8-23-2010

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Last Updated: August 23, 2010

"The boom, not the slump, is the right time for austerity at the Treasury." - John Maynard Keynes (1937) Collected Writings

Should the United States cut its deficit in the short term? This has been the subject of intense debate among politicians, policy analysts and thinkers over the past year. What are the consequences of cutting the deficit with interest rates low, unemployment high and growth uncertain?

A recent paper by Alberto F. Alesina and Silvia Ardagna (2009), "Large Changes in Fiscal Policy: Taxes Versus Spending" (henceforth A & A), looks at a cross section of deficit reduction policies among different countries. It examines examples where large-scale deficit reduction is associated with economic expansion and where the debt-to-GDP ratio falls in the medium-term (3 years after the adjustment). Based on this research, many popular commentators suggest that the U.S. can adopt such a policy and grow.[1]

However, upon a further examination of the data such a conclusion is unmerited. The overwhelming majority of the episodes used by A & A did not see deficit reduction in the middle of a slump. Where they did, it often resulted in a decline in the subsequent growth rate or an increase in the debt-to-GDP ratio. Of the 26 episodes that they identify as 'expansionary', in virtually none did the country a) reduce the deficit when the economy was in a slump and b) increase growth rates while reducing the debt-to-GDP ratio. The sole example not covered by those two qualifiers can be explained by a combination of two policy maneuvers that are not easily available to the U.S. at the moment: currency depreciation and interest rate reduction.

We expand on their initial examination and cover the entire data set of 107 observations, finding very little evidence for success when cutting in a slump—in our terminology, when the growth rate in the previous year was lower than the average growth rate over the past three years. Only one additional case out of 107 can be seen as an example of success in fiscal consolidation, and we show that this does not bear scrutiny either.

Key Findings

• Countries historically do not cut their deficits in a slump, instead addressing these problems during a non-recessionary time.

• When countries cut in a slump, it often results in lower growth and/or higher debt-to-GDP ratios. In very few circumstances are countries able to successfully cut during a slump, and this happens only when either interest rates and/or the exchange rates fall sharply.

• In our analysis, we find that there is no episode in which a country facing the same circumstances as the United States (recent recession, low interest rates, high unemployment) has cut its deficit and succeeded in reducing its debt through growth.

• We conclude that there is little evidence provided by A & A that cutting the federal deficit in the short-term, under the conditions the United States currently faces, would improve the country's prospects. It may even make the United States' situation far worse.

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Background

A & A find what they consider to be evidence of episodes in which "spending cuts adopted to reduce deficits have been associated with economic expansions rather than recessions." A & A suggest the episodes they've isolated show that reducing the deficit can lead to an increase in growth. They then use these examples as a basis for investigating the optimal way to reduce the deficit.

But what are these examples, and how useful are they to the United States' current situation? A & A use a panel of OECD countries from 1970 to 2007. The countries included in the sample are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

A & A filter this data to find episodes of fiscal adjustment by capturing years in which the primary deficit decreased by at least 1.5 percent of GDP. This leaves them with 107 periods of fiscal adjustment. Such an approach contrasts with the narrative approaches taken by Romer and Romer (2007) that were meant to control for the endogeneity of when to reduce the deficit. These are abrupt changes in GDP, but whether or not the primary deficit is being decreased at the height of a boom or at the bottom of a slump remains out of the picture. As we will see, cutting at the height of a boom characterizes many of their results, and as such is not relevant for the current United States.

They adopt a second filter and take the average growth rate for the year of the fiscal adjustment and the two years following and compare it to the average G7 growth rate (weighted by GDP weights) over the same period. They identify the top 25% of the difference between these two growth rates as periods of 'expansionary fiscal adjustments'. Note here that an expansion is doubly relative. First, an episode is expansionary if it is in the top quartile of the comparisons being made. But the economy need not be growing quickly (or indeed at all) for this to happen. Second, a country may be growing more slowly or even contracting in the three-year period (inclusive) following the year of adjustment and be considered expansionary if it is growing at a rate that is quicker than the G7 growth rate. This unusual definition selects 26 episodes in which fiscal consolidation takes place and terms them "expansionary."

The last filter A& A use to determine whether or not a deficit reduction is "successful" is if the cumulative reduction of the debt-to-GDP ratio three years after the beginning of deficit reduction is greater than 4.5 percent. Seventeen out of their 26 examples qualify.

Examining A&A's 26 Cases

In examining the data more closely, we seek to see how much these episodes can be used to provide guidance for the U.S. economy.[2] At the outset, therefore, we should remember where the U.S. economy is and what it has just been through. The U.S. underwent a sharp recession in the last year, growing at -2% in real terms, according to the OECD data that A & A (and we) use and was (obviously) lower than the average growth rate from 2007 to 2009. (We use 3-year windows to be as close to the A & A windows as possible). The unemployment rate is over 9% and probably even higher in real terms, since there are far more discouraged workers now than in previous periods. The questions we wish to ask are: how many of A & A's expansionary adjustments occurred in similar circumstances and what were the outcomes in terms of growth increases in the country?

Table 1 below provides such an examination, using their 26 episodes. The third column gives the growth rate in the year of the fiscal adjustment. The fourth column gives the growth rate in the preceding year. The first thing to note is that the average real growth rate in the year preceding is 4.1% across all episodes. **In other words, their examples of successful consolidation were, on average, growing strongly the year before the year of adjustment**. This is, of course, unlike the U.S. case today because the country was in recession last year.

Furthermore, the growth rate in the year preceding the adjustment was higher than the average growth rate for the three years preceding the adjustment in most of the cases (20 out of 26 cases). Why is this important? Because fiscal consolidation in periods of relative booms or steady growth is far less likely to be destabilizing than such actions in periods of slumps. Indeed, it may be standard Keynesian countercyclical policy in some cases. Policymakers are far more likely to undertake fiscal adjustments and to maintain growth in these circumstances than in others.

It should be noted that in fully 7 of the 26 episodes of 'expansionary adjustments' identified by A & A, growth in the country actually slowed in the three-year period (inclusive) following the adjustment compared to the three-year period before the adjustment.
Indeed, growth actually slowed for 4 of the 6 episodes in which consolidation occurred when the growth rate in

Table 1: A & A's Cases of Expansionary Fiscal Consolidation

Country	Year	Real GDP Growth Year T	Real GDP Growth Rate in Year T-1	Average Growth Rate T-3 to T-1	Average Growth Rate from T to T+2	Average Growth Rates from (T to T+2) - (T-3 to T-1)	Do they cut in a slump? (Growth T-1 below average of T-3 to T-1?)	Is Average Growth Higher in Post Adjustment than Pre-Adjustment?
Spain	1986	3.3	2.3	2.0	4.6	2.7	No	Yes
Spain	1987	5.5	3.3	2.5	5.1	2.7	No	Yes
Finland	1973*	7	7.7	5.1	4.0	-1.1	No	No
Finland	1996	3.7	3.9	2.2	5.0	2.8	No	Yes
Finland	1998	5.2	6.2	4.6	4.7	0.1	No	Yes
Finland	2000	5.1	3.9	5.1	3.1	-2.0	Yes	No
Greece	1976	6.9	6.4	2.7	5.7	3.0	No	Yes
Greece	2005	2.2	4.6	4.6	3.7	-0.9	Yes	No
Greece	2006	4.5	2.2	4.2	3.7	-0.6	Yes	No
Ireland	1976	1.4	5.7	4.9	5.6	0.7	No	Yes
Ireland	1987	4.7	-0.4	2.4	5.2	2.9	Yes	Yes
Ireland	1988	5.2	4.7	2.5	6.5	4.0	No	Yes
Ireland	1989	5.8	5.2	3.2	5.4	2.2	No	Yes
Ireland	2000	9.4	10.7	10.2	7.2	-3.0	No	No
Netherlands	1996	3.4	3.1	2.5	3.9	1.4	No	Yes
Norway	1979	4.4	3.9	4.6	3.5	-1.1	Yes	No
Norway	1980	4.5	4.4	4.1	2.0	-2.1	No	No
Norway	1983	3.9	0.1	2.0	5.1	3.0	Yes	Yes
Norway	1996	5.1	4.2	4.0	4.4	0.4	No	Yes
New Zealand	1993**	6.4	1.1	0.1	5.3	5.2	No	Yes
New Zealand	1994	5.3	6.4	2.1	4.3	2.3	No	Yes
New Zealand	2000	2.4	5.3	2.5	3.6	1.1	No	Yes
Portugal	1986	4.1	2.8	0.2	6.0	5.8	No	Yes
Portugal	1988	7.5	6.4	4.4	6.0	1.5	No	Yes
Portugal	1995	4.3	1	0.0	4.0	4.0	No	Yes
Sweden	2004	4.1	1.9	1.8	3.9	2.1	No	Yes

* Real GDP Growth Was Not Available for 1970 for Finland and Hence the Average Growth Rate from 1970 to 1972 is the Average Growth Rate for 1971 and 1972.

** Real GDP Growth Was Not Available for 1990 for New Zealand and Hence the Average Growth Rate from 1990 to 1992 is the Average Growth Rate for 1989, 1991 and 1992.

the previous year was lower than the three-year average preceding consolidation.

So this leaves us with two cases where growth in the year prior to the deficit reduction was not higher than the previous three years and growth did not slow after the reduction. The two cases that successfully cut their deficits in a slump without reducing future growth rates are: Norway (1983) and Ireland (1987).

Two Specific Cases

Norway (1983)

Norway (1983) interestingly is not a country that A & A classify as a "Successful Fiscal Consolidation". The reason for this is clear from a cursory examination of the debt-to-GDP ratio. In 1983, the year of consolidation, the debt was 20.83% of GDP. This rose about 14 percentage points to 34% of GDP by 1986.[3]

The other case is indeed a case of unusual success. We now take a closer look to see if there are ways in which the U.S. can emulate its experience.

Ireland (1987)

Ireland (1987) is the only case of a fiscal adjustment when the economy was in a recession the previous year. It is also a rather well-known case of fiscal consolidation that has been extensively explored by many scholars, including Walsh (1993) and Consdine and Duffy (1998).

The Irish struggle over public finances began in 1983 and involved two attempts to consolidate. The first period was from 1983 to 1986 and was remarkably unsuccessful. The second attempt, the episode selected by A & A, was very successful. It is worthwhile to quote Consdine and Duffy more extensively to understand the difference between these two periods:

> *"This first attempt at fiscal stabilisation coincided with a downturn in domestic economic activity and an international economic environment that was less favourable than in the second half of the decade. The second adjustment was preceded by a massive 10% devaluation of the Irish pound within the European Exchange Rate Mechanism in August 1986. This devaluation combined with positive implications of the fiscal adjustment for foreign direct investment helped the performance of Irish exports. Investment was further aided by the continued reduction of the interest differential with Germany, while exports were aided by the 'Lawson Boom' in Britain (Ireland's largest trading partner at the time)."*

As Walsh (1993) shows, the variables in question had sharp movements. The DM/Pound interest rate fell from about 3 DM/Irish Pound to about 2.7 DM/Irish Pound in 1986 (and stayed at that level for a few more years). The interest rate differential between Ireland and Germany and between Ireland and the UK fell sharply. It dropped from 10% to 5% between mid 1986 and early 1988 for the Irish-German Differential and from about 3.5 % to -1% in the case of the Irish-UK interest rate over the same period. Figure 1 is taken from Walsh (1993):

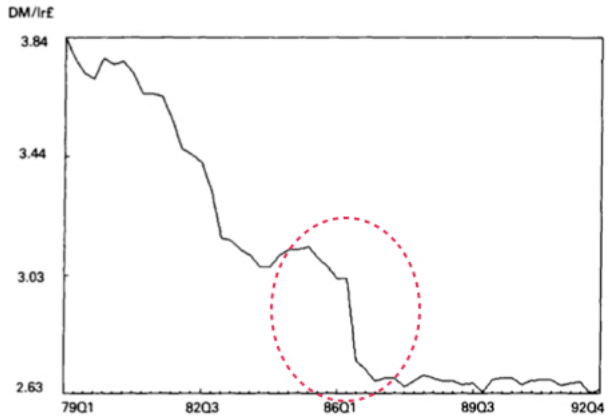


Fig. 1. Irish pound/German mark exchange rate, quarterly data, 1979–92

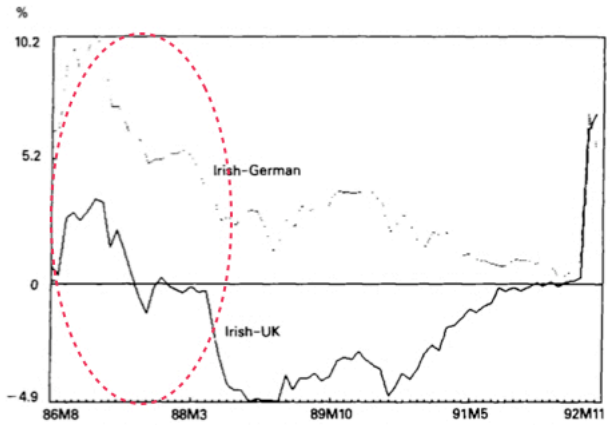


Fig. 2. Irish–German and Irish–UK short-term interest rate differentials

Figure 1. Irish Interest Rates and Exchange Rates

It is not immediately obvious how the growth experiences of a country with a population roughly the size of Chicago's that is undergoing a massive exchange rate devaluation, while its closest trading partner is undergoing a once-in-a-decade boom, while also

witnessing a decline of about 5% in the interest rate differential between it and the benchmark interest rates over the course of a year, is a suitable example to hold up for the U.S. today. The U.S. today has the benchmark rate and its interest rate is at the zero bound. In addition, the U.S. is a large country that cannot rely extensively on export-led growth—especially when its major trading partners are also undergoing recessionary conditions.

A Special Case: Portugal (1995)

One of the cases that does not make it through the filter we apply but needs further examination is Portugal in 1995. Portugal was growing at only 1% in the year preceding consolidation and had undergone a recession two years earlier (in 1993). It therefore bears further examination. As Jorge Correia da Cunha and Cláudia Rodrigues Braz show, Portugal's contractionary fiscal stance in 1995 as part of its attempt to join the ERM was followed by smaller expansionary stances for the next 3 years. But the key difference with the U.S. today was the ability to lower interest rates and encourage private investment. Portugal had an interest rate profile in 1995-2000 as follows:

Table 2: Portugal (1995) Interest Rates

Years	Short Term Interest Rates	Long Term Interest Rates
1995	9.8%	11.5%
1996	7.4%	8.6%
1997	5.7%	6.4%
1998	4.3%	4.9%

(Data from OECD Stat.)

Once again, there was considerable leeway to lower interest rates—a policy unavailable to the U.S. today.

All Cases

In the second step, A & A filtered their results from 107 adjustments to 26. We now turn to the full panel of 107 adjustments to undertake this examination. First, for most of the cases, consolidation did not take place in a slump. The following table shows the 48 episodes in which deficits were cut in a slump:

Table 3: Cases of Consolidation when the Deficit was Cut in a Slump

Country	Years
Australia	1987
Austria	1997
Belgium	1982, 1987, 2006
Canada	1981, 1987, 1996, 1997
Spain	1994
Finland	1976, 2000
United Kingdom	1996, 1997
Greece	2005, 2006
Ireland	1984, 1987
Italy	1976, 1982, 1990, 1991, 1992, 1997
Japan	1984, 1999, 2006
Netherlands	1973, 1983, 1988, 1993
Norway	1979, 1983, 1989, 2000, 2004
New Zealand	1987, 1989
Portugal	1982, 1983, 1992, 2002
Sweden	1981, 1986, 1987, 1994, 1997
Total Cases	48

Of these, more than half saw reductions in their growth rates in the years following compared with the years preceding. The remaining 23 are listed in the table below.

Table 4: Cases Where Fiscal Consolidation Occurred in A Slump and Growth Increased

Country	Years
Australia	1987
Austria	1997
Belgium	1987, 2006

Country	Years
Canada	1997
Spain	1994
United Kingdom	1996, 1997
Greece	1994
Ireland	1984, 1987
Italy	1976
Japan	1984, 1999
Netherlands	1983, 1988
Norway	1983, 1989, 2004
New Zealand	1989
Sweden	1986, 1994, 1997
Total Cases	23

Of these, most of the countries that have the requisite data (data is missing for debt-to-GDP ratios in the OECD tables for many years prior to 1980) experienced rises in the debt-to-GDP ratio in the years following the adjustment—suggesting that growth increases were insufficient to generate the revenues required to reduce debt. We are left then with 8 cases.

Table 5: Cases Where Fiscal Consolidation Occurred in A Slump, Growth Increased and Government Debt-to-GDP Ratios Fell.

Country	Years
Australia	1987
Belgium	2006
Canada	1997
Ireland	1987
Norway	1989, 2004
Sweden	1986, 1997
Total Cases	8

Of these only two, Norway in 1989 and Ireland in 1987, are examples that approximate the U.S. experience today, in that they both experienced recessions in the year prior to consolidation. We have already considered the case of Ireland. We are quite puzzled by the classification of the Norwegian case of 1989 as an example of a fiscal adjustment. We were unable to obtain cyclically adjusted primary balances from the OECD website before 1992, but other information available makes it somewhat implausible that this year should be seen as a period of consolidation. It should be noted that A & A use a different definition of cyclical fiscal variables, and this is possibly the source of the contradiction.[4]

As researchers at the University of Oslo and Research Statistics, Norway show, 1989 was the first year of a very strong expansionary policy in Norway as a reaction to the recession of 1988. They note that between 1988 and 1991, "The cyclically adjusted primary deficit increased by 3.8 per cent of trend GDP".[5]

Such a trend is consistent with the OECD's data on the cyclically adjusted government primary balance that we were able to obtain from an online source drawn from previous reports of the OECD. According to this data, the Norwegian primary balance went from a 3.0% surplus relative to trend GDP to a -8.1% deficit by 1991. In 1989, there was a modest decline in the surplus relative to 1988 of 0.1% of trend GDP—a mild expansion. The table is reproduced below for the relevant years.

Table 6: Cyclically-adjusted general government primary balances [Surplus (+) or deficit (-) as a percent of potential GDP, excludes revenues from Petroleum.]

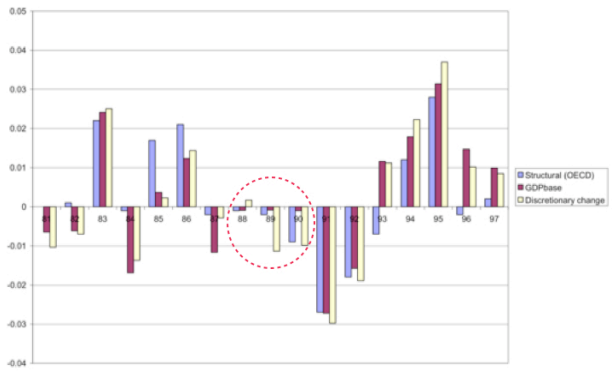
Year	Government Primary Balance
1986	3.9
1987	3.2
1988	3.0
1989	2.9
1990	1.6
1991	-8.1

The idea that 1989 was a year of fiscal policy expansion, not contraction, is further supported by Braconier and Holden (1999). They show that 1989 and later years saw sharp increases in the discretionary budget for

expansion. Figure 2, drawn from that paper, makes the point more clearly.

Figure 2: Norway's expansion 1989-1991

Figure 5.3.3. Discretionary Change in Budget Balances and Change in Structural Budget Balance in Norway, 1981-1997.



Looking at the broad spectrum of examples, we cannot find a situation in which cutting the deficit in the middle of a slump resulted in growth without also devaluing the currency, increasing debt-to-GDP ratios or decreasing interest rates.

An Additional Test Using a Longer Window

We turn now to another filter that is perhaps more appropriate for determining whether a cut is occurring in a slump. We have thus far been trying to maintain consistency with the three year window used by A & A. Instead of taking the growth rate in the previous year and comparing it to the average growth rate over the last three years, we now compare it to the last five years. The idea is to have a more robust idea of the trend growth rate in the economy . It should be noted that the U.S. is indeed in a position where the growth rate in the previous year was well below the five year average from 2005-2009 (inclusive). In the following table we ask the same questions that we have asked above.

First, it is important to see that fiscal consolidations very rarely occur when the growth rate in the year before is lower than the 5 year average preceding the consolidation. **This occurs for only 8 cases out of 107 where adequate data are available.** In 4 of the cases, the economy is growing robustly in the year preceding. In only one case, Ireland in 1987, did the economy recently undergo a recession. One case out 107 resembles the U.S. (superficially), and as we have showed above, the latitude afforded to policy makers in that case was far more than what is available to the U.S. today.

Table 7. GDP growth using longer growth trends

Episodes of Fiscal Consolidation when Growth in year t-1 was lower than average from t-5 to t-1)	Year	Lagged Growth Rates	Does GDP growth in years t to t+2 exceed GDP growth in years t-3 to t-1?
Finland	2000	3.9	No
Greece	2006	2.2	No
Ireland	1987	-0.4	Yes
Norway	1979	3.9	No
Norway	1980	4.4	No
Norway	1983	0.1	Yes
Portugal	1995	1	Yes
Sweden	2004	1.9	Yes

Conclusion

We are living in extraordinary times. This is the largest recession since the Great Depression. A large part of the rest of the world is also undergoing a sharp downturn. There is a genuine and reasonable concern that public intervention will replace the private debt overload with a sovereign debt overload. As such, sound policy advice requires that we recognize what historical examples are relevant for our current situation.

The A & A data do not appear to provide much solace in this regard. Their examples of successful consolidation are typically conditional on cutting a deficit during a boom and not during a slump. There may be situations in which consolidation does indeed result in better outcomes, but those do not apply to the U.S. at the moment. It is not clear that immediate fiscal consolidation will do much to alleviate that worry. Without robust growth, there is little hope of the debt-to-GDP ratio falling. The hope in undertaking such steps is for private investment to be reignited by increased trust and faith in the viability of government finances. While this may be a reasonable hope in some situations, the prospects for such a revival in the U.S. appear bleak.

Paper has been updated with fixes to typos in text, formatting in Table 1 and references to a count of total examples in text.

Endnotes

1. For example see David Brooks (2010), who approvingly citing Alberto Alesina's paper and suggesting that it be taken as guidance for the US.

2. Ryan Avent (2010) has considered a couple of examples that A & A use and suggests that they are not very useful for policy guidance. We argue that virtually none of the cases they look at are.

3. This is most likely because the lower addition to debt was not matched by a sufficiently large addition to GDP to reduce the debt.

4. A & A correct various components of the government budget for year to year changes in the unemployment rate. As they note : "More precisely, the cyclically adjusted value of the change in a fiscal variable is the difference between a measure of the fiscal variable in period t computed as if the unemployment rate were equal to the one in t · 1 and the actual value of the fiscal variable in year t · 1. We prefer this method to more complicated measures like those produced by the OECD because the latter are a bit of a black box based upon many assumptions about fiscal multipliers upon which there is much uncertainty." (page 7)).

5. By the OECD definition. By the government's own statistics, the expansion was even larger.

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Special thanks to Padma Krishnan for valuable research assistance and Bryce Covert for editorial content.