranking. The functional critiques in particular were renewed by Wohlrabe (2012) for the ranking in 2011. In the wake of the publication of the current ranking for 2013 on January 22nd, we are taking this opportunity to inspect the quality and validity of the new ranking.[2] In short, the critical points raised with regard to the 2011 survey remain relevant in light of the fact that neither the nomination nor the selection procedure has been changed since then; and only the categories have been re-adjusted. The ranking's results should therefore continue to be interpreted with great caution. The first part of this paper introduces the methodology used in the ranking and the second part highlights its shortcomings.

Methodology

The ranking is based on a three-stage process. In the first stage, the call for the open nomination round was sent to 6,826 think tanks, as well as "thousands"[3] of journalists, donors and policymakers (p. 11). Each participant was encouraged to nominate between five and 25 think tanks for each of the 46 categories. In the second stage, a further survey of all persons and organisations was carried out, whereby only think tanks could be ranked that obtained five or more nominations in the first round. At the third and last stage, the lists were shared with expert panellists, who had also corrected the nominations in the round before. The expert panel was composed of 793 not clearly defined experts "for all the regional and functional research categories" (p. 11). After the integration of the expert panellists' feedback, the final lists were generated and published. Following statistics on representativeness, the extent of the nomination process is reported:

- 6,826 think tanks from 182 countries were invited to participate in the process;
- 1,947 individuals from 120 countries participated in the nominations and rankings process;
- Think tanks were nominated, and subsequently ranked, in 47 categories;
- 2,265 ballots were cast over two voting rounds;
- 52,000 votes were cast over two voting rounds;[4]
- 171 think tanks were nominated as the world's top think tank.

Critiques

In general terms a great deal of the important information that would be necessary to evaluate the quality of the study is missing. It is not clear, for instance, how the 52,000 votes are distributed between the different stages.[5] Furthermore, there is no information on how many votes are cast per category and per think tank. There is also a lack of information on the regional vote distribution over continents that would make it possible to judge the regional bias mentioned by the Think Tank and Civil Societies Program itself (p. 9ff).

Wohlrabe (2012) criticised intransparent and partly contradictory statements on the number of participants. The exact number of participants also differs in this year's ranking: in one instance "over 1,950" (p. 11) are cited, while another reference is made to "1,947" (p. 12). Both of these numbers are all the more remarkable, as they are found in exactly the same context in the previous year's report. Equally, the term "100s of think tanks" (p. 11) is also very loose and open to interpretation. Despite an "increasingly global reach" (p. 11), the response rate of less than ten percent among think thanks is quite low.[6] This includes a decreasing representativeness. The number of 2,265 votes cast (allocated to two

[1] See http://gotothinktank.com/the-2013-global-go-to-think-tank-index-ggtti/.
[2] The current ranking can be downloaded at www.gotothinktank.com; here and hereafter, as far as not differently noted, we always quote from the "2013 Global Go-To Think Tank Index Report" of the Think Tanks and Civil Societies Program at the University of Pennsylvania.
[3] A certain or more specific number is not announced.

[4] The authors asked the editors how the votes are divided. At the time of writing they had not yet received any responses to their questions.
[5] In the 2012 ranking, 57,018 votes were received, corresponding to a decline of 5,000 votes.
[6] Assuming 1,947 participants, a number of between 609 and 614 participating think tanks can be calculated.

voting rounds), combined with 1,947 participants, implies that only 318 persons voted for both of the rounds and 1,629 for only one round.

The number of 52,000 votes, which are allocated to two voting rounds, also raises several questions. As already mentioned, no information on the exact vote distribution over the two rounds is available. In fact, it seems that voting parity does not exist in any of the 46 categories, because no think tank has to share its rank with another one. This, in turn, implies, however, that the votes for each think tank in the second voting round need to differ from each other by a minimum of one. For all of the 46 categories – the different length of the categories is taken into account – the minimum quantity of votes is necessarily 81,455, which is distinctly undercut by 52,000 (see Table 1).[7] This calculation does not include votes for the first nomination round. Furthermore, it cannot be assumed that all think tanks only won their ranking places by an advantage of one vote. Since a linear distribution of votes is highly improbable, the true amount of votes required has to be much higher. The insufficient number of votes therefore casts doubt on the accomplishment of the ranking.

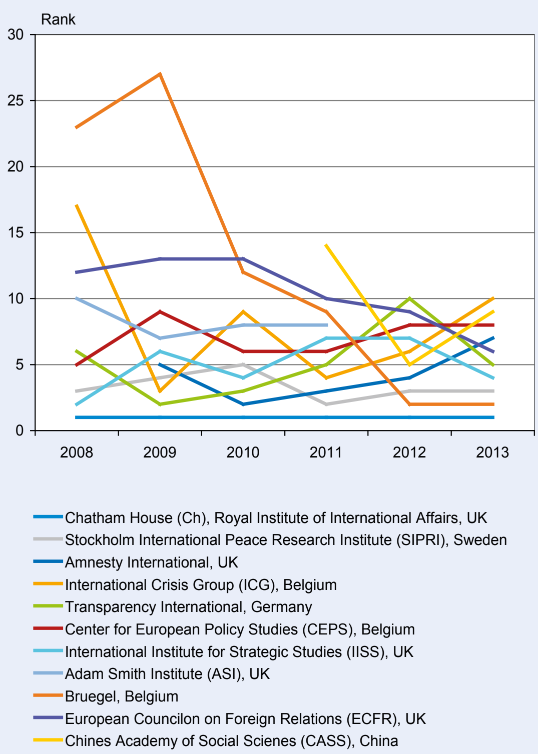
Other faults found concern the power of the expert panel, and especially the fact that changes in the ranking by the expert panellists are not explicitly excluded (Wohlrabe 2012). Identifying omissions or irregularities by the expert panel might be useful after the first round, but it is not reasonable which “serious errors” (p. 12) after the second and last voting round can be found and corrected. In addition to the insufficient number of votes, we suspect that intransparent and inappropriate adjustments and modifications occurred.

As in previous years, it may prove almost impossible to create a ranking of this magnitude based on quantitative indicators due to a lack of information.[8] Without an enormous time exposure, an economist, for example, is not able to assess either scientific or political think tanks worldwide. This may explain why, on average, only 23 votes per ballot were sent back, even although a far higher number is allowed.[9] A decreasing amount of votes is associated with declining representativeness. Even within the same branch, it is often impossible to give a comprehensive response according to the nomination and ranking criteria. How can any external individual assess, for example, the “level, diversity and stability of funding” of other organisations or “listserv and web site dominance” (p. 14ff)? Most of the participants may also be unaware of the “key contacts in the policy academic community” (p. 15) enjoyed by institutes in foreign countries.

Moreover, some of the category classifications such as, for example, the category “Top Domestic Economic Policy Think Tanks” are difficult to understand. Due to the large number of countries with all their specific domestic economies, scarcely anybody can realistically be expected to be in a position to evaluate the quality of all of these institutes with respect to their domestic economic situation. Two possible conclusions, however, can be drawn. Firstly, participants only rank those think tanks on which they have access to reliable information; therefore, the amount of votes and representativeness decrease and the ranking will be biased. It should be assumed that some think tanks are better according to objective criteria, but are not ranked because participants do not know enough about them. This selection bias could potentially be resolved by drawing upon a suffi-

Figure 1

Top ten think tanks[a)]



[a)] Wordwide excluding the USA.

Source: Go-To-Think-Ranking 2008–2013.

[7] This calculation assumes that, for example, for the ranking worldwide with 150 ranked think tanks, the first rank obtains 150 votes, the second 149, et cetera.

[8] The quantitative criteria are quite similar to those in 2011 (see Wohlrabe 2012).

[9] At the first stage a maximum of 25 think thanks can be nominated, at the second stage several can be nominated for each of 46 categories.

Table 1

Global Go-To Think Tank-Ranking voting

Amount of ranked think tanks within one category	Amount of rankings with certain amount of ranked think tanks	Minimum votes per ranking	Minimum votes total
10	1	55	55
20	1	210	210
25	1	325	325
30	7	465	3,255
35	1	630	630
40	5	820	4,100
45	2	1,035	2,070
50	7	1,275	8,925
55	1	1,540	1,540
60	7	1,830	12,810
65	2	2,145	4,290
70	2	2,485	4,970
75	2	2,850	5,700
80	5	3,240	16,200
100	1	5,050	5,050
150	1	11,325	11,325
Sum	46	35,280	81,455
votes cast			52,000
Difference			-29,455

Source: Global Go-To Think Tank-Ranking 2013, calculations of Ifo Institute.

ciently large sample. Nonetheless, the information in the report does not support this implication. The same problem occurs, as mentioned above, when individuals judge think tanks from other fields of research. The ranking results may also be biased if certain subjects answer more frequently and are overrepresented. Secondly, the lack of information leads to a perception-ranking and Seiler´s and Wohlrabe´s (2010) critique finds its application. Hence, only think tanks should be allowed to participate that are able to respond comprehensively for all nominated organisations.

Among these rankings, some inconsistencies are worth noting. At a glance, in Table 2 (p. 27ff) “Top Think Tanks Worldwide (Non-US)”, the “Bonn International Center of Conversation (BICC)” is ranked 70th. In Table 3, which includes US institutes, (p. 30ff.) “Top Think Tanks Worldwide (US and non-US)” the institute moves up to 57, although 11 US institutes are listed among the top 30. Thus, the BICC was able to move up 24 places compared to its non-US competitors. Examples of this type are often found in the report and indicate the inconsistency of answering-behaviour.

In addition, some technical faults can be identified. In Table 45 (p. 100ff), where “Think Tanks with the Most Significant Impact on Public Policy” are listed, the German Institute for International and Security Affairs (SWP) is ranked 22nd as well as 28th. It is completely unclear why the International Center of Human Development from Armenia is found on the ranking “Top Think Tanks in Central and Eastern Europe” (Table 11, p. 45ff), although nine other Armenian institutes are listed at “Top Think Tanks in Central Asia” (Table 8, p. 41ff).

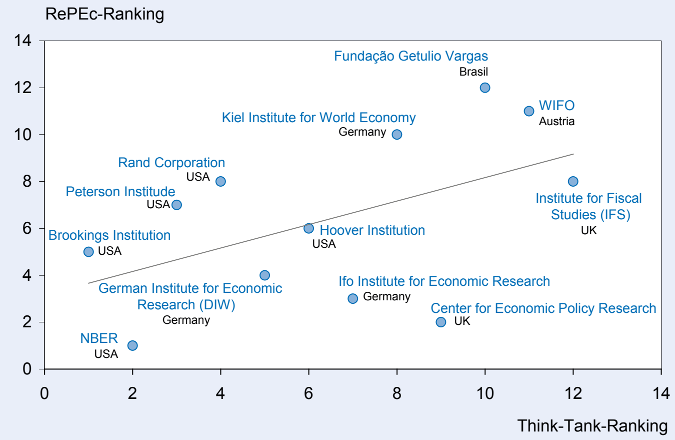
Development over time

Like Wohlrabe (2012), we would like to take a look at the development over time of the “Global Go-To Think Tank” Ranking. Figure 1 shows the Top Ten Think tanks (non-US) since 2008. It is notable that its composition within the last two years is the same and the order of the top three did not change either. This low level of fluctuation may be due to two different reasons: either the best ranked institutes are objectively the best; or there is a self-amplifying process over time due to the increasing prominence gained by an institute after being ranked at the top, which leads to more nominations. Publishing the amount of nominations over time of the top think tanks and their relative advantage to these think tanks would be quite helpful. Without this data, every statement is only speculative.

In a second step, we would like to draw a comparison with the “Global Go-to Think Tank” Ranking and a quantitative-based ranking like RePEc, which generates a global ranking among economic departments and institutes and aggregates 35 output-indicators. These indicators include the number of publications (weighted and unweighted), as well as the number of

Figure 2

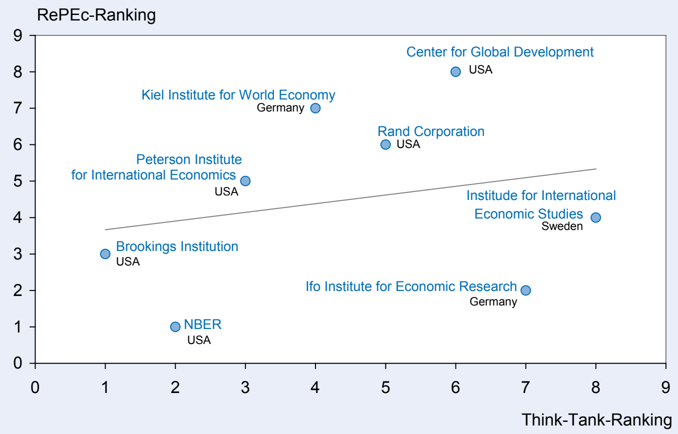
Domestic economic policy think tanks



Source: Go-To-Think-Tank-Ranking 2013; RePEc.

Figure 3

International economic policy think tanks



Source: Go-To-Think-Tank-Ranking 2013; RePEc.

citations and downloads.[10] Figure 2 illustrates a scatterplot with rescaled ranking positions of the category "Top Domestic Economic Policy Think Tanks" and the RePEc ranking position. Initially, it is conspicuous that among the top 80 of the "Global Go-To Think Tank" Ranking only 12 institutions are ranked by RePEc. There may be different reasons for this. On the one hand, there are some top think tanks that are not listed by the Think-Tank Ranking such as, for example, the World Bank (3rd at RePEc), International Monetary Fund (5th at RePEc) or Central Banks. These institutions produce a lot of highly relevant output, which is demanded according to the output criteria. On the other hand, think tanks listed by the "Global Go-To Think Tank" Ranking are not ranked at the RePEc list, because it only shows the top five percent of over 6,300 institutions and departments. Therefore, Bruegel is only found in the top eight percent in RePEc, but comes No. eight in the Think-Tank Ranking. This demonstrates the large differences that can occur between a quantitative ranking and a survey that is announced to be based on quantitative factors. The high variance in Figure 2 clarifies those differences. Figure 3 shows the same relation between the RePEc-Ranking and the category "Top International Economic Policy Think Tanks". In that case, only eight institutions can be compared with each other. The variance is still greater and the correlation smaller. Basically, a weak positive relation between both of the rankings is still visible.

Conclusions

As pointed out, the think tank ranking fails in terms of its own ambitious claim. Many of the facts that would be needed to prove the quality and significance of the ranking are inappropriate, unclear or missing. The methodology of the survey and the insufficient number of responses mean that the ranking is potentially biased and leads us to suspect that ex post adjustments have been applied. The interpretations and implications of this ranking therefore need to be approached with extreme caution.

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Seiler, C. and K. Wohlrabe (2012), "Ranking Economists on the Basis of Many Indicators: An Alternative Approach Using RePEc Data", *Journal of Informetrics* 6 (3), 389-402.

[10] See Seiler and Wohlrabe (2012) for a more detailed description of the RePEc Ranking methodology.

Defractionalisation in Different Electoral Systems

Box 1

Visual Storytelling

The data used in this article is available as visual story.

Visual Storytelling allows you to analyse DICE information using interactive maps and graphs.

This feature enables users to:

- See how indicators alter over time (play function).
- Use scatter or radar plots to compare different indicators and connections.
- Select individual countries to compare performance.
- Select additional information layers in all visualisations.

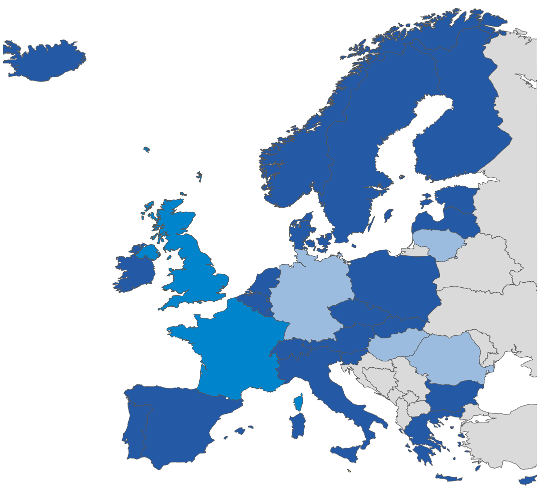
Electoral systems face two competing aims: firstly to ensure that the transmission of citizens' votes into parliamentary seats is proportional and secondly, that the legislative body has a stable majority to back up a government. As a result, there tend to be major differences between national electoral systems in terms of their respective history and depending on whether proportionality or the capacity to govern is considered as more important. While the aim of proportionality demands that the legislative body should be as fractionalised as the electorate body, the aim of building enough capacity to govern demands at least some degree of defractionalisation. In this article a measure used to quantify the degree of defractionalisation is discussed and applied to legislative bodies in different European countries.

Electoral system families

In general a distinction is drawn between two main families of electoral systems: proportional representation (PR) and the plurality or majority system (Lijphart 1991). Additionally there are electoral systems that contain components of both and are therefore called mixed or hybrid systems. Each electoral system has specific advantages. Proportional representation claims to have greater proportionality overall, and especially better representation of minorities. Plurality/majority electoral systems, on the other hand, claim clearer accountability and higher capacities to govern (Lijphart 1991). Mixed systems try to combine the benefits of both systems. Most European countries today have proportional representation systems or mixed systems. In Europe only France and United Kingdom have a majority system (see Figure 1).

Figure 1

Electoral system families in Europe



Source: IDEA (2013); www.ifo.de/w/3gMZQP2VK/visualstory.

Indices of fractionalisation

To assess the proportionality and the extent of defractionalisation in the different electoral systems empirically the two following indices of fractionalisation proposed by Rae (1968) are useful:

$$rae_{leg} = 1 - \sum_{i=1}^{m} s_i^2 \qquad\qquad rae_{ele} = 1 - \sum_{i=1}^{m} v_i^2$$

The indices show the fractionalisation of the legislative body and of the electorate body. In the formula m is the number of parties voted for, or having seats in the legislative body, v_i is the proportion of votes for party i; s_i the proportion of seats in the legislative body associated with the party i. When there is no fractionalisation in the respective body, the corresponding index is zero as there is just one party (m=1) and therefore s_1 and v_1 are one. When the body is totally fractionalised, meaning that every vote or parliamentary seat goes to another party, the indices become nearly one.[1]

To measure the difference between the fractionalisation of the electorate and the legislative body of an electoral system the spread between the two indices $Diff_{rae} = rae_{ele} - rae_{leg}$ is crucial. The spread shows the defractionalising effect of the electoral system as it compares the fractionalisation of the electorate body with the fractionalisation of the legislative body. In most cases the difference is again between one and zero. Negative values are unlikely as it can be assumed that the fractionalisation of the electorate is higher than the fractionalisation of the legislative body and therefore rae_{ele} is higher than rae_{leg}.[2] This is the case because of the defractionalising effect of the electoral systems, which mostly

[1] For better presentation all values displayed in the following are multiplied by one hundred.

[2] Does not hold for Italy in the years 1994 and 1995 where the highly complex, mixed electoral system introduced in 1993 leads to a higher fractionalisation of parliament than of the electorate body.

Table 1

Fractionalisation indices and electoral system family

	$Diff_{rae}$ (Median)	$Diff_{rae}$ 2011	Electoral system family
Denmark	1.05	0.36	Proportional Representation
Netherlands	1.27	0.51	Proportional Representation
Malta	1.37	1.89	Proportional Representation
Sweden	1.44	1.16	Proportional Representation
Iceland	1.44	1.91	Proportional Representation
Cyprus	1.51	1.83	Proportional Representation
Belgium	1.75	1.93	Proportional Representation
Austria	1.79	2.75	Proportional Representation
Switzerland	2.01	2.23	Proportional Representation
Finland	2.22	1.68	Proportional Representation
Germany	2.37	2.78	Mixed
Slovenia	2.61	3.17	Proportional Representation
Italy	2.86	6.17	Proportional Representation
Luxembourg	2.93	4.06	Proportional Representation
Norway	3.01	2.68	Proportional Representation
Estonia	3.65	5.11	Proportional Representation
Latvia	3.74	2.43	Proportional Representation
Ireland	4.71	7.30	Proportional Representation
Slovak Republic	5.12	6.93	Proportional Representation
Lithuania	6.10	6.10	Mixed
Poland	6.44	6.63	Proportional Representation
Romania	6.55	2.31	Mixed
Czech Republic	6.73	7.40	Proportional Representation
Portugal	6.93	6.93	Proportional Representation
Greece	8.04	6.87	Proportional Representation
Bulgaria	8.86	7.53	Proportional Representation
Spain	9.02	9.38	Proportional Representation
Hungary	10.00	15.53	Mixed
United Kingdom	12.59	11.89	Plurality/Majority
France	12.98	17.58	Plurality/Majority

Source: IDEA (2013), Armingeon et al. (2013); DICE Database (2013, 2014a, 2014b).

favour bigger parties over their smaller counterparts (Rae 1968). As perfect proportionality exists, when "every party receives exactly the same share of the seats as it won of the votes" (Galager 1991, 33), it can be assumed that values nearer to zero have a better proportionality in the transmission of votes into seats.

Effects of electoral systems

As stated in the beginning, the second function of the electoral system is to provide a legislative body with a stable majority to back up a government. To ensure this, most electoral systems have measures that influence the fractionalisation of the legislative body in a way that legislative bodies are less fractionalised than the electorate body. In most cases a party or a coalition has to reach a minimal value of the votes cast. This threshold can be explicit, as, for example, in Austria or Denmark on nationwide level, in Spain on a district level, or implicit through the limited number of seats of the legislative body as in the Netherlands (see Table 2). Additionally, there are other measures that influence the composition of the legislative body and ensure that there is a stable majority in the legislative body. Two examples of such cases are: 1) In Greece the party obtaining the most votes gets 50 additional seats. 2) If the strongest party or coalition in Italy fails to win 340 out of 617 seats, the party needs to obtain additional seats until it reaches 340 seats.[3]

The benefit of the approach used here is that it covers all of the measures cited that are used to influence the composition of the legislative body as it looks at the final result of all the measures and compares it with the original electorate body.

In most countries the electoral systems has experienced some changes over time, but the difference in the fractionalisation indices already alternated in every election. In view of this fact it is difficult to draw a clear distinction between the changes in fractionalisation caused by electoral system reforms and those driven by electoral behaviour. Hence a cross country comparison for a single year could be misleading. For a comparison between the electoral systems in different countries it is more useful to look at the median value of the fractionalisation across time for each country ($Diff_{rae}$ (Median)). This value then offers insights into the systemic design of the electoral system with regard to the importance of proportionality.

As expected from the theory, the plurality/majority systems in France and United Kingdom exhibit the highest

[3] This measure was executed in the three elections between 2006 and 2013, but was declared as an infringement of the constitution at the end of 2013 (Corte costituzionale 2014).

Figure 2: Difference in fractionalisations in Italy

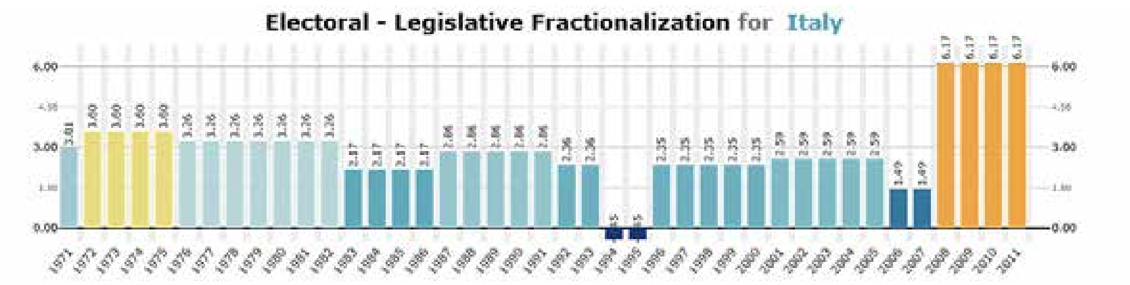
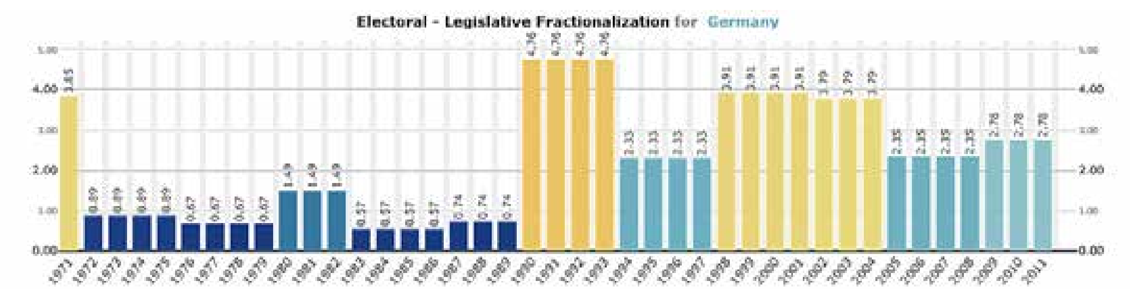


Figure 3: Difference in fractionalisations in Germany



difference between the fractionalisation of the electorate and the legislative body. Spain (9.02) has the highest value in the group of PR systems, which is a result of a regionalised party system and a three percent threshold at a district level combined with the fact that Spain has many small districts. This favours big national parties over their small regional counterparts, which may obtain a significant share of votes in some districts, but only a few seats in the legislative body (Field 2009). Denmark (1.05) and the Netherlands (1.27) rank best in this observation. Denmark has a relatively low threshold at a national level with additional exceptions. The whole electoral system is designed to create as much proportionality as possible (see Table 2).

For Italy we can observe that the change in electoral system in 2005 initially led to a slightly better proportionality in the electoral system, but with the 2008 election this value increased significantly. The current electoral system (described in Table 2) seems to have a more defractionalising effect than the previous electoral system.

Table 2

Electoral systems characteristics

Austria	Closed party-list system with proportional representation applying the Hare method to the regional and provincial constituencies, and the d'Hondt method at the federal level; 4 per cent threshold for parties to gain representation.
Denmark	Proportional representation system according to a modified version of the St. Laguë method and Hare quota and using the method of greatest remainders. Each elector can cast either a "personal vote" for one of the candidates or a vote for one of the party lists. They can vote for any of the candidates or parties of their constituency, not being limited to those of their nomination district. Of the 175 seats reserved for Denmark proper, 135 seats are distributed among the constituencies. The 40 remaining, or compensatory, seats are then distributed among the parties which either have won at least one constituency seat; have obtained, in two electoral regions, at least as many votes as the average number of valid votes cast in the region, per constituency seat; or have obtained at least 2% of all valid votes cast in the country as a whole. Such distribution, based on votes obtained on the national scale, is aimed at redressing the imbalance caused through the distribution of the constituency seats. When it has been decided which parties are entitled to a share of the compensatory seats, the number of seats which each party is proportionately entitled to of the 175 seats is calculated on the basis of the total number of votes cast for these parties in all parts of the country. From the number of seats thus arrived at for each party, the number of constituency seats already obtained by the party is deducted. The resulting figure is the number of compensatory seats due to the party. The end result of this system is a distribution of seats in the Folketing that faithfully reflects the share of the popular votes received by the parties.
Greece	- Parties must obtain at least 3 per cent of the votes cast to obtain parliamentary representation. - 250 seats are distributed in accordance with the Hagenbach-Bischoff system. - The party obtaining the highest number of valid votes is entitled to 50 seats, allocated to candidates on its party list. - majority vote, under some circumstances, to allocate further remaining seats at the national level and simple majority vote in eight single-member constituencies.
Italy	- Proportional representation system for 629 of 630 seats, using blocked party lists for 617 of the 630 members elected from Italy and for the 12 members elected by Italian citizens overseas (First-past-the-post system for the single-member constituency in Valle d'Aosta). The minimum thresholds for a seat in the Chamber of Deputies are: - for a political coalition: 10 % of total valid votes; - for a political party (list) within a coalition: 2% of total valid votes; - for a political party (list) which is not affiliated with any political coalition: 4% of total votes cast nationwide; - for language minority lists: 20% of the votes cast in their constituency. However, any list obtaining the highest number of votes among all lists and which fails to win 2% of the votes cast is also entitled to a seat. If the political coalition or party with the highest number of votes fails to win 340 seats, it is given "bonus" seats to meet the 340-seat requirement. The 277 remaining seats are distributed among the other coalitions or unaffiliated lists using the whole number quotient and highest remainders method.
Netherlands	Party-list system with proportional representation. Seats are distributed at the national level among different lists or groups of lists which have obtained at least 0.67% of the nationwide vote, each being awarded as many seats as the number of times the votes for its candidates is the multiple of an established national quota (the total of valid votes in the country divided by the number of seats (150) to be filled). Within each list, seats are then allocated among candidates according to the order in which they appear on the list. The seats remaining unfilled after this first distribution are then allotted according to the d'Hondt method of highest average.

Source: IPU (2013); DICE Database (2013).

On the other hand, the rise of new parties can lead to changes in the fractionalisation as can be shown for Germany. With German unification and the elections in 1990 the party system diversified and the defractionalising effect of the electoral system had a stronger impact as a result. In the last elections (2013) the diversification proceeded and the difference between the fractionalisation of the electorate body and the legislative body increased further.

Conclusion

It was shown that different electoral systems have different defractionalising effects. In majority or plurality systems these effects are stronger than in proportional representation systems. Depending on the measures used, however, the legislative body has a lot less fragmented structure than the electoral body, also in proportional representation systems. The huge variation in proportional representation systems depends on how the electoral system tries to achieve proportionality and the capacity to govern. The measures described in Italy and Greece, for example, are the result of experiences with unstable legislative majorities. However, the diversification of the party system can also lead to changes in the defractionalising effects of an electoral system. Through the effects of defractionalisation, established parties can prevent small new parties from getting into the legislative body. Hence countries that are highly concerned about proportionality should adjust their electoral system according to the new socio-political situations expressed in the diversification of the party system to minimise the defractionalising effects of the electoral system.

Daniel Leithold

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Public Debt in the Eurozone

In the wake of the outbreak of the recent global financial crisis, public deficits and government debt have increased substantially among member states of the European Union. These issues have since been hotly debated among economist and politicians.

Government debt is the accumulation of past borrowing and therefore the result of repeatedly running budget deficits. It is usually measured as a percentage of a country's gross domestic product (GDP) at nominal value. According to the Maastricht definition of debt, general government debt comprises of the consolidated gross debt of the entire government sector including central, state and local government, as well as social security funds outstanding at the end of a quarter. Sub-sector data are consolidated at the national level by the statistical authorities of the member states (Eurostat 2014).

To prevent excessive budget deficits and the over accumulation of debt, the Maastricht Treaty of 1992 and the Stability and Growth Pact of 1997 introduced rules to maintain stable public finances. More specifically, members of the European Union, and especially members of the Eurozone, were required to limit annual public deficits to three percent of GDP and public debt to 60 percent of GDP. Since the introduction of this rule-based policy framework, however, not all members have succeeded in achieving fiscal discipline. Although there is no scientific consensus on the proper size of public deficits and public debt, the latest reform proposals for the Stability and Growth Pact acknowledge the need for stricter fiscal governance in the Eurozone. Schuknecht et al. (2011), for example, demand that national budget deficits require approval at the European level.

The evolution in the public debt levels of selected EU countries is shown in Figure 1. A notable feature is that most countries managed to reduce their level of debt over the first decade of the millennium. Spain and Ireland in particular have made tremendous efforts to reduce their indebtedness. Although Greece and Italy registered small successes in their debt reduction, they were among those countries with the highest debt levels that entered the monetary union. The two largest countries of the Eurozone, France and Germany, experienced steady increases in their budget deficits and exceeded the Maastricht deficit criteria, which led to a controversy over the temporary suspension of sanctions. In 2009, however, all of the countries in the EU were forced to react to the global financial crisis by increasing their government spending and providing fiscal stimulus. Government debt levels rose to historical highs as a result. Currently, less than half of the EU countries meet the target of debt levels below 60 percent, as shown in Figure 2. Table 1 provides a detailed summary of the debt levels in the European Union during the financial crises.

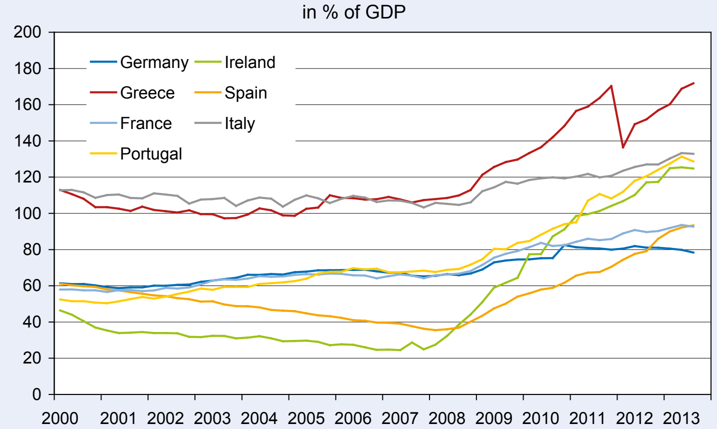
Figure 2 also reveals that the group of countries below the 60 percent debt criterion consists mostly of new member states. A crucial question is whether similar debt levels in the EU countries have a similar effect on economic activity and growth levels. It is widely accepted, that beyond a certain threshold level, further increases in the level of debt as percentage of GDP lead to lower economic growth. Reinhart and Rogoff (2010) find that for both advanced and emerging countries, high debt/GDP ratios of 90 percent and above are associated with notably lower growth outcomes. For countries in the EU Mencinger, Aristovnik and Verbic (2014) provide evidence that the turning point for new member states is substantially lower than that for old member states. These findings are important for fiscal governance in the Eurozone, as they indicate different levels of economic activity for similar debt levels.

Martin Berghausen

Figure 1

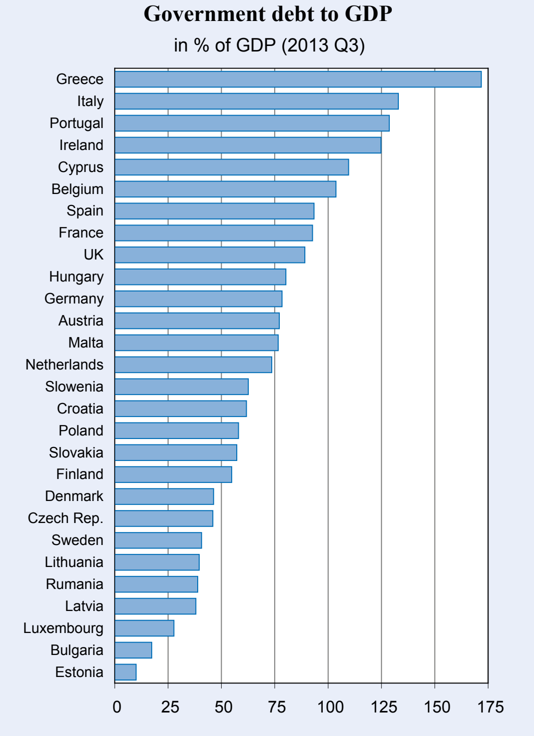
Evolution of government gross debt in the Eurozone

in % of GDP



Source: Eurostat (2014).

Figure 2



Source: Eurostat (2014).

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Table 1

General government gross debt (Maastricht debt) in % of GDP

	2006	2007	2008	2009	2010	2011	2012
Austria	62.3	60.2	63.8	69.2	72.3	72.8	74.0
Belgium	87.9	84.0	89.2	95.7	95.7	98.0	99.8
Bulgaria	21.6	17.2	13.7	14.6	16.2	16.3	18.5
Croatia				36.6	44.9	51.6	55.5
Cyprus	64.7	58.8	48.9	58.5	61.3	71.5	86.6
Czech Republic	28.3	27.9	28.7	34.6	38.4	41.4	46.2
Denmark	32.1	27.1	33.4	40.7	42.7	46.4	45.4
Estonia	4.4	3.7	4.5	7.1	6.7	6.1	9.8
Finland	39.6	35.2	33.9	43.5	48.7	49.2	53.6
France	64.0	64.2	68.2	79.2	82.4	85.8	90.2
Germany	68.0	65.2	66.8	74.5	82.5	80.0	81.0
Greece	107.5	107.2	112.9	129.7	148.3	170.3	156.9
Hungary	65.9	67.0	73.0	79.8	82.2	82.1	79.8
Ireland	24.6	24.9	44.2	64.4	91.2	104.1	117.4
Italy	106.3	103.3	106.1	116.4	119.3	120.7	127.0
Latvia	10.7	9.0	19.8	36.9	44.4	41.9	40.6
Lithuania	17.9	16.8	15.5	29.3	37.8	38.3	40.5
Luxembourg	6.7	6.7	14.4	15.5	19.5	18.7	21.7
Malta	62.5	60.7	60.9	66.5	66.8	69.5	71.3
Netherlands	47.4	45.3	58.5	60.8	63.4	65.7	71.3
Poland	47.7	45.0	47.1	50.9	54.9	56.2	55.6
Portugal	69.4	68.4	71.7	83.7	94.0	108.2	124.1
Romania	12.4	12.8	13.4	23.6	30.5	34.7	37.9
Slovakia	30.5	29.6	27.9	35.6	41.0	43.4	52.4
Slovenia	26.4	23.1	22.0	35.2	38.7	47.1	54.4
Spain	39.7	36.3	40.2	54.0	61.7	70.5	86.0
Sweden	45.3	40.2	38.8	42.6	39.4	38.6	38.2
United Kingdom	42.7	43.7	51.9	67.1	78.4	84.3	88.7

Source: Eurostat (2014).

Market Competition and Product Market Regulation

There are good reasons to regulate markets: to safeguard consumers, to protect investors or avoid damage to third parties and protect the environment. But regulation is costly: products become more expensive for consumers and entrepreneurs and investors may be discouraged from entering the market. As a result, product market regulation might inhibit market competition thereby reducing productivity and growth.[1] Aware of the need to make regulation competition-friendly, the OECD has developed indicators of product market regulation that measure the degree to which policies promote or inhibit competition.[2]

The indicator for product market regulation measures the economy-wide regulatory and market environments in OECD countries and some non-OECD countries in 1998, 2003, 2008 and 2013. It is based on qualitative information mainly derived from answers to a questionnaire by national administrations and covers both general and sectoral regulatory issues in the areas of "state control", "barriers to entrepreneurship" and "barriers to trade and investment".[3] The lower the value of the indicator, the more competition-friendly a country's product market regulation is.

The development of the product market regulation indicator over time is shown in Figure 1 for a restricted sample of OECD countries. From the descriptive statistics several insights are evident:[4] firstly, regulation impediments to competition have declined in recent years. Secondly, the regulatory environments in countries that formerly had comparatively restrictive policies have become a lot more liberalised. As a result of this convergence process, product market regulation has become more homogenous across the OECD. Finally, after an earlier period with substantial success in improving the competition friendliness of regulation, a ceiling seems to have been reached. The latest comparison of the indicator of product market regulation across countries is shown in Table 1. Due to the historical convergence process, only minor differences remain.

Marcus Drometer

1 See, for example, Nickell (1996).
2 For a recent update see OECD (2013).
3 See Wölfl et al. (2009).
4 For further details compare Wölfl et al. (2009).

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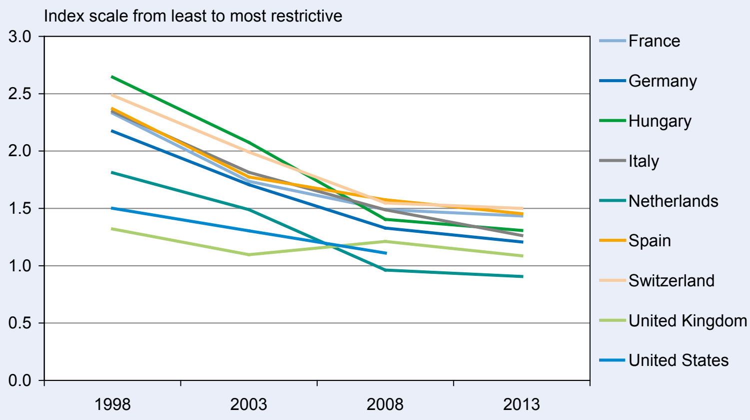
Figure 1

Competition friendliness of product market regulation



Source: OECD (2013).

Table 1

Product market regulation: overall PMR score 1998-2013

	1998	2003	2008	2013
Austria	2,11	1,60	1,35	1,17
Belgium	2,25	1,62	1,55	1,39
Bulgaria				1,57
Czech Republic	2,63	1,87	1,50	1,39
Denmark	1,65	1,48	1,31	1,22
Estonia			1,38	1,33
Finland	1,94	1,49	1,34	1,29
France	2,33	1,74	1,49	1,43
Germany	2,17	1,71	1,33	1,21
Greece	2,71	2,45	2,19	1,68
Hungary	2,65	2,08	1,40	1,31
Ireland	1,85	1,58	1,38	1,44
Italy	2,35	1,81	1,49	1,26
Netherlands	1,81	1,49	0,96	0,91
Portugal	2,55	2,09	1,70	1,30
Slovak Republic		1,93	1,57	1,31
Slovenia			1,99	1,80
Spain	2,37	1,77	1,58	1,45
Sweden	1,88	1,50	1,64	1,55
United Kingdom	1,32	1,10	1,21	1,09
Iceland	1,99	1,50	1,45	1,46
Norway	1,87	1,55	1,50	1,49
Switzerland	2,49	1,99	1,55	1,50
Australia	1,70	1,31	1,43	1,26
Canada	1,85	1,58	1,48	1,37
Japan	2,22	1,48	1,54	1,51
Korea	2,49	1,89	1,88	1,88
New Zealand	1,45	1,29	1,22	1,27
United States	1,50	1,30	1,11	

Index scale 0 to 6 from least to most restrictive. Empty cells: data not available.

Source: OECD 2014.

New at DICE Database

Recent entries to the DICE Database

In the first quarter of 2014, the DICE Database received a number of new entries, consisting partly of updates and partly of new topics. Some topics are mentioned below.

- Renewable Energy Capacities
- Policies to Support Renewable Energies
- Policies and Measures on Energy Efficiency
- Broadband Penetration
- Local Loop Unbundling Requirements
- Policy Developments in International Mobile Roaming Services
- National Treatment for Foreign-controlled Enterprises in Telecommunication
- Transparency of Government Policymaking
- Wastefulness of Government Spending (WEF Index)
- Youth in Labour Market

The interactive graphics application Visual Storytelling has been further expanded.

Forthcoming Conferences

CESifo Area Conference on Public Sector Economics 2014
24–26 April 2014, Munich

The conference is intended to give an overview of the current research undertaken by members of the Public Sector Economics area of the network and to stimulate interaction and co-operation between area members. All CESifo research network members are invited to submit their papers which may deal with any topic in Public Economics.
The keynote lecture on Taxation and Development will be delivered by Henrik Kleven (LSE).

Scientific organiser:
Rick Van der Ploeg

CESifo Area Conference on Employment and Social Protection 2014
02–03 May 2014, Munich

The purpose of the workshop is to bring together CESifo members to present and discuss their ongoing research, and to stimulate interaction and co-operation between them. All CESifo Research Network members are invited to submit their papers, which may deal with any topic within the domains of employment and social protection. Both domains are to be broadly defined, the former including, in particular, issues of the organisation of labour. The latter domain, in turn, includes not only governmental institutions of the welfare state, like social insurance, but also other non-governmental institutions of the welfare society, such as the family, or charities and informal networks, social norms and altruistic behaviour.
The keynote lecture will be delivered by Imran Rasul (University College London).

Scientific organiser:
Kai A. Konrad

CESifo Area Conference on Global Economy 2014
16–17 May 2014, Munich

CESifo will hold its annual meeting for the Global Economy research area, intended to allow presentation of current research undertaken by its members and to stimulate interaction and co-operation between area members. Papers can be on any topic under the Global Economy field, covering trade, international finance, migration, global environmental issues, and others. Papers will be discussed in seminar format.

Scientific organisers:
Peter Egger, John Whalley

Estimation of Gravity Models of Bilateral Trade
30–31 May 2014, Munich

This conference, organised by CESifo and the ETZ Zürich in connection with a Special Issue in Empirical Economics, calls for papers on all aspects of the estimation of bilateral trade. In particular, we welcome papers with a strong orientation towards econometric issues. Possible topics include the following:

- Panel data analysis of gravity models.
- Allowing for time-dependence or cross-sectional dependence of the data in gravity model estimates.
- Measurement error and endogeneity of variables in the estimation of gravity models.
- Addressing missing data and zero trade flows.
- Addressing nonlinear effects of covariates (such as trade costs) on trade flows
- Structural estimation of gravity models.

There will be four keynotes and the organizers will select papers among the submitted ones for presentation at the Ifo Institute in Munich and, after undergoing a regular review process, for publication in the special issue. All papers presented at the conference will appear in the CESifo Working Paper series

Scientific organisers: Badi H. Baltagi, Peter Egger and Michael Pfaffermayr

New Books on Institutions

Mass Politics in Tough Times. Opinions, Votes and Protest in the Great Recession
Edited by Larry Bartels and Nancy Bermeo
Oxford University Press 2014

International Development. Ideas, Experience, and Prospects
Edited by Bruce Currie-Alder, Ravi Kanbur, David M. Malone, and Rohinton Medhora
Oxford University Press 2014

Why Government Fails So Often: And How It Can Do Better
Peter H. Schuck
Princeton University Press 2014

CESifo DICE

THE DATABASE FOR INSTITUTIONAL COMPARISONS IN EUROPE

The Database for Institutional Comparisons in Europe – DICE – was created to stimulate the political and academic discussion of institutional and economic policy reforms. DICE is a unique database offering comparative information on national institutions, regulations and economic policy. Although DICE is not a statistical database, it also contains data on the outputs (economic effects) of institutions and regulations where relevant.

DICE covers a broad range of institutional themes: Business and Financial Markets, Education and Innovation, Energy and Natural Environment, Infrastructure, Labour Market and Migration, Public Sector, Social Policy, Values and Other Topics.

The information is presented in tables (text or data), graphics (interactive application Visual Storytelling), and reports. In most cases, all EU countries are covered as well as some other major OECD countries. Users can choose between current comparisons and time series that show developments over time.

DICE combines systematic information from a wide range of sources, presenting a convenient one-stop service for your data needs.

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