

Hans Pitlik, Norbert Gruber, Ewald Walterskirchen

An International Comparison of Success Factors for Budget Consolidation Strategies

The literature on the existing experience with the consolidation of government budgets identifies a number of factors that are decisive for a successful consolidation. It consistently refers to the concentration of consolidation efforts on spending cuts as well as the establishment of an appropriate institutional framework, whereas the influence of other factors (such as accompanying monetary policy measures) on successful consolidation is controversial. Concerning the effects of consolidation strategies on economic growth and national accounts balances, international comparisons – both cross sectional analyses and case studies – show a rather heterogeneous picture.

This article is based on the following WIFO study: Karl Aiginger, Michael Böheim, Kristina Budimir, Norbert Gruber, Hans Pitlik, Margit Schratzenstaller, Ewald Walterskirchen, Optionen zur Konsolidierung der öffentlichen Haushalte in Österreich, February 2010, 175 pages, € 60, free download: http://www.wifo.ac.at/www/jsp/index.jsp?fid=23923&id=38441&typeid=8&display_mode=2 Options for the Consolidation of Government Budget in Austria. Executive Summary, 12 pages, € 20, free download: http://www.wifo.ac.at/www/jsp/index.jsp?fid=23923&id=39722&typeid=8&display_mode=2 • The authors are grateful to Heinz Handler and Gunther Tichy for helpful and constructive comments. • The data were processed and analysed with the assistance of Elisabeth Neppi-Oswald and Andrea Sutrich • E-mail addresses: Hans.Pitlik@wifo.ac.at, Ewald.Walterskirchen@wifo.ac.at

In most industrial countries government debt has risen substantially since the 1970s. In Austria, for example, government debt in relation to output expanded from 18.4 per cent (1970) to 66.5 percent (2009) of GDP. Most countries exhibit a rapid and dynamic increase of debt ratios, which was followed in many cases by a stabilisation at a high level at the beginning of the 1990s¹. In view of the current and expected budgetary strains due to the global financial and economic crisis and due to demographic change most advanced economies are looking for suitable measures to consolidate their budgets.

Already in the past 20 years some OECD countries implemented ambitious programmes to balance their budgets. A number of countries have even managed to lower the debt ratio significantly since the 1990s. Admittedly, the experience also shows that not all attempts to consolidate government budgets were successful in the long run. Against this background the question arises, which economic and political economy factors affect the success and sustainability of consolidation strategies.

In principle a budget consolidation strategy can target both the expenditure side and the revenue side of the budget. From a theoretical perspective, especially those measures promise to be successful that focus primarily on spending cuts. The reason for this assumption is that expenditure-based strategies directly deal with the problem of the government's permanently rising expenditure obligations, whereas a tax hike merely shifts the correction of the spending dynamics into the future.

**Success factors for
consolidation
strategies**

¹ Since the end of the 1970s the long-term interest rate has been above the growth rate in the most important advanced economies (with the exception of the period 2004/2008). This makes it more difficult for the governments to stabilise their debt ratios (Schulmeister, 1995), because tax revenues are linked to nominal growth. Due to this relationship it is important to reduce the budget deficit and debt in boom phases.

Identifying consolidation periods and measuring consolidation achievements

The main objective of any strategy to consolidate government budgets is an improvement of the government's debt situation to regain room for manoeuvre in fiscal policy. Government budgets have to achieve primary surpluses to reduce government debt. The literature thus identifies consolidation periods on the basis of the change of the primary balance, also because this indicator does not include interest payments on existing government debt, which can hardly be influenced by budgetary policies. Thus, changes of the interest rates are not misinterpreted as expansionary (interest hike) or restrictive (interest reduction) fiscal policy.

In order to eliminate purely cyclical effects the relevant studies mostly use the cyclically-adjusted budget balances. The literature usually refers to a period as a consolidation period, if the primary budget balance improves by at least 1.5 percentage points within one year. Admittedly, the reference threshold varies slightly between studies.

In the literature the long-run change of the debt ratio is usually chosen as an indicator for a lastingly successful consolidation. Here the threshold is often defined as a reduction of government debt in relation to GDP by at least 4 percentage points for a sustained period. Most existing studies examine the changes during a period of three years after the beginning of the consolidation.

Empirical studies try to identify those factors which are decisive for a successful and sustained consolidation. Most analyses test for the influence of the factors outlined above on the sustainability of the consolidation strategy by means of probit regression and simple comparisons of means. In their pioneering study *Alesina – Perotti* (1995) show for the OECD countries and the period 1960 to 1992 that the debt ratio can successfully be reduced via spending cuts. By contrast strategies which mainly rely on tax increases do not seem successful in the majority of cases. Numerous subsequent studies by various authors corroborate this finding in principle (Table 1).

Mc Dermott – Wescott (1996) and *Alesina – Perotti* (1997) focus on individual expenditure components of the government budget. According to their analysis cuts especially of staff costs and transfers improve the chances of success of a consolidation, because the dynamic increase of expenditures is slowed for these categories.

As *von Hagen – Hughes-Hallet – Strauch* (2002) and *von Hagen – Strauch* (2001) show the fiscal situation at the beginning of the budget consolidation programme plays a vital role for its success. Obviously the consolidation is the more successful the more difficult the budgetary starting conditions, because this tends to raise the awareness of a crisis and the readiness for reform. However, it is possible that it is generally easier to reduce a higher debt ratio.

Further empirical literature identifies a number of additional factors for success. As *Zaghini* (1999) shows for a sample of EU countries policies of fiscal austerity implementing a whole package of measures within a short period of time ("radical reform", "cold turkey") tend to be more successful than a gradual consolidation over several years.

According to *von Hagen – Hughes-Hallet – Strauch* (2002) centralised structures in the budgetary process ("top-down budgeting") equally turn out more promising than decentralised decision-making structures. In addition to a centralised budget structure especially fiscal rules, such as self-imposed deficit limits or a binding expenditure ceiling, seem to have a positive influence on the consolidation outcome. Furthermore, multiannual financial and budgetary planning can strengthen the transparency and credibility of budgetary policies and thus increase the likelihood of a successful consolidation effort.

The success of consolidation is also influenced by the political environment. Thus, according to *Alesina – Perotti* (1995) single party governments are more likely to permanently reduce the debt ratio than coalition governments (*Alesina – Ardagna*, 1998, *Illera – Mulas-Granados*, 2007), because reaching political consensus is usually easier.

Table 1: Determinants of successful consolidation strategies

Studies	Sample	Result
<i>Spending cuts vs. revenue increases</i>		
Alesina – Perotti (1995)	OECD 1960-1992	Spending cuts are more conducive to successful consolidation than revenue increases
McDermott – Wescott (1996)	OECD 1970-1995	
Alesina – Perotti (1997)	OECD 1960-1994	
Alesina – Ardagna (1998)	OECD 1960-1994	
Heylen – Everaert (1998)	OECD 1975-1995	
Zaghini (1999)	EU 1970-1998	
von Hagen – Strauch (2001)	OECD 1960-1998	
von Hagen et al. (2002)	EU 1992-1998	
Briotti (2004)	EU 1991-2002	
Guichard et al. (2007)	OECD 1978-2004	
Gruber (2009)	OECD 1991-2007, EU 1991-2007	
<i>Expenditure components: Staff expenditures of the public sector, social spending</i>		
McDermott – Wescott (1996)	OECD 1970-1995	Especially cuts in public administration and social transfer spending contribute to the success of consolidation strategies.
Alesina – Perotti (1997)	OECD 1960-1994	
Alesina – Ardagna (1998)	OECD 1960-1994	
von Hagen – Strauch (2001)	OECD 1960-1998	
Wagschal – Wenzelburger (2008)	OECD 1982-2005	
Gruber (2009)	OECD 1991-2007, EU 1991-2007	
<i>Extent and scope of measures</i>		
Alesina – Ardagna (1998)	OECD 1960-1994	More comprehensive measures tend to be more successful than smaller consolidation packages
Heylen – Everaert (1998)	OECD 1975-1995	
Zaghini (1999)	EU 1970-1998	
von Hagen – Strauch (2001)	OECD 1960-1998	
von Hagen et al. (2002)	EU 1992-1998	
Ardagna (2004)	OECD 1975-2002	
Briotti (2004)	EU 1991-2002	
<i>The initial economic and fiscal situation</i>		
Alesina – Ardagna (1998)	OECD 1960-1994	The more difficult the initial situation the more successful the consolidation strategy tends to be
Zaghini (1999)	EU 1970-1998	
von Hagen – Strauch (2001)	OECD 1960-1998	
von Hagen et al. (2002)	EU 1992-1998	
Ardagna (2004)	OECD 1975-2002	
Briotti (2004)	EU 1991-2002	
Guichard et al. (2007)	OECD 1978-2004	
<i>The institutional framework</i>		
von Hagen et al. (2002)	EU 1992-1998	Fiscal rules, expenditure ceilings and deficit limits contribute to a successful consolidation strategy
Briotti (2004)	EU 1991-2002	
Guichard et al. (2007)	OECD 1978-2004	
Europäische Kommission (2007)	EU 1970-2006	
Wagschal – Wenzelburger (2008)	OECD 1982-2005	
<i>The political environment</i>		
Alesina – Perotti (1995)	OECD 1960-1992	Single party governments are more successful in the consolidation of the budget than coalition governments
Alesina – Ardagna (1998)	OECD 1960-1994	
Illera – Mulas-Granados (2007)	EU 1960-2004	
<i>Monetary factors, monetary policy</i>		
Ahrend et al. (2006)	OECD 1980-2005	An initially expansionary monetary policy contributes to the success of the consolidation strategy

Source: WIFO.

The monetary policy framework is another success factor. According to Ahrend – Catte – Price (2006) successful consolidation strategies in the OECD countries between 1980 and 2005 were often accompanied by an expansionary monetary policy, which cushioned the contractionary effects. The impact of devaluations on the consolidation outcome is less pronounced (See also Heylen – Everaert, 1998)

Whereas there is a broad consensus concerning the negative long-term growth effects of persistent excessive government debt², opinions concerning the effects of budget consolidation strategies on short-term growth diverge. Traditionally, the majority of relevant publications expressed fears of contractionary effects. Since the beginning of the 1990s theoretical as well as empirical studies increasingly question the inevitability of dampening aggregate demand effects. They argue that an appropriate budget consolidation strategy cannot only avoid losses of growth, but could induce expansionary ("non-Keynesian") effects under certain conditions.

In theory the most important channel of such effects is via the change of private agents' expectations caused by the consolidation. Expansionary demand effects may occur if the consolidation strategy has a positive influence on the expectations of future life-time income and reduces uncertainty. A credible consolidation encourages the expectation that enhanced fiscal discipline will lower the tax burden in the future, and, therefore, the discounted life-time income will rise, all other things being equal. Due to the reduction of government debt the expected risk premium will be lower, too, which also exerts a positive effect on those aggregate demand components that depend on the interest rate. In addition to these demand-side effects there is also a discussion of theoretical supply-side effects. A fiscal policy turnaround would also improve the international competitiveness by lowering wage costs, because, in view of a credible consolidation, tax relief for labour income would be expected for the future (among others *Alesina – Perotti, 1995*).

Empirical studies find non-Keynesian effects only under particular circumstances, which, however, coincide largely with the factors for a successful budget consolidation strategy. Thus, expenditure-based strategies in an especially difficult initial situation (very high debt ratio) and a consequently large scope are characterised by non-Keynesian effects. By contrast, unsuccessful, mainly revenue-based consolidation programmes tend to be accompanied by the short-term growth losses expected according to the traditional argumentation.

Occasionally, exchange rate policy can also play a role for growth effects. Thus, a devaluation helped Sweden and Finland to cushion potential growth losses (e.g., *Alesina – Perotti, 1997*). However, devaluations are neither necessary nor sufficient for a successful consolidation. There are also examples of consolidation attempts in combination with devaluation strategies that did not trigger any growth impulses and did not contribute to a successful balancing of the budget (*Giudice – Turrini – in't Veld, 2003*).

In total, the changes of total liabilities have to be balanced by changes of assets of the same size. The total of the financial balances (net borrowing/net lending) of the individual sectors must add up to zero. An illustration of this macroeconomic identity provides a useful framework for the empirical analysis of interdependence at the aggregate level. A reduction of the budget deficit can only be achieved if corporations or the rest of the world (via net exports) incur higher debts or if households save less than before (*Steindl, 1982*). Measures to consolidate the budget could therefore miss the objective of reducing the deficit, if this is prevented by a dampening of growth.

Fiscal consolidation in Sweden and Finland was particularly successful (*Marterbauer, 1999*), because especially the rest of the world could compensate for the reduction in government debt, after the currencies had been devalued massively in the wake of the financial crisis of the early 1990s. In the USA, in the United Kingdom, in Spain and in Ireland consolidation was supported essentially by a fall of the savings ratio (to zero in the USA) due to the house price bubble. Certainly, this trend could not

Consolidation and growth effects

Considerations on national accounts balances

² Negative long-term growth effects result from government debt, if the government spends the borrowed funds on consumption. If the government allocates the credit to investment, the growth effects are determined by how efficiently the government funds are used. Theoretical analyses can be found in *Bräuning* (2003); for the empirics, e.g., *Pattillo – Poirson – Ricci* (2004).

last. Since the bursting of the house price bubble the government budget deficits in these countries have been particularly high.

If in the coming years all countries want to massively reduce their government budget deficits after the burden of the financial crisis, there is only a minor chance of achieving this via significantly higher and growing current account surpluses (i.e., higher credit to the rest of the world). However, world trade is expected to expand strongly.

In addition to econometric studies that analyse budget consolidation strategies at an aggregate level, case studies provide more detailed insights which measures were applied in selected countries to achieve consolidation.

Belgium is one example of budget consolidation via spending cuts and institutional reforms. Following low growth at the beginning of the 1990s a total of three consolidation phases can be identified between 1993 and 2002 (*Wagschal – Wenzelburger, 2008*). The foundations for a successful consolidation were laid in the mid 1990s. The first phase (1993-1996) was influenced by the convergence plan of 1992, which aimed at a sustained reduction of the budget deficit. In the second (1996-2000) and third phases (2000-2002) the focus was directly on a reduction of the debt ratio.

Consolidation experience in selected EU countries

Belgium

Table 2: Trends of selected ratios in Belgium

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2007
	As a percentage of GDP											
Debt ratio	127.0	128.6	134.2	132.2	129.8	127.0	122.3	117.1	113.6	107.8	106.5	84.0
Primary balance	2.0	1.7	3.8	4.5	4.5	5.1	5.6	6.7	6.0	5.4	6.0	2.4
Expenditure ratio	53.5	53.8	54.9	52.5	52.1	52.4	51.1	50.4	50.2	49.2	49.2	48.3
Tax ratio	42.5	42.0	43.6	43.8	43.9	44.4	44.9	45.5	45.5	45.2	45.2	44.0
Real GDP growth	1.8	1.5	- 1.0	3.2	2.4	1.4	3.7	1.9	3.5	3.7	0.8	2.9
Compensation of employees	11.4	11.5	11.9	11.9	11.9	11.9	11.8	11.7	11.8	11.5	11.7	11.7
Intermediate consumption	3.1	3.1	3.1	3.2	3.1	3.3	3.2	3.2	3.3	3.2	3.3	3.5
Social benefits other than social transfers in kind	16.2	16.3	16.6	16.3	16.2	16.3	16.1	15.9	15.6	15.2	15.4	15.4
Social transfers in kind	5.5	5.8	5.8	5.6	5.9	6.2	5.9	6.0	6.1	6.2	6.5	6.9
Other current transfers	1.8	1.8	1.9	2.0	1.9	2.0	2.0	2.0	2.1	1.9	2.0	2.1
Subsidies	1.4	1.4	1.4	1.3	1.3	1.3	1.2	1.2	1.3	1.3	1.3	2.0
Capital transfers	1.0	1.1	1.4	1.2	1.2	1.2	1.5	1.4	1.3	1.2	1.0	1.2
Gross capital formation	1.8	1.9	2.1	2.0	1.9	1.8	1.7	1.7	2.0	2.0	1.7	1.6
Interest payments	11.2	10.9	10.8	9.2	8.9	8.5	7.7	7.4	6.9	6.6	6.5	3.9

Sources: AMECO, OECD.

The budget was primarily consolidated from the expenditure side: between 1993 and 2001 the expenditure ratio could be reduced by 5.7 percentage points, while the tax ratio increased by 1.6 percentage points to 45.2 percent of GDP. The decline of interest payments from 10.8 percent (1993) to 6.5 percent (2001) of GDP contributed most to the consolidation. Substantial economies resulted from the suspension of the indexation of social benefits other than social transfers in kind – they were reduced by 1.2 percent of GDP between 1993 and 2001. By contrast social transfers in kind increased by 0.7 percent of GDP. The share of compensation of employees in the public sector changed only slightly (by -0.2 percentage points to 11.7 percent of GDP).

Further measures on the expenditure side included a tightening of the eligibility criteria for receiving unemployment benefits and capping the increase of health spending. In addition public administration expenditures were frozen in real terms and the administration was restructured in part (decentralisation of fiscal responsibilities). In the second half of the 1990s the main focus was on active debt management, which helped to reduce the interest burden sharply. The reversal of the "snowball effect" contributed to a rapid debt reduction: interest payments declined due to the gradual decrease of the debt burden. This created new fiscal room for manoeuvre.

On the revenue side – in addition to the sale of assets – the government raised taxes on income and profits. One objective of the consolidation package consisted in the balancing of the social insurance budget while reducing the burden on labour. For this purpose employers' contributions were lowered, initially only for businesses with a particular dependence on exports, but later this was extended to all companies. This measure was financed by higher indirect taxes (Introduction of an energy tax, increase of the VAT rate by one percentage point). The capital gains tax and employees' social contributions for higher incomes were also raised.

Further, the institutional framework of fiscal policy was reformed in Belgium. The focus was on the objective of streamlining the budgeting process. Thus the federal government transferred expenditure and tax responsibilities to the regions ("communautés"), which curbed the regions' lobbying for additional federal spending.

Further, the Belgian government strengthened the role of the independent panel of experts CSF (Conseil Supérieur des Finances). Due to the reforms this institution, which has supervised the compliance with budget targets since 1989 as well as the compliance with the stability and convergence programmes since 1992, has to prepare an interim report every spring, which allows an earlier detection of deviations from the budget plan, in addition to the annual report. In 1996 an internal stability pact was concluded between the regional administrative levels and the federal government, in which the regions committed themselves to contribute to a reduction of the general government deficit. In 1995 the principle of a lump-sum budget was adopted for the social insurance branches: expenditure increases in one branch of the system had to be offset by spending cuts in other branches in order to balance the overall budget ("plan global").

At the peak of the severe economic and banking crisis of the early 1990s (Budget deficit in 1993: 11.4 percent of GDP) consolidation packages were adopted in 1994. Here spending cuts clearly dominated, but revenue measures also played an important role (Henrekson, 2007, Wagschal – Wenzelburger, 2008).

All in all, the expenditure ratio declined from 69.6 percent to 55.6 percent of GDP between 1994 and 2000, whereas the tax ratio increased from 48.5 percent to 51.8 percent. One focus of the measures was on a reduction of the social benefits other than social transfers in kind (by about –5 percentage points from 22.2 percent to 16.9 percent of GDP in 1993 to 2000). Subsidies were also cut substantially (from 4.4 percent of GDP in 1993 to 1.4 percent in 2001). Economies of staff cost (Compensation of employees in the public sector declined from 18.2 percent of GDP in 1993 to 15.6 percent in 2001) and privatisation measures equally contributed to the reduction of expenditures and debt.

On the revenue side the increase of social contributions for employees and the introduction of a company surcharge on the payroll tax have to be mentioned. Further, an increase of income tax for higher incomes generated additional revenues. At the end of the 1990s and in the early 2000s taxes were lowered, which emphasises the particular contribution of spending cuts to a successful consolidation. Privatisation measures also played an important role in Sweden in the 1990s (Rail and air transport, post and telecommunication, utilities). The banks which had been nationalised during the crises were re-privatised.

The spending cuts were supported by an amended institutional framework. For example Sweden fundamentally reformed the budgeting process strengthening the authority of the ministry of finance. Overall there was a transition from a bottom-up process to a top-down process, which served as a model for the reform of the Austrian federal budget legislation. Expenditure ceilings referring to macroeconomic indicators were defined for budgeting. In addition the reform strengthened medium-term budget planning by specifying expenditure ceilings for the following three years. The budgetary practice became more transparent due to the inclusion of off-budget funds.

In addition to these institutional factors the monetary framework contributed substantially to Sweden's successful consolidation: devaluations and the monetary sta-

Sweden

bilisation by the central bank ensured that the economy recovered quickly and the subsequent economic growth contributed to the consolidation achievements.

Table 3: Trends of selected ratios in Sweden

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2007
	As a percentage of GDP											
Debt ratio	66.2	70.5	72.4	72.1	72.1	69.2	69.1	64.8	53.6	54.4	52.6	40.5
Primary balance	- 6.8	- 6.6	- 4.9	- 4.1	0.6	2.3	4.1	3.3	4.9	3.2	0.6	2.9
Expenditure ratio		71.7	69.6	65.1	63.0	60.9	58.8	58.6	55.6	55.5	56.7	52.5
Tax ratio		48.3	48.5	47.9	50.4	50.9	51.6	51.8	51.8	49.9	47.9	48.3
Real GDP growth	- 1.2	- 2.1	3.9	4.0	1.5	2.5	3.8	4.6	4.4	1.1	2.4	2.6
Compensation of employees		18.2	17.3	16.4	16.8	16.4	15.9	15.5	15.3	15.6	15.8	15.1
Intermediate consumption		11.2	11.5	10.8	10.5	10.2	10.6	10.5	9.7	10.0	10.1	9.4
Social benefits other than social transfers in kind		22.2	21.7	20.1	19.3	18.5	18.3	17.8	17.1	16.9	17.0	15.3
Social transfers in kind		1.9	2.0	2.1	2.2	2.0	2.2	2.3	2.6	2.7	3.1	3.0
Other current transfers		1.6	1.8	1.9	1.7	1.7	1.9	2.0	2.1	2.1	2.1	2.1
Subsidies		4.4	4.0	3.6	3.2	2.6	2.1	2.0	1.5	1.4	1.5	1.5
Capital transfers		4.3	1.1	0.7	0.6	0.5	0.3	0.5	0.4	0.3	0.3	0.3
Gross capital formation	3.6	3.7	4.0	3.9	3.4	3.0	3.1	3.1	2.8	2.9	3.1	3.1
Interest payments		5.7	6.2	5.3	5.4	5.2	4.6	4.0	3.5	2.8	3.1	1.8

Sources: AMECO, OECD.

Finland, too, was successful in consolidating public finances via spending cuts and institutional reforms. The implementation of consolidation measures in 1993 was preceded by a severe economic and banking crisis, which had substantially worsened the budget situation (*Hauptmeier – Heipertz – Schuknecht, 2006*) – in 1993 the budget deficit amounted to 8.2 percent of GDP.

Between 1993 and 2001 the expenditure ratio decreased from 64.7 percent to 47.8 percent. At the same time the tax ratio declined from 45 percent to 44.8 percent, fluctuating between 44.8 percent and 47.6 percent (adjustments of VAT, increase of social contributions, reduction of personal income tax).

Finland

Table 4: Trends of selected ratios in Finland

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2007
	As a percentage of GDP											
Debt ratio	40.0	55.3	57.8	56.7	56.9	53.8	48.2	45.5	43.8	42.3	41.3	35.1
Primary balance	- 3.4	- 3.8	- 2.1	- 2.7	- 0.1	1.2	3.2	2.8	7.2	5.2	4.4	3.5
Expenditure ratio	62.3	64.7	63.7	61.5	59.9	56.2	52.6	51.5	48.3	47.8	48.8	47.3
Tax ratio	45.7	45.0	47.6	46.1	47.3	46.6	46.4	46.1	47.4	44.8	44.8	43.1
Real GDP growth	- 3.7	- 0.9	3.6	3.9	3.7	6.2	5.2	3.9	5.1	2.7	1.6	4.2
Compensation of employees	17.7	16.5	15.7	15.2	15.4	14.5	13.8	13.5	13.0	12.9	13.2	13.0
Intermediate consumption	9.2	9.0	9.0	8.7	8.9	8.9	8.4	8.3	7.9	7.9	8.4	9.1
Social benefits other than social transfers in kind	22.2	23.7	23.7	21.9	21.3	19.7	18.2	17.7	16.2	15.9	16.3	15.1
Social transfers in kind	1.3	1.3	1.3	1.3	1.4	1.6	1.4	1.6	1.6	1.7	1.8	2.2
Other current transfers	2.1	2.2	1.9	2.0	2.1	2.3	2.2	2.3	2.2	2.2	2.3	2.5
Subsidies	3.4	3.2	3.0	2.7	2.0	1.8	1.7	1.6	1.5	1.4	1.4	1.3
Capital transfers	0.5	1.7	1.9	2.8	1.5	0.3	0.4	0.9	0.4	0.4	0.4	0.3
Gross capital formation	3.5	2.8	3.0	2.7	2.8	3.1	2.9	2.8	2.5	2.6	2.7	2.5
Interest payments	2.5	4.4	4.1	3.9	4.2	4.2	3.5	3.0	2.8	2.6	2.1	1.5

Sources: AMECO, OECD.

The consolidation was largely achieved via spending cuts. Especially transfers to households and subsidies to the business sector were slashed. Within only three years (from 1993 until 1996) Finland reduced the subsidy ratio from 3.2 percent to 2.0 percent of GDP and even further to 1.4 percent until 2001. Capital transfers (including investment grants) were cut back by 2.5 percentage points from 2.8 percent to 0.3 percent of GDP. Social benefits other than social transfers in kind declined considerably (in 1994 23.7 percent, in 2001 15.9 percent, i.e., almost -8 percentage

points). Administrative staff costs, too, were reduced significantly in the consolidation process (Compensation of employees in the public sector in 1993 16.5 percent of GDP, in 2001 12.9 percent).

The consolidation measures were supported by reforms of the institutional framework of the budgeting process. In 1992 Finland defined expenditure ceilings for transfers, subsidies and public sector employment in order to slow the expansion of these expenditure items. Further, the parliamentary quorum for spending cuts was reduced from a two-thirds majority to an absolute majority. These measures were complemented by a reform of the fiscal system at subordinate administration levels. Like Sweden Finland also used monetary policy (devaluation, interest policy), which ultimately supported the consolidation efforts.

Spending cuts and institutional reforms were also the main elements of the Irish consolidation strategy. After a surge of the debt ratio in the 1980s this helped to achieve a remarkable consolidation (*Hauptmeier – Heipertz – Schuknecht, 2006*). A first phase of drastic measures was completed already in 1989. The "fine-tuning" of debt management further reduced the debt ratio until the early 2000s. In view of the surge of the deficit (in 2009 almost 12 percent of GDP) and the significant increase of the government debt ratio in the wake of the financial and economic crisis it certainly remains to be discussed, whether the budget consolidation was sustainable or whether it rested only on growth inflated by speculative bubbles.

Ireland

Table 5: Trends of selected ratios in Ireland

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	2007
	As a percentage of GDP											
Debt ratio	100.7	107.2	112.6	108.3	100.3	93.2	94.5	91.5	94.1	88.7	81.1	25.0
Primary balance	- 2.0	- 1.0	0.8	3.6	4.1	2.8	3.1	3.5	4.2	4.8	3.2	- 0.6
Expenditure ratio	53.2	53.0	51.4	48.3	42.5	42.8	44.4	44.8	44.6	43.9	41.1	35.7
Tax ratio	35.0	35.7	35.9	36.9	33.9	33.7	34.3	34.6	34.6	35.7	33.1	31.2
Real GDP growth	3.1	0.3	4.7	4.3	6.2	7.6	1.9	3.3	2.7	5.8	9.8	6.0
Compensation of employees	11.4	11.5	11.2	10.4	9.7	10.3	10.9	11.1	11.2	10.9	10.1	9.4
Intermediate consumption	6.7	6.9	6.2	5.7	5.4	5.6	5.8	6.0	5.8	5.9	5.6	5.2
Social benefits other than social transfers in kind	14.3	14.7	14.3	13.8	12.1	11.7	12.4	12.8	12.7	12.5	11.7	9.8
Social transfers in kind	1.6	1.5	1.8	1.6	1.5	1.5	1.5	1.6	1.5	1.6	1.5	1.8
Other current transfers	2.4	2.3	2.5	2.3	2.3	1.8	2.0	2.0	2.2	2.2	2.1	2.4
Subsidies	2.1	1.8	2.6	2.9	1.2	1.1	1.1	1.2	1.3	1.1	1.0	0.5
Capital transfers	1.4	1.4	1.4	1.1	0.9	1.0	1.0	1.0	1.1	1.5	1.6	1.2
Gross capital formation	3.8	3.4	2.6	1.8	1.8	2.1	2.2	2.1	2.2	2.3	2.3	4.4
Interest payments	9.6	9.0	9.2	8.5	7.6	7.8	7.6	7.0	6.6	6.0	5.3	1.0

Sources: AMECO, OECD.

During the first consolidation period (1986-1989) the expenditure ratio (53.2 percent in 1985) declined by 10.5 percentage points. In the course of the 1990s a series of smaller measures were taken to curb government debt, the expenditure ratio decreased further to 41.1 percent (1995).

For instance, the Irish government simultaneously enacted a hiring freeze in the public sector and – with the cooperation of the trade unions – a wage cut. In addition to slashing subsidies, public investment was reduced during the first consolidation phase, but was raised again in the 1990s. In the social sphere the focus was on a tightening of eligibility regulations of pensions. The spending cuts were complemented by a reduction of transfers in the health sector and by privatisation programmes. Owing to these measures Ireland could afford a simultaneous reduction of the tax ratio and thus attract high international direct investment.

Institutional reforms constituted an essential part of the measures mentioned above. For instance, the change-over to a multiannual budget contributed substantially to the medium-term consolidation progress.

The successful reduction of the debt ratio was supported by the remarkable economic growth performance. Between 1987 and 1990 the annual growth rate per-

manently exceeded 4 percent, in 1990 it was even 7.6 percent. Owing to the effects of the automatic stabilisers (additional tax revenues, spending cuts) government debt could be diminished considerably.

Consolidation efforts in Italy, which tried to solve the debt problem primarily via tax hikes in the early 1990s, have remained unsuccessful in the long run. Already in the 1960s Italy pursued a strategy which was unsustainable in the long run (inflation and devaluation). During this period the primary deficit remained at a persistently high level. At the beginning of the 1990s the debt ratio finally rose to almost 100 percent of GDP so that the participation in the monetary union was under threat. This is why measures to consolidate the budget have repeatedly been implemented.

Italy

Table 6: Trends of selected ratios in Italy

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2007
	As a percentage of GDP											
Debt ratio	93.1	94.7	98.0	105.2	115.7	121.8	121.5	120.9	118.1	114.9	113.7	103.5
Primary balance	- 3.5	- 2.5	- 0.8	1.6	3.5	2.8	4.0	4.5	6.7	5.4	5.3	2.7
Expenditure ratio	51.6	52.9	54.0	55.3	56.3	53.5	52.5	52.5	50.3	49.2	48.2	47.9
Tax ratio	36.6	37.6	38.6	41.0	41.9	39.7	40.1	41.9	43.8	42.5	42.5	43.1
Real GDP growth	3.4	2.1	1.5	0.8	- 0.9	2.2	2.8	1.1	1.9	1.4	1.5	1.6
Compensation of employees	11.6	12.2	12.3	12.2	12.0	11.6	11.0	11.3	11.5	10.6	10.6	10.6
Intermediate consumption	5.0	5.1	5.2	5.3	5.3	4.8	4.9	4.8	4.9	5.0	5.0	5.2
Social benefits other than social transfers in kind	15.0	15.0	15.1	16.1	16.6	16.8	16.3	16.5	17.0	16.7	16.9	17.1
Social transfers in kind	2.4	2.6	2.5	2.5	2.3	2.1	1.9	1.9	2.0	2.0	2.1	2.7
Other current transfers	1.1	0.9	1.0	1.0	1.3	1.0	0.9	1.1	1.1	1.1	1.2	1.5
Subsidies	2.2	1.8	1.8	1.8	1.9	1.7	1.4	1.5	1.2	1.3	1.2	1.0
Capital transfers	1.8	2.0	1.5	1.4	1.5	1.3	2.4	1.5	1.2	1.4	1.5	1.7
Gross capital formation	3.2	3.2	3.1	2.9	2.5	2.2	2.1	2.2	2.2	2.3	2.4	2.3
Interest payments	9.2	10.1	11.4	12.2	12.7	11.4	11.6	11.5	9.3	8.2	6.6	5.0

Sources: AMECO, OECD.

In a first consolidation phase at the beginning of the 1990s Italy tried to match the increase of expenditures by raising taxes so that the tax ratio rose from 36.6 percent (1989) to 41.9 percent of GDP (1993). Although subsidies, capital transfers and gross capital formation were curtailed, the budgetary effects were overcompensated by the dynamic increase of social benefits other than social transfers in kind, compensation of employees and interest payments. The expenditure ratio increased from 51.6 percent (1989) to 56.3 percent of GDP (1993). Nevertheless, rising taxes improved the primary balance by 7 percentage points. However, the overall effect of these measures on the debt ratio was not favourable. Rather, government debt rose further to 121.8 percent of GDP (1994).

As the consolidation efforts via tax hikes were not successful, Italy embarked on a new course in 1993-94. Now the focus was on a reduction of expenditures, whereas taxes were used for consolidation to a much smaller extent. In this context the government concentrated on cutting compensation of employees in the public sector, which helped to reduce the staff costs from 12 percent (1993) to 10.6 percent of GDP (1999). As in the first consolidation phase subsidies were slashed further (from 1.9 percent of GDP in 1993 to 1.2 percent of GDP in 1999). The cuts of social transfers in kind were counteracted by an expansion of social benefits other than social transfers in kind. Owing to the focus on the expenditure side Italy succeeded in reducing the debt ratio from 121.8 percent (1994) to 113.7 percent of GDP (1999), which in turn reduced the interest burden and paved the way for a further debt reduction.

This consolidation strategy was bolstered by institutional reforms. For instance, the reform of electoral legislation in 1994, which restrained proportional representation and complemented it by a majority voting system, led to a reorganisation of the political parties and, consequently, more stable governments. Further, in the reform of the budgeting process expenditure ceilings were defined to curb the dynamic growth of government spending.

In the past several efforts were made in Austria to reduce the budget deficit. These efforts were particularly pronounced in the years 1996-97 and in 2001 (Lehner, 1996, Butschek, 2004). After the early parliamentary elections in 1995 the new coalition government presented a comprehensive consolidation programme, which was enacted in the structural adjustment law of 1996 ("Strukturanpassungsgesetz 1996"). On the expenditure side it included a reduction of public investment, a salary freeze in the public sector, cuts in defence spending, the curbing of early retirement, cuts of unemployment and family benefits as well as a freeze of the nursing allowance. In addition numerous activities were outsourced from the public sector. All in all, the government deficit was successfully reduced from 5.8 percent (1995) to 1.8 percent of GDP (1997) within a period of only two years. During the consolidation of 2000-01, which lead to the realisation of a virtually balanced budget, revenues from wage and income tax, in particular, were raised (Table 7). The decline of compensation of employees in the public sector was almost exclusively due to moving hospitals off-budget.

Table 7: Use of income and changes of assets of the general government

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2007
	As a percentage of GDP										
Expenditures	56.1	56.3	55.9	53.7	54.0	53.7	52.1	51.6	51.0	51.5	48.8
Intermediate consumption	5.7	5.9	6.0	5.1	5.1	5.3	5.0	4.4	4.3	4.4	4.3
Compensation of employees	12.4	12.6	12.3	11.5	11.4	11.4	11.0	9.9	9.6	9.7	9.2
Taxes on production and imports	0.3	0.3	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.2	0.2
Subsidies	2.9	2.8	2.5	3.2	3.5	3.3	3.2	3.3	3.3	3.6	3.3
Interest payments on government debt	3.7	4.1	4.0	3.8	3.7	3.5	3.6	3.5	3.4	3.1	2.9
Social benefits other than social transfers in kind	19.5	19.7	19.7	19.3	19.0	19.1	18.9	19.0	19.2	19.5	18.0
Other current transfers	2.3	2.2	2.3	1.7	1.9	1.9	1.8	2.6	2.4	2.5	2.2
Capital transfers	1.8	1.9	1.8	2.1	2.3	2.1	2.2	2.4	2.1	2.1	2.3
Gross capital formation	3.3	3.0	2.8	2.0	1.9	1.7	1.5	1.2	1.3	1.2	1.1
Acquisitions less disposals of non-produced assets	0.1	- 0.2	0.0	- 0.1	0.0	0.0	- 0.4	- 0.1	0.0	- 0.1	- 0.1
Social transfers in kind	4.1	4.2	4.1	4.9	5.0	5.1	5.0	5.1	5.2	5.3	5.5
Revenues	51.1	50.5	51.8	51.7	51.5	51.3	50.3	51.4	50.1	49.9	48.1
Market and non-market production for own use, revenues of non-market producers	4.5	4.6	4.6	3.0	3.0	2.8	2.7	1.8	1.8	1.8	1.9
Taxes on production and imports	15.5	14.0	14.5	14.9	14.9	15.1	14.7	14.8	14.9	14.9	14.1
Property income	1.9	1.9	1.6	1.7	1.4	1.5	1.5	1.6	1.6	1.5	1.5
Taxes on income and wealth	11.1	11.7	12.7	13.5	13.7	13.3	13.2	15.0	13.9	13.7	13.5
Social contributions	17.2	17.2	17.3	17.3	17.2	17.2	16.8	16.7	16.4	16.5	15.9
Other current transfers	0.8	0.8	1.1	1.0	1.1	1.2	1.2	1.3	1.2	1.2	1.1
Capital transfers	0.1	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.2
Financial balance (net borrowing)	- 5.0	- 5.9	- 4.1	- 2.0	- 2.5	- 2.4	- 1.9	- 0.2	- 0.9	- 1.6	- 0.7

Source: Statistics Austria.

As the experience of the great budget consolidation steps in Austria shows the dampening effects on the aggregate demand (especially in the second half of the 1990s) were smaller than expected (Marterbauer – Walterskirchen, 1999A), also because the consolidation took place in a booming economy and in an environment of falling interest rates, and, because outsourcing (the motorway and trunk road finance and maintenance corporation ASFINAG, the rail infrastructure service corporation SCHIG, hospitals), guarantees privatisations, one-off effects, leasing arrangements etc. played an important role. By their nature such measures are merely an accounting manoeuvre. They do not affect demand.

Despite the consolidation measures growth in Austria did not significantly lag behind the EU average in the years 1996 and 1997. In 2001, however, it did – by 1½ percentage points. Thus, it is important for economic growth which instruments are used

for consolidation. Today the scope for lowering interest rates, further outsourcing and "creative accounting" has largely been exhausted, so that consolidation measures are likely to have a stronger effect on aggregate demand than in the past.

From theoretical considerations and the currently existing empirical evidence the following summary conclusions about vital elements of successful consolidation strategies can be drawn:

Consolidation efforts are often triggered by economic or fiscal crises, because the awareness of the crisis and thus the willingness to carry out reforms increase, as the budgetary problems grow. In this situation the success of a consolidation based on tax hikes is usually temporary. Spending cuts, especially in the fields of public administration and transfers, have a longer-lasting effect on the consolidation achievements. A comprehensive, bold and politically credible budget balancing strategy does not necessarily have to coincide with growth losses in the wake of the consolidation process. Institutional reforms of budgeting serve the purpose of complementing, supporting and securing the consolidation achievements. The reforms include an enhanced top-down orientation of fiscal decision-making as well as more transparent budgetary policies.

However, from a macroeconomic point of view, the budget balance cannot be manipulated at will, but crucially depends on the economic environment (economic growth, interest rates, inflation). Economic growth has a decisive impact on the budget balance, because it both raises government revenues and curbs government spending (unemployment benefits). If nominal growth in Austria increases by 1 percentage point, the budget deficit declines by 0.3 percent of GDP (almost € 1 billion). This finding suggests that a stimulus package should be implemented before the start of the consolidation phase.

Distribution effects of an expenditure-based consolidation have to be taken into account, because mainly low and middle income households benefit from government spending, whereas all social strata are affected almost proportionately to their incomes by revenue measures (Guger *et al.*, 2009). However, higher income households benefit more than proportionately from some expenditure categories, such as cultural subsidies, the promotion of home-ownership etc. As the savings ratio is relatively high for higher incomes, the top income brackets could contribute to the consolidation via an increase of wealth-related taxes.

Conclusions

- Afonso, A., "Expansionary Fiscal Consolidations in Europe: New Evidence", *Applied Economics Letters*, 2010, 17(2), pp. 105-109.
- Ahrend, R., Catte, P., Price, R., "Interactions between Monetary and Fiscal Policy: How Monetary Conditions Affect Fiscal Consolidation", OECD Economics Department, Working Paper, 2006, (521).
- Alesina, A., "The End of Large Public Debts", in Giavazzi, F., Spaventa, L. (editors), *High Public Debt: The Italian Experience*, Cambridge University Press, 1988, pp. 34-79.
- Alesina, A., Ardagna, S., "Tales of Fiscal Adjustment", *Economic Policy*, 1998, 13(27), pp. 487-545.
- Alesina, A., Ardagna, S., "Large Changes in Fiscal Policy: Taxes versus Spending", NBER Working Paper, 2009, (15438).
- Alesina, A., Perotti, R., "Fiscal Expansions and Fiscal Adjustments in OECD Countries", NBER Working Paper, 1995, (5214).
- Alesina, A., Perotti, R., "Fiscal Adjustments in OECD countries: Composition and Macroeconomic Effects", NBER Working Paper, 1997, (5730).
- Ardagna, S., "Fiscal Stabilisations: When Do They Work and Why?", *European Economic Review*, 2004, 48(5), pp. 1047-1074.
- Bräuning, M., *Public Debt and Endogenous Growth*, Heidelberg–New York, 2003.
- Briotti, G., "Fiscal Adjustment between 1991 and 2002: Stylised Facts and Policy Implications", ECB Occasional Paper, 2004, (9).
- Butschek, F., *Vom Staatsvertrag zur EU*, Böhlau, Vienna, 2004.
- European Commission, "Public Finances in EMU 2007", *Economic and Financial Affairs*, 2007.
- Giavazzi, F., Pagano, M., "Can Severe Fiscal Constraints be Expansionary? Tales of Two Small European Countries", in Blanchard, O.J., Fischer, S. (editor), *Macroeconomic Annual*, NBER, 1990, pp. 75-116.
- Giavazzi, F., Pagano, M., "Non-Keynesian Effects of Fiscal Policy Changes: International Evidence and Swedish Experience", *Swedish Economic Policy Review*, 1996, 31, pp. 67-103.

References

- Giudice, G., Turrini, A., in't Veld, J., "Can Fiscal Consolidation be Expansionary in the EU? Ex-post Evidence and Ex-ante Analysis", *European Economic Papers*, 2003, (195).
- Gruber, N., "Die Bedeutung der Lissabon-Strategie für Budgetkonsolidierungen ohne Wachstumsverluste", diploma thesis, Vienna University of Economics and Business, 2009.
- Guger, A., Agwi, M., Buxbaum, A., Festl, E., Knittler, K., Halsmayer, V., Pitlik, H., Sturn, S., Wüger, M., Umverteilung durch den Staat in Österreich, WIFO, Vienna, 2009, http://www.wifo.ac.at/www/jsp/index.jsp?fid=23923&id=36802&typeid=8&display_mode=2.
- Guichard, S., Kennedy, M., Wurzel, E., André, C., "What Promotes Fiscal Consolidation: OECD Country Experiences", OECD Economics Department, Working Paper, 2007, (553).
- Hauptmeier, S., Heipertz, M., Schuknecht, L., "Expenditure Reform in Industrialised Countries: A Case Study Approach", ECB Working Paper Series, 2006, (634).
- Henreksson, J., "Ten Lessons About Budget Consolidation", Bruegel Essay and Lecture Series, 2007.
- Heylen, F., Everaert, G., "Success and Failure of Fiscal Consolidation in the OECD: A Multivariate Analysis", *Public Choice*, 1998, 105, pp. 103-124.
- Illera, R., Mulas-Granados, C., "What Makes Fiscal Consolidations Last? A Survival Analysis of Budget Cuts in Europe (1960-2004)", *Public Choice*, 2007, 134, pp. 147-161.
- Lehner, G., "Budgetkonsolidierung prägt Bundesvoranschlag 1996 und 1997", *WIFO-Monatsberichte*, 1996, 70(5).
- Marterbauer, M., "Grenzen der Steuerungsfähigkeit: Die schwedische Fiskalpolitik im Konjunkturzyklus", in Riegler, C., Schneider, O., *Schweden im Wandel – Entwicklungen, Probleme, Perspektiven*, Berlin, 1999.
- Marterbauer, M., Walterskirchen, E. (1999A), *Gesamtwirtschaftliche Auswirkungen der Konsolidierungspolitik in der EU*, WIFO, Vienna, 1999.
- Marterbauer, M., Walterskirchen, E. (1999B), "Keynesianische oder neoklassische Effekte der Budgetkonsolidierung in Europa zwischen 1995 und 1997?", in Heise, A. (editor), *Makropolitik zwischen Nationalstaat und Europäischer Union*, Marburg, 1999.
- Marterbauer, M., Walterskirchen, E., "Verteilungseffekte des Regierungsprogramms", *Wirtschaft und Gesellschaft*, 2000, (2).

An International Comparison of Success Factors For Budget Consolidation Strategies – Summary

As a result of the economic crisis many countries are battling rising debt once more. Therefore political discussions about future consolidation strategies are becoming more frequent. As there is a large number of relevant studies on fiscal adjustment, this article tries to sum up and compare the main findings of the existing literature.

Different factors influence the likelihood of a successful consolidation. Therefore not all consolidation efforts have succeeded in solving the public debt problem so far. A vast majority of the existing literature finds that consolidation strategies concentrating on spending cuts (instead of tax increases) have a significant and positive effect on the likelihood of success, especially, if the strategy focuses on expenditures that are on a rising trend (e.g., pension payments). Furthermore, there is broad agreement on the positive influence of fiscal rules, such as expenditure targets, on fiscal discipline. In addition, some studies find evidence that particular economic conditions (i.e., high debt and economic turmoil) increase the readiness for economic reform and that political and monetary factors affect the likelihood of a successful consolidation. However, the evidence is not as strong as in the case of the factors mentioned above.

Regarding growth effects of fiscal adjustment the evidence in the literature is mixed. The conventional wisdom that fiscal adjustments lead to growth losses in the short-run was challenged after the publication of some studies in the 1990s that found non-Keynesian effects in addition to the traditional Keynesian ones. The authors of these papers argue that fiscal adjustment may positively influence expectations of life-time income, as taxes and risk premia become less likely to increase in the light of fiscal discipline. To avoid the traditional negative Keynesian effects, the fiscal adjustment has to be credible and determined. Therefore the factors mentioned above gain additional importance. Nevertheless, other studies find only traditional Keynesian effects. Overall the growth effects of fiscal adjustment remain controversial. In addition, it has to be taken into account that the balances of all national accounts sectors add up to zero. Accordingly, a reduction of the general government's deficit is only possible, if the remaining sectors reduce their surpluses or increase their deficits, i.e., if private households reduce their savings or the corporate and/or foreign sectors increase their debts. However, this is doubtful in the current economic situation.

- McDermott, J., Wescott, R.F., "An Empirical Analysis of Fiscal Adjustments", IWF, Working Paper, 1996, (WP/96/59).
- Pattillo, C., Poirson, H., Ricci, L., "What Are the Channels Through Which External Debt Affects Growth?", IWF, Working Paper, 2004, (WP/04/15).
- Perotti, R., "Fiscal Policy in Good Times and Bad", *Quarterly Journal of Economics*, 1999, 114(4), pp. 1399-1436.
- Prammer, D., "Wirken Budgetkonsolidierungen expansiv? Kritische Würdigung der Literatur zu nicht-keynesianischen Effekten der Fiskalpolitik mit einer Fallstudie für Österreich", *Oesterreichische Nationalbank, Geldpolitik & Wirtschaft*, 2004, (Q3/04), pp. 36-56.
- Schulmeister, St., "Zinssatz, Wachstumsrate und Staatsverschuldung", *WIFO-Monatsberichte*, 1995, 69(3).
- Steindl, J., "The Role of Household Saving in the Modern Economy", *Banca Nazionale del Lavoro*, 1982, (1).
- Tichy, G., "Einige unkonventionelle Gedanken zum Leben nach der Krise", *Wirtschaft und Gesellschaft*, 2009, (4).
- Von Hagen, J., Hughes-Hallet, A., Strauch, R., "Budgetary Consolidation in Europe: Quality, Economic Conditions and Persistence", *Journal of the Japanese and International Economies*, 2002, 16, pp. 512-535.
- Von Hagen, J., Strauch, R., "Fiscal Consolidations: Quality, Economic Conditions, and Success", *Public Choice*, 2001, 109, pp. 327-346.
- Wagschal, U., Wenzelburger, G., *Successful Budget Consolidation: an International Comparison*, Verlag Bertelsmann Stiftung, Heidelberg, 2008.
- Walterskirchen, E., "Budgetsanierung in einigen westeuropäischen Ländern", *WIFO-Monatsberichte*, 1987, 61(7).
- Zaghini, A., "The Economic Policy of Fiscal Consolidations: the European Experience", *Banca d'Italia, Temi di Discussione del Servizio Studi*, 1999, (355).