

Initial conditions and fiscal consolidations: a review of selected literature

This note reviews the relationship between consolidations and ‘initial conditions’ measured primarily in terms of economic and fiscal performance. Interested readers may wish to follow up in detail.

This note looks at two sources of evidence:

- The empirical literature on budget consolidation uses descriptive statistics and regression models to analyse the factors that influence whether a budget consolidation is successful. In this literature, the start of a fiscal consolidation is defined by a change in the cyclically adjusted primary budget deficit¹ with some studies taking account of debt to GDP ratios.² These indicators are typically measured in the two to three years after a consolidation as an indication of ‘sustainability’ or ‘success’.³
- The note also briefly reviews the initial fiscal and economic conditions of three international cases of successful consolidation including Canada from 1994-98, Sweden 1993-98, and New Zealand 1991-94.

The empirical analyses and case study evidence relating sustainability and institutional reform to various measures of ‘initial conditions’ such as prior and current fiscal balance, debt levels, economic growth and unemployment growth provides a clear albeit imperfect story: successful fiscal consolidations often begin during periods of crisis. While it is important to remain cautious and not assume causality, this has at least two implications. First, the ‘crisis’ situation may be a ‘necessary evil’ to galvanize support for a large scale program of strategic change. Second, it provides a positive outlook for countries that are experiencing difficult conditions. It suggests that there may be ‘light at the end of the tunnel’ as a set of studies confirm that it is possible to overcome initial problems and undertake a successful fiscal consolidation.

[EC \(2007\)](#) analysed a sample of 27 European countries from 1970 - 2006⁴. This provides 146 years of consolidation⁵ with one third of those being identified as successful⁶. EC (2007:225-27) reported that ‘the gravity of the initial level of the headline deficit or the initial level of the debt ratio is a statistically significant determinant of success’.

[Ardagna \(2004\)](#) looked at the relationship between initial conditions⁷ and successful consolidations⁸. The sample includes 17 OECD countries from 1975 to 2002 providing 413 observations. They find that ‘...past economic growth has a positive and statistically significant impact...but its effect is small...a one percentage point increase in lagged GDP growth increases the probability that the government is able to solve a fiscal imbalance from 0.19 to 0.21.’ (1060-61) Countries’ initial fiscal conditions have differential effects. ‘A higher level of the deficit-to-GDP ratio decreases

¹ The budget deficit before interest payments on the national debt are taken into account.

² The change (as a proportion of GDP) varies and is generally in the range of ½% to 2% over a period of one to three years. Some studies also take account of debt-to-GDP ratios, and the change varies from a constant ratio over the period to a reduction of 10%.

³ The definition of a sustainable consolidation focuses on both budget surplus (looking for around a 2% reduction) and debt-to-GDP ratios (ranging from the measure staying constant to 10% improvements).

⁴ Although for some countries data was available for a shorter period.

⁵ Define an episode of consolidation as ‘an improvement of the CAPB of at least 1.5% of GDP which is either achieved in one single year [cold shower consolidation] or over a period of three years where in each single year the improvement of the CAPB is less than 1.5 % of GDP and the CAPB does not deteriorate by more than 0.5 % of GDP compared to the year before [gradual consolidation]’ (201).

⁶ ‘A consolidation in line with Definition 1 is successful if the following condition applies: in the three years after the end of the consolidation episode the CAPB does not deteriorate by more than 0.75 % of GDP in cumulative terms compared to the level recorded in the last year of the consolidation period. In other words, at least half of the overall minimum fiscal correction required to qualify as consolidation has to be safeguarded three years after. A consolidation is deemed unsuccessful if this condition is not met’ (202).

⁷ Initial conditions are measured by looking at the initial level of the deficit and debt to GDP ratios and the lagged GDP growth rate.

⁸ ‘In the basic model, a successful fiscal stabilization is an episode in which the cyclically adjusted primary balance improves, and, 2 years after, the debt-to-GDP ratio is at least three percentage points lower than in the year of the fiscal tightening’ (1053).

governments' likelihood to stabilize public debt...' whereas '...a higher stock of public debt increases the chances of a success.' (1061)

[Von Hagen et al \(2002\)](#), used duration models to analyze the effect of the fiscal adjustments on the longevity of fiscal consolidations⁹. The study is based on data for 20 OECD countries from 1960–1998 with 65 episodes¹⁰ of fiscal consolidation. It finds that a '...in each year of a consolidation episode, a large domestic output gap in the preceding year tends to raise the probability of the consolidation to end. This confirms other findings, i.e., that a bleak domestic economy raises the likelihood of consolidations to be successful' (520). When other parameters are introduced into the model, they report that '...the initial and accompanying economic conditions lose much of their explanatory power when considered together with the quality¹¹ of the fiscal adjustment. Only the domestic output gap and the indicator of the OECD fiscal stance then retain significant coefficients.' (521)

[Tavares \(2003\)](#) looked at 19 OECD countries from 1960 – 1992 with 72 cases of fiscal adjustment¹² to relate 'success'¹³ to the initial conditions (the lag debt and lag change of debt).¹⁴ Tavares (2003: 21) finds, 'the faster the recent increase in the level of public debt the more persistent the adjustment'. Moreover, 'when debt is high or has been growing fast in the recent past, the likelihood of success increases' (23).

In a subset of a study on fiscal consolidations, Wagschal and Wenzelburger (2008: 225) analyzed the relationship between 'problem pressure'¹⁵ and the 'willingness to reform'¹⁶ for nine countries between 1992 – 2000. They find a strong correlation between problem pressure and willingness to reform arguing that 'there is a tendency for countries under high economic pressure to introduce stronger institutional reforms than countries with lower problem pressure' and attribute this to the possibility that 'governments in economic crisis situations were more likely to push through structural reforms than they would be under more favorable conditions' (224).

[Ahrend, Catte and Price \(2006\)](#) examined consolidation episodes in 24 OECD countries from 1980–2005 generating 318 observations. They relate success¹⁷ to a set of factors surrounding the initial starting conditions such as fiscal position, output gap, exchange rate, inflation and monetary stance. They found where 'the initial situation is more severe, fiscal adjustment is also more likely to be pursued, adjustment will be continued for longer, and the size of the adjustment (measured in various ways) will tend to be larger. Finally, a difficult financial situation even continues to exert

⁹ Success is present when, 'in two years after the initial adjustment, the government budget balance stands at no less than 75% of the balance in the first year of the consolidation episode.' (519). This analysis estimates empirical hazard models which help to explain the factors associated with 'exiting' a fiscal consolidation.

¹⁰ Episodes are defined where 'either the cyclically adjusted (total) government budget balance increased by at least 1.25% of cyclically adjusted GDP in two consecutive years, or the cyclically adjusted budget balance increased by at least 1.5% of cyclically adjusted GDP in one year and was positive but perhaps less than 1.25% in both the preceding and the subsequent year.' (514).

¹¹ Quality is defined as 'the relative contribution of different budgetary items to the adjustment effort. Good quality fiscal adjustments are marked by a strong emphasis on expenditure cuts rather than increased revenues and on tackling those expenditures that are politically most sensitive such as transfers, subsidies, and wage expenditures'.

¹² Where a fiscal adjustment is a change in the primary deficit by at least – 1.5 percent of GDP in a single year

¹³ Success is achieved if at least either 'in the three years after the tight period, the ratio of the primary deficit to DGP is on average 2 (or more) percent of GDP below its level in the initial year of the adjustment' or 'three years after the initial adjustment year, the debt to GDP ratio is at least 5 percent of GDP below its level in the last year of the tight period' (8-9)

¹⁴ 'The level of public debt at the time of adjustment and the change in its level in the 3 years before the adjustment, as a share of GDP' (37).

¹⁵ operationalised through a 'misery' index developed by 'adding the unemployment rate to the rate of inflation and subtracting economic growth' and including the public debt ratio, economic growth, and the proportion of senior citizens (224).

¹⁶ Developed by compiling an index which includes reforms to fiscal policy performance such as the budget process, public services, constitutional changes, changes to financing or benefits, or other reforms implemented during the budget consolidation such as changes to the labour market and pension system (207-8).

¹⁷ Defined as 'if in the two years following the adjustment which initiated the episode...an additional adjustment of at least one percentage point of GDP is achieved' (10).

some influence in the aftermath of an adjustment episode, insofar as there is a lower tendency for slippage... The probability of consolidation being pursued and of it being successful is also higher under adverse cyclical conditions' (22-23).

[Briotti \(2004\)](#) looked at 15 EU member states from 1991 – 2002 with 43 observed consolidations. They relate the fiscal stance¹⁸ in the period 1992-97 to the government budget balance in 1991. They show that nine out of the twelve countries with a large budget deficit (close to or above 3% of GDP) undertook a greater consolidation (more than 1 percentage point of GDP). They found similar results when comparing the fiscal stance from 1992-97 to the cyclically adjusted primary balance in 1991 (13). The study also found that the consolidation efforts¹⁹ in the high-debt countries²⁰ were greater than those in the low-debt countries (26).

[Guichard, Kennedy, Wurzel and Andre \(2007\)](#) looked at 85 fiscal consolidation episodes²¹ in 24 countries from 1978-2005. They related the initial conditions²² to successful²³ consolidations and found that 'an episode of consolidation begun under weak economic activity had a higher probability of success in the sense of reaching debt sustainability', although they noted that 'this may reflect the effect of weak initial conditions in terms of boosting the overall size of consolidation' (10).

Three international cases of successful fiscal consolidation including Canada from 1994-98, Sweden 1993-98, and New Zealand 1991-94 experienced difficult initial conditions. The following figures draw upon the period preceding and during each case of fiscal consolidation.

- Canada's unemployment rate was 11.4% (1993); its deficit was 9.1% of GDP (1992) and net debt climbed to 70% of GDP (1996)²⁴.
- Similarly, Sweden's unemployment rate was 9.4% (1994) and its deficit was 11.2% of GDP (1993)²⁵.
- In New Zealand, the unemployment rate was 10.3% (1991)²⁶ and the New Zealand Treasury predicted its deficit to be 4.8% of GDP in 1990-91, projected to increase to 6.3% of GDP by 1993-94 with net debt at 52% of GDP in 1990²⁷.

Each of these countries undertook significant public sector reforms producing sustained improvements in the public finances.

¹⁸ Defined as 'the change in the cyclically adjusted primary budget balance, expressed as a ratio to GDP' (12).

¹⁹ Measured as the cyclically adjusted primary balance ratio.

²⁰ High-debt countries are defined as those that in the mid-1990s had debt ratios close to or above 70% of GDP.

²¹ An episode 'starts if the cyclically adjusted primary balance (CAPB) improves by at least one percentage point of potential GDP in one year or in two consecutive years with at least ½ percentage point improvement occurring in the first of the two years, continues as long as the CAPB improves. An interruption is allowed without terminating the episode as long, at the deterioration of the CAPB does not exceed 0.3% of GDP and is more than offset in the following year (by an improvement of at least 0.5 % of GDP) and terminates if the CAPB stops increasing or if the CAPB improves by less than 0.2% of GDP in one year and then deteriorates.' (7)

²² Reported coefficient is 'Gap to primary balance sufficient to stabilise debt (actual-target)' – see page 13

²³ Defined where a fiscal adjustment is large enough to stabilise the debt-to-GDP ratio (10)

²⁴ IMF World Economic Outlook April 2009

²⁵ IMF World Economic Outlook April 2009

²⁶ IMF World Economic Outlook April 2009

²⁷ New Zealand Treasury 1990: 64

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