

**Unclassified**

**ECO/WKP(2010)8**

Organisation de Coopération et de Développement Économiques  
Organisation for Economic Co-operation and Development

**18-Feb-2010**

**English - Or. English**

**ECONOMICS DEPARTMENT**

**ECO/WKP(2010)8**  
**Unclassified**

**SUB-CENTRAL GOVERNMENTS AND THE ECONOMIC CRISIS: IMPACT AND POLICY  
RESPONSES**

**ECONOMICS DEPARTMENT WORKING PAPERS No. 752**

**by**

**Hansjörg Blöchliger, Claire Charbit, José Maria Pinero Campos and Camila Vammalle**

All Economics Department Working Papers are available through OECD's internet web site at  
[www.oecd.org/workingpapers](http://www.oecd.org/workingpapers)

**JT03278896**

Document complet disponible sur OLIS dans son format d'origine  
Complete document available on OLIS in its original format

**English - Or. English**

## ABSTRACT/RÉSUMÉ

### **Sub-central governments and the economic crisis: impact and policy responses**

The world is recovering from the worst crisis since the Great Depression, leaving a strong and lasting impact on Member countries' public finances. This paper analyses how sub-central governments (SCG) are affected and how fiscal policy has reacted in the first months after the outbreak of the crisis. In general and in line with earlier downturns, SCG's public finance appear to be less affected than central governments. However, SCGs suffer from a scissors effect of higher spending and lower tax revenue, specially those with a volatile tax base and large social welfare responsibilities. While some SCGs were conducting their own stimulus plans, others cut expenditures and raised taxes, potentially undermining national government's recovery programmes. Most national governments are helping SCGs to cope with the crisis, by disbursing additional grants and supporting investment programmes, by easing centrally-imposed fiscal rules, lifting borrowing constraints or by temporarily raising the sub-central tax share. The crisis also showed the need for better coordination in intergovernmental fiscal relations, both for more macroeconomic coherence and for efficiency in public service delivery. Several countries are creating or reinvigorating their institutions for managing relations across levels of government.

*JEL classification:* E63; H50; H77

*Keywords:* Fiscal federalism; sub-central government; sub-national fiscal policy; economic crisis; recession; recovery

### **Gouvernements infra-nationaux et la crise: effets et politiques**

Le monde se relève lentement de la crise la plus profonde depuis la Grande Dépression, mais les séquelles de celle-ci sur les finances publiques des pays Membres seront durables. Cet article analyse l'impact de la crise sur les collectivités territoriales (CT) et comment les politiques budgétaires ont été adaptées pour répondre à la crise pendant les tout premiers mois. En règle générale, comme dans les récessions antérieures, les finances publiques infranationales semblent moins touchées que celles des gouvernements centraux. Cependant, les CT sont confrontées à un effet « ciseaux », où leurs dépenses augmentent alors que leurs recettes fiscales diminuent. Cet effet est d'autant plus important que l'assiette fiscale des CT est volatile, et que leurs responsabilités en termes de protection sociale sont importantes. Certaines CT ont mis en œuvre leurs propres plans de relance, alors que d'autres au contraire ont réduit leurs dépenses et augmenté les impôts, compromettant ainsi l'efficacité des plans de relance nationaux. La plupart des gouvernements nationaux ont soutenu les CT, en leur attribuant des transferts exceptionnels, en participant à leurs programmes d'investissement, en relâchant les règles budgétaires ainsi que les plafonds d'endettement fixés auparavant, ou en augmentant temporairement la part des CT dans le partage des recettes fiscales. Cette crise a révélé le besoin d'améliorer la coordination budgétaire entre niveaux de gouvernement, tant dans un souci de cohérence macroéconomique que d'efficacité dans la provision de services publics. Dans ce but, plusieurs pays ont créé ou renforcé leurs institutions chargées de gérer les relations entre niveaux de gouvernement.

*Classification JEL:* E63 ; H50 ; H77

*Mots clés :* fédéralisme fiscal ; collectivités territoriales ; politique budgétaire au niveau infranational ; crise économique ; récession ; relance

**Copyright OECD 2010**

**Application for permission to reproduce or translate all, or part of, this material should be made to: Head of Publications Service, OECD, 2 rue André-Pascal, 75775 Paris Cedex 16, France.**

## TABLE OF CONTENTS

SUB-CENTRAL GOVERNMENTS AND THE ECONOMIC CRISIS: IMPACT AND POLICY RESPONSES.....	5
Introduction.....	5
1. Central versus sub-central governments’ fiscal positions: past trends.....	6
SCG budget deficits were lower than those of central government... ..	6
... and also less cyclical .....	6
Central and sub-central revenue volatility was quite similar... ..	8
... while SCG spending was more stable .....	10
SCG investment tended to fluctuate strongly.....	11
Differences between central and sub-central fiscal outcomes can be partly explained by fiscal rules... ..	12
... and by intergovernmental grants .....	14
2. The impact of the crisis on sub-central public finances: the “scissors effect” .....	15
Sub-central governments’ revenues are expected to fall... ..	15
... while their spending is expected to rise.....	16
... thus increasing fiscal imbalances .....	17
3. Sub-central governments have reacted to the crisis .....	18
SCGs play a considerable role in public finance... ..	18
... and their behaviour was quite similar to former crises.....	18
4. Central governments have helped SCGs to cope with the crisis .....	21
... by increasing transfers and other measures .....	21
...and by facilitating borrowing or increasing SCG’s tax revenue share .....	22
Coordination between levels of government is essential .....	23
5. Long-term impacts of the crisis and future challenges .....	23
<i>Annex</i> .....	25
References .....	29

### Boxes

Box 1. American states, balanced budget rules and fiscal packages during the crisis .....	20
Box 2. The monitoring of stimulus measures in Australia.....	22

### Tables

1. Correlation coefficients between net lending and output gap .....	8
2. Fluctuations of main fiscal variables.....	10
3. Tax revenue projections for different levels of government .....	16
4. Sub-central governments’ reactions to the crisis.....	19
5. Grants as a percentage of total national stimulus spending.....	22
A1. Correlation coefficients between investment and output gap.....	25

**Figures**

1.	Central and sub-central fiscal balances .....	7
2.	Central and sub-central government revenue fluctuations .....	9
3.	Central and sub-central government expenditure .....	11
4.	Evolution of sub-central investment and other expenditure .....	12
5.	How sub-central fiscal rules affect sub-central fiscal outcomes .....	13
6.	Sub-central own tax revenue and intergovernmental grants.....	14
7.	Share of social protection in sub-national expenditure (2007).....	17
8.	Sub-central governments' share in general government revenues and expenditure (2006).....	18
9.	Share of sub-central government in public investment (2007).....	19
10.	State budget gaps.....	20
A1.	Sub-central government spending as a per cent of GDP (2008) .....	26

## SUB-CENTRAL GOVERNMENTS AND THE ECONOMIC CRISIS: IMPACT AND POLICY RESPONSES

**Hansjörg Blöchliger, Claire Charbit, José Maria Pinero Campos and Camila Vammalle<sup>1</sup>**

### Introduction

1. The world is recovering from the worst economic and financial crisis since the Great Depression, leaving a strong and lasting imprint on Member countries' public finances both at the central and sub-central government (SCG) level. While the fiscal impact varies from country to country, depending on the revenue mix and spending responsibilities, most SCGs have to cope with a scissor's effect of declining tax revenues and rising expenditure. SCGs in several countries are conducting their own fiscal stimulus, while others are constrained by balanced budget rules and obliged to cut spending and to raise taxes, potentially undermining central government policies. Central governments took measures to help SCGs cope with the crisis, such as disbursing additional transfers, easing SCG fiscal rules or temporarily raising SCG's tax share. The crisis is calling for a coordinated response of central and sub-central governments' fiscal policies, both to tackle the crisis and to find a way towards long-term fiscal sustainability. Intergovernmental fiscal relations are likely to be affected in the long term, but it is not clear yet whether that will exacerbate or reverse the slow but steady trend towards more decentralisation.

2. Sub-central governments account for 31% of total government spending, 22% of tax revenue and 66% of public investment; hence their role in fiscal policy cannot be ignored. This paper analyses the crisis' impact on central and sub-central public finances as well as central and sub-central government's initial policy responses. The first section reviews the historical evolution of central and sub-central fiscal variables over the business cycle. The second section presents a projection for SCG tax revenues up to 2011, based on the hypothesis of unchanged policy. The third section provides an overview on how SCGs have adapted their own fiscal policies during the crisis, *e.g.* by implementing their own stimulus plans or, to the opposite, by cutting spending or increasing taxes. The fourth section discusses how the intergovernmental fiscal framework was affected by the crisis, *i.e.* how central governments are supporting sub-central governments. The final section presents a few thoughts on the potential long-term impact of the crisis on fiscal relations and fiscal decentralisation. The paper is based on National Accounts and Revenue Statistics data, *OECD Economic Outlook* No. 86 and a questionnaire sent to OECD member countries in spring 2009.

---

1. Camila Vammalle and Claire Charbit are, respectively, Economist and Principal Administrator at the Directorate for Public Governance and Territorial Development. José Maria Pinero Campos is Principal Administrator at the Center for Tax Policy and Administration. Hansjörg Blöchliger is Senior Economist at the Economics Department. We should thank Monica Brezzi, Peter Höller, Jens Lundsgaard, Stephen Matthews, Mauro Mingotto, Jean-Luc Schneider, and various Delegates of the Fiscal Relations Network for helpful comments and suggestions. This paper is a revised version of a background document prepared for an OECD conference on "Sub-central governments in the Economic Crisis" held in June 2009. The opinions expressed in the article are those of the authors and do not engage the OECD or its member countries.

3. The main conclusions are as follows:

- *SCG fiscal positions were more stable than those of central government:* Over the past 30 years, SCG deficits were lower and fluctuated less over the cycle than those of central government. Sub-central spending was also more stable, while tax revenue fluctuations were similar for both levels. Budget rules constraining SCG fiscal policy and intergovernmental grants filling SCG revenue gaps may explain this pattern, although grants tend to exacerbate rather than reduce SCG revenue volatility in many countries.
- *The crisis leads to a “scissors effect”:* While SCG spending is rising, not least due to SCG’s participation in fiscal stimulus plans, tax revenues are likely to have fallen. This scissors effect will be particularly strong for SCGs that have large social welfare responsibilities and rely on a volatile tax base such as corporate or personal income taxes. Despite higher transfers from the central government, most countries are reporting soaring deficits for their sub-central governments.
- *Governments reacted differently to the crisis:* While most central governments’ fiscal policy is expansionary in order to cushion the crisis, the pattern looks different for SCGs. In only around half of the countries did SCGs conduct a counter-cyclical policy, while in the other half tended to cut spending and increase taxes, thereby potentially undermining central governments’ fiscal policy. Most central governments’ stimulus plans take into account SCGs, by disbursing additional grants and supporting investment programmes, by easing centrally-imposed fiscal rules, lifting borrowing constraints or by temporarily raising the sub-central tax share.
- *Intergovernmental coordination is important:* The crisis has shown that governments need to coordinate their fiscal policy across government levels, both for reasons of macroeconomic coherence and efficiency in public service delivery. Several countries are creating or reinventing institutions in order to better deal with intergovernmental fiscal relations.

### **1. Central versus sub-central governments’ fiscal positions: past trends**

#### ***SCG budget deficits were lower than those of central government...***

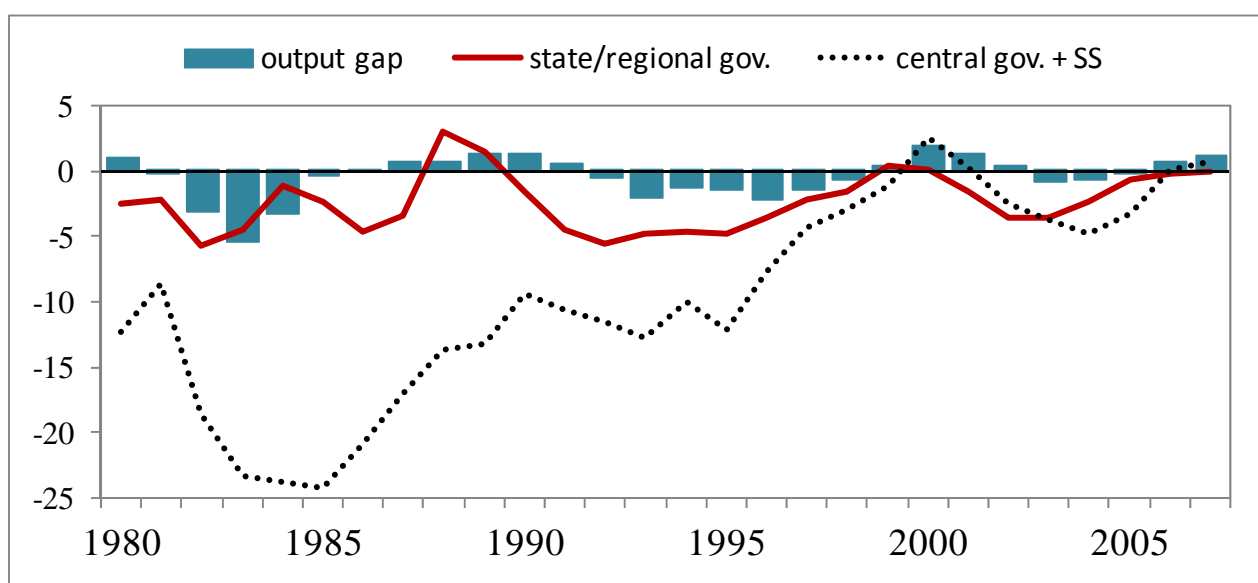
4. Over the past 30 years or so, sub-central governments (SCG) ran lower deficits, and their fiscal balances fluctuated less than those of central governments (Figure 1). While central governments had large deficits until the mid-1990s, reaching up to 25% of total spending in federal/regional countries, SCG deficits hardly ever exceeded 5% at both the state/regional and the local level. Lower deficits could be partly explained by fiscal rules that limit SCG budget discretion in many countries (Sutherland *et al.*, 2006). Deficits of all government levels tended to be counter-cyclical, *i.e.* they were larger in downturns than in upturns, but the counter-cyclical response of SCGs – especially at the local level – was considerably weaker. Both the deficit levels and the pattern of cyclical movements suggest that in most countries the willingness and the ability to run counter-cyclical fiscal policy are different for central than for sub-central governments.

#### ***... and also less cyclical***

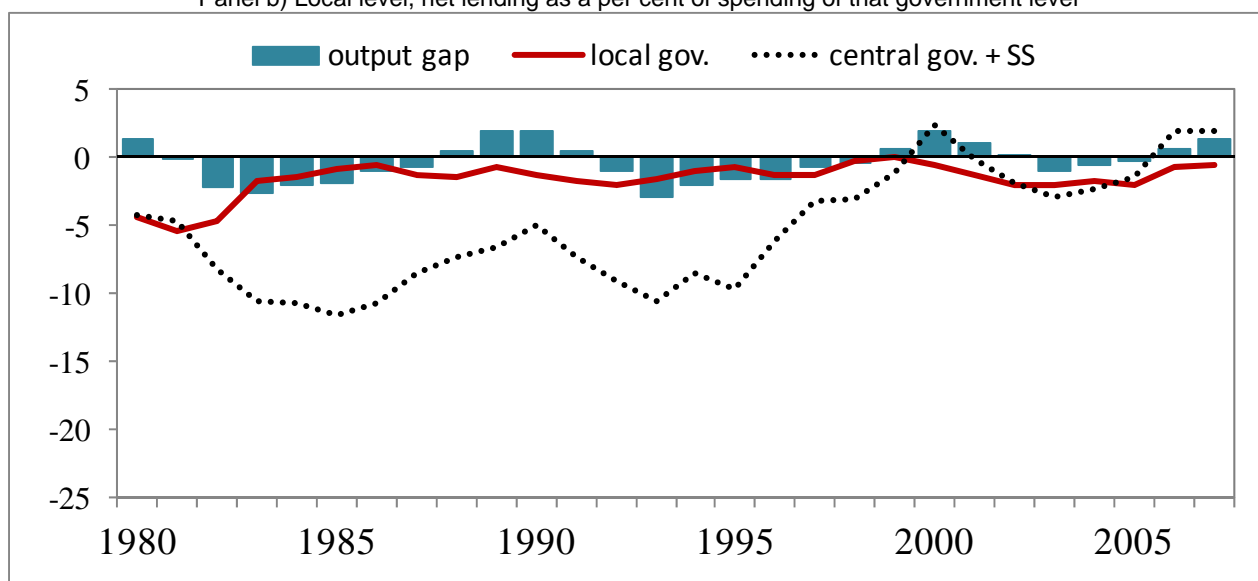
5. A closer look at the correlation between net lending and the size of the output gap confirms that the sub-central budget reaction was generally weaker and less counter-cyclical than at the central level, although the picture varies considerably across countries (Table 1). While the central government budget in

most countries reacted quite swiftly and counter-cyclically to economic downturns, the respective SCG budget reaction was much slower. Exceptions to this rule include large federations like Canada and Germany where the state level has large spending responsibilities and appears to conduct counter-cyclical fiscal policy of a considerable scale. Local budgets reacted even less to the cycle than state/regional budgets, as indicated by low correlation coefficients. In general, SCGs tend to move quickly towards a balanced budget after a shock – shown by correlation coefficients becoming increasingly negative the longer the time lag, which suggests however pro-cyclicality in sub-central fiscal policy in several countries. There is indeed some evidence that SCG fiscal policy could be pro-cyclical (Wibbels and Rodden, 2008).

Figure 1. **Central and sub-central fiscal balances**  
Panel a) State/regional level, net lending as a per cent of spending of that government level



Panel b) Local level, net lending as a per cent of spending of that government level



Note: Only countries with a state/regional level of government are included in panel a, hence central government deficits and output gaps are different in panels a and b.

Source: OECD National Accounts and OECD Economic Outlook database.

Table 1. Correlation coefficients between net lending and output gap

		Net lending and output gap					
		no lag		one year lag		two years lag	
		sub-central	central	sub-central	central	sub-central	central
Austria	Local	-0.01	0.45**	0.09	0.45*	0.07	0.18
	State	0.01		0.25		0.17	
Belgium	Local	-0.03	0.51***	0.11	0.42**	0.04	0.43**
	State	0.27		0.05		-0.29	
Canada	Local	-0.04	0.47***	-0.23	0.40**	-0.32*	0.29
	State	0.65***		0.30		-0.09	
Denmark	Local	-0.15	0.64***	-0.17	0.43*	-0.19	0.22
Finland	Local	-0.19	0.91***	-0.33*	0.81***	-0.39**	0.48***
France	Local	0.07	0.33*	-0.03	0.04	-0.09	-0.36
Germany	Local	0.36	0.34	-0.34	0.05	-0.70***	0.11
	State	0.51**		-0.16		-0.65***	
Greece	Local	-0.60*	-0.10	-0.61*	0.35	-0.06	0.75**
Hungary	Local	-0.40	-0.36	0.14	0.33	-0.04	0.33
Iceland	Local	0.54*	0.67**	0.69***	0.82***	0.53	0.35
Ireland	Local	-0.38	0.65***	-0.63**	0.48*	-0.49*	0.15
Italy	Local	-0.45**	-0.08	-0.55***	-0.24	-0.36*	-0.25
Japan	Local	-0.06	0.81***	-0.43	0.19	-0.63**	-0.37
Luxembourg	Local	-0.35	0.22	-0.53*	-0.06	-0.52*	-0.36
Netherlands	Local	-0.04	0.62***	-0.38	0.48*	-0.57**	0.27
New Zealand	Local	-0.29	0.43**	-0.17	0.26	0.05	-0.05
Norway	Local	-0.14	0.29	-0.22	0.49	-0.30	0.70***
Poland	Local	0.10	0.54**	-0.09	0.74***	-0.23	0.74***
Portugal	Local	-0.10	0.41	-0.26	0.35	-0.40	0.35
Spain	Local	-0.19	0.77***	-0.45	0.71***	-0.59**	0.63***
	State	0.40*		0.11		0.04	
Sweden	Local	0.45*	0.90***	0.23	0.81***	0.03	0.54**
Switzerland	Local	0.22	0.73***	0.03	0.57**	-0.12	-0.08
	State	0.34		0.01		-0.22	
United Kingdom	Local	-0.28	0.45**	0.15	-0.03	0.44**	-0.46**
United States	State	-0.38	0.36	-0.66***	0.15	-0.69***	-0.11
Average	Local	0.11	0.68***	-0.28	0.51**	-0.55**	0.24
	State	0.52**		0.14		-0.12	

Note: A positive sign mean counter-cyclical, a negative signs mean pro-cyclical. \*\*\*significant at the 1% level, \*\*significant at the 5% level, \*significant at the 10% level.

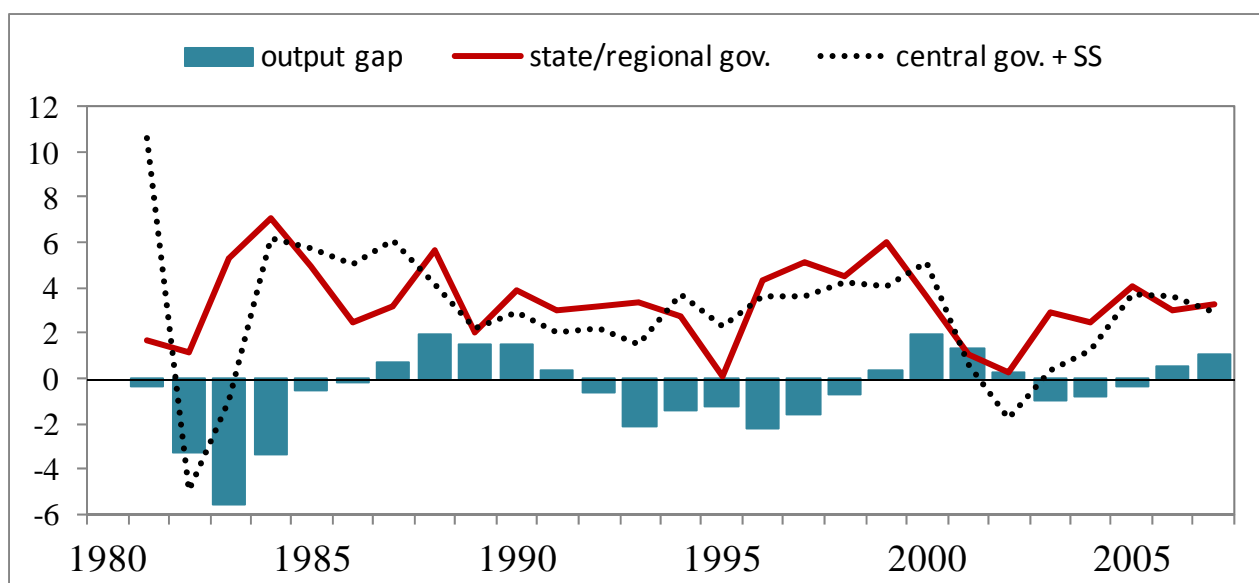
### *Central and sub-central revenue volatility was quite similar...*

6. The cyclical patterns of central and sub-central government revenues were quite similar in the past, with revenues at all government levels growing faster during upswings than during downturns (Figure 2). The amplitude of revenue fluctuations – as measured by the standard deviation – is also similar, with local government revenues fluctuating a bit less than state/regional government revenues. However, the ratio of SCG to central government revenue fluctuations varies strongly across countries, as shown in Table 2, which is likely to reflect very different SCG tax structures and their reaction to the cycle. In general, SCG revenues seem to react later to economic cycles than those of central government, with a lag

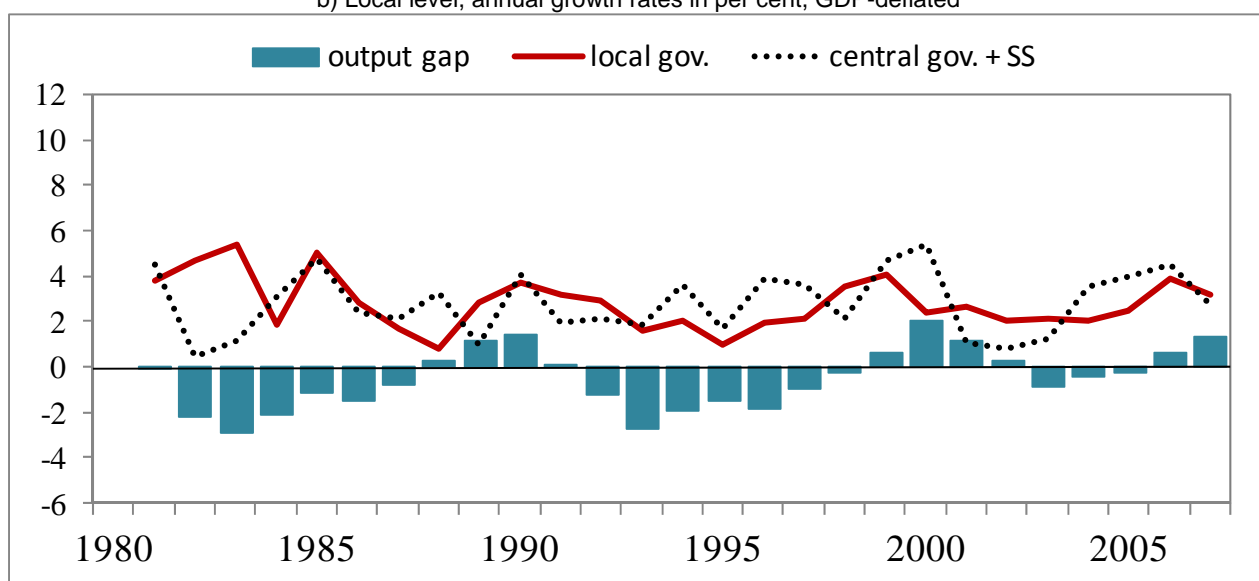


of one or two years, especially at the local level. The lagged reaction of SCG revenues points at differences in the revenue mix between central and sub-central governments, and particularly at the role of intergovernmental grants during the cycle.

Figure 2. **Central and sub-central government revenue fluctuations**  
Panel a) State/regional level, annual growth rates in per cent, GDP-deflated



b) Local level, annual growth rates in per cent, GDP-deflated



Note: See note to Figure 1.

Source: OECD National Accounts and OECD Economic Outlook database.

Table 2. **Fluctuations of main fiscal variables**  
Standard deviations, central and sub-central level

		Net lending		Revenues		Expenditure		Tax revenue		Investment		Grants
		(%GDP)		(annual growth rates)		(annual growth rates)		(annual growth rates)		(annual growth rates)		(annual growth rates)
		Sub-central	Central	Sub-central	Central	Sub-central	Central	Sub-central	Central	Sub-central	Central	Sub-central
Austria	Local	2.4	3.0	3.9	1.9	4.4	3.1	3.4	2.1	8.4	10.7	10.8
	State	4.0		4.9		4.5		4.0		13.3		5.4
Belgium	Local	2.7	6.1	2.7	2.1	2.9	2.6	5.6	5.5	15.5	23.1	4.2
	State	4.2		1.9		2.6		2.7		20.4		3.8
Canada	Local	2.1	13.5	2.9	3.9	2.4	3.7	2.3	4.1	6.8	12.8	5.4
	State	4.6		2.8		2.7		3.2		7.4		7.2
Denmark	Local	1.1	7.6	1.9	3.1	1.9	3.9	2.0	3.2	11.1	12.4	3.4
Finland	Local	3.1	9.4	2.8	3.4	3.2	4.9	4.3	4.5	9.9	13.2	7.6
France	Local	5.0	3.0	1.6	1.6	2.4	1.9	4.1	1.6	5.7	5.6	5.0
Germany	Local	2.7	4.7	2.6	2.0	2.2	3.1	5.3	2.3	6.5	12.8	3.0
	State	3.3		3.2		2.3		3.7		9.3		5.3
Ireland	Local	2.2	6.8	3.9	3.3	4.7	3.5	3.8	3.9	8.8	17.9	4.9
Italy	Local	3.3	6.6	4.0	3.7	3.5	4.5	6.6	4.2	6.4	12.7	5.9
Japan	Local	4.8	6.9	2.6	5.1	1.7	4.7	4.3	15.6	2.9	6.6	6.6
Luxembourg	Local	5.2	4.3	3.9	3.1	4.3	3.1	9.6	3.6	10.3	9.2	4.1
Netherlands	Local	2.0	4.8	2.1	3.5	2.1	2.8	7.1	3.3	6.8	7.8	2.8
New Zealand	Local	3.2	9.2	3.3	4.1	3.7	4.0	4.7	4.6	12.3	12.1	11.4
Norway	Local	2.3	3.0	4.8	4.8	6.0	3.9	8.5	3.1	10.1	9.6	7.3
Portugal	Local	4.6	2.2	5.4	3.2	6.4	2.6	5.9	2.5	13.9	8.5	9.5
Spain	Local	1.7	6.9	2.9	2.7	2.7	2.8	3.9	4.4	12.6	8.3	4.1
	State	2.0		2.2		2.3		4.9		7.1		4.6
Sweden	Local	1.3	9.5	2.3	2.8	2.0	5.8	2.0	4.4	6.8	6.7	7.4
Switzerland	Local	4.9	4.0	1.6	3.3	1.7	3.5	3.0	3.8	4.7	11.1	3.2
	State	4.6		1.8		1.8		2.9		8.0		3.6
United Kingdom	Local	1.7	6.8	4.5	2.8	3.3	4.0	3.7	3.0	8.8	24.1	5.9
United States	State	1.7	8.6	1.5	4.5	1.7	2.9	2.8	4.8	4.4	6.2	5.2
<b>Average</b>		<b>3.1</b>	<b>6.3</b>	<b>3.0</b>	<b>3.2</b>	<b>3.1</b>	<b>3.6</b>	<b>4.4</b>	<b>4.2</b>	<b>9.2</b>	<b>11.4</b>	<b>5.7</b>

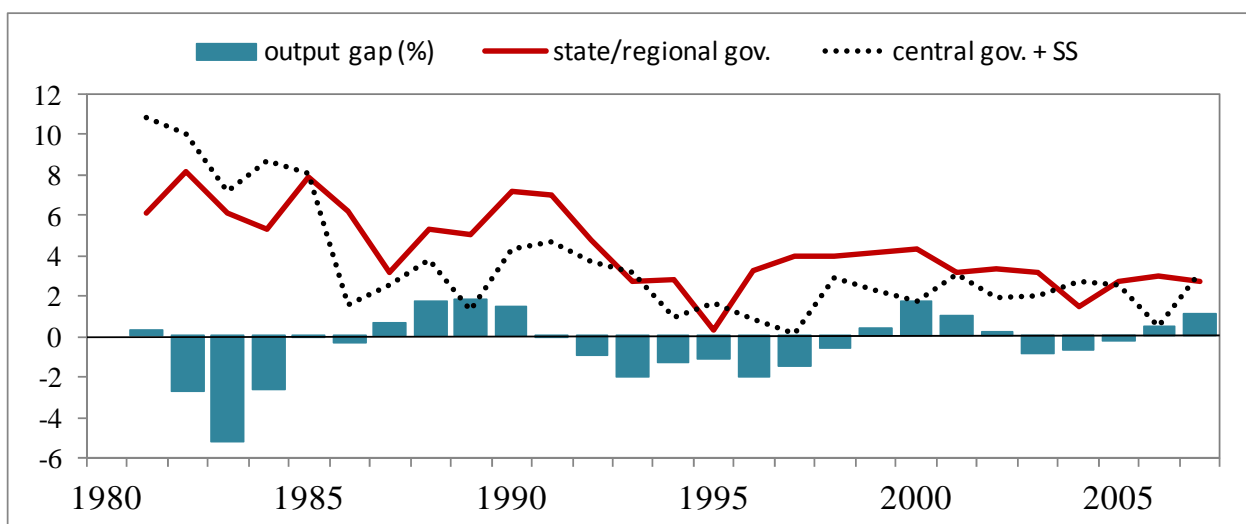
Note: Data available from 1980 for Canada, Finland, France, Netherlands and USA, from 1985 for Belgium (1989 for regional data), from 1986 for New Zealand, from 1987 for United Kingdom, from 1988 for Austria, from 1990 for Denmark, Ireland, Luxembourg and Switzerland, from 1991 for Germany, from 1993 for Sweden, from 1995 for Norway, Poland, Portugal and Spain and from 1996 for Japan.

*... while SCG spending was more stable*

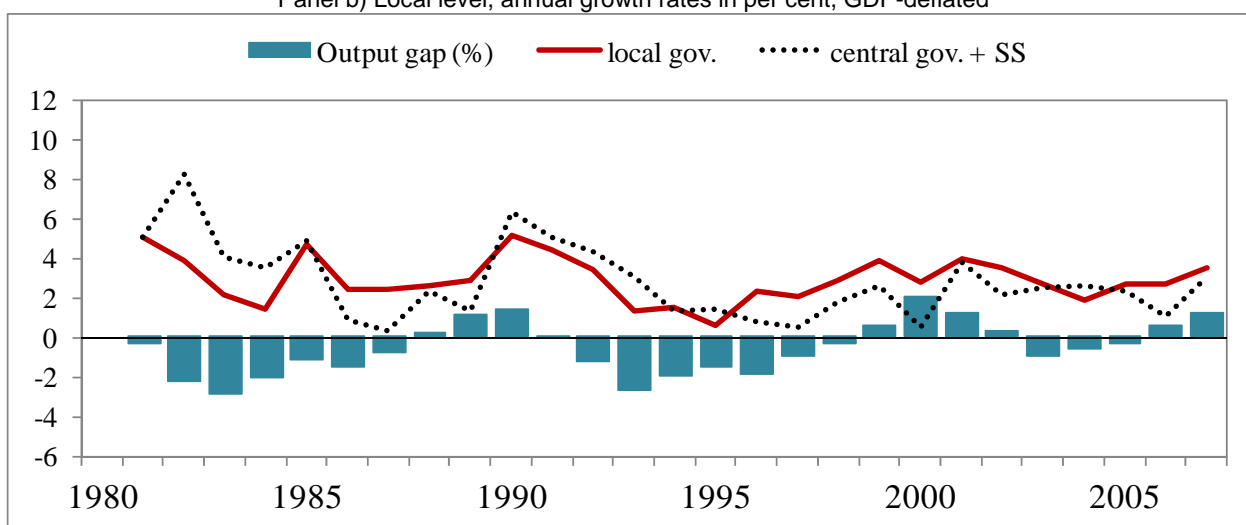
7. Both central and sub-central spending was counter-cyclical, with spending increases usually lower during an economic downturn (Figure 3). However, SCG spending, on average and in around two thirds of OECD countries, fluctuated less than central government spending, and this pattern was similar for both the state/regional and the local level (Table 2). Since revenue fluctuations at all government levels were quite similar, the spending side appears to be responsible for the lower budget balance fluctuations at the SCG level. Various factors could explain why spending and budget balance patterns differ between the

central and the sub-central level: the institutional set up, the prevalence of fiscal rules, the role of intergovernmental grants, different spending obligations or policy areas across government levels. In a majority of countries the central government plays the major role in providing income-related benefits such as unemployment insurance or social security, which fluctuate counter-cyclically, while SCGs are often responsible for less cyclically-prone areas like education.

Figure 3. **Central and sub-central government expenditure**  
Panel a) State/regional level, annual growth rates in per cent, GDP-deflated<sup>1</sup>



Panel b) Local level, annual growth rates in per cent, GDP-deflated



Note: See note to Figure 1.

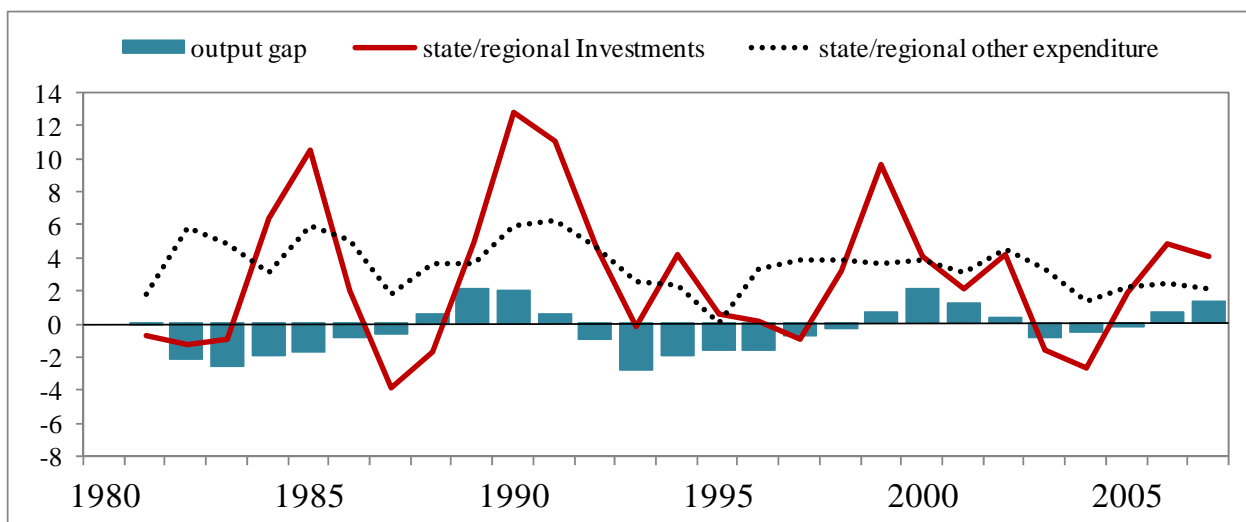
Source: OECD National Accounts and OECD Economic Outlook database

### ***SCG investment tended to fluctuate strongly***

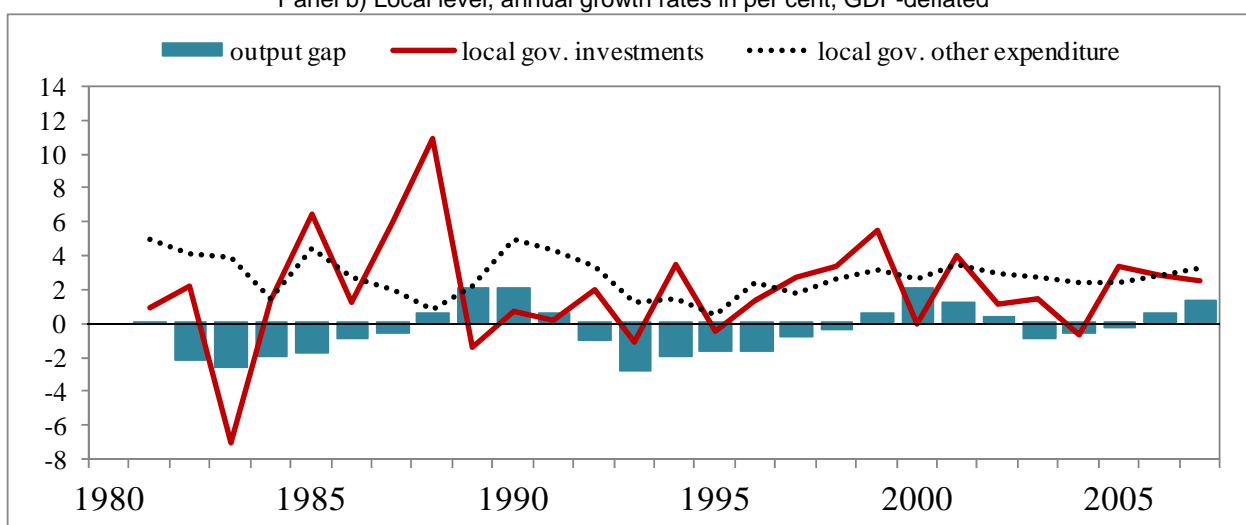
8. Although SCG's spending seems more stable than that of central governments, SCG investment volatility tends to be considerable. In some years and some countries, investment even approached values close to zero. It appears that investment is easier to curtail in the face of budget constraints, while current spending is often politically sensitive or mandated and thus difficult to change. However, no overall

cyclical pattern with respect to the output gap can be discerned, with only very few countries showing a clear pro- or counter-cyclical investment policy (Table A2 in the Annex). Individual country experience suggests that investment spending often follows an electoral cycle: Investment spending is highest in the year before an election and the lowest the year after.<sup>2</sup>

Figure 4. **Evolution of sub-central investment and other expenditure**  
Panel a) State/regional level, annual growth rates in per cent, GDP-deflated



Panel b) Local level, annual growth rates in per cent, GDP-deflated



Note: See note to Figure 1.

Source: OECD National Accounts and OECD Economic Outlook database.

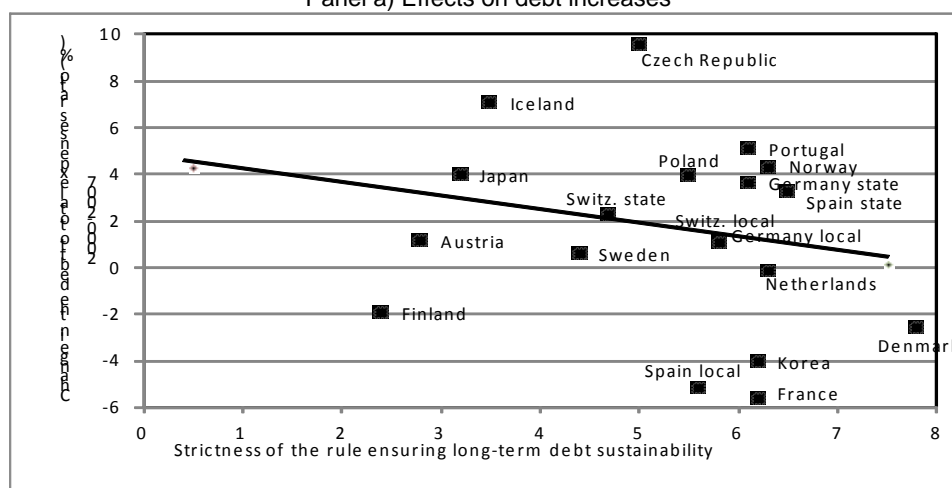
### *Differences between central and sub-central fiscal outcomes can be partly explained by fiscal rules...*

9. Sub-central fiscal rules – either self-imposed or imposed by central government – may partly explain differences in central and sub-central fiscal outcomes. SCG budgets in most OECD countries are subject to balanced budget rules or to borrowing constraints, and often SCG power to increase spending or taxes are restricted. The OECD Fiscal Network has made a comparative analysis of sub-central fiscal rules

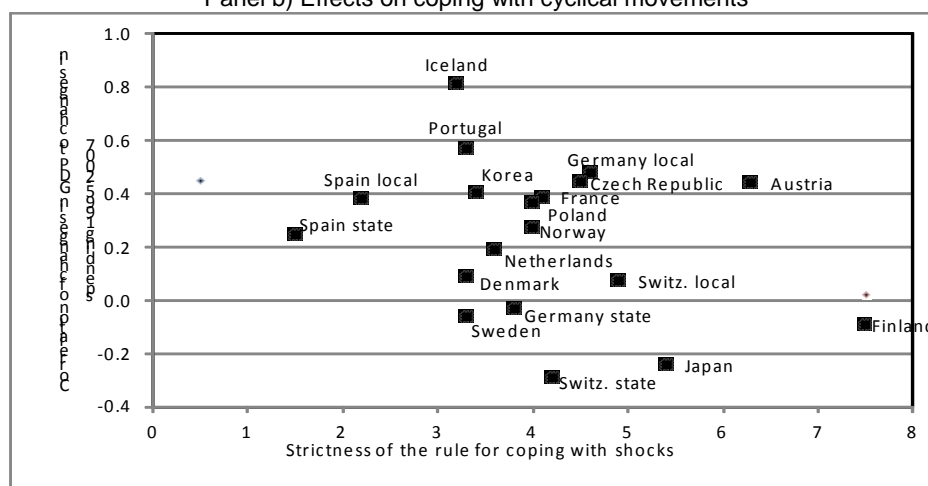
2. This is clearly the case for Belgium, Denmark and Spain.

and their potential effect on fiscal outcomes (Figure 5). Panel a) shows the relationship between debt growth and rules strength, panel b) shows the relationship between spending volatility and rules strength. Results suggest that fiscal rules indeed restrain debt increases and lead to counter-cyclical policy, albeit the relationship between the strength of the rules and sub-central fiscal outcomes – as shown by the straight lines – is rather weak.

Figure 5. **How sub-central fiscal rules affect sub-central fiscal outcomes**  
Panel a) Effects on debt increases



Panel b) Effects on coping with cyclical movements



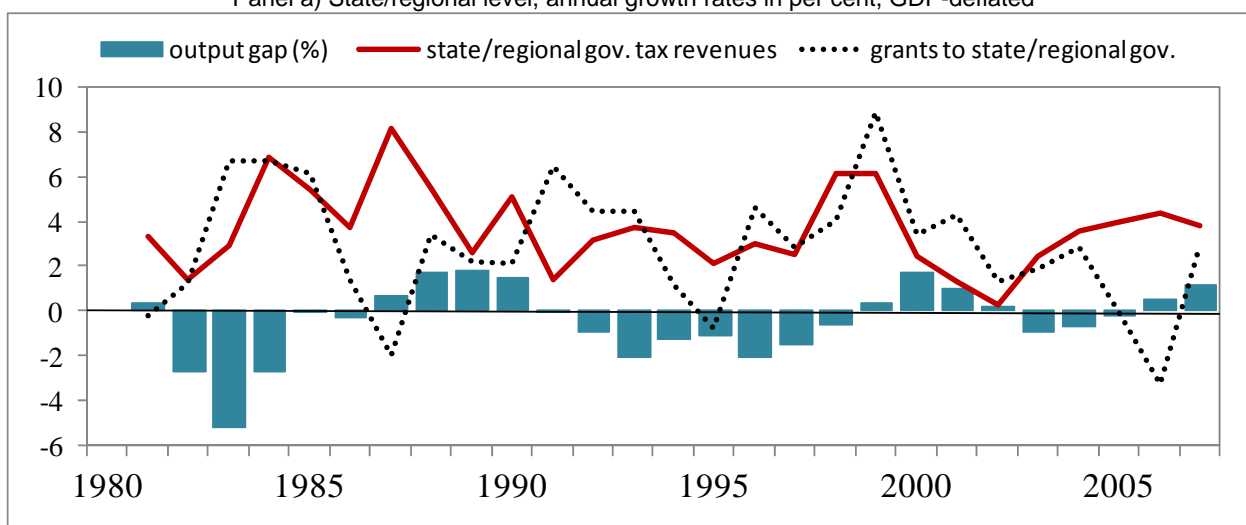
Source: Sutherland *et al.* (2006) and OECD National Accounts.

10. This analysis does not compare the strength of fiscal rules at the central and at the sub-central level and, hence, cannot directly relate differences in central and sub-central fiscal outcomes – such as lower deficits or less cyclical fluctuations – to differences in the bite of the rules. However, SCG fiscal rules tend to be more stringent and to cover more budget items than the rules central government imposes on itself. Moreover enforcement tends to be stricter at the sub-central than at the central level. Fiscal rules and ensuing differences in fiscal policy could hence explain at least some differences in fiscal outcomes between central and sub-central government.

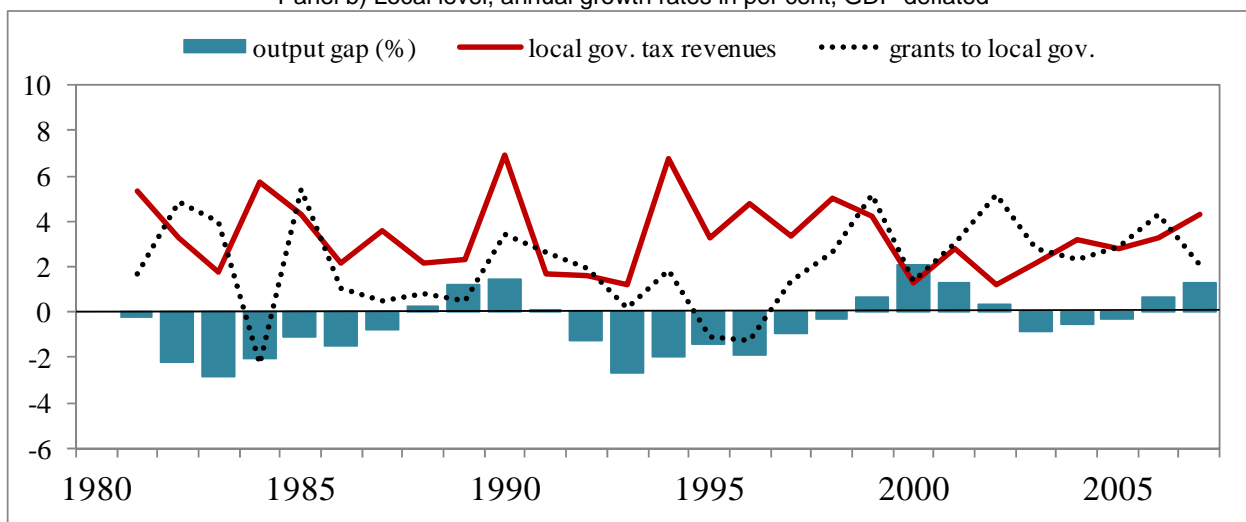
... and by intergovernmental grants

11. Own taxes and intergovernmental grants are the two main revenue sources of SCGs, and differences in the cyclical pattern of the two could be responsible for different fiscal outcomes at the central and sub-central level. Indeed, intergovernmental grants were more volatile and also more procyclical than SCG own tax revenue, making them the most volatile of all sub-central fiscal variables (Figure 6). This holds true for both state/local government and for around two thirds of countries (Table 2). Intergovernmental grants did not smooth SCG own tax revenue fluctuations but often exacerbated them. In many countries the grant system reacted with a lag of one or two years to the cycle, which points at delayed spending decisions at higher government levels.

Figure 6. **Sub-central own tax revenue and intergovernmental grants**  
Panel a) State/regional level, annual growth rates in per cent, GDP-deflated



Panel b) Local level, annual growth rates in per cent, GDP-deflated



Source: OECD Revenue Statistics, OECD National Accounts and OECD Economic Outlook database.

12. The OECD Fiscal Network carried out a country-by-country analysis revealing that intergovernmental grants often exacerbate rather than attenuate SCG own tax revenue fluctuations (Blöchliger and Petzold, 2009). Although there is no clear country pattern, the destabilising and procyclical effect is particularly strong in countries with large transfer systems, little SCG taxing power and a

relatively stable tax base like the property tax. Pro-cyclical transfer systems make sub-central budgeting difficult, particularly if fiscal rules limit SCG power to run deficits, and they are likely pushing SCGs into pro-cyclical fiscal policy. During this crisis, however, grants appear to have been disbursed rather fast, making them more counter-cyclical and hence relieving sub-central budgets.

## **2. The impact of the crisis on sub-central public finances: the “scissors effect”**

### *Sub-central governments’ revenues are expected to fall...*

13. The likely decline in sub-national governments’ revenues depends on the type of revenue source (grants or own taxes) and on the sensitivity of these revenue sources to the economic cycle (type of taxes, level of discretion over the use of central government transfers, and sensitivity of redistribution formulas to economic fluctuations). Besides, the fall in sub-central revenues will probably be mostly felt with a lag, as most taxes are based on the previous year’s activity, and many equalisation formulas smooth developments over several years. In some countries the value of sub-central assets has also been reduced by the financial crisis. For example, about a quarter of British municipalities had heavily invested in assets issued by Icelandic banks (a total of £929.3 million), and have thus suffered heavy losses.

14. Tax revenue losses will be large in 2009 but are expected to recover in 2010 and 2011 (Table 3). In general, sub-central tax revenue is likely to shrink slightly less than that of central government, and both the state and the local level are affected alike. SCGs where business taxes play an important role fare worse than those where property taxes are the main tax revenue, and sub-central personal income taxes are more prone to the downturn than consumption taxes. Sub-central tax revenue is expected to react more than central tax revenue in countries where the sub-central tax base consists of income taxes, while the opposite is true for countries with a strong SCG property tax base. Given that SCG tax revenues react with some lag (Figure 2), this projection is likely to overstate sub-central recovery from 2010 on. The methodology to estimate tax revenues is explained in the Annex.<sup>3</sup>

---

3. This mechanical exercise does not take into account structural changes in the revenue mix. In Finland, the share of the corporate tax received by local governments was temporarily increased by 10 percentage points, from 22% to 32% for the period 2009-11. Swedish national data show a very different projection than OECD data which is due to a different accounting procedure for both the central and sub-central personal income tax. French national data also show a different reaction of local tax revenue due to lags in the assessed tax base.

Table 3. Tax revenue projections for different levels of government

Annual growth rates, 2009-2011

	2009			2010			2011			Average		
	Central gov. (including social sec.)	State/regional government	Local government	Central gov. (including Social Sec.)	State/regional government	Local government	Central gov. (including Social Sec.)	State/regional government	Local government	Central gov. (including Social Sec.)	State/regional government	Local government
Australia	-7.7	0.4	0.7	1.2	3.1	1.5	7.7	4.5	1.9	0.4	2.7	1.4
Austria	-2.5	-2.9	-2.7	0.9	0.7	0.9	2.3	2.3	2.3	0.2	0.0	0.2
Belgium	-3.8	-2.2	-2.2	1.8	2.3	2.1	3.2	2.6	2.8	0.4	0.9	0.9
Canada	-6.6	-3.6	-0.3	2.3	2.3	1.4	4.7	4.0	2.2	0.1	0.9	1.1
Czech Republic	-1.7		-3.3	3.2		4.8	5.0		6.0	2.2		2.5
Denmark	-5.4		-3.2	-0.2		-0.9	5.4		4.0	-0.1		0.0
Finland	-4.6		-4.4	0.1		2.1	2.2		2.7	-0.7		0.1
France	-6.0		-8.6	1.1		2.9	2.8		3.1	-0.7		-0.9
Germany	-2.6	-4.2	-8.2	-1.5	-4.6	-7.3	2.5	4.6	7.1	-0.5	-1.4	-2.8
Greece	-5.5		-2.7	3.8		2.9	4.5		3.2	0.9		1.1
Hungary	-0.9		2.9	-0.7		3.2	2.7		2.7	0.4		3.0
Iceland	-13.4		-2.5	12.5		12.5	9.9		8.5	3.0		6.2
Ireland	-18.2		-10.8	0.2		-0.8	2.7		1.7	-5.1		-3.3
Italy	-2.7		-5.3	0.8		0.4	1.9		2.1	0.0		-0.9
Japan	-6.8		-8.5	-0.9		-1.1	2.2		2.6	-1.8		-2.4
Korea	-1.6		-0.5	2.1		1.4	6.5		3.8	2.3		1.6
Luxembourg	-4.7		-9.5	1.1		1.2	4.7		5.6	0.4		-0.9
Mexico	-5.8	-1.9	-0.8	2.6	1.7	1.5	4.4	3.0	2.3	0.4	0.9	1.0
Netherlands	-6.1		-1.2	1.8		0.7	2.6		2.1	-0.6		0.5
New Zealand	-5.9		1.1	1.8		1.4	5.1		1.7	0.3		1.4
Norway	-10.3		0.9	9.8		4.1	8.7		4.6	2.7		3.2
Poland	-0.7		-4.3	1.1		0.7	2.8		2.5	1.1		-0.4
Portugal	-4.4		-2.7	1.4		1.4	2.5		2.0	-0.1		0.2
Slovak Republic	-4.9		-5.0	0.1		1.4	6.5		8.2	0.6		1.5
Spain	-3.2	-4.4	-3.7	4.1	8.0	7.5	1.4	1.2	1.2	0.7	1.6	1.7
Sweden	-2.5		-3.8	0.1		-1.3	4.7		2.9	0.7		-0.7
Switzerland	-0.7	-3.4	-4.2	0.9	0.9	0.9	1.3	1.2	1.2	0.5	-0.4	-0.7
Turkey	-4.1		-4.9	2.4		2.2	3.9		4.0	0.7		0.4
United Kingdom	-7.5		-3.2	4.2		3.1	4.4		2.5	0.4		0.8
United States	-10.4	-8.2	-3.2	7.2	5.5	2.8	9.1	7.2	3.7	1.9	1.5	1.1
Average	-5.4	-3.4	-3.5	2.2	2.2	1.8	4.3	3.4	3.4	0.4	0.7	0.6

Source: OECD Economic Outlook database and own calculations.

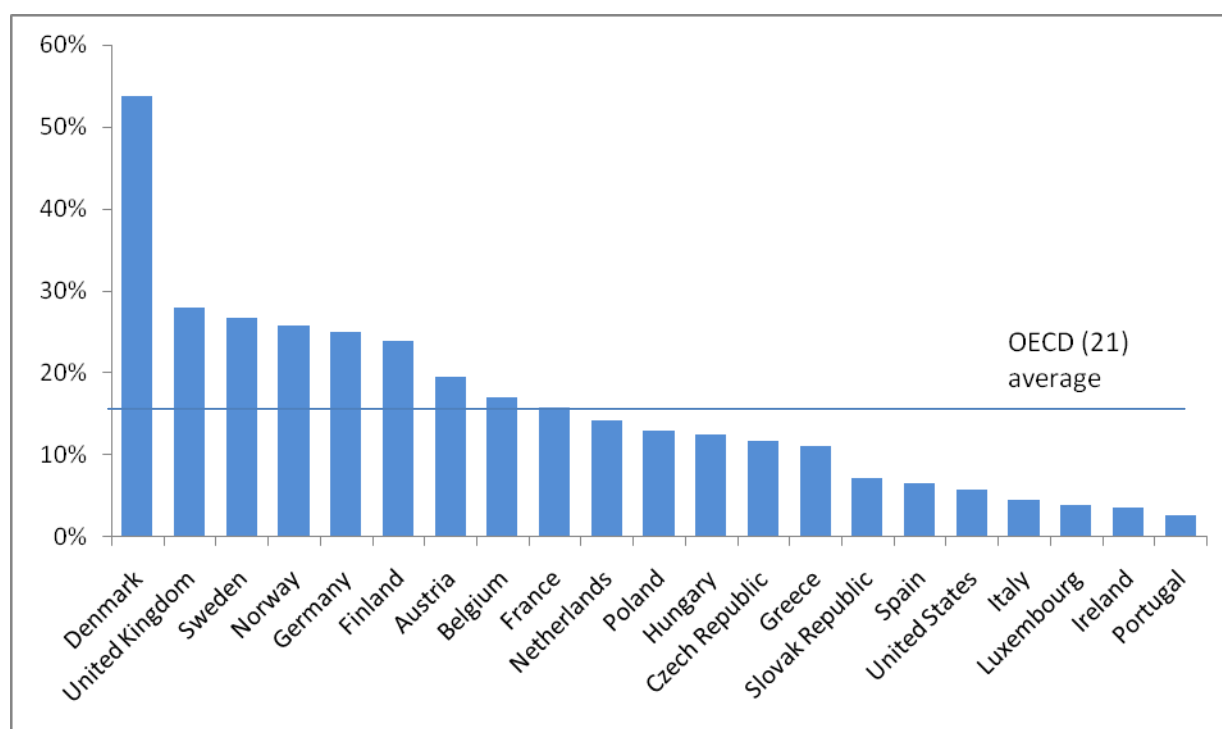
*... while their spending is expected to rise...*

15. In many countries sub-central governments are responsible for welfare services and social transfers, and the crisis led to higher spending on unemployment, social protection and welfare spending. On average, welfare transfers represent about 16% of sub-national expenditure, but they range from less



than 5% in Portugal to over 25% in Norway and the United Kingdom, with a record at more than 50% in Denmark (Figure 7). The rise in sub-central welfare expenditure might come with a certain lag, as people who lost their jobs will first benefit from national unemployment insurance systems, before moving to social welfare programmes, which is often weighing on sub-central finances.

Figure 7. **Share of social protection in sub-national expenditure (2007)**



Source: OECD National Accounts database.

### *... thus increasing fiscal imbalances*

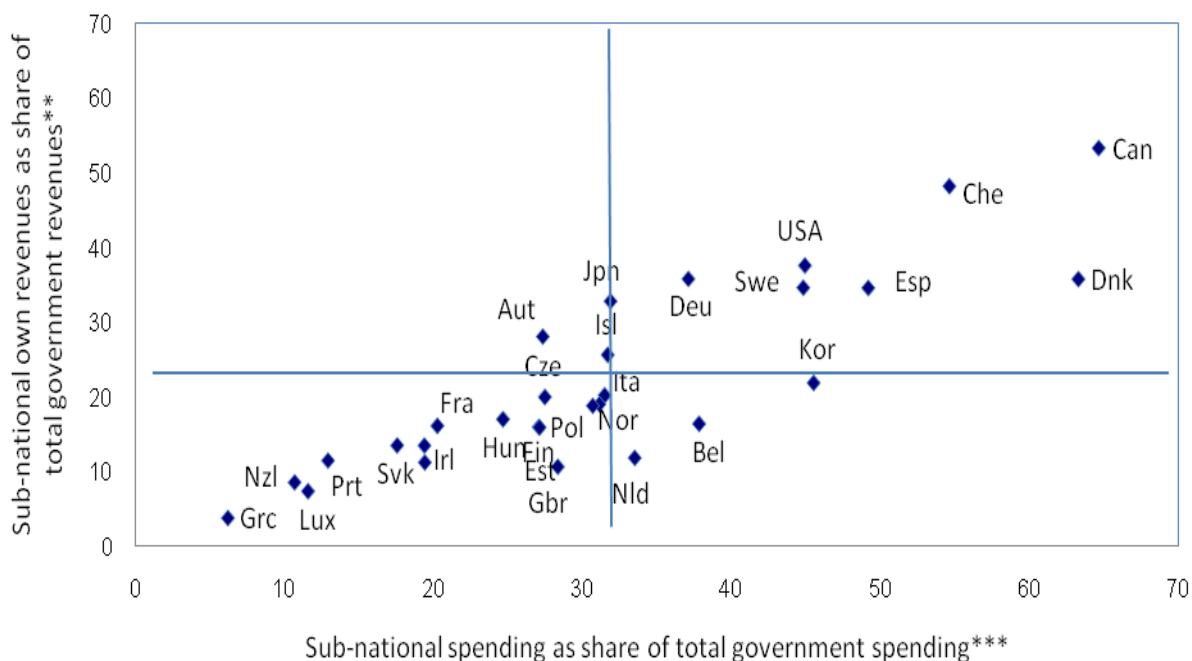
16. The crisis has a large negative impact on most sub-central governments' finances due to a "scissors" effect: revenues have been falling sharply in 2009 as a consequence of the fall in activity, while spending soars due to the need for social welfare programmes. Despite a slight recovery of tax revenues in 2010 and 2011, spending rises are likely to extend into the following years, implying that sub-central governments' balances might continue to deteriorate. This widening gap between sub-central governments' revenues and expenditure is in a few cases covered by increased transfers from central governments, but in most countries, sub-central government deficits and debt levels are expected to rise considerably in 2009 and 2010 (in 11 out of the 19 countries which completed the OECD questionnaire). Finland for example is expecting local governments' debt burden to increase by around €1 billion in 2009/2010 and the Spanish autonomous communities debt already increased by 14.7% in 2008.

### 3. Sub-central governments have reacted to the crisis

#### *SCGs play a considerable role in public finance...*

17. Sub-central governments represent 15% of GDP, 31% of public spending, 22% of public revenues, and are responsible for about 66% of public investment on average (Figures 8 and 9). Given sub-central governments' weight in the economy, their decisions will have a great impact on the chances of success of any recovery plan. Most national stimulus plans had a tax component, whereby central governments aimed at supporting business and private consumption by lowering taxes, and most featured an increase in public investment - both in soft and hard infrastructure - to support employment and long-term productivity growth. If sub-central governments had reduced their spending or increased their taxes in order to balance their budgets, this would necessarily have affected central governments' efforts to sustain the economy.

Figure 8. **Sub-central governments' share in general government revenues and expenditure (2006\*)**



\*Or latest year available; \*\*Excluding transfers received from other levels of government; \*\*\*Excluding transfers paid to other levels of government.

Source: OECD National Accounts; US Bureau of Economic Analysis.

#### *... and their behaviour was quite similar to former crises*

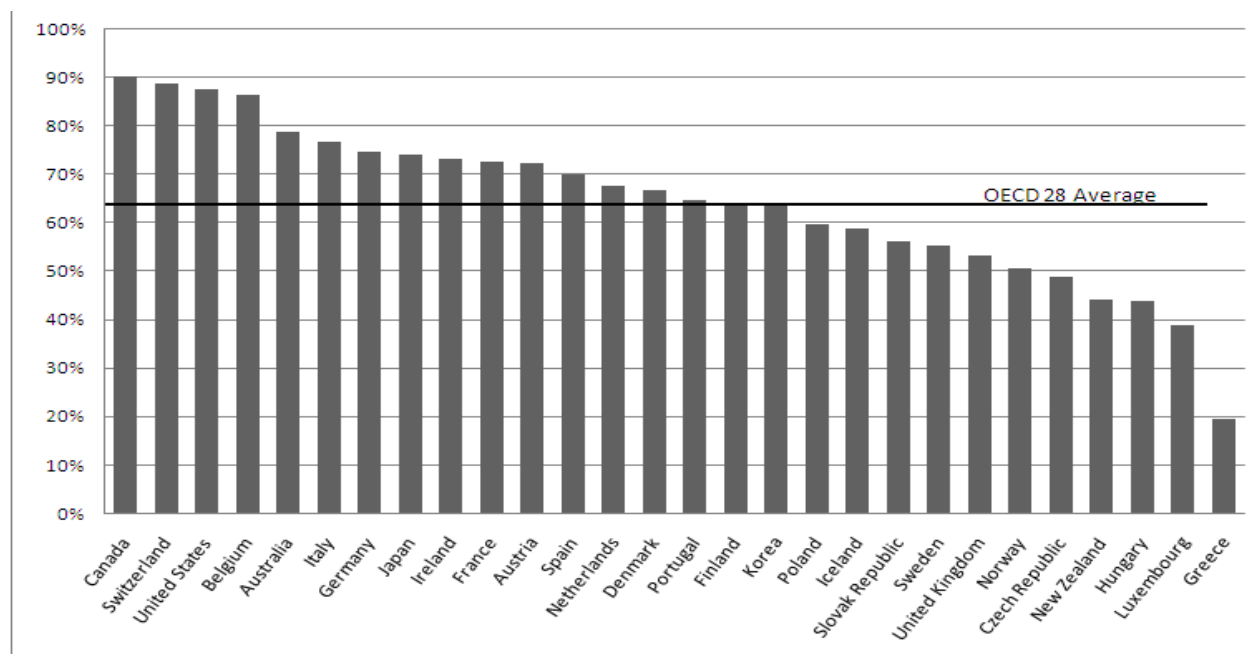
18. Like central governments, sub-central governments had three main fiscal options to face the crisis (Table 5). In some federal countries different SCGs may have chosen different policy options, so the table shows the reaction of the average SCG:

- (i) *Pro-cyclical policy*: to balance their budgets by reducing spending, by cutting jobs and investment, or by increasing revenues, especially raising taxes.
- (ii) *Passive policy*: to take no active policy measure, letting the automatic stabilisers work. This policy can result either from a lack of sub-central autonomy to implement discretionary policies (e.g.

Korea), or from an institutional framework which allows for the automatic stabilisers to work without explicit policy decision (e.g. Denmark).

- (iii) *Counter-cyclical policies*: to increase investment and/or lower tax rates, eventually exposing themselves to increased levels of deficits and debt.

Figure 9. **Share of sub-central government in public investment (2007)**



Source: OECD National Accounts - This figure uses gross fixed capital formation as the measure of public investment.

Table 4. **Sub-central governments' reactions to the crisis**

<b>Pro-cyclical reactions</b> (such as raising tax rates, cutting expenditure or investment, etc.)	<b>Automatic stabilisers</b> (no explicit policy measure)	<b>Counter-cyclical reactions</b> (such as decreasing tax rates, increasing investment, etc.)
Finland France Slovak Republic Sweden United Kingdom United States	Australia Denmark Korea	Austria Belgium Canada Germany Japan Norway Portugal Spain Switzerland

Note: In Italy, sub-central governments had little room for manoeuvre to increase expenditure due to the Internal Stability Pact, but have redirected resources towards support measures. In Portugal, sub-central reactions were decided by central government and approved by National Parliament. In addition to the automatic stabilisers, central and sub-central government in Denmark agreed to increase SCG investment.

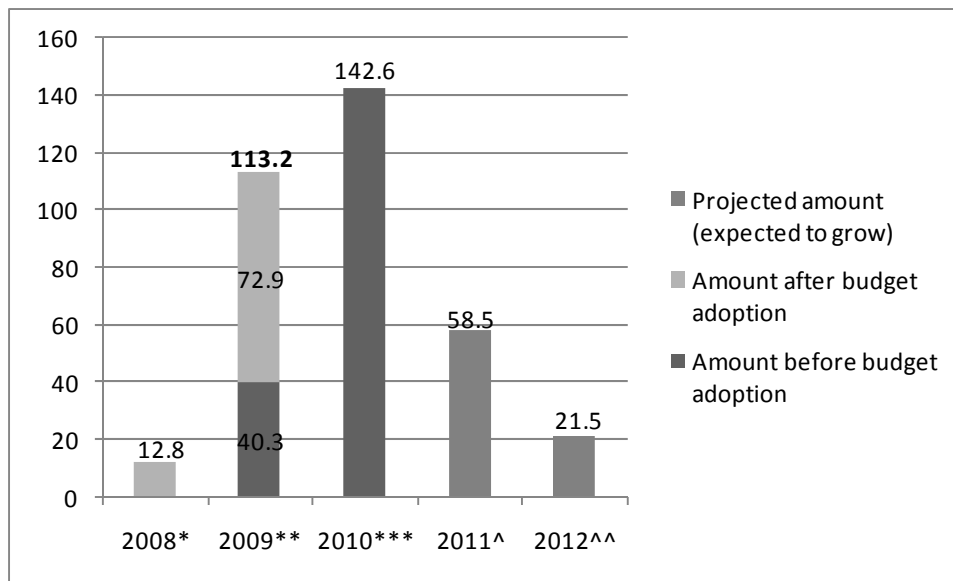
Source: Country responses to a questionnaire prepared by the OECD Network on Fiscal Relations across Levels of Government, June 2009 [COM/CTPA/ECO/GOV(2009)5/ANN].

19. The United States is probably the most notable case of pro-cyclical reactions by sub-central governments (Box 1), potentially undermining central government's fiscal policy. In Canada on the contrary, provinces have historically had large, counter-cyclical reactions to economic fluctuations (Table 1). The present crisis is no exception, as the provinces have implemented their own stimulus packages very early on, which include both tax reductions and spending increases. These represent 2.1% of GDP over the 2009-11 period (CAN\$ 33 billion in total), and will be mainly spent on infrastructure (70%).

**Box 1. American states, balanced budget rules and fiscal packages during the crisis**

In the United States, 49 states have balanced budget rules enshrined in their constitutions. Any reduction in revenues must therefore be compensated by an equivalent reduction in spending. The crisis has considerably reduced states' revenues, and state budget gaps (*i.e.* difference between desired spending and projected revenues) have reached unprecedented levels (Figure 10). As lawmakers prepared their 2009-2010 budgets in July 2009 (FY 2010 budgets), they faced a cumulated gap of over \$142 billion. These gaps, though shrinking rapidly, are projected to last at least until FY 2012, as sub-central tax revenues usually take longer to recover in the United States than GDP growth.

**Figure 10. State budget gaps**  
FY 2011 - FY 2012 (projected, in bn \$)



Source: NCSL. \* 20 states reported budget gaps after the adoption of the budget (includes Puerto Rico), \*\* 44 states reported budget gaps after the adoption of the budget (includes Puerto Rico). The ex-post budget gap was much larger than the budget gap estimated at the time of budget adoption, \*\*\* 46 states report budget gaps at the adoption of the budget (includes Puerto Rico). Ex-post gaps are expected to be larger, ^ 31 states and Puerto Rico forecast FY 2011 gaps, the amount for FY 2011 indicates the 24 states that have provided estimations, ^^ 15 states forecast FY 2012 gaps, the amount for FY 2012 indicates the 9 states that have provided estimations.

The difference between the amounts before budget adoption and the amounts after budget adoption show that no matter how pessimistic revenue forecasts have been, actual collections came in even lower. In FY 2010 to 2012, the fiscal gaps after budget adoption are also expected to be larger than those estimated in the budget.

Because of the balanced budget rules, sub-central governments had to take measures to balance their FY 2010 budgets. Given the weight of sub-central governments in the American economy (they represent 20% of GDP, 38% of general government revenues, 45% of general government spending, and 88% of public investment), these measures ran the risk of amplifying the effects of the crisis. These measures include: spending cuts (across the board cuts, education, hiring and salary freezes, layoffs and early retirement, health care, etc.), raising taxes, increasing fees, etc. For a detailed state by state description of the measures taken to balance FY 2010 budgets, see: [www.ncsl.org/?tabid=17255](http://www.ncsl.org/?tabid=17255).

In February 2009, the Federal administration voted the American Recovery and Reinvestment Act (ARRA). One of the several objectives of this plan was to stabilize state and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive state and local tax increases ([www.recovery.org](http://www.recovery.org)). Out of the \$787 billion of the stimulus plan, \$286 billion affected sub-central governments, either by substituting their expenses (as increased federal participation in Medicaid), or by directly providing stabilization funds. In the FY 2010, these funds have helped offset some of the planned spending reductions, and covered about 40% of the states' budget gaps. It is too early to evaluate whether the stimulus plan reached all its objectives, but according to some experts, it did help preserving existing jobs (Hurley and Tubbesing, 2009). Yet, the situation of the states is still worrying, as the lagged effect of the crisis will cause further budget gaps in FY 2011 and 2012 (Figure 10), while they will no longer be able to count on the ARRA funds to bridge these gaps.

20. In general, the immediate reactions of sub-central governments to the crisis (Table 5) are quite consistent with their historical pattern (Table 1). In only two cases, countries where sub-central governments ran counter-cyclical policies in the past have cut expenditure and increased taxes as an immediate reaction to the present crisis (Sweden and, to some extent, France), and in three countries, sub-central governments are implementing counter-cyclical policies while they usually had a pro-cyclical pattern (Austria, Japan and Norway).

#### **4. Central governments have helped SCGs to cope with the crisis ...**

21. Central governments have quickly become aware of how the crisis affects SCG public finance and that uncoordinated cuts in spending levels and in investment could not only affect public service quality, but also undermine the objectives of national fiscal policy. Therefore, most central governments have introduced discretionary, transitory measures to help sub-central governments. Measures comprise a wide variety of instruments that may be summarised and subdivided into a) an increase in transfers from the central to the sub-central level, and b) an easing of fiscal rules.

##### ***... by increasing transfers and other measures***

22. In a context of falling own tax revenues, exceptionally increasing discretionary grants is an instrument often used to stabilize sub-central revenues (Table 6). In most OECD countries, grants to sub-central governments represented a large share of the national stimulus spending, and earmarked grants – e.g. for public investment – were much more widely used than general purpose grants. Japan and Sweden are the only countries where general purpose grant increases were larger than earmarked grants increases.<sup>4</sup> Given the focus on investment, earmarked grants for capital investment were larger than for current spending and often made up the bulk of stimulus spending: more than 50% of national stimulus spending in Australia and more than 70% in Canada. Spain created a “State Fund for Local Governments”, which distributed €8 billion or 0.7% of GDP to local councils on the basis of population, to finance local investment projects, to be completed in the first quarter of 2010.

23. The aim of these grants was to finance investment projects that would not have been implemented by sub-central governments otherwise. However, such measures ran the risk of creating perverse incentives for sub-central governments, which could have reduced their investment spending, as they expected the central government to step in and compensate. Co-ordination between levels of government was and still is crucial, and grants may necessitate complementary measures to make sure that the projects financed by the central government do not crowd out local spending. Conditionality and monitoring mechanisms are sometimes applied: in Australia, the states were required to prove that they were not reducing their previously planned level of investment (Box 2). Co-funding is also a tool for reducing moral hazard, as SCGs must commit their own money in order to benefit from CG’s help; co-funding was an important element of investment schemes in Germany.

24. Accelerating the payments from central to sub-central governments, conditional on the commitment by these to maintain or increase their previous investment levels was also used as an incentive mechanism for sub-central governments not to decrease their investment., In France, the central government made an early payment to sub-central governments in 2009 of the FCTVA (VAT compensation fund) due in 2010, provided these committed to increase by at least one euro their level of investment, as compared to the average of the years 2004-07. In the same vein, accelerating the implementation of already decided projects allowed a swift reaction to the crisis. In Canada, the Provincial/Territorial Base Funding initiative provides CAD 25 million per year to each province and

---

4. In Finland, the Parliament has voted a €30 million general purpose grant for municipalities in September, 2009, not included in Table 6.

territory. To expedite infrastructure projects, Budget 2009 accelerated payments under this initiative. Future payments are brought forward by two years to provinces and territories that can demonstrate the ability to use these funds quickly. The European Commission is also accelerating the disbursement of funds for already agreed projects, by advancing payments for the 2007-13 programmes. Finally, many countries, such as France, Germany, Spain and Canada, have introduced simplifications to the procedures for approving and disbursing funds to speed up the implementation of projects, and have provided liquidity to the private sector.

Table 5. **Grants as a percentage of total national stimulus spending**  
Selected countries

	General purpose grants	Earmarked grants		Total
		Current expenditure	Capital expenditure	
Australia	-	-	56%	<b>56%</b>
Canada	-	6%	78%	<b>84%</b>
France	-	-	27%	<b>27%</b>
Germany	-	-	29%	<b>29%</b>
Japan	33%	-	18%	<b>51%</b>
Korea	-	-	28%	<b>28%</b>
Norway	7%	2%	30%	<b>39%</b>
Portugal	-	-	22%	<b>22%</b>
Spain	-	1%	72%	<b>73%</b>

*Note:* In OECD (2009), fiscal packages are registered according to the type of investment, and not according to the level of government that receives and manages the funds. This is why the “transfers to SCGs” displayed in the *OECD Economic Outlook* (2009) are not consistent with the answers to the questionnaire, as these reflect the share of the national stimulus packages channelled through SCGs (even if they are earmarked for specific purposes, and thus consolidated under other items in national figures).

*Source:* Country responses to a questionnaire prepared by the OECD Network on Fiscal Relations across Levels of Government; and *OECD Interim Report* (March 2009).

#### Box 2. The monitoring of stimulus measures in Australia

For the Nation Building and Jobs Plan to have the desired impact on the economy, it is essential that the additional stimulus affects aggregate demand quickly. This requires state capital expenditure in each of the targeted areas to be maintained, so that the capital investment under the plan is additional.

New governance arrangements have been implemented to ensure timely delivery and the desired economic stimulus effect. Under the Australian *National Partnership Agreement on the Nation Building and Jobs Plan*, the Ministerial Council for Federal Financial Relations has established expenditure and output benchmarks for each of the sectors to receive additional Commonwealth funding. A coordination oversight group within the Department of the Prime Minister and Cabinet, chaired by the Coordinator-General, has been established to support and monitor the implementation of key infrastructure and stimulus measures. The expenditure benchmarks allow assessment of whether the States have at least maintained their existing and planned level of expenditure during the period of increased Commonwealth expenditure.

*Source:* Australia’s federal relations (2009), *Budget Paper No. 3*, Australian Government.

#### *...and by facilitating borrowing or increasing SCG’s tax revenue share*

25. Some central governments helped SCGs by facilitating borrowing, either by providing (sometimes subsidized) loans (Canada, Switzerland) or by providing explicit guarantees to SCG borrowing (Australia, Korea, Spain). Also, central governments temporarily eased budget constraints by waiving SCG

balanced budget rules and allowing borrowing to finance their operational outlays. Spain allowed its municipalities to borrow to finance their 2008 operational deficit, including payments due to suppliers, under the condition of settling outstanding debts with suppliers within one month. Austria revised its Internal Stability Pact, allowing for higher sub-central deficits. Italy introduced temporary easing measures in the Internal Stability Pact to allow sub-central governments to increase their investment expenditure.

26. Another measure taken by some governments was to reassign taxes and tax revenue, for instance by increasing the share of taxes allocated to sub-central governments. Finland temporarily increased the corporate tax apportionment to local authorities from 22 to 33% of total tax revenue for the period 2009-11.

### *Coordination between levels of government is essential*

27. Coordination between government levels may help ensure a coherent crisis strategy. The need for coordination reinforced institutions that facilitate vertical dialogue and decision making. In the Slovak Republic, central government and the Association of Towns and Communities adopted a Memorandum that defines the obligations for central and sub-central governments for the years 2009-10. The Council of Australian Governments has been given new responsibilities to allow the Commonwealth to cooperate with the States and Territories in order to implement an ambitious reform agenda, which aims at boosting productivity, workforce participation and geographic mobility, and deliver better local services. Specific problems caused by the crisis have also led to the creation of new institutions. Municipal debt mismanagement is leading French local authorities to think about creating new public bodies for coordinating sub-central borrowing. This body could be responsible for negotiating loans at the best possible conditions on behalf of the municipalities, based on the model of the Danish Kommunalbanken or the Dutch Kommuninvest.

28. Regional development policy has for a long time been a way to foster public investment through co-funding arrangement (OECD, 2009d). In France, the selection of projects has been carried out by sub-central governments and registered through contracts with the territorial representative of the central government. The European Commission and EU member states have agreed to redirect cohesion funds towards investment in specific sectors such as energy efficiency, clean technologies, environmental services, and infrastructure. The Government of Australia will transform the former Area Consultative Committees into the Regional Development Australia Network, which was set up in July 2009. This network is coordinating the operations of the Australian State and Territory governments' regional development boards. It will also provide policy advice to government for delivering a more integrated approach to regional development.

## **5. Long-term impacts of the crisis and future challenges**

29. Beyond the immediate impact of the crisis on public finances, it is likely to have long-term implications for fiscal relations across levels of governments.

30. First, both central and sub-central governments will have to consolidate their budgets, as deficits and debt are rising to unprecedented levels. Consolidation might be harder for sub-central than for central governments, as the discretionary transfers they receive from central governments will expire, while the recovery in tax revenues is likely to be shallow. Sub-central debt levels are therefore likely to remain high for some time, at least in countries where sub-central governments are allowed to borrow.

31. Second, the agenda for structural fiscal federalism reforms could be affected for political economy reasons, although it is not yet clear whether the crisis will speed up or slow down potential reforms. Crises can be catalysts for reforms as they highlight the shortcomings of current policy settings.

The crisis apparently sparked a broad reflexion on the need to reform fiscal relations in order to increase efficiency. But crises may also delay or even stop reforms, as these tend to be expensive, because of the need to compensate losers, and increase uncertainty, which is less accepted in crisis periods. In some countries, the immediate impact of the crisis has been to delay or to scale down some previously planned reforms.

32. Third, the crisis could create a new balance of power between central and sub-central governments. The result could either be a greater role for sub-central governments in countries where they are key actors in implementing recovery measures or where weak fiscal positions will no longer allow central governments to shape SCG's behaviour. The crisis could also result in a shift of the power balance towards the central government, which might want to keep its predominant role it played in coordinating fiscal policy during the crisis.

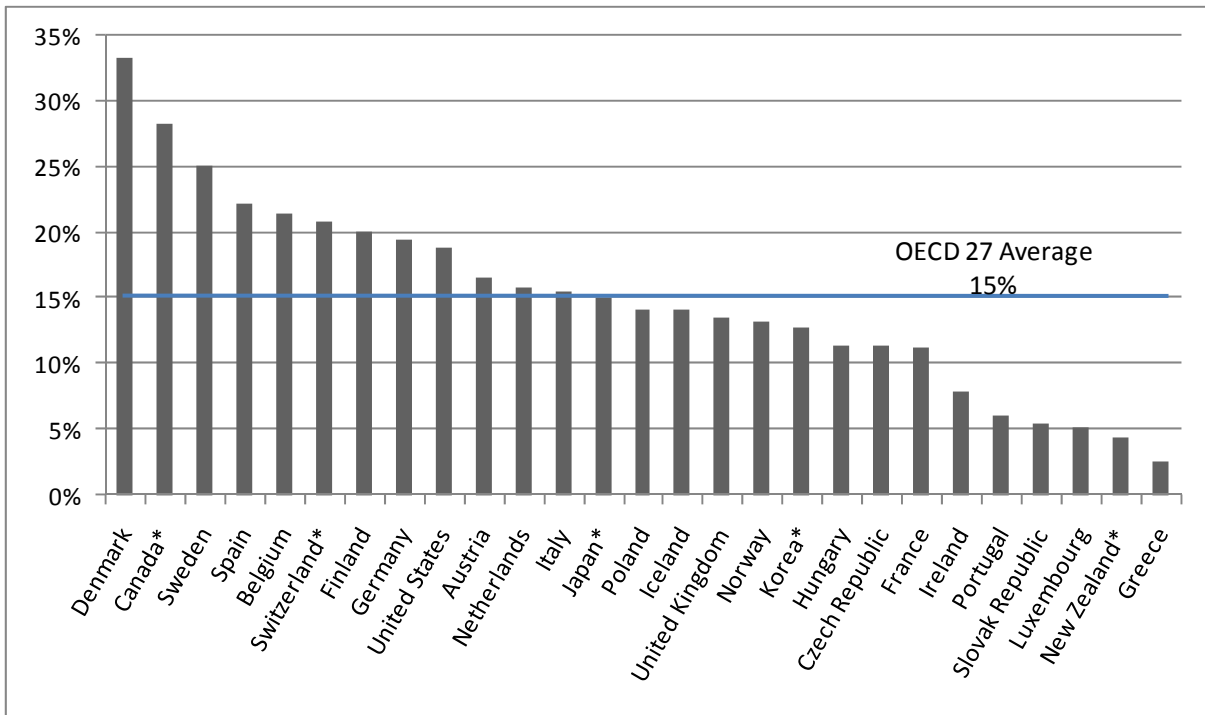


## Annex

Table A1. Correlation coefficients between investment and output gap

		Investment and output gap					
		No lag		One year lag		Two years lag	
		Sub-central	Central	Sub-central	Central	Sub-central	Central
Australia	State	-0.10	0.14	-0.32	0.07	-0.22	-0.14
Austria	Local	-0.28	-0.18	-0.10	0.00	0.02	0.00
	State	0.04		-0.23		0.02	
Belgium	Local	-0.28	-0.14	-0.09	-0.05	0.04	0.43
	State	0.46 **		0.34		-0.29	
Canada	Local	0.55 ***	-0.03	0.43 **	-0.26	0.04	-0.05
	State	0.57 ***		0.41 **		-0.03	
Denmark	Local	-0.02	0.05	-0.15	-0.26	-0.04	-0.19
Finland	Local	0.06	0.14	-0.32 *	0.19	-0.61 ***	0.09
France	Local	0.39 **	0.01	-0.06	0.04	-0.30	-0.01
Germany	Local	0.66 ***	0.03	0.04	-0.09	-0.42	-0.32
	State	0.35		-0.01		0.06	
Greece	Local	0.06	-0.05	0.33	-0.42	0.35	-0.33
Hungary	Local	0.14	0.21	0.01	-0.13	0.00	-0.19
Iceland	Local	0.42	-0.31	0.20	0.10	-0.18	0.93 ***
Ireland	Local	0.45 *	0.06	0.20	0.14	-0.08	0.07
Italy	Local	0.20	0.08	-0.18	0.17	-0.60 ***	-0.08
Japan	Local	-0.03	-0.27	0.83 ***	0.36	0.39	0.35
Luxembourg	Local	-0.09	0.37	0.11	0.23	0.00	0.30
Netherlands	Local	0.35 *	0.35 *	0.33 *	0.21	0.11	0.06
New Zealand	Local	0.12	0.19	0.06	0.11	-0.33	-0.14
Norway	Local	0.20	-0.26	-0.15	-0.34	-0.04	-0.42 *
Poland	Local	0.19	0.19	0.29	-0.09	0.03	-0.38
Portugal	Local	0.20	-0.20	0.11	-0.25	0.00	0.05
Spain	Local	0.07	0.59 **	-0.13	0.20	-0.20	0.27
	State	0.31		0.10		-0.16	
Sweden	Local	0.19	-0.15	0.40	0.09	0.32	0.46 *
Switzerland	Local	0.24	0.64 ***	0.00	0.32	0.22	0.14
	State	0.18		-0.09		0.16	
United Kingdom	Local	-0.12	0.27	-0.16	0.07	-0.05	0.15
United States	State	0.15	-0.33 *	-0.31	-0.21	-0.60 ***	-0.26
Average	Local	0.19	0.28	0.01	0.34 *	-0.27	0.18
	State	0.38 **		0.33 *		0.14	

Figure A1. Sub-central government spending as a per cent of GDP (2008)



Source: OECD National Accounts (\* data for year 2007).

### Methodology for estimating revenue developments at the sub-central level

According to the *OECD Economic Outlook* No. 86, released in November 2009 the impact of the crisis on various taxes will differ significantly over the coming years. The *OECD Economic Outlook* forecasts revenue growth rates for four tax categories:

- Direct taxes on business
- Direct taxes on households
- Indirect taxes
- Social security contributions

The Revenue Statistics provide a disaggregated classification of tax revenues by level of government that allows matching this classification with the four items above as set out in the table below.

*Correspondence between OECD Outlook and Tax revenues categories*

OECD Outlook categories	Tax revenues categories
Direct taxes on business	Taxes on income, profits and capital gains Other taxes paid solely by business Shared assignment of unallocable taxes on profits and capital gains
Direct taxes on households	Taxes on income, profits and capital gains of individuals Other taxes not paid solely by business Shared assignation of unallocable taxes on income profits and capital gains
Indirect taxes	Taxes on goods and services
Social security contributions	Social security contributions and payroll and workforce taxes

Property tax revenue, an important tax revenue source, is not projected in the *OECD Economic Outlook*. To obtain a guesstimate for the growth of this tax category, a regression has been run between property tax growth rates and GDP growth rates for the seven major countries over the 1991-2007 period. The result of this regression is an estimated elasticity of 1,15.

To provide a more complete view of sub-central government revenues, it is necessary to add grants as another category. As there is no forecast for the evolution of grants as such, a proxy has been used, which is calculated as the average growth of direct taxes on households, indirect taxes, social security contributions and property taxes. All tax revenues are projected without lags.

## Data sources

Variable	Indicator	Dataset
Output gap	Output gap of the total economy	OECD Economic Outlook
Real GDP	Gross domestic product, volume, market prices	OECD Economic Outlook
Government net lending	Government net lending as a percentage of GDP	OECD Economic Outlook
Total expenses	Total disbursements, general government, values	OECD Economic Outlook
Total revenues	Total receipts, general government, values	OECD Economic Outlook
Fiscal balances	Net lending(+)/Net borrowing	OECD National accounts
Spending of government level or government expenditures	Total government expenditure	OECD National accounts
Government revenues	Total government revenue	OECD National accounts
Investment	Gross fixed capital formation	OECD National accounts
Rest of expenditure	Total government expenditure – gross fixed capital formation	OECD National accounts
Grants	Other current transfers, receivable + other capital transfers and grants, receivables	OECD National accounts
Tax revenues	Total tax revenues	Revenue statistics

All nominal values have been deflated by which deflator.

The following data restrictions apply:

- There are no data for Mexico and Turkey.
- Some national accounts data are not available for Australia.
- The US local government data are included in the US state data.
- For most variables data for Canada, Finland, France, the Netherlands and the United States start in 1980. The starting date for the rest of countries is: 1985 Belgium (1989 for regional data), 1986 New Zealand, 1987 United Kingdom, 1988 Austria, 1990 Denmark, Ireland, Luxembourg and Switzerland, 1991 Germany, 1993 Sweden, 1995 Norway, Poland, Portugal and Spain and 1996 Japan.
- Some data have been excluded because they are outliers.

## References

- Blöchliger, H. and O. Petzold (2009), “Taxes or Grants: Which Revenue Source for Sub-central Governments?” *OECD Economics Department Working Papers*, No. 706, OECD, Paris.
- Hurley, J. and C. Tubbesing (2009), “Breathing Room”, *State Legislatures*, October/November.
- OECD (2009a), “Multi-level Regulatory Capacity in Australia”, (GOV/PGC/REG(2009)13), OECD, Paris.
- OECD (2009b), *OECD Economic Outlook*, Vol. 2009/2, No. 86, OECD, Paris.
- OECD (2009c), *OECD Policy Brief: Bridging the Gaps between Levels of Government*, OECD, Paris.
- OECD (2009d), *Regions Matter: Economic Recovery, Innovation and Sustainable Growth*, OECD, Paris.
- Sutherland, D., I. Joumard and R. Price (2006), “Sub-central Government Fiscal Rules”, in *OECD Economic Studies*, No. 41, OECD, Paris.
- Wibbels, E. and J. Rodden (2006), “Business Cycles and the Political Economy of Decentralized Finance: Lessons for Fiscal Federalism in the EU”, in P. Wierds *et al.*, *Fiscal Policy Surveillance in Europe*, Macmillan.

## WORKING PAPERS

The full series of Economics Department Working Papers can be consulted at [www.oecd.org/eco/working\\_papers/](http://www.oecd.org/eco/working_papers/)

751. *Improving China's health care system*  
(January 2010) by Richard Herd, Yu-Wei Hu and Vincent Koen
750. *Providing greater old-age security in China*  
(January 2010) by Richard Herd, Yu-Wei Hu and Vincent Koen
749. *China's labour market in transition: job creation, migration and regulation*  
(January 2010) by Richard Herd, Vincent Koen and Anders Reuterswärd
748. *A pause in the growth of inequality in China?*  
(January 2010) by Richard Herd
747. *China's Financial sector reforms*  
(January 2010) by Richard Herd, Charles Pigott and Sam Hill
746. *A bird's eye view of OECD housing markets*  
(January 2010) by Christophe André
745. *The automobile industry in and beyond the crisis*  
(January 2010) by David Haugh, Annabelle Mourougane and Olivier Chatal
744. *Towards a flexible exchange rate policy in Russia*  
(December 2009) by Roland Beck and Geoff Barnard
743. *Fiscal federalism in Belgium: Challenges and possible improvements*  
(December 2009) by Willi Leibfritz
742. *Product Market Regulation in Russia*  
(December 2009) by Paul Conway, Tatiana Lysenko and Geoff Barnard
741. *How to reform the Belgian tax system to enhance economic growth*  
(December 2009) by Jens Høj
740. *Improving the policy framework in Japan to address climate change*  
(December 2009) by Randall S. Jones and Byungseo Yoo
739. *Health-care reform in Japan: controlling costs, improving quality and ensuring equity*  
(December 2009) by Randall S. Jones
738. *Financial stability: overcoming the crisis and improving the efficiency of the banking sector in Japan*  
(December 2009) by Randall S. Jones and Masahiko Tsutsumi
737. *Recent Oil Price Movements– Forces and Policy Issues*  
(December 2009) by Eckhard Wurzel, Luke Willard and Patrice Ollivaud

736. *Promoting competition to strengthen economic growth in Belgium*  
(December 2009) by Tomasz Koźluk
735. *Prudential Regulation And Competition In Financial Markets*  
(November 2009) by Rüdiger Ahrend, Jens Arnold and Fabrice Murtin
734. *Keeping slovenian public finances on a sustainable path*  
(October 2009) Pierre Beynet and Willi Leibfritz
733. *Pedal to the metal: Structural reforms to boost long-term growth in Mexico and spur recovery from the crisis*  
(October 2009) David Haugh and Agustin Redonda
732. *Achieving higher performance: Enhancing spending efficiency in health and education in Mexico*  
(October 2009) Cyrille Schwellnus
731. *Russia's long and winding road to a more efficient and resilient banking sector*  
(October 2009) Geoff Barnard
730. *How do institutions affect structural unemployment in times of crises?*  
(October 2009) Davide Furceri and Annabelle Mourougane
729. *Understanding the world trade collapse*  
(October 2009) Calista Cheung and Stéphanie Guichard
728. *Estonia and euro adoption: Small country challenges of joining EMU*  
(October 2009) Zuzana Brixiova, Margaret H. Morgan and Andreas Wörgötter
727. *Towards better schools and more equal opportunities for learning in Italy*  
(June 2009) Romina Boarini
726. *Iceland: Challenging Times for Monetary and Fiscal Policies*  
(August 2009) Andrea De Michelis
725. *Iceland: The Financial and Economic Crisis*  
(August 2009) David Carey
724. *The role of transparency in the conduct of monetary policy*  
(September 2009) Makoto Minegishi and Boris Cournède
723. *Raising education outcomes in Greece*  
(September 2009) Vassiliki Koutsogeorgopoulou
722. *Improving the performance of the public health care system in Greece*  
(September 2009) Charalampos Economou and Claude Giorno
721. *Is there a case for price-level targeting?*  
(August 2009) Boris Cournède and Diego Moccero