

Fedea Policy Papers - 2016/05

**Regional Financing in Germany and Spain:
Comparative Reform Perspectives**

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Febrero de 2016

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This version: Feb. 25th 2016

* This project was initiated by BBVA Research, whose assistance is gratefully acknowledged. We are indebted to Rafael Doménech for his valuable comments and suggestions.

Regional Financing in Germany and Spain: Comparative Reform Perspectives*

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Abstract

Reforms of regional financing are due soon or even overdue in Spain and in Germany. This research paper compares the systems of regional financing in both countries, describes their financial outcomes, benchmarks them against criteria taken from the modern theory of fiscal federalism and extracts some lessons for reform from this endeavour. These lessons may also prove interesting from a broader European and OECD perspective as other Member States face comparable challenges.

JEL: H71, H77

Key words: regional financing, Germany, Spain

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A. Reforms of regional financing – A threefold motivation

Reforms of regional financing are due soon or even overdue in Spain and in Germany. This research paper compares the systems of regional financing in both countries, benchmarks them against criteria taken from the modern theory of fiscal federalism and extracts some lessons for reform from this endeavour. These lessons may also prove interesting from a broader European and OECD perspective, as other Member States face comparable challenges. Indeed, with the ongoing, if tacit, federalisation of the European Union, the fiscal regime of the Union itself should benefit from a better understanding of the challenges faced by federal countries and from the lessons that can be drawn from their experience.

In this perspective, the comparison of the regional financing regimes of Spain and Germany promises stimulating insights because both countries use partially comparable models, while being quite different in their political attitudes towards federalism. While officially not even a federal nation, Spain displays very strong federal dynamics. Germany, on the other hand, is counted among the established federal countries. Yet, politics in the federation (*Bund*) and also at the level of the states (*Länder*) often display strong homogeneity and at times even centralist traits. German federalism has traditionally been characterised as “unitary federalism” (Hesse, 1962). So, perhaps, both countries may learn from each other and benefit from some elements of the other’s system.

The chief focus of the paper is on Spain. One possible way to improve the design of the Spanish model of regional financing is to look at the experience of other decentralised countries. In this study, we seek to contribute to the much needed exercise of reflection that must precede reform by comparing and contrasting the current Spanish model with the German one. Germany is a particularly interesting benchmark as it has been repeatedly cited as an example in the domestic Spanish debate, although sometimes in a partial way or even in ignorance of some of the model's complexities. One reason for this ignorance is probably linguistic. The bulk of the relevant regulations and literature are only available in German, a language spoken by few Spaniards - and by very few Spanish experts on public finance.

To help overcome this barrier, BBVA Research has commissioned translations of the key German legal texts, which are annexed to this document, and set up the mixed research team that has written this paper, bringing together experts from both countries. This document is the result of this collaboration. It describes and evaluates the main features and financial outcomes of the Spanish and German regional financing systems and seeks to extract useful lessons and proposals that may be useful for fine-tuning both models in the future.

A.1. Spain: A pressing need for reform

The design of the regional financing system has been one of the most controversial issues in Spain since the promulgation of the 1978 Constitution initiated a process of decentralisation. Unfortunately, the debate on the issue has not been characterised by its rigor, a fact that has had important costs in terms of the rationality of the system. Successive reforms have never satisfactorily resolved the problems of equity and efficiency that have plagued the regional financing system since its birth, tending, in fact, to add new layers of complexity over time that have made it less transparent and less comprehensible to the public. With the passage of time and the onset of the current crisis, the debate has become increasingly bitter and has now reached worrying levels of intensity. Indeed, discontent with the financing model has swelled to such an extent that it is now cited as a central argument for Catalan independence, a political movement that has gained considerable strength in recent times.

Against this background, the reform of the regional financing system, which is due or overdue under any plausible interpretation of the (admittedly ambiguous) current law, has become an urgent and crucial task for the correct functioning of the Spanish State and even for the survival of its current model of decentralisation. Many experts deem the upcoming reform pivotal. There seems to be a growing consensus in the country that, this time, it is crucial to get it right. The country cannot get by with another quick fix, as it has done every five years or so in the past, eased through with a bit more money to persuade reluctant regional governments to sign up. The regional financing system needs a serious reform that is well thought through and addresses once and for all the structural problems of a model which has until now been mainly the result of improvisation and an opportunistic tug-of-war between opposing and short-sighted interests. The authors of this paper share this opinion.

A.2. Reform pressures in Germany

As we write these pages in autumn 2015, Germany is still in the middle of an ongoing debate on the future of the fiscal equalisation system. The debate has been prompted by the approaching deadline for the termination or renewal in 2020 of the 'Solidarity Pact II' – the special financing mechanisms set up to promote the economic recovery of post-socialist East-German *Länder* – and of the overall fiscal equalisation law.

To speed up negotiations over these complex issues, the two *Länder* that are net contributors to the system, Bavaria and Hesse, have joined forces and challenged the fiscal equalisation law in the Federal Constitutional Court. They submitted their case in March 2013. Germany looks back

at a long tradition of *Länder* governments – both contributors and net recipients – challenging the fiscal equalisation system in the high Court. More or less every ten years, some *Land* or a coalition of several *Länder* comes up with a new case. Now, two and a half years later, the Court has shown little enthusiasm to take up the pending case quickly. Obviously, it is waiting for the *Länder* and the Federal Government to take the lead and come to a new compromise so the court case may be dropped.

Negotiations among the *Länder* and between them and *the Bund* or Federation are well under way. A political compromise could be reached over the next few months, but expectations for a 2014 agreement have already been disappointed and the prospects for a sustainable long term agreement are uncertain. First, the majority of the *Länder* governments and the Federation have successfully boiled down the discussion to a mere haggling over money while excluding from the discussion almost all important, but potentially controversial, structural issues of regional finance. Second, the Federation has offered an additional EUR 8.5 billion for the prolongation of important programmes and – effectively – as a lubricant for compromise. As a reference, the previous equalization reform in 2005 needed only EUR 1.5 billion in Federal money as a sweetener for compromise. But today, ironically, the strategy to come to a quick solution by simplifying the distributional conflict – i.e. by reducing it to a merely pecuniary issue – has not been successful so far. A good compromise which offers a reliable outlook for the financial relations within the Federation for at least ten years will be hard to find as long as no efforts are made to alleviate the mounting structural problems behind those pecuniary issues. Some of the key players are visibly hesitant to accept a compromise that does not give the *Länder* more leeway in fulfilling their administrative and political tasks.⁴

When this paper was finalised in early 2016, all 16 *Länder* just had agreed on a common model for a renewed system. They propose a new mechanism that changes the outer look drastically but clings to most of the established inner parameters of equalization. Since such a revamp of the system could not go along without some distributional changes, the proposal was presented with an even higher request for compensation. Altogether, the *Länder* are asking for a total of EUR 9.6 billion compensation from the federal level for their willingness to come to a solution every *Land* agrees with.

So far, the Federation displays little eagerness to honour these additional demands. Especially the legislative body in charge, the *Bundestag*, is clearly *not amused* by being confronted with a seemingly ‘unchangeable’ compromise before the federal parliament itself even has *started* to

⁴ See Thöne (2015a) and (2015b).

discuss the reform options. Thus, at the moment, the prospects for a reform in Germany are unclear: The *Länder* may continue to push their luck by asking for more federal money. Or the bargaining may persist until the fiscal ‘window of opportunity’ closes. Ample surpluses at the federal level will not persist for ever – and neither will the current willingness of the Federation to pay dearly for minor progress. This possible ‘failure’ of the current reform discussions might not be the worst possible outcome because this may force the (legally unavoidable) reform to be newly designed from scratch, thus resulting in a new compromise that may be structurally much more ambitious in tackling the structural problems and cheaper at the same time.

Germany’s federal structure and institutions are visibly less challenged than Spain’s by centrifugal forces. Nevertheless, a good case can be made also in Germany for the appeal to get things right this time. In this context, the paper also aims at contributing to the German debate by casting a fresh light on its equalisation system as seen from Spain.

A.3. The European federal perspective

More and more, the European Union is becoming a ‘federal entity’, a federation with all its strengths and weaknesses. For decades, the Schuman Declaration’s (1950) famous call for a *European federation* has been understood as the development of the ‘ever closer union’ of the Treaty of Rome (1957). Today, the European level of political decision-making has become more important to the everyday life of all EU inhabitants than ever before – ironically as the consequence of the deep economic, fiscal and monetary crisis the Union has gone through in the years since 2008. But so far, fighting the crisis together has not welded Member States and their populations closer with each other or with the Union. In fact, looking at the current discussion on migration and refugee issues, one might even see a move backwards. Instead of putting the old and rather romantic ideal into practise, the EU is becoming a more *normal* federation. As such, it is not characterised by an ever-increasing closeness, i.e. by a smooth move towards increasing homogeneity and centralization or at least coordination, but rather by a constantly evolving division of power and resources across levels that implies constant tensions among members and uneven forward and backward movements in terms of the degree of centralization. In this sense, the dynamics of integration *and* disintegration alike characterise a living federation. At the margin, even secessionist debates can be seen as a facet of federalism’s dynamics. The ‘Brexit’- and ‘Grexit’-discussions at the EU level are mirrored by the Catalan and Scottish moves towards independence. In the fiscal dimension, debates about regional finances in (legally or at least functionally) federal Member States like in Spain, Germany and Austria are

mirrored by the ongoing discussion about the future of the EU system of 'own resources', the revenue side of the Union's *de facto* fiscal equalisation structure.⁵

As the European Union is not really yet a federation but a hybrid between a European Federation and a European Union of States, for some practical purposes, the European Union already is a kind of jumbled and sometimes involuntary four-level-federation. Vertical and horizontal systems of resource allocation and redistribution are already in force across and within these levels. They may not always be called 'fiscal equalisation' mechanisms but since they do allocate financial resources and, to different extents, equalise them, they should indeed be appraised in the light of the criteria for a good fiscal equalisation system.

For this reason, we expect a continuing growth of debates and research on practical fiscal federalism in and for the EU. One day we will need to decide whether Europe will be a "normal" federation or not. Meanwhile, our paper contributes to this European discussion in three dimensions:

First and foremost, it deepens comparative research in federal financing systems in one *seemingly* simple regard: Instead of comparing the fiscal equalisations systems of several tries - here Spain and Germany - only in qualitative terms, the paper takes the analysis one step forward. It compares both systems by applying the equalisations system of one country (Germany) with the other's fiscal data. A meaningful comparison can only be accomplished when the idiosyncrasies of the 'test-system' – in our case the German one – are identified and are *not* transferred to the 'test country' (Spain). We exclude these national idiosyncrasies.

This kind of quantitative comparative research has two important advantages: First, it forces the researcher to be extremely precise. In order to apply one system to the other country, he must have understood every single bit of both countries' systems. And second, the comparison itself becomes much more precise and honest. Simulating one country's financing system with the other's data leaves no room for interpretation and personal opinions of the 'grass is greener on the other side of the fence' kind. Here, quantitative comparison is a tool to *prove* where the grass is greener.

The *second* tool we provide to improve the quality and usefulness of comparative research is a detailed set of criteria for a 'good regional financing system'. It is formulated in this paper and utilised in the comparison of Spain and Germany. We propose 14 criteria for a differentiated evaluation of regional financing systems, and we apply this catalogue to Spain and Germany

⁵ See High Level Group on Own Resources (2014); Buettner/Thöne (2016).

alike. With this uniform framework, the comparison automatically becomes a balanced judgement of the (quite different) strengths and weaknesses of *both* systems. The list of criteria helps us avoid simplistic conclusions that 'all in all' judge one system better than the other. Instead, the differentiated criteria help us establish in what dimensions Germany may learn from Spain and vice versa. Of course, the criteria also help us identify those dimensions in which *both* countries need major improvements.

Finally, we propose to direct more comparative research on fiscal federalism into the subject of fiscal needs and the governmental tasks behind them, keeping an eye on different preferences and externalities for public goods within federations. Comparing fiscal equalisation systems on the revenue side is also necessary and valuable (we do it ourselves in this paper). Still, federal financing systems *do* finance the activities of the respective regional entities, which may differ significantly from one country to another. To a considerable extent, they do indeed differ between the Spanish regions and the German *Länder*, thus producing different fiscal needs profiles for both systems. We use COFOG data to easily access similarities and differences in the respective task profiles and to identify which systems shows a better fit of fiscal needs and fiscal equalisation.

Of course, research alone cannot resolve the European debates on federalism in general and on fiscal federalism in particular. The relevant federal discussions arise on all societal and political levels on many different and often not foreseeable occasions. But, whenever these discussions produce an ensuing need for reliable and unbiased information, research in (fiscal) federalism becomes a necessity. Thus, good and sensitive research on fiscal equalisation systems certainly is not a sufficient condition to initiate fruitful discussions in the future of public finances in the European Union and its Members States. But it certainly is a necessary condition for leading these discussions with a certain degree of rationality. This may hopefully help European politicians and civil societies to move towards a normal federation rather than dissolving into a mere trading Union, which would be bad for Europe and limit its voice on pressing and mounting global governance issues.

B. Criteria for a good regional financing system

When analysing regional financing systems, researchers as well as policy makers usually look at their own country and its system with particular emphasis on those elements where the need for reform is considered most pressing. Regional financing systems constantly are being criticised for one reason or another, it seems. This appears counter-intuitive from a political-

economy perspective: At least policy-makers should be inclined to stress the strong sides of “their” respective systems. Yet, this is seldom the case. The best a regional financing system can hope for is grudging approval at the very time the necessary political compromise for it has been found. But in normal times, regional financing systems are everybody’s favourite object of contempt. Several properties of these systems may help explain this observation:

- The disrespect for existing financing systems is (partly) justified. The current negotiations for changes in the model offer ample room for logrolling, pork barrel politics and other forms of mutual political bribery.
- Regional financing models are complex answers to complicated challenges. As we will see, a *good* regional financing system should meet multiple criteria. Not in every country, not under all circumstances, can all of these criteria be met simultaneously. More often than not, existing systems reflect compromises between opposing systematic requirements.
- Finally, a regional financing system in force mirrors a *specific* balance between centripetal and centrifugal powers in a decentralized country. It translates the Federal Constitution and the current balance of power into actual euros and cents, thus crystalizing a particular compromise between solidarity and autonomy reached at some point in time. From this perspective, a financing system in force embodies a particular “state of the union”. As such, it serves as the focal point for many dimensions of political dissatisfaction.

Thus, regional financing systems will most likely always raise some degree of opposition and discontent. This quality makes it difficult to judge any such system purely from the domestic perspective as we cannot hope for popular approval of even good systems.

Regarding the current reform debates in Spain and in Germany, even the slightest hope for popular approval of the financing system is vain. Both systems are in need of reform. But where do they have to be reformed? And – just as important – where should they *not* be reformed? A balanced reform debate cannot rely solely on the domestic perception of the system.

A balanced reform debate should also avoid the tempting *the-grass-is-always-greener-on-the-other-side-of-the-fence* perspective. Seen from the German reform discussion, the Spanish system has some attractive features. By contrast, the German fiscal equalisation system may look like a blueprint for reform when seen from Spain. These contradictory impressions may reveal more about the *subjects* of the comparisons than about their objects.

We try to avoid these pitfalls by employing a set of criteria that in our view characterise a *good* regional financing system, i.e. criteria that describe the economic and democratic requirements of a well-functioning and fair financing system. The criteria set out in **Table 1** are formulated against the background of a rich literature in public economics; in some parts, they reflect the guidelines formulated by Thöne and Jacobs (2001) and by Shah (2007).

Table 1: Criteria for a well-functioning regional financing system

Fiscal dimensions	
<i>Revenue adequacy</i>	Regional governments must receive adequate resources to perform their tasks and to exercise their constitutional rights – or adequate tools to raise such resources. The fiscal needs of all regions must be measured transparently and honoured adequately.
<i>Fairness in redistribution</i>	Allocated funds should vary directly with fiscal need factors and inversely with the tax capacity of each jurisdiction.
<i>Non-discrimination</i>	Special fiscal needs or selective redistribution goals must not be honoured unless they are clearly founded on objective factors that can be measured independently and are independent of the actions of the regional administrations
<i>Affordability</i>	The regional financing system must be consistent with the country’s overall budget constraint and with those of those (regional or national) administrations that are net contributors to it.
<i>Equity</i>	The results of the equalisation should be tolerable for donors and recipients alike. They should narrow financing disparities across regions without altering their needs-adjusted relative ranking (‘ordinality principle’). They should not carry equalization beyond a generally acceptable level.
<i>Responsiveness</i>	The equalisation system should be flexible enough to accommodate changes in the fiscal situation of net contributors and net recipients.
<i>Insurance</i>	The equalisation system should provide insurance against asymmetric shocks that hit regions differently.
Allocative Dimensions	
<i>Expenditure autonomy</i>	Within their designated constitutional competencies, regional governments should have independence and flexibility in setting priorities in resource allocation to different sectors or types of activity. Ear-marked grants should be avoided.

<i>Tax autonomy</i>	Regional governments should be directly politically responsible for a sizeable portion of their revenues. That does not exclude formula-based revenue sharing, or block grants for basic regional financing. But marginal financing should be covered by own taxes and/or tax-base sharing, i.e. by allowing regional governments to determine their own tax rates on shared bases.
<i>Dynamic efficiency and regional accountability</i>	The design of regional financing should provide incentives for sound fiscal management and discourage inefficient practices. Transfer allocations should be based on objective factors over which individual units have little control. This includes a ban on unconditional bail-outs for subnational government deficits.
<i>Compatibility with the fiscal framework</i>	The regional equalisation system should be compatible with the functions and incentives of the overall fiscal framework, namely with the vertical allocation of government responsibilities, with the tax system and with the fiscal rules in force (deficit rules, debt ceilings, etc.).
Governance Aspects	
<i>Predictability</i>	The mechanism should ensure midterm predictability of regional governments' finances within the overall economic and fiscal forecasts. Major changes in the formula should be accompanied by reasonable transition periods or by hold harmless or grandfathering provisions.
<i>Transparency</i>	Information on the details of the design and quantitative data on <i>all</i> steps of the equalisation system should be made available online. This should include information and data on the backgrounds of the formulae (e.g. need factors).
<i>Simplicity</i>	The equalisation system should be as easy to understand as possible. Complex systems cannot be too simple. But often enough, equalisation becomes unnecessarily complex because reforms are implemented in the form of 'additional layers' and/or because the opacity of the system is deemed a helpful instrument to hide some of its undesirable characteristics.

Sources: Thöne / Jacobs (2001), Shah (2007), own research.

Since some of the criteria in Table 1 may partially conflict with each other, it may be impossible to design a system that meets all of them simultaneously. Furthermore, the application of the same criteria to two different countries need not result in the same kind of regional financing system. Regional financing and equalisation systems are elements of fiscal federalism which are designed comparatively *late*, they allocate revenues necessary to finance a *given* allocation of

government tasks among the regions and, vertically, between central and regional governments.

This will become obvious when we compare the Spanish and the German systems of regional finance. The allocation of legislative and executive responsibilities on the local, regional and national levels in these two countries is neither identical nor totally different. Thus, even in theory, the regional financing system of each country could not be fully transferred to the other without producing suboptimal results. To a certain degree, different foundations necessitate different constructions. But that does not imply that all observed differences between existing regional financing systems are the necessary and rational consequences of differently allocated government tasks. The systems are not particularly different as we will see. As a consequence, both systems can be compared very well when allowances are made for existing differences. Section D of this paper compares both systems in the most direct way possible, i.e. by transferring a German-style equalisation system – stripped of its uniquely ‘German’ characteristics – to Spain. Based on this comparison and on further research, section E makes use of Table 1 to compare the strong and weak points of both systems line by line, criterion by criterion.

C. The structure of the German and Spanish regional financing systems

In this section we compare and contrast the basic structure of the Spanish and German systems of regional financing. For this exercise, it will be useful to focus on four fundamental elements of any such system. The first one is the allocation of tax revenues, fiscal legislative powers and tax collection responsibilities among the different tiers of government and across territories that determines each administration’s potential tax revenues or *fiscal capacity* and its degree of revenue autonomy. The second element is a formula for determining *spending needs* or equalisation targets. Such a formula is used to calculate the share of available resources that should ideally be allocated to each region, which is often equated with the financing it would need in order to provide some standard basket of public services equal for all territories. In both countries, this formula is cast in terms of the computation of an adjusted population variable that replaces the actual population of each region in the calculations required by the financing system to allocate funds across territories. The final two components are a set of transfers that flow horizontally across regions and vertically between the Central Government and the regions. Their main purpose is to equalise the resources available to territories with different levels of tax revenue or, what amounts to the same thing, to reduce the gap between each territory’s fiscal capacity and its spending needs.

In the remainder of this section, we will compare the Spanish and German systems in terms of these four elements.⁶ As we will see, some components of the two systems are very similar. In other respects, however, there are major differences between the two countries that, as will be shown in section D, have a significant impact on financial outcomes. Both models are highly redistributive and significantly narrow differences in fiscal capacity across regions. Perhaps the key advantage of the German model over the Spanish one (at least since the reform triggered by the 1999 Supreme Court ruling) is that it distributes resources according to reasonably clear and explicit criteria. While some of these criteria are certainly debatable, the German approach is certainly less capricious than the Spanish one. On the other hand, the formula for calculating spending requirements in Spain seems considerably more reasonable and transparent than the historic weightings used in Germany. Another desirable feature of the Spanish system is that it affords the regions or autonomous communities considerably more revenue autonomy than the *Länder* have, while avoiding some undesirable disincentive effects for tax management that arise in the German system.

C.1. The allocation of tax revenues and responsibilities across and within tiers of government

The allocation of tax revenues among the various tiers of public administration is very similar in Germany and in Spain. After setting aside a small share of some taxes for municipalities, the Federation and the regional governments split on roughly equal terms the bulk of the revenue from the most important taxes. In addition, the regions have an exclusive claim on the revenue of some minor levies while the Central Government retains full rights over some more important taxes. The details are set out in Table 2.⁷ In both countries, Personal Income Tax and VAT are shared between the regions and the Federation or Central Government, while wealth, inheritance, gambling, and asset transfer taxes are devolved to the regions. The biggest difference is that in Germany excise taxes (except for the beer tax) go entirely to the Federation (the *Bund*) while corporate income tax is shared with the regions, whereas in Spain the reverse is true.

⁶ In the case of Spain, we will focus on the standard financing system that is applied to most Spanish regions, ignoring the special regime enjoyed by the so-called foral regions of the Basque Country and Navarre.

⁷ The split in the take from the main taxes among the different layers of German government is regulated in Article 106 of the Constitution or Basic Law. To allow some flexibility on the vertical distribution of resources, the allocation of VAT receipts is decided by a federal law that has to be approved by the upper chamber of parliament, the *Bundesrat*. In the case of Spain, the constitution is silent on the matter, which is regulated through the standard legislation on taxes and regional financing.

Table 2: Division of tax revenues and tax responsibilities (without the local level)

	<i>Spain</i>	<i>Germany</i>
<i>Shared taxes</i>	Personal income tax ^{sc} : <i>Resid</i> VAT: <i>Cons</i> Excise Taxes: <i>Cons</i>	Personal income tax ^c : <i>Resid</i> VAT ^c : <i>Pop/Redist</i> Corporate Tax ^c : <i>Res</i>
<i>Federal Taxes</i>	Corporate tax	Excise Taxes (except beer) Vehicle matriculation
<i>Regional taxes</i>	Inheritance tax ^{sc} : <i>Resid</i> Wealth tax ^{sc} : <i>Resid</i> Property transmission ^{sc} : <i>Cons</i> Gambling taxes ^{sc} : <i>Cons</i> Vehicle matriculation ^c : <i>Cons</i> Retail fuel sales ^s : <i>Cons</i>	Inheritance tax ^c : <i>Resid</i> Property transmission ^{sc} : <i>Cons</i> Gambling taxes ^{sc} : <i>Cons</i> Beer tax: <i>Cons</i>

Key:

- *Superscripts: R, C* = regulated, collected by the regions; the default is the Federation
- *Criterion for the allocation of revenues across regions: Resid* = by residence or place of business; *Cons* = by location of consumption or transaction; *Pop* = by population; *Redist* = with a redistributive criterion.

The table also shows the criteria that are used for allocating regional tax revenues across territories. In both countries, direct personal taxes are generally allocated using a residence criterion⁸ and revenues from indirect taxes are collected in the territories where the relevant transactions take place or are allocated in proportion to consumption. The main exception to this rule is German VAT. As we will see below, the regional tranche of this tax is allocated across *Länder* partly in proportion to population and partly following a redistributive criterion that favours the poorer states.

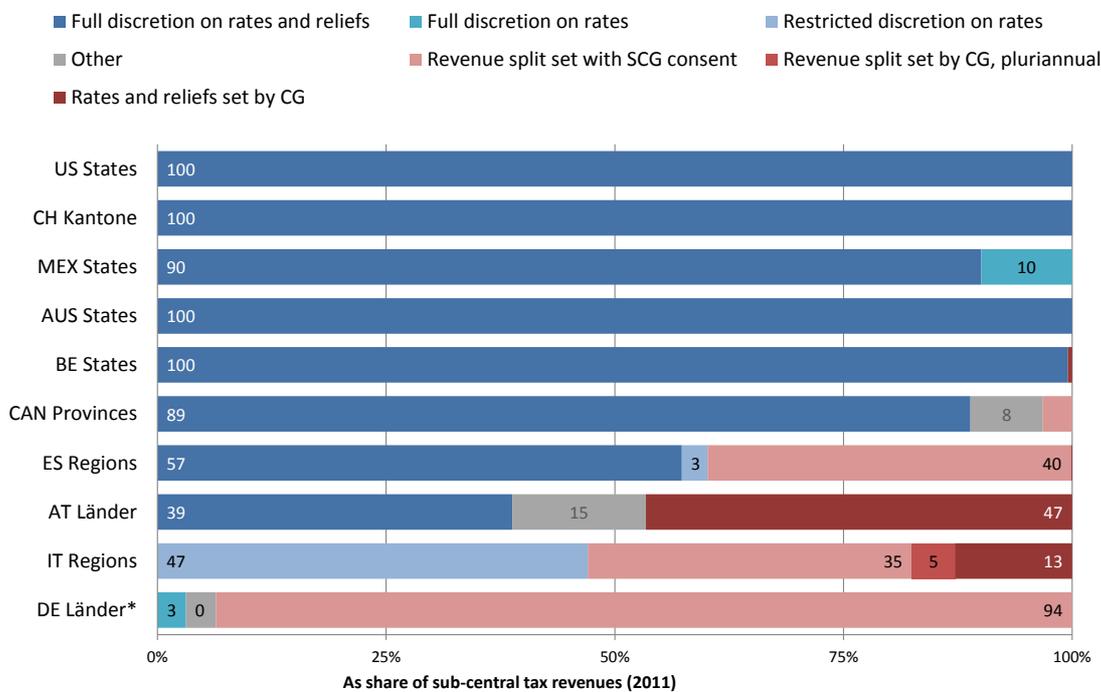
A very important difference between the two countries is that the power to regulate the main taxes is far more centralised in Germany than in Spain. As shown in Table 2 through the use of an *R* superscript, Spanish regions are largely free to set their own rates and deductions for wholly devolved taxes and for the regional tranche of personal income tax, but must apply uniform national legislation for VAT and excise taxes. In Germany, by contrast, all the major tax schedules are set through federal legislation and are therefore equal for all *Länder*.⁹ On the other hand, all legislation regarding taxes whose receipts accrue at least partially to the *Länder* have to

⁸ For personal income tax this means the region of residence of the taxpayer in both countries. In Germany, corporate income tax is distributed across regions on the basis of a regional breakdown of each firm's payroll (Fuest 2006, p. 270).

⁹ The only fiscally relevant exception here is the tax on land property transfers. As the result of the "Federalism Reform I" in 2005, the *Länder* were given discretion over the tax rates of this stamp duty. Since 2006, almost all *Länder* have used this *solitary* autonomy over a single tax rate quite intensively; see Fuest and Thöne (2013). The allocation of powers regarding tax legislation is set out in Articles 105 and 72.2 of the German Basic Law. The Federal Government can legislate on any tax of which it gets any part of the receipts if it considers it necessary to maintain uniform living standards across the country or to maintain the country's economic and legal unity.

be ratified by the upper chamber of the German parliament, the *Bundesrat*, which is made up of representatives of the *Länder* Governments. As a result, the individual *Länder* exert very little fiscal autonomy on their own; acting collectively, however, they can exert considerable influence on federal tax legislation through the *Bundesrat*. On the other hand, it must be noted that, unlike tax legislation in the EU, single *Länder* have no veto power over tax legislation in the German upper chamber. Thus, *Länder* Governments (but not Parliaments) can exert some influence on tax matters but only as part of the political majority in the *Bundesrat*. This almost complete lack of individual tax autonomy at the state level in Germany is unique among decentralized OECD countries (see Figure 1) and even worldwide (see Thöne, 2014a).

Figure 1: Regional tax autonomy in federal OECD Countries



Source: Blöchliger and Nettley (2015), own illustration.

The new constitutional ban on structural budget deficits, the “debt brake” which must be enacted by all German *Länder* by 2020, closes the final “valve” of revenue autonomy at the regional level. Coupled with very limited short- and mid-term flexibility on the *expenditure* side, the absence of flexibility and autonomy on the revenue side is considered a significant danger to the ability of *Länder* Governments to produce budgets that do not violate the constitution.¹⁰ Never-

¹⁰ See Fuest and Thöne (2013). Thöne (2015) asks whether the *Länder* might even be forced by the debt brake to take the *innovative route to a more conventional federalism* (with more revenue autonomy).

theless, the *Länder* traditionally shy away from demanding more individual powers in tax legislation.

Another area in which there are important differences between Spain and Germany is the distribution of tax collection responsibilities between central and regional authorities. In Spain, the regions manage directly only some of the minor levies that are wholly devolved to them and it is the Federal Tax Agency (AEAT) that collects all major taxes, including both shared taxes and corporate tax, as well as some minor taxes whose revenue goes entirely to the regions (vehicle matriculation duties and the tax on retail fuel sales). In Germany, in contrast, the federal tax authorities only collect excise taxes, customs duties and VAT on imports, leaving the *Länder* to manage personal and corporate income taxes and domestic VAT (Article 108 of the Basic Law). Although this is often cited in Spain as proof that German *Länder* have a much greater role in fiscal matters than their Spanish counterparts, it must be kept in mind that, to a large extent, the German regional tax authorities act as agents of the Federation. As such, they are subject to federal regulations, oversight and direction, and even need central approval for some management appointments (Article 85 of the Basic Law).

An obvious problem in this regard is the one created by the exceedingly high “leakage rates” that Germany’s highly redistributive regional financing system imposes on regional tax revenues.¹¹ Revenue increases stemming from efficiency gains in regional tax agencies or from closer monitoring of taxpayers largely leak out to the Federal Government or to other *Länder* through increased outgoing transfers or decreased incoming ones.

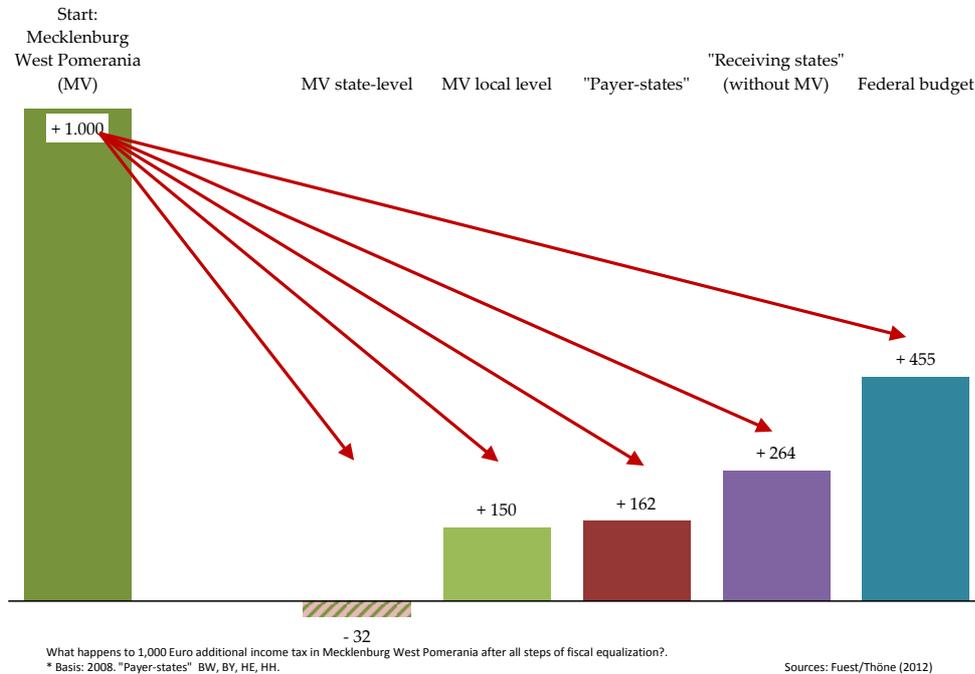
Figure 2 illustrates the loss of marginal revenues collected by the “recipient” *Land* of Mecklenburg-West Pomerania in Northeast-Germany following a hypothetical increase of 1.000 euros in income tax revenue, taking into account the effects of the different components of the equalization system and the sharing of revenues with the Federation. It has been estimated that marginal leakage rates for income tax range between 78 and 108 per cent.¹² In extreme cases, therefore, the marginal leakage rate can be above 100 per cent; that is, a *Land* may end up *losing* revenue when it collects an additional euro in shared taxes by broadening the local tax base (e.g. by cre-

¹¹ As we will see below, German *Länder* that increase their tax revenues faster than the average can exclude a minor part (up to 12 per cent) of their gains from the equalisation mechanism for *one* year. This only mitigates a bit the problem – actually, it has little more than a symbolic function.

¹² Fuest and Thöne (2012). For fairness’ sake it should be noted that a *Land*’s ‘own’ municipalities would gain from such an increase in income taxes (their share: max. 15 %, see Figure 2). Thus, eventual losses for a *Land* can be partially offset via the its local financing mechanisms, which take into account revenue developments on both levels when settling the total amount of vertical transfers the municipalities receive from their respective *Land*.

ating new jobs, by attracting FDI etc.). This effect is worse for net recipient states than for net contributors to the equalisation system.

Figure 2: Leakage in German tax sharing: What happens to EUR 1 000 additional income tax in Mecklenburg West Pomerania?



There is also evidence that the decentralisation of tax collection responsibilities has had negative effects on costs and efficiency. A number of studies have highlighted problems of lack of coordination across Germany's regional tax agencies, and documented the high administrative costs of the system and the disincentives it creates for efficient tax management.¹³ The Federal Ministry of Finance, a traditional (and unsuccessful) proponent of centralising tax administration, calculates the annual efficiency losses of the decentralised system to be around EUR 11.5 billion.¹⁴ But here, surprisingly, the *Länder* cling to their authority to *administer* taxes.¹⁵

This problem, by contrast, is largely absent from the Spanish system for two reasons. The first one is that tax collection responsibilities fall mainly on the Central Government, which faces considerably lower marginal leakage rates than the German states. The second one has to do with an important technical feature of the Spanish system, which German authorities may perhaps consider adopting, the use of standardised or theoretical tax revenues for equalisation

¹³ See, for instance, Baretta et al (2000), Sanchez-Saché (2007) and the references cited in these studies.

¹⁴ See Federal Ministry of Finance (2007).

¹⁵ There is a long standing allegation that some *Länder* use their powers in tax administration to tacitly support their home industries with for example strategically low numbers of tax audits. Bönke et al. (2013) find empirical evidence that confirms this behaviour by German *Länder*.

calculations.¹⁶ Since regional contributions to equalisation depend on standardised rather than actual tax revenues, regional governments get to keep 100% of any revenue gains arising from improvements in their tax collection practices. A similar mechanism exists in Germany, but only for the tax revenues of municipalities that are taken into account in equalisation calculations, not for those of the *Länder*.

More broadly, the distinction between theoretical or standardized and actual tax revenues is crucial for ensuring that regional authorities fully bear the consequences of their revenue decisions regarding both tax collection practices and the choice of tax rates, for it ensures that these do not trigger partially offsetting changes on Federal or cross-regional transfers. In the absence of a mechanism of this sort, obvious incentives for free riding would arise, especially in countries such as Spain where regions enjoy a high degree of tax autonomy.

C.2. The calculation of expenditure needs or adjusted populations

In both the Spanish and the German systems, regional populations are adjusted before equalisation calculations are made. In principle, such adjustments are made to take account of cost differences across regions in the setting of equalisation targets and can be seen as a way to calculate the expenditure needs of the different regions, understood as the resources that would be necessary in each one to provide a uniform level of public services throughout the country. The function of the equalisation mechanisms included in the Spanish and German systems (which will be described below) is to bring actual financing closer to this equalitarian distribution or, equivalently, to reduce the differences in resources that exist between rich and poor regions when we consider only their potential own tax revenues.

In the case of Germany, the calculation of expenditure needs is both extremely simple and seemingly very much *ad-hoc*. The adjustment made to the population of the *Länder* massively favours the city states of Hamburg, Bremen and Berlin, whose populations are multiplied by 1.35 on the grounds that this is needed to take into account the high costs of providing public services in densely populated conurbations. Three other regions (Mecklenburg-Pomerania, Brandenburg and Saxony-Anhalt) also receive notional boosts to their populations, though to a

¹⁶ For those taxes that are collected by the Central Government, theoretical tax revenues are equated with those that would have been obtained if regions had not made use of their legislative powers to alter the reference tax schedule set by the Federal Government. This variable is calculated by the Federal tax agency. For those taxes that are managed directly by regional governments, theoretical revenues are calculated by updating actual tax revenues at the time the tax was devolved with an index that does not depend on its actual revenues. This second procedure does have important shortcomings, but it does insure that regional governments face the correct incentives when making tax policy decisions.

far smaller extent – by factors of 1.05, 1.03 and 1.02, respectively – and only for the equalisation of municipal revenues.¹⁷ In this case, the rationale is the precise opposite: to take into account the high cost of providing public services in thinly populated areas.

While the second correction is based on a conventional economies-of-scale logic that can be found in several regional equalisation systems around the world (quite prominently, for example, in Australia), the higher weighting of inhabitants for the city states calls for a closer look. The higher weighting – unofficially called “ennoblement in inhabitants” – looks back on a long tradition in Germany; it was introduced by Johann Popitz in Prussia in the late 1920s. The following arguments have been used to justify a higher weighting for city state populations:

- *Diseconomies of scale*: Certain factors of production of public goods are more costly in big cities. Originally, this was true of public servants’ pay. Today, only land is clearly more expensive in conurbations.
- *Higher needs in cities*: Originally, street lightning, central sewage and paved roads were public services deemed necessary only in cities, not in the countryside. Today, these needs are acknowledged universally in Germany and are subject to economies-of-scale arguments. But nowadays bigger and central cities typically have higher dependency ratios and higher social expenditures due to self-selection effects and the suburbanisation of wealthier households.
- *Services of central cities*: Bigger cities supply many public services for their rural environment (culture, education, health etc.). In many German states, the local fiscal equalisations systems also use the ‘ennoblement’ of inhabitant to reflect urban-rural service relations. That is not viable for the three city-states Berlin, Hamburg and Bremen: as they do not have local fiscal equalisations systems, their relevant financing system is the regional equalisation system. Also, the city-states play a special constitutional role as they are both *Länder* and local Governments at the same time.

¹⁷ For purposes of the second-round horizontal equalization mechanism that will be described more fully below, the spending requirements of the regions are calculated as the sum of two components. The first one is calculated by taking the adjusted population of each *Land* and multiplying it by the average tax take per adjusted head of all the *Länder* using only the *Länder*’ own tax revenues. For this component the only adjustment taken into account is that for the three city states. The second component is calculated using the same procedure but applying it to just 64% of standardised municipal revenue. This component takes account of the upward population adjustments for the three regions mentioned above as well as the one applied to the three city states. The compensation rates (top-up or charge rates) discussed in the following section are applied to the difference between the tax receipts of each state and their spending needs.

This multi-layered justification is far from universally accepted, however, making ‘ennoblements’ a highly controversial issue in Germany.

In the case of Spain, the expenditure needs formula tries to take into account the main demographic and geographical factors that affect the demand for the public services managed by the regions (which include health care, education and social services) and their unit costs. Table 3 shows the variables included in the current formula and their weights, i.e. the fraction of the available resources that is distributed in proportion to each of these variables in order to arrive at an estimate of regional spending needs. Thus, 30% of the system’s total resources are distributed in proportion to unadjusted regional populations and 1,8% in proportion to regional land area, while 0,6% of the total is reserved for the two island regions (the Balearic and Canary islands). The dispersion of population is measured by the number of separate population nuclei in each territory. Needs for educational funding are assumed to be proportional to a measure of the school-age population (those aged between zero and sixteen) and health care funding needs are approximated by a weighted population indicator that weights different age segments in proportion to their observed average yearly medical expenses (*equivalent population for health-care purposes*).

It is important to notice that the system does not attempt to quantify how much it would cost in absolute terms to provide the public services that are managed by the regions at some level of performance that is considered desirable, but it does try to provide a distribution criterion that would ensure that the needs of all regions are satisfied approximately in the same proportion. Hence, the total amount of resources available in the system is taken as given, and the formula tells us how they should be allocated to ensure all regional administrations could afford to provide similar services with the same fiscal effort (i.e. without modifying the standard tax schedules).

Table 3: Variables that enter the Spanish formula for expenditure needs and their assigned weights

- <i>equivalent population for health care purposes</i>	38%
- <i>population</i>	30%
- <i>school age population (0-16)</i>	20,5%
- <i>population 65+</i>	8,5%
- <i>land area</i>	1,8%
- <i>population dispersion (population nuclei)</i>	0,6%
- <i>reserve for island regions</i>	0,6%

The formula described in **Table 3** is also used to calculate the *adjusted population* of each region – a variable that measures regional spending needs in a rather convenient way. In this case what is distributed according to the criteria summarised in **Table 3** are not the system's total resources but rather the total population of the Spanish regions (with the exception of the Basque Country and Navarre which, as noted above, enjoy a special fiscal arrangement). What this exercise achieves is to weight the regional populations by a factor that captures (the system's estimate of) the relative per capita cost of providing the main public services at a uniform level of quality in all regions.

Dividing each region's financing by its adjusted population, we obtain a measure of *financing per unit of need* or per adjusted capita that is often used to assess the fairness of the distribution of resources across regions. This indicator also provides an operative equalisation criterion: if the goal is to make sure that all citizens, independently of where they live, have equal access to the public services that are managed by the regions, what we need to do is equalise financing per adjusted capita across them.

The difference in the *measurement* of expenditure needs in Germany and Spain is partly a reflection of differences in the functions assigned to the regions /*Länder* in the two countries. Tables 4 and 5 show the functional composition of public spending using the COFOG¹⁸ classification. Table 4 illustrates the vertical allocation of different government tasks in both countries. For the ten main functions, it shows the regional share of total government spending, including the Central Government and the local administrations but not the EU (due to data restrictions).

The similarities between Germany and Spain are very obvious: In both countries, the regional level is not responsible for defence. Also, the regional shares in spending in economic affairs, environmental protection and social protection are very much alike. In both countries, education is mainly a regional responsibility.

The differences are also quite obvious. Health is almost exclusively a regional task in Spain, whereas the German *Länder* abstain from this area almost completely. Public order and safety is a regional issue in Germany, as the police and the judicial system are a *Länder*-task. Also, the regional share in general public services is almost twice as large in Germany as in Spain. Here, the *Länder's* responsibility for financing the local government plays an important role. In Germany, as opposed to Spain, the municipalities – although an independent democratic level – are

¹⁸ The *Classification of the Functions of Government* (COFOG) promises to become a potent instrument for the evaluation of public expenditures (see Deroose/Kastrop (2008)). Employing COFOG-data in the study of fiscal federalism is a new and, in our view, promising approach in this field. For pioneer work in a related application see Bach, Blöchliger and Wallau (2009).

legal parts of the *Länder*. (For this reason, 64 percent of the tax capacity of the local level is added to *Länder* fiscal capacities for the purpose of equalization calculations, see below).

Table 4: Regional share of total spending in government functions (COFOG 2011)

Government Function (COFOG, 2011)	Germany <i>Länder</i>	Spain Regions
GF01 General public services	 37,9%	 19,1%
GF02 Defence	 0,0%	 0,0%
GF03 Public order and safety	 74,2%	 22,3%
GF04 Economic affairs	 32,6%	 33,1%
GF05 Environment protection	 20,6%	 25,0%
GF06 Housing and community amenities	 32,9%	 43,1%
GF07 Health	 5,3%	 92,2%
GF08 Recreation, culture and religion	 35,0%	 26,9%
GF09 Education	 70,0%	 91,6%
GF10 Social protection	 10,1%	 6,9%
TOTAL	23,6%	31,4%

Source: Own Calculations based on Eurostat-Data: government expenditure by function (COFOG) [gov_a_exp]

Table 5: Spending on the regional level: Allocation of functions

Government Function (COFOG, 2011)	Germany <i>Länder</i>	Spain Regions
GF01 General public services	 26,0%	 18,4%
GF02 Defence	 0,0%	 0,0%
GF03 Public order and safety	 9,2%	 2,7%
GF04 Economic affairs	 11,6%	 9,8%
GF05 Environment protection	 1,1%	 1,3%
GF06 Housing and community amenities	 1,6%	 1,5%
GF07 Health	 2,9%	 33,0%
GF08 Recreation, culture and religion	 2,3%	 2,3%
GF09 Education	 26,1%	 24,5%
GF10 Social protection	 19,3%	 6,5%
TOTAL	100,0%	100,0%

Source: Own Calculations based on Eurostat-Data: government expenditure by function (COFOG) [gov_a_exp]

Table 5 uses the COFOG-data to depict differences and similarities in the distribution of activities at the regional level alone. This perspective might be useful for assessing the appropriateness of empirically-based expenditure needs formulae. A comparison of Table 3 and Table 5 suggests that the Spanish formula captures well spending needs in health and education, which are the main tasks of the regions. In this area, Germany obviously lags behind. This becomes most obvious in education: Although this function accounts for more than a quarter of *Länder* spending, the fiscal needs indicator does not take into account student figures at all.

C.3. Equalisation mechanisms in Germany and Spain

Once tax revenues have been apportioned across regions and expenditure needs have been calculated, both the Spanish and the German systems attempt to reduce the differences between the two variables through a variety of transfers that flow across regions and between the Federation and the regions. In this section we will discuss how equalisation works in both countries, starting with Germany.

C.3.1. Equalisation in Germany

In the case of Germany, equalisation actually starts with the allocation of tax revenues. Hence, the process has three stages that will be described in turn.

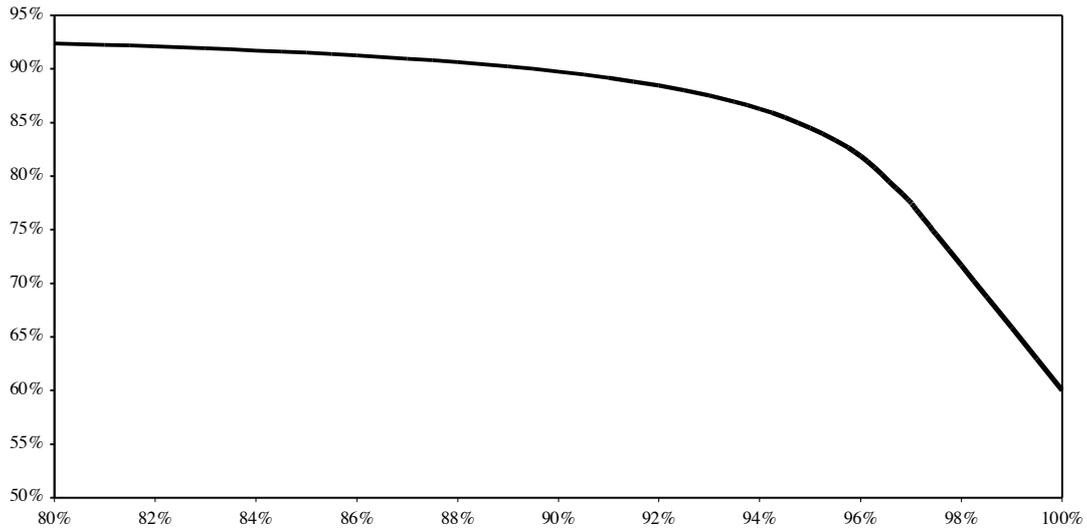
a) *The allocation of VAT across the Länder*

As we have already noted, the regional share of VAT is allocated in a very different way in the two countries. While Spain allocates VAT receipts in proportion to (domestic) regional consumption, which roughly captures the distribution of the tax's economic burden, in Germany the bulk of VAT revenue is allocated in proportion to population, a criterion that implies a transfer from high-income/high-consumption regions to the rest. Moreover, up to 25% of VAT receipts assigned to the *Länder* are reserved to top up the revenues of those states with below average fiscal capacity per head ('*VAT pre-equalisation*'). In Germany, then, the allocation of VAT acts as an important equalisation tool that does not exist in Spain.

The details of how the regional portion of VAT is distributed, set out in Article 2 of the Fiscal Equalisation Act (or "FAG"), are fairly complex. The allocation takes into account the revenue from wholly devolved taxes and the *Länder's* share of personal income tax and corporation tax. *Länder* that, after factoring in these taxes, are below the national average in terms of their fiscal capacity per (unweighted) head of population get an additional share of VAT receipts that nar-

rows the gap to the average. Figure 3 shows how the proportion of the gap which is eliminated (the "top-up rate") falls as the tax take per head rises, dropping from more than 90% in the case of *Länder* with a fiscal capacity indicator of less than 85% (100% being the national average) to 60% for those which are already close to the average.¹⁹

Figure 3: Average top-up rate from additional VAT allocations based on fiscal capacity per head before VAT allocation



The calculation above is capped in the sense that the sum of all top-up payments from VAT cannot exceed 25% of the total share of the *Länder* in VAT receipts. If the initial calculation exceeds this ceiling, all top-up entitlements are reduced proportionately to bring the total down to 25%.

This 'equalisation prior to the official equalisation' was introduced in 1969 with the explicit goal of 'unburdening' the core equalization mechanism, i.e. to make it look smaller and politically more tolerable. Since the East German *Länder* were integrated into the regular financing system in 1995, VAT pre-equalisation accomplishes a major part of the narrowing of differences across *Länder*. In 2014, it redistributed EUR 7.9 billion if measured against the benchmark of an equal per capita VAT allocation, while the core horizontal equalisation mechanism (see below) redis-

¹⁹ Let $cfrel_i^{iva}$ be the relative fiscal capacity per head of region i before the allocation of VAT. Then, the top-up rate tr_i , i.e. the share of the gap with the average eliminated by top-up VAT payments, is determined by:

$$tr_i = \begin{cases} 0,95 - \frac{21}{4.000 * (1 - cfrel_i^{iva})} & \text{if } cfrel_i^{iva} < 0,97 \\ 0,60 + \frac{35}{6} (1 - cfrel_i^{iva}) & \text{if } cfrel_i^{iva} \geq 0,97 \end{cases}$$

tributed EUR 9.05 billion. With the ‘Spanish’ benchmark of a VAT-allocation according to regional consumption, the redistributive effect of the German VAT pre-equalisation would amount to EUR 10.2 billion in 2014, making it the most important element of the equalization mechanism.²⁰

Since pre-equalisation uses other criteria to distinguish relatively ‘rich’ and ‘poor’ *Länder* than the ensuing core mechanism, both mechanisms do not simply add up. In 2014, pre-equalisation had eight *Länder* on the paying side and eight *Länder* on the recipient side. In the regular equalisation mechanism, only four *Länder* remain net contributors, whereas 12 *Länder* receive equalisation transfers. Hence, four *Länder* change from being ‘payers’ in pre-equalisation to becoming ‘recipients’ in the core equalisation mechanism. Especially for the biggest *Land*, North Rhine-Westphalia, this carries a bitter irony because it loses almost EUR 2.3 billion in pre-equalisation (compared to a per capita allocation), but receives only EUR 1.4 billion back in the later stages – and appears as a beneficiary of the system when this is not really the case (see Thöne, 2012 and 2015a).

The current discussion on equalisation reform focuses almost exclusively on VAT pre-equalisation with fierce defenders and critics of this system on each side. Indeed, using two horizontal equalisation mechanisms with different criteria in direct succession does not seem logical and may in fact be harmful. Still, the fact that the political reform debate in Germany is focused on the *symbolic* quality of being counted among the net contributors to the system shows that priorities are wrong.

b) Horizontal transfers across regions

After VAT has been allocated, a second equalisation mechanism comes into play, the so-called *financial compensation* (set out in Articles 5 to 10 of the FAG). All states whose fiscal capacity per adjusted head of population is above the national average transfer resources to the other states in order to narrow existing disparities in spending power across territories but without altering their ranking.

The calculation of fiscal capacity for this second stage of the equalisation process is based on tax receipts after the allocation of VAT plus income from levies on mineral extraction and 64% of the standardised tax take of municipalities.²¹ Municipal taxes are taken into account because the

²⁰ As a reference, in 2014 the total gross fiscal capacity of the German *Länder*, including 64% of standardized municipal tax revenues, amounted to 290 billion euros or 3,593 euros per capita.

²¹ The standardisation serves to neutralise the effect of differences in tax rates across municipalities. This is done by applying standardised tax rates to the relevant tax bases in each region.

Länder are under an obligation to supplement municipal finances to ensure reasonable uniformity in living standards within their territory (Articles 106.3 and 107.2 of the Basic Law). Finally, to provide incentives for the efficient management of regional tax agencies, fiscal capacity is reduced for *Länder* who have managed to increase their tax take per head since the previous year by more than the national average.²² Regions are then compared in terms of their fiscal capacity *per adjusted head*, which is calculated by dividing the tax revenue variable we have just discussed by the adjusted population variable described in the previous section.

As with the allocation of VAT, interregional transfers are designed to eliminate an increasing portion of the gap with the national average as this gap increases in absolute value.²³ The top-up rate applied to the shortfall falls from around 70% for *Länder* with an index of fiscal capacity of 70 (where the average is normalised to 100) to 44% for those that are near 100. The schedule of average charge rates for the rich regions (those with above-average fiscal capacity per adjusted head of population) is the mirror image of that for the poorer regions, as shown in Figure 4. If the total contribution by the paying regions does not match the total entitlements of the recipient regions the contributions of the rich *Länder* are adjusted up or down proportionately. After this adjustment, the contribution of a paying *Land* cannot be more than 72.5% of its gap with the average in terms of fiscal capacity per adjusted head. If this limit is exceeded, half the difference will be met by the other net contributors and the other half by the net recipients, with the relevant amounts being adjusted proportionately in each case. In 2014, the core mechanism of horizontal equalisation redistributed EUR 9.05 billion.

²² The cut is 12% of the *excess over the average rate* of growth per head compared to the prior year.

²³ The top-up rate applied to the difference with the average of the net recipient regions is given by:

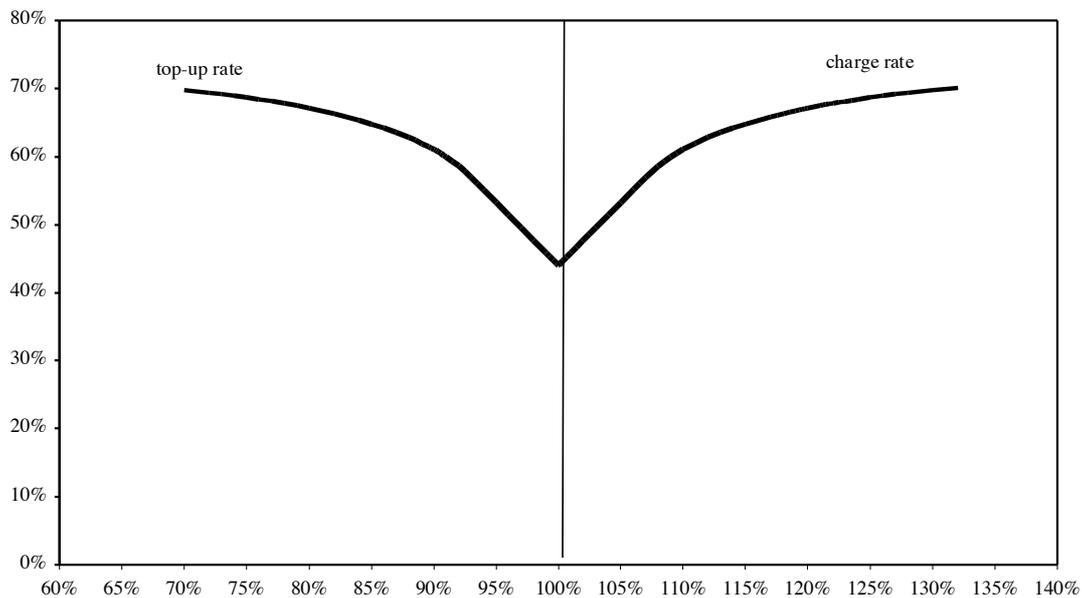
$$tgm_i = \begin{cases} 0.75 - \frac{317}{20,000 \cdot (1 - cfrel_i^{hor})} & \text{if } cfrel_i^{hor} < 0.80 \\ \frac{5}{26} (1 - cfel_i^{hor}) + \frac{35}{52} - \frac{2,121}{260,000 \cdot (1 - cfrel_i^{hor})} & \text{if } cfrel_i^{hor} \in [0.80, 0.93] \\ 0.44 + \frac{13}{7} (1 - cfrel_i^{hor}) & \text{if } cfrel_i^{hor} > 0.93 \end{cases}$$

The corresponding scale for the net contributing regions is given by:

$$tgm_i = \begin{cases} 0.75 - \frac{317}{20,000 \cdot (cfel_i^{hor} - 1)} & \text{if } cfrel_i^{hor} > 1.20 \\ \frac{5}{26} (cfel_i^{hor} - 1) + \frac{35}{52} - \frac{2,121}{260,000 \cdot (cfel_i^{hor} - 1)} & \text{if } cfrel_i^{hor} \in [1.07, 1.20] \\ 0.44 + \frac{13}{7} (cfel_i^{hor} - 1) & \text{if } cfrel_i^{hor} < 1.07 \end{cases}$$

where tgm is the average charge rate applied to surplus fiscal capacity.

Figure 4: Average compensation rate (top-up or charge) applied to gap with average fiscal capacity per adjusted head based on the relative fiscal capacity per head before horizontal equalisation



iii) Federal transfers for equalisation and special needs

In the third phase of the German equalisation process, the Federal Government makes various transfers to the *Länder*. First, all states that are still below 99.5% of average financing per adjusted head after the second round receive an equalisation transfer that makes up 77.5% of the remaining shortfall. These general supplementary federal grants amounted to 3.5 EUR billion in 2014.

Second, the *Bund* makes supplementary transfers to cover special needs in particular *Länder*. The main beneficiaries of these transfers are the new regions in the former East Germany, which get federal grants to help overcome their infrastructure shortages and to compensate for their disproportionately low municipal financial capacity (FAG, Article 11.3). The size of these transfers, which are allocated according to fixed percentages that seem to be based on the initial population of the beneficiary regions, are scheduled to fall gradually over time from EUR 10.5 billion in 2005 to EUR 2.1 billion in 2019.

There are additional transfers to the Eastern *Länder* (except for Berlin) to cover the costs arising from their structurally high rates of unemployment. This item was initially funded at around EUR 1 billion annually and is also scheduled to decline gradually over time. Finally, the Federal Government provides supplementary resources to regions with small populations to help them

meet the fixed costs of their administrative and political structure. This item was initially funded at EUR 500 million and is reviewed every five years.

C.3.2. Equalisation in Spain

The Spanish equalisation system has two components that broadly resemble their German counterparts: a system of (largely) horizontal transfers across regions and a series of vertical grants from the Central Government to the autonomous communities.

a) Horizontal Equalisation: the Guarantee Fund

The main equalisation instrument in the Spanish regional financing system is the so-called Guarantee Fund (formally, the Fund for the Guarantee of Essential Public Services). This Fund, which channels the bulk of the system's resources, works as a sort of pooled common purse that is distributed among the regions in proportion to their expenditure needs or adjusted populations as revised every year. The Guarantee Fund (GF) is fed by regional contributions amounting to 75% of the standardized or theoretical tax revenues of each autonomous community and by an additional contribution by the Central Government. In 2013, the Fund's total resources amounted to 72 billion euros (including a central contribution of 7.7 billion), which represented 80.4% of the system's total ordinary resources (leaving aside special grants for services that have only been transferred to some regions, like the police in the case of Catalonia). The sharing of this large pool of resources in accordance with a need criterion generates sizable horizontal flows from rich to poor regions and greatly reduces regional disparities in terms of financing per adjusted head. While the design of the system is much simpler, its effect is very similar to the German mechanism of horizontal financial compensation discussed in the previous section.

b) Vertical Transfers

The final piece of the Spanish system is comprised by a jumbled set of vertical transfers from the Central Government to the regions and vice versa. These transfers are channelled through three funds which have been (mis-)named as the Sufficiency, Cooperation and Competitiveness Funds. They are distributed across regions according to a large number of often conflicting criteria. Among these, the dominant one is the preservation of the *status quo*, that is, the situation of each region at the time of the latest reform of the model, which the system tends to perpetuate indefinitely.

Table 6: Vertical transfers in Spain, millions of euros

	<i>resources in 2013</i>	<i>distribution criteria</i>
<i>Sufficiency fund*</i>	-3,799	preservation of the status quo at the time of the latest reform of the system
<i>Cooperation Fund</i>	1,952	additional financing for regions with low income per capita, slow population growth or low density of population
<i>Competitiveness Fund</i>	2,433	additional resources for regions that are left by the rest of the system below the national average or with a financing index below an adjusted index of fiscal capacity
<i>Total</i>	<i>585</i>	

- *Note:* A negative sign indicates that resources flow from the regions to the Central Government.

(*) Excludes financing for services transferred only to certain regions. The figure given in the table for this Fund is the net result of 1,842 million in transfers from the Central Government to the 8 regions that are net beneficiaries of the Fund and 5,641 million in transfers from the remaining four regions to the Central Government.

- *Source:* de la Fuente (2015).

Table 6 shows the resources channelled by each Fund in 2013 and the criteria used for distributing them.²⁴ The total resources of the Sufficiency Fund (SF) and their distribution across regions in the first year of application of the current system (2009) were calculated in a way that ensured that no region lost resources as a result of the revision of the financing system.²⁵ For successive years, all these amounts are updated in proportion to an indicator of the Central Government's tax revenues, a procedure that has the effect of freezing regional shares in the SF. The SF, finally, has been subject to yearly technical revisions as set out in the current regional financing law (BOE, 2009), the most important of which neutralises the effect on regional financing of changes in VAT and excise tax rates via offsetting variations in regional allocations in the Fund. Since VAT and excise tax rates have increased significantly in recent years, pushing up regional shares in tax revenues, the offsetting corrections have turned the Sufficiency Fund negative, as a majority of regions now have negative SF balances with the Central Government to compensate for their increased tax revenues.

²⁴ See de la Fuente (2012) for the details of the regulation of these Funds, which are rather complicated.

²⁵ The initial SF was calculated in order to implement an ad-hoc political agreement on the distribution of the available resources of the new system (which included a significant increase in the Central Government's contribution). The agreed distribution bears little resemblance to the one implied by the spending needs formula and is very close to the distribution that existed prior to the reform, which is hardly surprising since the agreement was negotiated under a strict *statu quo* clause that guaranteed that no region lost resources with the reform. In essence, then, the only negotiation had to do with the distribution of the additional resources supplied by the Central Government. The sharing of these resources tended to favour those regions that were worse off under the previous system, but not nearly by enough to correct existing inequalities in financing per adjusted head.

The last two Funds, which are collectively known as the Convergence Funds, introduce some final adjustments in the distribution of regional financing. The Cooperation Fund provides additional resources for regions with low per capita incomes and for those with low rates of population growth or low levels of population density. Finally, the Competitiveness Fund provides at least partial compensation for two groups of regions that receive an unfavourable treatment under the rest of the system: those that are left below the national average in terms of financing per adjusted capita and those whose provisional financing index is below an adjusted index of fiscal capacity that approximates regional revenues after the application of the Guarantee Fund.

D. The financial results of the German and Spanish systems

This section summarises the financial effects of the application of the German and Spanish regional financing systems. For Germany, our data refer to 2014 (and 2008) and come from the Federal Finance Ministry. Our Spanish data correspond to 2013 and are taken from de la Fuente (2015), who introduces some technical adjustments to the results of the official liquidation of the system (MHAP, 2015).

Table 7 summarises the financial results of the German system of regional financing in 2014. Results for 2008 are shown in Table A1 in Appendix I. The tables show how the relative funding per head of the different states changes after each successive phase of the equalisation process, working always with per capita indices that take as a reference the national average (which is always normalised to 100). The bottom row of the tables shows an indicator of dispersion or inequality in regional financing: the standard deviation of the regional indices of financing per head. Since the adjusted population used in the German system is, as we have seen, derived in an antiquated way and only dubiously approximates the relative costs of providing key public services, we have decided to ignore it and work with data on financing per unadjusted head. Also, we have included standardised municipal tax revenues in the indicators for fiscal capacity and regional financing at all stages of the process because we consider that including this item more accurately reflects the *Länder's* financial position.

Column [1] of Table 7 shows an indicator of gross fiscal capacity per head, i.e. of the tax revenues that correspond to each state before the corrections dictated by the equalisation system. Gross fiscal capacity includes tax revenues from the *Länder* and 64% of the standardised tax take from municipalities. To facilitate comparisons with Spain, in this column VAT receipts have been allocated in proportion to regional consumption. Column [2] shows how the relative fi-

nancing indicators of the *Länder* would look after the allocation of VAT according to German criteria. As the last row of the table shows, this initial equalisation mechanism eliminates nearly half the initial disparities in regional revenues, reducing the dispersion of the financing indicator from 22 to 12.8.

Table 7: Financing per head in the German Länder before application of the equalisation system and after each stage in the process, including 64% of municipal tax revenues (2014)

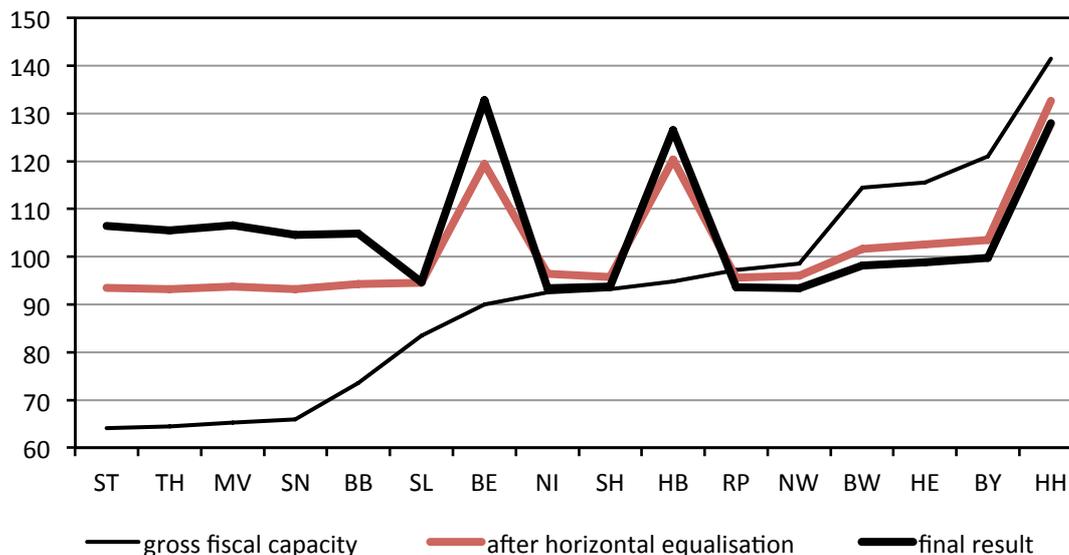
	[1] <i>Gross fiscal capacity</i>	[2] <i>Financing after VAT allocation</i>	[3] <i>After horizontal equalisation</i>	[4] <i>After vertical equalisation</i>	[5] <i>After federal transfers for specific needs</i>	Note: <i>Income per capita indicator</i>
NW	98.5	94.6	96.0	95.6	93.4	99.3
BY	121.0	114.2	103.5	102.3	99.8	116.0
BW	114.4	107.9	101.6	100.4	98.1	113.1
NI	92.5	95.4	96.4	95.7	93.4	91.0
HE	115.5	110.6	102.5	101.2	98.8	115.7
RP	97.2	93.6	95.6	95.5	93.6	90.8
SH	93.2	94.1	95.8	95.6	93.8	83.5
SL	83.5	90.3	94.5	95.3	94.7	94.5
HH	141.4	133.5	132.6	131.0	127.9	159.3
HB	94.8	94.7	120.3	127.0	126.5	129.5
SN	65.9	86.1	93.2	95.0	104.6	74.2
ST	64.1	86.2	93.5	95.4	106.4	69.9
TH	64.5	86.0	93.2	95.0	105.5	69.8
BB	73.5	88.5	94.3	95.7	104.8	70.8
MV	65.2	85.7	93.8	95.9	106.6	67.1
BE	90.0	91.1	119.4	126.8	132.8	92.1
<i>Average</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>	<i>100.0</i>
<i>Std. Dev.</i>	<i>22.0</i>	<i>12.8</i>	<i>11.5</i>	<i>12.5</i>	<i>12.5</i>	<i>24.7</i>

- Key: NW = North Rhine-Westphalia; BY = Bavaria; BW = Baden-Wurttemberg; NI = Lower Saxony; HE = Hesse; RP = Rhineland-Palatinate; SH = Schleswig-Holstein; SL = Saarland; HH = Hamburg; HB = Bremen; SN = Saxony; ST = Saxony-Anhalt; TH = Thuringia; BB = Brandenburg; MV = Mecklenburg-Western Pomerania; BE = Berlin.

- Sources: Our calculations are based on data for tax revenue, equalisation transfers, and population from the Federal Ministry of Finance (2015), and data for GDP and consumption (both 2013) from the regional accounts page of the statistics portal shared by the *Länder* and the *Bund*, <http://www.vgrdl.de/>

The dispersion of financing per head is further reduced, though to a much lesser extent, by the horizontal equalisation transfers (column [3]) and slightly increased by the general vertical transfers (column [4]). In both cases, however, the special treatment accorded to the city-states of Hamburg, Bremen and Berlin introduces a large distortion. By increasing their notional populations by 35% for purposes of the system's calculations, the city-states receive much larger transfers (or pay much smaller contributions) than they would without the adjustment.

Figure 5: Allocation of resources per capita at various stages in the application of the German financing system (includes homogenized local taxes. 2013 data)



In principle, both rounds of transfers eliminate only part of the gap with the per-capita average and do so in a way that preserves the original ranking of the German states. In practice, however, this is only true when the calculations are done on an adjusted population basis. If we work with financing per actual (unadjusted) head of population, the favourable treatment accorded to the three city-states becomes glaringly obvious. Finally, federal transfers for specific needs (column [5]) are concentrated on the Eastern *Länder* (grouped together in the lower part of the table). As a result, this group of regions jumps into the upper tail of the per-head financing distribution despite starting from gross tax receipts well below the national average (see Figure 5).

Overall, then, the German regional financing system reduces by approximately one half of the inequality of resources per head and significantly changes the ranking of the *Länder* in terms of this criterion in a way that very much favours the poorer regions of the former East Germany and the three city states. The first effect is at least understandable given the recent date of German reunification and the undoubted disadvantages that encumber the new *Länder*, particularly as these transfers are theoretically set to decrease over time until they eventually vanish. The second effect is much harder to justify and is somewhat reminiscent of the privileges granted to the Spanish *Foral* regions of Navarre and the Basque Country, although the gap in resources with the other regions is substantially smaller in the German case.

Table 8 and Figure 6 reproduce the analysis with Spanish data for 2013. Column [1] shows each region's gross fiscal capacity, column [2] its financing after the operation of the Guarantee Fund and column [3] its final financing after the vertical transfers channelled through the Sufficiency,

Cooperation and Competitiveness funds. In this case, we work with indices of financing per adjusted head, normalizing to 100 the average values of the variables of interest in the part of Spain that is subject to the standard regional financing system (i.e. excluding the Basque Country, Navarre and the autonomous cities of Ceuta and Melilla). All the calculations are made “at homogeneous competences”, that is, excluding the resources destined to finance certain responsibilities that have only been transferred to certain regions (like the police, prisons or the staff of the courts of justice).²⁶

Table 8: Financing per adjusted head in the Spanish regions before application of the equalisation system and after each stage in the process, 2013

	Average value in Spain, excluding Basque Country, Navarre, Ceuta and Melilla = 100			
	[1]	[2]	[3]	Note:
	<i>gross fiscal capacity</i>	<i>financing after Guarantee Fund</i>	<i>financing after vertical transfers</i>	<i>Income per capita</i>
<i>Canarias*</i>	54.8	100.5	100.3	87.4
<i>Extremadura</i>	71.1	94.5	114.6	70.1
<i>C. la Mancha</i>	82.2	97.1	102.7	82.7
<i>Andalucía</i>	82.4	96.8	96.9	76.2
<i>Murcia</i>	84.9	96.4	94.3	83.2
<i>Galicia</i>	86.8	97.6	106.5	90.0
<i>Valencia</i>	93.1	96.3	92.5	89.2
<i>Cast. y León</i>	93.3	98.9	109.2	96.8
<i>Asturias</i>	99.4	98.9	106.8	90.7
<i>Rioja</i>	100.0	98.9	119.5	110.5
<i>Aragón</i>	102.6	97.6	104.2	111.7
<i>Cantabria</i>	106.2	96.0	124.4	93.5
<i>Cataluña</i>	118.4	102.6	97.4	119.9
<i>Baleares</i>	122.9	107.7	104.4	106.9
<i>Madrid</i>	141.4	108.2	96.9	138.7
<i>average</i>	100.0	100.0	100.0	100.0
<i>Std. deviation</i>	20.6	3.9	8.9	17.4

- Source: de la Fuente (2015).

- Note (*) Figures for the Canary Islands include the so called REF resources, linked to the region's special fiscal status. See de la Fuente (2012 and 2015) for additional details.

As can be seen in Table 8 the application of the Guarantee Fund dramatically reduces financing disparities across regions (the dispersion indicator drops from 20.6 to 3.9) while roughly respecting the initial ordering of the regions in terms of their gross fiscal capacity.²⁷ The effect of

²⁶ As part of the calculation of these magnitudes, some adjustments have been made that seek to increase the comparability of the figures across regions. These adjustments include an attempt to homogenise the revenues of some regional taxes so they approximate the tax take that would have been obtained with homogeneous tax scales throughout the country. For more details, see chapter 5 and Appendix 2 in de la Fuente (2012).

²⁷ There are minor exceptions to this rule because the transfers of the Guarantee Fund are calculated without taking into account the Canary Islands' REF resources and using a measure of theoretical re-

the vertical transfers is, however, very different. This element of the system sharply increases the dispersion of financing per adjusted capita (from 3.9 to 8.9) and completely alters the ordering of the autonomous communities, leaving a final distribution of resources that has very little to do with the original distribution of tax revenues. Thanks to Central Government grants, for instance, Extremadura gains 11 positions in the ranking in terms of resources per adjusted capita, while Madrid and Catalonia lose 11 and 8 positions, respectively.

Figure 6: Financing per adjusted head at homogeneous competences after the application of the different elements of the Spanish system

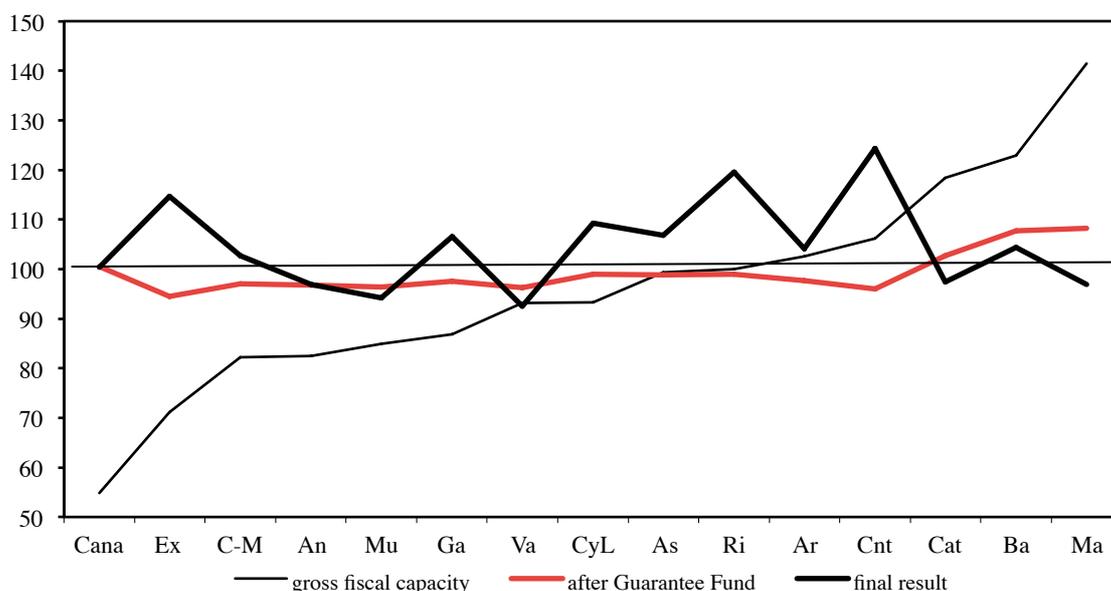


Table 9 summarises some key figures on the financial results of the two regional financing systems and compares them with each other. For each country and for different stages in the application of the system, we show the dispersion of regional financing per capita or per adjusted capita, measured by the standard deviation of the financing indices shown in Table 7 and Table 8 and by a re-standardised inequality index that is normalised to 100 for each country in column [1]. We also show the correlation between the financing index obtained at each stage and the fiscal capacity index shown in column [1] of Table 7 and Table 8. This coefficient gives us an idea of how the ordering of the regions is affected as successive redistribution mechanisms are applied.

gional tax revenues that is slightly different from the corrected one used here. As a result of these factors, our measure of gross fiscal capacity differs slightly from the official one.

Table 9: Some comparative statistics on the two systems

	[1] gross fiscal capacity	[2] financ- ing after allocation of VAT	[3] after hori- zontal transfers	[4] after stand- ard vertical transfers	[5] after special vertical transfers
Germany 2014					
<i>Std. deviation</i>	22.0	12.8	11.5	12.5	12.5
<i>Inequality index</i>	100.0	57.9	52.4	56.8	56.8
<i>corr with [1]</i>	1.000	0.943	0.646	0.503	0.122
Spain 2013					
<i>Std. deviation</i>	20.6		3.9		8.9
<i>Inequality index</i>	100.0		19.0		43.2
<i>corr with [1]</i>	1.000		0.700		-0.027
<i>Note:</i>					
Germany 2008					
<i>Std. deviation</i>	27.6	15.6	12.2	13.0	14.7
<i>Inequality index</i>	100.0	56.5	44.3	47.0	53.2
<i>corr with [1]</i>	1.000	0.945	0.692	0.545	-0.132

Looking at the table, we see that both systems achieve very significant reductions in initial disparities in tax revenues per capita and introduce important changes in the regional ranking in terms of resources per capita (or adjusted capita). While the initial level of revenue inequality is roughly similar in both countries, the Spanish system achieves a somewhat greater degree of equalisation. The main reason for this is the distortion introduced by Germany's ad-hoc population adjustment, which dampens the redistributive impact of the system and introduces an important element of arbitrariness. In the case of Spain, the main source of arbitrariness is that, as we have seen, the allocation of vertical grants follows no clear logic beyond the preservation of the *statu quo*. This component of the system also increases very significantly the degree of inequality across regions, rather than contributing to equalisation as may be expected.

The changes in the regional ranking are important in both countries, as evidenced by the correlation coefficients shown in column [5]. Both in Germany and in Spain, the final distribution of resources has very little to do with the original distribution of tax revenues across regions, as evidenced by a correlation coefficient close to zero. In Germany the correlation between the two variables was actually negative (-0.132) in 2008, indicating that the poorest regions ended up with the highest financing. This was largely due to special programs of aid to the new Eastern states at the last stage of the equalisation process. These programs, however, respond to very real needs and are being phased out over time, gradually eliminating this 'anomaly'. By 2014, the reordering of regions was smaller in Germany than in Spain.

E. The regional financing systems in light of the criteria

The descriptions of the German and Spanish systems of regional fiscal equalisation have already unveiled many strong and weak points on both sides. We have reviewed different features of the two systems and learnt that both are far from perfect. That becomes even more obvious when we apply the criteria for a well-functioning regional financing system developed in section B (Table 1) to the current models of the two countries. Here, we also see more *common* characteristics than before – e.g. both systems performing badly when it comes to simplicity.

Table 10 uses the simple and very straightforward method of attaching ‘Smileys’ of different colours to value performance along each dimension. These symbols indicate whether performance is considered to be good (green), fair (yellow) or poor (red). Of course, this ordinal scale does not reflect results from unambiguous measurement. Rather, the ratings should be read as the expert judgements they are.

Table 10: The equalisation systems in light of the performance criteria

Criteria	Spain	Germany
Revenue adequacy		
Fairness in redistribution		
Non-discrimination		
Affordability		
Equity		
Responsiveness		
Insurance		
Expenditure autonomy		
Tax autonomy		
Dynamic efficiency and regional accountability		
Compatibility with the fiscal framework		
Predictability		
Transparency		
Simplicity		

In light of the criteria for a *good* system, both countries’ regional financing systems are in need of reform. But the reform requirements are not the same. Tax autonomy, for example is quite good in Spain while Germany has almost none. In other fields, *both* systems could be improved

significantly. For example, neither system meets the requirement to be as simple as possible (for the given purpose).

Finally, a *good* system of regional finance need not show positive ratings for each single criterion. As trade-offs between some of the criteria have to be expected, even in theory we cannot expect a completely 'green' picture. But, as we see in Table 10, there is much room for 'real world' improvements in both countries.

F. Simulation of the German system applied to Spain

It has become clear that the German system of fiscal equalisation is far from perfect. Still, in some dimensions it reflects a more systematic and less arbitrary approach than its Spanish counterpart. Hence, the question arises: What would happen if we applied the German system to the Spanish regions? We cannot give an exact answer to this question as some aspects of the German financing system could not be translated directly to the situation in Spain. Two major examples of this are the transfers to the new Eastern *Länder* to reduce their infrastructure deficits and the ad-hoc system used to calculate adjusted population.

The simulation we present in this section has ignored these two factors and a number of others, such as the bonus for regions whose tax receipts have risen most when calculating fiscal capacity. We have taken as given the current distribution of tax resources between Spain's autonomous regions and the Central Government and the procedure used in Spain to calculate adjusted population. This means that the main focus is on the impact of the equalisation mechanisms on regional disparities, ignoring special needs transfers by the *Bund* which go mostly to the East - partly because Spain has suffered no shock in the last two decades that comes close in importance to Germany's reunification and partly because it seems reasonable to maintain the separation that exists in Spain between the ordinary financing of regions and regional development aid, which is largely channelled through European Structural Funds and the Interterritorial Compensation Fund. We have also ignored municipal revenue in the allocation of regional financing because in Spain it is the Central Government that is responsible for supplementing and, to some extent, equalising the revenues of local authorities.

Table 11 summarises the results of our simulation using 2013 data. The figures are indicators of fiscal capacity or financing per adjusted head of population and are given relative to the average of all regions subject to the common financing regime (average = 100). The bottom row

shows the standard deviation of each indicator. Financing is measured at comparable responsibilities, i.e. looking only at resources that go to fund responsibilities exercised by all regions.

**Table 11: Results of applying the German equalisation system in Spain using 2013 data
Financing per adjusted head**

	[1] <i>Gross fiscal capacity</i>	[2] <i>After VAT allocation</i>	[3] <i>After horizon- tal equalisation</i>	[4] <i>After vertical equalisation</i>	[5] <i>Note: Relative GDP per head</i>
<i>Catalonia</i>	118.4	107.5	103.6	102.2	119.9
<i>Galicia</i>	86.8	86.0	95.0	97.1	90.0
<i>Andalusia</i>	82.4	95.0	97.6	97.7	76.2
<i>Asturias</i>	99.4	91.2	96.5	97.4	90.7
<i>Cantabria</i>	106.2	94.4	97.5	97.7	93.5
<i>La Rioja</i>	100.0	91.0	96.4	97.4	110.5
<i>Murcia</i>	84.9	94.1	97.3	97.6	83.2
<i>Valencia</i>	93.1	96.3	98.2	97.8	89.2
<i>Aragon</i>	102.6	94.5	97.5	97.7	111.7
<i>C.-La Mancha</i>	82.2	87.4	95.4	97.2	82.7
<i>Canaries</i>	54.8	90.8	96.3	97.4	87.4
<i>Extremadura</i>	71.1	86.0	95.0	97.1	70.1
<i>Balearic Islands</i>	122.9	103.5	101.9	100.5	106.9
<i>Madrid</i>	141.4	128.5	110.7	109.1	138.7
<i>Castille & Leon</i>	93.3	85.7	94.9	97.1	96.8
<i>Total</i>	100.0	100.0	100.0	100.0	100.0
<i>Standard dev.</i>	20.6	10.7	4.1	3.1	17.4

Column [1] shows the gross fiscal capacity of the common regime regions under the current system, i.e. the tax take each would have received applying uniform tax scales across Spain for all taxes currently devolved in whole or in part to the regions and distributing VAT receipts in proportion to consumption as is done under the current system.²⁸ Columns [2] to [4] show how the situation would change after the application of the successive regional equalisation mechanisms used in Germany. Column [2] shows the results of allocating VAT according to the German model, i.e. distributing the bulk of VAT receipts in proportion to population and assigning the rest of such revenues to regions with lower than average fiscal capacity per head. Column [3] shows regional revenues after the horizontal equalisation transfers required by the German system and column [4] shows the final result after the vertical transfers that the Central Government would have to make to regions with financing levels below 99.5 in column [3]. We

²⁸ To see details of how this amount, which includes some adjustments to the standard tax receipts used in the financing model, is calculated see the Source (2012).

have not tried, as we said, to reproduce Germany's federal transfers for special needs, which mainly go to the new Eastern *Länder*.

As Table 11 shows, the simplified version of the German system that we are simulating here would considerably reduce the disparities in resources across autonomous regions but would not eliminate them completely. The inequality indicator shown in the bottom row of the table is reduced to one half by the VAT allocation and by another 60% by the horizontal equalisation. As a result, the spread between the best- and worst-off regions is reduced from 87 points in column [1] to 16 in column [4] and this would come down to 9 if we took out Madrid. Also, the ranking of regions remains the same between columns [2] and [4], but not in all cases between columns [1] and [2]. The region that would suffer most from allocating VAT on German criteria would be the Balearic Islands, which would lose around 20 points in terms of its relative financing index as it would no longer get to keep all the VAT generated by tourism on the islands.

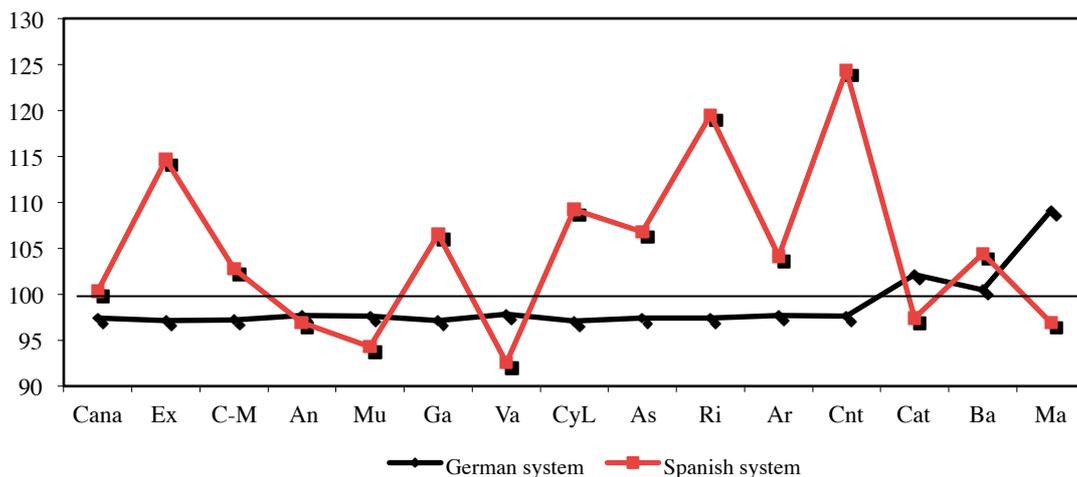
Table 12 compares the results of using the German system in 2013 (Table 11 column [4]) with the actual distribution of regional financing in Spain under the current system and shows the net gain that moving to the German system would produce for each region, measured as a percentage of its GDP.

Table 12: Regional financing per adjusted capita in 2013 German vs. current Spanish system net gain from the change of system as a % of GDP

	[1]	[2]	[3]
	German system	Current Spanish system	Net gain from [1] as % GDP
<i>Catalonia</i>	102.2	97.4	0.36%
<i>Galicia</i>	97.1	106.5	-1.05%
<i>Andalusia</i>	97.7	96.9	0.09%
<i>Asturias</i>	97.4	106.8	-1.01%
<i>Cantabria</i>	97.7	124.4	-2.68%
<i>La Rioja</i>	97.4	119.5	-1.93%
<i>Murcia</i>	97.6	94.3	0.37%
<i>Valencia</i>	97.8	92.5	0.54%
<i>Aragon</i>	97.7	104.2	-0.58%
<i>C.-La Mancha</i>	97.2	102.7	-0.66%
<i>Canaries</i>	97.4	100.3	-0.32%
<i>Extremadura</i>	97.1	114.6	-2.48%
<i>Balearics</i>	100.5	104.4	-0.34%
<i>Madrid</i>	109.1	96.9	0.79%
<i>Castille & Leon</i>	97.1	109.2	-1.26%
<i>Total</i>	100.0	100.0	0.00%
<i>Standard dev.</i>	3.1	8.9	

The differences between the two systems stand out more clearly in Figure 7. The regions are listed from left to right in order of increasing gross fiscal capacity. In order to respect the “ordinality principle” (that all regions should maintain their starting positions in the ranking by resources per adjusted head), the relative financing line should slope consistently upward. Comparing the two models, it is clear that the current Spanish system fails to comply with this principle and generates significant differences across regions in terms of financing per unit of need which have nothing to do with the fiscal capacity of the different territories. The streamlined version of the German system we have used in our simulation produces a far more egalitarian allocation of resources and one that is more consistent with the ordinality principle than that currently in force in Spain. It should be said, however, that this is largely because we have ignored the elements of the German model that most distort its results and have the greatest impact on the *Länders'* rankings.

Figure 7: Results of using the German vs. the Spanish systems



Note also that in the case of Catalonia, where the German model is often cited as a standard to follow, there is only a relatively small difference between the outcomes of the two systems. Relative to the current system, adoption of the German model would result in a gain of around EUR 700 million, which translates into an improvement of 4.7 points in the financing index or a gain of a 0.36 percentage points of GDP. The differences would be greater in other regions, including Madrid and Valencia, which would gain more than 12 and 5 financing points from the change and Extremadura, Castille & Leon, La Rioja and Cantabria, which would lose between 10 and 20 financing points and between 1.3 and 2.7 points of GDP apiece.

Another major difference between Spain and Germany that should be mentioned is that the German Basic Law lays down comprehensive regulations for many aspects of regional financ-

ing and includes a clause on the equalisation of living standards, while in Spain the Constitution says virtually nothing on the issue and the relevant regulations are set out in an organic law. It would be a good idea to include the core principles of the system in the Constitution.

G. Conclusions

This paper does not aim at designing new and better fiscal equalisations systems for Spain and Germany. Yet, the detailed, systematic and quantitative comparison of both systems produces some quite fundamental insights on how each country might learn from the other.

For Spain, in a nutshell, the main conclusion is the following. If we ignore the special needs transfers, which seem eminently reasonable (and even if we include them), the main advantage of the German system is that vertical transfers are made on a comprehensible and reasonable basis, while in Spain there is a multitude of funds which are allocated according to highly diverse and sometimes contradictory criteria. This is what wrecks the rest of the system and results in a highly debatable final distribution. Sorting this out should be a major aim of the reforms. Another important lesson is that long phasing-out periods for special allocations that may be temporarily justified are preferable to the permanent freezing of distributive patterns that the Spanish system tends to generate.

For Germany, the main conclusions are as follows. An outdated and empirically dubious mechanism is at work at the very heart of the horizontal equalisation system to determine the expenditure needs of the *Länder*. Here, the Spanish method of tying needs to indicators linked to the demand for the main regional public services could bring about a big leap forward. Also, German *Länder* – and German federalism – suffer from too little tax and expenditure autonomy. Here, a – measured – infusion of the existing Spanish regional liberty would prove very valuable. Finally, the introduction of a measure of standardized tax revenue as the basis for equalization calculations could be quite useful in reducing the disincentive effects of the current system.

For Europe, the comparative analysis of the Spanish and German regional financing systems may be useful as an example of a rational discussion of federal issues. Only better and detailed research in this field can inspire a productive and well informed discussion on how to design a European Federation. The authors hope this paper will not just inform the discussion in the two countries concerned but will also shed some light and insight on the best way forward for Europe – notwithstanding the well taken criticisms that can be directed at the way some elements of European federalism have developed over the last fifty years.

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Appendix I: Results of the German financing system in 2008

Table A1: Financing per head in the German Länder in 2008 before application of the equalisation system and after each stage in the process, including 64% of municipal tax revenues German average = 100

	[1] Gross fiscal capacity	[2] Financing after VAT allocation	[3] After hori- zontal equalisation	[4] After vertical equalisation	[5] After federal transfers for specific needs	Note: Income per capita indica- tor
NW	103.8	97.3	97.4	96.2	91.9	102.4
BY	116.7	109.6	101.9	100.6	96.2	111.1
BW	117.2	109.6	101.9	100.7	96.2	112.3
NI	91.8	94.9	96.2	95.7	91.5	88.2
HE	123.9	117.4	103.9	102.6	98.1	122.0
RP	94.7	91.9	95.0	95.4	91.5	88.2
SH	92.2	93.5	95.5	95.5	91.8	85.0
SL	88.5	90.9	94.7	95.3	93.0	100.2
HH	156.9	143.0	136.0	134.4	128.4	172.9
HB	105.6	95.2	120.4	127.0	124.2	138.0
SN	59.7	83.3	92.5	94.8	112.9	72.7
ST	59.8	84.4	93.1	95.3	115.0	70.0
TH	58.0	83.1	92.4	94.8	113.7	67.4
BB	65.4	85.3	93.5	95.5	112.3	69.8
MV	55.6	82.2	92.9	95.7	115.0	68.0
BE	80.2	88.4	118.8	126.7	139.1	92.2
Average	100.0	100.0	100.0	100.0	100.0	100.0
Disper.	27.6	15.6	12.2	13.0	14.7	28.1

- Key: NW = North Rhine-Westphalia; BY = Bavaria; BW = Baden-Wurttemberg; NI = Lower Saxony; HE = Hesse; RP = Rhineland-Palatinate; SH = Schleswig-Holstein; SL = Saarland; HH = Hamburg; HB = Bremen; SN = Saxony; ST = Saxony-Anhalt; TH = Thuringia; BB = Brandenburg; MV = Mecklenburg-Western Pomerania; BE = Berlin.

- Sources: Our calculations are based on data for tax revenue and equalisation transfers from the German Finance Ministry (2009) and data for population, GDP and consumption from the regional accounts page of the statistics portal shared by the Länder and the Bund, http://www.vgrdl.de/Arbeitskreis_VGR/home.asp?lang=en-GB

Appendix II: Selected Articles from the German constitution (Basic Law)

Article 72 [Concurrent legislative power of the Federation definition]

(1) On matters within the concurrent legislative power, the *Länder* shall have power to legislate so long as and to the extent that the Federation has not exercised its legislative power by enacting a law.

(2) The Federation shall have the right to legislate on these matters if and to the extent that the establishment of equal living conditions throughout the federal territory or the maintenance of legal or economic unity renders federal regulation necessary in the national interest.

(3) A federal law may provide that federal legislation that is no longer necessary within the meaning of paragraph (2) of this Article may be superseded by *Land* law.

Article 85 [Execution by the Länder on federal commission]

(1) Where the *Länder* execute federal laws on federal commission, establishment of the authorities shall remain the concern of the *Länder*, except insofar as federal laws enacted with the consent of the Bundesrat otherwise provide.

(2) The Federal Government, with the consent of the Bundesrat, may issue general administrative rules. It may provide for the uniform training of civil servants and other salaried public employees. The heads of intermediate authorities shall be appointed with its approval.

(3) The *Land* authorities shall be subject to instructions from the competent highest federal authorities. Such instructions shall be addressed to the highest *Land* authorities unless the Federal Government considers the matter urgent. Implementation of the instructions shall be ensured by the highest *Land* authorities.

(4) Federal oversight shall extend to the legality and appropriateness of execution. For this purpose the Federal Government may require the submission of reports and documents and send commissioners to all authorities.

Article 105 [Legislative powers]

(1) The Federation shall have exclusive power to legislate with respect to customs duties and fiscal monopolies.

(2) The Federation shall have concurrent power to legislate with respect to all other taxes the revenue from which accrues to it wholly or in part or as to which the conditions provided for in paragraph (2) of Article 72 apply.

(2a) The *Länder* shall have power to legislate with respect to local taxes on consumption and expenditures so long and insofar as they are not substantially similar to taxes imposed by a federal law.

(3) Federal laws relating to taxes the revenue from which accrues wholly or in part to the *Länder* or to municipalities (associations of municipalities) shall require the consent of the Bundesrat.

Article 106 [Apportionment of tax revenue]

(1) The yield of fiscal monopolies and the revenue from the following taxes shall accrue to the Federation:

1. customs duties;
2. taxes on consumption insofar as they do not accrue to the *Länder* pursuant to paragraph (2), or jointly to the Federation and the *Länder* in accordance with paragraph (3), or to municipalities in accordance with paragraph (6) of this Article;
3. the highway freight tax;
4. the taxes on capital transactions, insurance, and bills of exchange;
5. nonrecurring levies on property and equalisation of burdens levies;
6. income and corporation surtaxes;
7. levies imposed within the framework of the European Communities.

(2) Revenue from the following taxes shall accrue to the *Länder*:

1. the property tax;
2. the inheritance tax;
3. the motor vehicle tax;
4. such taxes on transactions as do not accrue to the Federation pursuant to paragraph (1) or jointly to the Federation and the *Länder* pursuant to paragraph (3) of this Article;
5. the beer tax;
6. the tax on gambling establishments.

(3) Revenue from income taxes, corporation taxes, and turnover taxes shall accrue jointly to the Federation and the *Länder* (joint taxes) to the extent that the revenue from the income tax and the turnover tax is not allocated to municipalities pursuant to paragraphs (5) and (5a) of this Article. The Federation and the *Länder* shall share equally the revenues from income taxes and corporation taxes. The respective shares of the Federation and the *Länder* in the revenue from the turnover tax shall be determined by a federal law requiring the consent of the Bundesrat. Such determination shall be based on the following principles:

1. The Federation and the *Länder* shall have an equal claim against current revenues to cover their necessary expenditures. The extent of such expenditures shall be determined with due regard to multi-year financial planning.
2. The financial requirements of the Federation and of the *Länder* shall be coordinated in such a way as to establish a fair balance, avoid excessive burdens on taxpayers, and ensure uniformity of living standards throughout the federal territory.

In determining the respective shares of the Federation and the *Länder* in the revenue from the turnover tax, reductions in revenue incurred by the *Länder* from January 1, 1996 because of the provisions made with respect to children in the income tax law shall also be taken into account. Details shall be regulated by the federal law enacted pursuant to the third sentence of this paragraph.

(4) The respective shares of the Federation and the *Länder* in the revenue from the turnover tax shall be apportioned anew whenever the ratio of revenues to expenditures of the Federation becomes substantially different from that of the *Länder*; reductions in revenue that are taken into account in determining the respective shares of revenue from the turnover tax under the fifth sentence of paragraph (3) of this Article shall not be considered in this regard. If a federal law imposes additional expenditures on or withdraws revenue from the *Länder*, the additional burden may be compensated for by federal grants pursuant to a federal law requiring the consent of the Bundesrat, provided the additional burden is limited to a short period of time. This law shall establish the principles for calculating such grants and distributing them among the *Länder*.

(5) A share of the revenue from the income tax shall accrue to the municipalities, to be passed on by the *Länder* to their municipalities on the basis of the income taxes paid by their inhabitants. Details shall be regulated by a federal law requiring the consent of the Bundesrat. This law may provide that municipalities may establish supplementary or reduced rates with respect to their share of the tax.

(5a) From and after January 1, 1998, a share of the revenue from the turnover tax shall accrue to the municipalities. It shall be passed on by the *Länder* to their municipalities on the basis of a formula reflecting geographical and economic factors. Details shall be regulated by a federal law requiring the consent of the Bundesrat.

(6) Revenue from taxes on real property and trades shall accrue to the municipalities; revenue from local taxes on consumption and expenditures shall accrue to the municipalities or, as may be provided for by *Land* legislation, to associations of municipalities. Municipalities shall be authorised to establish the rates at which taxes on real property and trades are levied, within the framework of the laws. If there are no municipalities in a *Land*, revenue from taxes on real property and trades as well as from local taxes on consumption and expenditures shall accrue to the *Land*. The Federation and the *Länder* may participate, by virtue of an apportionment, in the revenue from the tax on trades. Details regarding such apportionment shall be regulated by a federal law requiring the consent of the Bundesrat. In accordance with *Land* legislation, taxes on real property and trades as well as the municipalities' share of revenue from the income tax and the turnover tax may be taken as a basis for calculating the amount of apportionment.

(7) An overall percentage of the *Land* share of total revenue from joint taxes, to be determined by *Land* legislation, shall accrue to the municipalities or associations of municipalities. In all other respects *Land* legislation shall determine whether and to what extent revenue from *Land* taxes shall accrue to municipalities (associations of municipalities).

(8) If in individual *Länder* or municipalities (associations of municipalities) the Federation requires special facilities to be established that directly result in an increase of expenditure or in reductions in revenue (special burden) to these *Länder* or municipalities (associations of municipalities), the Federation shall grant the necessary compensation if and insofar as the *Länder* or municipalities (associations of municipalities) cannot reasonably be expected to bear the burden. In granting such compensation, due account shall be taken of indemnities paid by third parties and financial benefits accruing to these *Länder* or municipalities (associations of municipalities) as a result of the establishment of such facilities.

(9) For the purpose of this Article, revenues and expenditures of municipalities (associations of municipalities) shall also be deemed to be revenues and expenditures of the *Länder*.

Article 106^a [Federal grants for local mass transit]

Beginning January 1, 1996 the *Länder* shall be entitled to an allocation of federal tax revenues for purposes of local mass transit. Details shall be regulated by a federal law requiring the consent of the Bundesrat. Allocations made pursuant to the first sentence of this Article shall not be taken into account in determining the financial capacity of a *Land* under paragraph (2) of Article 107.

Article 107 [Financial equalisation]

(1) Revenue from *Land* taxes and the *Land* share of revenue from income and corporation taxes shall accrue to the individual *Länder* to the extent that such taxes are collected by revenue authorities within their respective territories (local revenue). Details respecting the delimitation as well as the manner and scope of allotment of local revenue from corporation and wage taxes shall be regulated by a federal law requiring the consent of the Bundesrat. This law may also provide for the delimitation and allotment of local revenue from other taxes. The *Land* share of revenue from the turnover tax shall accrue to the individual *Länder* on a per capita basis; a federal law requiring the consent of the Bundesrat may provide for the grant of supplementary shares not exceeding one quarter of a *Land* share to *Länder* whose per capita revenue from *Land* taxes and from income and corporation taxes is below the average of all the *Länder* combined.

(2) Such law shall ensure a reasonable equalisation of the disparate financial capacities of the *Länder*, with due regard for the financial capacities and needs of municipalities (associations of municipalities). It shall specify the conditions governing the claims of *Länder* entitled to equalisation payments and the liabilities of *Länder* required to make them as well as the criteria for determining the amounts of such payments. It may also provide for grants to be made by the Federation to financially weak *Länder* from its own funds to assist them in meeting their general financial needs (supplementary grants).

Article 108 [Financial administration]

(1) Customs duties, fiscal monopolies, taxes on consumption regulated by a federal law, including the turnover tax on imports, and levies imposed within the framework of the European Communities shall be administered by federal revenue authorities. The organisation of these authorities shall be regulated by a federal law. The heads of intermediate authorities shall be appointed in consultation with the *Land* governments.

(2) All other taxes shall be administered by the revenue authorities of the *Länder*. The organisation of these authorities and the uniform training of their civil servants may be regulated by a federal law requiring the consent of the Bundesrat. The heads of intermediate authorities shall be appointed in agreement with the Federal Government.

(3) To the extent that taxes accruing wholly or in part to the Federation are administered by revenue authorities of the *Länder*, those authorities shall act on federal commission. Paragraphs (3) and (4) of Article 85 shall apply, provided that the Federal Minister of Finance shall take the place of the Federal Government.

(4) Where and to the extent that execution of the tax laws will be substantially facilitated or improved thereby, a federal law requiring the consent of the Bundesrat may provide for collaboration between federal and *Land* revenue authorities in matters of tax administration, for

the administration of taxes enumerated in paragraph (1) of this Article by revenue authorities of the *Länder*, or for the administration of other taxes by federal revenue authorities. The functions of *Land* revenue authorities in the administration of taxes whose revenue accrues exclusively to municipalities (associations of municipalities) may be delegated by the *Länder* to municipalities (associations of municipalities) wholly or in part.

(5) The procedures to be followed by federal revenue authorities shall be prescribed by a federal law. The procedures to be followed by *Land* revenue authorities or, as provided by the second sentence of paragraph (4) of this Article, by municipalities (associations of municipalities) may be prescribed by a federal law requiring the consent of the Bundesrat.

(6) Financial jurisdiction shall be uniformly regulated by a federal law.

(7) The Federal Government may issue general administrative rules which, to the extent that administration is entrusted to *Land* revenue authorities or to municipalities (associations of municipalities), shall require the consent of the Bundesrat.

Appendix III: Fiscal Equalisation Act (FAG) – English Translation

Law on the Redistribution of Income between the Federal and the State governments (Fiscal Equalisation Act - FAG)

FAG

Date of issue: 20.12.2001

Full citation:

“Fiscal Equalisation Act of 20 December 2001 (Federal Gazette I p. 3955, 3956), last amended by Article 3 of the Law of 24 June 2015 (Federal Gazette I p. 974)”

The law expires per § 20 at the end of 31.12.2019

Status: Last amended by Art. 3 G of 24.6.2015 I 974

Footnote

(+++ Text from: 1.1.2005 +++)

The law as enacted as Article 5 G of 20.12.2001 I 3955 (SFG) by the Bundestag [Parliament] with approval by the Bundesrat [Federal Assembly]. It enters into force per Art. 12 para 2 of this law on 1.1.2005. Per its § 20, it expires at the end of 31 December 2019.

First Section

Tax sharing between the Federal and State Governments as well as among the States

§ 1 Federal and State Government Shares of the VAT

From the amount of the VAT, the Federal government receives, in 2007 3.89 percent, in 2008 4.42 percent, and in 2009 4.45 percent of the sales tax revenue; for any tax rate increase or reduction, the percentage reduces or increases corresponding to the increase or decrease in the year it becomes effective. From the amount of the VAT, the government receives, in 1998 3.64 percent, from 1999 to 2006 5.63 percent and for remaining the portion of 2007 5.15 per cent, and from 2008 5.05 percent, to equalise for the burdens due to an additional Federal subsidy to the pension insurance of workers and employees; for any tax rate increase or reduction, the percentage reduces or increases corresponding to the year it becomes effective. From the remaining amount of the VAT, the municipalities receive, from 1998 2.2 percent, plus an amount of 500 million euros a year in the years 2015 and 2016, and 1500 million euro in the year 2017. From the then remaining amount of the VAT, the government receives 50.5 percent, plus the amount referred to in sentence 5, and the States 49.5 percent, less the amount specified in sentence 5. The amount referred to in sentence 4 shall be

in the years 2005 and 2006
in the years 2007 and 2008

2 322 712 000 euros,
2 262 712 000 euros,

in the year 2009	1 727 712 000 euros,
in the year 2010	1 372 712 000 euros,
in the year 2011	1 912 712 000 euros,
in the year 2012	1 007 212 000 euros,
in the year 2013	947 462 000 euros,
in the year 2014	1 115 212 000 euros,
in the years 2015 and 2016	326 212 000 euros,
in the year 2017	223 212 000 euros,
in the year 2018	977 712 000 euros,
from the year 2019	1 077 712 000 euros,

In the share of the VAT, the States receive, in each case a share of 5.5 percent for restructuring in favour of States to equalise for their additional burden from the new rules on family benefits equalisation. This share is adjusted, from 1998, on the basis of the fiscal statistics of the Federal Central Tax Office so as to prepare the benefits in accordance with §§ 62-78 of the Income Tax Act in its current version, in order that this be borne 74 percent by the Federal government and 26 percent by the States. For the equalisation for the increase in child benefits of 1 January 2000, decreasing, from 1 January 2000, the share of the Federal government under sentence 4, by 0.25 percent and increasing the proportion to the States, under sentence 4, by 0.25 percent. The share referred to in sentence 6 is increased, on 1 January 2000, to 0.25 percent. For equalisation of the burden of the Second Act on Family Support of 16 August 2001 (Federal Gazette I p. 2074) decreases, from 1 January 2002, the share of the Federal government under sentence 4 by another 0.65 percent, increasing the share of the States under sentence 4 by another 0.65 percent. The share referred to in sentence 6 is increased on 1 January 2002 by a further 0.65 percent. For equalisation of the increase in child benefits, on 1 January 2009, the amounts referred to in sentence 5 change as follows:

in the year 2009	less 794 000 000 euros,
in the year 2010	less 281 000 000 euros and
in the year 2011	plus 152 000 000 euros.

The percentage referred to in sentence 6 is,
in the year 2009
changed by an amount of

plus 794 000 000 euros,

in the year 2010
changed by an amount of

plus 281 000 000 euros and

in the year 2011
changed by an amount of

less 152 000 000 euros

For equalisation of the tax rate increase, from 1 January 2007, the share of the Federal government under sentence 4 increases in 2007 by 0.08 percent and the share of the States under sentence 4 decreases by 0.08 percent; as of 2008, the share of the Federal government under sentence 4 increases by 0.1 percent and the share of the States under sentence 4 decreases by 0.1 percent. For equalisation of the tax rate increase, from 1 January 2007, the share referred to in sentence 6, will be reduced in 2007 by 0.08 percent and from 2008 by 0.1 percent. To finance the consolidation support per the Consolidation Assistance Act, the amount referred to in sentence 4 increases in 2011 by 266 666 666 euros and in 2012 by 400 million euros. If the claim of one or more States to consolidation support is voided, the amount in sentence 16 is accordingly adapted per the provisions in § 3 of the Consolidation Assistance Act. To equalise for the in-

crease in child benefits on 1 January 2010, the amount referred to in sentence 5 is reduced from 2010 by 1 326 000 000 euros. The share referred to in sentence 6 is increased, in 2010, by 1 326 000 000 euros. For any tax rate increase or reduction, in the year it becomes effective, the percentages referred to in sentences 8 to 11 and 14 to 15 are reduced or increased accordingly. This VAT distribution participation ration is valid for all sums, which are collected or refunded during the period of validity.

§ 2 Distribution of VAT between the States

(1) The States, whose revenues come from the personal income tax, corporation tax, trade tax allocation and from the land tax per capita under § 7 para. 1 from all of the States, receive supplementary shares from the State share of the VAT. The supplementary shares of a State are determined by multiplying tax revenues of all of the States under sentence 1 per inhabitant and with its population number and one of the following F factors:

1.
$$F = \frac{19}{20} \cdot X - \frac{21}{4000},$$

if the per capita tax revenues of the States under sentence 1 is below 97 percent of all the States,

2.
$$F = X \cdot \left(\frac{35}{6} \cdot X + \frac{3}{5} \right),$$

if the per capita tax revenues of the States under sentence 1 amounts to at least 97 percent of all the States;

it is for X each 1 minus the ratio of the per capita tax revenues of the State under sentence 1 over the per capita tax revenues of all the States under sentence 1. If the supplementary share, under sentences 1 and 2, amount overall to more than a quarter of the State share of the VAT, then the supplementary share is reduced in proportion to the amounts determined under sentences 1 and 2.

(2) The remaining State share of the VAT will be distributed in proportion to the population numbers of the State.

(3) To calculate the VAT share of the individual State, the population number is decisive, as established by the Federal Statistical Office on 30 June of the equalisation year.

§ 3 Distribution of the Trade Tax Allocation between the States

The trade tax allocation for the State stands to the extent that the business tax is collected in the territory of each State.

Second Section

Financial equalisation between the States

§ 4 Equalisation Payments

For implementation of the financial equalisation between the States, contributions are paid from equalisation paying States (equalisation contributions) to equalisation receiving States (equalisation allocations).

§ 5 Equalisation Paying and Equalisation Receiving States

(1) States, whose their financial capacity index number is greater than their equalisation index number in the calendar year for which the equalisation is carried out (equalisation year), are equalisation paying.

(2) States, whose financial capacity index number does not reach their equalisation index number in an equalisation year, are receiving equalisation.

§ 6 Financial Capacity Index Number, Equalisation Index Number

(1) The financial capacity index number of a State is the sum of the revenue of the State under § 7 and the tax revenues of its municipalities under § 8.

(2) The equalisation index number of a State is the sum of the index numbers determined separately, for equalisation of State revenues under § 7 and for equalisation of municipal tax revenue under § 8. The index numbers are derived from the per capita equalisation revenue of all of the States, multiplied by the population number of the States; this is based on the population numbers determined under § 9.

§ 7 Revenue of the States from Taxes and Royalties

(1) The tax revenues of a State are deemed those accrued during the equalisation year,

1. from its share of the income tax and corporation tax;
2. from its part of the trade tax allocation under § 6 of the Municipal Finance Reform Act;
3. from the wealth tax, inheritance tax, motor vehicle tax, the beer tax, the Betting and Lotteries tax as well as the tax on sports betting excepting the totaliser tax, the fire protection tax and the tax on gambling excepting the special levy and the casino tax;
4. according to the law regulating the financial compensation in favour of States due to the transfer of the tax sovereignty of the motor vehicle tax to the Federation.

The tax revenues of a State are also deemed the tax capacity number of the real estate transfer tax in the equalisation year. Tax capacity numbers are amounts established for each State, which arise when the real estate transfer tax for the overall Federal territory, for an equalisation year, is distributed in proportion to the rise of the underlying State tax bases of the real estate transfer tax. For cases of flat-rate taxation under § 12 of the Real Estate Transfer Tax Act, for the determination of the flat rate, the tax base is divided by the tax rate that was valid at the time of the lump sum tax process. The VAT share established for the equalisation year is also applicable under § 2 as tax revenue of a State.

(2) The revenue from the royalties under § 31 of the Federal Mining Act is added to the tax revenues of the States referred to in paragraph 1.

(3) The revenue referred to in paragraphs 1 and 2 shall be reduced in the States in which the rate of change of per capita tax revenue under paragraph 1 sentences 1 to 4, in the equalisation year, exceeds the corresponding rate of change of all of the States, in the calendar year preceding the equalisation year. Thereby, the population numbers are relevant, which are established by the Federal Statistical Office on 30 June of the equalisation year and in the calendar year preceding the equalisation year. The amount of reduction is set to 12 percent of the amount that results when the rate of change in per capita tax revenues of a State under paragraph 1 sentences 1 to 4 in an equalisation year, insofar as it exceeds the corresponding rate of change in all of

the States, multiplied by the per capita tax revenues of the State under paragraph 1 sentences 1 to 4 in the calendar year preceding the equalisation year as well as with number of inhabitants in the equalisation year.

§ 8 Tax Revenues of Municipalities

(1) Considered as tax revenue of a municipality of a State, in accordance with the provisions of para. 3,

1. is the community share of the VAT and income tax in the equalisation year,
2. the tax capacity number of the property taxes and the business tax under paragraph 2, less the trade tax allocation in the equalisation year.

For the payments of the municipalities of the trade tax allocation, the findings of the State shall prevail.

(2) As the tax capacity number of the real estate tax for agricultural and forestry business, the land tax for property and the trade tax, the amounts are established, in each case for each State, that arise when the individual real taxes, in the Federal territory for the equalisation year, are distributed in proportion to the basic amounts of these taxes in the State, in the calendar year preceding the equalisation year. Thereby, the basic amounts are authoritative, which are established by the Federal Statistical Office on the outcome of local government finance statistics.

(3) The tax revenues of the municipalities of a State referred to in paragraph 1 are each reduced to 64 percent.

§ 9 Number of Inhabitants

(1) The equalisation index number of a State is based on the population number (resident population), as established by the Federal Statistical Office on 30 June of the equalisation year.

(2) When calculating the index numbers for equalisation of the revenues of States under § 7, the number of inhabitants of the States of Berlin, Bremen and Hamburg are weighted with 135 percent and the number of inhabitants of other States with 100 percent.

(3) In determining the index numbers for equalisation for the tax revenue of the municipalities under § 8, the number of inhabitants of the States of Berlin, Bremen and Hamburg are weighted 135 percent, the number of inhabitants of the States of Mecklenburg-Western Pomerania with 105 percent, the population numbers of the State of Brandenburg with 103 percent, the number of inhabitants of Saxony-Anhalt with 102 percent and the number of inhabitants of other States with 100 percent.

§ 10 Assessment of the Equalisation Allocations and the Equalisation Contributions

(1) The equalisation allocations of any equalisation receiving States are determined by multiplying their equalisation index number with one of the following F factors:

1.
$$F = \frac{3}{4} \cdot X - \frac{317}{20\,000},$$

if the financial capacity index number of the State is less than 80 percent of its equalisation index number,

2.
$$F = X \cdot \left(\frac{5}{26} \cdot X + \frac{35}{52} \right) - \frac{2\,121}{260\,000},$$

if the financial capacity index number of a State is at least 80 percent of its equalisation index number, but less than 93 percent of its equalisation index number,

3.
$$F = X \cdot \left(\frac{13}{7} \cdot X + \frac{11}{25} \right),$$

if the financial capacity index number of a State is at least 93 percent of its equalisation index number;

thereby, for each x this is set at 1, less the ratio of the financial capacity index number to the equalisation index number of the State;

(2) The equalisation contributions of an equalisation paying State is determined per the provision of sentence 2, by multiplying its equalisation index number with one of the following factors:

1. with the factor under paragraph 1 no. 3, if the financial capacity index number of the State is under 107 percent of its equalisation index number,
2. with the factor under paragraph 1 no. 2, if the financial capacity index number of the State is at least 107 percent of its equalisation index number, but under 120 percent of its equalisation index number,
3. with the factor under paragraph 1 no. 1, if the financial capacity index number of the State is at least 120 percent of its equalisation index number,

thereby, for each x this is set at the ratio of the financial capacity index number to the equalisation index number of the State less 1. Amounts determined under sentence 1 are weighted with the percentage in applying the equalisation allocations, which is required so that the sum of the equalisation contributions corresponds to sum of the equalisation allocations.

(3) If any equalisation paying State, regarding the equalisation contribution determined in paragraph 2, exceeds 72.5 percent of the difference between its financial capacity index and equalisation index number, then the excess amount shall be equally borne by all equalisation paying and all equalisation receiving States. The equalisation paying States provide their shares in proportion to their equalisation contributions under paragraph 2, and the equalisation receiving States provide their shares in proportion to their equalisation allocations under paragraph 1.

Third Section

Supplementary Federal Grants

§ 11 Supplementary Federal Grants

(1) The federal government grants from its funds, to underperforming States, Supplementary Federal Grants, to assist them in meeting their general financial needs, including as equalisation for special burdens in accordance with provisions under paragraphs 2 to 4.

(2) To assist them in meeting their general financial needs, underperforming States receive general Supplementary Federal Grants. Underperforming, for the purpose of sentence 1, is a State, whose sum includes from the financial capacity index number and the equalisation allocations per § 10 deficit to 99.5 percent of the equalisation index number of the equalisation year. An underperforming State receives 77.5 percent of this deficit as general Supplementary Federal

Grants.

(3) To meet distribution-related special burdens from the existing strong infrastructural backlog demand and to equalise for under proportional municipal financial capacity, the States of Berlin, Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia receive in total, in the years 2005-2019, the following special needs Supplementary Federal Grants:

in the year 2005	10 532 613 000 euros,
in the year 2006	10 481 484 000 euros,
in the year 2007	10 379 225 000 euros,
in the year 2008	10 225 838 000 euros,
in the year 2009	9 510 029 000 euros,
in the year 2010	8 743 091 000 euros,
in the year 2011	8 027 283 000 euros,
in the year 2012	7 260 345 000 euros,
in the year 2013	6 544 536 000 euros,
in the year 2014	5 777 598 000 euros,
in the year 2015	5 061 790 000 euros,
in the year 2016	4 294 852 000 euros,
in the year 2017	3 579 043 000 euros,
in the year 2018	2 812 105 000 euros,
and in the year 2019	2 096 297 000 euros,

The amounts referred to in sentence 1 shall be distributed among the States referred to by the following percentages under rounding to thousands of euros:

Berlin	19.020610 percent,
Brandenburg	14.326911 percent,
Mecklenburg-Western Pomerania	10.536374 percent,
Saxony	26.075481 percent,
Saxony-Anhalt	15.733214 percent,
Thuringia	14.307410 percent,

The States of Berlin, Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia report to the stability council annually as part of the "Aufbau Ost" progress reports on their respective progress in closing the infrastructure gap and the use of the funds received to reduce distribution-related special charges. The reports shall be submitted no later than 15 September of the year following the year and discussed with an opinion of the Federal Government in the Stability Council.

(3a) For equalisation of special burdens via structural unemployment and the resulting disproportionate burdens in the merging of unemployment assistance and social assistance for the employable obtained by the following states following annual Special Needs Supplementary Federal Grants:

for the years 2005 to 2011:

Brandenburg	190 000 000 euros,
Mecklenburg-Western Pomerania	128 000 000 euros,
Saxony	319 000 000 euros,
Saxony-Anhalt	187 000 000 euros,
Thuringia	176 000 000 euros,

for the years 2012 and 2013:

Brandenburg	153 330 000 euros,
Mecklenburg-Western Pomerania	103 296 000 euros,
Saxony	257 433 000 euros,
Saxony-Anhalt	150 909 000 euros,
Thuringia	142 032 000 euros,

for the years from 2014:

Brandenburg	147 630 000 euros,
Mecklenburg-Western Pomerania	99 456 000 euros,
Saxony	247 863 000 euros,
Saxony-Anhalt	145 299 000 euros,
Thuringia	136 752 000 euros,

For the years 2012 and 2013, the amounts of the States under sentence 1 each reduce as follows:

Brandenburg	18 335 000 euros,
Mecklenburg-Western Pomerania	12 352 000 euros,
Saxony	30 783 500 euros,
Saxony-Anhalt	18 045 500 euros,
Thuringia	16 984 000 euros.

Federal and State governments jointly verify, with an interval of three years starting from 2013, to what extent the special burdens of these States are equalised from each following year. The special charges are determined in correspondence with the inhabitant-related ratios of communities in need and the progression of the costs of housing in the average of the States of Brandenburg, Mecklenburg-Western Pomerania, Saxony, Saxony-Anhalt and Thuringia in relation to the average of the States of Baden-Wurtemberg, Bavaria , Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatinate, Saarland and Schleswig-Holstein, given from the prior year review, with respect to the base year of 2005.

(4) Due to above-average costs of political leadership, the following States receive annually the following special needs Supplementary Federal Grants:

Berlin	43 460 000 euros,
Brandenburg	55 220 000 euros,
Bremen	60 332 000 euros,
Mecklenburg-Western Pomerania	61 355 000 euros,
Rhineland-Palatinate	46 016 000 euros,
Saarland	63 400 000 euros,
Saxony	25 565 000 euros,
Saxony-Anhalt	52 663 000 euros,
Schleswig-Holstein	53 174 000 euros,
Thuringia	55 731 000 euros.

Federal and State governments jointly review the conditions of the transfer with an interval of five years, for the first time in 2008, with regard to the transfer in each case for the next year.

(5) The Supplementary Federal Grants are represented in revenue, under § 11, notwithstanding § 10 para. 3, § 12 para. 1 and 4 of the Budgetary Principles Act and of § 13 para. 3, § 15 para. 1 and § 17 para. 1 of the Federal Budget Code.

Footnote

§ 11: In accordance with the decision formula with Art. 107 para. 2 sentence 3 Basic Law consistent with Decisions of the Constitutional Court 19.10.2006 I 2652 - 2 BvF 3/03 -

Execution and settlement of the VAT distribution, of financial equalisation and the Supplementary Federal Grants

§ 12 Determination of the Equalisation Payment

The Federal Ministry of Finance provides, at the end of the equalisation year, the final amount of the State shares of the VAT under § 2 and determines the final amount of compensatory allocations and compensation contributions under § 10, which requires the approval of the Bundesrat.

§ 12a Other Provisions for Equalisation Years 2011 and 2012

For equalisation years 2011 and 2012, pursuant to the ordinance under § 12, it will take into account the differences between the updated population numbers of the States on the basis of the 2011 census, on the one hand and the updated population numbers of the States on the basis of the statement of the Central Population Register of the German Democratic Republic on 3 October 1990 for the new States, and on the basis of the census of 25 May 1987 for the rest of the federal territory (population numbers on the old basis) on the other hand, as follows: The population numbers of the States in accordance with § 2, paragraph 3, § 7, paragraph 3 and § 9 paragraph 1 are calculated by dividing the population number of the States under the old basis for equalisation year 2011 and one-third for equalisation year 2012, wherein two thirds of the difference will be added under sentence 1.

§ 13 Execution of the financial equalisation during the equalisation years

The financial equalisation will be performed based on preliminary tax bases during the equalisation year. The provisional supplementary shares are determined, under § 2, from the provisional equalisation allocations and equalisation contributions are under §§ 4 to 10; however, are based on

1. the revenue of the States under § 7 paragraphs 1 and 2, as well as the municipality shares of the VAT, and the income tax and trade tax allocation under § 8, in the year period ending on 30 September of the preceding year.
2. the tax capacity numbers of the property taxes and the business tax of the municipalities under § 8, of the basic amounts, most recently established by the Federal Statistical Office, and after their occurrence in the year period ending on 30 June of the preceding year;
3. the population numbers under § 9 paragraph 1, established by the Federal Statistical Office as of June 30 of the year preceding the equalisation year; if these are not available in time, then the most recent population numbers established by the Federal Statistical Office.

§ 14 Payments under the execution of the financial equalisation

(1) The payments will be handled during the equalisation year in such a way that the delivery of the federal share will be increased or reduced by the amounts in which the VAT managed by

national tax authorities are increased or reduced, following the provisional assessment of the State shares of the VAT under § 2, in which the provisional assessment of the equalisation contributions and the equalisation allocations are offset in the financial equalisation under § 10 between the States. Insofar as the claim of a State is not fully covered by these offsets of the Federal share of the VAT, the Federal Ministry of Finance will transfer, to that State, the uncovered part of the provisional equalisation claim in monthly instalments. Insofar as an obligation of a State, from these offsets of the revenue managed by State tax authorities, exists from the VAT, the overlying part shall be transferred by the State to the Federal Ministry of Finance in monthly instalments. Any mid-year changes in legislation with impact on the VAT shares under § 1, in the current equalisation year, shall be considered separately as part of the payments of import VAT under paragraph 2.

(2) The State share in the import VAT, managed by the Federal tax authority, is distributed among the States based on population numbers, and paid in monthly instalments.

(3) The differences of the provisional supplementary shares, equalisation allocations and equalisation contributions under § 13 to the supplementary shares determined on the basis of actual changes in tax bases, equalisation allocations and equalisation contributions for the equalisation compensation year are provisionally settled on a quarterly basis.

(4) The details shall be regulated by the Federal Ministry of Finance each year in an ordinance that requires the consent of the Bundesrat.

§ 15 Final Settlement of Financial Equalisation

Differences between the provisionally paid and the finally adopted equalisation payments are offset by remittances, which are due to the entry into force of the measures provided for in § 12 of the ordinance. The Federal Ministry of Finance shall make the necessary arrangements for the transfer of funds.

§ 16 Payments under the execution of the Supplementary Federal Grants

(1) For the Supplementary Federal Grants under § 11 para. 2, on 15 March, 15 June, 15 September and 15 December, advance payments are paid, according to the financial capacity ratios from the respective previous accounting periods. At the same time, the amounts of the advance payment from the previous payment date that were over or under will be offset. For the final settlement of the Supplementary Federal Grants, § 15 applies accordingly.

(2) The Supplementary Federal Grants under § 11 para. 3 and 4 are due each with a quarter of its amount on 15 March, 15 June, 15 September and 15 December.

§ 17 Execution of the Distribution of the Municipal Share of the VAT

(1) The amount of the municipality share of the VAT managed by Federal tax authorities and State tax authorities and its distribution to States under § 5c of the Municipal Finance Reform Law, will be calculated by the Federal Ministry of Finance at the end of the month. The municipal share of the import VAT managed by the Federal tax authorities shall be paid to States, together with the State shares of the import VAT under § 14 para. 2 in monthly instalments. It is thereby distributed to the States, so that the particular State together with the municipality share of the VAT managed by the State tax authorities reaches the total share to which its municipalities are entitled. If the municipal share of the VAT managed by the State tax authorities, for a particular State, is higher than the total share of the VAT attributable to its municipalities,

the excess amount will be deducted from the State's share of the import VAT.

(2) Details may be determined by the Federal Ministry of Finance, by ordinance, which requires the consent of the Bundesrat.

§ 18 Obligation to Provide Information

The competent State authorities are obliged to provide the Federal Ministry of Finance information necessary for the implementation of this law and to confirm their veracity to the Supreme Audit Institutions of the country.

§ 19 Execution and Settlement of the Equalisation years before 1 January 2005

For the execution and settlement of the VAT distribution, of financial equalisation and the Supplementary Federal Grants for the equalisation years prior to 1 January 2005 under the law on the financial equalisation between the Federal and State governments of 23 June 1993 (Federal Gazette I p. 944, 977) in the version in on 31 December of the equalisation year.

§ 20 Validity

This law expires at the end of 31 December 2019.