ISSN 0034-8066

UNIVERSIDAD NACIONAL DE CÓRDOBA
FACULTAD DE CIENCIAS ECONÓMICAS
INSTITUTO DE ECONOMÍA Y FINANZAS

REPÚBLICA ARGENTINA

REVISTA
DE
ECONOMÍA Y ESTADÍSTICA

VOL. XLVIII - NÚMERO 1
AÑO 2010

UNIVERSIDAD NACIONAL DE CÓRDOBA
FACULTAD DE CIENCIAS ECONÓMICAS
INSTITUTO DE ECONOMÍA Y FINANZAS

REPÚBLICA ARGENTINA

REVISTA
DE
ECONOMÍA Y ESTADÍSTICA

Vol. XLVIII - Número 1 - Año 2010
Córdoba (República Argentina) - Ciudad Universitaria
Departamento de Impresiones y Publicaciones
Facultad de Ciencias Económicas

UNIVERSIDAD NACIONAL DE CÓRDOBA
FACULTAD DE CIENCIAS ECONÓMICAS
INSTITUTO DE ECONOMÍA Y FINANZAS

REVISTA
DE
ECONOMÍA Y ESTADÍSTICA

VOLUMEN XLVIII - Número 1 AÑO 2010

Índice

Revista de Economía y Estadística - Vol. XLVIII- N° 1 - (2010) - pp. 7-9
Instituto de Economía y Finanzas - Facultad de Ciencias Económicas
Universidad Nacional de Córdoba - Argentina

Letter from the Editors

Ernesto Rezk
Alberto Díaz Cafferata
Editors in Chief Revista de Economía y Estadística

Daniele Franco
Managing Director, Economic Research
and International Relations Area, Banca d'Italia

The Editors in Chief of the Revista de Economía y Finanzas, whose first number dates back to 1935, announce with pleasure that, following successful contacts with Banca d´Italia and with authors, a group of articles submitted to the 12th Public Finance Workshop held in Perugia from 25 through 27 March 2010, are now reprinted in the journal edited by the Institute of Economics and Finance of the National University of Córdoba, Argentina.

The workshop was devoted to the consideration of Fiscal Policy Lessons from the Crisis. The editors (Marika Cioffi, Daniele Franco and Maria Rosaria Marino) of the Banca d'Italia´s release of the papers noted that 'the economic downturn and its severe impact on public finances and long term growth have renewed the debate on the role, design and priority of fiscal policy'. They argued that the new consensus on the complementarity of monetary and fiscal policies stemmed from the limited effectiveness of monetary policies when low interest rates prevail and dysfunctional credit markets add extra challenges to the efficacy of economic tools.

In organizing the presentation, four articles by Fischer and Justo, Follette and Lutz, Creel and Saraceno and Schuknecht, were selected to be included in the number 1-2010 of Revista de Economía y Estadística. They examine the role of automatic stabilizers and discretionary policies from different angles. They offer different views on automatic stabilization and fiscal activism during crises. These papers will be complemented by four additional articles that will be appearing in the next issue.

J. Fischer and I. Justo examine the discretionary measures taken by European Union Member States in response to the recent international crises. They offer a broad overview of the measures and estimates of their dimensions. They note that discretionary support was – at the aggregate level- timely, temporary and targeted, as requested by prevailing policy indications. Countries with less room for manoeuvre naturally took more restrictive stances. In assessing the interaction between discretionary measures and built in budgetary stabilization, Fischer and Justo find that about half of the discretionary measures operated on budgetary items already covered by automatic stabilizers whereas the rest relates to investment projects and the support of industrial sectors and vulnerable groups hit by crisis. They conclude that, overall, policies were consistent with agreed principles concerning the provision of discretionary stimuli and that they have strengthened budgetary stabilization in EU countries.

The second paper, by G. Follette and B. Lutz, aims at assessing the interaction of economic developments and fiscal policy in the USA, both at the federal and at the state and local level. The authors estimate that the federal deficit and the overall deficit of state and local governments respectively increase by 0.35 % and by 0.1% of GDP for each 1 percentage point deviation of actual relative to potential GDP. In order to analyze the response of the economy to automatic stabilizers, Follette and Lutz resort to a FRB/US model in which scenarios with and without automatic stabilizers are used to compare the impact of aggregate demand shocks. They also provide estimates of the impact of discretionary fiscal policy actions taken by different levels of government. The authors conclude that, while federal policy actions tend to be counter cyclical, state and local policy actions are generally pro-cyclical.

J. Creel and F. Saraceno focus on the issue of the effectiveness of stabilizers in the European Union, which they tackle using macro and micro evidence. They argue that the importance of automatic stabilization has dwindled, also because of the reduction of the size of government in several countries, and note that this is not consistent with the current EU fiscal framework, which is primarily relying on automatic stabilizers to ensure resilience to shock and income stability. They also refer to a recent literature based on structural VAR models, whose results highlight the importance of discretionary fiscal policies.

By discussing activist fiscal policies during good times, the crisis and the aftermath of the crisis, L. Schucknecht argues that overly imprudent fiscal policies during the boom phase preceding the crisis was due to the excessive

growth of expenditures and to problems in measuring the output gap and the fiscal stance. During the crisis, too much emphasis was placed upon the need for an active fiscal demand support despite the previous demand excesses. The balance sheet nature of the crisis and the significant resource misallocation were not adequately perceived. According to Schucknecht, given the strong increases in public expenditure ratios during the crisis, exit strategies should be necessarily based on the reduction of these ratios to sustainable levels. He thinks that this will help to regain fiscal sustainability and to create an environment conducive to consolidation and growth.

The Editors in Chief of Revista de Economía y Estadística are pleased for the possibility to contribute to the diffusion of valuable empirical contributions to the current debate concerning the reaction of governments to international crises, the room for automatic and discretionary fiscal policies, and the evaluation of the effectiveness of fiscal policies. In this connection, we convey our gratefulness to the Banca d´Italia for its permission to reprint the articles.

Revista de Economía y Estadística - Vol. XLVIII- N° 1 - (2010) - pp. 11-40
Instituto de Economía y Finanzas - Facultad de Ciencias Económicas
Universidad Nacional de Córdoba - Argentina

Government Fiscal and Real Economy Responses to the Crises: Automatic Stabilisers versus Automatic Stabilisation*

Jonas Fischer
DG ECFIN
European Commission
jonas.fischer@cec.eu.in

Isabelle Justo
DG ECFIN
European Commission

Abstract

This paper looks at the discretionary fiscal and real economy support measures introduced by EMU Member States in response to the crises. The analyses build on a data base assembled by the Commission on individual crises response measures with a view to survey the implementation of the European Economic Recovery Programme (EERP). The paper first provides a broad overview of the types of crises-related measures taken, including broad estimates of their budgetary dimension. On this basis it appears that on an aggregate level, the discretionary support has been in line with agreed principles of being timely, temporary and targeted. Member States with restricted fiscal space has overall taken a more restrictive stance than those with more room of manoeuvre. The paper then looks at how these discretionary measures complement the "automatic" budget stabilisation. It appears that, in budgetary terms, about half of the discretionary measures add to the areas already covered by automatic stabilisers while the other half address other areas such as investments, industrial sectors and vulnerable groups particularly hit by the crises. The overall experience

* The view expressed in the paper is that of the authors and do not necessarily represent those of the Commission.

may suggest that it has been helpful with agreed ex-ante principles for how discretionary stimuli should be provided and that the provision of discretionary stimulus under such conditionality can work to strengthen the budgetary stabilisation capacity in a flexible way.

Key words: Automatic stabilisers, European Economic Recovery Programme (EERP), Budget, Discretionary policies.

JEL Classification: E6, H2, H3, H6.

RESUMEN

Este artículo analiza las medidas discrecionales fiscales y de apoyo a la economía real introducidas por los países miembros de Unión Monetaria Europea en respuesta a la crisis. El análisis se realiza en base a datos recolectados por la Comisión Europea sobre medidas tomadas por cada país en respuesta a la crisis para evaluar la implementación del Programa de Recuperación Económica Europea. El artículo provee una extensa revisión de los tipos de medidas tomadas relacionadas con la crisis, incluyendo estimaciones de su dimensión presupuestaria. Con respecto a esto se encuentra que, a nivel agregado, el apoyo discrecional ha estado en línea con los principios aceptados de ser oportuno, transitorio y selectivo. Los Estados Miembros con capacidad fiscal más limitada en general han adoptado una postura más restrictiva que los que tienen más margen de maniobra. En el documento se analiza cómo estas medidas discrecionales complementan la estabilización presupuestaria "automática". Se encuentra que, en términos presupuestarios, cerca de la mitad de las medidas discrecionales apoyan a áreas ya cubiertas por los estabilizadores automáticos, mientras que la otra mitad apoya otras áreas como inversiones, sectores industriales y grupos vulnerables particularmente afectados por la crisis. La experiencia en general puede sugerir que los estímulos discrecionales han sido de gran ayuda y han estado de acuerdo con los principios preestablecidos de cómo deben ser provistos y que la implementación de este tipo políticas discrecionales pueden fortalecer la capacidad de estabilización presupuestaria de una manera flexible.

Palabras clave: Estabilizadores Automáticos, Plan Europeo de Recuperación Económica (PERE), Presupuesto, Políticas Discrecionales.

Clasificación JEL: E6, H2, H3, H6.

I. INTRODUCTION

The economic crises have provoked substantive policy responses, in the EU and globally. The role of discretionary fiscal stimulus as an ingredient in a successful policy response was initially vividly debated and the stance among EU policy makers was arguably relatively cautious. The cautiousness was rooted in a consensus, built-up over many years and backed up by historical evidence,[1] that discretionary fiscal stimulus suffers from problems related to the design, implementation and reversibility of measures. Therefore, in normal circumstances the fiscal stabilisation job should be restrained to the "free play" of the automatic stabilisers as they are relatively well targeted and by nature also timely and temporary. Moreover, it has been argued that in the EU/ euro area the size of government is relatively large implying that also automatic stabilisers are sufficiently large.[2]

Nevertheless, as the depth of the crises manifested itself with more strength, and as stimulus through monetary policy appeared partially impaired, the worries of entering into an outright depression led to a change of hearts. Despite quickly deteriorating fiscal positions, the concern about using discretionary fiscal policy for stabilisation purposes were overridden by the greater concern about economic developments and the risk of economies being locked into a state of depression. Policy makers in the EU/euro area thus opened up to the idea that it would be appropriate with additional fiscal stimuli given that this was not a normal downturn. Discretionary fiscal stimulus was seen as an insurance policy, both from an economic perspective, to reduce the risk of a depression, and possibly also from a political economy perspective to get acceptance from tax payers for the much larger public efforts to support the financial system. Against the background of the simultaneous discussions at global level in the G20 context, in the EU, this stimulus policy was manifested in the so-called "European Economic Recovery Plan" (EERP) adopted by the European Council in December 2008 based on a Commission proposal.[3] In essence, the EERP called for a co-ordinated EU crises response including a fiscal stimulus of overall at least 1.5% of GDP over 2009-2010 where measures should be "timely, temporary and targeted". Out of this Member States were asked to contribute with 1.2% of GDP, where the size of national

1. See for example the annual Commission reports "Public Finances in EMU".

2. See for example Deroose, Larch, Schaechter (2008).

3. COM (2008) 800 final, 26/11/2008, 'A European Economic Recovery Plan'. Available at: http://ec.europa.eu/commission_barroso/president/pdf/Comm_20081126.pdf

contributions should take into account fiscal space, whereas the remaining 0.3% of GDP should come from EU level actions. Against this background the objective of this paper is to give an overview of how the discretionary stimulus under the EERP has been distributed in euro area Member States and how this support has complemented the stabilisation provided by the automatic stabilisers.

The paper is organised as follows. On the basis of the Commission "EERP data base", section 2 provides a broad overview of the crises response measures taken in euro area member states. This includes the division of measures across policy objectives as well as their budgetary dimension including whether they are temporary or permanent. Section 3 then goes into more detail examining the sub set of discretionary measures that could be seen to top-up the automatic stabilisers. In section 4 follows concluding remarks.

II. Crises Support Measures in the Euro Area: An Overview

The EERP called for a co-ordinated fiscal stimulus equivalent to 1.5% of EU27 GDP over 2009-2010, whereof 1.2% of GDP should come from Member States. The stimuli measures should follow the "TTT principles", that is, being timely, temporary and targeted, whilst taking into account national starting points. In addition, priority should also be given to structural reform measures as part of the Lisbon strategy for Growth and Jobs. There has been continuous follow up exercises where the assessment of the Commission and the Council so far has been positive in that broadly these ambitions have been met.[4] That is, the implementation of the EERP has been showing good progress and been in line with the principles agreed in the EERP. The objective here is not to confirm or question this assessment but merely to provide an overview of the support measures to the real economy implemented by euro area Member States on the basis of the measures included in the EERP data base[5] (see Box 1 for a description of the structure of the data base).

4. Commission reports of the follow-up of the EERP have been presented in June 2009 and December 2009. See Progress report on the implementation of the European Economic Recovery Plan - June 2009 and dito December 2009, available at http://ec.europa.eu/financial-crisis/documentation/index_en.htm

5. For a detailed overview of the measures in the data base in May 2009, see European Commision (2009).

Box 1: Structure of the EERP database

The EERP database refers to reforms and measures that can help with the recovery process in the short-term, i.e. during 2009 and 2010, irrespective as to whether they were devised specifically as a response to the crises. The data base include information on reforms and measures that are relevant for (i) sustaining aggregate demand, (ii) sustaining employment, (iii) addressing competitiveness problems (iv) protecting incomes of disadvantaged groups during that period. Financial market rescue packages are not included in the database. However, consolidation measures are included in the database. In practice, there is no clear separation between measures that are of a short term fiscal nature or a longer term structural nature. Accordingly, some "stimulus measures" can be purely of a budgetary and temporary nature or also be structural reforms with a budgetary impact. Measures have been classified according to *four broad types* of policy objectives with sub categories:

- *Measures and reforms aimed towards supporting industrial sectors, businesses and companies*, with sub-categories (i) Easing financing constraints for businesses/SMEs (ii) Sector-specific demand support (iii) Non-financial measures supporting business (e.g. regulatory) and (iv) Sector-specific direct subsidies.
- *Measures and reforms aimed at supporting a good functioning of labour markets,* including (i) Promoting wage moderation (ii) Temporary working-time reduction (iii) Reduction of tax on labour (iv) Unemployment benefit system and social assistance and (v) Easing labour market transitions (training, placement, other job-search help).
- *Measures and reforms aimed at supporting investment activity* including (i) physical infrastructure (ii) energy efficiency and (iii) R&D and innovation.
- *Measures and reforms that support household purchasing power*, including (i) income support, general, (ii) income support, targeted and (iii) household subsidy for certain type of goods/services.
- *Budgetary consolidation measures*, including (i) Pure budgetary consolidation measure. (ii) Financing of recovery measure.

Table B1
Overview of the number of measures in the EERP data base

MEMBER STATES	POLICY TYPE				
	1 Supporting Industrial Sectors, Businesses and Companies	2 Supporting a Good Function-ing of Labour Markets	3 Supporting the Investment Activity	4 Supporting the Households' Purchasing Power	5 Budgetary Consolidation
BE	16	25	11	14	15
DE	23	12	13	16	2
IE	7	4	9	10	30
EL	13	13	7	12	18
ES	50	16	20	17	7
FR	23	15	12	18	1
IT	43	29	20	27	21
CY	12	16	9	11	0
LU	8	3	7	8	0
MT	13	5	17	11	13
NL	18	8	32	3	1
AT	28	15	16	16	0
PT	16	8	7	11	0
SI	11	7	12	2	2
SK	10	10	7	8	4
FI	4	14	6	7	5
TOTAL EA 16	295	200	205	191	119
(% of the total)	29	20	20	19	12

In some cases, a measure can relevantly contribute to multiple policy objectives. For example, some labour market measures involving tax reductions also contribute to supporting household income. Also, tax reductions on the low paid can contribute both to supporting transitions on the labour market and bolstering income of vulnerable households. The resulting "double counting" implies that the 764 euro area measures are recorded 1010 times

under different policy types. Measures have also been classified according to their duration. *Temporary measures* have a budgetary effect only in 2009 and/or 2010. They should be automatically reversed (e.g. measures with a limited budget envelope, a known ending date, or one-off measures). In that respect, investment projects are considered as temporary measures in the data base. Tax measures are considered as temporary only if the end date of the tax measure is indicated in the decision. If the reversal/change of the measure undertaken will require a new decision, it has been considered as *permanent*.

A detailed budgetary dimension (expenditures and revenues) of each measure for the year 2009 and 2010 is recorded in the database in millions of Euro, with an indication of the 'Off-budgets' or 'below the line' amounts, essentially loan and guarantees, which potentially could have structural and possibly budgetary effects in the medium term. Figures are recorded as a change relative to the year 2008, also in 2010. In other words, if a measure is permanent, the amount of the stimulus is reported both for 2009 and 2010, while one-off measures appear only for the year when they occur. It should be noted that the information is in gross terms both on the expenditure and revenue sides and refers to the general government sector and state, regional, local and social security budgets.

II.1. The euro area budgetary dimension of EERP stimulus

Euro area budget positions have deteriorated sharply in connection with the crises. According to the Commission Autumn Forecast (Table 1), on average, euro area deficits is projected to widen by almost 5% of GDP over 2009 and 2010 and the average deficit position in the euro area to approach 7% of GDP in 2010. Clearly the consolidation requirements in the years to come will be challenging. A fair share of this deterioration can be expected to be reversed in the recovery phase, in so far that it depends on the cycle. In the Commission autumn forecast it is estimated that the cyclical budget component explains about half of the deterioration in the euro area as a whole (column 3). Nevertheless, in this juncture the estimates of the cyclical budget component are possibly more uncertain than ever, given the difficulty in knowing what are really the representative output gap as well as budgetary sensitivity to the cycle. Uncertainty is also increased by that some tax bases arguably have been structurally reduced in connection with the crises and much of such revenue will therefore not return in a future recovery.[6]

6. See Commission 2009 Autumn Forecast for some further comments on this issue.

Table 1
Budgetary developments over the 2010-2008 period

% OF GDP	BUDGET BALANCE 2010	CHANGE BUDGET BALANCE (2010-2008)	CHANGE CYCLICAL COMPONENT (2010-2008)	CHANGE IN CAB (2010-2008)	CHANGE REVENUE RATIO (2010-2008)	CHANGE EXPENDITURE RATIO (2010-2008)	EERP STIMULUS 2009 (GROSS TERMS)	EERP STIMULUS 2010 (GROSS TERMS)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
BE	-5.9	-4.6	-2.4	-2.2	-0.8	3.8	1.1	1.1
DE	-5.0	-5.0	-2.9	-2.1	-0.4	4.6	1.7	2.4
IE	-14.7	-7.5	-3.1	-4.4	-0.5	7.0	0.7	1.0
EL	-12.3	-4.6	-2.1	-2.4	-3.4	1.1	0.6	0.0
ES	-10.1	-6.0	-1.9	-4.1	-1.4	4.6	2.4	0.8
FR	-8.3	-4.9	-1.6	-3.2	-2.4	2.4	1.6	1.4
IT	-5.3	-2.6	-2.3	-0.3	-0.5	2.1	0.8	0.8
CY	-5.7	-6.6	-1.6	-5.0	-1.4	5.2	2.3	1.9
LU	-4.2	-6.7	-3.1	-3.6	-0.5	6.2	3.4	2.2

Source: Commission Autumn 2009 forecast and EERP data base.

Table 1
Budgetary developments over the 2010-2008 period (continued)

% OF GDP	BUDGET BALANCE 2010	CHANGE BUDGET BALANCE (2010-2008)	CHANGE CYCLICAL COMPONENT (2010-2008)	CHANGE IN CAB (2010-2008)	CHANGE REVENUE RATIO (2010-2008)	CHANGE EXPENDITURE RATIO (2010-2008)	EERP STIMULUS 2009 (GROSS TERMS)	EERP STIMULUS 2010 (GROSS TERMS)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
MT	-4.4	0.3	-1.0	1.3	1.6	1.4	0.7	1.1
NL	-6.2	-6.8	-3.4	-3.4	-1.8	5.1	0.9	1.0
AT	-5.5	-5.0	-2.5	-2.5	-1.3	3.7	1.5	1.8
PT	-8.0	-5.3	-1.3	-4.0	0.3	5.6	1.1	0.6
SI	-7.0	-5.2	-4.2	-1.0	0.8	6.0	1.5	1.8
SK	-6.0	-3.7	-3.3	-0.4	-1.1	2.7	0.4	0.5
FI	-4.6	-8.7	-4.0	-4.7	-3.0	5.7	1.8	2.9
EA	**-6.9**	**-4.9**	**-2.4**	**-2.5**	**-1.2**	**3.7**	**1.5**	**1.5**

Source: Commission Autumn 2009 forecast and EERP data base.

On the basis of the EERP data base, the volume of the discretionary stimulus is estimated to be 1.5% of GDP in 2009 and 1.5% of GDP in 2010. This is in gross terms and compared to 2008 and as such seems to achieve the 1.2% of GDP objective in the EERP with a margin. It should be noted that in some countries there has also been substantive measures taken in order to finance the stimulus or limit the budget deterioration given the lack of fiscal space (see Table 2). Therefore, in net terms the EERP stimulus is about a third lower than in gross terms (2% instead of 3% of GDP). Overall, these figures indicate that roughly about a quarter of the deterioration of budget positions between 2008 and 2010 could potentially be explained by the EERP stimulus.[7] In other words, three quarters of the deterioration in budget positions is rather explained by other cyclical, structural or one-off factors.

II.2. The national budgetary dimension of EERP stimulus

The size of the EERP discretionary stimulus over 2009-2010 nevertheless differs substantially across Member States. This could partially reflect differences in the depth of the crises and thus the need for additional stabilisation efforts, over and beyond the automatic stabilisers. However, it is arguably a stronger reflection of that the room of manoeuvre in terms of deficit and debt levels as well as external imbalances varied across countries going into the crises, in other words, some countries had more fiscal space than others.[8] As suggested by Table 2, discretionary stimulus efforts have been larger than average in Germany, Luxembourg and Finland. In all these countries the budget position was strong going into the crises and external imbalances limited. Additional stimuli have on the other hand been clearly below average in Ireland, Greece and Malta where the consolidation measures have more than off-set any stimuli. Efforts have also been relatively small in Portugal, Slovenia and Slovakia. For other countries, the situation appears to be more mixed. In some countries where the fiscal space should be restricted, the stimulus has in any case been relatively strong, for example Spain where most of the efforts have been concentrated in 2009 (whereas consolidation measures are larger 2010).

7. However, it should be noted that the information in the EERP data base is fully national accounts based, so the analysis here is only indicative, see also Box 1.

8. See section IV.3 in Public Finances in EMU-2009 where an indiactor of "fiscal space" is presented.

Table 2
Overview of discretionary stimulus in EU Member States

	FISCAL POLICY												
	Change in Fiscal Balance (Aggregate over 2008-10)(1)	DISCRETIONARY STIMULUS IN 2009					Consolidation Measures in 2009	DISCRETIONARY STIMULUS IN 2010					Consolidation Measures in 2010
		Overall (Gross Terms)	of which:					Overall (Gross Terms)	of which:				
			Measures Aimed at Households	Increased Spending on Labour Market	Measures Aimed at Businesses	Increased Investment Expenditure			Measures Aimed at Households	Increased Spending on Labour Market	Measures Aimed at Businesses	Increased Investment Expenditure	
	p.p. change	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP	% of GDP
BE	–4.6	1.1	0.5	0.2	0.2	0.2	0	1.1	0.3	0.5	0.1	0.1	–0.9
DE	–5.0	1.7	0.5	0.4	0.5	0.4	0	2.4	1.1	0.4	0.4	0.4	0
IE	–7.5	0.7	0.4	0.1	0.2	0	–5.4	1	0.6	0.2	0.2	0	–10.2
EL	–4.6	0.6	0.5	0.1	0	0	–1.0	0	0	0	0	0	–1.8
ES	–6.0	2.4	0.5	0.1	0.8	0.9	–0.3	0.8	0.2	0	0.1	0.5	–0.9
FR	–4.9	1.6	0.3	0.1	0.9	0.3	0	1.4	0.3	0	1	0.1	–0.1
IT	–2.6	0.8	0.2	0.1	0.3	0.2	–0.9	0.8	0.1	0.2	0.3	0.1	–0.8
CY	–6.6	2.3	0.9	0.1	0.3	1.4	0	1.9	0.7	0.1	0.6	1.1	0
LU	–6.7	3.4	1.6	0.3	0.3	1.1	0	2.2	1.4	0	0.5	0.3	0
MT	0.3	0.7	0.2	0	0.2	0.2	–1.7	1.1	0.6	0	0.2	0.3	–2.2
NL	–6.8	0.9	0.2	0.1	0.3	0.2	–0.2	1	0.2	0.1	0.3	0.4	–0.1
AT	–5.0	1.5	1.1	0.3	0	0.1	0	1.8	1.3	0.3	0.1	0	0
PT	–5.3	1.1	0.2	0.2	0.3	0.4	0	0.6	0.2	0.3	0.1	0	0
SI	–5.2	1.5	0.1	0.1	0.8	0.4	–1.0	1.8	0.1	0.3	1	0.4	–1.7
SK	–3.7	0.4	0.2	0.1	0	0.1	–0.5	0.5	0.3	0.1	0.1	0.1	–1.1
FI	–8.7	1.8	1	0	0.2	0.3	0	2.9	1.7	0.1	0.5	0.4	–0.4
EA16	–4.9	1.5	0.4	0.2	0.5	0.4	–0.3	1.5	0.5	0.2	0.4	0.3	–0.6

Notes. 1) Commission services Autumn forecast 2009
Source: Commission services database on recovery measures.

II.3. The policy objectives of the EERP stimulus

According to the principles of the EERP, the real economy stimulus should be well targeted in order to achieve the highest demand impact. The support measures in the data base have been classified under four different policy objectives (see Box 1), namely: support to households and vulnerable groups; support to labour markets; support to industry and business and finally investment support.[9] In budgetary terms, Table 2 indicates that out of the total 3% of GDP of support measures over 2009-2010, about 0.9% of GDP have been directed towards the support of households while the resources spent to support labour markets have been considerably less at 0.4% of GDP, possibly reflecting the lagged impact of the crises on labour market conditions and unemployment. Measures to support businesses and product markets make up about 0.9% of GDP and investments 0.7% of GDP.[10] As regards the individual policy objectives the following broad observations can be made as regards the type of policies taken:

- *Measures to support household purchasing power.* General changes of income tax schemes have been implemented in several Member States which have the advantage of being transparent, easily implemented, unbiased towards specific sectors, and increase incentives to work. On the other hand, they may be less efficient since high income earners have a relatively low propensity to consume while they are often costly from a fiscal perspective, which may explain their limited scope in many Member States.[11] Finally, a relatively large number of countries have introduced measures that target low income households although they often are of a quite limited overall size in terms of budget impact. As low income households also covers unemployed persons it would seem to be a group negatively hit by the crises.
- *Measures and reforms aimed at supporting a good functioning of labour markets.* Many of them facilitate flexibility within firms (through retraining and working time arrangement) or labour market transition between firms (through job placement, training, and encouragement to geographical mobility). Reduction of taxes on labour

9. The financial sector support schemes are not covered by the data base.

10. In terms of a simple measure counting, around 29% has been directed towards measures that support businesses, 20% to supporting labour markets, 20% to investment activities, and 19% as support to households' purchasing power (including vulnerable groups). See table B1 in Box 1.

11. Even so, general tax reductions have been more pronounced in Member States where these tax cuts, in particular on labour income, have been part of a longer term structural policy agenda to lower taxes on labour.

is applied in many Member States and can boost both labour demand and labour supply while supporting household purchasing power. As regards measures with the potential to directly affect wages in the short term they have been relatively scarce. There have however been measures to boost labour demand through reductions in social security contribution, cutting income taxes. Rebates on social security contributions to boost labour demand have been taken in a number of euro area members and have then typically been made conditional upon job creation. Many euro area countries have either introduced new forms of public support to flexible working time or temporary unemployment, or extended the duration and/or the level of already existing public support (these measures are dealt with further in the next section).

- *Measures aimed at supporting industrial sectors, businesses and companies.* Overall, there have been quite a number of initiatives taken in these areas across euro area countries and the budgetary amounts involved are in cases substantial. Almost all euro area countries have moved to counteract the drying up of credit for businesses in various ways. Measures also relates to the support of sectors particularly hard-hit by the crisis, that is, automotive, construction, tourism varying on the country. As regards demand measures, car-scrapping schemes have been implemented in several countries (FR, PT, IT, ES, LU, DE, AT, SK, CY, NL, IE) with the German version being the most extensive example. Other sectors where demand support measures have been taken are construction (FR, IE, ES).
- *Measures to support investment activity.* This relates to physical infrastructure, R&D and energy efficiency. The prominence attached to public investment in recovery efforts varies considerably across Member States, with the largest increases in spending as a percentage point of GDP observed in DE, CY, ES, NL, SI while support to investment in euro area countries facing larger budgetary restrictions are less. Nearly all Member States have announced measures aimed at supporting investment in physical infrastructure. By type of physical infrastructure, a majority of the measures aim at supporting investment in transport infrastructure. The biggest group of them are related to the road and/or railway sectors.

II.4. The temporary versus permanent dimension of EERP measures

According to the principles of the EERP, the stimulus measures should be of a temporary nature unless they are part of a longer term reform agenda with a positive structural impact. Therefore, the measures in the data base have also been classified as being "temporary" or "permanent" in terms of their budget impact (see Box 1 for classification criteria used). The information has admittedly not always been complete and the dividing line between the two concepts not always fully clear.

On the basis of the classification made in the data base, out of the 1.5% of GDP of overall stimulus in 2010, 0.6% of GDP is classified as being of a temporary nature, thus implying that their budgetary impact should fade off. *In the context of the accumulated 3.0% of GDP discretionary stimulus over 2009 and 2010, this suggests that the large majority share of the budgetary impact would indeed be of a temporary nature.* Looking at the temporary measures in the field of labour markets and income support, they amount to 0.2% of GDP in 2009 and 2010. In this category, most measures have well-known ending dates or budgets clearly limited in time. The proportion of permanent measures to support household's purchasing power is also significant: 0.3% in 2009 increasing to 0.6% of GDP in 2010 and the measures concerned are concentrated in the field of labour taxation and income support. The budgetary impact of temporary measures to support business is amounts to 0.4% of GDP in 2009 and 0.2% in 2010. Of course, there is also a fairly large amount of off budget measures that should be considered in this context, including loans and guarantees. However, these measures do not affect public deficits in the immediate future. *Still, in 2010, 0.9 % of GDP consists of permanent measures with a durable impact on budget balances. The bulk of these permanent measures (equivalent to 0.5% of GDP) are aimed at supporting household purchasing power and a proper functioning of labour market, mainly via labour tax cuts. Their true motivation is often to strengthen incentives to work and is thus part of a longer term agenda*. At a country level, Germany, Finland, Luxembourg and Austria seem particularly concerned.

Table 3
The temporary versus permanent dimension of EERP measures (% of GDP)

EA16	2009	2010
TOTAL TEMPORARY MEASURES	1.1	0.6
1. Supporting industrial sectors. businesses and companies.	0.4	0.2
2. Supporting a good functioning of labour markets.	0.1	0.2
3. Supporting the investment activity.	0.4	0.2
4. Supporting the household purchasing power.	0.1	0
TOTAL PERMANENT MEASURES	0.4	0.8
1. Supporting industrial sectors. businesses and companies.	0.1	0.3
2. Supporting a good functioning of labour markets.	0	0.1
3. Supporting the investment activity.	0	0
4. Supporting the household purchasing power.	0.3	0.5
TOTAL EERP MEASURES IN THE EURO AREA	1.5	1.5
BUGETARY CONSOLIDATION IN THE EURO AREA	-0.3	-0.6

Source: Commission and own computations.

Table 3 (continued)

EA16	2009		2010	
	TEMPORARY MEASURES	PERMANENT MEASURES	TEMPORARY MEASURES	PERMANENT MEASURES
BELGIUM	0.4	0.7	0.1	1
GERMANY	1.2	0.5	1	1.5
IRELAND	0.1	0.6	0.2	0.8
GREECE	0.6	0	0	0
SPAIN	2.2	0.2	0.5	0.2
FRANCE	1.3	0.2	0.4	1
ITALY	0.6	0.2	0.7	0.1
CYPRUS	1.8	0.5	1.6	0.4
LUXEMBOURG	0.7	2.7	0.3	1.9
MALTA	0.3	0.4	0.4	0.7
NETHERLANDS	0.5	0.3	0.6	0.4
AUSTRIA	0.2	1.2	0.3	1.5
PORTUGAL	0.8	0.3	0.3	0.3
SLOVENIA	0.4	1.1	0.6	1.2
SLOVAKIA	0.4	0	0.5	0
FINLAND	0.5	1.3	0.6	2.3
EA16	1.1	0.4	0.6	0.8

Source: Commission and own computations.

III. EERP MEASURES, AUTOMATIC STABILISERS AND AUTOMATIC STABILISATION

The recognition that discretionary fiscal stimulus can be a useful stabilisation tool has seemingly revived the interest in questions linked to automatic stabilisation and the complementary role of discretionary policies. Issues are whether there are efficient ways to strengthen the automatic stabilisers? Can discretionary stimuli become more like the automatic stabilisers, for example by increasing their automaticity by using ex-ante rules ensuring that additional

stimuli is well targeted and temporary? Therefore, the recovery measures in euro area member states[12] are classified according to what extent they deepen the impact of existing automatic stabilisation or whether they broadened their impact by focussing on recipients otherwise not covered. As above, the information draws on a Commission data base set up for the surveillance of the implementation of the European Economic Recovery Programme (EERP).

III.1. Automatic stabilisers and their freedom to play: a budgetary versus a stabilisation perspective

Euro area members benefit from the stabilisation provided by their large and encompassing welfare states. Indeed, it is today consensual advice, qualified on the availability of fiscal space, that the budget automatic stabilisers should be allowed to "play freely", including in downswings. However, what it actually implies in practice to let the automatic stabilisers "play freely" can be addressed from different sides of the same coin and below a differentiation is made between the "budgetary impact" side or the "stabilisation provision" side.

Arguably, the most common approach is to look at the automatic stabilisers from a "budgetary impact" perspective. Focus is then on estimating the cyclical budget component which is defined through the elements in the budget that vary systematically with the cycle, thus inducing to a counter-cyclical movement in the budget deficit position. The budget elements involved come from both the revenue side and expenditure side of the budget. On the revenue side, cyclically sensitive tax bases such as personal and corporate income taxes, social security contributions and consumption taxes are taken into account. Work has also been done to look at capital taxes linked to movements in asset prices.[13] If tax rates are progressive it adds to the size of the automatic stabilisers. On the expenditure side, the measurement of automatic stabilisers is usually confined to unemployment benefits as unemployment rates vary counter-cyclically. It is more difficult to find clear automatic cyclical patterns for other expenditure areas, but also here work is on-going.[14] In addition, there is a debate on where the line should be drawn between what is really automatic or discretionary. In some cases it can be observed that government behaviour is such that certain measures are taken over time systematically with the cycle albeit they formally require a discretionary decision and thus are not rules

12. While the EERP covers the whole EU27, in this paper for reasons of limited resources, the discussion has been limited to euro area countries.

13. See for example "Girouard and Price (2004)".

14. See for example "Darby and Melitz, (2008)".

based. Overall, the budgetary impact from the automatic stabilisers is mainly associated with the tax side. According to the standard approach, the budgetary elasticity used to capture the size of the cyclical component (the elasticity is about 0.5 in the euro area on average and is multiplied with the estimated output gap), about 80% stem from the tax side (0.4) wile the remaining 20% stem from the unemployment benefit contribution (0.1).[15]

In order to measure the "stabilisation impact" of automatic stabilisers, the basic approach is to contrast a situation when they are allowed to "play freely" with a situation when they are restricted or "turned off".[16] There are several technical options available to do this, but in principle a simulation is made where the impact on growth when automatic stabilisers are playing freely is compared to the situation when the fluctuation in budgetary revenues are fully compensated by tax hikes and expenditure increases by expenditure cuts. This approach follows the apparent logic of the definition of automatic stabilisers from the budgetary impact side. Nevertheless, an issue to consider is what the results imply in terms of stabilisation provision and the support provided to households (in a down turn) through the automatic stabilisers. In particular, if the benchmark for comparison is the case when all taxes and expenditures are lump sum (or alternatively a strict budget annual budget balance rule applies) the question arises what the results actually implies, especially if the underlying question is how much stabilisation or support that has been provided through the budget.

Consider an illustrative example. A household before a downturn earns 100 and faces a proportional income tax rate of 50%. It then pays 50 in tax, leaving a net income of 50. If in the downturn the household gross income fall by half to 50, it then pays 25 in taxes, seeing its net income half to 25. Thus, government tax revenue falls by 25. If the benchmark is proportional taxes then one would conclude that there is no stabilisation provided. However, arguably, if the benchmark used instead is lump sum taxes (as described above) this would be described as a case with a support of 25 to households from the automatic stabilisers through the tax side. Nevertheless, household income fall by half and the fact that the governments abstain from raising the tax rate to 100%, in order to keep tax income at 50, appear to be a rather indirect and "virtual" stimulus seen from the point of view of households.

From the other side of the coin, i.e. the "stabilisation provision" side the perspective is reversed and it is in fact the non-cyclicality of government

15. See "Girouard and Andre, (2005)".

16. See for example Sekkat, van den Noord, Buti, Martinez-Mongay (2002).

expenditures that provide the bulk of the automatic budget stabilisation. The basic mechanism is that the majority of government expenditures are not cyclically sensitive, and thus not cut or increased in a rules based and pro-cyclical way, which provides a large block of stability in the economy. This is not new, it is a common empirical conclusion that the degree of stabilisation tend to increase with the size of government.[17] From this perspective, letting the automatic stabilisers to "play freely", in a down turn, implies focussing on that:

- Planned non-cyclical expenditures are not cut;
- Unemployment benefits are paid according to set rules and are not cut;
- That there is full financing, through borrowing, of expenditures despite the fall in revenues, i.e there are no pro-cyclical tax hikes to compensate for falling revenues.

In a debate on whether and how the automatic stabilisers can be strengthened it arguably makes a difference whether the discussion is framed around a definition of automatic stabilisers seen from the "budgetary impact" or "stabilisation provision" perspective as described above. Inputs in this debate seemingly often take a budgetary impact perspective as the starting point and therefore focus on the revenue side looking at the progressivity of tax rates, temporary changes in tax rates and, on the expenditure side, temporary increases in the generosity of the unemployment benefit system. However, if the final objective is to strengthen automatic stabilisation, then mechanisms to ensure that government non-cyclical expenditures are financed to be spent according to plan in bad times, not suffering from cuts, should also stand in focus together with mechanisms in good times to ensure that expenditures meant to be temporary do not become permanent. Indeed, there is an asymmetry at play here where in many countries, over time, expenditures have been raised permanently in good times leading to a gradual increase in the size of the public sector and tax pressure over time, possibly leading to higher inefficiencies in the economy.

III.2. An overview of the EERP stimulus measures in relation to automatic stabilisers

The discretionary stimulus measures taken and planned by euro area member states in the context of the EERP are examined below from an automatic stabilisation perspective. The typology allows for observations that are relevant in a more general discussion on how to strengthen automatic stabilisation and how discretionary stimulus would fit in this context.

17. See for example Fatas, Mihov, (2001).

A distinction can also be made between "direct" stabilisation measures referring to measures that add additional support to the economy and "indirect" stabilisation measures that defend against pro-cyclical volume cuts.

- *Discretionary measures that add on top of the automatic stabilisers: expenditure side*
  1) Top up of unemployment benefits.
  2) Financial resources for agencies, local government etc, to finance planned expenditures including public employment.
- *Discretionary measures that add on top of the automatic stabilisers: revenue side*
  3) Changes in tax rates (income, corporate or consumption taxes) and social security contribution rates, including to what extent there is an impact on progressivity.
- *Discretionary measures that provide stimulus complementing automatic stabilisers*
  4) Investments over and beyond original plans, additional benefits to targeted and vulnerable groups, other.

Indeed, given that the automatic stabilisers are generally not designed with stabilisation provision as the primary objective,[18] and that this thus to a large extent is a by-product, it is not obvious that, depending on the type and size of the shock,[19] the stabilisation provided is sufficiently well targeted. An issue to examine is therefore how much of the discretionary stimulus provided under the EERP that relate to areas outside the coverage of existing automatic stabilisers and how much that has directly built on the existing structures of automatic stabilisers.

At an aggregate level, Table 4 suggests that, in budgetary terms, the split is fairly even between measures that build on, and thus deepen or broaden, the provision of automatic stabilisation and other stimulus measures, for example measures that relate to increased investment expenditures which is the ticket item together with additional support to households and vulnerable groups. Looking instead at the consolidation measures, Table 5 suggests that there have been noticeable pro-cyclical cuts in public expenditures (worth 0.2% of GDP) and increases of other taxes. The discussion below looks at these elements in more detail, seen from the expenditure and revenue side of the budget.

18. The primary objectives of tax systems are rather concerns linked to financing, equity and efficiency.

19. Indeed, it is often remarked that if the there is a supply shock the automatic stabiliser scan be counter productive by postponing necessary adjustment.

Table 4
Stimulus measures in EERP data base (2009-2010), % of GDP

	STIMULUS RELATED TO THE AUTOMATIC STABILISATION										OTHER STIMULUS			
	EXPENDITURE			REVENUE										
	Top up of Unemployment Benefits	STWA	Financial Support for Government Expenditures and Public Employment	Labour Income Taxes		Social Security Contributions		Corporate Taxes		Consumption Taxes (VAT)	Other Taxes and Various Tax Credits	Investment Expenditures	Expenditures to Support Vulnerable Groups	Other Stimulus (Regulatory, Sectoral Support, Easing Labour Market Transitions)
				Increasing Progressivity	Other	Employees	Employers	Increasing Progressivity	Other					
BE	0.1	0	0	0.3	0	0	0.2	0	0	0.2	0.3	0.1	0.4	0.1
DE	0	0.1	0	0.4	0	1.1		0.5	0	0	0.8	0.7	0.4	
IE	0	0	0	0.2	0	0	0	0	0	0	0	0.1	0.8	0.3
EL	0	0	0	0	0	0	0	0	0	0	0	0	0.6	0
ES	0.1	0	0	0	0.2	0	0	0	0.1	0.6	0.5	1.2	0	0.3
FR	0	0	0.2	0.3	0	0	0	0	1.3	0.2	0	0.5	0.3	0.1
IT	0	0	0.1	0	0	0	0	0	0	0	0.6	0.2	0.3	0.4
CY	0	0	0	0	0	0	0	0	0	0.8	0	2.5	1.1	0.6
LU	0	0.3	0	0	0	0	0	0	0.7	0.1	2.9	0.9	0.5	0.1
MT	0	0	0	0.4	0	0	0	0	0	0	0.2	0.3	0.3	0.5
NL	0	0.1	0	0	0	0.5	0	0	0.4	0	0.2	0.6	0.2	0
AT	0	0.2	0	0	1.8	0.2	0	0	0.1	0.2	0.1	0.1	0.6	0.1
PT	0.1	0.1	0	0	0	0	0.2	0.1	0	0.1	0.1	0.4	0.4	0.2
SI	0	0.5	0.3	0.1	0	0	0	0.6	1.7	0	0	0	0.1	0.1
SK	0	0	0	0	0	0.6	0	0	0.2	0	0	0	0	0.1
FI	0	0	0.5	0	2.3	0	0.7	0	0.1	0.3	0	0.7	0.2	0.1
TOTAL EA 16	0.0	0.1	0.1	0.2	0.1	0.4		0.0	0.5	0.1	0.2	0.6	0.4	0.3
Percent total	0.01	0.02	0.03	0.06	0.04	0.12		0	0.16	0.05	0.07	0.2	0.14	0.09
Temporary	1	1	3.64	0.12	0.2	0.35		0	0.67	0.41	0.52	0.83	0.31	0.84

Discretionary stimulus that build on the automatic stabilisers: expenditure side

On the expenditure side, there are many examples of measures that either top up benefits directly or work to widen and soften eligibility criteria. While generally of a temporary nature, such measures do increase stabilisation properties if maintained. However, in this case there would be efficiency concerns related to the incentives to work looking forward. While measures that increase the generosity of unemployment systems arguably provide additional support in a direct way, measures that protect already planned demand provide support only indirectly. In the debate on fiscal rules it is recognised that annual budget balance rules can have a pro-cyclical impact, and that multi-annual rules are preferable from this perspective (such as the "close-to-balance over the cycle" rule in the Stability and Growth Pact). In this context the relationship between local government, where much of the consumption takes place, and central government, where much of the revenues are collected could be important as local level borrowing is in many cases restricted from the centre. However, the measures included in the data base do not reveal that this has been a particular concern so far. There are examples of measures providing additional support to local government but then mainly related to subsidies for additional investments at local level. More precisely:

- *Measures that top up unemployment benefits.* Measures under this heading has been taken in several countries (EL, IT, BE, PT, FR, ES), even though the budgetary impact has been overall rather small. Some countries decided to increase the generosity of unemployment benefits in level or in duration (in BE, EL, IT and PT). Others decided to extend their coverage to include temporary and interim workers (in FR, IT). In Spain a new allowance of 420 € for unemployed who have lost their eligibility to unemployment benefits was made available. In all these cases the measures are of a temporary nature. It should arguably be taken into account that the generosity of the existing unemployment insurance systems varies across euro area Euro area members in the starting points and accordingly also the need for additional top ups in times of rapidly deteriorating labour market conditions. The extension of benefit arrangements to groups formerly not insured, or who have lost their rights, can reach a large numbers of vulnerable households (recently laid-off workers, long term unemployed and other low-income households).

- *Short term working schemes.*[20] In practice these schemes differ in nature across countries and it is not straightforward whether to see them as predominantly as a way to avoid lay offs, or whether they should be seen mainly as a way to top-up the salary for employees that otherwise would only get a part time based income. Indeed, in STW and temporary lay-off public schemes are also known as 'partial' or 'temporary unemployment', for example in Belgium, France and Luxembourg. Some Member States have introduced new short term working schemes (notably NL, PT, SI, SK), while others have extended the duration and/or the level of already existing ones (e.g. DE). Their coverage has been extended in BE, FR and IT to include employees on fixed-term contracts and in small companies. More generally, although STW schemes are justified in times of crisis, the main risk is that they can inhibit necessary restructuring, and this calls for strict time limits and eligibility criteria.
- *Financial support to support to government, agencies etc, to support expenditures and public employment.* In this category measures have in fact only been identified in a few countries. In France, central government VAT repayments to local authorities have been speeded up. A general move towards shorter lags in principle helps to strengthen the efficiency of automatic stabilisers. In Germany, there has been some support to structurally weak communes to carry out investments. In Italy the financing for the payment of social security benefits have been strengthened. In order to strengthen local government finances, Finland increased the share of corporate income tax revenues that are directed to municipalities and allowed for the upper real estate tax limit for local governments to be increased.

Discretionary stimulus that build on the automatic stabilisers: revenue side

Automatic variations in VAT rates could be one way to strengthen the automatic stabilisers, i.e. a rule based increase in good times neutralised by a rules based decrease in bad times,[21] with the key feature that is

20. Short-time work (STW) can be defined as a temporary reduction in working time intended to maintain an existing employer/employee relationship. It can involve either a partial reduction in the normal working week for a limited period of time, i.e. a partial suspension of the employment contract, or a temporary lay-off (zero hours' week), i.e. a full suspension of the employment contract. In both cases, the employment contract continues and is not broken.

21. See for example SOU (2002).

could be a measure that could be quickly implemented and of substantial budgetary magnitude, shifting consumption demand in time. The key example in the EU in this category has nevertheless come from outside the euro area, namely the temporary general VAT cut in the UK. Also, in the euro area there have been some cuts in VAT rates albeit generally of a targeted nature. Stabilisation properties can also be strengthened by measures that increase the progressivity in tax systems. In this context there has been a wide set of temporary measures taken with a view to support low income households or low income earners. In general such measures are both well targeted and in line with strategies to strengthen work incentives. More precisely:

- *Income taxes.* Measures that relate to income taxes have been taken in about half of euro area countries and in several countries these are relatively substantial. To a large extent these measures have been permanent and this relates in particular to the income tax cuts in Finland and Austria, which broadly should be seen in a longer term agenda to reduce tax on labour and improve incentives to work. However, of course, to some extent these measures reduce the future degree of automatic stabilisation. Beyond these broader measures, quite a few countries have taken other income tax measures that indirectly increase the degree of progressivity, such as reduction in the bottom personal income tax rate (DE) or for low income earners (FR). In MT income tax bands have been revised by broadening the tax free range of household income, thus raising progressivity.
- *Social Security Contributions.* For the euro area as a whole, measures with a view to cut social security contributions have been substantial even though actions have concentrated to a few countries and then in particular the temporary reductions in Germany. In the Netherlands, unemployment benefit premiums paid by employees have been abolished.
- *Corporate taxes.* Measures with a view to reduce corporate taxation have been taken in a majority of countries and corporate taxes have been lowered on a permanent basis in several euro area countries (FR, DE, LU, SI, SK) and on a more temporary basis in others (NL, PT, EL, ES). In Germany, a main measure relate to an increase in depreciation rates and interest ceilings. In Slovenia, tax rates have been cut and the deductibility of investment costs has been increased. Also, in France the depreciation rate of investments have been increased.

- *Consumption taxes*. Changes to consumption taxes. In Belgium there has been a targeted cut of VAT towards construction. As indicated above, in France, central government VAT repayments to local authorities have been speeded up.

Discretionary measures that add stimulus outside the areas covered by automatic stabilisation and consolidation measures

About half of the overall stimulus provided under the EERP relate to measures targeted to areas outside the coverage of automatic stabilisation. The larger items are investments expenditures, where multipliers are potentially large, and towards households and vulnerable groups where in the current juncture the propensity to consume could also be relatively large. As pointed to in the previous section, there has also been substantial support to industry, in particular the automotive sector and construction sector, as well as measures to improve the access to finance.

As already pointed out (see Table 2), in terms of overall size, consolidation measures have been mainly concentrated to the countries with the most unbalanced fiscal positions, such as Ireland and Greece where the former have applied a broad based approach. In terms of the concentration of measures, Table 5 suggests that pro-cyclical cuts in public employment and wages have played a role, indicating that the automatic stabilisation has been reduced. A general positive feature is that investment spending has generally been protected. As regards tax increases, measures have concentrated on "other taxes".

In the case where the discretionary stimulus could be seen as a top up of the automatic stabilisers, a question is how much this has implied a "deepening", in terms of increasing their impact, and how much can been related to a "broadening" in terms of extending the coverage of recipients. For example, one way to increase the stabilisation properties of tax systems is to reduce the lags between economic activity and the ensuing tax payments.[22] The smaller the lag the higher is the stabilisation properties and measures contributing towards this end therefore strengthen the stabilisation properties.[23] In particular, corporate income tax is paid with a lag on the basis of the income in previous years. There are some examples of measures that move in this direction that is, shortening the lags in the system, for example quicker repayments of VAT in some countries.

22. Baunsgaard and Symansky (2009).

23. It can be noted that in the estimation of the standard budgetary elasticity to the cycle by the OECD, a correction for the lag structure in corporate and personal income tax structures have been introduced (Girouard and André, 2005).

Table 5
Consolidation measures in EERP data base (2009-2010)

	BUDGETARY CONSOLIDATION MEASURES							
	EXPENDITURE				REVENUE			
MEMBER STATES	Cuts in expenditure support to government, Çagencies etc, cut in public employment and wage freeze	Cuts in investment spendings	Reduction in social benefits transfers that affect vulnerable groups	Elimination of various subsidies	Increase in Labour income taxes (PIT)	Increase in corporate taxes	Increase in consumption taxes (VAT)	Other taxes (raising taxes on alcohol, Higher excise duties on fuel)
BE	-0.3	0.0	-0.1	0.0	-0.2	-0.1	0.0	-0.3
DE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
IE	-4.0	-3.2	-1.2	0.0	-2.2	-0.3	-0.2	-4.7
EL	-0.8	0.0	0.0	0.0	0.0	0.0	0.0	-2.0
ES	-0.2	0.0	0.0	0.0	0.0	-0.5	-0.2	-0.2
FR	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	0.0
IT	-0.5	0.0	0.0	0.0	0.0	-0.4	0.0	-0.8
CY	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.8
LU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MT	-0.3	0.0	0.0	-2.7	0.0	0.0	0.0	-1.0
NL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.3
AT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SI	-1.2	0.0	0.0	0.0	0.0	0.0	0.0	-1.5
SK	-1.4	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
FI	-0.1	0.0	0.0	0.0	0.0	0.0	-0.2	-0.1
TOTAL EA	-0.2	-0.1	0.0	0.0	0.0	-0.1	0.0	-0.3
TOTAL	25%	6%	4%	0%	5%	16%	4%	38%
Temporary	51%	0%	0%	0%	0%	49%	0%	40%

4. CONCLUDING REMARKS

Euro area countries have addressed the impact of the crises by a broad use of the budgetary instruments available, including discretional fiscal stimuli. Generally, the automatic stabilisers have been allowed to "play freely" in the sense that the cyclical budget impact has, by and large, been allowed to influence budget positions without restraint, except in cases where the budgetary room of manoeuvre has been severely limited. For example, in Ireland substantial budget consolidation measures have instead been taken and in Greece such measures are currently in the pipeline.

The broad overview of the discretionary stimulus provided by euro area governments in the Commission's EERP data base indicates that they have been targeted towards investment expenditures, where multipliers are large, and towards households and vulnerable groups where in the current juncture the propensity to consume also should be relatively large. There has also been substantial support to industry, in particular the automotive sector and construction sector, as well as measures to improve the access to finance. It would seem that measures supporting labour markets have been relatively less prominent, possibly explained by the lag between growth and unemployment, even if the general impression is that in many countries the short-term working schemes have indeed helped to contain unemployment, even if only temporarily. Here, the absence of some type of measures, such as widening the access to early retirement schemes, which reduces labour supply, or large scale public employment creation schemes can also be positively noted as a break with the past. Moreover, most of the discretionary stimulus appears to be of a temporary nature while the bulk of stimulus measures with a more permanent impact have tended to relate to reductions in labour income taxes, contributing also to longer term agendas to reduce taxes on labour.

The crises have illustrated that while automatic stabilisation may be sufficient in normal cyclical conditions there is a role for discretionary policies in recessions and over-heating periods. The advantage of discretionary stimulus is that it can be designed to address the particular expressions of the crises/ over heating at hand. This time, for example, the financial sector, the automotive sector and a sizeable fall in investments have been key characteristics and this is also where most of the discretionary stimulus has been directed. Measures to strengthen the existing automatic stabilisers will most likely not help in this respect. Likewise, proposals for rules based discretionary stimulus schemes, conditioned on pre-specified indicator based triggers, will most likely suffer from the same weakness.

Instead, the crises experience indicates the value of having a strategy and principles in place for how to best design and condition discretionary stimulus. The EERP could in this respect be seen as a success in that EMU members seem, so far, to have kept the agreed principles in mind in the national formulation of stimulus. In addition, the ability to also agree on common principles for the actual withdrawal of temporary measures to help ensuring that they indeed stay temporary is also positive.[24] This experience can be built upon and the principles for what, how and under what conditions discretionary stimulus policies could play a positive role can be further developed, whilst acknowledging that there must be enough flexibility to allow the measures taken to be well targeted given that each crises/ over heating period will be different from the one before.

This argument is supported by another key lesson illustrated by the crises, namely the importance of having enough fiscal space going into a down turn not to be forced to adopt a pro-cyclical fiscal stance. In the coming years, the challenge of fiscal consolidation is a commonly shared one. This will require cuts in public expenditures and higher tax revenues. A gradual trimming of the size of government can promote efficiency but may also lead to less automatic stabilisation, given that the provision of stabilisation increase with government size. In this context, the impact of policies on the degree of automatic stabilisation should not be a primary concern. Indeed, there has been some research indicating that an optimal government size could lie as at such a low level as 40% of GDP, a level that most euro area countries have bypassed.[25] Tax increases can on the other hand strengthen the automatic stabilisers but again at the possible expense of efficiency, of course depending on the design choices. Again, efficiency should be the primary concern and not the impact on stabilisation.

The overview of the discretionary measures taken by euro area members in this paper only provides some tentative indications at best, in particular as regards the interplay with the automatic stabilisers and the provision of automatic stabilisation. However, looking forward and with the benefit of increasing hindsight, there will surely be opportunity to draw more substantiated lessons from the experience with budget based stabilisation tools from this economic crises episode, hopefully in time to shape policies already in the upcoming recovery.

---

24. Council of the European Union, "Council conclusions on exit strategies for crises-related mesaures in labour and product markets", 16 March 2010, 7588/10.

25. Buti et al (2003).

REFERENCES

Andres, Javier and Domenech, Rafael and Fatas, Antonio (2008). "The stabilizing role of government size", *Journal of Economic Dynamics and Control*, Elsevier, vol. 32(2), pages 571-593, February.

Baunsgaard, Thomas and Symansky, Steven (2009). "Automatic fiscal stabilizers", IMF position note, September 28.

Buti, Martinez-Mongay, Sekkat, van den Noord (2003). "Automatic Fiscal Stabilisers in EMU: A Conflict between Efficiency and Stabilisation?" *CESifo Economic Studies*, vol 49, pp. 123 - 140.

Darby and Melitz (2008). "Automatic stabilizers", *Economic Policy*, October.

Deroose, Larch, Schaechter, (2008). "Constricted, lame and pro-cyclical? Fiscal policy in the euro area revisited" *European Economy*. Economic Papers. 353.

European Commission (2003). "Meeting the EU's budgetary requirements: national expenditure rules and fiscal relations across levels of government", Part V, "Public Finances in EMU-2003", N. 3 Directorate-General for Economic and Financial Affairs.

European Commission (2009), "The EU's response to support the real economy during the economic crises: an overview of Member States' recovery measures", *Occasional Paper* 51, Directorate-General for Economic and Financial Affairs.

Fatás, Antonio and Ilian Mihov (2003). "The Case for Restricting Fiscal Policy Discretion" *The Quarterly Journal of Economics*, vol. 118, No. 4, pp. 1419-1447 Published by: The MIT Press.

Fatas, Antonio and Ilian Mihov (2009). "The Euro and Fiscal Policy," *NBER Working Papers* 14722, National Bureau of Economic Research.

Fatas, Antonio and Mihov, Ilian (2001). "Government size and automatic stabilizers: international and intranational evidence", *Journal of International Economics*, Elsevier, vol. 55(1), pages 3-28, October.

Girouard, Nathalie and André, Christophe (2005). "Measuring Cyclically-adjusted Budget Bqlqnces for OECD countries", *OECD Economic Department Working Papers* No.434, July.

Girouard, Nathalie and Price, Robert (2004) "Asset Price Cycles, One-off" factors and structural Budget Balances", *OECD Economic Department Working Papers* No. 391, July.

Seidman, Laurence and Lewis, Kenneth (2002). "A New Design for Automatic Fiscal Policy", *International Finance*, Blackwell Publishing, vol. 5(2), pages 251-84, Summer.

Statens Offentliga Utredningar (SOU) (2002) "Stabilization policy in the monetary union", 12 March.

Revista de Economía y Estadística - Vol. XLVIII - N° 1 - (2010) - pp. 41-73
Instituto de Economía y Finanzas - Facultad de Ciencias Económicas
Universidad Nacional de Córdoba - Argentina

Fiscal Policy in the United States: Automatic Stabilizers, Discretionary Fiscal Policy Actions, and the Economy

Glenn Follette
Board of Governors of the Federal Reserve System
glenn.r.follette@frb.gov

Byron Lutz
Board of Governors of the Federal Reserve System
byron.f.lutz@frb.gov

Abstract

We examine the effects of the economy on the government budget as well as the effects of the budget on the economy. First, we provide measures of the effects of automatic stabilizers on budget outcomes at the federal and state and local levels. For the federal government, the deficit increases about 0.35 percent of GDP for each 1 percentage point deviation of actual GDP relative to potential GDP. For state and local governments, the deficit increases by about 0.1 percent of GDP. We then examine the response of the economy to the automatic stabilizers using the FRB/US model by comparing the response to aggregate demand shocks under two scenarios: with the automatic stabilizers in place and without the automatic stabilizers. Second, we provide measures of discretionary fiscal policy actions at the federal and state and local levels. We find that federal policy actions are somewhat counter-cyclical while state and local policy actions have been somewhat pro-cyclical. Finally, we evaluate the impact of the budget, from both automatic stabilizers and discretionary actions, on economic activity in 2008 and 2009.

Key words: Automatic stabilizers, Discretionary actions, Government budget.

JEL Classifiaction: E6, H2, H3, H6.

RESUMEN

Examinamos los efectos de los ciclos de la economía en el presupuesto del gobierno como así también los efectos del presupuesto del gobierno en los ciclos de la economía. Primero, proveemos medidas de los efectos de los estabilizadores automáticos sobre los presupuestos federales, estatales y locales. Para el gobierno federal, el déficit se incrementa alrededor de un 0,35 por ciento del PIB por cada desviación de 1 punto porcentual del PIB real con respecto al PIB potencial. Para los gobiernos estatales y locales, el déficit aumenta en un 0,1 por ciento del PIB. Luego se examina la respuesta de la economía a los estabilizadores automáticos utilizando el modelo FRB / US comparando la respuesta a shocks de demanda agregada en dos escenarios: con estabilizadores automáticos y sin estabilizadores automáticos. En segundo lugar, proporcionamos medidas de las acciones discrecionales de política fiscal a nivel federal, estatal y local. Encontramos que las políticas federales son de alguna manera contra-cíclicas, mientras que las políticas estatales y locales han sido un tanto pro-cíclicas. Por último, se evalúa el impacto del presupuesto, tanto de los estabilizadores automáticos como de las medidas discrecionales, en la actividad económica en 2008 y 2009.

Palabras clave: Estabilizadores Automáticos, Presupuesto, Políticas Discrecionales.

Clasificación JEL: E6, H2, H3, H6.

I. INTRODUCTION

Fiscal policy has been a key policy tool in addressing the aggregate demand consequences of the financial crisis in the United States. This paper examines fiscal policy at both the federal and state and local level and looks at the effects of both automatic stabilizers and discretionary fiscal actions. Our analysis involves three steps. First, we provide measures of the effects of the automatic stabilizers on budget outcomes at the federal and state and local levels. For the federal government, the deficit increases about 0.35 percent of GDP for each 1 percentage point deviation of actual GDP relative to potential GDP. For state and local governments, the deficit increases by about 0.1 percent of GDP. We then examine the response of the economy to these automatic stabilizers using the FRB/US model by comparing the response to aggregate demand shocks under two scenarios: with the automatic stabilizers in place and without the automatic stabilizers. Second, we provide measures of discretionary fiscal policy actions at the federal and state

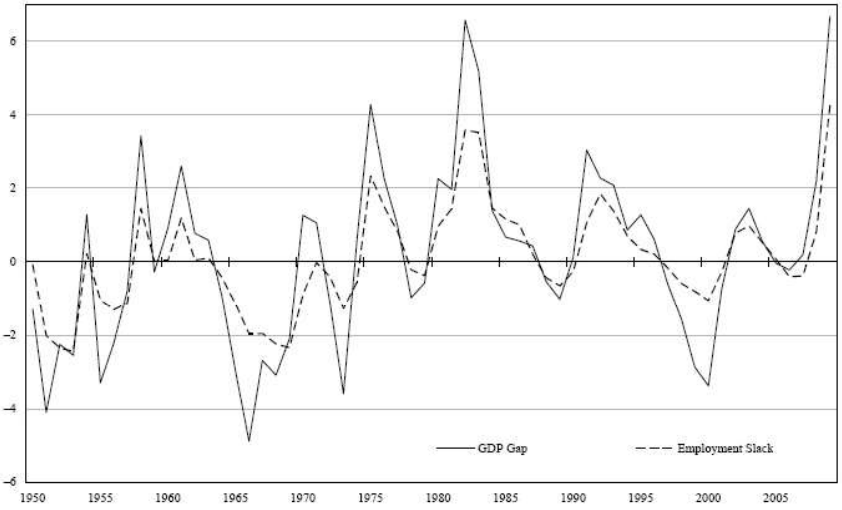
and local levels. We find that federal policy actions are somewhat counter-cyclical: expenditures and tax actions are typically more stimulative after a business cycle peak than before the peak. In contrast, we find that state and local policy actions have been somewhat pro-cyclical, probably reflecting constitutional restrictions on general fund budget balances. We also consider the multiplier impacts of these actions. Third, armed with the information from our two estimation steps, we evaluate the impact of the budget, from both automatic stabilizers and discretionary actions, on economic activity over the past two years.

II. Automatic Stabilizers

To assess the effect of the business cycle on government budgets, we use a high-employment budget framework that allows us to separate National Income and Product Accounts (NIPA) revenues and expenditures into their cyclical and non-cyclical components; our measures are based on the methodology developed for the federal budget by Frank de Leeuw et al (1980), refined by Cohen and Follette (2000), and subsequently applied to the state and local sector by Knight, Kusko, and Rubin (2003), and Follette, Kusko and Lutz (2008). The high-employment budget methodology allows us to strip out the effects of cyclical macroeconomic developments on actual budget outcomes and thus provides an indication of the path the budget would have followed had the economy continually operated at its potential level. By design, it is unaffected by the actions governments take to offset the automatic changes in revenue or expenditures, such as tax rate increases in response to falling receipts.

To construct our high-employment budget, we use the NIPA budget data at the federal and state and local levels and the Congressional Budget Office's (CBO's) estimates of potential GDP. Figure 1 shows the estimates of the GDP gap and the difference between the actual unemployment rate and the NAIRU (which we term "employment slack"). Then we follow the procedure detailed in Cohen and Follette (2000) to adjust receipts and current expenditures to the levels they would attain if the economy were operating at its potential level.

Figure 1
Estimates of GDP Gap and Employment Slack
(calendar years, percent)



Note: *GDPGAP* = (Potential *GDP* - *GDP*) / Potential *GDP* *100
Employment slack is unemployment rate minus NAIRU.

The cyclical adjustment to receipts, which accounts for the bulk of the total cyclical adjustment, depends upon three factors: the composition of receipts, the estimated cyclicality of the base for each major tax, and the elasticity of the tax to the base.[1] For summary statistics we will report two measures, the elasticity of the overall tax system with respect to cyclical *GDP*, $\varepsilon_{T/GDP}$ (Table 2), and the change in taxes associated with a 1 percent change in the cyclical *GDP* (Table 5). The overall elasticity of the tax system is:

$$(1) \quad \varepsilon_{T/GDP} = \sum \varepsilon_{B_i} * \varepsilon_{\tau_i} * \frac{T_i}{T} = \sum \varepsilon_{i/GDP} * \frac{T_i}{T}$$

1. The tax bases for the major taxes are NIPA taxable personal income for personal taxes, NIPA corporate profits for corporate taxes, aggregate wages and salaries for social insurance contributions, NIPA personal consumption expenditures on goods for sales taxes. NIPA taxable personal income is defined as NIPA personal income less transfers plus employee contributions for social insurance. We adjust NIPA corporate profits to remove the *earnings* of the Federal Reserve System, which are included in the NIPA measure.

where T is total tax collections, T_i is the collection from tax *i*, B_i is the tax base of tax *i*, ε_{B_i} is the elasticity of B_i with respect to cyclical changes in *GDP*, ε_{τ_i} is the elasticity of tax *i* with respect to B_i and $\varepsilon_{i/GDP}$ is the elasticity of tax *i* with respect to cyclical *GDP*. Although we estimate time varying elasticities, the time subscripts are suppressed here for notational simplicity. The second summary measure, the change in revenues as a percent of *GDP*, simply equals the product of the overall elasticity, $\varepsilon_{T/GDP}$, and the tax share of *GDP*. Accordingly, we require estimates of the elasticity of tax bases to cyclical changes in *GDP*, ε_{B_i}, and elasticities of the taxes to the tax bases, ε_{τ_i}. The first is accomplished through regressions of components of the tax base with respect to the *GDP* gap. The tax elasticities, ε_{τ_i}, are built up from detailed information about the tax code and its changes over time and a variety of auxiliary regressions.[2]

II.1. Elasticity of the tax bases

Our estimates of the elasticity of the tax bases, ε_{B_i}, are implemented through several steps and are based on a few assumptions. First, we assume that each component of the tax base is potentially differentially affected by cyclical changes in *GDP*. Second, we assume that the bases are buffeted by other factors than cyclical changes in *GDP*, and therefore we do not use detrending methods, such as an HP filter, to separate trend from cycle because these other factors would be conflated with the cyclical changes. Third, we assume that the cyclical affects may appear with some lag. Equation (2) captures these assumptions and equation (3) is the resulting high-employment tax base.

$$(2)\quad SHAREK_{i,t} = SHARE_{i,t} - \sum_{v=0}^{v=lag_i} \beta_{i,v} * (GDPGAP_{t-v})$$

$$(3)\quad BASEK_{i,t} = SHAREK_{i,t} * GDPK_t$$

For each variable, the "K" denotes the high-employment variable (potential *GDP* is therefore denoted as $GDPK_t$), $SHARE_i$ is the ratio of the base for tax "*i*" to *GDP*, *GDPGAP* is the difference between potential *GDP* and actual *GDP* divided by potential, $BASE_i$ is the relevant tax base for tax "*i*", and lag_i quantifies the lag structure for tax *i*.

2. We do not attempt to estimate the tax elasticities from the aggregate time series data because movements in taxes in these data also include frequent and sometimes substantial changes in policy.

We operationalize equation (2) by estimating the first difference of equation 2:

$$(4)\quad \Delta SHARE_{i,t} = \sum_{v=0}^{v=lag_i} \beta_{i,v} * i * (\Delta GDPGAP_{t-v}) + u_{i,t}$$

and then using the $\hat{\beta}_i s$ to calculate the $SHAREK_{i,t}$ values. We use quarterly data from 1950 through 2008 to estimate the i relationships and the regression results are found in Table 1.[3] As expected, the profit share initially falls as the economy moves into recession while the wage share rises (see column 1). Figure 2 provides a graphical representation for wages and profits by plotting the "profits gap" (cyclical profits divided by potential profits) and the "wage gap" against the *GDP* gap. As is clearly visible, wages are nearly perfectly unit elastic, whereas profits have an elasticity significantly in excess of 1. Finally, in order to display summary statistics for ε_{B_i}, we calculate the mean elasticity for each of the major tax bases by regressing the wage, personal income, and profits gaps on the *GDP* gap and its lags. These elasticities are presented in column 2 of Table 2.

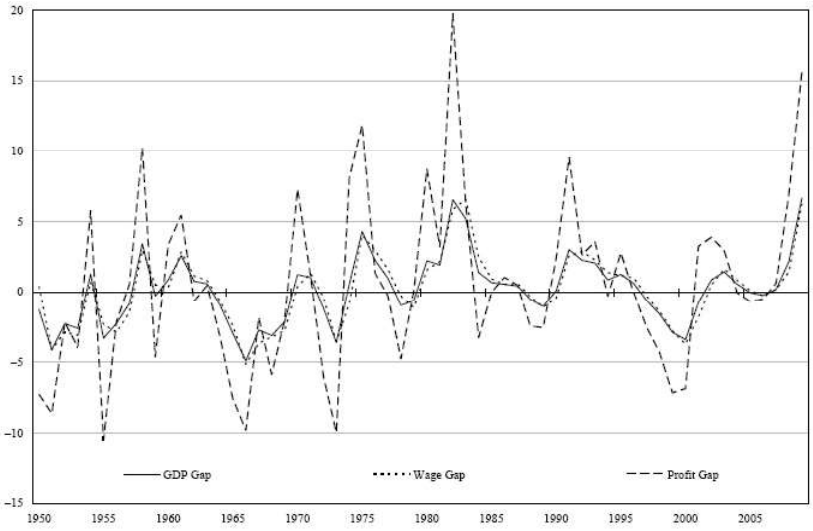
3. Note, we do not require that the deviations in the shares sum to zero. The deviations in GDI and *GDP* have a cyclical pattern. Thus, the income gaps do not have to sum to the *GDP* gap.

Table 1
Share Equations

ITEM	*GDP gap t* (1)	*GDP gap t– 1* (2)	*GDP gap t– 2* (3)	*GDP gap t– 3* (4)	*GDP gap t– 4* (5)	*Σ(GDP gap)* (6)
Δ Wages	0.189	–0.121	–0.040	–0.073	0.000	–0.044
t -value	10.072	–6.185	–2.022	–3.736	0.020	n.a.
Δ Supplements (inc. employer's)	0.033	–0.004	0.002	–0.012	0.005	0.024
t -value	5.050	–0.621	0.248	–1.743	0.832	n.a.
Δ Profits	–0.286	0.028	0.069	–0.013	0.107	–0.095
t -value	–11.536	1.094	2.678	–0.491	4.278	n.a.
Δ Proprietor's income	0.011	–0.003	–0.023	0.001	0.007	–0.007
t -value	0.654	–0.164	–1.344	0.033	0.423	n.a.
Δ Rental income	0.021	–0.001	0.008	0.003	–0.005	0.025
t -value	4.019	–0.186	1.441	0.644	–1.016	n.a.
Δ Net interest	0.034	0.004	–0.014	–0.017	0.005	0.012
t -value	3.112	–0.186	–1.269	–1.508	0.506	n.a.
Δ Rent & net interest	0.054	0.003	–0.007	–0.013	0.000	0.038
t -value	4.536	0.261	–0.529	–1.087	0.021	n.a.
Δ HEB property	–0.005	–0.002	–0.002	–0.003	0.000	–0.010
t -value	–3.209	–1.030	–1.006	–1.669	0.112	n.a.
Δ Property	0.466	–0.155	–0.152	–0.245	0.020	–0.065
t -value	3.202	–1.020	–1.007	–1.615	0.137	n.a.
Δ Personal consumption, goods	0.066	–0.016	–0.030	0.102	–0.036	0.087
t -value	2.420	–0.550	–1.052	3.568	–1.306	n.a.

Note: Dependent variable is the income variable as a share of *GDP* and then differenced. *GDP* Gap = (Potential *GDP* – *GDP*) / Potential *GDP* *100.

Figure 2
Estimates of *GDP*, Wage and Profit Gaps
(calendar years, percent of potential GDP)



Note: A positive *GDP* gap implies actual *GDP* is less than potential *GDP*.

II.2. Federal government tax elasticities

We now turn to our procedures for estimating the elasticity of taxes to the base, ε_{τ_i}, for the federal side. These procedures are based on the methodology in Cohen and Follette (2000). Federal personal income taxes are roughly 45 percent of federal NIPA-based total tax receipts. Our personal income tax elasticity measure, ε_{τ_p}, reflects two factors: the elasticity of taxes with respect to the administrative definition of income (called adjusted gross income or AGI) and the elasticity of AGI with respect to the national accounts measure of income. Furthermore, the elasticity of income taxes with respect to aggregate AGI is a weighted sum of the number of returns and average income per return where the weights are the relative contributions of changes in returns and average income to the cyclical change in income. More formally,

$$(5)\quad \varepsilon_{\tau_p} = \varepsilon_{tagi} * \varepsilon_{pinc} = \left[\alpha * \varepsilon_{preturns} + (1-\alpha) * \varepsilon_{ptax}\right] * \varepsilon_{pinc}$$

Where ε_{tagi} is the elasticity of taxes with respect to AGI, ε_{pinc} is the elasticity of AGI with respect to NIPA adjusted personal income, $\varepsilon_{preturns}$ is the elasticity of taxes with respect to changes in the number of returns, and ε_{ptax} which is the elasticity of the income tax schedule with respect to AGI per return. Finally, α measures the relative importance of the numbers of returns and income per return in cyclical income.

As detailed in Cohen and Follette (2000) we calculate ε_{τ_p} by taking a weighted average of separate calculations for single and non-single filers. We assume that $\varepsilon_{preturns}$ equals 1 and construct the weight α for single and non-single returns separately by regressing the number of returns filed and AGI per return to obtain estimates of their relative cyclical sensitivities. We find that for non-singles α is zero as filing is not cyclically sensitive, but for single filers alpha is about 0.5. We estimate ε_{ptax} for each year based on that year's tax schedule and actual distribution of income. Turning to ε_{pinc}, personal income as defined by the tax authorities, AGI, is more cyclical than personal income in the national accounts (NIPA), perhaps because capital gains realizations (which are not included in national accounts' definition of income) appear to be cyclical. We estimate ε_{pinc} by regressing average AGI per return on NIPA income per employee, with allowance for a change in the elasticity after the 1986 Tax Reform Act, and find that the current elasticity is about 1.5, compared to 1.1 before. The resulting estimates for ε_{τ_p} are shown in Table 2 (columns 3 and 5) (these are mean elasticities, with the mean taken over time).

The next largest source of revenues for the federal government is social insurance contributions. These are somewhat inelastic because, while the tax rate is constant the wage base is capped, and because some sources of social insurance contributions are not based on wages. The cap, as a fraction of average wages, has fluctuated over time with changes in law and the distribution of wages. We estimate the elasticity of social insurance contributions, $\varepsilon_{\tau_{si_i}}$ using a similar methodology used to produce ε_{τ_p}. The resulting estimates are shown in table 2 (columns 3 and 5), with the elasticity rising from about 0.3 in 1965-1985 to 0.7 in 1986-2008 largely as a result of the wage caps being raised.

The corporate tax system itself is essentially unit elastic as the rate structure is very flat. As a result, ε_{ctax} is equal to approximately 1.04 and we assume α equals zero. The cyclical movements in corporate income subject to tax are smaller than those of economic profits because some adjustments such as loss carry backs are counter-cyclical. We estimate that the elasticity

of corporate income subject to tax with respect to economic profits, ε_{cinc}, is about 0.8. The overall elasticity of corporate taxes to economic profits, ε_{τ_c}, is therefore about 0.8.

Other taxes –chiefly excise taxes and customs duties– are a small and declining share of receipts at the federal level. We set the elasticity of customs duties at 2.0, the cyclical elasticity of imports found in the FRB/US model and the elasticity of excise taxes is built up from demand elasticities of the various components –many of which, such as tobacco and alcohol– are rather inelastic. As shown in table 2 the resulting elasticity for these other taxes is around 1.

II.3. Federal government total tax elasticity and cyclical revenues

Combining the estimates in columns (2) and (3)/(5) of Table 2 allows us to display the elasticity of the tax receipts with respect to cyclical *GDP*, $\varepsilon_{i/GDP}$, for the major taxes (see columns 4 and 6).[4] Focusing on the 1986 –2008 period (column 6), corporate receipts are by far the most elastic, largely because profits are very elastic (e.g. ε_{B_c} is large). Equation (1) allows us to pull these estimates together to produce the Federal total tax elasticity, $\varepsilon_{TFed/GDP}$. For the earlier period the total elasticity is 1.2 and for the later period it is 1.6. Total federal receipts are thus currently quite elastic with respect to the business cycle. The elasticity has increased over time as a result of both the increase in wages subject to social insurance taxes and the 1986 tax reform's effect on personal and corporate receipts.

4. We estimate the multiyear elasticities by regressing the log differences of cyclical taxes on the log differences of the cyclical bases (or *GDP*) which provides the average response over the period with the observed dynamics of the cycle.

Table 2
Tax Elasticities

ITEM	SHARE OF TAXES 2007	ELASTICITY OF BASE	TAX ELASTICITY			
			1960-1985		1986-2008	
			NIPA Base	*GDP*	NIPA Base	*GDP*
	(1)	(2) E_B	(3) E_τ	(4) $E_{i/GDP}$	(5) E_τ	(6) $E_{i/GDP}$
FEDERAL						
Total ($E_{T/GDP}$)		n.a	n.a	1.2	n.a	1.6
Personal	45%	1.0	1.4	1.4	2.0	2.0
Social insurance	37%	1.0	0.3	0.3	0.7	0.7
Corporate	14%	4.0	0.7	2.7	0.8	3.7
Other taxes	4%	1.0	0.9	0.9	1.0	1.0
STATE AND LOCAL						
Total ($E_{T/GDP}$)		n.a	n.a	0.6	n.a	0.6
Own revenues	100%	n.a	n.a.	0.7	n.a.	0.8
Personal	24%	1.0	1.1	1.1	1.5	1.5
Corporate	4%	4.0	0.7	2.8	0.8	3.6
Other taxes	72%	1.0	0.5	0.5	0.5	0.5

Note: Estimated elasticities vary from year to year. The table reports multi-year averages.

In addition to the revenue elasticities, we also produce analogous estimates of cyclical revenues: $TAX_{i,t}$ - $TAXK_{i,t}$ (see Table 3 and Figure 3A). These are calculated as

$$(6)\quad TAXK_{i,t} = TAX_{i,t} + TAX_{i,t} * \left(\left(BASEK_{i,t} / BASE_{i,t}\right) - 1\right) * \varepsilon_{\tau_{i,t}}$$

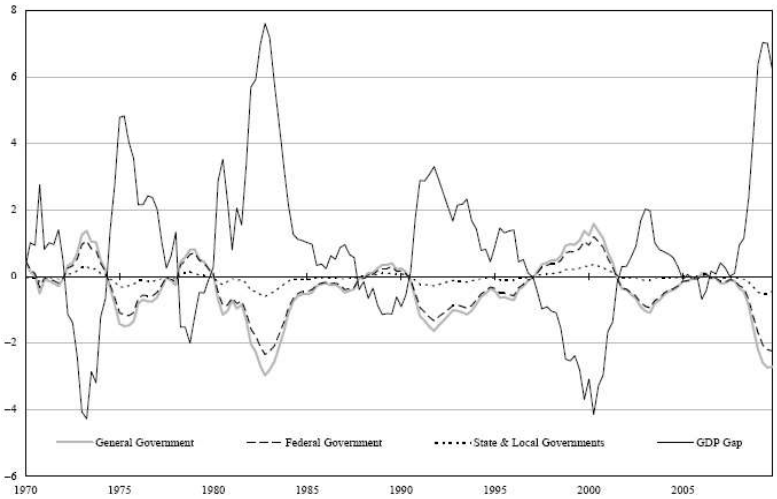
where TAX_i is tax revenue from tax "*i*", $TAXK_j$ is the high-employment, or non-cyclical, portion of tax revenue and $BASEK_j$ comes from equation (3). Note that the cyclical revenues are produced using the time-varying estimates of $\varepsilon_{\tau_{i,t}}$ and $BASEK_{i,t}$.

Table 3
Cyclical Receipts
(percent of potential GDP)

YEAR	FEDERAL (1)	STATE AND LOCAL (2)	GENERAL GOVERNMENT (3)	GDP GAP (4)	YEAR	FEDERAL (1)	STATE AND LOCAL (2)	GENERAL GOVERNMENT (3)	GDP GAP (4)
1970	0.10	–0.08	0.02	1.27	1990	–0.11	–0.01	–0.11	0.12
1971	–0.13	–0.07	–0.20	1.05	1991	–1.16	–0.27	–1.43	3.03
1972	0.27	0.08	0.35	–1.14	1992	–1.06	–0.20	–1.26	2.27
1973	0.91	0.26	1.17	–3.59	1993	–0.92	–0.17	–1.09	2.07
1974	–0.12	–0.04	–0.15	0.63	1994	–0.51	–0.08	–0.59	0.87
1975	–1.14	–0.31	–1.45	4.28	1995	–0.50	–0.11	–0.61	1.27
1976	–0.61	–0.15	–0.77	2.27	1996	–0.33	–0.07	–0.40	0.61
1977	–0.22	–0.07	–0.29	0.97	1997	0.17	0.05	0.22	–0.61
1978	0.34	0.07	0.40	–0.97	1998	0.50	0.14	0.63	–1.56
1979	0.45	0.04	0.50	–0.57	1999	0.84	0.25	1.10	–2.87
1980	–0.56	–0.17	–0.73	2.25	2000	1.01	0.31	1.33	–3.37
1981	–0.84	–0.14	–0.98	1.96	2001	0.09	0.08	0.17	–0.73
1982	–1.98	–0.52	–2.50	6.57	2002	–0.59	–0.06	–0.65	0.88
1983	–1.87	–0.41	–2.28	5.18	2003	–0.82	–0.11	–0.93	1.45
1984	–0.65	–0.10	–0.75	1.39	2004	–0.40	–0.04	–0.44	0.56
1985	–0.34	–0.06	–0.40	0.67	2005	–0.12	0.00	–0.12	–0.03
1986	–0.23	–0.05	–0.28	0.57	2006	–0.00	0.01	0.01	–0.22
1987	–0.31	–0.05	–0.35	0.44	2007	–0.15	–0.03	–0.18	0.19
1988	0.06	0.05	0.11	–0.53	2008	–0.66	–0.18	–0.83	2.21
1989	0.24	0.09	0.33	–1.01	2009	–2.06	–0.51	–2.57	6.66

Note: GDP Gap = (Potential GDP – GDP) / Potential GDP *100.

Figure 3A
Estimates of Cyclical Receipts by Government
(percent of potential GDP)



Note: A positive GDP gap implies actual GDP is less than potential GDP.

II.4. State and local government elasticities and receipts

State and local governments have a less elastic tax system than the federal government general because they rely more heavily on property taxes and sales taxes which are less cyclically sensitive and their income tax structures are less elastic. For personal income taxes, we use the same methodology as at the federal level. However, instead of estimating the effective elasticity of the tax schedule to IRS-based income, $\varepsilon_{\text{ptax}}$, for all of the states, we assume that it is 1.1. As state income tax systems generally use the same income concept as the federal government, we use the same estimates made for the federal government for the sensitivity of IRS income to changes in NIPA personal income, $\varepsilon_{\text{pinc}}$. Accordingly, we arrive at an overall elasticity of state and local personal income taxes with respect to cyclical personal income, ε_{τ_p}, of 1.1 before 1986 tax reform, rising to 1.5 afterwards. For corporate income taxes we use the federal measure of the elasticity of corporate income taxes to NIPA corporate profits of 0.8. For other taxes, primarily sales and property taxes, we estimate that the cyclical elasticity is 0.5 as sales taxes are unit elastic and property taxes are inelastic.

In addition to its "own" revenue, state and local governments receive a substantial amount of federal grants, equal to about 20 percent of their total revenues which are a somewhat countercyclical revenue source. We cyclically adjust Medicaid and AFDC grants using the procedure described below for Medicaid expenditures. For other grants from the federal government, there is no cyclical sensitivity because their levels are set through discretionary appropriations.

We estimate that the elasticity of total receipts to cyclical GDP, $\varepsilon_{TS\&L/GDP}$, has moved in the range of ½ to ¾ and have averaged 0.6 over the 1986 to 2008 period (see column 6 of Table 2). The elasticity is well below 1 because property taxes and most federal grants have no or little cyclical response. The damping effect of grants is substantial as the elasticity of own receipts is currently about 0.8. The variation over time reflects the changing composition of receipts. Table 3 and figure 3A show our resulting estimates for the cyclical component of state and local revenues.

II.5. Federal Expenditures

Among expenditures, only those transfers and grants that are oriented toward income support respond automatically to changes in economic activity. Fluctuations in unemployment benefits account for the vast majority of the cyclical swing in expenditures; also contributing to the swings are changes in the number of beneficiaries of low-income and disability programs such as food stamps, earned income credit, welfare (prior to the 1996 reform), and disability insurance. We use both aggregate macro data and micro studies to create estimates for the cyclical sensitivity of expenditures.

Unemployment benefits are typically available for up to 26 weeks. Since 1970 the time period is automatically extended in states with high unemployment. However, the automatic trigger appears to be set at "too high" a level and temporary programs have been enacted during every recession. Our estimates of the cyclical component of the budget exclude expenditures by the temporary programs because they are not automatic. Based on these observations we estimate:

$$(7)\quad \Delta\frac{UIBEN_t}{WS_t} = \alpha + \beta_0\Delta RU_t + \beta_{-1}\Delta RU_{t-1} + \beta_{-2}\Delta RU_{t-2} + \varepsilon_t$$

where *UIBEN* is regular unemployment benefits excluding the temporary benefit expansions, *WS* is NIPA wages and salaries and *RU* is the total civilian unemployment rate (*RU*).

These regression results indicate that a 1 percentage point increase in the unemployment rate would boost benefits by 0.25 percent of wages and salaries over the first two quarters, or 0.10 percent of potential GDP, dropping back a bit in the third quarter as benefit eligibility is exhausted (see Table 4).

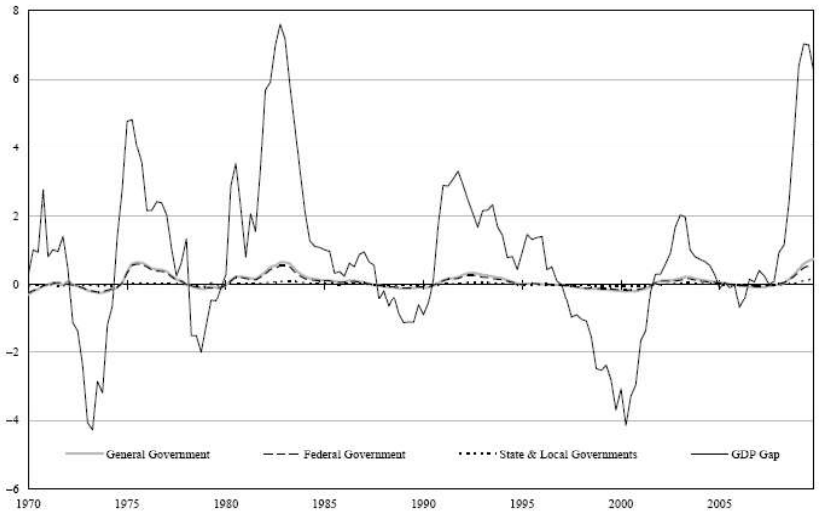
Table 4
Cyclical Sensitivity of Unemployment and Food Stamp Benefits

Dependent variable	Independent variables		
	RU	*RU (T– 1)*	*RU (T –2)*
	(1)	(2)	(3)
UI benefits / Wages*100	0.20	0.06	–0.02
t -value	(10.40)	(2.60)	(1.20)
Food Stamps / GDP*100	0.037		
t -value	(4.73)		

Note: Data are in first differences.

Other changes in expenditures are smaller individually, but sum to about the same total as unemployment benefits. The food stamp program is the next largest program. Time series regressions on the aggregate caseload data, similar to equation (7), indicate that a percentage point increase in the unemployment rate boosts food stamp expenditures by about 0.04 percent of GDP. For welfare and Medicaid we draw upon on Blank (2001) and model the cyclical portion of these programs as a function of past changes in the unemployment rate and infer that Medicaid grants rise by 0.02 percent of GDP per percentage change in the unemployment rate. In 1996 federal welfare payments were changed to block grants and are no longer sensitive to economic conditions, previously it would have raised these expenditures by 0.015 percent of GDP. Finally, studies using micro data have concluded that both the old age (OASI) and disability (DI) programs are cyclically sensitive –see Kalman, Rupp, and David Stapleton (2005) and Autor and Duggan (2006)– but that the movements are economically negligible in size.

Figure 3B
Estimates of Cyclical Expenditures by Government
(percent of potential GDP)



Note: A positive GDP gap implies actual GDP is less than potential GDP.

Adding up all of the above programs, for every percentage point increase in the unemployment rate cyclical expenditures rise about 0.15 percent of GDP. Using an Okun's law relation of a 0.4 percentage point change in the unemployment rate for each 1 percentage point change in real GDP implies a 0.06 percentage point increase in federal expenditures for each percent change in real GDP (Table 5 and Figure 3B).

II.6. State and local expenditures

State and local government expenditures are equal to about 15 percent of GDP, but only about 3 percent of GDP are in the cyclically sensitive transfers category. For Medicaid expenditures and welfare caseloads we again draw upon on Blank (2001) to estimate the cyclical sensitivity. For other transfers, we use the time series NIPA data and regressions similar to equation (7) to estimate cyclical sensitivities, but the estimated elasticities are small. All in all, the overall sensitivity of gross state and local expenditures is quite small and lags the business cycle by about a year and reaches only about 0.04 percent of GDP per percentage point change in the unemployment rate. With much of that accompanied automatically by

federal grants, the change in expenditures less grants is only 0.02 percent of GDP per 1 percentage point change in the unemployment rate and 0.01 percent of GDP per one percent change in cyclical GDP.

II.7. Cyclical Deficits

Table 5A brings these pieces of the analysis together to provide estimates of the cyclical budget sensitivities at the federal, state and local and general government levels. Specifically, we evaluate our revenue and expenditure elasticities using the current values of revenues and expenditures as a percent of GDP. (For instance, the Federal total tax elasticity with respect to cyclical GDP on Table 2 is 1.6 and Federal revenues comprise about 19 percent of GDP. Thus, the change in Federal revenues as a percent of GDP produced by a 1 percent change in cyclical GDP is 0.30 –see column 1–). We then subtract the expenditure estimates from the revenue estimates to produce an estimate of cyclical deficits, or net lending (column 3). State and local cyclical deficits are much smaller than Federal deficits, likely reflecting balanced budget requirements at the state and local level.

At the general government level (column 3), the deficit is increased about 0.5 percent of GDP for every 1 percent decline in GDP.[5] In the current environment, the deficit is about 3.3 percent of GDP, or $500 billion, larger than it would if the economy had been at full employment (Table 5B, column 2, and Figure 3C). Total general government net lending was around $1600 billion in 2009 (Table 5B, column 1), or 11 percent of actual GDP, thus about 30 percent of the 2009 deficit was generated by the automatic stabilizers.

5. This is a considerably larger response than estimated by van den Noord (2000), largely reflecting different assessments of the elasticity of taxable personal income to cyclical GDP.

Table 5A
Cyclical Response of Budget

ITEM	OWN REVENUES (1)	EXPENDITURES LESS GRANTS RECEIVED (2)	NET LENDING (3)
(percent of GDP, per one percent change in cyclical GDP)			
General government	–0.37	0.09	–0.46
Federal government	–0.31	0.08	–0.39
State and local governments	–0.06	0.01	–0.07
(percent of potential GDP using CBO's estimate of potential GDP in 2009)			
General government	–2.63	0.47	–3.11
Federal government	–2.09	0.41	–2.50
State and local governments	–0.54	0.07	–0.61
(billions of dollars using CBO's estimate of potential GDP in 2009)			
General government	–402	72	–474
Federal government	–320	62	–381
State and local governments	–82	10	–93

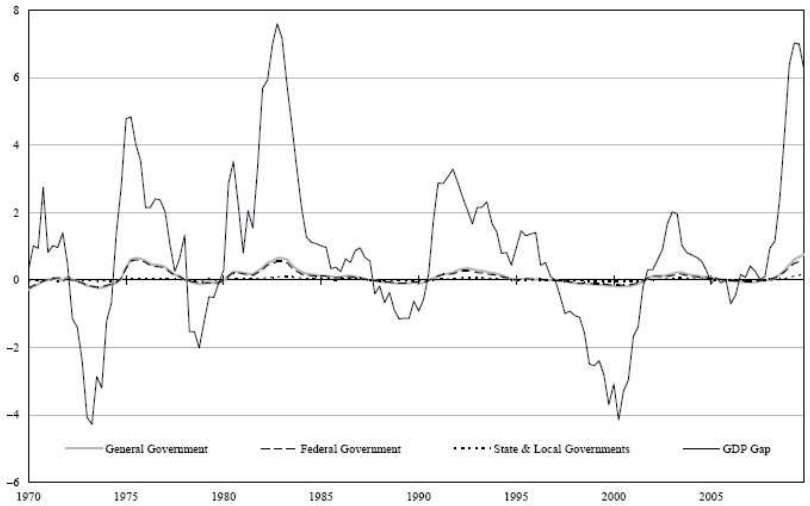
Note: The CBO estimated potential GDP in 2009 to be 15,275 billion dollars and the GDP gap to be 6.75 per cent.

Table 5B
Cyclical Response of Budget

ITEM	ACTUAL (1)	CYCLICAL (2)	HIGH-EMPLOYMENT (3)
Net lending, 2009 (billions of dollars)			
General government	–1,579	–474	–1
Federal government	–1,451	–381	–1
State and local governments	–128	–93	
Net lending, 2009 (percent of actual GDP)			
General government	–11.1	–3.3	–7.7
Federal government	–10.2	–2.7	–7.5
State and local governments	–0.9	–0.7	–0.2

Note: The CBO estimated potential GDP in 2009 to be 15,275 billion dollars and the GDP gap to be 6.75 per cent.

Figure 3C
Estimates of Cyclical Deficits by Government
(percent of potential GDP)



Note: A positive GDP gap implies actual GDP is less than potential GDP.

II.8. Effect of automatic stabilizers on the economy

We use simulations of the FRB/US model to examine the degree to which the automatic fiscal stabilizers considered above help or hinder the performance of the broader economy.[6] We simulate the impact of a negative demand shock under two scenarios. In the first simulation the automatic stabilizers are left on and the economy is subjected to a series of negative aggregate demand shocks that by construction lower the level of GDP by 1 percent lower for eight quarters. The federal funds rate is maintained at its baseline value. In the second simulation we turn off the federal automatic stabilizers by using a counterfactual tax structure in which taxes are independent of income and transfers are independent of the unemployment rate and we subject the economy to the same demand shocks used in the first simulation. A comparison of GDP growth in the first and second simulations provides an estimate of the extent to which the stabilizers mute negative demand shocks.

6. FRB/US is a large-scale quarterly econometric model of the U.S. economy developed by the staff of the Federal Reserve. See Brayton and Tinsley (1996) for a detailed introduction to the model.

As constructed, in the first simulation, real GDP falls 1 percent for eight quarters. In the second simulation real GDP falls 1.1 percent after four quarters and 1.2 percent after eight quarters. Thus, after eight quarters the GDP response to a shock is mitigated by about 20 percent. The implicit multiplier –that is the change in GDP divided by the change in the deficit– grows to about ½ after eight quarters. There are two reasons for the gradual increase in the buffering. First, in FRB/US the consumption response to lower taxes (and higher unemployment benefits) is phased in over time –this is a common feature of many estimated consumption equations–. Second, the multiplier effects gradually increase, particularly because the federal funds rate is fixed in the two simulations. In the current recession, with the downward adjustment of the federal funds rate limited by the zero bound, monetary policy would not be able to offset the additional weakness if the automatic stabilizers were not available, but in most cases in history the absence of automatic stabilizers could have been offset by more aggressive monetary policy.

III. DISCRETIONARY POLICY ACTIONS

This section outlines fiscal impetus (FI), our measure of discretionary policy actions. Fiscal impetus is a bottom-up approach that involves developing a measure of each major type of budget action –for example, a cut in personal taxes or an increase in real government consumption– and aggregating them into a single fiscal indicator that quantifies the impulse to growth in real GDP coming from budget decisions. The weights used for the aggregation are based on estimates of the direct effects of budgetary actions on the growth of real GDP. For example, the weight applied to a reduction in personal taxes is based on an estimate of the increase in aggregate consumer spending induced by the tax cut –that is, the MPC. Thus, fiscal impetus is model dependent–. Our measure is designed to quantify the first-round effects of policy changes on GDP growth. It does not take account of subsequent multiplier effects. It also explicitly excludes the effects of cyclical movements in taxes and transfers (i.e. FI captures only discretionary policy actions). Two key uncertainties in constructing FI are the timing of the response and the size of the MPCs. In general we time the impetus with the implementation of the policy, rather than with the enactment. For example, the effect of defense spending occurs when the purchases are recorded in the NIPA and consumers are assumed to react to tax cuts when they observe the lower payments. Some studies, such as Auerbach (2003), instead base the timing on when the policy is enacted. It is our judgment

that the empirical literature finds very little support for quantitatively important announcement effects on aggregate demand.[7] Our MPC estimates are consistent with the coefficients in the macroeconomic models used by the Federal Reserve Board staff.

III.1. Federal

Starting with discretionary tax changes, we assume that such changes are permanent unless they are explicitly designed to be temporary. Our measures of the real demand effects are based on estimates of the budget effects of the tax law changes deflated by the appropriate deflator (consumption or investment).[8] For personal or social insurance tax cuts we utilize an MPC of 0.7 and phase it in over two years following the date of implementation. For temporary tax changes we assume an MPC of 0.25 in the current quarter and 0.05 in the following quarter, consistent with studies of recent one-time rebates.[9] For corporate tax law changes there can be two effects: the normal income channel as well as the incentive channel. For general corporate tax cuts we assume an MPC of 0.5. For changes in investment incentives, such as the two recent partial expensing provisions, we are guided by the results from House and Shapiro (2008) and Cohen and Cummins (2006) and assume a small effect on investment demand.

Turning to expenditures, all changes in real purchases of goods and services (which excludes transfers) are considered discretionary because they are controlled by annual appropriations. These receive a weight of one. We assume an MPC of 1.0 for legislated changes in transfer payments (except for one-time payments which are treated like temporary tax cuts) and we exclude the endogenous changes in transfers owing to demographic factors, automatic cost-of-living adjustments and other economic factors. The higher MPC for transfers than for taxes reflects the fact that most transfers go to lower-income households, which are more likely to be liquidity constrained or follow rule-of-thumb behavior than the taxpaying population as a whole.

---

7. For example, the consumption literature, in general, finds rule of thumb behavior by many consumers but little support for Ricardian behavior. Survey evidence shows little awareness of tax law changes. By contrast, there is some support for anticipatory changes in taxable income to tax law changes: During the early-1990s year-end bonus payments were shifted to lower tax burdens in response to a series of tax increases. Actual labor supply probably did not change much.

8. Our estimates for legislated changes to taxes or transfers come from a variety of sources, including the Congressional Budget Office and the Administration's budget. We then translate these estimates into the accounting framework of the national income and product account.

9. See, Sahm, Shapiro, and Slemrod (2009), Coronado, Lupton and Sheiner (2005) and Johnson, Parker and Souleles (2004).

Grants to state and local governments, which are considered to be part of *Federal* FI at the time they are spent by the state and localities, are problematic because the degree and timing of the state and local response is not well understood. We assume that the states and localities spend the funds over the following two years. This is consistent with the flypaper effect, but overstates the response if states and localities react to increased grants by cutting taxes.[10] Our assumptions about the state and local reaction to grants is important only in assigning stimulus actions to the federal or state and local level. At the general government level FI does not depend much on the grant assumptions.[11]

Figure 4A
Estimates of Fiscal Impetus, Federal Government
(percent of real GDP)

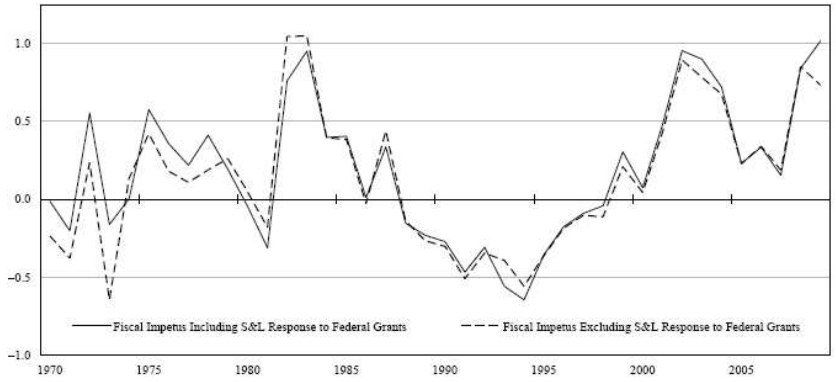


Figure 4A shows our estimates for federal fiscal stimulus. Several observations jump out. Federal fiscal policy does appear to be countercyclical. Second, the amount of stimulus in any given year has been limited, with a boost to aggregate demand of about 1 percent of GDP being near the top. Third, note that the amount of stimulus in 2009 as a result of last year's budget actions is not much different than earlier in the decade when demand

10. See Knight (2002) and Lutz (2010) for recent studies of the response of state and local governments to changes in grants which find that state and local governments respond to increased grants by cutting taxes. In this case the MPC would be closer to 0.7, the MPC of a tax cut.

11. The impetus we attribute to an increase in federal grants is deducted from our measure of state and local impetus. For instance, if we overestimate the state and local grant spendout rate, we will mechanically underestimate spending from state and local own source revenue. Thus, general government FI is largely unaffected even if states use the grants to fund tax cuts.

was boosted by tax cuts and defense spending increases. The portion of federal fiscal stimulus that owes to increased grants to the state and local sector is indicated by the distance between the dashed and solid lines and this amount will be subtracted from state and local actions to determine their contribution. Table 6 shows federal fiscal impetus around business cycle peaks; it shows the impulse to growth in real GDP from the Federal sector during the two years up to and including the peak and during the three years after the peak. In general, federal fiscal policy has been more stimulative after the peak than before it, thus moderating the economic downturns. The exception was following the 1990 peak when policy was focused on long-term deficit reduction.

Our measure of fiscal stimulus registers a positive value when fiscal policy is boosting aggregate demand. Alternatively FI could be measured relative to whether policy is inducing growth above or below that of potential GDP. In that context, a neutral fiscal stance corresponds to the impetus to GDP growth that would emanate if each component of taxes and expenditures were to grow at the rate of potential GDP. In such a case, the impetus from taxes and transfers would be zero and the impetus from purchases would equal the rate of growth of real potential GDP times the share of Federal purchases in GDP. Under a neutral fiscal stance, the Federal government share of GDP would remain constant. For the federal sector neutral FI would be approximately 0.2 (CBO's estimate of potential GDP growth is about 2.5 and Federal purchases are about 8 percent of GDP).

Table 6
Fiscal Impetus Around Business Cycles
(percent of GDP)

PEAK YEAR	1969 (1)	1973 (2)	1980 (3)	1990 (4)	2000 (5)	2007 (6)	Average (7)
FEDERAL GOVERNMENT							
Year before peak	0.02	0.55	0.19	–0.23	0.30	0.33	0.20
Peak	–0.77	–0.16	–0.04	–0.27	0.07	0.16	-0.17
1 year after	–0.01	0.00	–0.31	–0.47	0.48	0.84	0.09
2 years after	–0.20	0.58	0.76	–0.31	0.95	1.02	0.47
3 years after	0.55	0.36	0.95	–0.56	0.90	n.a.	0.44
Before	–0.38	0.20	0.07	–0.25	0.19	0.24	0.01
After	0.11	0.31	0.47	–0.44	0.78	0.93	0.36
STATE AND LOCAL GOVERNMENT							
Year before peak	0.89	–0.04	0.31	0.47	0.53	0.06	0.37
Peak	0.50	–0.04	0.17	0.52	0.38	0.27	0.30
1 year after	0.21	0.55	–0.21	0.24	0.55	0.04	0.23
2 years after	0.34	0.48	0.16	0.17	0.35	–0.39	0.18
3 years after	–0.04	–0.05	0.22	0.34	–0.19	n.a.	0.06
Before	0.69	–0.04	0.24	0.50	0.46	0.16	0.33
After	0.17	0.33	0.06	0.25	0.24	–0.17	0.15
GENERAL GOVERNMENT							
Before	0.31	0.16	0.31	0.25	0.65	0.41	0.35
After	0.29	0.64	0.52	–0.19	1.01	0.76	0.50

III.2. State and Local

Whenever possible, we use direct information to construct our estimates of state and local "policy" actions –for example, we use figures from the National Association of State Budget Officers (NASBO) on enacted state revenue changes to estimate changes in state tax policy–. However, we have no such sources for either local taxes or for state or local expenditures; thus, we have developed NIPA-based measures of policy change that we believe are satisfactory alternatives. With regard to property taxes, our policy indicator is the ratio of NIPA property tax receipts to nominal potential GDP, which we dub the effective property tax rate. When this effective tax rate is constant from one year to the next, policy is defined as being constant. Movements in the effective tax rate are interpreted as changes in policy; in general, they occur either because localities make adjustments to their *statutory* tax rates or because the rate of increase in average property assessments differs from the rate of overall inflation (as measured by the GDP price index). Thus, when property values rise rapidly and local governments do not offset the increases with decreases in the statutory tax rate, we score the change in revenue as a policy induced tax increase.[12]

On the expenditure side, we define constant policy for Medicaid as a constant ratio of outlays (net of federal grants) to potential GDP, and we interpret deviations in this ratio as changes in policy.[13] We use a similar algorithm for other transfers. For purchases of goods and services, we include both consumption and investment expenditures and define constant policy as a constant real (i.e. inflation-adjusted) level of purchases. To measure the demand effect of discretionary changes taxes and transfers, we use the same MPCs as on the Federal side.

As with the federal sector we present two measures of fiscal impetus: with and without grants. In order to obtain an estimate for general government impetus, the solid line of federal impetus which includes the impact of grants to the states and localities (Figure 4A) should be added to the solid state and local line which excludes from impetus the impact of grants from the Federal government (Figure 4B). This avoids double counting the effect of grants. As Figure 4B indicates, state and local fiscal impetus varies a good deal from year to year, but is smaller than federal actions.

12. See Lutz (2009) for a discussion of the response of local governments to changes in real estate prices.

13. We first adjust Medicaid outlays to their high-employment level to remove the cyclical changes from this program.

Figure 4B
Estimates of Fiscal Impetus, State and Local Governments
(percent of real GDP)

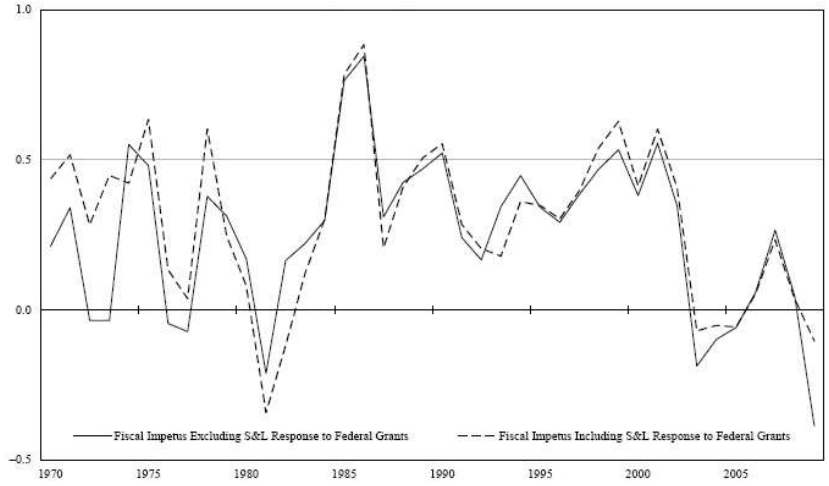
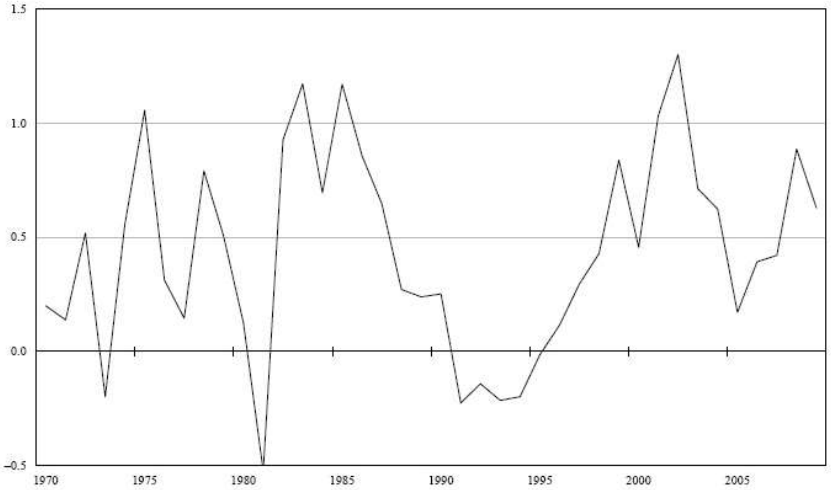


Figure 4C
Estimates of Fiscal Impetus, General Government
(percent of real GDP)



In terms of policy reactions, the middle panel of Table 6 focuses on the behavior of our state and local fiscal impetus measure around past business cycle peaks. In all six episodes, policy was expansionary leading up to the peak. During the period following the peak, the amount of stimulus usually diminished and was only about half as large, on average, as it had been in period leading up to the peak; the drop-off in fiscal impetus between the two periods amounted to about 0.2 percent of GDP. This pro-cyclical response probably is the result of state and local balanced-budget requirements, which while not binding on a year to year basis, do enforce a significant level of budget discipline.

III.3. Discretionary actions

Fiscal impetus is our measure of the direct impact and does not incorporate any crowding out or crowding in. The total effect on the economy of discretionary actions reflects both the initial MPC as captured by FI as well as the multiplier (FI does not include multiplier effects and they therefore must be added to FI in order to obtain the full effect of discretionary actions). The multiplier depends upon the state of the economy both because of endogenous crowding out and due to monetary policy responses. The multiplier effects in FRB/US can range from under 1 to about 2. The multiplier is less than one when both monetary policy is assumed to try to offset the impetus (such as assuming that it follows a Taylor rule or other such reaction function) and the fiscal policy is a permanent increase in the deficit, (such as a permanent 1 percent increase purchases). In this case interest rates rise and the exchange rate appreciates dampening the demand effect. By contrast, when monetary policy is constrained by the zero bound and if policy actions are seen as temporary then the multiplier may be as large as 2. As a rule of thumb, a multiplier of about 1¼ would be generally appropriate if monetary policy is not offsetting fiscal policy and if the actions are temporary. This multiplier would be applied to FI, not to the original budget effect. In most discussions of fiscal policy the "multiplier" is a combination of the MPC and the follow-on effects. Here we address each piece separately.

IV. THE BUDGET AND ECONOMIC ACTIVITY IN 2008-2009

Since the current recession began at the end of 2007 both automatic stabilizers and discretionary fiscal policy have been at work to buffer the downturn in aggregate demand. In 2008, our measures indicate that policy actions raised real aggregate demand by about 1¼ percent and the automatic

stabilizers boosted demand by ¼ percent, on a year-over-year basis. The increase from discretionary policies in 2008 reflects continued increases in defense spending, stimulus spending, and other policies. In 2009 discretionary policy actions may have raised real GDP growth by ¾ percent, including the multiplier effects, and the automatic stabilizers may have contributed another ½ percentage point. All told, over the two years fiscal factors (discretionary and automatic) may have lifted the level of GDP by 2¾ percent in 2009.

First, consider the automatic stabilizers. They widened the 2009 deficit by about 3 percent of GDP. FRB/US model simulations indicate that without the stabilizers, output would have been ¾ percentage point lower on average in 2009. With the deficit 3 percent of GDP larger and output ¾ percent higher the implicit multiplier is ¼. This is smaller than the figure derived from the simulation with a constant 1 percent shock. This is because the GDP gap widened in 2008 and 2009 whereas in the prior experiment it was held constant. Given that the effects on demand from lower taxes and higher transfers builds over time the implicit multiplier derived by dividing *current* quarter change in GDP by the *current* quarter change in the deficit will be lower than the value obtained when the shock is constant.

Second, discretionary fiscal policy actions by the federal government boosted aggregate demand directly by 1 percent in 2008 and another 1 percent in 2009. State and local actions, excluding those induced by federal grants (which are included in federal FI) had negligible impact on aggregate demand in 2008, and were contractionary by about -0.4 percent of GDP in 2009. The retrenchment by state and local government largely reflects the pro-cyclical response induced by balanced budget requirements alluded to above. Combining federal and state and local discretionary actions together yields 1 percent boost to GDP in 2008 and ½ percent in 2009 leaving real GDP 1½ percent higher in 2009. Applying a multiplier of 1.3 would yield about 2 percent extra GDP in 2009.

Considerable attention has been given to the role of the portion of federal discretionary policies that were explicitly designed to stimulate the economy. During 2008 and 2009 numerous policies were enacted for stimulus reasons, the most prominent being the American Recovery and Reinvestment Act (ARRA) which passed in February 2009. Other policies include the 2008 temporary tax cut, the expansion and extension of unemployment benefits that have occurred several times, aid to first-time home buyers, the 2009 "Cash for Clunkers" program, and additional corporate tax relief. The Administration has proposed additional policies for 2010 and

2011, including extending several provisions that are slated to expire this year. Table 7 reports the significant elements of the enacted measures (including an assumed further extension of unemployment benefits). Personal tax cuts include a one-time rebate in 2008 and the "Make Work Pay" reduction in income taxes that began in April 2009 and which we assume will be treated by consumers as a permanent reduction in taxes, although it is slated to expire after 2010.[14] Transfers include increased unemployment benefits that have been part of five separate bills and which we assume will be extended again through the end of 2010. The third major piece of stimulus is increased grants to state and local governments for construction, education and general funds. Minor elements include temporary reductions in corporate taxes for partial expensing, and provisions to delay payment of taxes for several years through loss-carry-back and temporary indebtedness relief.

Table 7
Recent Federal Fiscal Stimulus Actions
(billions of dollars)

	4-year Total	Calendar Year			
		2008	2009	2010	2011
	(1)	(2)	(3)	(4)	(5)
Enacted	**845**	**146**	**298**	**324**	**76**
Individual tax cuts*	298	96	81	104	16
Expanded UI and other transfers	144	8	80	50	6
Aid to state and local governments	202	0	71	97	34
Corporate and other tax cuts	117	42	49	32	-6
Other spending	85	0	18	41	26
Proposed	**271**	**0**	**0**	**133**	**138**
Total	1116	146	298	457	214

* Excludes AMT relief, includes refundable credits.

14. We have excluded the temporary extension of AMT relief as is has been provided every years since 2003 and thus it has been previously incorporated in FI.

Figure 5
Effects of Fiscal Stimulus Actions
(percent of GDP)

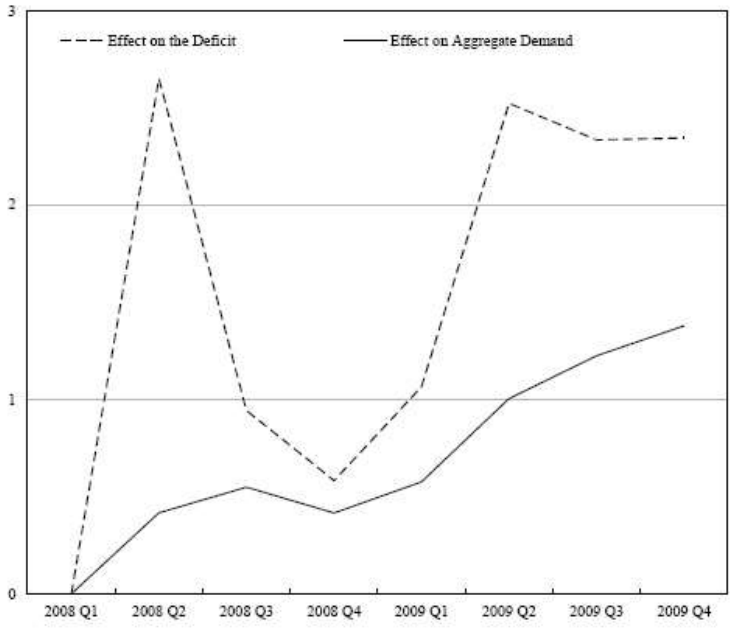


Figure 5 puts these on a national accounts quarterly basis and provides an estimate of fiscal impetus from stimulus legislation. In our judgment the aggregate demand effects of these provisions is more muted and drawn out than the budget effects. This reflects several factors. It is more muted because we assume temporary tax and transfers are mostly saved, particularly the corporate provisions, but also those for individuals. It is more drawn out because consumers phase in their response to the permanent tax cuts over several years. Moreover, we assume that state and local governments are expected to smooth out their spending response to the temporary boost in grants so that they will not have to make significant adjustments when the grants end at the end of 2010. Thus, the spending response is spread over the 2009-2012 period rather than just 2009 and 2010. As a result of these assumptions, the aggregate "MPC" from the stimulus is well below one in 2009, but eventually cumulates to about 0.7. As shown in Figure 5, the direct effects of the stimulus actions raise GDP

by 1¼ percent by the end of 2009; with a multiplier of 1.3 the total effect is about 1½ percent.[15]

V. CONCLUSIONS

This paper provides quantitative estimates of the effects of the automatic stabilizers on the government budget and on the economy. We find that at the general government level each 1 percent increase in the GDP gap increases the deficit by 0.45 percent of GDP with 0.35 percent of GDP occurring at the federal level. According to simulations with FRB/US, the automatic stabilizers provide a moderate amount of buffering of aggregate demand shocks. The stabilizers attenuate the effects on aggregate demand by about 10 percent after four quarters and 20 percent after eight quarters. Turning to active fiscal policy, the federal government has engaged in countercyclical policies following most business cycle peaks. This has been offset to some degree by tightening at the state and local level. During 2008-09, the combined effects of federal and state and local budgets on aggregate demand (from both discretionary actions and automatic stabilizers) may have lifted the level of GDP by 2½ percent in 2009.

REFERENCES

Autor and Duggan (2006). "The Rise in Disability Rolls and the Decline in Unemployment", *Journal of Economic Perspectives*, Summer 71-96.

Auerbach, Alan J. (2003). "Fiscal Policy, Past and Present", *Brookings Papers on Economic Activity*, 1, pp. 75-122.

Aizeman, Joshua and Gurnain Kaur Pasricha (2010). "On the Ease of Overstating the Fiscal Stimulus in the US, 2008-9", NBER working paper 15784.

Blank, Rebecca (2001). "What Causes Public Assistance Caseloads to Grow?" *Journal of Human Resources* 36, No. 1 (Winter): 85-118.

Bryaton, F. and P. Tinsley (eds.) (1996). "A Guide to FRB/US: A Macroeconomic Model of the United States" Finance and Economics Discussion

15. There are a wide range of projections of the effect of the ARRA portion of the stimulus. For example, the Council of Economic Advisors estimates that the year-over-year effect is about 1 percent in 2009 and report that the forecasts from major Wall Street forecasters range from 0.7 to 1.3 percent, with the fourth quarter level ranging from 1½ to 2½ percent.

Series 1996-42. Washington: Board of Governors of the Federal Reserve System.

Cohen, Darrel (1987). "Models and Measures of Fiscal Policy". Working Paper Series, Economic Activity Section, No. 70. Washington D.C.: Board of Governors of the Federal Reserve System.

Cohen, Darrel and Jason Cummins (2006). "A Retrospective Evaluation of the Effects of Temporary Partial Expensing", Finance and Economics Discussion Series, 2006-19.

Cohen, Darrel and Glenn Follette (2000). "The Automatic Fiscal Stabilizers: Quietly Doing Their Thing". *Economic Policy Review* 6 No. 1 (April): 35-68.

Coronado, Julia, Joseph Lupton and Louise Sheiner (2005). "The Household Spendng Response to the 2003 Tax Cut: Evidence from Survey Data", Finance and Economics Discussion Series, 2005-32.

Council of Economic Advisers (2010). "The Economic Impact of the American Recovery and Reinvestment Act of 2009 Second Quarterly Report", January 13.

DeLeeuw, Frank, Thomas Holloway, Darwin Johnson, David McClain, and Charles Waite (1980). "The High-Employment Budget: New Estimates, 1955-1980". *Survey of Current Business* (November): 13-43.

Follette, Glenn, Andrea Kusko and Byron Lutz (2008). "State and Local Finances and the Macroeconomy: The High-employment Budget and Fiscal Impetus", *National Tax Journal*, September.

House, Christopher, and Matthew Shapiro (2008). "Temporary Investment Tax Incentives: Theory with Evidence from Bonus Depreciation", *American Economic Review*, September, 1028-1038.

Johnson, David, Jonathan Parker and Nicholas Souleles (2004). "Household Expenditure and the Income Tax Rebates of 2001", NBER working paper 10784.

Kalman, Rupp, and David Stapleton (1995). "Determinant of the Growth in the Social Security Administration's Disability Programs - An Overview", *Social Security Bulletin*, Winter.

Knight, Brian (2002). "Endogenous Federal Grants and Crowd-out of State Government Spending: Theory and Evidence from the Federal Highway Aid Program," *American Economic Review,* 92(1).

Knight, Brian, Andrea Kusko and Laura Rubin (2003). "Problems and Prospects for State and Local Governments". *State Tax Notes* (August 11): 427-439.

Sahm, Claudia R., Mathew D. Shapiro, and Joel Slemrod (2009). "Household Response to the 2008 Tax Rebates: Survey Evidence and Aggregate Implications", Prepared for the NBER Conference on Tax *Policy and the Economy* Washington, DC (September).

Lutz, Byron (2008). "The Connection Between House Price Appreciation and Property Tax Revenues". *National Tax Journal* (September, 2008).

Lutz (2010). **"**Taxation with Representation: Intergovernmental Grants in A Plebiscite Democracy**"**, *Review of Economics and Statistics***,** forthcoming.

National Association of State Budget Officers (2009). *The Fiscal Survey of the States*. Washington, D.C. (June).

National Conference of State Legislatures (2008). *State Budget Actions FY 2007 and FY 2008.* Denver CO. April.

U.S. Congressional Budget Office (2010). "Estimated Impact of the American Recovery and Reinvestment Act on Employment and Economic Output From October 2009 Through December 2009", February.

U.S. Congressional Budget Office (various years). *The Budget and Economic Outlook*. Washington D.C.

van den Noord, Paul (2000). "The Size and Role of Automatic Fiscal Stabilizers in the 1990s and Beyond", *OECD Economics Department Working Papers*, No. 230.

Revista de Economía y Estadística - Vol. XLVIII - N° 1 - (2010) - pp. 75-103
Instituto de Economía y Finanzas - Facultad de Ciencias Económicas
Universidad Nacional de Córdoba - Argentina

The Crisis, Automatic Stabilisation, and the Stability Pact*

Jérôme Creel**
OFCE - Centre de Recherche en Économie de Sciences Po
ESCP - Europe
jerome.creel@sciences-po.fr

Francesco Saraceno
OFCE - Centre de Recherche en Économie de Sciences Po
francesco.saraceno@ sciences-po.fr

Abstract

This paper develops a comprehensive description of recent trends on the effectiveness of automatic stabilisers in the European Union, using both macro evidence on the cyclical sensitivity of budget deficits to economic activity and micro evidence on the tax and expenditure profiles. We conclude that there is increasing evidence of the declining importance of the automatic stabilisation. This points to a fundamental contradiction in the European Stability and Growth Pact, that relies almost exclusively on automatic stabilisation for the conduct of fiscal policy, We also argue, on the basis of past experience, that further increasing market flexibility does not seem a viable path to reduce aggregate fluctuations. The paper concludes by highlighting the complex relation between discretionary policies and automatic stabilisation.

---

* We wish to thank Daniele Franco for his invitation and to gratefully acknowledge comments by and discussion with Philip Arestis, Gerard Cornilleau, Giuseppe Fontana, Richard Hemmings, Christian Kastrop, Malcolm Sawyer, and Henri Sterdyniak on a first draft of this paper. Alessandra Iacobucci has been very helpful in explaining her filtering method. This paper benefited from funding by the European Community's Seventh Framework Programme (FP7/2007-2013) under Socio-economic Sciences and Humanities, grant agreement no. 225408 (POLHIA).

** Corresponding autor: Jérôme Creel, OFCE, 69 Quai d'Orsay, 75007 Paris, France. +33-1-44185456.

Keywords: Automatic stabilisers, tax progressivity, unemployment benefits, discretionary fiscal policy, European fiscal institutions, Stability and Growth Pact.

JEL classification: E6, H2, H3, H6.

RESUMEN

En este trabajo se presenta una descripción completa de las tendencias recientes sobre la eficacia de los estabilizadores automáticos en la Unión Europea, utilizando tanto datos macro acerca de la sensibilidad cíclica de los déficits presupuestarios sobre la actividad económica, como evidencia microeconómica sobre la estructura de impuestos y gastos. Llegamos a la conclusión de que existe creciente evidencia sobre la pérdida de importancia de la estabilización automática. Esto apunta a una contradicción fundamental en el Pacto para la Estabilidad y Crecimiento Europeo, que se basa casi exclusivamente en la estabilización automática para la determinación de la política fiscal. También señalamos, en base a la evidencia empírica, que incrementar la flexibilidad del mercado no parece un camino viable para reducir las fluctuaciones a nivel agregado. El artículo concluye resaltando la compleja relación entre las políticas discrecionales y la estabilización automática.

Palabras clave: Estabilizadores automáticos, progresividad impositiva, seguro de desempleo, políticas fiscales discrecionales, Instituciones Fiscales Europeas, Pacto de Crecimiento y Estabilidad.

Clasificación JEL: E6, H2, H3, H6.

I. INTRODUCTION

The paper deals with one inconsistency between the design of European governance since the inception of the Euro and its implementation. The institutional guidelines which led to the economic governance of Europe have long been grounded on the doctrine that dominated academic thinking and the circles of policy makers in the early 1990s (the New Classical Macroeconomics School, NCM hereafter)[1], faithful of the substantial capacity of markets to reach first best outcomes.

In particular, in what concerns fiscal policy, the Stability and Growth Pact (SGP) is designed with the explicit objective to ban discretionary fiscal

1. Another label that can be considered equivalent is "New Monetarism" (see Arestis et al., 2001).

policy, and to lay the burden of adjustment on the operation of automatic stabilizers. This institutional arrangement is therefore consistent, on the one hand, with a doctrine that is sceptical on the capacity of governments to exert a positive influence on the equilibrium of the economy, and, on the other hand, with a social and political environment like the one of most European countries, that gives extreme importance to the insurance role of the government and of the welfare state.

Yet, since the inception of the Maastricht Treaty, European institutions and academic circles have constantly called for a substantial reduction of the insurance role of the government, emphasizing the non viability of the welfare state, and invoking structural reforms in product and especially in labour markets. The crisis that started in 2007 has only temporarily weakened this trend. As soon as EU economies went past the acute phase of the crisis, the renewed plea for more flexibility, and speculative market pressure led EU governments to adopt a new macroeconomic governing framework: together with a modified Stability and Growth Pact, EU leaders agreed on "a Pact for the Euro plus" and a permanent European Stability Mechanism (ESM). Hence fiscal discipline has been complemented with incentives to perform (further) structural reforms on pension systems and on the labour markets with the objective to boost competitiveness.[2]

Despite this on-going process of reform in the EU, we maintain that weakening the capacity of the system to smooth fluctuations through automatic stabilization could be harmful precisely because the institutional system is designed to prevent discretionary policy. In this respect, the comparison with the United States is instructive. There, the social contract puts a relatively low weight on the insurance role of the government and on automatic stabilization. As a consequence, coherently with this democratic choice, discretionary macroeconomic policies need to be (and have been, as we will see below) active to smooth income fluctuations.

In other words, two equally legitimate and consistent systems can be designed, either a US-like one in which a marginal role for the welfare state is compensated by active discretionary fiscal and monetary policies; or a European treaty-consistent one in which constraints to discretionary policy go hand in hand with an important role for automatic stabilization.

If on the contrary the role of automatic stabilization were proven to be decreasing in Europe, with ongoing and constant calls for structural reforms,

2. See the conclusions of the European Council meeting of March 24 and 25, 2011.

Europe would be in neither of these two polar cases, and an inconsistency would emerge. Europe would live in a world where shocks would not be absorbed by automatic stabilizers, and in which fiscal and monetary authorities would either be prevented from intervention or would have to do so breaking the fiscal rules. It would then not be surprising to witness sluggish and volatile growth, except in cases in which economic expansion would be driven by exports –i.e. by an intensive recourse to market competitiveness–.

The current crisis shows that this issue is extremely relevant: fiscal policies have been praised for their capacity to sustain aggregate demand and to dampen the cycle (Arestis and Sawyer, 2010). Nevertheless, past the acute phase of the crisis, the old NCM doctrine has resurfaced. Due to large increases in public deficits and debts, European institutions, like governments, the European Commission and the European Central Bank, have started, as early as during the first semester of 2010, to call for a reversal in fiscal stances in order to gain credibility and have public deficits converge below the 3 per cent of GDP threshold. During the Greek debt crisis, more and more often, a "more stringent" Stability Pact was invoked, and the spring 2010 saw a number of countries announce fiscal retrenchment measures that sometimes were at odds with the forecasted unemployment and growth figures. The underlying message is simple: deficits have grown in bad times, because of automatic stabilisation and of the implementation of fiscal stimulus packages. Provided good times are coming back (or simply anticipating that they will), a symmetric evolution of deficits is required, through fiscal contractions. As a side argument, it is also argued that countries which did not abide by such a symmetric behaviour in the past are badly hit by financial markets: their risk premia are soaring.

The underlying analysis seems reasonable, but under specific assumptions that need to pass a comprehensive empirical test. Among these assumptions, one of the most dramatic is surely the one related to the full play of automatic stabilisers. Were automatic stabilisers strong, then smaller fiscal packages would be required[3] to counter a given shock like the current crisis; more importantly, on one side it would be easier to bring back deficit and debt under control, and on the other the requirement for reducing the scope of governments after the crisis is over would also be smaller.

Of course, the current crisis, and the subsequent increase in the number of liquidity constrained households and firms, has renewed interest in

3. For well-known political economy mechanisms, discretionary reductions of public deficits may be problematic (the ratchet effect argument).

automatic stabilizers.[4] Two recent examples, Afonso and Furceri (2008) and Crespo Cuaresma et al. (2009), use panel data for EU countries and the usual five definitions of automatic stabilisers: household direct taxes, business direct taxes, social security contributions, indirect taxes and unemployment compensation (see Giorno et al., 1995, van den Noord, 2000). These are studied independently; both studies conclude that the strength of automatic stabilisers has decreased over time.

In order to assess the consistency of the current thinking on EU fiscal policies, it is important to further review the level, evolution over time and effectiveness of automatic stabilisers in the EU. If we were to conclude in favour of a strong or increasing role for automatic stabilisers in the EU would reinforce the arguments about exit strategies and the necessity of a fast reduction of public deficits. If the opposite were true, an inconsistency would emerge, between the severity of the crisis and the call for a quick reversal of discretionary fiscal policies. If automatic stabilization does not (or no longer) suffice to ensure macroeconomic stabilization, there may be the need to keep discretionary policies to the foreground, not only during this severe crisis, but also in "normal" times.

The rest of the paper is organised as follows. Part II provides a short presentation of the past, current and future EU fiscal setting. Part III presents our own estimations of the scope of automatic stabilisers, and then reviews and discusses different approaches to estimating their effectiveness. Part IV turns to the question of macroeconomic stability and presents our own estimations of the cyclical components of real GDP for the euro area for a different set of frequency bands; our analysis does not allow to support the view that the decreased importance of automatic stabilizers may be justified by the increased capacity of market forces to smooth fluctuations. Part V concludes, with a discussion on the pros and cons of going beyond automatic stabilisers *via* discretionary fiscal policies.

II. Fiscal Rules in Europe

The economic institutions of Economic and Monetary Union in their actual design stem from two main sources (today consolidated into the Lisbon Treaty). The first is the founding Treaty signed in Maastricht in

4. This is evident from the number of recent papers devoted to this topic in the very recent past, that contrasts with the relative neglect of the previous decade A quick search of "automatic stabilis(z)ers" in the abstract of "journal articles" under EconLit leaves us with 72 articles; as a matter of comparison, searching for "inflation target" gives 726 results over the same period.

1991, and the second is the Amsterdam Treaty of 1997, that completed the setup with the SGP.

The Maastricht Treaty defined the convergence criteria that countries had (and still have) to fulfil in order to be admitted to the single currency area. In particular, it required a deficit to GDP ratio of no more than 3%, and a public debt below 60% of GDP, or approaching that level at a satisfactory pace.

The Amsterdam Treaty contains further provisions regarding fiscal policy that have the objective of increasing transparency and control on public finances. The Stability and Convergence Programmes that each year Member States present to the Commission have to contain a medium-term objective for the budgetary position of close to balance or in surplus, together with an account of the adjustment path towards the objective. The Excessive Deficit Procedure states what deviations from the 3% budget deficit ceiling are acceptable and describes the sanctions for the violators. As of May 2011, no country has been fined, although disapproval of budget positions in some countries has been expressed, and the public finance crises in Greece, Ireland and Portugal highlight the powerful effect of the SGP as a peer-pressure instrument.

The prolonged period of low growth experienced by most Euro area countries (especially the largest ones), and the increasing number of countries struggling to maintain their deficits within the limits set by the SGP, have triggered a debate on the flaws of the current fiscal framework, and on possible reforms aimed at a better functioning of fiscal policy in Europe.[5] The reform adopted by the European Council in March 2005 relaxed somewhat the medium term objective of a zero structural deficit for countries with low debt and/or with high potential growth; furthermore, it contemplates a number of circumstances (e.g. a strong engagement in costly structural reforms) allowing temporary deviations from the deficit ceiling, and longer delays for correcting them.

The requirement to attain a position of close to balance or surplus in the medium term is an important innovation of the SGP with respect to the Maastricht Treaty, and it was left substantially unchanged by the reform of 2005. In fact, it implies the strong consequence that public debt as a ratio to GDP should tend asymptotically to zero, a position hard to justify *per se* (de Grauwe, 2003). The standard pro-SGP argument maintains that the limit of total deficit to 3 percent, coupled with the requirement of structural balance,

5. For detailed accounts of the debate on reforming the Pact, see e.g. Arestis et al. (2001), Buti et al. (2003), Farina and Tamborini (2007), and Fitoussi and Le Cacheux (2007).

could avoid fiscal indiscipline (thus protecting central bank independence, and ensuring fiscal sustainability), while letting enough room for automatic stabilisation to take care of country specific shocks (see e.g. Brunila et al., 2002). Nevertheless, some empirical studies (see e.g. Barrell and Pina, 2004) pointed to the fact that the initial levels of debt-to-GDP ratios and cyclically-adjusted deficits in some Euro area Member States might have been too high on the wake of adopting the euro to permit the automatic stabilisers to operate freely within the constraints of the SGP.

Despite this criticism, the proposals for reform by the Van Rompuy Group or by the European Commission that have been discussed since the Greek bail-out package was announced in May 2010 do not consider the possibility of a change in the fiscal rule but, rather, a change in control over, and implementation of, national law of finances. The creation of a European Semester, and the requirement, stated in the "Pact for the Euro plus", that European fiscal rules (either on debt, primary surplus or expenditures) should be translated in national laws have certainly been aimed at a better coordination of European fiscal policies but also at the reinforcement of *current* fiscal rules.

After the reform of 2005 and even after the public finance crises of 2010 and 2011, the debate on the SGP has thus continually focused on the full operation of automatic stabilisers which would allow the implementation of a counter-cyclical short run fiscal policy. However, assessments of fiscal policies in the EU have either pointed to their a-cyclicality (Gali and Perotti, 2003) or their pro-cyclicality (Farina and Ricciuti, 2006, Candelon et al., 2010). This raises doubts about the effectiveness of automatic stabilisers all over Europe.

Before turning to our own evaluation of this latter point, it is worth recognising that the EU fiscal framework is based upon an unfriendly view of fiscal policy that largely stems from the New Classical Macroeconomics.

Four main sets of arguments have been advanced to justify this aversion: first, discretionary fiscal policy is subject to a number of delays (from decision to implementation) that make it impossible to use in reaction to shocks. By the time the effects of policy are felt, the shock it was supposed to address may have vanished. Second, fiscal policy produces crowding out effects on private expenditure (in particular investment) up to the point at which the overall increase in income becomes negligible. This may happen because the deficit is financed with borrowing, thus increasing interest rates (directly and because of the inflationary pressure of deficit) and the cost of

investment; or because public spending is aimed at moving the economy away from some sort of optimal or "natural" position, so that rational consumers react in order to bring the system back to its natural level. A weaker version of this argument focuses on the intertemporal budget constraint of rational consumers who anticipate future tax increases to repay for current deficits, and hence react by increasing their current savings and reducing their expenditure (the Ricardian equivalence, see Barro, 1974). Third, drawing on the latest argument in the vein of Barro, it has been argued that fiscal contractions could prove expansionary. Reversing the argument, fiscal expansions would reduce GDP: non-Keynesian effects would arise. Fourth, based on the national accounting identity it is possible to show that an increase in budget deficit may create an equivalent deficit of the current account, hence *twin deficits*, so that total domestic income may not increase, and the expansionary effect may benefit other countries through increased imports.

Many theoretical counter arguments and empirical weaknesses can be found in the above literature, which make it difficult to conclude in a precise way in favour or against the use of discretionary fiscal policy as a tool for stabilisation (see, e.g. Arestis and Sawyer, 2003, 2010; Blinder, 2006). Nevertheless, European fiscal rules have not changed since 2005. As a consequence, automatic stabilisation, to be opposed to policy discretion, remains the cornerstone of fiscal policy design in Europe.

III. The Effectiveness of Automatic Stabilisers in the EU

The effectiveness of automatic stabilisers depends on the sensitivity of government revenues and spending to economic fluctuations and on the sensitivity of economic activity to cyclical changes in government revenues and spending. Among the factors affecting budgetary sensitivity, the literature highlights the size of the public sector, the progressivity of the tax and benefit system, the sensitivity of tax bases to economic fluctuations, the institutional time profile of the tax system,[6] the level of unemployment benefits and the sensitivity of unemployment to fluctuations in economic activity.[7] Other factors, such as the nature and size of shocks, have an influence

6. By this we mean that automatic stabilisers are more effective if e.g. main tax revenues come from taxes which are very sensitive to economic fluctuations and whose lags are short. For example, corporate taxes are generally very sensitive to the economic cycle but delays in collection reduce the overall effectiveness of this tax as a prominent automatic stabiliser.

7. Darby and Melitz (2008) extend the analysis to a wider set of public spending categories: they show that age- and health-related social expenditures and incapacity benefits have a role to play as automatic stabilizers, as they also help to cushion the business cycle.

on the effectiveness of automatic stabilisers. Finally, the overall flexibility of the economy may also dampen the shocks; that may in turn overstate the effectiveness of automatic stabilisers.

In the following, we first present some macroeconomic estimations of the changing strength of EU automatic stabilisers; then, we review the evolution of the above-mentioned factors over time, distinguishing the macro evidence from the micro evidence on the effectiveness of automatic stabilisers in the EU since the adoption of the euro.

III.1. Automatic stabilisers: Macro evidence

We begin by a simple econometric exercise aimed at assessing the changing strength of automatic stabilisers over time. Starting from total net lending (NL) and the cyclically-adjusted public balance (CAPB), we define *cyclical public balance* (CPB) as the cyclical component of NL: $CPB = NL - CAPB$. All the data come from the OECD Economic Outlook. We then compute the semi-elasticity of CPB and CAPB to changes in the output gap (OG). The first captures the strength of automatic stabilisation, and the second the discretionary stance. By construction, cyclically-adjusted public balance data should not depend on the output gap as the overall public balance has been corrected for the incidence of cyclical evolutions. Nevertheless, CAPB data are not corrected for discretionary measures taken by governments to cope with cyclical evolutions. Thus, the relation between CAPB and OG may capture the will of the government to complement automatic stabilisers with fiscal stimuli (if the output gap is negative).[8]

We performed OLS estimations on Euro area and US data. Results appear in Table 1. They show, first, that the strength of automatic stabilisers in the USA has not changed over the years: the semi-elasticity of the CPB to OG is constant over the three reported time periods. This is not at all the case in the Euro area: after an increase in the 1990s, the strength of automatic stabilisers has steeply decreased during the following decade. The semi-elasticity has been halved between the 1990s and the 2000s, and is close to the US. Second, no discretionary stance is visible in the Euro area in the 1980s and the 1990s (the R^2 is nil) when automatic stabilisers were relatively strong. In the 2000s however, the semi-elasticity of the CAPB to OG changes is significant, although it is half that of the US.

8. We neglect here the possibility that the CAPB and the OG suffer from measurement errors.

Table 1
Strength of automatic stabilisers and discretionary fiscal policy in the Euro area and the US economy

	$CPB = \alpha . OG + \beta$					
	EURO AREA			USA		
	1980-89	1990-99	2000-09	1980-89	1990-99	2000-09
α	0.40	0.54	0.26	0.30	0.32	0.30
β	-0.12	-0.60	-0.64	-0.04	0.02	0.03
R^2	0.98	0.66	0.48	0.96	0.96	0.97
	$CAPB = \gamma . OG + \varepsilon$					
	EURO AREA			USA		
	1980-89	1990-99	2000-09	1980-89	1990-99	2000-09
γ	-0.00	-0.12	0.60	-0.15	1.15	1.19
ε	-4.77	-3.54	-1.40	-4.05	-2.19	-3.64
R^2	0.00	0.01	0.90	0.11	0.55	0.75

Sources: OECD, authors' computations.

Although at a rough level, these estimates confirm two things: automatic stabilisers have been less strong in the Euro area taken as a whole over the years, and relatively weak automatic stabilisers can be complemented with a strong discretionary stance as exemplified in the US.

Our rough evidence is consistent with other studies on the subject. Table 2 reports the main conclusions of different well-known macroeconometric models regarding the effectiveness of automatic stabilisation. These models estimate the percentage of fluctuations in output which are smoothed by automatic stabilisers.[9] The most striking result is the heterogeneity among countries in terms of the sensitivity of economic activity to the cyclical changes in government revenue and spending. The standard error of business

9. Although some models have been recently updated (for example, the QUEST model of the Commission), updates of the estimates of the smoothing national properties of automatic stabilisers are not available.

cycle smoothing through automatic stabilization across countries goes from 2 to 8%, for an average of 19% across models and countries. Moreover, the extent of smoothing for a country is quite different from one model to the other and the standard errors across models are large, ranging from 6% for Germany to 12% for the Netherlands. In spite of these discrepancies, which stem from the different model properties (the early inclusion of Ricardian consumers in NiGEM explains why the smoothing contribution is so small), overall, Table 2 shows that the effectiveness of automatic stabilisers in the EU is low: at best, they smoothed a maximum of 36% of economic fluctuations and at worst only 5% of them. This outcome is definitely consistent with Afonso and Furceri (2008) recent estimates with panel data for the EU: between 1980 and 2005 the smoothing of economic fluctuations by social contributions and social benefits is close to 5%, and to 7% respectively. Moreover, the authors do not find a substantial change in economic smoothing once they limit the sample to more recent years.

Table 2
Effectiveness of automatic stabilisers across EU countries (in %)

	BUNDESBANK MODEL (1)	QUEST MODEL (2)	NIGEM MODEL (3)	INTERLINK MODEL (4)
FRANCE	19	23	7	14
ITALY	14	21	5	23
NETHERLANDS	14	20	6	36
UK	24	18	n.a.	30
GERMANY	23	17	18	31
UNWEIGHTED AVERAGE	18.8	19.8	9.0	26.8
STD ERROR	4.8	2.4	6.1	8.5

Note: percentage of fluctuations in output which are smoothed by automatic stabilisers.

Sources: (1) Scharnagl and Tödter (2004); (2) European Commission (2001); Barrel and Pina (2004); van den Noord (2000).

Drawing on estimations by Blix (2008), it can be argued that the average cyclical sensitivity of public expenditures to a 1 percent change in the output gap in EU countries is low (-0.2%) and varies much across the sample of countries (standard error equal to 0.2). It comes that the homogeneity of fiscal rules at the level of countries in the EU is contradictory with the heterogeneity of empirical rules since the 1980s.

To summarize, we find evidence that the sensitivity of automatic stabilisers to changes in economic activity has decreased in the Euro area, and that the sensitivity of economic activity to cyclical changes in government revenues and spending has been rather low. The macro effectiveness of automatic stabilisers is therefore dubious.

III.2. Recent changes in revenue and expenditure trends

It was recalled earlier that the full working of automatic stabilisers rests predominantly on the size of the public sector, on the structure of the tax and benefit systems and on the level of unemployment benefits and their sensitivity to economic fluctuations. The evolution of these factors is described in the next subsections.

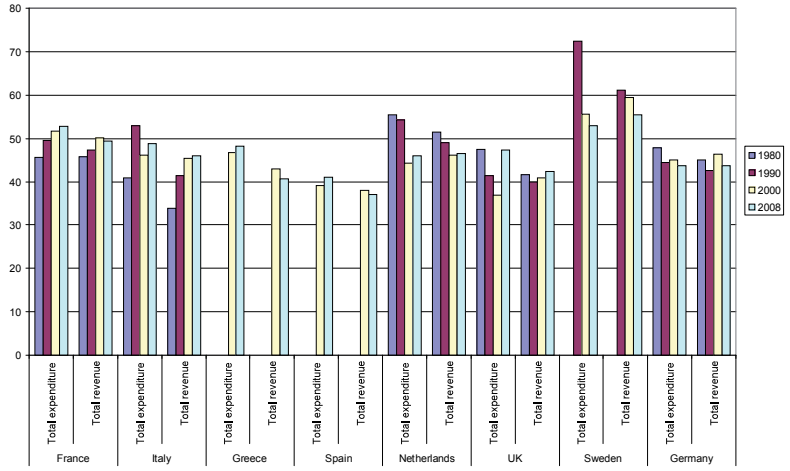
The size of the public sector

Since the seminal paper of Gali (1994), there have been many attempts to link the size of governments, using either the levels of expenditures or tax receipts, to output volatility/stability. Gali opted for a cross-country study involving only tax receipts, whereas van den Noord (2000) used public spending. Both showed that higher government size corresponds to lower output volatility. Using a sample of 20 OECD countries, Fatas and Mihov (2001) also showed that government size and the volatility of the business cycle were negatively correlated. Government size was measured by the ratio of public expenditures or tax revenues to GDP, and they concluded that larger governments had more effective automatic stabilisers. Lee and Sung (2007) confirmed earlier results by Fatas and Mihov (2001), using IV empirical techniques and making a distinction amongst public spending.

Our own calculations go in the same direction. Figure 1 displays the level and evolution of government size in 8 EU countries. Three groups of countries emerge with one outlier. The Netherlands, Sweden and Germany have reduced the size of their governments, in terms of revenues and expenditures, whereas France and Italy have rather increased it. Greece and Spain, over a shorter sample, constitute a third group in which spending has increased

whereas tax receipts have been reduced. The UK is the outlier: until 2006, this country joined the first group, but the financial turmoil has been so dramatic that public spending (over GDP) has recently sharply increased. This evolution stands in sharp contrast with what had happened since the 1980s. For the countries of the first and, to a lesser extent, the third group, and following Fatas and Mihov (2001), it can be concluded that automatic stabilisers are now less effective than in the past. An opposite conclusion holds for France and Italy.

Figure 1
General government size in the EU (in % of GDP)



Source: Eurostat.

On average, EU-8 total expenditures and total revenues have decreased since the 1990s. Measured by the standard error of cross-country public spending, discrepancy across EU countries was at its lowest in 2008 (4.1%), in comparison with 11% and 6% in 1990 and 2000 respectively: there has been strikingly more homogeneity in government spending in the EU than in the past, at a time when the size of governments was on average on a downward trend. The same conclusion holds for total revenues.

These conclusions are consistent with Debrun et al. (2008), who found out that above a threshold level of public spending, the effectiveness of automatic stabilisers was sharply reduced. They also pointed to a decrease in effectiveness since the 1990s.

The progressivity of the tax and benefit system

Since the end of the 1990s, there has been a sharp modification in the tax and benefit systems of the EU-15 countries: In many of them the redistributive role of the system has been attenuated (see, e.g. Creel and Saraceno, 2009), while at the same time top marginal tax rates were reduced.

Table 3
Number of tax brackets and marginal income tax rates*

		1981	1991	2001	2008
BELGIUM	Number of Brackets	23	7	7	5
	Maximum Rate	72%	55%	55%	50%
FRANCE	Number of Brackets	12	12	6	4
	Maximum Rate	60%	56.80%	52.75%	40%
GERMANY	Number of Brackets	2	2	2	2
	Maximum Rate	56%	53%	48.50%	45%
ITALY	Number of Brackets	32	7	5	5
	Maximum Rate	72%	50%	45%	43%
SPAIN	Number of Brackets	30	16	6	4
	Maximum Rate	65.09%	56%	39.60%	27.13%
IRELAND	Number of Brackets	5	3	2	2
	Maximum Rate	60%	52%	42%	41%
UK	Number of Brackets	6	2	3	2
	Maximum Rate	60%	40%	40%	40%

* Central government rates.

Source: OECD Tax Database (www.oecd.org/ctp/taxdatabase). Calculations of the authors.

Table 3 reports central government marginal tax rates of a few European countries, together with the number of tax brackets. While this measure is only partial (the overall degree of progressivity also depends on the structure of the tax base, on thresholds, exemptions, etc), the trend is unequivocal. One

can easily see that in most countries there was a sharp decrease in both the marginal rate and the number of brackets, going thus towards a less progressive tax system. The complexity of the tax system on the other hand may hide other trends of inframarginal rates and thresholds that may redistribute income towards the very poor, thus implying an increase of average propensities to consume and of multipliers, in spite of the overall decrease of progressivity.[10] Nevertheless, recent studies on the long run evolution of income distribution (see IMF 2007, OECD 2008, and Krueger et al., 2010 among the most recent works) suggest that this possibility is not realistic.

Table 4
Main corporation tax rate, in percentage points

	1990	2000	2005	2009
AUSTRIA	30		25	20
BELGIUM	43	40.2	35.5	35.5
DENMARK	50		28	25
FINLAND	33	29	26	26
FRANCE	42 (distributed profit) 37 (retained profit)	37.8	34.9	34.4
GERMANY	36 (distributed profit) 50 (retained profit)	52	39.3	15.8
GREECE	46 (40: industry)		32	25
IRELAND	43 (10: industry)	24	12.5	12.5
ITALY	36	37	33	27.5
LUXEMBOURG	34	37.5	30.4	21.8
NETHERLANDS	35		31.5	25.5
PORTUGAL	34		27.5	25
SPAIN	35	35	35	30
SWEDEN	52		28	26.3
UK	35	30	30	28

Sources: European Tax Handbook 2005 and 2009, year 1990 reproduced from Sterdyniak (2005, p.24), and year 2000 reproduced from Saint-Etienne & Le Cacheux (2005, p.22).

10. We owe this remark to Richard Hemmings.

Table 4 displays corporate tax rates in EU-15 countries. Except in Spain where the change occurred later, corporate tax rates have decreased since 1990 or 2000. The common wisdom maintains that this significant and widespread reduction enhances productivity, incentives and entrepreneurship. In the short run, lower corporate tax rates may induce higher profitability that may fuel investment and employment. Nevertheless, besides their distributional consequences, they may also induce to distribute more profits which may then be invested elsewhere in the world economy and which may become unavailable for financing domestic social benefit systems. Moreover, if lower corporate taxes do not succeed in fuelling production and growth, the consequent rise in public deficits in Europe may push governments to reduce transfers and other public expenditures; in this sense, lower corporate taxes may have as a side effect the reduction of automatic stabilisation.

Possible tensions on public finances because of lower taxes do not come exclusively from corporate tax rates: taxes on labour incomes have also decreased in the recent past (see OECD, 2006). Only Denmark and, to a lesser extent, Finland, Greece and Sweden, have not witnessed such a decrease. Apart from these countries, tax cuts are general and they may have had a bad outcome on the effectiveness of automatic stabilisers. The latter are also currently hurt by the implementation of the OECD Employment Strategy: Belgium, Denmark, Germany, and the Netherlands all experienced declining replacement rates and/or shortened benefit duration.

The decreasing size of the government may thus impair economic stability, as Fatas and Mihov (2001) argued (see above); but it may also fuel social discontent or unrest. A look at Table 5 shows that except in a few countries (France, Ireland and the UK, even if the latest two experienced reductions in the replacement rates and benefit duration), the employment protection legislation (EPL) index[11] has been reduced since the mid-1980s and, quite often, sharply so like in Belgium, Germany, Italy, Portugal, Spain and Sweden. Lower taxes and lower protection may impair the effectiveness of automatic stabilisers and may contradict their advocates during the current crisis.

11. The EPL, introduced by Nicoletti et al. (2000), is extensively discussed in OECD (2006). It is built by aggregation of 18 indexes from three main areas: Employment protection of regular workers against individual dismissal; specific requirements for collective dismissals; and regulation of temporary forms of employment. As all aggregative indexes, it is not exempt from criticisms (see e.g. Bertola et al., 2000; Fitoussi, 2003). Nevertheless, it is a useful representation of the trends in employment protection over time.

Table 5
EPL index*. Selected years

	1985	1995	2005	2008
AUSTRIA	2.21	2.21	1.93	1.93
BELGIUM	3.15	3.15	2.18	2.18
DENMARK	2.4	1.5	1.5	1.5
FINLAND	2.33	2.16	2.02	1.96
FRANCE	2.79	2.98	3.05	3.05
GERMANY	3.17	3.09	2.12	2.12
GREECE	3.56	3.5	2.73	2.73
IRELAND	0.93	0.93	1.11	1.11
ITALY	3.57	3.57	1.82	1.89
NETHERLANDS	2.73	2.73	2.12	1.95
PORTUGAL	4.19	3.85	3.46	3.15
SPAIN	3.82	3.01	2.98	2.98
SWEDEN	3.49	2.47	2.24	1.87
UK	0.6	0.6	0.75	0.75
US	0.21	0.21	0.21	0.21
EMU11**	-	2.75	2.23	2.2

Source: OECD, Employment Outlook, 2004. Data for 2005 and 2008 from OECD STATS (http://stats.oecd.org/index.aspx).

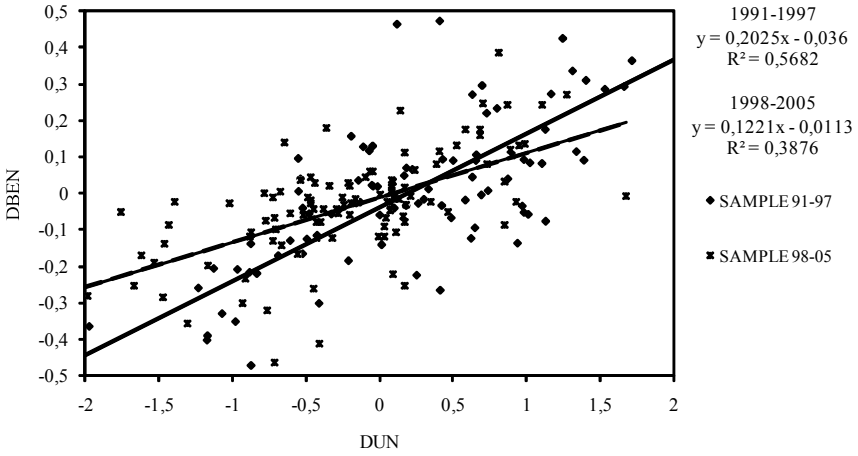
* Version 1 (unweighted).

** EMU11: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Slovak Republic, Spain.

Unemployment expenditures

Some items of public spending, in particular those linked to the support of the unemployed, help to balance the consequences of shocks. A negative shock on aggregate demand is partly dampened by generous unemployment benefits which sustain consumption of those most dramatically hit by the shock. More active unemployment public expenditures –those labelled under the heading of active labour market policies (ALMP), mostly training– also reduce the costs of unemployment for the unemployed, promoting their employability and improving their probability of finding a new job, thus shortening unemployment duration. Expenditure aimed at fighting unemployment can help to maintain economic stability through a combination of supportive measures for the demand for labour and enhancing the effective supply of labour. Consequently, the sum of passive *and* active unemployment public expenditures reveals the stabilisation properties of unemployment expenditures.

Figure 2
Relationships between the variation in unemployment public expenditures (expressed in percentage points of GDP) and the variation in unemployment rate, both stated in %, EU 15, 1991-1997 and 1998-2005



Source: OECD, computations by the authors.

In general, the responsiveness of unemployment expenditures to the unemployment rate has decreased, thus reducing the stabilising properties of the system. Figure 2 displays pairs of yearly variations[12] in unemployment public expenditures (active and passive expenditures) and yearly variations in unemployment rates, for the EU-15 countries, distinguishing two sub periods of equal length: before and after the Amsterdam Treaty, hence: 1991-1997 and 1998-2005.[13]

We expect these points to be evenly distributed on an upward line whose slope will reveal the average elasticity of unemployment expenditures to the unemployment rate. There is actually a very interesting pattern in Europe: since 1998, the elasticity of unemployment public expenditures to the unemployment rate has been significantly lower than before (0.1 rather than 0.2 on average). Stated differently, the relationship between variations in unemployment expenditures and unemployment rates was stronger in the preceding period despite the Maastricht public finance criteria.

It is also noteworthy that the level of unemployment expenditures for the same rate of unemployment has decreased since 1998, in comparison with the preceding period. This latter property of the European social system appears clearly in the cases of Italy, France, Spain, Austria and, to a lesser extent, Germany (see, Creel and Saraceno, 2009, for more details).

To sum up, the stylised facts on the reduction of tax rates, the reduction in the progressivity of the tax and benefit systems, and the reduction in the Employment Protection Legislation, all seem to point unequivocally towards a decrease of the effectiveness of automatic stabilisation in European countries.

Therefore, public deficits may be less and less cyclical, or less and less able to dampen fluctuations. In the literature, (e.g., Girouard and André, 2005) it is customary to report elasticities of taxes, transfer payments and other expenditures with respect to GDP growth, elasticities which have generally remained constant over time. Looking at unemployment expenditures only, it is however possible to suggest that for most of EU countries their relationship with GDP growth rate has changed substantially since the end of the 1990s.

12. With a short sample it has not been possible to perform a panel test with fixed effects, so that we have chosen a specification in first differences to remove country effects.

13. The Amsterdam Treaty in 1997 made clear that the transition period towards the adoption of the Euro would not be followed by a benign-neglect attitude towards public deficits: the convergence criterion of a public deficit below 3-percentage points of GDP was soon to become a rule of conduct within the newly constituted Euro area.

IV. How to Substitute for Automatic Stabilisation?

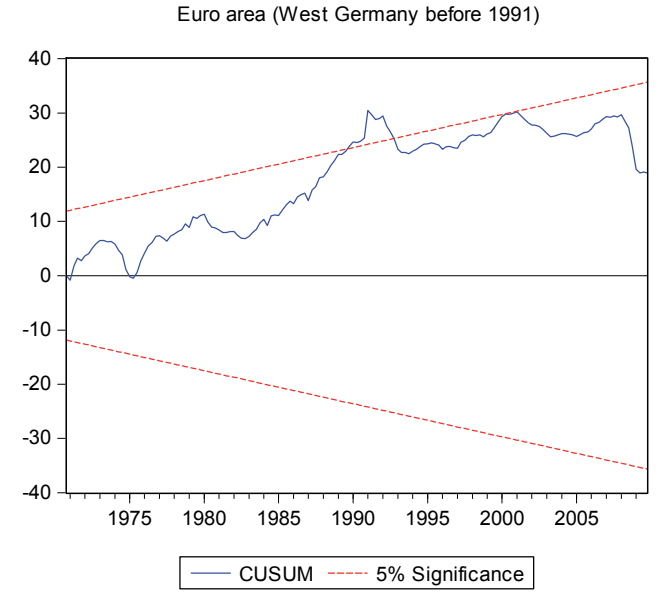
The decreased strength and effectiveness of automatic stabilisers in Europe, highlighted in the preceding section, cannot be inevitably attributed to bad EU governance. It may simply be due to the fact that automatic stabilisers have recently been less necessary than they used to in the past. It may well be argued that, in a competitive world where markets (for labour, goods and services or finance) are highly flexible, prices adjust rapidly to bring output fluctuations under control.

Although the above-mentioned argument is common among economists who promote more flexibility and "structural reforms" in Europe (see e.g. Sapir et al., 2003), it needs to be supported by identifiable empirical facts. In the vein of McConnell and Perez-Quiros (2000), who documented the decline of US output volatility, we study output volatility in Euro area countries taken as a whole. We remove the mean of GDP growth from yearly GDP growth rates; we then fit a constant and a linear trend to the ensuring gap; and we perform a CUSUM and CUSUM of squares test on the cumulative sum of the recursive residuals.[14] The CUSUM of squares test reports possible instability in the variance of the parameters.

For the Euro area, parameter instability in the variance occurs only around the German reunification years or during the latest crisis (Figure 3). It remains that parameter instability is statistically significant only using the CUSUM test in the former case and the CUSUM of squares in the latter. Although not statistically significant, parameter instability increased between 1985 and 1991, and has been declining over the recent years. The same conclusion holds for the US where results confirm those of McConnell and Perez-Quiros (2000).

14. A well-known drawback with a CUSUM test based upon recursive residuals is that a shift late in a sample is likely to go relatively unnoticed. A CUSUM test using OLS residuals gives better results for late-sample data, but none of the tests can be considered significantly superior to the other (Ploberger and Krämer, 1992).

Figure 3
Real GDP growth rates, 1970:1-2006:2



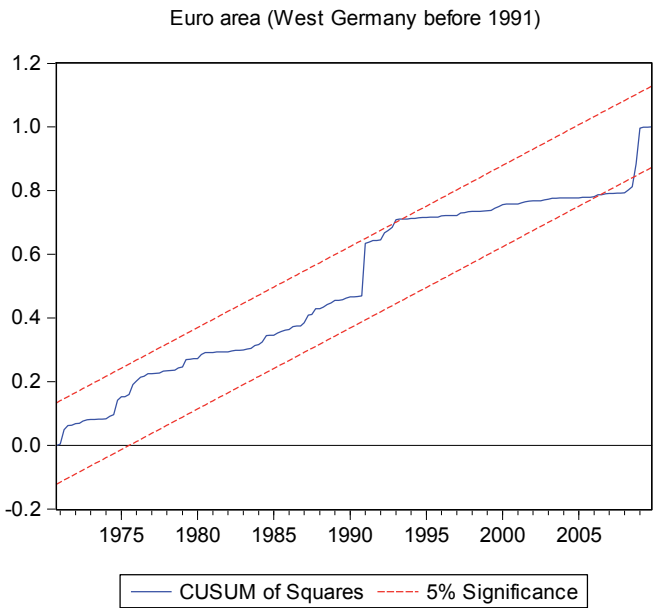
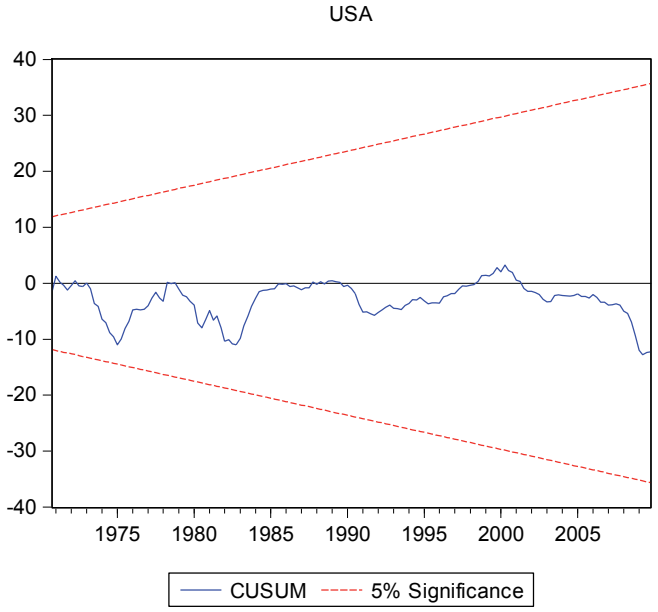
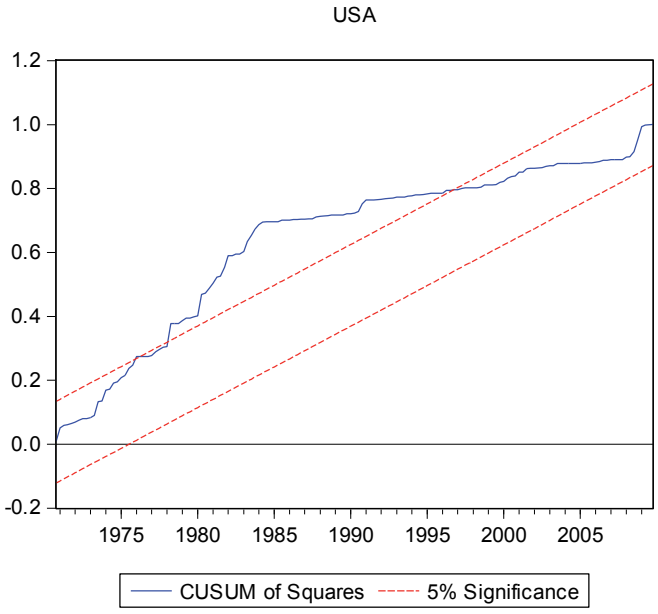


Figure 3
Real GDP growth rates, 1970:1-2006:2 (continued)





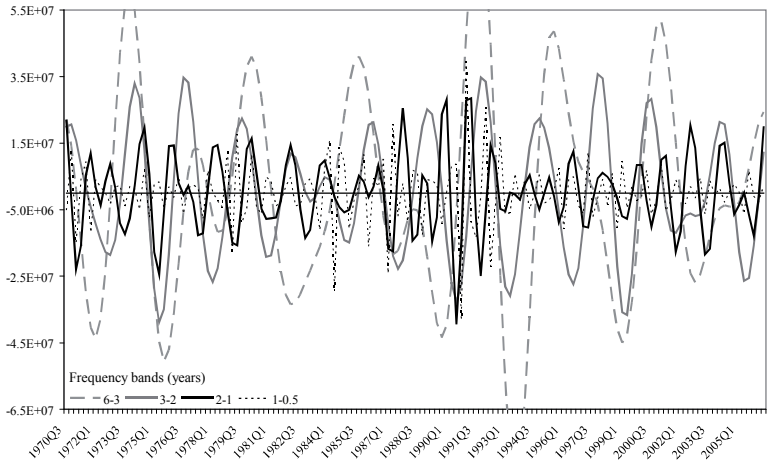
Hence, at least since the early 1990s, like the US, Europe seems to have experienced a decline in output volatility. Nevertheless, contrary to what happened in the US, the decreased variability in Europe happened against a background of soft growth through the 1990s, with the largest European countries, notably Germany and Italy, which experienced growth rates close to zero (in 2002-3) and significantly below the EU average. In a context of low growth, it shall not be surprising that the variability of growth decreased.

To eliminate the effect of changing growth trends, we detrended the series and analyzed the behaviour of cyclical components. There are many frequency filters in the macroeconomic literature for trend and cyclical extraction. The three most widely used are Hodrick-Prescott, Baxter-King and Christiano-Fitzgerald. Though they retain their own specificities, they have a common shortcoming: they are not performing well with short samples. For this reason, we used the filter proposed by Iacobucci and Noullez (2005) that over short samples has a better performance with respect to these more widely used filters.[15]

Figure 4 shows the cyclical components of real GDP for the euro area for a number of frequency bands, from medium (6-3 years) to very short (1 year-6 months) cycles. A visual inspection shows that, in particular for the 6-3 year band, we observe an increase in variability in the early 1970s, and in the early 1990s, two periods of macroeconomic turbulence. Nevertheless, the picture shows no clear reduction in variability in recent periods, no matter what frequency we examine. To obtain a less impressionist assessment, we computed, for each of the frequency bands, the standard errors of two subperiods of equal length (1970Q3 to 1988Q2, and 1988Q3 to 2006Q2). The results, reported in Figure 5, show that for all the frequencies (except the very long cycles 18-6 years) the variability in the second period is slightly larger than in the first. Using a cut-off between the periods linked to institutional changes (for example the Single European Act of 1986, or the Maastricht Treaty of 1992), does not alter significantly our findings, which are also robust to detrending the series with the standard HP filter.

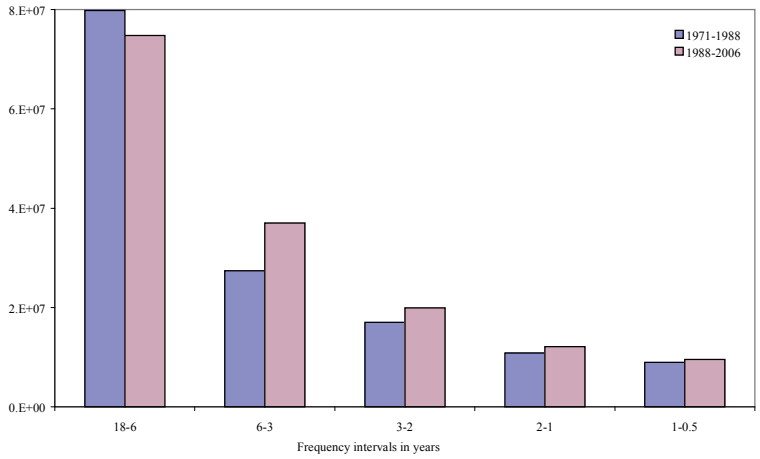
15. Using either an artificial series or Euro zone quarterly GDP data between 1970:1 and 2001:4, Iacobucci and Noullez (2005) show that their frequency selective window-filter fares better than the three above-mentioned filters especially towards the extremes of the series.

Figure 4
Cyclical components for the Euro area real GDP; selected frequencies



Source: OECD. Series obtained using the Iacobucci and Noullez (2005) filter.

Figure 5
Standard error of the filtered series at different frequencies. Two subsamples of equal length



Source: OECD; series obtained using the Iacobucci and Noullez (2005) filter
Calculations of the authors.

As a conclusion, it cannot be argued that the decrease in output variability has made automatic stabilization less necessary than in the past. The argument that the decreased strength and effectiveness of automatic stabilizers is compensated by income stability can thus be dismissed.

Finally, we may notice that, contrary to the US, the Euro area countries are confronted with a very specific policy architecture which leaves monetary and fiscal policy uncoordinated and whose federal budget is both small (1 percentage point of EU-27 GNP) and not allowed to contribute to stabilising the economies. This fetters domestic fiscal policies.

Thus, we can conclude that the likely occurrence of asymmetric shocks in the EU and the institutional framework question the belief that increasing flexibility will be sufficient to assure income stabilisation (especially when average growth will go back to more standard levels). This is somewhat confirmed if we analyze Figure 3 together with Table 5, that documents a significant increase in labour market flexibility. This flexibility did not yield a significantly improved capacity of the economy to react to shocks.

V. CONCLUDING REMARKS

In this paper we highlighted a contradiction between the spirit of the Stability and Growth Pact, and the actual behaviour of fiscal policies in Europe. On the one hand the Pact is designed with the objective to rule out any discretion in the conduct of fiscal policy, thus leaving to automatic stabilisation the task of countercyclical policy; on the other hand, though, a number of stylized facts that we reported points to a significant decrease of the role of automatic stabilisation. Progressivity of the tax system and the size of the public sector have been reduced in most European countries, and the sensitivity of unemployment benefits to the unemployment rate has decreased since the late 1990s. Meanwhile, another prominent reason for defending discretionary fiscal policy appeared. A recent strand of literature, started by Blanchard and Perotti (2002), confirms that the empirical evidence is unable to rule out a positive role for discretionary fiscal policy.

Thus, even if we were to adhere to the principles behind the setting chosen by European countries to rule economic policy, and we gave importance only on automatic stabilisation, we would be forced to recognize that the design of fiscal policy in Europe is mostly dysfunctional.

The debate opened at the beginning of this decade on the flaws of the Stability Pact had been closed by the reform of 2005 that took it out of the

political agenda. While it has been reopened by the crisis and the debt difficulties of some countries, there is no discussion today about the respective role of discretionary policy and automatic stabilisation.

We believe on the contrary that this moment of crisis may actually be an opportunity. The current difficulties experienced by an increasing number of Eurozone countries show the risks of imprudent fiscal behaviour. Our paper highlights nevertheless that the impact of fiscal policies passes through a multiplicity of channels and this complexity should be kept in mind both in implementing effective policies and in designing fiscal rules.

REFERENCES

Afonso A. and D. Furceri (2008), "EMU enlargement, stabilisation costs and insurance mechanisms", *Journal of International Money and Finance*, 27(2), 169-187.

Arestis, P., McCauley, K. and Sawyer, M., (2001) "An alternative stability pact for the European Union", *Cambridge Journal of Economics*, 25(1), 113-130.

Arestis, P. and M. Sawyer (2003), "Reinventing fiscal policy", *Journal of Post-Keynesian Economics*, 26(1), 3-25.

Arestis, P. and M. Sawyer (2010), "The return of fiscal policy", *Journal of Post-Keynesian Economics*, 32(3), 327-346.

Barrell R. and A.M. Pina (2004), "How Important Are Automatic Stabilisers in Europe? A Stochastic Simulation Assessment", *Economic Modelling*, 21(1), 1-35.

Barro R.J. (1974), "Are Government Bonds Net Wealth?", *Journal of Political Economy*, 82(6), 1095-117

Bertola G., Boeri T. and Cazes S. (2000), "Employment protection in industrialized countries: The ca se for new indicators", *International Labour Review*, 139(1).

Blanchard, O. and R. Perotti (2002). "An Empirical Characterization of the Dynamic Effects of Changes in Government Spending and Taxes on Output." *Quarterly Journal of Economics* 117(4), 1329-68.

Blinder, A. S. (2006). "The Case against the Case against Discretionary Fiscal Policy". *The Macroeconomics of Fiscal Policy*. R. W. Kopcke,

G. M. B. Tootell et R. K. Triest, Eds. Cambridge and London, MIT Press, 25-61.

Blix M. (2008), "How well do the automatic stabilisers work?", *mimeo*.

Brunila, A., M. Buti and J. In't Veld (2002). "Fiscal Policy in Europe: How Effective Are automatic Stabilisers?" *European Economy, Economic Papers*, 1 no. 77-2002.

Buti M., S.C.W. Eijffinger and D. Franco (2003), "Revisiting the SGP: Grand Design or Internal Adjustment?", *CEPR Discussion Paper*, no.3692, January.

Candelon B., J. Muysken and R. Vermeulen (2010), "Fiscal policy and monetary integration in Europe: an update", *Oxford Economic Papers*, 62(2), 323-349.

Creel J. and F. Saraceno (2009), "Automatic stabilisation, discretionary policy and the Stability Pact", in J. Creel and M. Sawyer (eds.), *Current thinking on fiscal policy*, Basingstoke: Palgrave MacMillan, January.

Crespo Cuaresma J., G. Reitschuler, and M.-A. Silgoner (2009), "On the effectiveness and limits of fiscal stabilizers", *Applied Economics*, August, 1-8.

Darby, J. and J. Melitz (2008). "Social Spending and Automatic Stabilizers in the OECD." *Economic Policy* **56**: 715-46

Debrun X., J. Pisani-Ferry and A. Sapir (2008), "Government size and output volatility: should we forsake automatic stabilization?", *European Economy*, Economic Papers 316, April.

de Grauwe, P. (2003). "The Stability and Growth Pact in Need of Reform", *mimeo,* University of Leuven.

European Commission (2001), "Public finances in EMU - 2001", *European Economy*, 3.

Farina F. and R. Tamborini (eds.) (2007), *Economic Policy in the EMU. From the Old to the New Stability and Growth Pact*, London: Routledge.

Farina F. and R. Ricciuti (2006), "L'évaluation des politiques budgétaires en Europe", *Revue de l'OFCE*, 99, Pp. 275-301

Fatas A. and I. Mihov (2001), "Government size and automatic stabilisers: international and intranational evidence", *Journal of International Economics*, 56(1), 3-28.

Fitoussi, J.-P. (2003), "The Beveridge Curve, Unemployment and Wages in the OECD from the 1960s to the 1990s: Comment", in P. Aghion *et al*, (Eds.), *Knowledge, information, and expectations in modern macroeconomics: In honor of Edmund S. Phelps,* 432-40, Princeton and Oxford, Princeton University Press.

Fitoussi J.-P. and J. Le Cacheux (eds.) (2007), *Report on the State of the European Union* Volume 2. Basingstoke: Palgrave-MacMillan.

Gali J. (1994), "Government Size and Macroeconomic Stability," *European Economic Review*, vol. 38, 117-132.

Gali, J. and R. Perotti (2003). "Fiscal Policy and Monetary Integration in Europe." *Economic Policy* 0(37), pp. 533-64.

Giorno C., P. Richardson, D. Roseveare and P. van den Noord (1995), "Estimating Potential Output, Output Gaps and Structural Budget Balances", *OECD Economics Department Working Papers* 152, OECD, Economics Department.

Girouard N. and C. André (2005), "Measuring cyclically-adjusted budget balances for OECD countries", *OECD Economics Department Working Paper* 434.

Iacobucci, A. and A. Noullez (2005). "A Frequency Selective Filter for Short-Length Time Series." *Computational Economics*, 25 (1-2), 75-102.

IMF (2007) *World Economic Outlook: Globalization and Inequality*. October.

Krueger, D., F. Perri, L. Pistaferri and G. Violante (2010), "Cross Sectional Facts for Macroeconomists", *Review of Economic Dynamics* - Special Issue, 13(1).

Lee Y. and T. Sung (2007), "Fiscal policy, business cycles and economic stabilisation: evidence from industrialised and developing countries", *Fiscal Studies*, 28(4), 437-462.

McConnell M.M. and G. Perez-Quiros (2000), "Output Fluctuations in the US: What Has Changed Since the Early 1980's?", *American Economic Review*, 90(5), 1464-76.

Nicoletti, G., S. Scarpetta and O. Boylaud (2000), "Summary Indicators of Product Market Regulation with an Extension to Employment Protection Legislation" *OECD Economics Department Working Papers*, 226, April.

OECD (2006), *Employment outlook*, Paris: OECD.

OECD (2008), Growing Unequal? Income Distribution and Poverty in OECD Countries. October.

Ploberger W. and W. Krämer (1992), "The CUSUM test with OLS residuals", *Econometrica*, 60(2), 271-85.

Saint-Etienne C. and J. Le Cacheux (2005), "Croissance équitable et concurrence fiscale"**,** *Rapport du Conseil d'analyse économique, 56*, La Documentation française, October.

Sapir A., P. Aghion, G. Bertola, M. Hellwig, J. Pisani-Ferry, D. Rosati, J. Vinals and H. Wallace (2004), *An Agenda for a Growing Europe*, Oxford University Press.

Scharnagl M. and K-H. Tödter (2004), "How effective are automatic stabilisers? Theory and empirical results for Germany and other OECD countries", *Deutsche Bundesbank Discussion Paper*, 21.

Sterdyniak H. (2005), "Taxation in Europe: Towards more competition or more co-ordination", *OFCE Working Paper*, 19-2005.

Van den Noord P. (2000), "The size and role of automatic stabilisers in the 1990s and beyond", *OECD Economics Dpt. Working Paper*, 230.

Revista de Economía y Estadística - Vol. XLVIII - N° 1 - (2010) - pp. 105-139
Instituto de Economía y Finanzas - Facultad de Ciencias Económicas
Universidad Nacional de Córdoba - Argentina

Fiscal Activism in Booms, Busts, and Beyond

Ludger Schuknecht*
European Central Bank
Ludger.Schuknecht@ECB.europa.eu

Abstract

This paper discusses activist fiscal policies during good times, the crisis period and for the post-crisis period. The study argues, first, that fiscal policies were overly imprudent during the boom phase preceding the crisis. This was due to excessive expenditure growth and problems with measuring the output gap and fiscal stance. Second, during the crisis, too much emphasis was placed on the need for (activist) fiscal demand support despite demand excesses in the boom years in several countries. Fiscal activism focussed less (and less strongly than needed) on the balance sheet nature of the crisis and the significant misallocation of resources. Third, and given strong increases in public expenditure ratios in the crisis, timely fiscal exit strategies need to bring these down to sustainable levels so as to regain fiscal sustainability and to create an environment conducive to consolidation and growth.

Key words: Fiscal activism, booms and busts, consolidation, expenditure policies.

JEL classification: E62, E63, H62.

---

* The views expressed are the authors and do not necessarily represent those of the ECB. I am grateful to Vilem Valenta, Geert Langenus and to participants of the Banca d'Italia 2010 workshop in Perugia for very helpful comments.

RESUMEN

Este documento analiza las políticas fiscales activas durante el período de auge, durante el período de crisis y durante el período posterior a la crisis. El estudio argumenta, en primer lugar, que las políticas fiscales fueron demasiado imprudentes durante la fase de auge anterior a la crisis. Esto se debió al crecimiento excesivo del gasto y a problemas con la medición de la brecha del producto y la posición fiscal. En segundo lugar, durante la crisis, en varios países se puso demasiado énfasis en la necesidad apoyo fiscal (activista) a pesar de los excesos de demanda en los años de auge. El activismo fiscal se centró menos (y menos fuerte de lo necesario) en la naturaleza de balance de la crisis y en la mala asignación de recursos. En tercer lugar, y teniendo en cuenta los fuertes incrementos en las tasas de gasto público durante la crisis, estrategias de política fiscal tienen que llevar el gasto público a niveles sostenibles con el fin de recuperar la sostenibilidad fiscal y crear un entorno propicio para la consolidación y crecimiento.

Palabras clave: Estabilizadores automáticos, progresividad impositiva, seguro de desempleo, políticas fiscales discrecionales, Instituciones Fiscales Europeas, Pacto de Crecimiento y Estabilidad.

Clasificación JEL: E62, E63, H62.

> *"Even the most practical man of affairs is usually in the thrall of the ideas of some long-dead economist"* KEYNES.
>
> *"Today, the long dead economist is Keynes" [...] "The policy mistake has already been made – to adopt the fiscal policy of a world war"* NIALL FERGUSSON, in FT 30/31 May 2009.

I. INTRODUCTION

The financial crisis has changed both the intellectual environment and the outlook for fiscal policies strongly. Before the financial crisis, the consensus appeared to be that discretionary fiscal policies were normally not desirable for demand management (ECB, 2002). Automatic stabilisers in Europe were seen to be large and better targeted and timely for this purpose. Discretionary policy changes would be applied to attain consolidation objectives—which were to be in line with the SGP and structural changes which aimed to boost growth.

With the intensification of the financial crisis in autumn 2008, a renaissance of Keynesian thinking gripped not only much of the economic profession but also many policy makers of all colours. The crisis was declared a demand shock which was argued to require a demand stimulating response (Freedman et. al, 2009). While the duration of the renaissance in Keynesian thinking is unclear the much-deteriorated outlook for fiscal sustainability associated with it is certainly a huge challenge for many years to come.

The quick succession of concerns about the economic meltdown followed by concerns about too early or too late fiscal consolidation drowned out a number of very important questions for the handling of this crisis and beyond: what role have fiscal policies played in the boom period and what can be learned? Have fiscal responses in the crisis been adequate and really addressed the key issues? And, on this basis, what should fiscal exit strategies take into account? These are the questions that this study focuses on. Activism, first, refers to active fiscal policy interventions (as opposed to automatic stabilization) that change the fiscal stance with the objective of fiscal expansion and consolidation.[1] Second, I will also call activism those fiscal policies that aim to preserve fiscal sustainability given uncertainty about the economic situation and outlook in real time. The study focuses mainly on euro area countries but occasionally also makes reference to and comparisons with other advanced economies.

While the study aims to provide positive analysis, the objective is distinctly normative. Moreover, technical sophistication and depth is sacrificed to allow a broad coverage of the subject within the scope of one paper. The study argues, first, that fiscal policies were overly imprudent in the boom-phase, partly due to real time measurement problems. Second, in the bust phase, analysis into the roots of the crisis should have been deeper and too much emphasis was placed on the need for (activist) fiscal demand support. Although the balance sheet nature of the crisis was little acknowledged, significant fiscal measures to support balance sheets were introduced. Little attention has so far been paid to the fiscal dimension of restructuring of sectors and down-scaling of demand that had reached unsustainable dimensions in the boom. Third, fiscal exit strategies are being prepared and implemented in light of unsustainable fiscal balances. However, attention is only slowly focussing on the underlying strategy and this study argues the case for expenditure reform.

1. Recall that automatic stabilizers lead to changes in the deficit mainly as a result of "automatic" changes in revenue over the cycle rather than active or discretionary policy decisions. They leave the underlying balance unchanged.

The study draws three lessons for activist fiscal policies: First, apply prudent expenditure policies during boom years and improve the measurement of the fiscal stance. Second, target fiscal policies to the true causes of a crisis: support demand via fiscal stimulus only during the deep crisis phase and only to the extent that it does not reflect a correction of excess demand in the boom; help balance sheet repair; and allow the adjustment of unsustainable boom structures. Third, do not procrastinate in correcting fiscal imbalances and focus on reverting unsustainable expenditure ratios. This would contribute to a virtuous cycle of more economic dynamism facilitating fiscal adjustment and balance sheet repair.

II. Fiscal activism in the boom period

The experience of the past economic boom suggests that the main challenge for fiscal policies in good times lies in preventing an imprudent expansionary fiscal stance. This is, first, because the measurement of the cyclically adjusted balance and its change tend to suggest an overly favourable underlying position and an adjustment mirage. Second, this and the strong growth during the boom which can persist much longer than during normal business cycle upturns, tempts policy makers to decide on an expenditure path that looks broadly reasonable ex ante but proves unsustainably expansionary ex post.

II.1 Measurement problems in the boom

In order to decide on the appropriate degree of fiscal activism or automatism, the economic and fiscal position in the business cycle and the impact of the cycle on the fiscal balance need to be known. This, however, is a major challenge (Cimadomo, 2008). First, especially the end of a boom period tends to be characterised by significant downward revisions in the output gap as subsequent busts/downturns are never anticipated. This is illustrated in Table 1 which reports estimates of output gaps for 2007, the final boom year. In real time (autumn 2007), the output gap was seen as broadly closed in the euro area. Several countries, such as Spain, Ireland or the UK, were seen as having a slightly negative gap even after a decade of boom. The experience of the financial crisis changed this picture dramatically and the euro area was seen to have had a positive output gap of 2.5% in 2007 from the perspective of the autumn 2009 forecast. Revisions for Ireland exceeded 5pp and for some others 3pp of GDP. This is the result of an overestimation of trend growth during the boom years.

The revision of output gaps coincided with a revision in cyclically adjusted balances. While the euro area was seen only in slight deficit (-0.7%) in 2007 for 2007, the underlying balance was seen at -1.8% two years later. The change is around 1pp for most countries and almost 3pp for Ireland. If this mis-measurement had not occurred, the riskiness of the pre-crisis fiscal position would have been apparent and would have suggested action much earlier.[2]

The measurement problem of the output gap has been made worse by another, by now well-known, problem that concerns the measurement of the elasticity of the cyclically sensitive revenue and expenditure items. As early as 2002, Eschenbach and Schuknecht argued that in boom periods the elasticity of revenues can be much higher than expected if stock market or real estate price gains result in extra revenue from wealth effects on consumption, valuation gains notably in corporate balance sheets or higher asset market turnover. Jaeger and Schuknecht (2004/2007) found that the budgetary elasticity to GDP changes during asset price boom and bust periods is on average twice as high as during more normal times. In the meantime, many further studies on this matter have emerged and broadly confirmed that the related revenue windfalls in booms can result in a consolidation mirage (e.g., Girouard and Price, 2004; Kremer et al, 2006; Morris and Schuknecht, 2007; Martinez Mongay et al, 2007; European Commission, 2009; Tagkalakis, 2009). By the same token, in a bust "unexpected" revenue shortfalls can make the deficit deteriorate much faster and the cyclically adjusted balance worsen much more than discretionary measures would have suggested.

2. A first glance at Commission data and a simple OLS regression for EU countries suggests a correlation between output gap revisions and macroeconomic imbalances (as reflected by the current account or the size of the construction sector). Dependent variable: output gap revisions between autumn Commission vintages for 2007 and 2009. Independent variables: A 1 pp higher [share in construction/% of GDP; current account deficit] in 2007 suggests an output gap revision of [1/3 pp, 0.2 pp].

Table 1
Output gap and cyclically adjusted balance, for different vintages

	A) OUTPUT GAP 2007			B) CYCLICALLY ADJUSTED BALANCE 2007	
	Vintages autumn 2007	Vintages autumn 2009		Vintages autumn 2007	Vintages autumn 2009
BE	-0.2	2.4	**BE**	-0.2	-1.5
ES	-0.5	1.5	**ES**	2	1.2
DE	0.3	2.7	**DE**	-0.1	-1.2
IT	-0.8	2.8	**IT**	-1.9	-2.9
FR	-0.3	1.9	**FR**	-2.4	-3.6
PT	-1.7	0.6	**PT**	-2.2	-2.8
NL	-0.4	2.8	**NL**	-0.2	-1.3
AT	0.4	2.5	**AT**	-1	-1.7
IE	-0.7	4.9	**IE**	1.2	-1.7
FI	0.4	4.6	**FI**	4.4	2.9
LU	0	5.3	**LU**	1.2	1
GR	1.3	3.4	**GR**	-3.4	-5.1
SI	0.9	5.5	**SI**	-1.1	-2.6
CY	-1.1	1.9	**CY**	-0.6	2.6
MT	-0.6	1.3	**MT**	-1.6	-2.6
SK	1	7.5	**SK**	-3	-4
Euro area	-0.2	2.5	**Euro area**	-0.7	-1.8
GB	-0.1	2.6	**GB**	-2.7	-3.8
EU27	-0.1	2.7	**EU27**	-1	-2.1

Source: European Commission.

This assessment is broadly confirmed by econometric estimates of asset price related revenue elasticities for the euro area and a number of its member countries as reported in Table 2, by Morris and Schuknecht (2007). In 2002, for example, conventional calculations of the change in the cyclically adjusted balance would have suggested a loosening while an asset price adjusted calculation suggests a tightening in several countries and for the euro area as a whole.

Table 2
Impact of asset prices on structural budget balances
(as a percentage of GDP)

a) CHANGE IN CYCLICALLY ADJUSTED BALANCE

	Belgium	Germany	Spain	France	Ireland	Italy	Neth'nds	Finland	Euro area
1999	-0.38	0.54	1.18	0.36	-0.79	0.83	0.47	0.05	0.51
2000	-0.19	-0.54	-0.29	-0.5	1.17	-1.27	0.46	4.74	-0.42
2001	0.98	-1.58	0.46	0.07	-3.12	-1.23	-1	-1.28	-0.7
2002	-0.08	-0.24	0.68	-1.06	-1.06	0.71	-0.49	0.01	-0.12
2003	0.55	0.28	0.62	-0.5	1.6	-0.08	-0.21	-0.83	0.03
2004	-0.52	0.13	0.14	0.45	1.75	0.15	1.24	-0.32	0.23
2005	-1.7	0.65	1.47	1.16	-0.15	-0.04	1.72	0.45	0.67

b) CHANGE IN CYCLICALLY ADJUSTED BALANCE NET OF ASSET PRICE EFFECTS

	Belgium	Germany	Spain	France	Ireland	Italy	Neth'nds	Finland	Euro area	
									[1]	[2]
1999	-0.25	0.2	0.88	-0.09	-1.28	0.68	-0.33	-0.38	0.18	0.2
2000	-0.05	-0.7	0	-0.64	1.11	-1.56	-0.04	2.41	-0.62	-0.61
2001	1.69	-0.92	1.19	0.59	-2.23	-1	-0.25	-2.4	-0.17	-0.27
2002	0.43	0.26	1.12	-0.66	-0.65	0.71	0.19	2.25	0.21	0.26
2003	0.35	0.14	0.03	-0.73	1.29	-0.31	-0.08	-0.08	-0.12	-0.15
2004	-1.27	0.11	-0.53	0.23	1.5	-0.05	1.38	-0.3	0.07	0.08
2005	-1.91	0.4	0.7	0.98	-0.31	0.05	1.45	0.38	0.44	0.47

Sources: Morris and Schuknecht, 2007. [1] Estimated [2] Weighted average of country estimations.

II.2 Expenditure trends in the boom

If trend GDP growth, the underlying fiscal balance and adjustment efforts tend to be overestimated in booms it is no surprise that governments get tempted into expenditure trends that are seen as "reasonable" and in line with "automatic stabilisation" ex ante while proving destabilizing ex post. A simple simulation can illustrate this point. Assume a "light" business cycle as in scenario 1 of Table 3 (average growth of 2% with 3% during the upswing and 1% in the downturn). Revenue is assumed to grow in line with GDP. If automatic stabilizers are allowed to operate and, as assumed here, expenditure growth simply follows trend growth, the expenditure and balance ratio would rise and

fall symmetrically over the cycle. However, if as in scenario 2, the economic upswing leads to stronger revenue growth and governments believe that revenue and trend GDP growth have increased permanently they would also argue that a higher spending growth rate can be maintained. If this assumption on growth and revenue turns out to be an error, two things happen: the expenditure ratio at the end of the upswing remains higher than warranted, revenue windfalls would reverse more strongly than anticipated during the downturn. This, in turn, would result in a worse fiscal balance and higher expenditure ratio at the end of a full cycle as reflected in the second scenario. With such a policy error in the boom, a return to the starting fiscal position at the end of the full cycle would then require pro-cyclical tightening in the downward phase.

Table 3
Simulation of revenue, expenditure and fiscal balance ratios to GDP

SCENARIO 1: NORMAL CYCLE

Time		1	2	3	4	5	6	7	8	9
Growth Y		2%	3%	3%	3%	2%	1%	1%	1%	2%
Growth T		2%	3%	3%	3%	2%	1%	1%	1%	2%
Growth G		2%	2%	2%	2%	2%	2%	2%	2%	2%
Rev ratio	45	45	45	45	45	45	45	45	45	45
Exp ratio	45	45	44.6	44.1	43.7	43.7	44.1	44.6	45	45
Def ratio	0	0	0.4	0.9	1.3	1.3	0.9	0.4	0	0

SCENARIO 2: REVENUE CYCLE CUM EXPENDITURE ACCELERATION

Time		1	2	3	4	5	6	7	8	9
Growth Y		2%	3%	3%	3%	2%	1%	1%	1%	2%
Growth T		2%	4%	4%	4%	2%	0%	0%	0%	2%
Growth G		2%	2%	3%	3%	3%	3%	3%	3%	3%
Rev ratio	45	45	45.4	45.9	46.3	46.3	45.9	45.4	45	45
Exp ratio	45	45	44.6	44.6	44.6	45	45.9	46.8	47.7	48.2
Def ratio	0	0	0.9	1.3	1.8	1.3	0	-1.4	-2.8	-3.2

Source: Author's own calculations.

The second simulation scenario illustrates the experience of several euro area countries over the pre-crisis boom period rather well. Real expenditure growth for the average of the area and several countries was well above trend growth for the 2000-2007 period (Table 4). Just to illustrate, a 1pp higher annual expenditure growth for an expenditure ratio around 45% of GDP for a period of seven years makes a difference of about 3% of GDP in the expenditure ratio at the end of this period. For the euro area average, the excess expenditure growth was perhaps half that figure.

Table 4
Real expenditure versus trend GDP growth

	Real Expenditure Growth			Trend GDP Growth		
	2000-05	**2006**	**2007**	**2000-05**	**2006**	**2007**
Spain	4.1	4.1	3.3	3.2	2.2	1.8
Germany	0.8	0.5	1.9	1.2	0.9	0.9
Italy	2.7	1.8	2.4	1.1	0.5	0.3
France	1.9	2.4	2.5	1.9	1.5	1.3
Netherlands	3.1	1.8	1.6	2.2	1.7	1.7
Austria	1.6	1.6	2.1	2.1	1.8	1.6
Greece	3.3	3.1	3	3.7	3	2.6
Euro area 12	2.1	1.9	2.3	1.8	1.3	1.1

Source: Ameco, autumn 2009.

Table 5
Compensation per public and private employees
1999-2008 accumulated% growth in nominal terms

	COMPENSATION PER GOVERNMENT EMPLOYEE	COMPENSATION PER PRIVATE EMPLOYEE	COMPENSATION PER EMPLOYEE, TOTAL ECONOMY
EURO AREA 12	35.3	23.7	25.3
BELGIUM	38.2	31.5	33
GERMANY	16.6	12.2	12.4
IRELAND	99.4	70.5	76.6
GREECE	107.3	74.1	79.5
SPAIN	51.9	27.7	36.5
FRANCE	32	32.7	32.4
ITALY	41.8	24.9	27.9
LUXEMBOURG	53.7	37.7	38.7
NETHERLANDS	33.2	40.8	39.5
AUSTRIA	28.4	25.7	25
PORTUGAL	52.2	38.4	40.1
FINLAND	41.6	39.3	40

Source: OECD Economic Outlook database November 2009 Issue. Missing government employment data for Germany, Greece and Austria have been taken from the Spring 2006 (1998, 1999) and Spring 2007 (2000-2006) issues.

The relatively strong expenditure growth in the boom years reflects underlying policy decisions. Public wages, for example, grew very strongly in a number of countries in the boom and notably in Ireland and Greece but also in Spain, Luxembourg and Portugal. These growth rates were much above the euro area average and above private wage growth in these countries (Table 5). Public employment was also imprudently buoyant in the boom years, notably in Spain, the Netherlands and Ireland (Table 6).

Table 6
Public employment in selected OECD countries

PUBLIC EMPLOYMENT GROWTH (%)

	1991-1999	1999-2007
ESP	16,5	36,8
DEU	-12,7	-5,4
ITA	-3,2	2,3
FRA	5,6	7
NLD	-0,6	13,1
AUT	-3	-5,9
IRL	8,9	46,5
EA12	-0,1	7,3
GBR	-10,2	14,1
US	9,5	9,4
JAPAN	5	-1,3

Source: OECD.

As a result of these trends, public expenditure ratios in the later boom years changed very little in the euro area, except for Germany (Table 7). A number of countries even saw their expenditure to GDP ratio rise, notably Ireland. But many countries did not experience a decline in the expenditure ratio commensurate with the economic environment and the operation of automatic stabilisers.

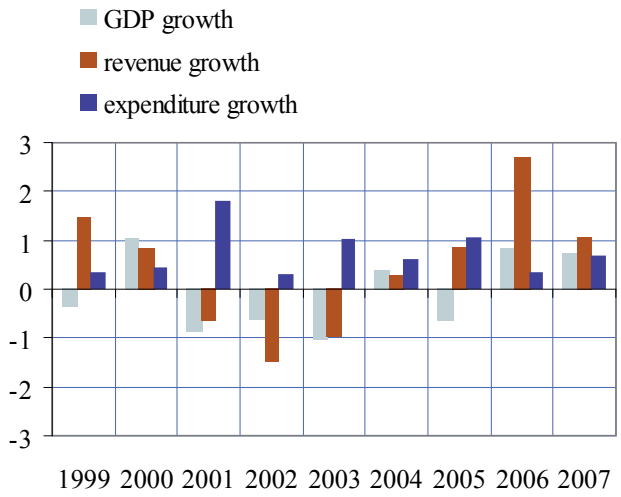
An important reason for imprudent expenditure trends in the euro area were not ex ante plans but slippages in the budget execution. On average, public expenditure in the euro area increased by more than 1/2pp faster than planned between 1999 and 2007 for the average of the euro area (Chart 1). This may reflect two important factors: first, plans may not have been consistent with commitments arising from policy choice. Second, slippages may also reflect poor budget execution due to weak expenditure rules.

Table 7
Public expenditure developments in selected countries, 2004-2007 (% of GDP)

COUNTRY	2004	2007
BELGIUM	49.3	48.4
GERMANY	47.1	43.7
IRELAND	33.5	38.4
GREECE	45.5	44.1
SPAIN	38.9	39.2
FRANCE	53.2	52.3
ITALY	47.7	47.9
NETHERLANDS	46.1	45.5
PORTUGAL	46.5	45.7
FINLAND	49.9	47.3
EURO AREA	47.6	46.1
SWEDEN	55.3	52.5
UNITED KINGDOM	42.9	44
JAPAN	37	36
UNITED STATES	36	36.7

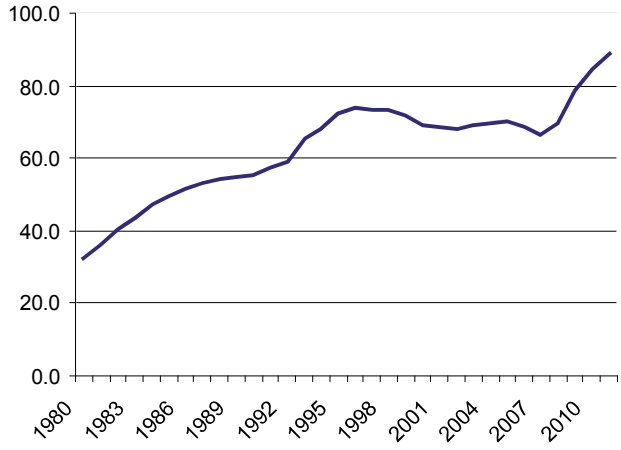
Source: Commission, Autumn 2009.

Chart 1
Deviations from stability programme targets (euro area 12 aggregate)
(annual percentage points)



Sources: AMECO, stability programmes and ECB calculations.

Chart 2
Public debt developments in the euro area,
1980-2011 (% of GDP)



Source: AMECO (based on Commission 2009 autumn forecast).

All in all, measurement problems and expenditure developments are the main reason for a relatively weak starting position of public finances in the euro area before the crisis struck. The average euro area deficit ratio still posted a deficit in 2007 and the public debt ratio in the euro area only improved by 8pp since the mid-1990s peak of 74% of GDP and by 3pp between 2003 until 2007 when it stood at 66.4% of GDP. In fact, public debt has been rising much more strongly in downturns than it has been falling in upswings for the past three decades (Chart 2).

The lesson of this experience is twofold. First, the measurement of the underlying fiscal balance and stance needs to improve. Additional indicators to check the robustness of output gap estimates such as current account imbalances, capacity utilization or real estate prices and the inclusion of further variables such as asset prices in the stance measurement may be considered. Several of the quoted studies have pointed to ways to improve the measurement of the fiscal stance.

Second, and given that measurement problems can probably not be excluded in the future, it is advisable to follow what I would call "activist prudence" in good times. This should ensure that expenditure dynamics remain sustainable which, in turn, helps mitigate the risk of unsafe positions at the end of a boom. Three elements are important to consider: i) trend growth assumptions need to be prudent and the baseline expenditure scenario should be built on this (any expenditure consolidation needs should then be deducted from this scenario); ii) expenditure commitments need to be consistent with the desired expenditure growth path and policy changes should be implemented where needed (Tanzi and Schuknecht, 2000); and iii) expenditure rules may need to be improved if slippages are the result of undue leeway in budget execution (European Commission, 2007). Automatic stabilizers may then normally operate more "safely" around the resulting spending and deficit path.

III. Fiscal Activism in the Crisis

The experience of the financial crisis suggests two main questions which could have been examined with more care from the outset: i) what is the underlying problem of the steep decline in demand in late 2008 and how much of that should be addressed by what type of fiscal policy? And ii), how much deterioration of the fiscal balance can and should we afford from a short and long term perspective. This study will only deal with the first issue in detail. I will argue that indeed there appears to have been a

Keynesian-type demand shock after the Lehmann default. However, too much attention has been focussed inappropriately on the demand-stimulating role of fiscal activism. The crisis was and is mainly a balance sheet crisis where excessive private debt accumulation (to finance excess private demand in the boom) had to be followed at some point by a phase of more subdued demand so as to allow balance sheet repair. Moreover, the boom period with excess demand "naturally" resulted in excess supply in the "profiting" sectors, in particular construction/real estate and finance. On this basis one could have argued for fiscal activism to support balance sheet repair and the structural rebalancing of economies. But on the demand side, the issue is complex and the Keynesian argument for more stimulus is countervailed by the structural argument of lower equilibrium output and demand.

III.1 The Keynesian crisis (phase)

In the autumn of 2008, after the collapse of Lehman, calls for activist fiscal policies emerged very quickly. In retrospect, the concerns about the demand outlook underlying these calls appear at least partly justified. Euro area GDP fell by almost 2% in the fourth quarter of 2008 and by another 2 ½% in the first quarter of 2009. The European Commission called for activist measures to be targeted, temporary and timely (TTT) so as to minimise the risk of repeating the mistakes of the seventies and early 1980s when fiscal activism was often late (and hence pro-cyclical), poorly targeted and non-reversible, thus leading to a permanent worsening of fiscal balances and structures. Moreover, it was pointed out that large automatic stabilisers in Europe were already contributing significant support to demand.

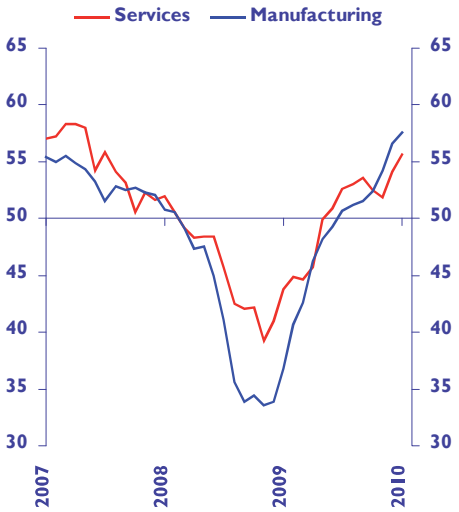
Table 8 shows that of the likely worsening of the fiscal balance in 2009 by about 4 ½% of GDP more than half came from automatic stabilizers (cyclical effect) and another quarter from the reversal of revenue windfalls discussed in the previous section (part of "residual change"). Only one quarter was due to discretionary fiscal loosening. However, this assessment hinges on the fact that there will be no major further ex post downward revisions of the output gap and trend growth during the crisis which would drive up the discretionary component of the budget deterioration.

Table 8
Fiscal deficit changes in the financial crisis in the EU and euro area

	TOTAL CHANGE IN THE DEFICIT WITH RESPECT TO PREVIOUS YEAR	OF WHICH: CYCLICAL EFFECT	BUDGETARY IMPACT DISCRETIONARY	RESIDUAL CHANGE IN THE PRIMARY CYCLICALLY-ADJUSTED	BUDGETARY IMPACT CHANGE IN THE INTEREST EXPENDITURE
2009					
EA-16	-4.4	-2.4	-1.1	-0.9	0
EU27	-4.6	-2.4	-1.3	-1	0
2010					
EA-16	-0.5	0	0.1	-0.3	-0.2
EU 27	-0.6	0	0.2	-0.4	-0.2
2011					
EA-16	0.4	0.2	0.4	0	-0.2
EU 27	0.6	0.2	0.4	0.2	-0.2

Source: Commission autumn 2009 forecast.

Chart 3
Purchasing Managers' Indices (PMIs) for the euro area (monthly data; seasonally adjusted)



Source: Markit.

With this caveat in mind and while it is too early to come to an overall judgement, the strong role of automatic stabilizers for boosting demand appears appropriate from this perspective. One could probably also argue for a discretionary fiscal demand boost during the immediate deep crisis phase from a demand management perspective.

But there are several reasons to be sceptical about the overall fiscal strategy pursued. The deep crisis phase when arguably a demand and confidence boost was warranted only lasted a short period. Already in the second quarter of 2009, survey indicators pointed to much less negative growth in real time and positive growth (as later confirmed) resumed in the third quarter in the euro area (Chart 3). Further arguments relate to political economy factors as experienced in the 1970s. First, little analysis was undertaken as to where and how much demand shortfall was emerging. Consequently, targeting was partly poor. In Germany, for example, a demand shock in the export sector was met with an investment programme directed at a construction sector that was fully employed. Stimuli were also captured by special interests that would not have stood a chance in normal times. VAT reduction for German hoteliers may be an example. Second, in many instances, timing was poor and much of the stimulus took time to take effect. In fact, in countries such as the Netherlands, Germany or Austria, the fiscal stimulus continued well into 2010 when activity has already been recovering for quite some time. Third, a number of countries also introduced measures that are hard to reverse such as public wage or benefit increases. Immediate tax rebates, VAT cuts and to a certain extent also car wrecking premia may have been the best measures from a TTT perspective.[3]

Moreover, it may turn out that part if not much of the demand fall in the crisis was not a negative demand shock but the reversal of excess demand during the boom linked to unsustainable wealth effects in many countries cum a supply shock due to mis-allocated resources. Then perhaps activist demand stimulation or even the full operation of automatic stabilisers would not have been justified and certainly not for the time after the deep crisis phase. This issue will be discussed in more detail in section 3c.

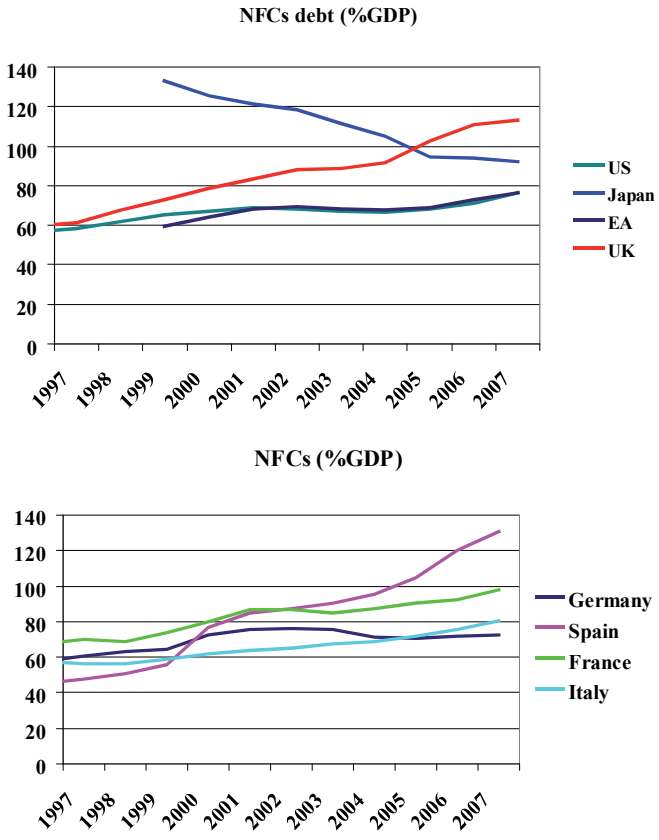
III.2 The balance sheet crisis

A main cause of the financial crisis was growing leverage in the private sector in the boom years. Rising asset prices and wealth allowed rapid

3. There are also substantial knowledge gaps as regards size and functioning of fiscal multipliers. This makes it very difficult to deliver well-targeted fiscal stimulus measures (Bouthevillain et al., 2009).

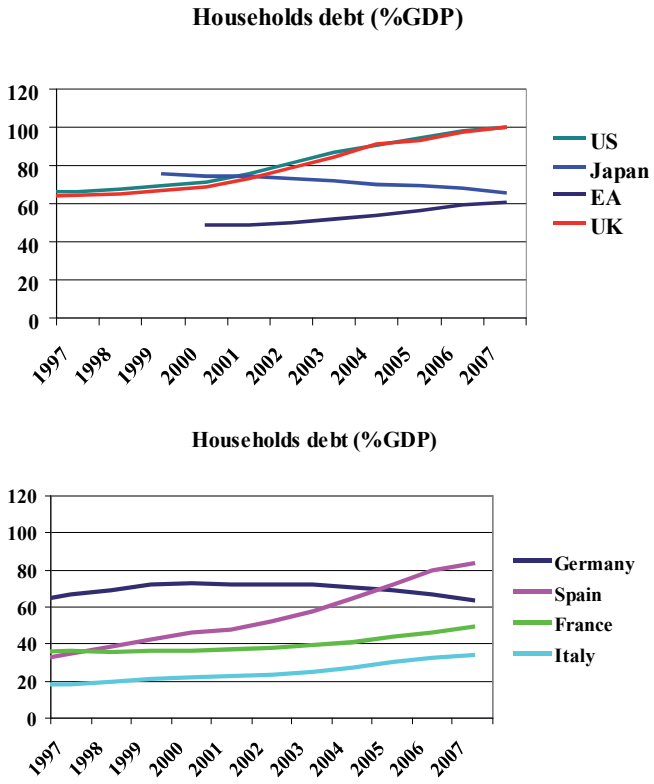
consumption and debt growth. Chart 4 on household and corporate debt developments in a selection of industrialized countries illustrates the growing indebtedness, except in Japan and Germany. Ultimately, however, asset prices started to reverse on the back of housing over-supply and debt overhangs emerged. Part of the crisis-related slump in consumer, investment and credit demand can in fact be related to the desire by agents to deleverage and reduce their own default risk after they recognised that real estate prices were not sustainable and, thus, debt too high. However, notably after the Lehman default this risked to become a disorderly process with a financial-economic downward spiral.

Chart 4
Household and corporate debt



Source: ECB.

Chart 4
Household and corporate debt (continued)



Source: ECB.

Governments responded swiftly to this impending risk of a downward spiral of financial and non-financial bankruptcies and balance sheet repair-induced demand loss. After the insurance of most or all deposits, governments introduced guarantee schemes, injected capital and took a number of other measures to secure the stability of the financial system. The impact of these measures on public debt was important. It averaged 3.5% GDP for the euro area and much more in some countries by mid 2009. In addition, contingent liabilities with a ceiling of about 20% of GDP for the euro area were accumulated (Table 9).[4]

4. These measures were complemented by liquidity enhancing measures, interest rate cuts and further enhanced credit support measures by the European Central Bank.

Table 9
Cumulative financial sector interventions and fiscal impact (2008-2009)
(as a percentage of 2009 GDP)

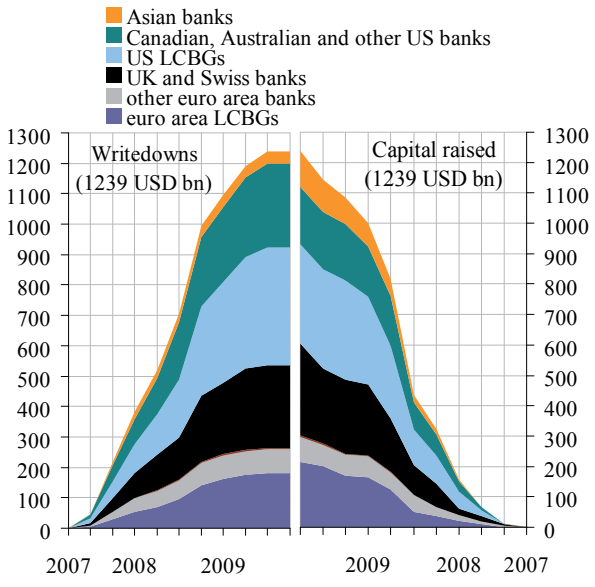
	Guarantees	Capital injections		Asset purchase	Asset swaps / asset lending	Debt assumptions / cancellations	Other measures	Government debt	Government contingent liabilities	
		Acquisition of shares	Loans						Provided	Ceiling
Belgium	21	4	2.1	0	0	0	0	7.4	21	34.6
Germany	6.3	1.3	0	1.7	0	0	0	2.9	6.3	18.7
Ireland	214.8	4.2	0	0	0	0	0	4.2	214.8	242
Greece	0.6	1.6	0	0	1.8	0	0	1.6	0.6	6.1
Spain	3.1	0	0	1.8	0	0	0	1.8	3.1	18.9
France	1.1	0.8	3.2	0	0	0	0	4.1	1.1	16.8
Italy	0	0	0	0	0	0	0	0	0	0
Cyprus	0	0	0	0	0	0	0	0	0	0
Luxembourg	12.8	8.3	0	0	0	0	0	8.3	12.8	0
Malta	0	0	0	0	0	0	0	0	0	0
Netherlands	5	6.5	7.6	3.9	0	0	0.2	18.2	5	35
Austria	6.6	1.7	0	0	0	0	0	1.7	6.6	27.8
Portugal	3.8	0	0	0	0	0	0	0	3.8	12.4
Slovenia	0	0	0	0.4	0	0	3.6	4	0	33.2
Slovakia	0	0	0	0	0	0	0	0	0	0
Finland	0.1	0	0	0	0	0	0	0	0.1	28.1
Euro area	7.5	1.3	1.2	0.9	0	0	0	3.4	7.5	19.9

Source: ECB Monthly Bulletin, July 2009.

Further ad hoc measures were introduced in many countries to support balance sheets and reduce the risk of disorderly deleveraging in the private non-financial sectors (households and corporations): governments "organised" mortgage loan rescheduling, deferral of payments, lending programmes for the unemployed and guarantee and credit programmes for corporations. These programmes provided balance sheet support to households and corporations and prevented bankruptcies and fire-sales of assets. Tax cuts and rebates probably also reduced household balance sheet problems indirectly (even though they had a more Keynesian motivation).

The magnitude of the debt-overhang at the time of writing of this study is not known. However, the huge magnitude of losses that accumulated in the financial sector as the crisis unfolded is an indication (Chart 5). Moreover, significant balance sheet problems remained at the time of writing of this study and significant further financial sector losses were seen to be in the pipeline (Chart 6). At the end of 2009, the household debt to disposable income ratio only stabilised at a very high level in the euro area (Chart 7).

Chart 5
Financial sector writedowns



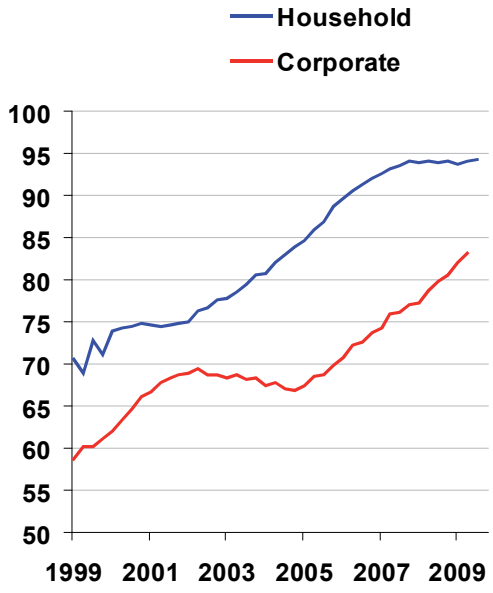
Source, ECB Financial Stability Report, December 2009.

Chart 6
Expected financial sector losses

	ESTIMATED EXPOSURE	IMPLIED WRITE-DOWNS 2009 DECEMBER FSR	ESTIMATED LOSS RATE (%)
CASH AND SYNTHETIC STRUCTURED			
CREDIT SECURITIES	1122	169	15.1
OTHER SECURITY HOLDINGS	1717	28	1.6
LOANS	11424	355	3.1
TOTAL	14263	553	3.9

Source: ECB, Financial Stability Report, December 2009.

Chart 7
Household and corporate indebtedness
(Percent of gross disposable income for households; of GDP for corporations)



Sources: ECB and Eurostat.

Abstracting from any potential "collateral damage" via more moral hazard, less competition and special interest capture of the support, the government role in mitigating balance sheet risks and preventing disorderly balance sheet adjustment can probably be called rather successful. Although no "scientific" assessment is yet available, the speedy and targeted action is likely to have prevented a much deeper financial and economic crisis.

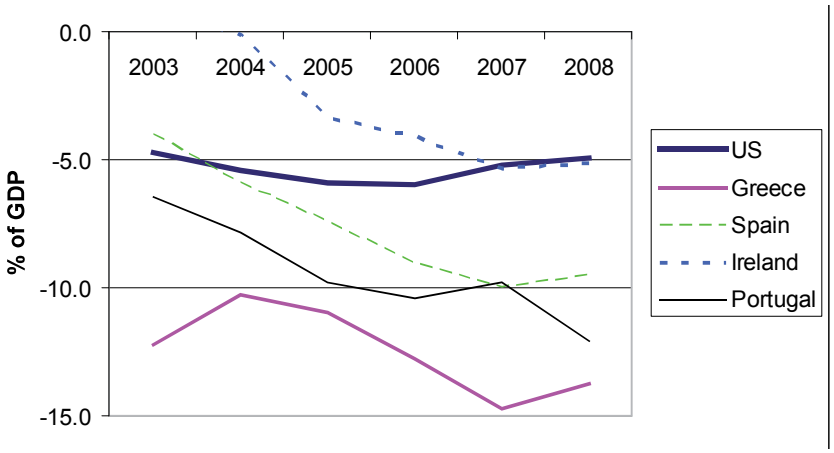
III.3 The "crisis" of economic structures: adjusting excess supply and demand

Finally, the importance of excess demand and structural resource misallocation in the boom phase is relevant for evaluating the fiscal policy response to the crisis (see also Tanzi, 2009). A number of countries experienced a strong expansion of certain sectors in the boom. If such expansion turns out unsustainable, a significant physical and human capital re-allocation and a downward shift in the level of potential output would be implied. At the same time, demand levels in the boom phase may have been exaggerated and unsustainable. In fact, this is the origin of the private sector debt increase mentioned above. It is also reflected in the large and persistent current account deficits in a number of euro area and other advanced economies (Chart 8).

Current account balances had deteriorated significantly in a number of euro area countries plus some other advanced economies during the boom phase, suggesting excess demand in the economy. In Spain, Portugal and Greece, current account deficits were near or above 10% of GDP towards the end of the upswing.

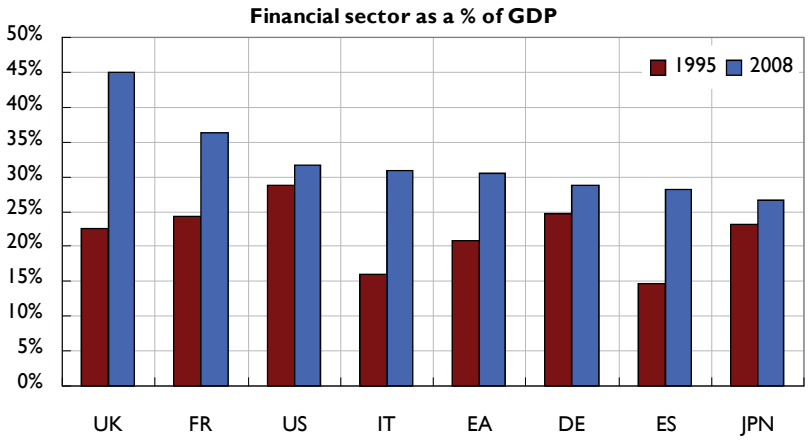
A cursory look at some structural changes over the boom phase is also worthwhile. Chart 9 reports that a number of countries had seen a major shift in the output composition towards finance (in the broadest sense, including financial services, real estate, renting and business activities) and construction. It is not clear what share of output is sustainable. But it is unlikely that a mature economy with relatively limited growth, an excess housing stock and an aging population (like Spain) can sustain a construction sector much above the average for industrialized countries. This seems to be around 5% of GDP rather than the 14% reported for Spain in 2008. Similarly, there seems to have been a general relative output shift towards finance with an average around 25-30%. It is not clear that the 45% figure for the UK is sustainable even with London continuing to be a major global financial center.

Chart 8
Current account imbalances, selected countries



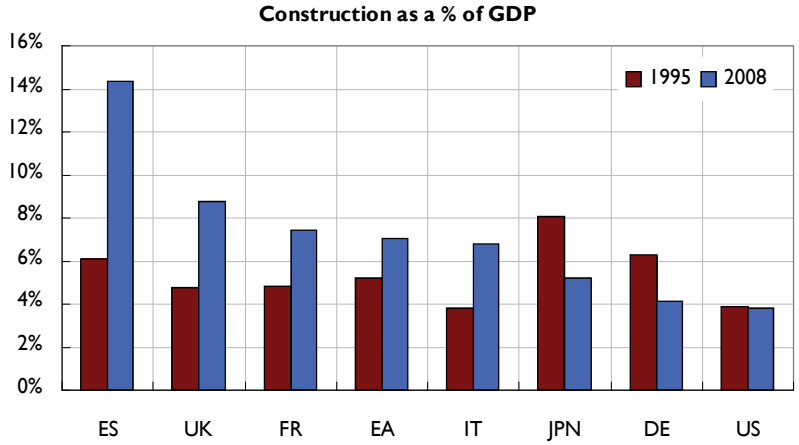
Source: Commission, Ameco autumn 2009.

Chart 9
Contribution of finance and construction to GDP



Source: European Commission, Ameco.

Chart 4
Household and corporate debt (continued)



Source: European Commission, Ameco.

What would be the implications of this? First, if equilibrium output and demand were lower than the actual level at the end of the boom, the crisis phase may have mainly been an (admittedly very abrupt) correction of imbalances and not a Keynsian demand shock. Second, especially wages and benefits in the private and public sector adjusted little (and as mentioned even at times significantly increased). They will need to adjust to the new demand-supply equilibrium as lower profits can most likely not fully and permanently absorb the adjustment. One could then argue that even the operation of automatic stabilizers may have unduly kept demand at an unsustainable level and delayed economic restructuring, thus, undermining also the path of future output and demand growth.[5] For example, if the fiscal response to the crisis implies continued public wage and benefit growth along the pre-crisis output path this would also push up private wage growth and reservation wages more than sustainable and desirable. This would reduce employment and growth. At the same time, one could also argue that some smoothening of demand and adjustment via fiscal stabilisation was warranted until potential output has caught up again. In particular in countries with significant structural resource

5. Koopman and Szekely, 2009 provide an excellent overview over the factors that could be detrimental to the recovery of the output level and trend growth. These factors include the locking in of resources in unproductive activities, the disincentives and lack of opportunities to find new jobs (and the related destruction of human capital) or the adverse effect of credit constraints on investment.

re-allocation needs, this would cushion the social costs and support the human capital re-allocation via unemployment benefits, education and retraining.

When seeing the crisis from this perspective, these considerations speak against much of a fiscal stimulus. They would possibly even argue against a far-reaching shielding of much of the population against the impact of the crisis via automatic stabilisers. The risk is great that economic dynamism is reduced and demand is stabilised too much above equilibrium. It would then take a very long time for equilibrium output to catch up with a level of government commitments that can be financed. The consequence is high and persistent deficits and rapidly rising debt. This raises the risk of a public balance sheet crisis (which in fact had already gripped and risked to spill over to others at the time of writing of this study).

Second, the need for economic restructuring is too much on the backburner of the crisis debate. On the supply side, few banks and car factories have so far closed shop in Europe (in contrast to the US where this figure is much larger also due to the earlier start of the crisis). On the other hand, construction firms do not seem to be kept alive and significant bank restructuring is taking place, not least due to the European Commission.

All in all, what are the record and lessons for fiscal activism in this crisis? First, analyse the origins of the crisis properly as this points to the desirable remedies. Second, address the right problem with the right measures in a targeted and timely manner. The record of fiscal activism has been mixed: i) there has clearly been too much emphasis on Keynesian-type demand support and perhaps even for automatic stabilisers; Keynesian support should have probably ended in the summer of 2009 at the latest if warranted at all; ii) governments appropriately supported balance sheet repair even though the balance sheet nature of the crisis was not fully appreciated in many quarters; and iii) there has been little focus on facilitating economic restructuring and too little acknowledgement of the need for a downward adjustment of aggregate demand at least in some countries.

IV. Fiscal Activism Beyond the Crisis

IV.1 Deficit and debt dynamics

In light of the earlier considerations, it is worth taking a closer look at the fiscal fallout of the crisis from two angles: first, what activist policies are needed to return to fiscal sustainability, and second, what should be the underlying strategy, notably as regards expenditure and revenue reform?

The first issue can be dealt with very briefly as it has received significant attention elsewhere: it is undoubted that fiscal trends as projected by the European Commission in its autumn forecast would be unsustainable. A deficit ratio between 6 ½ and 7% of GDP in 2009-11 on a no policy change assumption would bring the average public debt ratio to 90% of GDP in 2011 and on an explosive path. Aging, potential further financial sector bailout costs due to unrepaired private balance sheets, and lower trend growth would exacerbate this picture. This poses great risks to the long term outlook for fiscal sustainability and would not facilitate the future task of the European Central Bank.[6] Even if debt sustainability concerns can be contained, there is little fiscal leeway for another major crisis if the debt increase of this crisis is not reversed.

It is therefore undoubted that fiscal activism in the coming years means fiscal consolidation: euro area countries need to pursue an ambitious and determined fiscal adjustment strategy. The December 2009 package of Excessive Deficit Procedures under the Stability and Growth Pact for 11 euro area countries required a start of fiscal adjustment in 2010/11 and a correction of excessive deficits in most cases in 2013 (Table 10). On average, annual adjustment efforts would have to be near 1% of GDP. Even if these recommendations were fully implemented, the euro area deficit would fall below 3% only in 2013 and the debt ratio would stabilise near 90% of GDP. A return to pre-crisis debt ratios in the euro area would take until the 2020s. These parameters suggest that the package is ambitious but it is clearly the minimum needed.[7]

Finally, there is the issue of timing. Given fickle markets which can loose confidence very quickly and which have tested a number of governments over the crisis, there is a clear reason to err on the cautious side, notably for large countries. Procrastination would not only result in further debt increases with adverse effects on confidence by the public. A small country can, if needed, be supported by the deep pockets of other governments or the IMF (as in the case of Greece). However, this is most probably not the case for major economies.

6. High public debt ratios also risk undermining automatic stabilisation as rising deficits and debt would be increasingly countervailed by Ricardian saving (Nickel and Vansteenkiste, 2009).

7. The 2009/10 update of countries' stability programmes is broadly in line with these parameters which is a first good sign, even though in many instances the underlying strategies and measures have not been carefully designed.

Table 10
Excessive deficit procedures in euro area countries

	Budget balance 2010 (% of GDP)	Consolidation start	Deadline	Recommended average structural adjustment (in % of GDP)
Belgium	-5.8	2010	2012	0.75
Germany	-5	2011	2013	>0.5
Ireland	-14.7	2010	2014	2
Greece	-12.2	2009	tbd	tbd
Spain	-10.1	2010	2013	1.5
France	-8.2	2010	2013	1
Italy	-5.3	2010	2012	>0.5
Malta	-3	2009	2010	-
Netherlands	-6.1	2011	2013	0.75
Austria	-5.5	2011	2013	0.75
Portugal	-8	2010	2013	1.25
Slovakia	-6	2010	2013	1
Slovenia	-7	2010	2013	0.75
Euro area	-6.9			

Table 11
Public spending in the euro area, 2007-2010

Euro area 12	2007	2010	2007-2010
Total expenditure ratio	46.1	50.6	4.5
Transfers	15.9	17.8	2
Government consumption	20.1	22	1.9
Ad memoriam: fiscal balance	-0.6	-6.9	-6.3

Source: European Commission, Ameco.

IV.2 Expenditure dynamics and reform

Finally, and in light of the fiscal outlook, which consolidation strategy should be applied and, more specifically, what role should expenditure and revenue adjustment play? There are three arguments why this can only come through an emphasis on reducing unsustainable expenditure dynamics. First, expenditure reform is needed to correct the increase in relative public and private sector wages over the crisis that would otherwise result in less incentives to work (via higher reservation wages), drawing talent away from the private sector (via higher public wages) and reduce investment (via excessive wages/low profits and disincentives to adjust human and physical capital). When looking at the fiscal balance deterioration of roughly six percentage points of GDP in 2007-2010, it is noteworthy that three quarters of this reflects an increase in the expenditure ratio (Table 11). Most of this increase is on government consumption (including public wages) and transfers. These two expenditure categories continued to grow broadly in line with pre-crisis trends while real output is about 3% lower in 2010 than in 2007. This is important because it confirms the earlier conjecture that governments have fully shielded large parts of the population from the impact of the crisis. A return of spending on public wages and transfers to pre-crisis ratios seems, hence, reasonable from a structural and distributional perspective and it would eliminate most of the deficit problem.

The second argument for expenditure-based consolidation derives from the fact that the optimal size of government is much smaller than the average post-crisis spending ratio of over 50% of GDP. This ratio is now near or above its historical record in many euro area and other advanced economies (Table 12). It is much higher than the pre-crisis ratio of about 45% and way beyond the 30-40% ratio that some literature typically sees as necessary to attain core public sector objectives or that attains an optimal degree of stabilisation (Tanzi and Schuknecht, 2000 and 2005; Buti and Van den Noord (2005).

Table 12
Public expenditure in the euro area in historical perspective
(% of GDP)

COUNTRY	HISTORICAL PEAK	YEAR	2007	2010
BELGIUM	63.8	1983	48.4	53.8
GERMANY	50.2	1996	43.7	48.3
IRELAND	56.2	1982	38.4	49.1
GREECE	46.6	2000	44.1	49.4
SPAIN	47.6	1993	39.2	45.6
FRANCE	55.4	1996	52.3	55.1
ITALY	57.7	1993	47.9	50.8
NETHERLANDS	58.3	1983	45.5	50.9
PORTUGAL	47.7	2005	45.7	51.5
FINLAND	55.4	1996	47.3	55
EURO AREA	**52**	**1993**	**46.1**	**50.6**
SWEDEN	73	1993	52.5	55.6
UNITED KINGDOM	50.7	1981	44	52.1
JAPAN	41	1998	36	41.6
UNITED STATES	37.2	1992	36.7	43.8

The third argument is linked to revenue developments over the crisis and the aggregate revenue ratio in the euro area. In fact, it appears inconceivable that for the average of the euro area, the revenue ratio could be raised by 5 percentage points and reach 50% of GDP to close most of the budget gaps via tax increases. As it stands, the revenue ratio did not decline much over the crisis (Table 13). Most of the fall has affected corporate income taxes due to a reversal of windfalls from previously booming asset markets, balance sheet losses and a decline in profits). Indirect tax revenue fell due to VAT cuts and possibly the downturn in the construction sector but more analysis would be needed.

Some modest adjustment is likely to come from the revenue side as temporary tax cuts are reversed, corporate income tax revenue recovers somewhat from the crisis trough and some indirect taxes are likely to be raised. However, an increase by 5 percentage point would imply that

personal income taxes have to increase by half (50%!) from less than 10% to close to 15% of GDP. Or receipts from social security contributions would have to increase by about one third. However, marginal and average tax rates in Europe are mostly already very high (Table 14). Further significant increases would be rather detrimental to employment and growth. Moreover, the literature has shown that mainly tax-based consolidations tend to be less successful (e.g. Guichard et al. 2007, Afonso at al. 2005).

Table 13
Total public revenue in the euro area
(% of GDP)

	2007	2010	2007-2010
Total revenue	45.5	43.8	-1.7
Direct taxes	12.5	11.3	-1.2
thereof: corporate	3.3	2.2	-1.1
Indirect taxes	13.5	12.7	-0.8
Social contributions	15.2	15.4	0.2
Other	4.4	4.4	0.1

Source: Commission autumn forecast (corp tax=unweighted average).

Table 14
Marginal tax rates in industrialised countries, 2007

	Marginal tax rate	
	single earner, no children, average income	married, 2 children, incomes of 100 and 67% of average income
United States	43.3	34
Japan	33.2	30.5
United Kingdom	40.6	46.5
Germany	66.5	63.4
France	55.8	52
Italy	52.7	52.7
Spain	45.5	45.5
Euro Area (EU-15)	52.8	52.3

Source: OECD, 2008.

More concretely what does this imply? Expenditure ratios are currently unsustainable and need to come down significantly. Relative public wage and benefit levels need to decline and the public sector reduce its commitments. A cut in total public expenditure by 10% would yield savings of about 5% of GDP; a cut in 20% over time would be hardly unreasonable for a country with a deficit of 10% of GDP and an expenditure ratio of 50%.

Linking these claims with the findings of the second section, it should be recalled that expenditure adjustment needs to be based on the appropriate baseline. If indeed the crisis has reduced economic growth dynamics, even a real expenditure freeze may hardly generate enough adjustment and real if not nominal expenditure cuts will be needed. Assume a country with a 50% expenditure ratio and 1 ½% trend growth. A real expenditure freeze would only yield about ¾ pp of adjustment per year and a 5pp adjustment would take seven years. A nominal total expenditure freeze would yield about 1 ½ pp adjustment per annum. However, care needs to be taken that underlying commitments are cut commensurately via actual policy reforms.[8]

V. CONCLUSION

As to the experiences with fiscal activism in boom, crisis and beyond, the following simplified conclusions can be drawn: first, fiscal policies were overly imprudent in the boom-phase preceding the financial crisis, partly due to real time measurement problems. In the bust phase, analysis into the roots of the crisis should have been deeper and too much emphasis was placed on the need for (activist) fiscal demand support. Although the balance sheet nature of the crisis was little acknowledged, significant fiscal measures to support balance sheets were introduced. Little attention has so far been paid to the fiscal dimension of economic restructuring and down-scaling of demand that had reached unsustainable levels in the boom. While at the time of writing, fiscal exit strategies have been prepared and, in some countries, implemented in light of unsustainable fiscal balances, little attention has been paid so far to the importance of expenditure reform.

The previous discussion suggests a number of policy lessons and recommendations for fiscal activism:[9]

8. Assuming inflation in line with the ECB's definition of price stability. Fiscal rules that maintain sustainable expenditure trends and underpin adjustment could increase the credibility of exit strategies (European Commission, 2007; Hauptmeier et al. 2010).

9. There is also an important fiscal structural dimension for preventing future boom bust cycles the discussion of which goes beyond the scope of this paper. Fiscal policies should in particular not

- In booms, remain actively prudent. Hence, anticipate measurement problems and base expenditure plans on prudent economic growth assumptions, underpinned by appropriate rules and commitments.
- In crisis, target the underlying problems. Provide a stimulus only in the deep crisis (demand shock) phase but weigh this against the risk of maintaining demand at unsustainable levels (especially if there were excesses in the boom). In fact, this risk may argue against much of a stimulus and even against the full operation of automatic stabilisers in certain cases. Provide balance sheet support in an appropriate manner. Support rather then prevent the restructuring of sectors that had reached unsustainable dimensions in the boom (e.g., construction/real estate and finance).
- Beyond the bust, implement appropriate fiscal exit strategies. As expenditure ratios have become unsustainable, given already high taxes and adverse growth implications, secure major reductions in the expenditure ratio. Adjust relative public wages and benefits and reduce other commitments of government commensurately. Build adjustment on an appropriately prudent baseline macro scenario.

Many observers have suggested implementing the fiscal exit rather later than too earlier. This approach is risky especially for large countries as it could make the global system uninsurable. It is also likely that many observers will emphasise the political difficulties of implementing an ambitious expenditure-based exit strategy. However, many countries have already gone through even greater, drawn out adjustment periods with primary expenditure cuts by more than 5% or even 10% of GDP in the 1980s and 1990s. The experience has in fact been rather positive and virtuous cycles of fiscal adjustment, higher growth and faster balance sheet repair can emerge (see Hauptmeier, Heipertz and Schuknecht, 2007).

References

Afonso, A., Ch. Nickel and P. Rother (2005), "Fiscal Consolidations in the Central and Eastern European Countries", ECB Working Paper No. 473.

set undue incentives to invest in construction as crisis following real estate booms have proven to be particularly costly (Agnello and Schuknecht, 2009; Alessi and Detken, 2009). Moreover, fiscal policies should not encourage undue indebtedness and leverage in the household or corporate sector (IMF, 2009; Commission 2010). A gradual change in incentives in this regard would reduce the risk of future crisis.

Agnello, L. and L. Schuknecht (2009) Booms and Busts in Housing Markets: Determinants and Implications, ECB Working Paper 1071.

Alessi, L. and Detken, C. (2009) Real time early warning indicators for costly assest price boom/bust cycles: A role for global liquidity, ECB Working Paper.

Bouthevillain, C., J. Caruana, C. Checherita, J. Cunha, E. Gordo, S. Haroutunian, G. Langenus, A. Hubic, B. Manzke, J. J. Pérez and P. Tommasino (2009), "Pros and cons of various fiscal measures to stimulate the economy", Banque centrale du Luxembourg Working Paper No. 40, September, and *Banco d'España Economic Bulletin*, July.

Marco Buti and Paul van den Noord (2005),"What is the Impact of Tax and Welfare Reforms on Fiscal Stabilizers?", in Willi Semmler (ed.), *Monetary Policy and Unemployment*, Routledge, pp. 252-271.

Cimadomo, J. (2008), "Fiscal policy in real time", ECB Working Paper No. 919.

European Commission (2007) *Public Finances in EMU*, European Economy 3, Brussels.

European Commission (2009) *Public Finances in EMU*. European Economy 5, Brussels.

European Commission. *European Economic Forecast*. Autumn 2009. Brussels.

European Commission, forthcoming 2010, Surveillance of Competitiveness, Brussels.

Freedman, C., Kumhof, M., Laxton, D. and J. Lee (2009), "The case fro global fiscal stimulus", IMF staff position note, SPN/09/03, Washington (D.C.), International Monetary Fund.

Guichard, S. et al. (2007), "What Promotes Fiscal Consolidation: OECD Country Experiences", OECD Economics Department Working Papers, No. 553.

Hauptmeier, S., Heipertz, M. and L.Schuknecht (2006), "Expenditure reform in industrialised countries. A case study approach", European Central Bank, Working Paper Series, No. 634, Frankfurt/Main, ECB.

Hauptmeier, S., F. Holm-Hadulla, P. Rother (2010), "The impact of numerical expenditure rules on budgetary discipline over the cycle", forthcoming ECB Working Paper.

IMF (2009), "Debt bias and other distortions: crisis-related issues in tax policy", IMF, Working Paper, Washington (D.C.), International Monetary Fund.

Jaeger, A and L. Schuknecht (2007), "Boom-Bust Phases in Asset Prices and Fiscal Policy Behaviour", *Emerging Markets Finance and Trade*, Vol.43, No.6, pp.45-86.

Koopman, G.-J. and I. P. Székely (2009), "Impact of the current economic crisis and financial crisis on potential output", European Economy Occasional Papers, XX/2009, Brussels, European Commission.

Kremer, J., Rodrigues Braz, C., Brosens, T., Langenus, G., Momigliano, S. and M. Spolander (2006), "A disaggregated framework fort he analysis of structural developements in public finances" ECB, WP No 579, Frankfurt/Main, ECB.

Martinez-Mongay, C., Maza Lasierra, L.A. and J. Yaniz Igal (2007), "Asset Booms and Tax Receipts: The case of Spain, 1995-2006", European Economy Economic Papers, No 293, Brussels.

Melander, A. and J. Morgan (2009), "How has the crisis affected growth prospects? What are the main sources of uncertainty and how are they affecting economic activity?" delivered at Joint ECB/DG ECFIN Workshop, Frankfurt, 1-2 October 2009.

Morris, R. and L. Schuknecht (2007), "Structural balances and revenue windfalls. The role of asset prices revisited", European Central Bank, Working Paper Series, No 737, Frankfurt/Main, ECB.

Nickel, C. and I. Vansteenkiste, "The interaction between fiscal policy and the current account: the role of Ricardian equivalence", Frankfurt, mimeo.

Tagkalakis, A. (2009) Fiscal adjustments and asset price movements, Bank of Greece Working Paper 104.

Tanzi, V. (2009), "Comments on recent fiscal developments and on exit strategies" delivered at the *"Vancouver Seminar: The Crisis Response and Road to Recovery"*, Bank of Canada, November 30-December 1, 2009, Vancouver, Canada.

Tanzi, V. and L.Schuknecht (2000), "Public spending in the 20th century. A global perspective", Cambridge University Press.

REVISTA DE ECONOMÍA Y ESTADÍSTICA

Instituto de Economía y Finanzas
Facultad de Ciencias Económicas
Universidad Nacional de Córdoba

Instrucciones para los autores

I. Normas Generales

Se reciben para su posible publicación en la Revista de Economía y Estadística trabajos en idioma español o inglés, inéditos y que no estén siendo sometidos simultáneamente para su publicación en otros medios.

Todo trabajo recibido estará sujeto a la aprobación de un Comité de Árbitros, especialistas de reconocido prestigio. El procedimiento que se utiliza es el doble ciego (autores y árbitros anónimos).

Los originales deberán presentarse en versión electrónica (en Word y Excel) y ser enviados a los editores de la Revista a la siguiente dirección electrónica: rev_eco_estad@eco.unc.edu.ar. Es responsabilidad del autor asegurarse que el archivo sea completamente legible en cualquier computadora personal (no solamente en aquella sobre la cual el artículo fue compuesto). No serán aceptados archivos ilegibles.

Los Editores no aceptan la responsabilidad por el daño o la pérdida de artículos presentados. Sobre la aceptación de un artículo, se pedirá al autor/es transferir los derechos de autor del artículo al editor. Esta transferencia asegurará la diseminación más amplia posible de información.

II. Tipos de Contribuciones

Artículos

Artículos breves

Crítica bibliográfica

"Observatorio de Política"

III. NORMAS EDITORIALES

El autor enviará el trabajo de acuerdo con las siguientes normas editoriales:

Extensión: los artículos deberán estar escritos a doble espacio, con márgenes de 2,5 cm.; la extensión promedio será de veinticinco (25) páginas, numeradas consecutivamente (la página del título es la página 1) y en ningún caso podrán superarse las cuarenta (40) páginas.

La primer página del artículo deberá contener la siguiente información:

Título: debe ser corto, explicativo y contener la esencia del trabajo.

Autor (es): indicar los nombres y apellidos completos sin títulos profesionales, seguido de la dirección postal (institucional o particular según corresponda) y dirección de correo electrónico.

Resumen: los trabajos deberán ir acompañados por un resumen en español y en inglés. El resumen debe escribirse en un solo párrafo de no más de 100 palabras. Contendrá una descripción del problema, los objetivos, la metodología y las principales observaciones y conclusiones.

Palabras claves: se debe incluir la clasificación JEL (JOURNAL OF ECONOMIC LITERATURE CLASSIFICATION SYSTEM) disponible en Internet y hasta cinco palabras claves que definan el artículo.

Referencias: todas las referencias bibliográficas citadas en el texto deberán ser presentadas alfabéticamente, y estar escritas según las normas de la International Organization for Standardization. ISO 690 - documentos impresos y materiales especiales e ISO 690-2 Documentos electrónicos y sus partes. Se puede consultar en Internet ambos documentos. ISO 690; ISO 690-2.

Tablas (cuadros) y Figuras (gráficos): tanto las tablas como las figuras se numerarán con números arábigos y cada una llevará una leyenda y la fuente si fuera el caso. Si en una figura se incluyen fotografías, deberán presentarse en forma de copias en blanco y negro, brillantes y de muy buena calidad. Ejemplos:

Figura 1

Precios de las acciones y riesgo/país

Fuente: JPMorgan

Tabla 1

Cambios de tipo de tenencia de la vivienda

Fuente: encuesta movilidad espacial en Bogotá, Centro de Estudios sobre el Desarrollo Económico (CEDE), 1993.

Las tablas, referencias y leyendas para figuras deberán ser escritas en páginas separadas.

Fórmulas: deberán ser numeradas consecutivamente como (1), (2), etc. sobre el lado derecho de la página. Si la derivación de fórmulas ha sido abreviada, se recomienda presentar por separado, cuando sea pertinente, la derivación completa (que no será publicada).

Notas al pie de página: deberán ser en un mínimo y numeradas consecutivamente en todas partes del texto con números en superíndice. Deberán ser escritas a doble espacio y no incluir fórmulas.

Nombre de organizaciones y/o instituciones: deberá indicarse la denominación completa, con su correspondiente sigla entre paréntesis, de toda organización o institución mencionada en el trabajo.

Anexo: con la base de datos, cuando corresponda, es conveniente el envío en un archivo adjunto, de los datos utilizados para las estimaciones y/o construcción de tablas y gráficos.

REVISTA DE ECONOMÍA Y ESTADÍSTICA

Instituto de Economía y Finanzas
Facultad de Ciencias Económicas
Universidad Nacional de Córdoba

Instructions for authors

I. General Information

Papers submitted for publication in Revista de Economía y Estadística must be written in Spanish or English and should not simultaneously be submitted for publication in other journals. Received papers will be considered by a Board of Associate Editors, composed by well known and prestigious specialists. Articles will be subject to the doublé blind procedure (anonymous authors and referees).

Electronic versions of originals (word and /or excel) must be sent to the Editors to the following e-mail address: rev_eco_estad@eco.unc.edu.ar. It is the authors´ responsibility to ensure that the file is completely legible in any personal computer (not only in the one in which the article was written).

Not legible files will not be accepted.

The Editors will not take any responsibility for any damage or loss of submitted articles. On papers acceptance, authors will be asked to transfer their property rights to the Editors in order that the amplest dissemination of information can be guaranteed.

II. Types of Contributions

Articles

Short Articles

Bibliographical Reviews

Contributions to Policy Watch

III. MANUSCRIPT PREPARATION

Papers' length. Submitted articles should typically be less tan 25 double-spaced pages with 2.5 cm margins on all sides, and should in no event exceed 40 pages. Pages should be consecutively numbered (the title page being number 1).

Title page. The title page will include:

The **article title,** which should be short, self explaining and bearing the paper´s essence.

The authors´ name and permanent affiliations, followed by their current postal address, e-mail address and telephone or fax number.

The title page will also include single paragraph abstracts, in Spanish and in English, of not more than 100 words each and a list of two to five keywords.

Footnotes. Footnotes will be kept at a minimum and numbered consecutively and designated by superscripts in the text. All footnotes should be typed double-spaced and they will not include formula.

References. All bibliographical references quoted in the text should follow the format prescribed by the International Organization for Standardization-ISO 690 (printed documents and special materials) and ISO 690-2 (electronic documents and their parts), available in internet for consultation. The list of references will be presented in alphabetic order.

Formula. They should be numbered consecutively throughout the text [e.g. (1), (2), etc] on the right of the page. It is recommended, in case of abbreviated formula display, to separately submit their complete derivation (which will be not published).

Tables and Figures. Tables as well as figures should be identified with Arabic numbers and will have a legend and the source (whenever it applies). Figures carrying photographs will be presented in brilliant, good quality white and black copies. Tables, references and figure legends should be written in separate pages.

Organizations and Institutions. Organizations and Institutions quoted or mentioned in the paper will be indicated with their complete denomination and the corresponding initials between brackets.

Annex. Authors are advised to send, enclosed to the paper, the file with the database used for estimations and the construction of tables and graphics.

UNIVERSIDAD NACIONAL DE CÓRDOBA
FACULTAD DE CIENCIAS ECONÓMICAS
INSTITUTO DE ECONOMÍA Y FINANZAS

REPÚBLICA ARGENTINA

REVISTA
DE
ECONOMÍA Y ESTADÍSTICA

VOLUMEN XLVIII - Número 1 AÑO 2010