

TECHNICAL NOTE

FISCAL CONSOLIDATIONS AND LABOR MARKET OUTCOMES¹

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1. Introduction

This technical note provides some preliminary evidence on the impact of fiscal consolidations on labor market outcomes. More specifically, it includes some descriptive statistics and stylized facts about fiscal adjustments in advanced economies using alternative methods to identify fiscal consolidation episodes and also presents and discusses some empirical results.

2. Identifying and computing fiscal episodes

The literature addressing the identification of fiscal episodes is vast and has, for a long time, relied on changes in the cyclically adjusted primary balance (CAPB). Some caveats surrounding this approach have been highlighted recently. In particular, the CAPB approach could bias empirical estimates towards finding evidence of non-Keynesian effects (see Afonso and Jalles, 2014 for a recent study). Many non-policy factors, such as price fluctuations, influence the CAPB and can lead to erroneous conclusions regarding the presence of fiscal policy changes.³ In addition, even when the CAPB accurately measures fiscal actions these include discretionary responses to economic developments, such as fiscal tightening to restrain rapid domestic demand growth.

With these considerations in mind, an alternative “narrative approach” is considered, which relies on the identification of fiscal episodes on the basis of concrete policy decisions. The episodes are identified by looking at IMF and OECD historical reports and by checking what countries intended to do at the time of publication.⁴ This policy-action based approach makes use of descriptive historical facts that usually describe what happened to the deficit in a particular period but they do not go into the details of policy makers' intentions, discussions and congressional records. Proponents of this approach argue that the estimated size of the

¹ The contents of this note and any remaining errors are the author's sole responsibility and the views expressed herein do not reflect necessarily those of the IMF or its member countries. Thanks go to Ethan Alt who provided excellent research assistance.

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³ For example, a stock price boom raises the CAPB by increasing capital gains tax revenue, and also tends to coincide with an expansion in private domestic demand (Morris and Schuknecht, 2007).

⁴ Note, however, that this approach differs from the one used in Romer and Romer (2010), who identify exogenous tax policy changes by carefully analyzing US congressional documents.

fiscal measures during the episodes identified have the advantage of not being affected by the cycle (since their construction is “bottom-up”), can minimize identification problems,⁵ and are unlikely to imply risks of reverse causation (Guajardo and others, 2014). That said, the narrative approach could also have some drawbacks: it largely relies on judgment calls, and it may not eliminate entirely endogeneity problems (i.e., fiscal policy reacting to the output performance and not the other way around).

The analysis that follows relies on both the narrative and CAPB-based approaches (the latter being employed largely as the result of lack of sufficient information to construct a narrative dataset for countries other than some advanced economies). On the former, the analysis uses the publicly available dataset compiled by Devries and others (2011) based on the policy-action based method for advanced economies between 1980 and 2010. On the latter, the analysis relies on Afonso’s (2010) approach based on the changes in the CAPB, for other advanced economies and, more importantly, emerging and developing countries between 1980 and 2013. In this case, a fiscal episode occurs when either the change in the CAPB (as a percentage of potential GDP) is at least one and a half times the standard deviation (from the reference country panel) in one year, or when the change in the CAPB is at least one standard deviation on average in the last two years. Other CAPB-based approaches were used to assess robustness. These include: i) Giavazzi and Pagano’s (1996) under which a fiscal episode consists of a change in the CAPB of at least 2 percent of GDP in one year or at least 1.5 percent on average in the last two years; and ii) Alesina and Ardagna’s (1998) that consider a limit of 3 percentage points of GDP for a single year consolidation, and cumulative changes in the CAPB that are at least 5, 4, 3 percentage points of GDP in respectively 4, 3 or 2 years, or 3 percentage points in one year.

2.1 Descriptive statistics of fiscal consolidations

Table 1 reports the fiscal episodes identified according to the above-mentioned four alternative methods.⁶ The number of fiscal contractions ranges from 29, in the approach proposed by Afonso (2010), to 43, using the approach from Alesina and Ardagna (1998). The Devries and others’ (2011) narrative approach reports a much higher number of years where fiscal contractions take place (169 years against an average of 61 for the CAPB approaches), even though the covered time sample is slightly smaller (1980-2010). The average duration of the reported fiscal episodes is on average 1.9 years for the CAPB approaches and around 4.6 years for the narrative approach. The three CAPB-based methods essentially coincide in about 50% of total number of years with those of the narrative approach.

⁵ However, as Jorda and Taylor (2013) argue, fiscal shocks may not be exogenous and can be predicted.

⁶ For the CAPB-based approaches the sample of 30 advanced countries has been constrained in Table 1 to match the 17 sub-set for which the narrative approach has available data.

Table 1. Identification of Fiscal Episodes based on the narrative approach and on the change in the CAPB

	Narrative (Devries and others, 2011)	Afonso (2010)	Alesina and Ardagna (1998)	Giavazzi and Pagano (1996)
Australia	1985–88, 1994–99
Austria	1980–81, 1984, 1996–97, 2001–02	1984, 1997, 2005	1997, 2001, 2005	...
Belgium	1982–87, 1990–97	1982–85	1982–85, 2006	1982–87
Canada	1984–97	1987, 1996–97	1981, 1986–87, 1996–97	1987–88, 1996–98
Denmark	1983–86, 1995	1983–86, 2013	1983–86, 2005, 2013	1983–87, 2005
Finland	1992–97	1988, 1996–97, 2000	1988, 1996–97, 2000	1997–98, 2000
France	1987–92, 1995–2000	...	1983	...
Germany	1982–84, 1991–2000, 2003–07	1996–97	1996–97, 2000, 2011–12	1996–99, 2012
Ireland	1982–88, 2009	1988, 2009–11, 2013	1988, 2009–11, 2013	1988, 2010–13
Italy	1991–98, 2004–07	1982–83, 1992–93	1982–83, 1992–93, 1997, 2012	1983, 1992–94
Japan	1980–83, 1997–98, 2003–07
Netherlands	1981–88, 1991–93, 2004–05	1991, 1996–97, 2013	1991, 1993, 1996–97, 2013	1991, 1993, 1996–99, 2013
Portugal	1983, 2000–07	1983–84, 1992, 2006, 2011–12	1983–84, 1986, 1988, 1992, 2006, 2011–13	1983–84, 2011–13
Spain	1983–84, 1989–97	2013–13	2012–13	2012–13
Sweden	1984, 1993–98	1996–97, 2001	1996–98, 2001	1996–99, 2001
United Kingdom	1980–82, 1994–99	1986–87, 2010–11	1986–87, 1997–98, 2010–11	1986–89, 1997–98, 2000, 2011–13
United States	1980–81, 1985–98	...	2013	2013
Years with episodes	169	49	68	65
Number of episodes	37	29	43	28
Average duration (years)	4.6	1.7	1.6	2.3
Percentage of overlapping years relative to the narrative approach	100	51	49	46

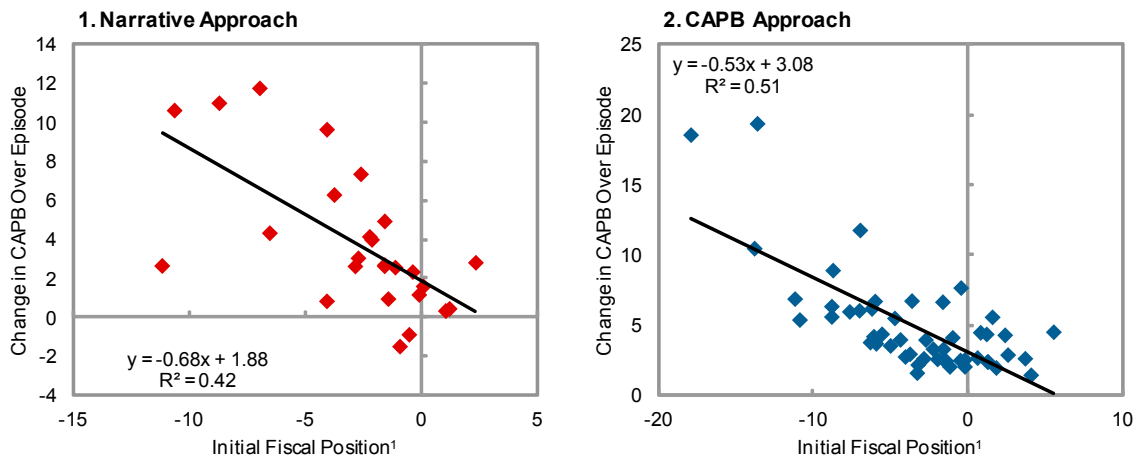
Note: Devries and others (2011) and author's estimates

As far as characteristics of the fiscal episodes in advanced economies are concerned, the fiscal conditions prevailing just before the beginning of a consolidation episode seem to have had an impact on the size of subsequent efforts (Figure 1).⁷ The larger the cyclically adjusted primary deficit, the larger was the size of ensuing fiscal consolidation (this finding is corroborated in Escolano and others, 2014). This may reflect that large deficits made it more

⁷ Findings are not dependent on the CAPB-based approach chosen. Using alternatively Alesina and Ardagna's (1998) or Giavazzi and Pagano's (1996) approaches yield qualitatively similar results. These are not shown for reasons of parsimony. The change in the CAPB was also employed when using the narrative approach for comparison purposes in Figures 1–4.

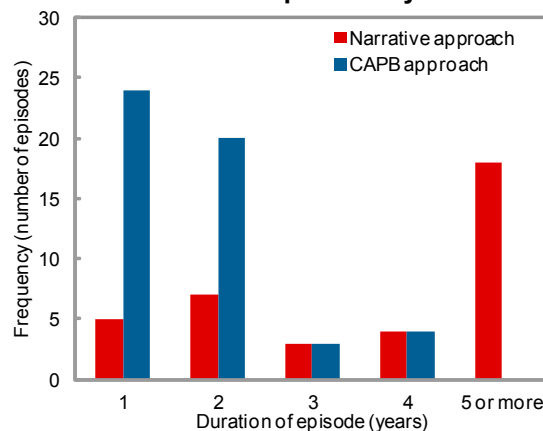
necessary to consolidate and, at the same time, raised public awareness of the extent of the fiscal imbalance problem, making it easier to act. Moreover, most of the consolidation episodes were of short duration in the CAPB-based methods, while the narrative approach includes episodes lasting long periods (e.g. Canada with a 14 year consolidation episode) (Figure 2). Fiscal episodes, particularly those identified using CAPB-based methods, generally involved relatively modest improvements in the CAPB; however, there were a small number of large efforts, amounting to improvements of more than 5% of GDP (Figure 3). Furthermore, it is possible to observe that, in general, sizeable consolidation episodes also lasted for longer periods, and vice-versa (Figure 4).⁸

Figure 1. Initial Fiscal Position¹ versus Change in CAPB



Sources: European Commission; Organisation for Economic Co-Operation and Development; and author's estimates.
 Note: CAPB = cyclically adjusted primary balance, which is expressed as a percentage of GDP. See Afonso (2010) for details on the identification of fiscal consolidation episodes using the CAPB approach.
¹ Initial fiscal position refers to the CAPB prior to the first year of consolidation.

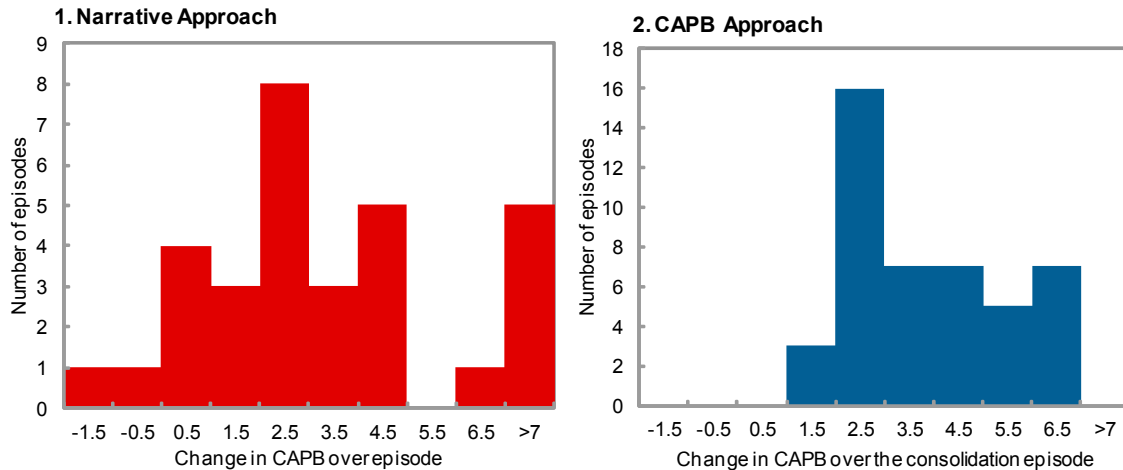
Figure 2. Advanced Economies: Frequency of Consolidation Episodes by Duration



Source: author's calculations.
 Note: CAPB = cyclically adjusted primary balance. The CAPB approach is defined as in Afonso (2010).

⁸ Ibidem.

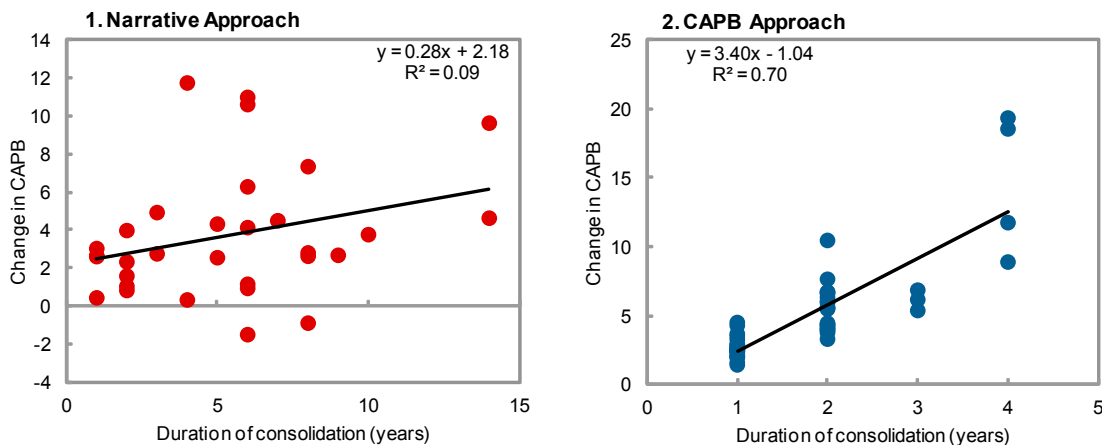
Figure 3. Advanced Economies: Distribution of Episodes by the Size of Consolidation



Source: author's calculations.

Note: CAPB = cyclically adjusted primary balance, which is expressed as a percentage of potential GDP. The CAPB approach is defined as in Afonso (2010).

Figure 4. Advanced Economies: Duration of Consolidations and Cumulative Change in the CAPB over the Episode



Source: author's calculations.

Note: CAPB = cyclically adjusted primary balance, which is expressed as a percentage of potential GDP. The CAPB approach is defined as in Afonso (2010).

2.2 How do labor market variables behave around fiscal consolidations?

Table 2 provides summary statistics on the behavior of several labor market segments (in addition to the CAPB) before, during and after consolidations. In particular, it shows average values for each of the approaches considered to identify fiscal episodes. In general, employment (including female and part-time) and labor force participation decrease during the episode, while rebounding afterwards. The opposite applies to unemployment related variables that increase during a fiscal consolidation and fall afterwards.

Table 2. Advanced Economies: Economic Performance, the Labor Market, and Fiscal Adjustments, 1980–2013

	Narrative Approach			Afonso (2010)			Alesina and Ardagna (1998)			Gizavazzi and Pagano (1996)		
	Before	During	After	Before	During	After	Before	During	After	Before	During	After
Cyclically adjusted primary balance (% of GDP)	-1.9	0.2	0.7	-2.6	0.1	1.2	-2.1	0.3	1.2	-2.8	0.4	1.0
Employment (% of working age population)	64.4	63.5	65.2	66.9	64.9	67.2	66.1	64.8	66.2	66.7	65.2	67.4
Employment, females (% of female working age population)	47.9	44.2	46.2	49.9	47.8	49.3	48.6	47.2	48.4	49.6	47.5	49.6
Labor force participation rate (% working age population)	62.4	59.4	61.5	63.1	62.2	63.3	61.9	62.1	62.1	63.2	62.8	63.6
Labor force participation rate, females (% of female working age population)	64.9	62.1	65.0	66.5	65.7	65.9	65.3	65.7	65.1	66.4	66.6	66.4
Unemployment (% of labor force)	7.6	9.1	7.8	7.8	9.8	6.8	7.9	9.6	7.0	8.1	9.4	6.9
Unemployment, females (% of female labor force)	9.2	10.9	9.0	8.3	10.1	7.8	8.6	10.0	8.2	8.6	10.1	7.8
Youth unemployment rate (% of labor force 15-24)	15.7	17.8	15.1	16.0	20.3	14.1	16.5	19.8	15.0	16.7	19.5	14.0
Long-term unemployment (% of total unemployment)	3.1	3.8	3.2	3.0	4.3	2.9	3.2	4.2	3.1	3.2	4.2	3.0
Part-time employment (% of employment)	15.6	14.6	17.7	14.9	14.1	15.2	14.8	14.7	15.2	15.5	15.4	15.9

Sources: European Commission; Organisation for Economic Co-Operation and Development; World Bank; and author's estimates.
Note: Before (after) shows the average of the two years before (after) the consolidation episode.

Turning to the design of the fiscal consolidation strategy between expenditure and revenue, Table 3 provides information on the average change of the same set of variables present in Table 2 for the overall set of fiscal consolidation episodes, and also for those that have been classified as expenditure driven. The latter occurs when the change in the primary expenditure over a given episode accounts for more than 50% the overall change in the CAPB over the same period. All in all, expenditure-driven consolidations across the different approaches bring about larger improvements in the CAPB and are generally associated with higher growth rates. Moreover, it seems to be the type of consolidation that hurts the least the labor market. These results should, nevertheless, be interpreted with caution given the lack of other relevant control variables that can significantly affect any judgment coming from comparing simple averages.

Table 3. Advanced Economies: Average Changes in Fiscal and Labor Market Variables Across Consolidation Episodes

	Narrative Approach		Afonso (2010)		Alesina-Ardagna (1998)		Giavazzi-Pagano (1996)	
	All	Expenditure-based	All	Expenditure-based	All	Expenditure-based	All	Expenditure-based
Cyclically adjusted primary balance(% of GDP)	0.4	0.9	2.1	2.5	2.0	2.2	1.9	2.2
Overall balance(% of GDP)	0.5	1.3	2.2	3.4	2.2	3.1	2.0	2.6
Real GDP growth(%)	2.3	2.3	2.0	2.0	1.9	2.1	2.1	2.3
Unemployment (% of labor force)	0.2	-0.1	0.3	0.0	0.2	-0.1	0.2	-0.1
Youth unemployment rate(%of population aged 15-24)	0.2	0.1	0.8	-0.1	0.7	0.0	0.6	0.0
Long-term unemployment(share of total unemployment)	0.0	0.0	0.3	0.1	0.2	0.1	0.2	0.1
Employment (% of working age population)	0.1	0.2	0.1	0.1	0.1	0.2	0.0	0.2
Employment, females(% of female working age population)	0.1	0.2	0.2	0.2	0.2	0.2	0.1	0.2
Part time employment(share of employment)	0.3	0.3	0.3	0.2	0.3	0.2	0.2	0.2
Labor force participation rate(% of working age population)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0

Sources: European Commission; International Labour Organization; Organisation for Economic Co-operation and Development; World Bank; and author's estimates.

Note: An expenditure based consolidation episode is defined as one in which the change in primary expenditure as a percentage of the change in the cyclically adjusted primary balance exceeds 0.5.

¹ Public sector employment refers to general government employment when public sector data is not available.

3. Econometric Methodology

The dynamic impact of fiscal consolidation variables on labor outcomes is estimated following the approach proposed by Jorda (2005) and Teulings and Zubanov (2010), which allows the impulse response functions (IRFs) to be estimated directly from local projections. This method has the advantage that it can accommodate non-linearities (better than the

traditional VAR approach), and is of particular relevance when evaluating state-dependent impulse responses.⁹ For each future year k , the estimated equation has the following form:

$$L_{i,t+k} - L_{i,t} = \alpha_i^k + \phi_t^k + \sum_{j=1}^2 \gamma_j^k L_{i,t-j-1} + \beta_1^k (\Delta CAPB_{i,t} * FC_{i,t}) + \beta_2^k gap_{i,t-1} + \varepsilon_{i,t}^k, \quad (1)$$

where L_{it} is a labor-market variable in country i in period $t+k$, $FC_{i,t}$ is a fiscal-consolidation dummy (that takes value 1 for consolidation in period t in country i and zero otherwise), α_i^k and ϕ_t^k represent country and time effects; $gap_{i,t-1}$ is the (initial) output gap in the period prior to the fiscal shock; $\varepsilon_{i,t}^k$ is an i.i.d. error term satisfying standard assumptions. The coefficient γ_j captures the persistence in changes in labor-market variables and β_1^k measures the impact of one percentage point of potential GDP improvement in the CAPB on the change in labor market outcomes for each future period k .¹⁰ Equation (1) is estimated by panel fixed effects (least-squares dummy variable) for our sample of 30 advanced economies. IRFs are then obtained by plotting the estimated β_1^k for $k=0, \dots, 5$ (in years), with confidence bands (at a 90% level) being computed using the standard deviations associated with the estimated coefficients.¹¹

Equation (1) is then re-estimated for the decomposition exercise in which fiscal adjustments are split into expenditure and tax-based episodes, where the term $(\Delta CAPB_{i,t} * FC_{i,t})$ is replaced by two, namely $(\Delta pEXP_{i,t} * FC_{i,t})$ and $(\Delta REV_{i,t+1} * FC_{i,t+1})$ with $pEXP_{i,t}$ denoting primary expenditure and $REV_{i,t}$ denoting total revenues, which are jointly estimated.¹² More specifically, we have:

$$L_{i,t+k} - L_{i,t} = \alpha_i^k + \phi_t^k + \sum_{j=1}^2 \gamma_j^k L_{i,t-j-1} + \beta_1^k (\Delta pEXP_{i,t} * FC_{i,t}) + \beta_2^k (\Delta REV_{i,t} * FC_{i,t}) + \beta_3^k gap_{i,t-1} + \varepsilon_{i,t}^k, \quad (2)$$

Similarly, when accounting for the possibility of asymmetry of the impact in different phases of the economy—following the more recent literature on state-contingent multipliers

⁹ See Duval et al. (2011) and Bernal-Verdugo et al. (2012) for a similar approach.

¹⁰ Note that in the case of the narrative approach—not shown for reasons of parsimony-- the term

$\Delta CAPB_{i,t} * FC_{i,t}$ was replaced by the overall size of the fiscal consolidation package in a given year directly from Devries and others' (2011) database.

¹¹ While the presence of a lagged dependent variable and country fixed effects may in principal bias the estimation of γ_j and β_k in small samples (Nickel, 1981), the length of the time dimension mitigates this concern. The finite sample bias is in the order of $1/T$, where T in the sample is 34 (1980-2013).

¹² Note that in the case of the narrative approach—not shown--, terms $(\Delta REV_{i,t} * FC_{i,t})$ and $(\Delta pEXP_{i,t} * FC_{i,t})$ were replaced by the decomposition of the consolidation package into these two rubrics (in percent of GDP) provided by Devries and others (2011).

discussed previously (Baum and others, 2012; Dell’Erba and others, 2014), equation (1) is re-estimated allowing all coefficients in the regression to be dependent on the phase of the cycle. That is, right-hand-side variables are interacted with an indicator function (that takes the value one in periods of protracted recession and zero otherwise, i.e., in periods of small recessions or no recessions) and also its complement (Ramey and Zubairy, 2013).¹³ In particular, we have instead:

$$\begin{aligned}
L_{i,t+k} - L_{i,t} = & \alpha_i^k + \phi_t^k + \sum_{j=1}^2 \gamma_j^k L_{i,t-j-1} + \\
& + I_t^{PR} \left[\beta^{k,PR}_1 (\Delta CAPB_{i,t} * FC_{i,t}) \right] + \\
& + (1 - I_t^{PR}) \left[\beta^{k,NonPR}_1 (\Delta CAPB_{i,t} * FC_{i,t}) \right] + \beta^k_2 gap_{i,t-1} + \varepsilon_{i,t}^k
\end{aligned} \tag{3}$$

with I_t^{PR} denoting the indicator function and the remaining coefficients being as in the baseline specification (1). See Dell’Erba and others (2014) for a similar application.

4. Additional Empirical Results using a CAPB-based approach

Beginning with the impact of consolidations in general on different labor market segments, evidence—using Afonso (2010)’s approach to identifying fiscal consolidations—suggests that fiscal consolidations have a statistically significant negative impact on employment, while positively affecting unemployment (including youth and long-term)—Figure 5.¹⁴ Employment (unemployment) falls (increase) about 0.25p.p. (0.2p.p.) two years after the beginning of the consolidation for each 1 percent improvement in the CAPB. The impact lasts in between 2 and 4 years after the beginning of the consolidation episode (recall that episodes last on average 2 years under CAPB-based methods).

In normal times, spending cuts tend to be more successful in enhancing economic growth than tax increases (Alesina and Perotti, 1995; Alesina and Ardagna, 2010, 2012) because the former are generally perceived as more credible by economic agents (Hernandez de Cos and Moral-Benito, 2012).¹⁵ Splitting consolidation episodes between expenditure and

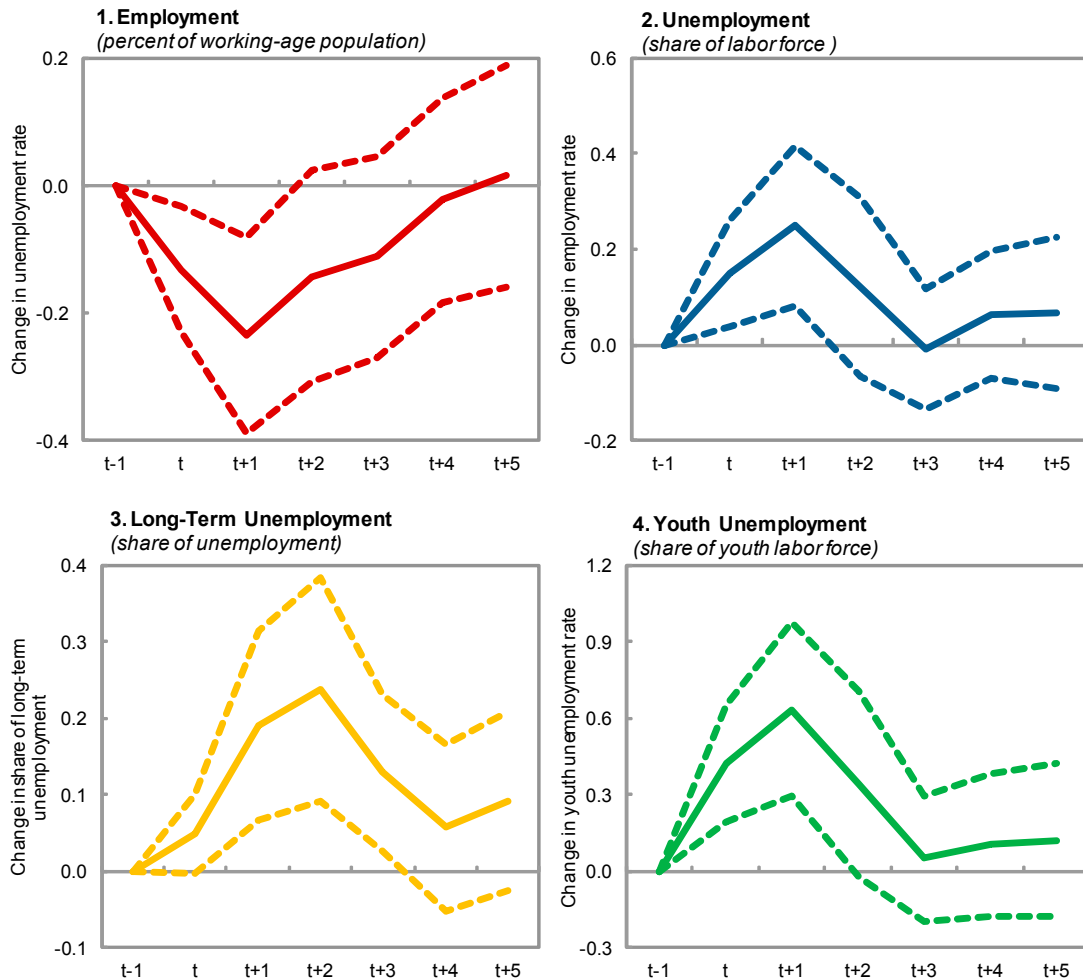
¹³ Protracted recessions are defined by an annual dummy equal to one for periods of at least 24 months of economic contraction and zero otherwise, using the Recession Indicators Series by the Federal Reserve Bank of St. Louis.

¹⁴ The other alternative CAPB approaches—namely the Alesina and Ardagna (1998) and Giavazzi and Pagano (1996)—and the narrative approach yield qualitatively similar IRFs but are not shown for reasons of parsimony.

¹⁵ The majority of the empirical literature supports the view that expenditure-driven consolidations in normal times increase the likelihood of success of the adjustment (see, e.g., Giavazzi and Pagano, 1990, 1996; McDermott and Wescot, 1996; Alesina and Ardagna, 1998; Perotti, 1998; and Giavazzi and others, 2000). There is also evidence that consolidations and particularly reductions in public expenditure can contribute to reducing sovereign debt spreads, and therefore the cost of servicing sovereign debt (Akitoby and Stratmann, 2006). However, others have empirically contested the idea that spending cuts are the preferred policy for a successful fiscal consolidation to take place (see, e.g., Heylen and Everaert, 2000).

revenue-driven ones and analyzing their impact on employment, yield the IRFs displayed in Figure 6. First, while expenditure-driven consolidations seem preferred to revenue-driven ones, the overall impact is not statistically different from zero. Moreover, there is no statistically significant difference between coefficient estimates in panels 1 and 2 at different time periods.

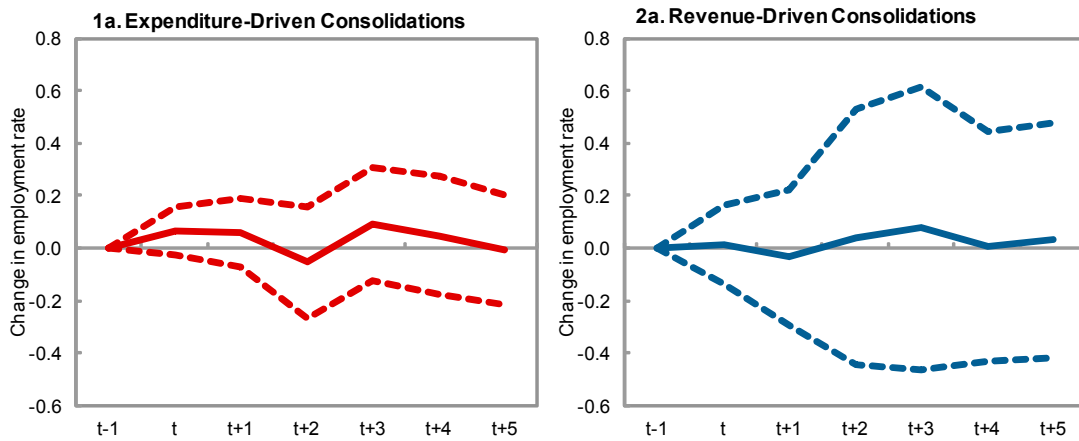
Figure 5. Advanced Economies: Impact of Consolidations on labor market outcomes, CAPB-based approach (Afonso, 2010)



Sources: European Commission; Organisation for Economic Co-Operation and Development; World Bank; and author's estimates.

Note: Impulse response functions (solid lines) are computed using a local projection estimator a la Jorda (2005) and plotted together with their 90% confidence bands which are used to represent the uncertainty in a given estimate (dotted lines). Interpretation: when both lower and upper confidence bands are above (below) zero, then the corresponding impulse response estimate at time t can be inferred to be positive (negative) at a 10% significance level. When the upper (lower) limit is above zero and the lower (upper) limit is below zero, then the impulse response is less precisely estimated and it is not statistically different from zero at the same significance level.

Figure 6. Advanced Economies: Impact of Expenditure- and Revenue-Based Consolidations on Employment (percent of working-age population), CAPB-based approach (Afonso, 2010)



Sources: European Commission; Organisation for Economic Co-Operation and Development; World Bank; and author's estimates.

Note: See Figure 5 for interpretation and methodological details.

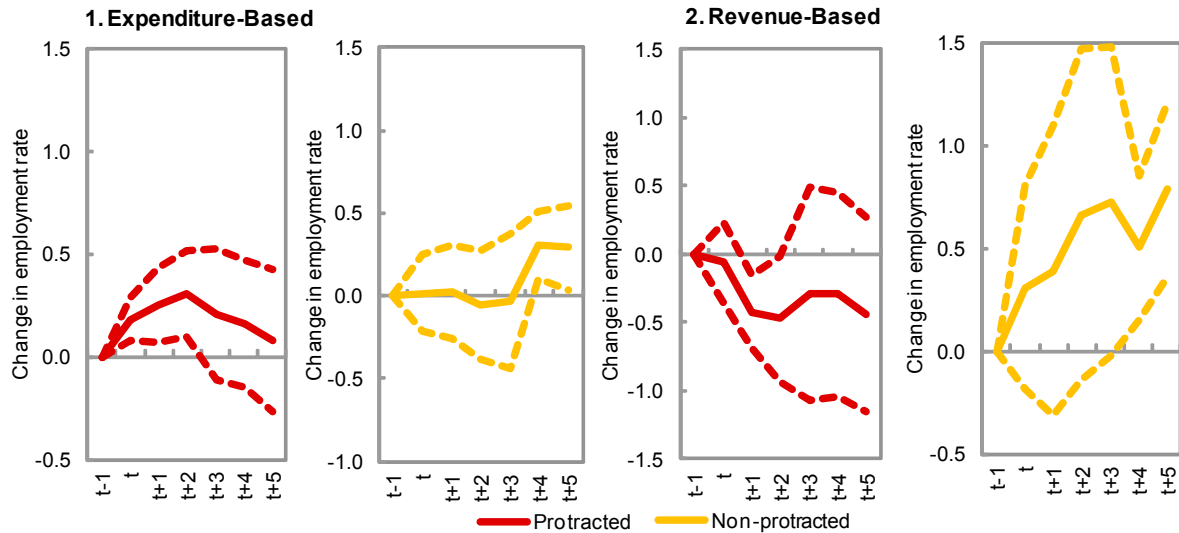
There are large differences in the size of fiscal multipliers in recessions and expansions, with fiscal policy being largely more effective in recessions (Auerbach and Gorodnichenko, 2012a,b; Giavazzi and McMahon, 2012). In Keynesian models the multiplier for public spending is generally higher than that for taxes (Gali, Lopez Salido and Valles, 2007). Focusing now on estimating equation (3) to assess state-contingent effects of fiscal adjustments on the labor market, yields the IRFs in Figure 7. In contrast to the narrative approach, using the CAPB-based approach suggest that when consolidations are pursued in times of protracted recessions, expenditure driven consolidations are not only preferable (relative to tax-driven ones) but appear eventually mildly expansionary. Non-recessionary fiscal consolidations are theoretically possible (this literature has been recently extended and summarized by Alesina and Ardagna, 2010, 2012).¹⁶ For Alesina and others (2012) spending based fiscal consolidations are associated with mild and short-lived recessions, while tax-based adjustments are associated with prolonged and deep recessions.¹⁷ That said, results should be interpreted with caution, not only because the drawbacks of the CAPB approach, but particularly because the intersection between the set of expenditure-driven consolidations

¹⁶ In neoclassical models, fiscal policy affects economic activity by means of wealth effects, intertemporal substitution and distortions. If consolidation measures remove uncertainty with respect to fiscal sustainability (signaling tax cuts in the future and raising discounted disposable income), hence boosting confidence, then the negative impact on output may be limited or even give rise to an “expansionary fiscal contraction”.

¹⁷ On the one hand, a reduction in government spending has a positive wealth effect on agents (through lower future expected taxation) and hence an expansionary effect on consumption. Consequently, the labor supply shifts upwards. On the other hand, an increase in taxes will have an unambiguous contractionary effect on economic activity as the negative wealth effect on the demand side (both consumption and investment) is coupled with the negative effect of higher distortions on the supply side (Baxter and King, 1993).

years and the set of protracted recession years is small, therefore alluding to sample selection biases.

Figure 7. Advanced Economies: Impact of Expenditure and Tax-Driven Consolidations Following Protracted Recessions on Employment (*Percent of working-age population*), CAPB-based approach (Afonso, 2010)



Sources: European Commission; Organisation for Economic Co-Operation and Development; World Bank; and author's estimates.

Note: See Figure 5 for interpretation and methodological details.

Moreover, it could be the case that the sample under scrutiny includes countries (and years) that, while implementing fiscal adjustment, also engaged into growth-enhancing structural reforms and complementary policies. Alesina and Ardagna (2012) and Perotti (2012) show that the growth-friendly expenditure-driven consolidations are those that have been accompanied by supply-side policies (e.g., product market reforms, labor market liberalization and wage moderation). These accompanying reforms may signal a “change of regime”, i.e., a policy shift towards a more market friendly stance.¹⁸

¹⁸ These results are consistent with the different reaction of business confidence during spending based and tax based adjustments, much more negative in the latter (Alesina and Ardagna, 2012).

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