I. General Remarks

1. Devolution, decentralisation, reforms of (fiscal) federalism are high on the reform agenda for several years in many countries. Regarding economic aspects, reform debates mainly focus on efficiency and equity issues, but also on the macroeconomic impact of fiscal federalism. The economic analysis of federalism provides for a broad set of results that appear to be difficult to comprehend. In essence, it leaves us with a differentiated picture as to how institutions of fiscal federalism work. Although there are many open questions, some results are relatively robust and well-accepted.

2. The questions formulated in the Call for Written Evidence on the Scotland Bill 2010 and Relevant Legislative Consent Memoranda reflect more or less the same concerns that have been present in the reform debates in other countries and the same questions scientists in the field have been interested in. In the following, I answer these questions from my own perspective on the existing empirical evidence. Thereby, I mainly draw on my own work on fiscal federalism. This should not be understood as neglect or even ignorance of what other researchers have found out. As some of my own work is based on broad surveys of the literature, but also a meta-analysis of empirical studies, I nevertheless hope that it suffices when I draw on these papers. As my empirical studies on the results of fiscal federalism are mainly on Switzerland and Germany, it is useful to first describe the institutional backgrounds of both countries’ fiscal federalism.

II. Fiscal Federalism in Germany and Switzerland as Two Prototypes

3. The German fiscal constitution is characterised, *inter alia*, by i) a relatively low level of sub-national tax autonomy, ii) a strong horizontal and vertical interdependence in intergovernmental finances, iii) a high sub-national autonomy of borrowing and iv) the constitutional guarantee of “comparable” (i.e. more equal) living conditions throughout the federation.

4. First, the constitutional guarantee of comparable living conditions has been interpreted to imply that all sub-national jurisdictions have had to exhibit
very similar policies in the most important policy areas. In particular, all sub-national governments have been subject to federal mandates with respect to social policy, and employment in the public sector was regulated at the federal level. While the leeway of sub-national governments in the area of public employment has increased considerably after the German Federalism Reform I in 2006, social policy continues to be tightly regulated. Realising comparable living conditions at the lower end thus continues to be one of the main goals of German federalism.

Second, since sub-national governments have little tax autonomy, they are forced to finance public expenditures primarily through the receipts from shared taxes (income tax, corporation tax, and value added tax) for which they cannot determine rates nor define bases, or they must finance spending through transfers from the federal or other sub-national governments. If both sources of revenue do not suffice, the Länder may borrow. Both features of the German fiscal constitution as such lend towards higher indebtedness. In order to achieve similar living conditions across Länder, each has to spend a minimum amount in the different policy areas. In order to finance these spending requirements taxes cannot be increased individually, new transfers must be agreed upon at the federal level such that borrowing becomes the easiest way to obtain a formally closed budget balance.

5. Moreover, the federal and sub-national governments are interlinked in a complex intergovernmental transfer scheme.¹ This transfer scheme consists of three stages. In the first stage, the revenues from the shared taxes are distributed to the state governments. The receipts from the income and corporation taxes are allocated according to where they were collected; 75% of the receipts from the value added tax are allocated according to population shares. Given that the level of economic activity and thus receipts from value added taxes vary between states, this particular distribution of receipts already implies an equalisation of fiscal resources. The remaining 25% are used to raise the available revenues in fiscally weak states closer to the federal average.

This first stage does not lead to a complete equalisation of fiscal revenues. Therefore, remaining differences in the fiscal capacity of sub-national governments are further equalised through transfers from fiscally strong to fiscally weak states. Since the federal government does not participate during this second stage of the intergovernmental transfer scheme, this is called horizontal equalisation. Even though a recent reform (as of 2005) has introduced more competitive elements into the system, the intensity of horizontal equalisation remains high. After this second stage, the fiscal capacity of fiscally weak states rises to about 95% of the federal average.

During the third stage of the transfer scheme, the federal government grants vertical transfers to the fiscally weak states. These transfers are paid either in the form of general (block) or special purpose grants ("Bundesergänzungszuweisungen"). For example, East-German states receive special-purpose grants to compensate them for infrastructure expenditures associated with "Reconstruction East". Overall, these federal transfers continue to reduce the differences in states’ fiscal capacity.

This levelling of fiscal capacities implies that every additional Euro collected by a state on its own leads to a reduction of receipts from transfers by an almost equal amount. Thus, states lack incentives to generate additional revenue by fostering economic growth or policing tax fraud. A state would have to incur the full costs of additional revenue collection while only receiving a fraction of the benefits. If a state wants to increase expenditures, it is, from its own perspective, more reasonable to finance these with public debt. Although the state has to pay the principal and interest in the future, the costs of borrowing are only partly internalised by the current government since the opposition will win the next election with some probability.

6. The incentives to finance expenditures with debt are further increased by the bail-out guarantee of the German constitution. The Constitutional Court emphasised in its ruling on the two Länder Saarland and Bremen in 1992 that it is the duty of all constituent members of the federation to display "intergovernmental solidarity" toward a state experiencing an extreme budget-

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ary crisis. The solidarity principle was again emphasised in 2006 by another ruling of the Constitutional Court on a similar case that dealt with Berlin. Berlin was however declined a bail-out because it was not sufficiently indebted and had possibilities to consolidate on its own. As a consequence, states can expect to shift borrowing costs once they lose the ability to finance a minimum level of public goods. It has been argued\(^3\) and there is also some evidence\(^4\) that this reduction in the expected costs of borrowing leads to inefficiently high levels of public debt. Thus, the constitutional guarantee of a bailout by the federation reduces incentives for fiscal prudence.

7. The solidarity principle, besides its direct consequences for the fiscal incentives of sub-national governments, also reduces the incentives of capital markets to evaluate the soundness of sub-national budgets and to adjust the costs for public debt accordingly. This is exemplified by the different interest rates that different states face.\(^5\) Moreover, the recent refusal of the Federal Constitutional Court to grant a bail-out to Berlin did not change the financial markets’ risk assessment of the Länder. Despite significant differences in public indebtedness, rating agencies rate all state bonds equally, and only small risk premiums are charged on the bonds from highly indebted states. Apparently, the possibility of a federal bailout is perceived to imply that the probability of default is equal for all Länder.

8. Overall, the properties of the German fiscal constitution do not encourage the states to be fiscally responsible. Therefore, the new German debt brake that passed with Federalism Reform II in 2009 forces the Länder to realise balanced budgets as of 2020.\(^6\) Although this appears to be far away in the future the transition phase starting from a high level of indebtedness requires the Länder to start consolidation soon.

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9. In contrast to Germany, Switzerland is characterised by a competitive federalism. The cantons have the basic power to tax the income of corporations and individuals. The receipts from these taxes constitute about 50% of their total revenue and about 95% of total tax revenue. The remaining revenue stems from user charges and fees, cantonal assets, and from federal transfers. The municipalities levy surcharges on the cantonal taxes. The federal government receives its resources from the most important indirect taxes (value added and mineral oil tax), and levies a highly progressive income tax on natural persons and a proportional tax on profits. All three layers of government, therefore, levy taxes on the income of corporations and individuals. The latter, however, are not allowed to credit the tax payments to these three tiers against each other. This tax autonomy leads to a strong variation between the Swiss cantons and between municipalities. For example, a married taxpayer with two children and an annual taxable income of 1 million CHF faced in 2007 a (cantonal and local) income tax rate of 23.3% in the canton of Zurich and 7.7% in Freienbach in the canton Schwyz. Similar differences exist for profit taxes. Since 2001, a tax harmonisation law considerably restricts the cantonal autonomy to determine tax bases. But a recent attempt to harmonise income and wealth tax rates across cantons failed in a referendum in November 2010.

10. The Swiss system of competitive federalism is complemented by a fiscal equalisation scheme. This scheme, however, redistributes fewer resources than the German equalisation scheme though some of the fiscally weak cantons such as Jura or Uri have received in the past about half of their revenues from fiscal equalisation. On the other hand, Basel-Stadt, Schaffhausen and Geneva finance over 80% of their expenditures with their own tax receipts. On average, less than one third of cantonal revenues originate from the federal government. Switzerland has introduced in 2008 a new equalisation system that is, at its core, characterised by general purpose transfers from the federal and the fiscally strong to the fiscally weak cantons. This reform of the fiscal equalisation scheme was accompanied by a disentanglement of competencies between the federal and cantonal gov-

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ernments, and an expansion in cantonal responsibilities. The consequences of this reform are, however, not yet assessable.

11. The high sub-national fiscal autonomy in Switzerland induces strong fiscal competition among the cantons. High-income earners choose – ceteris paribus – their residence in jurisdictions with lower tax rates. Tax rate differentials are more important at the local than at the cantonal level. The differences in tax burdens are also capitalised in housing prices. The higher the tax burden in a canton or city, the lower are housing prices. The tax burden is more influential for high-income than for low-income earners. The capitalisation of tax differentials in property prices, thus, mitigates the consequences of tax competition somewhat. Similar evidence is found for corporations. Taxes influence location decisions of firms and cantonal employment. In particular, taxes have a significantly negative effect on the number of small and medium-sized firms. Strikingly, the personal income tax has a larger quantitative effect on the number of firms than the profit tax.

12. In addition to the influence of tax rate differentials on individual and firm mobility evidence exists that cantons use their fiscal instruments (i.e. taxes and expenditures) strategically to attract mobile taxpayers. The income tax burden in a canton is – ceteris paribus – positively and significantly correlated with the tax burden in neighbouring jurisdictions. This spatial correlation of tax rates is more pronounced for middle- and high-income earners than for low-income earners. The same relationship is found at the local level in a study on the localities in the canton of Vaud. However, the spatial interactions of the tax policy are to a lesser extent due to the mobility of

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tax bases than to political factors. Citizens compare the tax rates in their jurisdictions with those in other jurisdictions and demand adjustments when they feel that they are worse off in their jurisdictions. Thus, strategic interactions do not necessarily result in an uncontrolled spiral of tax reductions.

13. The aforementioned studies confirm the existence of fiscal competition in Switzerland. It is, however, unclear whether it has positive or negative consequences. How does fiscal competition affect the provision of public goods? Since efficiency is difficult to measure, it is not surprising that the results are quite differentiated and indirect, although there is also direct evidence that decentralization in Switzerland increases efficiency. Studies on the choice of residence show that Swiss cantons are relatively homogeneous with respect to incomes. The more homogeneous jurisdictions are, the more likely it is that public services conform to citizens’ preferences. Indeed, the citizens of more decentralised cantons report – ceteris paribus – a higher life satisfaction than the citizens of more centralised ones.

14. Potential externalities induced by fiscal competition are emphasised by theoretical analyses. Regarding the Swiss case, inter-cantonal regional externalities are small, they might however be more important at the local level. There is also evidence from a case study for the city of Zurich that regional externalities are often internalised at the local level by negotiation. Some inter-cantonal externalities, for example in the provision of tertiary education, have been internalised such. The results with regard to the costs of smallness (economies of scale) are more conclusive. A canton’s fragmentation into localities does not have any significant effect on total can-

tonal and administrative expenditures.\textsuperscript{18} There is also no negative effect of fragmentation on cantonal labour productivity.\textsuperscript{19}

15. However, existing evidence indicates that tax competition leads to lower public expenditures in Switzerland. The estimated reduction of public expenditures for the canton that is the least constrained by tax competition, and the canton that is the most constrained is about CHF 2,114.- per capita.\textsuperscript{20} Similar effects can be observed at the revenue side of the budget. There, tax competition induces a shift from taxes to user fees.\textsuperscript{21} Fiscal decentralisation does not impede fiscal consolidations,\textsuperscript{22} but keeps public debt low.\textsuperscript{23} The Swiss system of fiscal equalisation, however, increases both total and administrative costs, and impedes fiscal consolidations.

16. With respect to the redistributive effects of Swiss federalism, there is less conclusive evidence. The existence of strategic tax competition indicates that decentralised redistribution is more difficult to achieve because high-income earners can leave jurisdictions with high tax rates. However, the Swiss welfare state is not collapsing because of fiscal competition.\textsuperscript{24} Sub-national jurisdictions in Switzerland have redistributed more income in 1992 compared to 1970 than the federal government. At all tiers of government, redistribution takes place more through taxes than through expenditures. The thesis that decentralised redistribution is not possible is therefore refuted by the newest evidence from Switzerland on this issue.

III. Federalism and Growth

17. Based on this comparative overview of the effects of competitive federalism (the Swiss case) and cooperative federalism (the German case), observers

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may believe that sub-central fiscal autonomy induces a higher economic growth. However, the results reported in the literature are not clear-cut.

18. From 2003 to 2007, my research group analyzed the impact of federalism on growth from several perspectives. In a first step of analysis, we conducted a simple literature survey assessing the vast literature on decentralisation and growth. The empirical studies in this field are either cross-country or on individual federations (U.S., Switzerland, Germany, China, Russia, India). In the cross-country studies, federalism, devolution or decentralisation are captured by a measure that calculates sub-central government expenditure (revenue) in percent of overall government expenditure (revenue). A careful reading of the previous section reveals that the main contrast between the German and the Swiss type of federalism has been the extent of fiscal competition stemming from sub-central fiscal autonomy. The measure used in most cross-country studies to find out whether decentralisation has an impact on economic growth does however not really capture fiscal autonomy. On the spending side, a sub-central jurisdiction may spend large amounts of money without much autonomy when it is restricted by federal (central) mandates. On the revenue side, a sub-central jurisdiction may administer high amounts of revenue, but they may be obtained to a large extent from transfer schemes. In our first survey on this literature we nevertheless noted the conclusion that the hypothesis of positive effects of decentralization on economic growth is more and more often supported by existing studies.

19. Given the measurement problems just described in the case of cross-country studies, it is no surprise that a more formal survey method does not support this conclusion overall. We have conducted a meta-analysis which is a quantitative literature review in which the average estimated effect of decentralisation on economic growth is first calculated and then explained by the characteristics of the different studies. According to this analysis,


fiscal decentralisation does not have a significant effect on economic
growth. The more sophisticated the econometric methods used and the be-
ter the data, the lower is the probability that a significant effect of decen-
tralisation on growth is found.

20. In the second step of analysis, we analyse the impact of fiscal decentralisa-
tion on economic growth for OECD countries. For a panel of 23 high in-
come countries between 1975 and 2001, a new data set exists including a
measure of fiscal decentralisation calculated as the share of sub-national
tax revenues, of which the sub-national jurisdictions can decide rates or
bases, from total tax revenues. This indicator rather captures the extent of
competitive federalism in different countries than the traditional measures
described above. Still, we do not find any robust significant effect of dece-
ntralisation on economic growth.

21. The third step of analysis brings us back to the comparison between Ger-
many and Switzerland. For an unbalanced panel of 16 German Lärder
between 1975 and 2005 we find a highly significant and robust negative ef-
fect of horizontal transfers on the level of labour productivity of the Lärder
in macroeconomic terms. The impact of vertical transfers is not significant.
This is some support for the suggested adverse impact of the German fiscal
equalisation system on economic performance alluded to in the previous
section. Revenue decentralisation has the expected positive effect on pro-
ductivity, and is consistently highly significant. Expenditure decentralisation,
however, has a robust and highly significant negative effect on productivity
in the German Lärder. These results are consistent in the sense that ex-
penditure decentralisation without revenue decentralisation leads to fiscal ir-
responsibility and could thus affect economic performance negatively. For
the growth regressions, however, all coefficients have the theoretically ex-
pected signs - positive for decentralization and mostly negative for trans-
fers. None of them, however, is robustly significantly different from zero.

Fiscal Decentralization and Economic Growth in OECD Countries: Is There a Relationship?, CESifo Working Pa-
per No. 2721, Munich.

Cooperative Federation, Working Paper, University of Freiburg.
22. The results for Switzerland point in the same direction, but they are more remarkable because of the strong fiscal competition between cantons. The more intensive a canton stands in the tax competition by its neighbours, the higher is cantonal labour productivity. Transfers have a negative effect on economic performance. There is again no effect of tax competition or decentralisation on economic growth.

23. The final step of analysis aims at a more differentiated investigation. Most important for regional economic growth in mature economies is the ability to cope with structural change. The more a region is able to adopt structural change, the faster it develops to modern economic structures. It will be more successful in keeping up its level of income or even to catch-up to higher income jurisdictions. In a system of federalism that is governed by a large amount of fiscal transfers, there is the danger that these transfers are used to subsidise declining industries instead of actively promoting structural change. In fact, the transfers help to keep wages and incomes high and thus prevent a region to become attractive for capital investment. In a competitive federalism, regional governments can be expected to use all available instruments to attract mobile capital. In particular, they can reduce taxes in order to compensate for existing locational disadvantages.

24. In a recent paper, we have analysed how Germany’s highly egalitarian fiscal equalisation system affects structural change by looking at three border regions from different countries. Each one stands for a different political regime and each has started after World War II with a similar pattern of economic structure characterised by a dominance of coal and steel industry. The three regions are the Saarland as part of Germany’s cooperative federalism, Lorraine as part of France’s unitary state and Luxembourg as a sovereign state that has to compete internationally, but also enjoys all the autonomy of sovereign states. The three regions are geographical neighbours and they already belonged to the same labour market regions before


World War I. In a time series analysis from 1961 to 2003, we find that the Saarland adopted structural change more slowly than Lorraine and Luxembourg and that the transfers from the German fiscal equalisation scheme did not have any effect on structural change. Rather the transfer payments were driven by adverse shocks to declining industries and were used to keep wages and incomes high.

25. The upshot of all this is: Decentralised taxing powers are advantageous because financial responsibility is enhanced, political accountability regarding the relation between voters (taxpayers) and Parliaments/Governments increases. Decentralisation of taxes and spending leads to a more efficient public sector and it enhances economic performance. Fiscal decentralisation does not lead to higher economic growth because economic growth is much more driven by factors other than taxes and spending, e.g., by increases in technological progress and improved human capital.

IV. The Questions

26. I have summarized the main research findings in greater length, because my answers to the key questions regarding the Scotland Bill 2010 follow straight from the reported evidence.

27. I think that the goal of financial accountability of the Parliament and Government in Scotland will be enhanced by the proposals in the Bill and the White paper. A decentralisation of taxing powers will meet an already existing decentralisation of spending. The advantages of balancing expenditure and tax decentralization can be seen from the comparison between Switzerland, where this balance exists, and Germany, where expenditure decentralisation without tax decentralisation has led to excessive borrowing.

28. To my view, the advantages of substituting the revenue from taxes levied by the Scottish Parliament for some of the grant from the UK government dominate. A careful reading of the Swiss case above will clarify why I think that existing evidence rather speaks in favour of such tax decentralisation. I would however also not totally eliminate inter-governmental transfers if there were asymmetries between jurisdictions. My incomplete knowledge about the Scottish economy tells me that Scotland has lower income per
capita than England, in particular South England, indicating the presence of regional asymmetries.

29. The Scottish income tax should be levied on all tax bands. It is necessary to let as many people in Scotland who consume public goods and services as possible participate in the financing of these services. This creates a clear relation of responsibility between taxpayers and the government. How much the Scottish government should tax income is a different question. In the transition, there should be a target of, say, 10 percent by which the UK income tax should then be reduced. Afterwards, it depends on the financing needs of the Scottish government and how it can persuade its voters to need more tax money. I would prefer to leave the questions about the technicalities – how would this work, are the proposals effective, and is the mechanism adequate – aside, as technicalities require legal knowledge and my knowledge of the law in the UK is limited. However, such technicalities could also be corrected easily.

30. During the business cycle, Scotland would have participated in the increase of income tax revenue during the boom, but also its decrease during the downturn. The government must therefore develop procedures to adequate cope with these automatic stabilisers. As the income tax revenue moves with the cycle, it will also not prevent Scotland to return to a path of normal growth. Competitive fiscal federalism is robust to cope with such shocks.

31. Again, my limited knowledge about the UK tax system prevents me from answering question 5, but also question 6. I would, however, prefer to restrict government borrowing overall and in particular at the sub-central level to exceptional circumstances.

32. Regarding the remaining questions 7 to 13, I have similar difficulties without proper knowledge of the legal background.

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