

# Expansionary Fiscal Consolidations? An Appraisal of the Literature on Non-Keynesian Effects of Fiscal Policy and a Case Study for Austria

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*This paper reviews the key theoretical and empirical findings of the literature on non-Keynesian effects of fiscal policy, or “expansionary fiscal consolidations.” Specifically, it seeks to identify why the empirical evidence is rather ambiguous about the effects that fiscal contractions have on private consumption, investment, national saving and output.*

*The empirical evidence surveyed in this paper is found to provide no clear support for the existence of expansionary fiscal consolidations. The safest conclusion seems to be that fiscal policy has lost some of its ability to stabilize the economy over the recent past.*

*Austria’s fiscal consolidation of 1995–1997, identified as expansionary by the European Commission, is found to have relied significantly on one-off measures.*

## 1 Introduction

In the 1970s and early 1980s, in times of low nominal growth rates and high nominal interest rates, many European countries were running high deficits, as a result of which public debt rose rapidly. The high debt, in turn, decreased the ability of fiscal policy to stabilize the economy, given the sharp rise in interest expenditure. To tackle this problem, governments initiated fiscal adjustments in the late 1980s. In the EU Member States, these efforts were reinforced in the 1990s to ensure compliance with the fiscal criteria set out in the Maastricht Treaty for participation in the third stage of Economic and Monetary Union (EMU). However, once the founding members of the euro area had been selected in 1998, consolidation efforts were relaxed.

Exacerbated by only very moderate growth since the turn of the millennium, budget balances have consequently worsened considerably in Europe. In order to continue to meet the fiscal criteria established by the Maastricht Treaty and the Stability and Growth Pact and given the implicit financial liabilities posed by ageing populations, many EU Member States these days again face the need to implement major fiscal consolidations. This is true even more so in

the light of EMU enlargement, since sustainable public finances are typically seen as the key prerequisite for monetary stability in EMU.

Policymakers are usually hesitant to introduce fiscal adjustments because standard Keynesian textbook analysis indicates that a fiscal contraction will have a dampening effect on private consumption, output and employment. Yet, there is no consensus on the size or even the sign of the effects that fiscal policy has on economic activity, since a number of studies suggest that a fiscal consolidation might even stimulate economic activity in the short run, i.e. have “non-Keynesian” effects.

In Europe the idea of non-Keynesian effects of fiscal policy, also called “expansionary fiscal consolidations,” was first introduced by German policymakers and economists in the 1980s. The academic debate on expansionary fiscal contractions did not start until years later, sparked by Giavazzi and Pagano (1990), who studied the effects of fiscal policy in Denmark and Ireland in the 1980s. According to this much-cited paper, Denmark and Ireland saw drastic reductions in the cyclically adjusted deficits followed by above-average economic growth. Numerous studies have since sought to identify whether and under what

*Refereed by Martin Zagler,  
Vienna University of  
Economics and Business  
Administration, July 2004.*

<sup>1</sup> *The author acknowledges comments from Sylvia Kaufmann, Markus Knell, Walpurga Köhler-Töglhofer, Geert Langenus and Sandro Momigliano.*

conditions fiscal contractions can generate a favorable economic response.

This paper reviews the key theoretical and empirical findings of the literature on non-Keynesian effects. Specifically, it seeks to identify why the empirical evidence is rather ambiguous about the effects of fiscal contractions on private consumption, investment, national saving and output. While some studies find significant positive effects of fiscal contractions on these macroeconomic variables, others fail to find any support for the idea of non-Keynesian effects of fiscal policy.

The paper is organized as follows. Section 2 presents a survey of theoretical work ranging from Keynesian to non-Keynesian approaches. Section 3 discusses empirical work focusing on case studies and descriptive statistics. Section 4 reviews empirical regression analyses and discusses their results. Section 5 provides an Austrian case study based on the referred literature. Section 6 offers some concluding remarks.

## **2 Some Theoretical Insights: Contractionary or Expansionary Fiscal Consolidations?**

### **2.1 Keynesian Effects**

According to the traditional Keynesian textbook view a fiscal consolidation has short-run contractionary effects on domestic demand, national output and employment. While cuts in government expenditure directly reduce aggregate demand, tax increases dampen private consumption indirectly by reducing disposable income. In the Keynesian model, the initial impact on output of a change in fiscal variables is amplified by the fiscal multiplier, which increases with the marginal propensity to consume

out of disposable income. In theory, the Keynesian multiplier exceeds 1; with the ultimate effect on output being larger for a change in government consumption than for a change in taxes. Hence, even small changes in fiscal policy will affect output, which raises the potential of fiscal policy to stabilize the economy.

The exact size of this multiplier, i.e. to which degree crowding out/in through interest rates and openness is experienced, hinges on the given money market and the exchange rate regimes. If demand for money is very sensitive to the interest rate, changes in fiscal policy have a relatively large effect on output.

### **2.2 Ricardian Effects**

The ability of fiscal policy to affect output and its components, as outlined by the standard Keynesian view, has been questioned by the Ricardian equivalence theorem.

The concept of equivalence as such was first introduced by David Ricardo (1820, reprinted 1951), who stated that for a given path of spending, deficit financing (taking into account the intertemporal government budget constraint) is equivalent to tax financing, and cannot be used to influence aggregate demand. Reacquainting the economics community with this equivalence concept, Robert Barro (1974) postulated the following: Agents with rational expectations realize that even governments that finance some extra spending through deficits will eventually raise taxes to be able to repay the borrowed funds. Therefore taxpayers, while being more liquid today because less money is taxed away, will not consume more but save more to pay for the higher taxes that one day will come. According to the Barro/Ricardo equivalence

theorem, deficits will thus affect neither consumption nor the total amount left for investment, implying that the tax multiplier in this model is zero.

The assumptions on which the Ricardo/Barro theory is based are very strong. Relaxing the necessary assumptions by allowing for imperfect foresight, liquidity constraints, distortionary taxation as well as nonaltruistic behavior with respect to bequests can limit the degree of Ricardian equivalence. Most important, in the empirical literature, Ricardian equivalence is highly ambiguous, which would support Ricardo's doubts that his equivalence idea might not work in practice.

### 2.3 Neoclassical Effects

The third "traditional" school of thought explaining economic effects of fiscal policy is the neoclassical paradigm. Neoclassical economics conceptualizes agents as farsighted, rational actors (like the Ricardian model) with finite life spans (unlike the Ricardian model) and assumes individuals to optimize consumption over their life cycles. In this setup, budget deficits may shift the tax burden to future generations, thus raising total life-time consumption for current consumers. Under the assumption of market clearing, increased consumption implies a reduction in private saving, which in turn causes interest rates to adjust to reinforce balance on the capital market. Thus, permanent deficits in particular crowd out private capital accumulation, which Bernheim (1989) regards as highly detrimental for the economy. For Austria, Zagler (2002), following Elmdorf and Mankiw (1999) quantified the maximal level

effect on GDP that is caused by the reduction in the capital stock – and hence implies reduced production possibilities – at 2.5% of GDP.

### 2.4 Non-Keynesian effects:

#### The Expectational View

If a change in current fiscal policy is taken to as a signal for future fiscal action, fiscal adjustments may affect aggregate demand in a different way than the conventional Keynesian view would suggest. According to such an "expectational view of fiscal policy," a fiscal contraction that is perceived to imply a permanent reduction in government spending as a share of GDP will fuel expectations of lower taxes in the future. Future lower taxes increase households' permanent income and thus are assumed to raise current consumption and investment such that aggregate demand increases, resulting in an upturn in output and employment. Being in contrast to conventional Keynesian wisdom, these effects are called non-Keynesian effects.

These ideas have also been introduced into neoclassical models in which individuals are infinitely lived and government consumption is pure waste. A fiscal adjustment designed to reduce wasteful government consumption clearly is associated with an increase in private wealth via reduced future taxation and hence stimulates private consumption.

An added feature of the recent literature on non-Keynesian effects is that it has tried to model nonlinear effects of fiscal policy. These models capture the switch of fiscal policy effects from Keynesian effects to non-Keynesian effects (and vice versa), as triggered by the state of the economy.

#### 2.4.1 Nonlinear Effects in a Keynesian Setup

Blanchard (1990), and later on also Sutherland (1997) and Perotti (1999) introduced models in a Keynesian setup where the effects of fiscal policy on economic variables, above all on private consumption, depend on the level of public debt. In such setups, fiscal policy exhibits the usual Keynesian effects on consumption at moderate levels of public debt and debt accumulation, but develops non-Keynesian effects once debt reaches extreme values. In such models, fiscal policy thus gives rise to nonlinear consumer behavior.

The idea is that at high levels of debt, the amount of taxes necessary to stabilize the debt position induces a significant deadweight loss. The higher the tax rate required to consolidate, the larger the disruptions generated by the adjustment. So, if a consolidation is expected not to induce sharp tax increases in the future to pay back the debt, deadweight losses will be lower. Hence, expected permanent income increases, which positively affects consumption – which implies that a fiscal consolidation can be expansionary. Conversely, an expansion program implemented when the debt ratio is already high is very likely to trigger sharp tax increases to ensure the sustainability of public finances, thereby reducing income in the near future. In that case the effect of the tax hike on life-time income is much larger than the small positive effect of fiscal transfers – which indicates that a fiscal expansion can be contractionary in these times.

As Blanchard (1990) and Sutherland (1997) assume finitely lived consumers, at low levels of debt, consumers perceive the next stabilization program in the distant future when they

are very unlikely to be alive. As the burden of future very distortionary taxes is unlikely to fall on them, they discount future taxes heavily. Hence, the negative effects of a tax increase that does occur outweigh the positive effects of increased sustainability of public finances. Fiscal expansions exhibit the usual Keynesian effects on consumption when the debt ratio is low, since an intergenerational shift of taxes is still deemed possible.

In Perotti (1999) this nonlinear effect of fiscal policy is the result of the coexistence of liquidity constrained and unconstrained individuals. As constrained individuals consume all their disposable income in each period, their consumption function is purely Keynesian. For unconstrained, forward-looking rational consumers a change in government taxation may exert a positive impact due to positive wealth effects from expected lower distortionary taxes. If the stimulus to output induced by an expenditure increase is not able to outweigh the negative wealth effects generated by higher distortionary taxation, consumption will decrease, i.e. non-Keynesian effects may prevail. These non-Keynesian effects are stronger, the higher the debt level is, since higher financing needs imply higher distortionary taxation.

Hence in this model both expenditure and revenue shocks have the usual Keynesian correlation with private consumption in normal times (i.e. when debt ratios are low) due to the reaction function of liquidity constrained consumers. However, in exceptional times the strong non-Keynesian reaction function of unconstrained individuals might outweigh the Keynesian reaction function provided unconstrained individuals account for a high enough share in the

population. Thus the effect of a shock on consumption is the weighted effect on constrained and unconstrained individuals and depends on the level of government debt.

#### 2.4.2 Nonlinear Effects in a Neoclassical Setup

In contrast to the models presented above, Bertola and Drazen (1993) investigate the possibility of nonlinear effects of fiscal policy, above all of government expenditure, in a neoclassical framework. In a neoclassical setup where consumers are infinitely lived and government consumption is pure waste, every cut in government spending increases private consumption. Reduced government spending in these models implies a decrease in the expected future tax burden, which in turn increases life-time disposable income and private consumption. Therefore, in normal times the relationship between government consumption and private consumption is inverse.

However, as government spending is on an upward path, a stabilization program is necessary at specific trigger points to ensure the sustainability of public finances. At very high levels of government spending, agents know that stabilization has to take place, which means that government spending falls sharply. This cut induces expectations that both future spending and the discounted value of future expected taxes will be lower. Thereby individuals' wealth and private consumption are increased. Hence, a further rise of government spending increases the likelihood that stabilization takes place soon, which in turn induces higher consumption.

Even though the model has a neoclassical structure, the result just presented for very high values of government spending (close to the trigger point) has a Keynesian implication – namely that higher government spending induces higher private consumption. So in this model the neoclassical inverse relationship between private and government consumption flattens out and even reverts shortly before consolidation episodes when the ratio of government spending/GDP increases further.

#### 2.5 Nonlinear Effects: Further Credibility Effects

Among others<sup>2</sup> McDermott and Westcott (1996) highlight the wealth effects on demand induced by changes in interest rates. A country facing high levels of public debt or rapidly increasing public debt might face an interest rate premium on its debt, reflecting the underlying inflation risk or default risk. If a consolidation is perceived to have a permanent debt reducing effect, the sustainability of public finances becomes more credible. Hence inflation expectations as well as the default risk premium should be reduced, both resulting in a decrease of interest rates. This should increase the market value of consumer's portfolios – their wealth – and increase aggregate demand, and especially those demand components that are sensitive to interest rates.

Even though this channel allows for nonlinearities – at very high levels of public debt a fiscal expansion might increase interest rates, thereby reducing wealth and hence demand – it crucially hinges on the credibility of fiscal

<sup>2</sup> Alesina and Perotti (1997a), Giavazzi and Pagano (1990, 1996), Perotti (1999), Höppner and Assenmacher-Wesche (2001).

policy. If there is doubt in the government's ability to significantly decrease public debt, interest rates will most likely not change.

Furthermore, Auerbach (2002) hints that a theoretical foundation for the very popular view of a simultaneous decrease in real interest rates and higher aggregate demand is hard to derive. Using a simple IS-LM model, he shows that an increase in aggregate demand is usually accompanied by an increase in interest rates – even when expectational effects are taken into account. However, Auerbach (2002) qualifies his analysis as he allows for creative amendments to the simple IS-LM analysis, or supply-side effects that can bring about an increase in aggregate demand and a decrease in interest rates simultaneously.

### 2.6 Nonlinear Effects: The Supply Side

Alesina et al. (2002) introduce a supply-side model that emphasizes the labor market as the main transmission channel for fiscal policy.<sup>3</sup> According to this model an increase in government spending, more particularly in the real compensation of government employees, puts upward pressure on private sector wages. If unions are strong enough to enforce their claims, an increase in the compensation of government employees or alternatively a hike in labor taxation increases overall unit labor cost. Standard assumptions on the link between the marginal profitability of capital and real labor compensation show that an increase in real compensation decreases profits and the shadow value of capital and hence curbs investment. Therefore the model explains an increase in private investment during episodes of fiscal contraction.

In contrast to the demand-side models presented above, in this supply-side model the reaction to fiscal policy does not hinge on initial fiscal conditions such as the level of debt or of government expenditure. It rather depends on the composition of the fiscal adjustment, namely on whether consolidation is brought about by labor tax increases or by cuts in government spending, wage expenditure in particular. At any rate, the Alesina et al. (2002) supply-side model does not incorporate nonlinearities due to the dynamics of fiscal variables, but rather relies on nonlinear effects caused by changes in the composition.

### 2.7 Some Critical Comments on the Practical Relevance of Theory

As already mentioned above, the theoretical rationale for the emergence of non-Keynesian fiscal consolidations in the models above hinges crucially on

- (a) the assumption of perfectly rational agents,
- (b) the credibility of the adjustment, and
- (c) the composition of the adjustment.

The variable driving private consumption behavior in all four models of the “expectational view” is the effect current policy has on expectations about future policy changes (such as a very high debt ratio). These policy changes are linked to the materialization of a rare and momentous event, and agents have to anticipate the effects of this credibly changed fiscal strategy.

In practice, however, building credibility seems to be a particularly slow and difficult process when it

<sup>3</sup> For related work on that channel see Alesina and Perotti (1997b) and Lane and Perotti (2003).

comes to political decisions, since political agents often face a time inconsistency problem. This means that a strategy once adopted as the optimal strategy may cease to be optimal and has to be changed accordingly. In other words, when the framework conditions change, a consolidation policy may have to be reversed. In addition, changing governments often have little incentives to commit to their predecessors' actions, and often reverse at least part of their decisions; thereby not adding to the credibility of fiscal adjustments. Therefore agents that are learning from past errors – one of the major features of rational expectations – might not be willing to give credit to any fiscal consolidation, since they know from past experience that fiscal consolidations have often been reversed.

### 3 Empirical Evidence

The empirical literature on non-Keynesian effects of fiscal policy is very inhomogeneous not only with respect to the results, but also with respect to the approaches applied. The approaches currently used in the literature can be grouped as follows: Case studies focusing on a small number of countries (see section 3.1); descriptive studies on “successful fiscal consolidations” (see section 3.2.1) and, drawing on the latter, cross-country studies investigating the characteristics of expansionary fiscal consolidations, i.e. trying to identify/describe circumstances that support the emergence of non-Keynesian effects (see section 3.2.2); and finally cross-country or panel regressions testing econometrically for nonlinearities of the effects of fiscal policy on output and its components consump-

tion, investment or national saving (see section 4).

#### 3.1 Empirical Literature: Case Studies

With their case study on large budget consolidations in Ireland and Denmark in the 1980s, Giavazzi and Pagano (1990) sparked the scholarly debate on nonlinear effects of fiscal policy. Denmark and Ireland, first identified by Giavazzi and Pagano as countries that “are the two most striking cases of ‘expansionary stabilization’ in Europe,” (1990, non-technical summary) are cited throughout the literature and have also made their way into macroeconomic textbooks.

##### 3.1.1 Denmark and Ireland

Giavazzi and Pagano (1990)<sup>4</sup> investigate in detail the periods of fiscal turnaround in Denmark in 1983–1986 and in Ireland in 1982–1984 and 1986–1989, periods in which the full employment deficit decreased by at least 7% of GDP, respectively. In Denmark, consolidation was followed by a strong expansion, as was the second consolidation round in Ireland (whereas after the first round, GDP growth had fallen considerably). Both expansionary consolidation periods were accompanied by concomitant monetary and exchange rate policies: an initial sizeable devaluation was followed by a currency peg to the Deutsche mark, which resulted in a dramatic decrease in nominal interest rates as well as disinflation. Furthermore capital flows were liberalized considerably and wage moderation helped to improve competitiveness in both countries.

At the same time, the two consolidation patterns differ in terms of composition: whereas the Danish gov-

<sup>4</sup> Related work has been done by Alesina and Perotti (1997a).

ernment relied heavily on tax increases – mostly on direct taxation – the Irish consolidation was mostly achieved on the expenditure side; brought about by lower government transfers, a lower government wage bill and reduced investment. Simultaneously, the tax base was broadened while marginal tax rates on household income and corporate tax rates were reduced considerably.

As the overall findings were only partially supporting the existence of non-Keynesian effects the authors state that “part of the expansionary effects of the fiscal contractions analysed here must be attributed to the concomitant monetary disinflation, [...] and the liberalisation of capital flows.” Nonetheless, they conclude: “that there are cases in which the “German view”<sup>5</sup> has a serious claim to empirical relevance” (Giavazzi and Pagano, 1990, p. 32).

Their conclusions are, however, highly controversial as fiscal policy was evidently not the major driving force behind the observed increase in growth rates. Summarizing the major criticism<sup>6</sup> Eichengreen (1998, p. 256) states: “For Denmark and Ireland in the 1980s, for example, analysts argue that fiscal consolidation occurred during the period of the soaring US dollar; the favourable competitiveness effects of these countries’ depreciating real exchange rates therefore swamped the negative output effects of the contractionary fiscal impulse.” For Ireland, Blanchard (2000, p. 337) adds that “Productivity was increasing much faster than real wages, reducing the cost of labour for firms. Attracted by tax breaks, low labour costs and an educated la-

bour force, many foreign firms were coming to Ireland to create new plants.”

### 3.1.2 Other Countries

Taking into account some criticism, a more cautious subsequent study was provided by Alesina and Ardagna (1998), who focused on ten fiscal adjustments in the 1980s and 1990s. Only two out of the ten were classified as unambiguously expansive, namely Ireland 1987–1989 and Australia 1987. These consolidation episodes share sizeable devaluations as well as the policy of wage moderation, generating a boost in competitiveness.

Interestingly, the often cited case of Denmark was only considered as mixed evidence, since even though during the adjustment the economy was clearly expanding, in the immediate aftermath Denmark experienced a severe downturn.

### 3.1.3 Interpretation of Findings

To sum up the evidence of the case studies referred to above, it seems that the effects of fiscal policy can hardly be assessed on their own. As so many extraordinary factors are affecting the economy at the same time it is difficult to filter out the effects of fiscal policy keeping a *ceteris paribus* assumption, since mostly a significant change in fiscal policy was just part of a whole “policy package.” As Giavazzi and Pagano (1990, p. 33) state “This expansionary effect, however, crucially hinged upon the credibility of the fixed parity chosen by the monetary authorities: it is remarkable that in both our cases of “expansionary contractions” the shift in fiscal and exchange rate policy was preceded by a

<sup>5</sup> *The German view states that an exceptional fiscal consolidation positively affects aggregate demand.*

<sup>6</sup> *See also Barry (1991), Barry and Devereux (1995), and Andersen and Risager (1988).*

sizeable devaluation.” Whether accompanying structural reforms such as changes in wage systems or in monetary policy were unintended or in fact designed to minimize the adverse effects of fiscal policy has not been analyzed. Furthermore, as the case studies refer to specific countries in very specific situations, one should be hesitant to generalize the patterns observed in these countries.

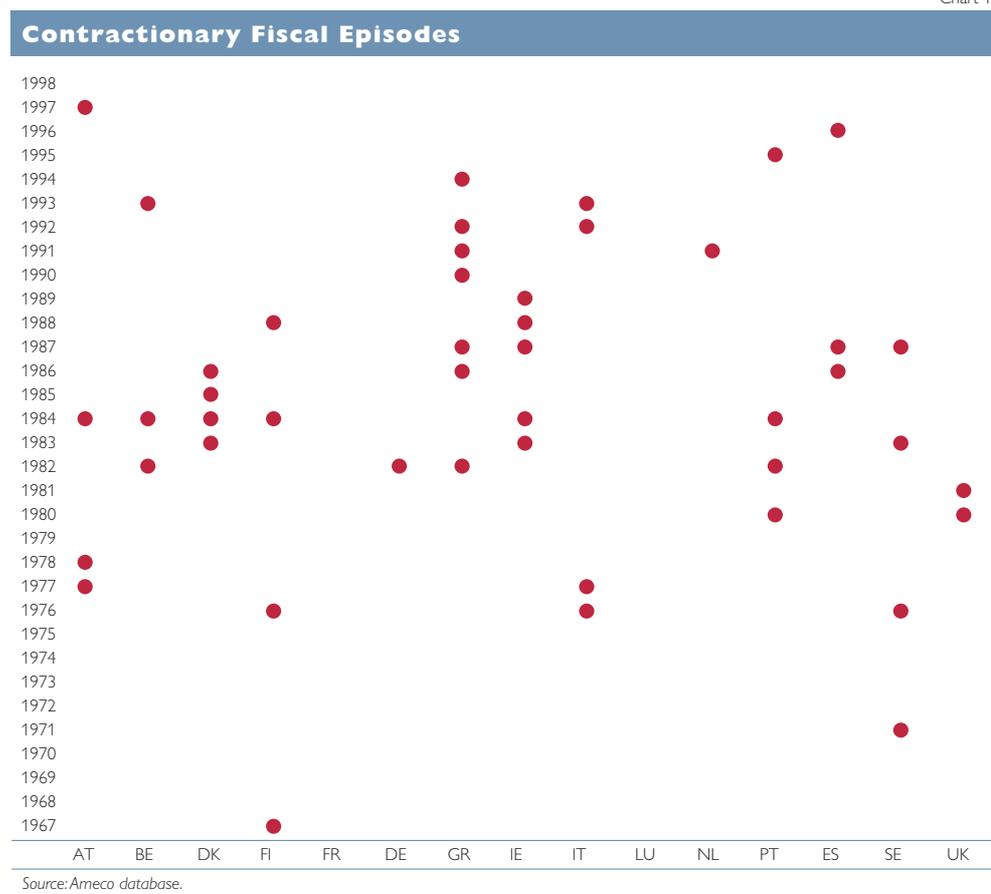
**3.2 Empirical Literature:**  
**Descriptive Evidence**

Based on observations from the case studies, attempts have been made to identify systematic characteristics of

exceptional fiscal periods and their effects on the economy.

A common theme of the closely related strands of literature on the characteristics of “successful fiscal policy” and on those of “non-Keynesian effects” is the attempt to identify periods of fiscal policy in which non-Keynesian effects are likely to be observed. Clearly, that literature draws heavily on the theoretical idea that non-Keynesian effects can only be observed in “exceptional” periods, which are typically defined as periods with large changes in cyclically adjusted primary balances, or alternatively periods of large and growing debt.<sup>7</sup>

Chart 1



<sup>7</sup> To give one example, the European Commission (2003) defines fiscal consolidation periods such that the cyclically adjusted primary budget balance improves by at least 2 percentage points of GDP at time *t* or by at least 1.5 percentage points in each of two consecutive years.

Naturally due to the arbitrariness of the different definitions applied, the periods identified as exceptional fiscal episodes in individual studies vary considerably. Chart 1 indicates years which have been identified as contractionary fiscal episodes in at least half<sup>8</sup> of the seven studies investigated, and hence can be considered as robust fiscal episodes.<sup>9</sup>

A closer look at some of the – seemingly very robust – remaining “exceptional” episodes uncovers further problems with the methods used and the underlying data. According to Alesina and Ardagna (1998) the consolidation periods identified in Spain in the period 1986–1987 should be excluded, since the improvement in the budget balance reflects high growth rates rather than discretionary fiscal policy measures. Due to methodological limitations of cyclical adjustments, part of the changes in the budget balance was incorrectly attributed to discretionary fiscal policy.

However, the episodes identified as strong fiscal contractions are not only subject to the definition applied and cyclical adjustment methods, but also to special influences – temporary measures – underlying the data. In the run-up to EMU, some EU countries relied particularly heavily on temporary measures to improve their budget balances. Hence most likely, the episodes identified in the different studies are not very robust, neither with respect to the definitions chosen, nor with respect to taking account of external/exogenous factors, such as temporary measures.

### 3.2.1 Successful Fiscal Policy Episodes

Further refining the concept of consolidation, part of the literature pays particular attention to “successful fiscal consolidations.” A successful consolidation is interpreted such that the debt/GDP ratio is reduced by a specified amount during/after the consolidation.

Even though this strand is not directly assessing non-Keynesian effects of fiscal policy, it is included in this literature survey because, in a way, it has paved the way for the descriptive literature on non-Keynesian effects of fiscal policy and because it is also (wrongly) used for policy advice on non-Keynesian effects.

Alesina and Perotti (1995, 1996, 1997a), McDermott and Westcott (1996), Alesina and Ardagna (1998), Alesina et al. (1998), Giavazzi and Pagano (1990)<sup>10</sup> and Zaghini (1999) divide the consolidation periods into expansionary and nonexpansionary episodes and investigate the underlying asymmetries of successful and unsuccessful adjustments. In addition, Köhler-Töglhofer and Zagler (2004) find that the very characteristics supporting the reduction of debt/GDP ratio during consolidation periods also keep public finances on a sustainable path during fiscal expansions.

The main and almost unambiguous findings are that a successful fiscal adjustment is characterized by expenditure cuts rather than tax increases. Furthermore, expenditure cuts in successful consolidations fall mostly on cuts in transfer payments and government wage expenditure. Consolida-

<sup>8</sup> As a result, the chart may not fully reflect the episodes referred to in the text (Austria and Ireland being cases in point).

<sup>9</sup> Contractionary episodes of the following studies were investigated: Afonso (2001), Alesina and Ardagna (1998), Alesina and Perotti (1995), Alesina and Perotti (1996), Giavazzi et al. (2000), McDermott and Westcott (1996), Zaghini (1999).

<sup>10</sup> Not derived by comparative statistics, rather by regression.

tions that rely heavily on increases in taxes, above all direct taxes on households and indirect taxes, and include very little expenditure cuts, tend to be unsuccessful. However, there is no consensus as to whether the size of the fiscal consolidation makes a difference between successful and unsuccessful episodes.

With respect to differences in macroeconomic variables between successful and unsuccessful consolidation periods, advocates of this literature conclude that GDP growth rates are higher in successful than in unsuccessful consolidations. Investment booms, private consumption grows, unit labor costs decrease and profits increase as well as trade balances improve during and after successful consolidations.

As revenue and expenditure items are sensitive to the cycle, asymmetries in the composition observed between successful and unsuccessful consolidations – such as less transfer payments during and immediately after successful adjustments – might be due to different positions in the cycle. Following Eichengreen (1998, p. 256) “An alternative interpretation, therefore, is that when there is sustained acceleration in growth for reasons having little to do with fiscal policy much of the induced reduction in the deficit takes the form of a fall in government transfers.”

Altogether, the literature on successful consolidations is mainly of a descriptive nature – simply comparing mean values, and therefore not able to take into account all possible correlations and causalities, as McDermott and Westcott state (1996, p. 741): “Given the interactions between economic growth and changes in public debt ratios, it is difficult to distinguish between the contribution of good

growth to successful consolidations and the effect of successful consolidations in boosting demand and growth.”

### 3.2.2 Non-Keynesian Fiscal Policy Episodes

Drawing on the experiences of the literature on successful consolidations, Alesina and Ardagna (1998), Alesina et al. (2002) and the European Commission (2003) investigate the characteristics of expansionary fiscal consolidation. They define periods of expansionary tight fiscal policy such that some measure of GDP growth (either actual growth, trend growth or the growth difference from G7 average rates) is higher on average during and after the consolidation than before.

In contrast to the literature on successful fiscal consolidations, the focus is now on the development of GDP growth rather than on the development of the debt ratio. However, the characteristics identified to influence the likelihood of expansionary fiscal consolidations turn out to be similar to those accompanying successful fiscal consolidations.

Whereas Alesina and Ardagna (1998) argue that expansionary adjustments are much larger than contractionary ones, the European Commission (2003) suggests that the size of the adjustment is not significantly different. At the same time, there is unambiguous consent among the authors that the composition of the adjustment plays a key role in determining whether the adjustment will have expansionary or nonexpansionary effects. Expenditure-based consolidations are more likely to be expansionary than consolidation periods based on revenue increases. Alesina and Ardagna (1998) and Alesina et

al. (2002) find that cuts in transfer spending as well as in government wages are characteristic for expansionary fiscal consolidations; a statement that is not verified by the European Commission, which does not find a significant difference in the development of the compensation of public employees.

Concerning the macroeconomic environment, the finding that growth is higher during expansionary consolidations is not surprising, given the definition of expansionary consolidation chosen. When the definition of expansionary fiscal policy is conditioned on higher growth rates after a consolidation, this is what one should actually be able to observe.

In order to avoid the argument that macroeconomic developments are mainly caused by accompanying monetary policy, the European Commission isolates so-called “pure expansionary consolidations,” which comprise roughly half of their “expansionary fiscal consolidations.” These episodes are characterized by fiscal consolidations in which the average change in real short-term interest rates between  $t-1$  and  $t+1$  is nonnegative. However, for running the comparative statistics, the European Commission does not apply this distinction but uses all episodes of expansionary fiscal consolidations.

We extend the European Commission statistics on pure expansionary fiscal consolidations to assess the composition and macroeconomic effects, once concomitant monetary policy is excluded. The striking difference is that compositional differences between pure expansionary fiscal consolidations and nonexpansionary consolidations are no longer significant. Hence, it seems that it is not the composition that is the driving factor be-

hind expansionary fiscal consolidations, but rather monetary policy. However, the macroeconomic environment is the same as under expansionary fiscal consolidations and significantly different from nonexpansionary fiscal consolidations.

## 4 Empirical Estimations

Empirical tests of theoretical hypotheses of non-Keynesian effects employ a number of different methods and focus on various components of growth. Following various theories, the regressions intend to capture the wealth effect that arises when the expected size of permanent income is altered due to different expectations about the tax path.

The variables on which non-Keynesian effects of fiscal policy are investigated are: The effects of fiscal policy on consumption (see section 4.1); effects of fiscal policy on national saving (see section 4.2.1); effects of fiscal policy on investment (see section 4.2.2) and effects of fiscal policy on GDP (see section 4.3.4).

### 4.1 Effects of Fiscal Policy on Consumption

Van Aarle and Garretsen (2003), Afonso (2001), Hjelm (2002), Höppner and Assenmacher-Wesche (2001), Miller and Russek (2003), Perotti (1999) and Giavazzi and Pagano (1996) all focus on non-Keynesian effects on a consumption function, mostly using cross-country/panel estimations for (a subsample of) OECD countries. Common to their estimation procedures is that they assume the existence of two different regimes: a Keynesian regime prevailing during “normal” times, and a non-Keynesian predominant in “exceptional” times. Exceptional times are defined in line with the ad hoc defini-

tions in the descriptive literature, either as large changes of cyclically adjusted primary balances; as strong fiscal contractions or expansions; or as times of high debt levels. These distinct regimes are intended to represent periods in which different expectations of the future tax paths are prevailing. Hence, this switch in expectations is empirically captured by a sign reversion of the effects of fiscal policy on macroeconomic variables, which is in line with the theory referred to above. Econometrically, the authors introduce dummy variables to capture the effects of the two different regimes.

Reviewing the empirical literature with respect to the regression methods applied, this paper assesses the results by Giavazzi and Pagano (1996) together with those of Aarle and Garretsen (2003), since the latter replicate the model designed by Giavazzi and Pagano. Both studies estimate various specifications of that type; whereas Giavazzi and Pagano test the robustness of the equations with respect to different estimation techniques, van Aarle and Garretsen test the robustness with respect to various definitions of exceptional fiscal episodes.

Depending on the different specifications applied, Giavazzi and Pagano (1996) find significant non-Keynesian effects with respect to roughly one-quarter of the estimated fiscal variables.<sup>11</sup> Van Aarle and Garretsen (2003) – focusing on the effects of fiscal adjustments of EU countries from 1990–1998 – can hardly support the existence of non-Keynesian effects of fiscal policy on consumption, since none of the estimated regimes turns

out to differ significantly from the other.

The second group of authors – Afonso (2001), Miller and Russek (2003) and Perotti (1999) – are interested not only in non-Keynesian effects but also assess the possibility of nonlinear effects of fiscal policy on consumption during different regimes. These nonlinear effects indicate whether the original effect of fiscal policy is changed – weakened – during exceptional times. Only in a second step do the authors assess whether the resulting non-linear effects are truly non-Keynesian.

This paper compares their results with respect to three definitions of exceptional fiscal episodes applied, namely a large change in the cyclically adjusted primary balance (Miller and Russek, 2003, Afonso, 2001); high debt levels (Perotti, 1999); and strong fiscal contractions or expansions. Judging from table 1 below, government expenditures are more likely to exhibit nonlinear effects on private consumption than government revenues. However, the empirical evidence is rather inconclusive, not only because the estimated effects in the studies are mostly not significant, but comparing the partly contradicting conclusions of the studies considered results in an even stronger inconclusiveness. Whereas Miller and Russek (2003) find only Keynesian effects during fiscal contractions, Afonso (2001) reports non-Keynesian effects during fiscal contractions. In contrast to this, Miller and Russek (2003) report non-Keynesian effects for fiscal expansions, whereas Afonso (2001) does not find any evidence

<sup>11</sup> *The fiscal variables are tax changes, lagged taxes, transfer changes, lagged transfers, public consumption changes, lagged public consumption.*

Table 1

		Exceptional episodes		Fiscal contractions		Fiscal expansions	
		expenditure	revenue	expenditure	revenue	expenditure	revenue
Afonso 2001	EU-15 panel	nonlinear (not sign.)	non-Keynesian (not sign.)	non-Keynesian (not sign.)	non-Keynesian (not sign.)	nonlinear (not sign.)	Keynesian
Miller und Russek 2003	OECD 19 panel	not estimated not estimated	not estimated not estimated	Keynesian (sign.)	Keynesian (sign.)	nonlinear (not sign.)	nonlinear (not sign.)
Perotti 1999	OECD 19 VAR	non-Keynesian (sign.)	non-Keynesian (? sign.)	not estimated	not estimated	not estimated	not estimated

Source: Author's compilation.

for non-Keynesian effects during exceptional government expansions.

In contrast to these two analyses, Perotti (1999) finds not only nonlinear effects between normal and exceptional times, but also non-Keynesian effects of government expenditure. Using a VAR framework to derive unexpected fiscal policy shocks, Perotti (1999) is only interested in assessing the effects of these shocks on private consumption, but “the results presented here have nothing to say about the effects of systematic fiscal policy as a stabilizing tool” (Perotti, 2002, p. 2).

In contrast to the authors above, Höppner and Assenmacher-Wesche (2001) use a Markov-switching approach, which allows for an endogenous determination of the two different regimes – Keynesian and non-Keynesian. Interestingly, the dates of the regime shifts do not correspond to any consolidation or expansion period identified in the literature, but they all fall into periods of business cycle downturns.

To sum up the results of the studies discussed above, empirical evidence does not appear to give an unambiguous answer about the existence of non-Keynesian effects on private consumption. Only a few out of a large number of empirical estimations in fact find non-Keynesian results on private consumption – not even taking

into account the problem of endogeneity or concomitant monetary policy.

## 4.2 Effects of Fiscal Policy on National Saving, Investment and GDP Growth

### 4.2.1 ... on National Saving

Giavazzi et al. (2000) find that the effect of fiscal policy on national saving is at odds with the Ricardian equivalence theorem. Even though nonlinearities in the national saving behavior are observed during exceptional times, the original effects during normal times are never reversed completely but continue to follow the traditional theory.

### 4.2.2 ... on Investment

Alesina et al. (2002) find that an increase in government spending during expansions reduces business investment, which is consistent with the supply-side model of the labor market channel. Taxes reduce investment dynamics, but their effect is much smaller than that of government expenditure.

As fiscal consolidations usually incorporate some kind of spending reductions, increases observed in private investment are to be attributed to the labor market channel of the supply-side model. The fact that investment rises even though government spending is cut, has also been observed in the descriptive analysis

of expansionary fiscal contractions. In other words, since no structural breaks have been found, business investment obviously does not react differently in normal and exceptional periods. So what makes a difference in terms of business investment growth is not the presence or absence of consolidation measures, but rather the composition of fiscal policy in general. This might be the reason why the authors question “the need for ‘special’ theories for large versus small changes in fiscal policy” (Alesina et al., 2002, p. 586).

#### 4.2.3 ... on GDP Growth

Probably closest to the literature on consumption are Miller and Russek (2003), since they explicitly differentiate between different regimes when regressing the effects of fiscal policy on GDP growth. However, as their evidence on non-Keynesian effects of fiscal policy was rather inconclusive, the authors state that “The findings cast some doubt on the possibility that unusual fiscal outcomes reflect some systematic relationships in the macro economy. Rather, special circumstances and conditions may dictate when and where unusual fiscal outcome emerge” (Miller and Russek, 2003, p. 57).

Without allowing for two different regimes, in particular not explicitly allowing for exceptional times, von Hagen et al. (2001), Blanchard and Perotti (2002) and Perotti (2002) provide evidence that the impact of fiscal policy is generally rather small and decreasing over time. An

explicit distinction between pre-1980 and post-1980 effects in Perotti (2002) unveils that in the post-1980 period, unexpected government spending shocks exert significantly negative effects on output growth within the first three years after the shock in most of the investigated countries. On impact, fiscal policy thus tends to exhibit the usual Keynesian effects. Hence, in the short term the effects of fiscal policy mostly remain Keynesian even from 1980 onwards, which may change as time progresses. Furthermore, as these studies only focus on the effects of shocks, evidence on the existence of non-Keynesian effects of fiscal policy – not only of fiscal innovations – remains rather weak.

## 5 Austrian Case Study

This case study is intended to improve awareness of underlying methodological problems, in particular with respect to temporary measures. We assess the fiscal episode 1995–1997 since this episode was identified as an expansionary fiscal consolidation before the third stage of EMU by the European Commission.<sup>12</sup>

As in 1995 the cyclically adjusted primary balance only improved by 0.2 percentage points, and the consolidation package was only introduced in April 1996, we concentrate our analysis on the more important years 1996 and 1997.<sup>13</sup>

This consolidation package basically relied on revenue-raising measures such as abandoning exemptions from wage and personal income taxa-

<sup>12</sup> The period 1995–1997 was identified as expansionary with respect to the persistence criterion by the EC. This criterion required that the primary cyclically adjusted budget balance improves by at least 3 percentage points of GDP over three consecutive years and in each year the change in the primary cyclically adjusted budget balance cannot be below –0.5 percentage point of GDP. The periods chosen to assess the growth effects follow the methodology of the European Commission.

<sup>13</sup> For details on the consolidation packages please see Brandner and Diebalek (2000).

Table 2

Austria's fiscal consolidation 1996–1997									
Consolidation year	Cyclically adjusted primary balance				Average real GDP growth		Cyclical condition		
	t-1	t	t+1	t+2	(t-2)-(t-1)	t-(t+2)	peak	trough	
1996	-0.7	0.70	2.50	1.40	2.00	2.80	1996	1998	
1997	0.7	2.50	1.40	1.10	1.60	3.40	1996	1998	

Source: Statistics Austria, Economic Cycle Institute.

tion and the introduction of an energy tax on electricity and natural gas. At the same time, expenditure measures were enforced, including a virtual freeze in nominal salaries, a reduction of the public payroll by 11,000 persons and cuts in the transfer system. In other words, the government opted for a mixed consolidation package.

In 1997, moreover, one-off measures contributed heavily to the improvement of the primary cyclically adjusted budget balance. The privatization of ASFINAG (the public sector road construction company) and of public utilities (providers of waste sewage disposal services and water suppliers) reduced government nominal investment expenditure from 2.8% of GDP in 1996 to 2% of GDP in 1997. Payments from PSK, the Austrian postal savings bank, and telecommunication licensing proceeds provided additional revenues of approximately 0.5% of GDP. In other words, the strong tightening of the fiscal stance was mainly an artefact resulting from one-off measures. Had it not been for the additional revenues and expenditure cuts arising from one-off measures, 1995–1997 would not even qualify as a consolidation period according to the European Commission's definition in Austria. Furthermore, it is not yet clear whether outsourcing has indeed short-run growth effects.

Moreover, this strong consolidation was not long lasting at all, since the fiscal stance was relaxed quite sig-

nificantly in 1998, deteriorating to 1.4% of GDP, which implies a deterioration of 1.1 percentage points from 1997.

To analyze the timing of Austrian fiscal consolidations, this paper looked at the growth rate cycles at the respective periods. Interestingly enough, the consolidation started in a period of accelerating growth rates, which implies that the consolidation could profit from good economic conditions. However, it seems that the fiscal consolidations were not able to extend the episodes of accelerated growth, but rather curbed them significantly, as the trough of the business cycle was identified in 1998.

## 6 Concluding Remarks

Even though the theoretical rationale for the existence of non-Keynesian effects of fiscal policy is straightforward, its empirical relevance crucially hinges on whether consolidation efforts of governments are credible. However, gaining credibility – apart from being a tough challenge – is a gradual process.

This might be one reason why the empirical evidence on expansionary fiscal contractions is rather weak. Some authors find unambiguous evidence for the existence of non-Keynesian effects of fiscal innovations, but the majority of the papers comes up with rather inconclusive answers. Comparing the partly contradicting conclusions of the studies considered results in an even stronger inconclusiveness.

The empirical evidence surveyed in this paper provides no clear support for the existence of expansionary fiscal consolidations. The safest conclusion seems to be that fiscal policy has lost some of its ability to stabilize the economy over the recent past during the 1990s. Possibly this diminishing power of fiscal policy is associated with the opening of economies and the rather fast integration of good

markets in Europe together with the liberalization of capital markets. Moreover, the Maastricht Treaty and the Stability and Growth Pact, which changed the fiscal framework in the 1990s, as well as the debate on the sustainability of pension systems for ageing societies may also have weakened the short-term effectiveness of fiscal policy in stabilizing output and employment.

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