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Fiscal Federalism: Public Goods, Transfers, and Common Pools*

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Abstract

The design of a federation raises important questions which have found very different answers in practice. An efficient assignment of public policies and revenues is important to make a federation viable, to maintain a balance of power between the central government and the states, and to find a good compromise between a strong government and a competitive market system. Transfers between the federal government and the state governments often become sources of conflict. Avoiding such conflicts demands a high degree of transparency, which can be better achieved with horizontal transfers among states of different tax capacity than vertical transfers from the centre to the states. Sustainability of public finances can be achieved best by either full fiscal autonomy of the states and/or fiscal unions, where the states with no borrowing autonomy are viable. Federations in which some states are highly and systematically dependent on transfers from the central government are likely to end up as debt unions. Finally, an important part of the design problem is to find an efficient way of changing the federal constitution, one that avoids the tendency for excessive centralism and yet allows for responding to changing circumstances in adequate ways.

Keywords: Fiscal federalism, revenue assignments, common debt pools, centralisation-decentralisation, fiscal equivalence, subsidiarity, Cyprus, public debt sustainability.

1. Introduction

Federalism is a form of governance in which different constituent polities (called states in the USA, Bundesland in Austria and Germany, provinces in Argentina, Australia and Canada, and cantons in Switzerland) exist under a common, federal government. For simplicity, we call the constituent polities "states" in this paper. Federalism is more than just

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decentralized administration: The state governments make decisions regarding public policies and resources in their own right and responsibility and according to their own preferences (Riker, 1964). Federalism is also more than the confederation of sovereign states, a federation features a strong federal government created by a constitution which is recognized as supreme law in the states (Elazar, 1987). Federalism is more than decentralized government; in a federal system, the authority and autonomy of the central government are explicitly restricted, and the states are represented directly in the process of national legislation (Rodden, 2002). According to Wheary's (1946) classical study of federalism, the defining principle of federalist government is that "neither general nor regional government is subject to the other." How strong the federal government actually is compared to the states differs across federations and can change over time. Federalism is a form of sharing power, resources, and responsibilities among the states. If each state was independent and sovereign, its government would have to provide a full scale of public goods and services for its citizens. In a federal system, the federal government can assume the responsibility for some of these goods and services and deliver them to the citizens of all states, exploiting economies of scale and scope and taking into consideration cross-border externalities, while the state governments execute their own policies in their respective territories.

There are today 28 federations around the world.[1] About 40 percent of the world's population live in federal states (Voigt and Blume, 2012). Most of the existing federations have more than ten states, the US and Russia are the two federations with the largest number of states. Saint Kitts & Nevis is the only existing federation of just two states, Bosnia and Herzegovina has two constituent regional entities, one of which is a federation itself, and an independent region parts of which belong to the two constituent regions; Comoros has three states.[2] Belgium is the only federation consisting of

[1] Argentina, Australia, Austria, Belgium, Bosnia and Herzegovina, Brazil, Canada, Comoros, Ethiopia, Germany, India, Iraq, Malaysia, Mexico, Micronesia, Nepal, Nigeria, Pakistan, Russia, Saint Kitts & Nevis, Somalia, Spain, South Africa, Sudan, Switzerland; United Arab Emirates, United States, and Venezuela. See CIA World Factbook. In addition, several large unitary states have made efforts at decentralization in recent decades.

[2] Saint Kitts & Nevis became a bi-state federation only by accident. It was originally composed of three states, one of which, Anguilla, left the federation in 1998. In a 1998 referendum, Nevis barely failed to achieve the required two-thirds majority to leave the federation with Saint Kitts. See Bahcheli and Noel (2015). The Federal Republic of Yugoslavia, formed in 1992 by Serbia and Montenegro, was dissolved in 2006 after a referendum to leave the federation had won a majority in Montenegro. The Mali Federation, which had Senegal and French Sudan (now Mali) as constituent states was dissolved only two months after its formation in June 1960.

three constituent regions plus three linguistic communities which have their own government functions but are not regionally defined.

There is a tradition in political science holding that federalism, by giving some degree of autonomy and self-governance to different ethnic or cultural groups under the umbrella of a federal government, is a way to accommodate interregional conflicts and preserve the unity of a larger state. Another strand of literature, in contrast, argues that, by giving such groups opportunities to organize themselves and voice their demands, federalism deepens regional conflict. Historical experiences such as the disintegration of Czechoslovakia and Pakistan, the Civil War in the US, as well as with continued violent conflicts in India, Nigeria, or Russia, suggest that federalism is no silver bullet for managing regional, ethnic or cultural conflicts.[3]

Designing a federation leads to the question of which policies should be assigned to the state governments and which ones should be entrusted to the federal government. This is called the assignment problem. A second and related question is how much power and resources should be vested with the federal government and how much with the state governments. Political economy addresses these questions from three different angles: Efficiency in the production and delivery of public goods and services, equity among the states and their citizens, and the sustainability of the federation and its public finances.

The existing federations demonstrate that the specific answers to these questions vary greatly, implying that there is no such thing as a "typical federation." Nor is it possible to say that a federation must have this or that characteristic to be viable. Existing federations were and continue to be shaped by political forces and bargaining processes, and the assignment of responsibilities and powers within federations continues to change over time.

Regardless of the specific design of a federation, it is important that its constitution clearly spells out which level of government is responsible for which policy domain and how a given policy competence can be moved from one level to another. Clarity in this regard is essential for citizens to know who is responsible for the execution and the financing of different policies and who is to be held accountable for the outcomes. Furthermore, procedural clarity regarding the change of assignments is important

[3] See Bakke and Wibbels (2006). Their empirical results suggest that federations are more successful in dealing with interregional conflict, if ethnic divisions across regions are not accompanied by large differences in economic prosperity, if political parties at the national level succeed in integrating ethnic minorities, and if ethnic minorities are not regionally concentrated.

because federal governments have a tendency to acquire more competences.

In this paper, we set out the economic principles of federalism with some illustrations from existing cases. In section 2, we discuss the assignment of tasks and of sources of revenue to the states and the federal government, focusing on the trade-off between heterogeneity of preferences and efficiency in the provision of public goods and services. We discuss several versions of the "principle of subsidiarity" as a guide to the assignment problem. In section 3, we consider transfers of money and resources between the different levels of government in a federation. In section 4, we discuss the problem of common debt pools. Section 5 draws out some conclusions for a possible federation of Cyprus.

2. Assignment: heterogeneity, efficiency, principles of subsidiarity

2.1. Assignment of competences

The traditional economics of federalism deals with the distribution of competences between the federal government and the states. The objective is to achieve an efficient allocation of resources in the provision of public goods and services. The benchmark is the principle of fiscal equivalence (Musgrave, 1986; Olson, 1969), which says that the geographical incidence of a public policy should coincide with the geographical jurisdiction of the government operating and financing it. This principle rules out welfare-reducing externalities and internalities. In the case of externalities, the costs or the benefits of the policy under consideration spill over to the jurisdictions of other governments, but the government operating it does not take into account the welfare effects of its policy on the citizens of other jurisdictions. Therefore, positive (negative) externalities lead to an undersupply (oversupply) of public goods and services by state governments judged from the point of view of the federation, that is, all citizens. In the case of internalities, the burden of financing the policy falls on citizens who do not benefit from it, while those who benefit pay less than the full cost. Therefore, the latter demand more of the public goods and services than they would otherwise. Classical examples are bridges or highways with locally concentrated benefits paid for by the federal government. Under the equivalence principle, policies which have effects throughout the entire federation should be allocated to the federal level, examples being internal and external security, macroeconomic stabilization and monetary policy, or interstate highways and communication. In contrast, policies whose effects are regionally concentrated should be assigned to the states, examples being regional infrastructure, education or

health. Fiscal equivalence gives preference neither to centralization nor to decentralization. Too much of either one leads to inefficiencies causing a waste of resources and the dissatisfaction of the citizens with the performance of public policies in the federation which may weaken their commitment to forming the federation or keeping it together.[4]

The efficiency principle behind fiscal equivalence requires that public policies respond to the preferences of the citizens of all jurisdictions, so that different jurisdictions can have different levels and qualities of public policies according to the preferences of their citizens. Preference heterogeneity regarding public policies can be the result of different cultural backgrounds, different ethnicities, different religious affiliations or simply different levels of economic development in the states of a federation. In fact, the possibility that state governments choose different levels and qualities of their policies in accordance with their citizens' preferences is an important justification for the decentralization of government and, hence, federalism. According to the *Decentralisation Theorem* (Oates, 1972), the coexistence of multiple state governments, each providing different packages of taxes and public policies tailored to their citizens' preferences, cannot, in the absence of externalities and economies of scale in the provision of public goods and services, deliver worse outcomes than centralized government. However, if state governments have superior information about their citizens' preferences (Qiang and Weingast, 1997) or if citizens can hold local governments accountable more effectively than the central government, decentralized government performs better than centralized government. The *Decentralization Theorem* directly leads to a version of the *Principle of Subsidiarity* which is now also enshrined in the European Union Treaty: In the presence of regionally heterogeneous preferences over public goods and services, public policies should be assigned to the lowest level of government that can deliver them efficiently. Evidently, the more different the preferences of citizens in different states are regarding public goods and services, the fewer are the competences that should be assigned to the federal government.

The Decentralization Theorem can be challenged by the fact that the production of many public goods and services entails substantial economies of scale and scope. If such economies are strong, the federal government can deliver these goods and services at significantly lower cost to the average citizen than the state governments could. Cost efficiency then creates a strong motivation for centralizing public policies

[4] In fact, taking the principle to its logical consequences calls for multiple and overlapping levels of jurisdictions designed in accordance with the geographical incidence of each public policy. See Frey and Eichberger (2001) and the discussion in Prud'homme (1995), pp. 214sq.

in the hands of the federal government. The combination of preference heterogeneity and economies of scale and scope, therefore, results in a tension between the desire to decentralize policies to respond to citizen preferences on the one hand and cost efficiency on the other. The literature on state formation and the optimal size of nations has studied this tension extensively (e.g. Alesina and Spoalore, 1997; Alesina, Spoalore and Warcziarg, 2000; Staal 2010). Centralization of the production of public goods and services requires citizens of different states to compromise on the levels and quality of such goods and services. The resulting utility loss must be compensated by the gains in the utility of consuming private goods due to lower taxes or user fees. Conversely, the advantage to enjoy a level and quality of public services corresponding more closely to citizen preferences must be paid for by higher taxes or user fees resulting from higher unit costs of production. This sharpens the *Principle of Subsidiarity*: In the presence of regionally heterogeneous preferences over public goods and services, public policies should be assigned to state governments unless there are strong economies of scale and scope that justify moving them to the federal level.

How can such a compromise be achieved? We can think of the answer as a bargaining process among the median voters of the states of a federation, where each median voter tries to achieve the best solution for himself. This analogy reveals three points. First, finding a solution that is efficient and acceptable from the point of view of the median voters in all states is important for the stability and the viability of the federation. Joining and staying in the federation must yield a sufficiently large welfare benefits for all median voters. Consider a situation where a state's median voter finds the solution of the assignment problem grossly unsatisfactory, resulting in a welfare loss compared to what the state could achieve independently. By definition, a proposal to leave the federation (or not to join it in the first place) will find a majority among the voters in that state. If the cost of leaving (or not entering) the federation is low, the state will secede or not join, if the median voter finds that the expected level and quality of public goods and services deviate too much from his preferences to compensate for the gains from centralization. Thus, the smaller the overall welfare gains from joining (staying in) a federation, the larger must be the cost of not joining (exit) to make the federation viable. But if a large cost of exit is all that holds a federation together, citizens will feel being coerced into a federation they dislike and support policies that obstruct the operation of the federation. Dysfunctional federations like Bosnia-Herzegovina illustrate the point. As noted by Wheary (1946), substantial degrees of preference heterogeneity are likely to make a federation non-viable unless

there is a strong will on the part of the median voters from all states to form and maintain a federal union for its own sake.[5]

Based on these ideas, Alesina et al. (2000) suggest that federations (and nations) may break up when they become integrated into the global economy. The reason is that global trade integration provides new opportunities for trade and reduces a state's dependence on economic exchange with the other states of the federation. This reduces the cost of leaving for individual states. A similar argument can be made for the effects of the integration of a federation with a large economic union such as the European Union. Forces holding the federation together become weaker, because there are new outside opportunities. This would explain why tendencies to break up federations and unions have gained strength in the past 30 years, witness the break-up of Czechoslovakia, the former Yugoslavia, the former USSR, and the rising separatist forces in Belgium, Spain, and the UK.[6] As Quian and Weingast (2001) point out, a federal government can respond to the decline in exit costs by adopting policies that are more desirable from the point of view of the median voter of the state who is most eager to leave. Therefore, global trade integration or integration into a larger economic union can cause federal governments to make greater efforts to keep the federation together.

Second, our paradigm of bargaining among state median voters suggests that finding a solution acceptable in all parts of the federation will be easier, if many different policy domains are considered in the bargaining process all at the same time. Such bundling facilitates trading advantages and disadvantages of centralization and decentralization across different areas of public policy. The median voter of one state may agree to the centralization of policy X desired by the other median voters, if, by doing so, he obtains the decentralization of policy Y that is of great importance to himself. Therefore, dividing the negotiations into too many small chapters can make it harder to find an overall agreement to form or maintain a federation.

Third, the number of states and their relative size or bargaining power play a crucial role. In a federation of many states of equal size, an individual median voter will most likely find itself in the winning coalition determining the assignment regarding some policies and outside the winning coalition regarding others. No median voter necessarily perceives

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[5] See Kashman (1999) for a discussion of Wheary's argument.

[6] In a version of the same argument, Christou (2015, p. 60) argues that Greek Cypriots in 2004 rejected the Annan Plan, which foresaw the formation of a Cypriot federation which would then join the European Union, because they had the alternative of unilateral accession to the European Union.

itself systematically as a loser in the entire bargaining process. This makes it easier to find an overall solution acceptable to all.

In contrast, if there is a state that dominates the others in bargaining power, its median voter will find itself (almost) always in the winning coalition. Since federal policies will largely reflect the preferences of that median voter, the expected gains from joining the federation are naturally small for him. At the same time, the expected gains for the median voters of the dominated states are also small unless their preferences align well with those of the median voter in the dominant state. This means that, where a dominant state exists and there are significant cultural or ethnic cleavages between this and the dominated states, federations are unlikely to come into or remain in existence unless there are large costs of not joining or exiting for the dominated states.

Similarly, if the number of states is very small, a federation is unlikely to form or remain in existence, because individual median voters are likely to have veto power over the others or there are too many winning coalitions pitting the same winners against the same losers. Under such circumstances, it is likely that those who perceive themselves as systematic losers will be dissatisfied with the federation to the point of wanting to leave it or not to join it. A federation can then only come into being or survive well if citizens have strong preferences for being in union with one another for the sake of the union itself, not for the advantages it promises. Deep ethnic or cultural cleavages between a small number of states pose serious threats to the viability of a federation. Tarlton (1965, p. 875) makes this point thus: "The elements of similarity of the component units of a federal system must, if that system is to function at an optimum level of harmony, predominate over existing elements of diversity." Where this is not the case, federacy, a form of federation between a small number of highly asymmetric states with strong protection of the autonomy of the dominated ones in all affairs except national matters such as foreign policy may be more adequate than traditional forms of federalism (Stevens, 1977).

2.2. Revenue assignment

The assignment of taxes of different types to the different levels of government is called the "tax assignment problem" in fiscal federalism (McLure, 1983). Again, static efficiency considerations are used to tackle this issue. The main point is to avoid distortions in the locational choices of mobile households and firms, which could arise if tax rates differ widely across states. For example, large differences in excise taxes between local jurisdictions could induce consumers to spend resources on inefficient travel to places with low tax rates. Similarly, low business tax rates may

bias investment decisions away from locations where the pre-tax marginal return on capital is maximized.

The mobility of the tax base within a federation poses another challenge to the principle of fiscal equivalence. If tax payers residing in states charging low taxes and delivering low levels and quality of public goods and services can enjoy the benefits of public goods and services in states where they are provided at high levels and quality and where tax rates are high, tax payers have an incentive to move to the former and free-ride on the latter. State governments then find themselves competing against each other for mobile tax payers. The result is a prisoners' dilemma: States wish to keep tax rates low to attract tax payers, but, as all do that, revenues do not suffice to provide public goods and services at the desired levels and quality. In equilibrium, both taxes and the provision of public goods and services are too low throughout the federation. If some tax bases are mobile while others are not, allocative distortions may follow from the tendency to cut tax rates for the former and increase rates for the latter. Again, asymmetries in the relative size of the states and a small number of states can amplify political tensions around such competition, as the small states would feel coerced by the dominating one and it is easy to detect which state is particularly fierce in the competition for mobile tax payers.

Traditional fiscal federalism solves this problem by a assigning taxes on mobile tax bases to the federal government or by tax harmonization across states. This eliminates inefficient tax competition, but it makes the federal government revenue-rich compared to the state governments. This imbalance is then compensated by vertical transfers from the federal to the state governments (Olson 1969, Break 1980). Once this is recognized, economies of scale in the collection and administration of taxes suggest that the most important taxes, those on income and consumption, should be assigned to the federal government leaving taxes on immobile factors like land and houses to the state governments (Spahn, 1988; Prud'homme, 1995). This, however, can make the state governments highly dependent on grants from the former, which is true in most existing federations.

Once again, heterogeneity among the states can work against this solution. Suppose, first, that states are equal in their level of economic development and size of the tax base, but citizens have different preferences regarding public goods and services. Centralized tax collection and administration with harmonized tax rates and equal vertical grants to all states will only lead to an outcome all citizens find acceptable, if their preferences do not differ with regard to the level of public spending. Otherwise, citizens in states demanding relatively low levels of public goods and services will find federal taxes to high, while those with high demands will find that

federal grants are not sufficient to finance their desired levels of public goods.

Next, suppose that citizens in all states have equal preferences regarding public goods and services but states differ in the level of economic development. The federal government can use vertical grants to close any gaps between revenues at the state level and the needs to finance the desired level of public goods provision. Vertical grants then become instruments of redistribution of income from rich to poor states and considerations of equity come into play. We come back to this theme in the next section. Here, we note that states receiving grants to close perceived gaps between financing needs and local tax capacity have incentives to understate their own ability to raise taxes locally in order to obtain larger federal grants. Furthermore, vertical grants reduce the incentive of poorer states to develop their own tax capacity by appropriate economic policies. To avoid such moral hazard problems, the federal government must be able to monitor the economic and tax capacity developments at the state level effectively and to design vertical grants such that they are least open to manipulation, e.g., by requiring co-financing.

Once again, tensions arise between the desire for centralization to benefit from economies of scale and to suppress adverse tax competition on the one hand and the desire for decentralization to make tax policies match the preferences and needs of citizens in each state on the other. Such tensions will be easier to deal with if cross-state differences in preferences and economic development are small and if the number of states in the federation is not too small.

2.3. Welfare programs

Traditional fiscal federalism assigns the responsibility for redistributive policies targeting individual income differences to the central government (Musgrave, 1997). The argument is similar to that about tax competition. When taxpayers are mobile, local governments will compete for rich taxpayers by offering them low tax rates and low welfare benefits; meanwhile, poor individuals will move to jurisdictions offering generous welfare programs and charging higher taxes to finance them. As a result, rich and poor individuals will tend to cluster in different jurisdictions, which implies that there is little scope for redistribution at the local level. Therefore, decentralization of redistributive policies would lead to too little income redistribution and too much inequality in the federation. Such adverse competition, however, can be avoided. In Switzerland, for example, large parts of welfare policy are run by local and state (canton) governments, which are responsible for the welfare of all individuals born within their territories regardless of where they live later on. In the US,

unemployment insurance and supporting poor people are state programs. In Brazil, local and state governments account for a little over 40 percent of public spending on social services (Souza, 2002). As mentioned above, the US went through a process of devolution of welfare policy from the federal government to the states during the 1980s and 1990s. In Germany, cities have assumed more responsibilities in this area in the past 20 years.

Decentralized welfare policy is thus feasible and there are strong reasons to assign it to the states rather than the federal government especially in large federations and those where there are strong cultural or ethnic cleavages between states. To the extent that relatively rich citizens dislike poverty in their immediate neighborhoods, economic support for the poor has the character of a local public good and, by the principle of fiscal equivalence, should fall under the competence of the states for efficiency reasons (Pauly, 1973).[7] Alternatively, one can regard welfare policy as an expression of the solidarity the members of a community owe each other. Welfare policy, therefore, should be assigned to the level of government where such solidarity can be assumed among the population. In the presence of strong ethnic or cultural cleavages between states, this is more likely to be the case at the state level than at the federal level. In such situations, it is possible that assigning welfare policies to the federal level results in too little redistribution because the states, through their participation in federal legislation oppose more extensive welfare programs fearing that they benefit the members of other communities more than the poor within their own. Finally, welfare policies are subject to severe moral hazard problems, which are easier to tolerate and to control at the local and state level where there is a stronger sense of belonging to a community than at the federal level.

2.4. Shared responsibilities

The tension between preference heterogeneity and efficiency in the production of public goods and services arises from the assumption that the federal government can only deliver a uniform provision of public goods and services throughout the federation. Shared responsibilities provide a better way to deal with this tension. Prud'homme (1995) argues that the real problem of federalism in practice is not to assign individual policies to either the federal or the state governments but to find frameworks within which the two cooperate effectively and efficiently in the provision of public goods and services. Shah (2007, p. 6) finds that the federal government strongly influences state policies in Australia,

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[7] Following this logic, critics of unemployment support in Germany demand a stronger role of city governments in the administration of these programs. See e.g. Berthold (2002).

Germany, India, Malaysia, Mexico and Pakistan, moderately in Nigeria and the US, and weakly in Brazil, Canada and Switzerland.

Classical welfare economics suggest that cross-state externalities can be addressed by Pigovian taxes on and subsidies of the activities of the state governments imposed by the central government. By paying conditional, per-unit grants to state governments subsidizing the cost of public goods generating positive externalities, or by imposing financial charges on public goods generating negative externalities, the central government can change the marginal costs of the relevant policies faced by the state governments and induce them to provide the levels of public goods that maximize social welfare at the national level. The provision of the relevant public goods then remains a task of the local governments subject to financial incentives set by the central government. The advantage is that such arrangements preserve the responsiveness of public policies to local preferences and conditions and yet correct for externalities. Since the geographical design of local and regional jurisdictions is more often the result of historical developments than of deliberate planning exercises, shared responsibilities should in practice be the norm rather than the exception.

However, the efficient use of Pigovian taxes and subsidies requires the verifiability of local preferences and conditions. When local governments can misrepresent costs, preferences, and the size of the relevant spillovers, Pigovian taxes and subsidies can distort choices at the local level and create more inefficiency rather than less.

Alternatively, shared responsibilities can take the form of federal government programs providing certain public goods in parallel with state governments or of federal mandates. In the former case, the central government provides a uniform level of a public good to all local jurisdictions, allowing states to provide additional levels financed out of local taxes if they wish to do so. Under a federal mandate, the central government requires state governments to produce a minimum level of a certain public good, leaving it to their choice to provide more of it. In both cases, the federal government can achieve a better position in the trade-off between welfare gains from centralization and losses from uniform central services by setting a minimum standard or providing a level of the public good lower than it would do if it were the sole provider. While the central government policy alleviates the externality problem in these cases, the possibility of additional, local production of the public good reduces the cost of uniformity.

To conclude, we have a further refinement of the principle of subsidiarity: *Where externalities and preference heterogeneity are important, shared*

responsibilities leaving the primary competence for a public policy with the local government and giving the central government the authority to intervene can be used to find a better position in the trade-off between the welfare gains and losses from centralization.

The dark side of shared responsibilities is that they create ambiguities as to which government is responsible for which policy and, therefore, weaken political accountability (Rodden, 2007). State governments can blame the federal government for unsatisfactory performance and vice versa. At the same time, policies implemented under shared responsibilities become the subject of complicated negotiations between the federal and the state governments. Germany's experience with shared responsibilities shows that this makes it very difficult to agree on any policy reform (Feld and von Hagen, 2007).

2.5. Rent-extraction: government as leviathan

Political economy in the public-choice tradition emphasizes that politicians pursue their own interests and seek to maximize the rents they can extract from being in office. It views government as a *Leviathan* and federalism as a way to constrain the monster's discretionary powers (Brennan and Buchanan, 1977). Competition among governments leads to lower levels of taxation and government expenditures and forces politicians to deliver policies in line with voters' preferences. Hirschman (1970) argues that the mobility of citizens within a federation gives them opportunities for *exit* – moving themselves and/or their assets to places where *Leviathan* is less oppressive. This makes decentralized government beneficial even in the presence of homogeneous preferences of public policies and even in the presence of large economies of scale in the provision of public goods and services. From this perspective, tax harmonization and vertical grants are noxious forms of collusion among self-serving state politicians preserving their powers to extract rents.

This positive view of competition among state governments leads to the version of the principle of subsidiarity we find in the Treaty on European Union: Policies should be delegated to the lowest level of government unless it is proven that this level cannot deliver satisfactory outcomes. It is then not sufficient to prove that a policy cannot be delivered efficiently by the lower level of government to justify assigning it to a higher level. *Satisfactory* is a much weaker criterion than efficiency and it takes into account explicitly the voters' satisfaction with the outcome. This version of the principle recognizes that there is a trade-off between efficiency in the

provision of public goods and services on the one hand and the benefits from exposing self-serving governments to competition on the other.[8]

However, the claim that competition among governments improves the efficiency of the public sector is not uncontroversial. Oates and Schwab (1988) show that such competition can yield efficient outcomes, if consumer preferences are relatively homogeneous and state governments have access to efficient tax instruments. Otherwise, it can result in sizeable welfare losses. The literature on this topic typically assumes that competition operates in an environment where all jurisdictions are small and act like price takers and no potential taxpayer has any market power. Imperfect competition among states is less well understood. Practical experience suggests that it can lead to inefficient outcomes, e.g., when a large potential taxpayer such as a multinational company shops around state governments for infrastructure investments as a precondition for building a new production site. As all states deliver such investments but only one obtains the production site, the others are left with wasteful, unused infrastructure. Some collusion among states assuring that no government invests resources before locational decisions have been made can improve the outcome.[9]

Finally, there remains the problem of taming the *Leviathan* at the level of the federation. This leads to another dilemma in the design of a federation (de Figueiredo and Weingast, 2005). On the one hand, a strong federal government is desirable to regulate the competition among the state governments and discipline their behavior and to assure that no state free-rides on the public goods and services provided by the federation. On the other hand, the more powerful is the federal government, the greater is its ability to conduct policies in its own interests and extract rents from the states. De Figueiredo and Weingast suggest that the cost of exiting the

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[8] The Leviathan view stands in obvious contrast to the argument on tax competition referred to above, which holds that competition among governments may be harmful in the presence of a mobile tax base. Oates and Schwab (1988) consider this tension in a model where local governments compete for job-creating mobile capital in two dimensions, capital income taxes and environmental standards. Oates and Schwab show that interjurisdictional competition yields efficient solutions, if consumer preferences are relatively homogeneous and local governments have access to efficient tax instruments, such as head taxes. Otherwise, competition can result in sizeable welfare losses.

[9] Sinn (1997, 1999) challenges the very idea of useful competition among Leviathans. He argues that government interventions in the economy respond to market failures due to increasing returns to scale or problems of asymmetric information. If so, competition among governments cannot replace competition among private suppliers without leading to the same problems of market failure. Sinn (1997: 270) summarizes succinctly: “Competition is bad, when government intervention is good.” This limits the usefulness of competition among governments to areas where government interventions are not essential from an economic point of view.

federation is the main disciplinary force at the federal level. The more costly it is for states to exit, the larger the rents politicians at the federal level can extract from the states.

2.6. Market-preserving federalism

Pursuing these lines of thought further, Weingast (1995) and MacKinnon (1997) introduce the concept of *market preserving federalism*. According to Weingast (1995,1), every economic system faces a fundamental political dilemma: "A government strong enough to protect property rights and enforce contracts is also strong enough to confiscate the wealth of its citizens. Thriving markets require not only the appropriate system of property rights and a law of contracts, but a secure political foundation that limits the ability of the state to confiscate wealth." Weingast argues that federalism, combining strong state government with a federal government that is able to effectively enforce free markets and free mobility of goods, services, labor and capital throughout the federation, offers a solution to this dilemma. State governments have strong incentives to protect their markets and producers against competition from other states. Free markets spanning state borders and free mobility across states especially of labor cannot, therefore, be taken for granted. In the US, for example, professionals are subject to state licensing requirements that make moving from one to another state costly. The US Federal Department of Commerce was created to ensure free trade among the states, but, even so, differences in health, product, and tax regulations between states create barriers for free competition.

Under m*arket-preserving federalism,* regulatory and economic development policies are assigned to the states. This limits the federal government's power to confiscate wealth. State governments cannot print money nor can they obtain bailouts for excessive debts from the federation. This, together with their limited tax resources, limits their ability to borrow in the capital markets in their own right. The federal government enforces the common market throughout the federation. Note that this is not without contradictions: Differences in product regulations for example can be viewed as barriers to interstate trade, which would suggest assigning the responsibility for such regulation to the federal government. In the US, the federal government became increasingly involved in this area during the 1990s as it tried to assure uniform conditions in all states to intensify business competition.[10] This contradiction can be avoided if the federal

[10] Nathan and Gais (2001). A similar tendency exists in the EU and the resulting, perceived encroachment of national sovereignty is the main driver of the demands for leaving the EU in Britain.

government enforces a policy of mutual recognition of regulations among the states instead of issuing uniform regulations for all states.

This framework assures that state governments are responsible for their own actions and policies. Furthermore, their ability to bail out failed projects, businesses, or public policies is very limited. This contributes to strengthening market incentives and discipline, as individual agents are punished for bad behavior and have strong incentives to avoid mistakes (Qiang and Weingast, 1997). State governments compete intensely with one another for mobile tax payers by offering them bundles of taxes and public goods and services. This limits their ability to confiscate their citizens' wealth and forces them to conduct policies that match the demands of their citizens. Interstate competition does not exclude interstate cooperation to provide some public goods and services to account for cross-state externalities and economies of scale. Only public goods with externalities in the entire federation, such as military defense should be assigned to the federal government.

2.7. Dynamic assignment

De Figuereiro and Weingast (2005) argue that every federation is exposed to a dilemma: On the one hand, the federal government must be prevented from growing too powerful. Too powerful a federal government would "overawe" the states and enable federal politicians to extract excessive rents from being in office. The states, feeling increasingly constrained by federal powers and seeing the advantages from being in the federation disappear, would eventually leave the federation. Too much power vested with the federal government may thus destroy the federation. On the other hand, the states must not be allowed to free-ride on federal policies and form "economic dukedoms" or engage in other, uncooperative behavior that would also lead to the disintegration of the federation. This means that the federal government must be powerful enough to discipline the states. The stability of the federation therefore requires a delicate balance of power between the federal government and the states. De Figuereiro and Weingast show that this balance depends on the gains the states expect from being in the federation and on the cost of exiting from it.

Even if such a balance has been achieved at the creation of a federation, one cannot rely on it being stable over time. Political forces at work within federations are likely to push for changes in the assignment and the relative power of the federal government. On the one hand, politicians at the federal level will want to increase the responsibilities and the resources of the federal government to extract more rents from being in office. On the other hand, politicians at the state level have incentives to transfer competences to the federal government hoping to be relieved of the need

to finance these policies from state taxes and to be no longer accountable to local voters for them.[11] The experience of the German federation since the 1950s has been that the federal government has assumed more and more competences with the result that the balance of power has shifted more and more in its favor. Education policy, the last bastion of state sovereignty in Germany recently fell when the federal government offered the states permanent financing of their universities which have been chronically underfinanced. At the same time, responding to increasing pressures for more budgetary discipline from the European Union, the federal government has shifted the responsibility for large parts of welfare policy to the local (sub-state) level without transferring the necessary funds with it. In the US, the role of the federal government has increased greatly over time, a process that was mainly driven by rulings of the Supreme Court (Tarlton, 1965). More recently, conservative politicians have used the devolution of welfare policies from the federal to state governments as a way to curtail the overall size of the welfare state.

Furthermore, circumstances may change over time and require a change in the balance of power between the federal government and the states and in the assignment of competences. For example, regulatory policies may become the subject of international trade negotiations and must, therefore, be assigned at least partially to the federal government. As noted above, declining exist costs for states due to increasing integration into the global economy may motivate the federal government to transfer responsibilities to state governments allowing them to conduct policies according to the preferences of their own citizens.

In addition to the static assignment of tasks and revenues to the states and the federal government, therefore, the design of a federation must answer the question, who has the right to change the assignment of competences over time? At the time of designing the federation, state representatives (median voters) recognize that the preferences of the median voter in the federal electorate will not necessarily align well with the preferences of the median state representatives. This gives the state representatives a strong incentive to enshrine the initial assignment of competences in the federal constitution such that they cannot be changed without the consent of the states.[12] As a result, reforms of federalism are hard to achieve and often the result of logrolls between the federal government and individual states

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[11] Both arguments are version of what classical public finance called Popitz' Law of the Attraction of the Higher-Level Budget.

[12] Bahcheli and Noel (2015, p. 45) point out that this desire was strongly reflected in the Annan Plan, the UN proposal for a federation in Cyprus. Specifically, the plan did not allow for any changes in the structure of government and required majorities in both constituent states to amend other elements of the constitution.

which do not necessarily produce efficient outcomes. In Germany, for example, attempts to reform the federal system have been the result of complicated bargains between the federal and the states and they have favored the move of more and more responsibilities to the central level over time. To prevent this from happening, a procedural assignment rule could give citizens at the state level strong veto powers against attempts to move competences from the state governments to the federal government. The downside of such a rule is that it makes it hard to react to changing circumstances and this, in turn, will come at the cost of lower efficiency in the provision of public goods and services.

3. Transfers

3.1. Equalization

Differences in the tax capacity of the states in a federation can cause horizontal imbalances where some states are unable to finance the level of public spending required to deliver the public goods and services they are obliged to. For example, the Canadian constitution guarantees all citizens the same level and quality of public goods and services regardless of where they live. In Germany, a similar mandate is derived from the constitutional mandate that all citizens should enjoy the same standards of living. In both federations, some states do not raise enough own taxes to fulfill these mandates. Such mandates presuppose that the citizens of all states regard each other as members of the same community (Buchanan, 1950).[13]

In Canada, unconditional vertical transfers from the federal government called "equalization payments" serve to close any gaps between state tax capacity and needs. Equalization divides the provinces into a group of "have-nots" that permanently receive transfers, "haves" that never receive transfers and implicitly finance the "have-nots," and intermediate provinces The debate in Canada over equalization payments and the frequent changes in the laws implementing them show that even there, a feeling of belonging together cannot be taken for granted. Richer provinces frequently complain that they are being shortchanged by the "have-nots" and that cheating and data manipulation leads to distorted payments. In Germany, closing the gap between tax capacity and needs is achieved by a

[13] In Germany, the mandate to maintain uniform living conditions for all citizens of the Federal Republic is regarded as the constitutional basis for equalisation among the states. For Canada, the Rowell-Sirois Commission in the 1940s first argued explicitly that equalisation was an important part of national solidarity and nation building (Cumming, 1986).

combination of horizontal tax revenue sharing among the states and unconditional vertical transfers from the federal government. Before German unification in 1990, the legal rules were changed several times, each time resulting in more equality of tax revenues per capita among the states. Since then, only two states, Bavaria and Hesse, are left as significant net contributors to the system of horizontal revenue sharing, which has become the subject of legal and political conflicts and calls for federalism reform. At the same time, federal supplementary transfers have increased by a factor of five in per-capita terms, but they reduce the degree of equality among the states.

3.2. Vertical dependence and vertical transfers

The assignment of the most important taxes to the federal level in most existing federations leads to a significant degree of vertical imbalance. State governments are unable to raise sufficient revenues from their own taxes to finance their activities, while federal governments raise more revenues than they need to finance the activities they have been assigned. This imbalance is compensated by vertical transfers paid from the central government to the states.

Vertical transfers can be unconditional or conditional on the state governments undertaking certain activities defined by the federal government. Conditional vertical transfers can be used to give state governments the incentive to implement public policies falling under their competence but applying rules and standards set by the federal government. For example, conditional grants targeting state welfare policies can be used to increase the scope for redistribution of incomes and reduce inequality throughout the federation while leaving the principal responsibility for welfare policies with the states. Federal grants for state school and hospital programs can lead to greater harmonization of education and health policies while leaving these areas under the responsibility of the states.

Vertical transfers, however, are subject to abuse by both the federal and state governments. Federal governments in Latin America for example have used vertical grants to discipline and punish states pursuing policies conflicting with the political preferences of the federal government. In the US, federal funds for health and education programs are today seen as instruments to force states to follows undesired federal political agendas such as gender politics. State governments have incentives to overstate their financial needs to meet federal targets and standards and extract excessive rents from the federal government that way. To what extent state governments simply replace resources they would have spent on the

targeted policies anyway by federal grants remains a subject of a large empirical literature.

Once again, numbers are important. The smaller the number of states in a federation, the more likely vertical transfers and revenue sharing will lead to a perception that some states systematically benefit and others systematically lose from redistributive arrangements. The more that is the case, the more important it is that the states are relatively homogeneous in economic development and prosperity and that citizens regard each other as belonging to the same community. Strong cultural, ethnic and economic cleavages work against the stability of a federation with large vertical transfers and revenue sharing.

3.3. Soft budget constraints

Soft budget constraints prevail in a federal system, when local governments are able to obtain more vertical grants to finance local expenditures ex post than ex ante, i.e., to spend more money than originally foreseen when local and federal budget decisions were made. An important context in which soft budget constraints arise is when central governments bail out over-indebted local governments. When bailouts can be anticipated, they create similar incentive problems as budgeted vertical transfers. Local governments borrow excessively to finance additional spending; when they eventually find themselves unable to service their debts, the central government or central bank intervenes and comes forward with the necessary funds.

A necessary condition for soft budget constraints is the central government's willingness to grant bailouts. There are several important challenges to the credibility of a no-bailout commitment by the central government. If local governments are allowed to default on their debts, ripple effects can be transmitted through the financial system and the entire country may face an increase in its risk premium due to the reputational damage. Important recent examples for this are Argentina and Brazil, whose debt problems in the 1980s and financial crises in the late 1990s and in 2001-2 are largely due to excess borrowing at the level of provincial governments (Aizenman, 1998). Sharp fiscal adjustments may force local governments to cut spending on health, home security, and education, which can have significant negative spillovers to other jurisdictions. Given the cost of letting local governments default, central governments may find granting bailouts more attractive than denying them, even if they were determined to enforce hard budget constraints ex ante, a classical problem of "time inconsistency" (Kydland and Prescott, 1977). Even if the central government is unwilling to grant bailouts, it may be forced to do so by a legal mandate. An example is Germany, where the

Constitutional Court ruled in the early 1990s, that the federation must grant state governments the resources to fulfill the tasks assigned to them by the federal constitution. In practice soft budget constraints are a significant problem in many federations, including Argentina, Brazil, India, Mexico, Australia, and Germany.

The idea that large jurisdictions are “too big to fail” is a popular one closely connected to the bailout issue. Wildasin (1997) develops a model of “too big to fail” based on the notion that negative externalities from local government default are proportional to the size of the jurisdiction. Thus, the cost of denying a bailout increases in the size of the jurisdiction and large states or regions are more likely to obtain bailouts. However, empirical evidence for OECD (Australia, Germany, Italy, and Sweden) and several Latin American countries lends little support to this notion (von Hagen, 2000). In fact, bailouts are typically granted first to small states or regions. An example is Germany, where the federal government bailed out two of the smallest states in the early 1990s. Political considerations and the perception that the immediate cost of bailing out small jurisdictions is small may explain that observation; the long-run cost, taking into consideration the adverse incentive effects of bailouts on the fiscal discipline of other small states, however can be devastating. An example is the repeated rounds of bailouts in Brazil that were triggered each time by small states. In federalism, the principle is that a state may be “too small to fail.”

Furthermore, bailouts often follow an increase in unfunded central government mandates or shifts of fiscal responsibilities from the center to the state governments that are not matched by increases in vertical transfers. In such scenarios, bailouts may reflect state governments’ unwillingness to assume the responsibilities put on them by the center and to use local tax resources to fund them.

In order to enforce hard budget constraints at the state level, many existing federations subject state governments to ceilings on borrowing or debt. Such ceilings pose complex issues in practice. Empirical evidence suggests that borrowing constraints invite creative accounting and borrowing through off-budget entities, local financial institutions, or payment arrears with the private sector, allowing local governments to incur large financial liabilities nevertheless.[14] As the example of the EU suggests, debt and

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[14] For example, Italian local governments, whose tax basis was thin in the 1980s and which were subject to a complete ban on borrowing nevertheless managed to incur large debts through payment arrears. These arrears were then presented ex post to the central government with the threat of closing hospitals and schools unless a bailout was provided. Italian local governments thus contributed significantly to the expansion of national debt in the 1980s (Bordignon, 2000). For evidence on US states see von Hagen (1992).

deficit ceilings, therefore, must be combined with enforcing transparent accounting rules. By relying on numerical limits on deficits and debts, debt and deficit ceilings also constrain the ability of local governments to react to negative fiscal shocks and, therefore, to contribute to macroeconomic stabilization (Poterba, 1994). Where local government is relatively large, the resulting macro economic costs can be significant.

Vertical imbalance is again important in this context (von Hagen and Eichengreen, 1996). The larger the share of local governments spending financed by own taxes, the more a local government in financial distress can be expected to make the necessary adjustments itself and raise additional taxes. In contrast, where local governments almost entirely depend on federal grants, denying bailouts is hardly credible, as the required adjustment can only come by cutting important local public services. Von Hagen and Eichengreen (1996), show that the empirical incidence of borrowing constraints is more likely in countries with greater vertical imbalance. This suggests that reducing vertical imbalance is an important element in assuring hard budget constraints at the local level.

3.4. Federalism as insurance

Federal systems can be interpreted as arrangements for sharing idiosyncratic risks among states.[15] States enjoying positive idiosyncratic shocks pay transfers to regions suffering from negative idiosyncratic shocks. Such transfers could be paid to individuals or exchanged among the regional governments. In the first case, the federal arrangement provides individual consumption smoothing. In the second case, the federal arrangement insures regional government budgets against exogenous fluctuations, and this serves indirectly to smooth individual consumption and taxes. There is now a large literature on risk sharing in federal systems showing that fiscal mechanisms in existing federations smooth a significant part of idiosyncratic shocks at the level of provinces or states.[16] Risk-sharing can be provided vertically, i.e., through the budget of the federal government or a federal unemployment insurance program, or horizontally through fiscal equalization. The US is a prime example for the former, while Germany is a prime example for the latter.

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[15] For example see Persson and Tabellini (1996a,b) , von Hagen (2000), Bayoumi and Masson (1995).

[16] For the US, estimates indicate that the federal fiscal system smooths between 10 and 15 percent of idiosynchratic shocks. Similar magnitudes are found for Canada. The German federal fiscal system, in contrast, provides very little smoothing of individual incomes, but almost complete insurance of state budgets against idiosynchratic shocks. See Hepp and von Hagen (2012) for an overview.

In our context, risk sharing arrangements are relevant for two reasons. The first issue is whether risk sharing should be a federal program or a program of the states. Under federal programs, transfers to households target the difference between average income at the federal level and actual individual incomes, while transfers to households under state programs target differences between actual individual and state average incomes. If average incomes or the exposure to idiosyncratic shocks differ significantly across states, federal risk sharing arrangements result in a mix of insurance and permanent income redistribution. Persson and Tabellini (1996a) show that federal programs tend to oversupply, while horizontal programs tend to undersupply insurance under such circumstances. While the median voter at the federal level may vote for a federal insurance scheme, median voters in the richer states will oppose them. Therefore, where or not a federal scheme is politically viable depends on whether the scheme is voted on at the federal or the state level.

The second issue relates to moral hazard problems. Persson and Tabellini (1996b) assume that regional governments can invest in projects that reduce their exposure to adverse idiosyncratic shocks. As usual in an insurance context, the prospect of receiving transfers when bad shocks occur reduces the incentive to invest in such projects. Migué (1993) observes more generally, that risk sharing arrangements in federations reduce the incentives for regional governments to conduct economic policies aiming at strong economic development. In the German debate about fiscal equalization, it is often pointed out that states which are likely to be net contributors to the system have very low returns on projects increasing tax revenues. Persson and Tabellini (1996b) show that these moral hazard problems strengthen the case for assigning the responsibility for risk sharing arrangements to the central government. The latter can pay investment subsidies to the regional governments to mitigate the moral hazard problems. Thus, there is a strategic complementarity between risk sharing and federal investment (subsidy) programs justifying federal government engagements in the latter type of policy.

Once again, numbers and symmetry matter. The scope for insurance against asymmetric shocks depends on the correlation between transitory shocks to the state economies. The greater that correlation, the less use there is for insurance. Furthermore, if there is a dominant state and a few small states, insurance at the state level is hampered by the fact that the small states will be unable to provide the funds required to compensate the large state for a negative asymmetric shock. In that case insurance would have to operate at the federal level, target individuals rather than states and require the possibility of borrowing when the dominant economy is

hit by a large negative shock. This would, however, be largely equivalent to income smoothing by state government borrowing.

4. Common debt pools

Federations provide opportunities for coordinated borrowing in the capital markets and debt management of the states and the federal government. Such coordination has the advantage of creating larger and, therefore more liquid bond markets and of avoiding competition among the states especially in foreign capital markets that may lead to less favorable borrowing conditions. We distinguish three types of arrangements: a federation with fiscal autonomy of the states, a federation with a fiscal union, and a federation with a debt union.

The US is a prime example of a federation with fiscal autonomy.[17] States have the right to borrow in their own right and with no restrictions imposed by the federation.[18] States are solely responsible for their own debts, having no expectation to receive a bailout in the case of a fiscal crisis. The principle that the federal government will not bail out over-indebted states was firmly established in the state debt crises of the 1830s and 1840s, when several states defaulted on their bonds and received no help from the federal government.[19] In his inaugural address on March 4, 1845, the 11th president of the US, James Polk, made the point succinctly: „The government of the Union is neither in a legal nor in a moral sense bound for the debts of the states, and it would be a violation of our compact of union to assume them…".[20] More recent experiences with debt crises e.g. in California have affirmed the principle. At the same time, the federal government is free to borrow in its own right, too.[21]

If fiscal autonomy is strictly enforced, the extent to which states can borrow is limited by their tax capacity, which depends to a large extent on the mobility of the tax base. Since states have no command over monetary policy, they cannot monetize excessive debts. This puts a further limit on their ability to raise debt. As a result, state debt-to-GDP ratios in the US are

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[17] Another example for a federation with fiscal autonomy is Switzerland; see Feld and Kirchgässner (1999).

[18] Most states in the US do have self-imposed borrowing restraints. See e.g. von Hagen (1992).

[19] Note, however, that in the crisis following the collapse of Lehman Brothers, the US Federal Government did not resist the temptation to bail out the US automotive industry which is regionally concentrated in the Midwestern states of Michigan, Ohio, and Indiana.

[20] http://www.bartleby.com/124/pres27.html.

[21] For a review of the US history see Rodden (2006).

typically small, ranging between two and 25 percent in 2015.[22] Markets judge the quality of each state as a borrower clearly on the grounds of its own financial and economic conditions such that interest rates paid on state debt can vary substantially. In 2014, for example, ratings of full-faith-and-credit bonds issued by state governments varied between A- and AAA.[23] In principle, market discipline works to reward fiscal prudence and punish fiscal laxity of state governments. Beyond the strict commitment not to bail out states with excessive debts, a federation with fiscal autonomy needs no rules nor limits on state financial operations. Each state is free to conduct the fiscal policy it likes best.

In a federation with a fiscal union, states are not allowed to borrow in their own right. Instead, the federal government borrows on their behalf and allocates the proceeds to the states. This requires a mechanism to determine and coordinate the borrowing needs of the states. Australia under the Financial Agreement of 1927, which became part of the Australian constitution in 1928, was an example of a fiscal union. The Commonwealth managed and took over provincial debts. The provinces were not allowed to borrow at all. Annual borrowing volumes and their apportionment were decided by the Australian Loan Council, which consisted of the prime ministers of the provincial and the Commonwealth governments and the Commonwealth treasurer. Voting rules on the Council assured the Commonwealth a dominant position in all decisions.

Over time, the Loan Council increasingly became an institution by which the Commonwealth government exerted control over state finances and managed the fiscal stance of the Australian economy. During the 1950s and 1960s in particular, the states repeatedly had to accept borrowing allocations smaller than their desired amount of borrowing. The Commonwealth's dominant role was strengthened by its near monopoly of the power to tax goods, consumption, and income. Under the Loan Council arrangement, the states effectively renounced their fiscal powers for the benefit of the Commonwealth guaranteeing their debts. However, the Commonwealth paid little attention to the states' individual financial needs in the allocation of funds. Instead, the Commonwealth used the loan allocations to the states for its own macroeconomic management. The resulting conflict between the states' interest in cheap borrowing and their interest in pursuing their own fiscal and development policies eventually lead to the deterioration of the Loan Council Agreement. Gradually, the ban on provincial borrowing was loosened and finally, in the early 1990s it was given up altogether. Today, the Australia is again a federation with

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[22] http://www.usgovernmentspending.com/state_debt_rank.

[23] https://ballotpedia.org/State_credit_ratings.

fiscal autonomy of the states and the Loan Council merely serves to coordinate the borrowing of the provinces and the Commonwealth.

The Australian example illustrates the difficulties of operating a fiscal union. On the one hand, a fiscal union gives the federal government a dominant position over the states in financial matters. In order to secure the sustainability of its borrowing, the federal government must have a sufficiently large tax base and, therefore be assigned ownership of the most important taxes. This, in turn, will make the states increasingly dependent on vertical grants. Furthermore, the federal government can abuse this dominant position by pursuing fiscal policies that serve its own interest rather than the states'. On the other hand, the fiscal union requires the strict enforcement namely of a complete ban on state borrowing. In practice, however, state governments have a multitude of ways to circumvent that ban, ranging from payment arrears to borrowing through state-owned enterprises, banks, and other semi-governmental institutions outside the formal budget process. To preserve the integrity of the fiscal union, the federal government therefore must be able to monitor and control the complete universe of state financial operations closely. Such tight control can easily be perceived as putting the states into a fiscal straightjacket. It contradicts the very spirit of federalism which is to give the states substantial autonomy to determine their own fate. In essence, states in a fiscal union trade the advantage of better borrowing conditions, which the federal government can obtain for them, for the freedom to conduct their own policies as they see fit.

In a federation with a debt union, finally, states are allowed to borrow in their own right, but the federal government is liable for their debts through explicit or implicit guarantees. This is the case in Germany, for example, where a 1992 Constitutional Court ruling established the principle that the federation owes individual states the solidarity of supporting them in the financial stress coming from excessive debt. That ruling was triggered by the near default of two state governments, Saarland and Bremen and forced the federal government to bail them out. Both states had to underwrite fiscal adjustment programs, which, however, did not lead to a reduction of state debt.[24] In 2014, Bremen's debt amounted to 398.3 percent of its revenues; Saarland's debt was 351.8 percent of its revenues (Kaiser, 2016). In the early 2000s, the state of Berlin also demanded a federal bailout because of its excessive state debt. In its ruling on that case the Constitutional Court did not deny that the federation owes the state solidarity in financial distress, but it argued that Berlin still had significant assets that it could sell to reduce the debt burden. Berlin's public debt

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[24] For an account of these bailouts see Bordignon et al. (2000) and Seitz (2000).

stood at 232.4 percent of its revenues in 2014 (Kaiser, 2016). Since the country has no effective rules nor mechanisms to deal with over-indebted states other than federal bailouts, there is a real risk that state debt will continue to grow and eventually become federal debt. This is a significant source of fiscal instability in Germany.[25]

The federal guarantee for state debts is most clearly visible in the fact that states pay the same interest rate on their debts as the federal government, indicating that the state and federal debt are perfect substitutes from the investors' point of view. On this criterion, Schuknecht et al show that Spain is a debt union, too, while Canada is a partial debt union in the sense that the provinces that are permanently dependent on grants under Canada's tax equalization also pay the same interest rates as the federal government.[26] In a debt union, therefore, market discipline cannot work and states are neither rewarded for fiscal prudency nor punished for fiscal laxity.

The debt union creates a classical fiscal common pool problem, giving state governments access to the tax revenues raised in other states without facing the political costs of taxation and without being held accountable to the consequences of excessive borrowing. State governments are enticed to borrow more than they would otherwise. This incentive is particularly strong for small member states, who feel the common pool externality less than large states and anticipate that large states will always want to protect the credibility of the common debt from being damaged by the default of a small state. In view of this adverse incentive problem, a debt union, like a fiscal union, has a vital interest in tightly controlling the states' financial operations to assure that each state maintains the sustainability of its public finances. It will, therefore, create a host of budgetary rules much tighter than the fiscal union and a machinery of fiscal plans and programs, ambitious fiscal targets and detailed norms to identify situations where member states have unsustainable public finances. In doing so, the debt union constrains the states' space for short-term fiscal policy much more than a fiscal union.

The tragedy of the debt union is that, in contrast to a fiscal union, the federal government lacks the monitoring and coercive powers to keep the states from borrowing excessively. The idea that the federal government controls the states' fiscal policies remains an illusion. Historical experience shows that debt unions end up with repeated episodes of excessive state

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[25] Kaiser (2016) cites a group of OECD experts coming to the same conclusion. See Bevilaqua (1999) and Rodden (2006) for accounts of the Brazilian debt union.

[26] The Canadian provinces that do not receive equalization grants, in contrast, are treated by capital markets based on their own fiscal performance.

debts and bailouts. A debt union is not a sustainable arrangement. In the end, all federations face the choice between fiscal autonomy, the freedom to conduct fiscal policies according to state needs and preferences and the responsibility for it, and fiscal union, where the price for better borrowing conditions for the states is that their fiscal policies are controlled by the federal government.

Finally, all federations must provide the federal government with sufficiently strong own tax resources to serve its financial liabilities. Germany in the years after World-War I is an example of what happens otherwise. The new German government was burdened with the financial consequences of the war, but it was not vested with the tax resources it needed to fulfill its obligations. The government, therefore, turned to the printing press and created what became a hyperinflation. Where federal governments do not have access to monetary policy, as in a monetary union, severe imbalances between the federal government's financial obligations and its tax resources will sooner or later lead to a federal debt crisis with damaging consequences for the state economies.

Again, asymmetries matter. Large and dominant states in a federation have an interest in opting either for fiscal autonomy with a federal government whose tax resources suffice to fulfill the tasks it has been assigned, or a fiscal union with a financially strong federal government. Small states, in contrast, have an interest in opting for a debt union, since they can expect to be bailed out by the federal government or the federation when they have piled up excessive debts.

5. Conclusions and perspectives for Cyprus

The design and formation of a federation raises important questions to which existing federations have found very different answers. Political economy suggests that an efficient solution of the assignment problem both in public policies and in government revenues is important to make a federation viable and stable, to maintain a balance of power between the central government and the states, and to overcome the dilemma between the wish to preserve a strong government and a competitive market system at the same time. Political economy and practical experience suggests that transfers between the federal government and the state governments meant to address discrepancies in tax capacities among the states often become the object of politically motivated manipulation and, therefore, sources of conflict. Avoiding such conflicts demands a high degree of transparency. Horizontal transfers among states of different tax capacity may be preferable because of their larger degree of transparency. With regard to the sustainability of public finances, only federations with

full fiscal autonomy of the states and full fiscal unions where the states have no borrowing autonomy are viable. Debt unions end up with unsustainable debt burdens. Federations in which some states are highly and systematically dependent on transfers from the central government are likely to end up as debt unions. Finally, an important part of the design problem is to find an efficient way of changing the federal constitution, one that avoids the tendency for excessive centralism and yet allows for responding to changing circumstances in adequate ways.

The discussion above has shown that the number of states, preference heterogeneity, and asymmetries in the levels of income and state of economic development are important determinants of the viability and stability of a federation. Large degrees of preference heterogeneity, driven e.g. by different ethnic and cultural backgrounds of the populations of different states make a federation difficult to form and maintain. In the presence of a large degree of preference heterogeneity, forming and maintaining a federation becomes the more difficult, the smaller the number of (prospective) states. With a large degree of preference heterogeneity, a small number of constituent states and a large degree of economic asymmetry, forming and maintaining a federation becomes extremely hard if not impossible.

The concept of forming a two-state federation of Turkish North and Greek South Cyprus has been part of all plans to reunite Cyprus since the High-Level Agreement between Archbishop Makarios and the leader of the Turkish-Cypriot population Rauf Denktash in February 1977.[27] Such a federation would have two constituent states featuring large ethnic and cultural differences and large economic asymmetries. In addition, the commitment to a federal union seems to be small on both the Turkish-Cypriot and the Greek-Cypriot side.[28] With such parameters, the possibility of forming a viable federal state in Cyprus seems slim at best. Ker-Lindsay (2015) concludes that there is, at best, a case for a loose federation which might be accepted as the second-best solution to reunify Cyprus by both sides. But if *loose* means easy to dissolve, such a federation, if it were formed, may not last long.[29] Bahcheli and Noel (2015) conclude that a federal solution for Cyprus is impossible, and Bahcheli (2000) recommends to consider seriously the possibility of two sovereign states.

[27] Christou (2015), p. 57.

[28] E.g. Ker-Lindsay (2015), Bahcheli (2000), Khashman (1999).

[29] As one reviewer pointed out to me, „loose" federation is commonly understood in the sense of „minimalist" federation but without the possibility of secession in the Cypriot context. See below on the prospects of a minimalist federation.

Still, there is another way of looking at it. This starts from the argument that, over time, the initial design of a federation is less important than its rules for transferring policy competences from the states to the federation. Suppose that a transfer rule can be found that is acceptable for both sides. A federation could then be designed with a very small federal government responsible only for the truly common policies of the two parts of Cyprus, namely military defense, air and maritime traffic, and maintaining internal trade, the rules of which would be defined by the European Single Market, anyway. Such a strong limitation of federal powers would not demand much compromise on the part of either side, and both states could conduct most of their affairs according to their own preferences. It would also need only a very small federal government in terms of financial and human resources and thus avoid one of the contentious points in earlier attempts to reach a settlement, namely the perception of unacceptable shares in the financing and staffing of the federal government. The prospect of true independence of a reunited Cyprus and the advantages of participating in the Single Market might be sufficient motivation for both sides to enter into such a federation. Transfers between the two states could be designed on a horizontal basis assuring transparency.

If such a minimalist federation were designed forever, it might not seem worth the effort.[30] But the point of this approach would be to allow for future changes in the design, changing the assignment of policies under rule accepted at the start.[31] Experience tells us that collaboration, even in small areas, helps to build trust and mutual understanding among the parties involved. If so, the minimalist federation could contribute to overcoming the long-standing tensions between the Turkish and the Greek Cypriot populations. If it does, cooperation could be expanded by moving more policy areas to the federal level provided that both states agree on each step on the way.[32] Over time, the commitment to federal union needed to make the union viable might grow.

In his classical study of federal government, Riker (1964) concludes that "nothing happens in a federation because of the federal constitutional

[30] Whether or not it would be would depend in part on what is the perceived alternative. If it is the coexistence of two independent states, a minimalist federation would not seem attractive as a permanent outcome. It might still be an improvement over the status quo, but there is no agreement in the political literature cited above suggesting that.

[31] As pointed out above, one of the main weaknesses oft he Annan Plan was that it made the initial federal constitution unamendable.

[32] Requiring unanimity each time the federal competences are expanded guarantees that this will only happen when both sides expect benefits from it. The history of existing federations suggests that this provides some protection but no guarantee against future political conflicts between the two constituent states.

arrangements that could not happen otherwise in fundamentally the same way." That is, federalism is no silver bullet for anything. But the statement can be turned around: Everything that can happen in another constitutional arrangement can happen in an appropriately designed federal arrangement. Thinking about the right process to allow going from a minimalist to a greater federation as people's perceptions of the advantages and costs of common policies change may be more important than worrying about an initial design meant to last forever.

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