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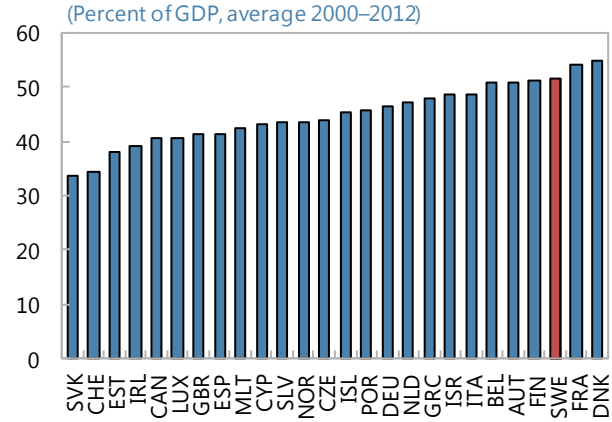
IV. HAS SWEDEN'S FISCAL POLICY BECOME LESS COUNTERCYCLICAL?[1]

Sweden's large public sector and well-developed welfare system are often said to provide large cyclical stabilizers. However, various empirical approaches suggest recent reforms might have reduced the budget's reaction to changes in the output gap.

1. Sweden's government sector is large, and its social spending is high relative to many other advanced economies. At around 50 percent of GDP, general government total expenditure ranks among the top of the OECD, second only to spending in Denmark and France (Figure 1).

Figure 1. General Government Total Expenditure
(Percent of GDP, average 2000–2012)

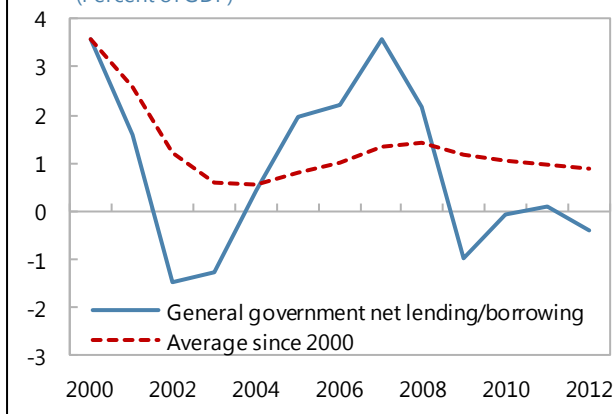


Sources: Haver Analytics and Fund staff calculations.

2. Within total spending, automatic stabilizers have traditionally been large. This reflects Sweden's high benefit levels—in particular unemployment benefits—a characteristic of the Nordics' welfare model in which high taxes are used to finance high transfers with the aim of enhancing individual welfare and stabilizing the economy.

3. However, recent reforms might have reduced the budget's elasticity to changes in economic activity. Since 2006, the government introduced a series of tax cuts and reduced unemployment and sick leave benefits. These changes come on the heels of a more medium-term consolidation strategy that began in the early 1990s, involving a series of larger cuts and rule changes in income benefits and services. These reforms, together with a strong medium-term fiscal framework, have ensured a general government surplus, averaging above 1 percent since 2006 (Figure 2). When compared to the surplus target rule of 1 percent of GDP over the cycle, the government has mostly met this rule since the fiscal reform took effect in 2000.

Figure 2. General Government Net Lending
(Percent of GDP)



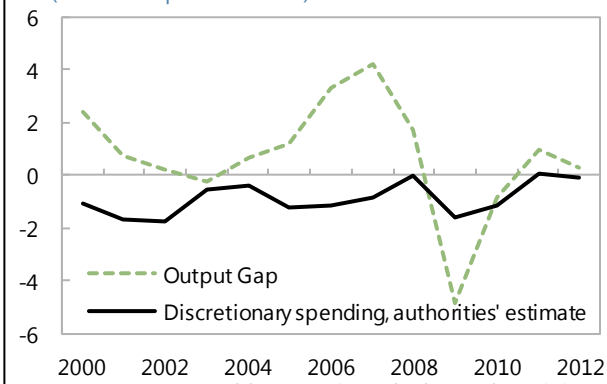
Sources: Sweden Statistics and Fund staff calculations.

[1] Prepared by Ruchir Agarwal (EUR) and Salvatore Dell'Erba (FAD).

4. There is some evidence that the responsiveness of automatic stabilizers to fluctuations in the output gap might indeed have declined. For instance, a study from the National Institute of Economic Research (NIER)—an independent government agency tasked with economic analysis and forecasts—finds that public finances have become less sensitive to fluctuations in the economic cycle, particularly with respect to automatic stabilizers. Measuring automatic stabilizers as the difference between net lending and cyclically adjusted net lending, in percent of potential GDP, they find the elasticity of automatic stabilizers with respect to the output gap has roughly halved over the period 2007–12 compared to the period 1995–2006 (NIER, 2013).

5. At the same time, discretionary spending has become significantly less countercyclical since the recession of 2008. While the formulation of Sweden's surplus balance target rule has not changed since 2000, the way the rule has been implemented has varied over time. For example, the incorporation of larger safety margins in the central government's expenditure ceilings at around the time of the Great Recession could have lowered spending growth during the downturn. Indeed, based on the indicator shown in Figure 3, discretionary spending decreased pro-cyclically just when the output gap opened in 2008–09 before picking up again as the gap started to close thereafter.

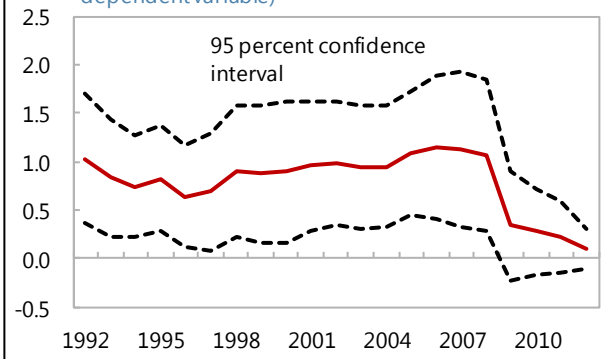
Figure 3. Discretionary Spending in Sweden, 2000–2012
(Percent of potential GDP)



Sources: IMF World Economic Outlook, Sweden Ministry of Finance, and Fund staff calculations.

6. This finding extends to the discretionary budget overall. While the CAPB reacted to changes in the output gap in a countercyclical fashion for much of the 1990s and early 2000s—with the balance improving with the cycle and vice versa—this pattern changed significantly at around the time of the Great Recession (Figure 4).

Figure 4. Response of Cyclically-Adjusted Primary Balance to Changes in Output Gap
(Rolling regression coefficient on output gap; CAPB as dependent variable)



Sources: OECD and Fund staff calculations.

7. Overall, there is evidence that the responsiveness of fiscal policy to the business cycle has declined in recent years. This indicates that there may be room for refinements in the implementation of the fiscal rule. This could include making the use of the generous safety margins incorporated in the expenditure ceiling path contingent on a clear set of rules to limit discretion and, ultimately, a countercyclical use of the discretionary part of the government budget. To reinforce the effectiveness automatic stabilizers, consideration could be given to a targeted re-enforcement of income-support policies to those tenuously attached to the labor force.

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Appendix. Econometric Methodology

This appendix explains the econometric methodology behind the results presented in Figure 4 in the main text. We use the cyclically adjusted primary balance to represents a measure of discretionary fiscal policy, since it measures the primary fiscal balance that would prevail without the impact of automatic fiscal stabilizers.[1] Similarly, the residual—that is, the actual primary balance minus the cyclically-adjusted primary balance—is taken to be a measure of automatic stabilizers. The benefit of this approach is that it allows us to connect the results of this note to the existing academic literature, and it permits us to examine fiscal policy over a much longer horizon (1970–2012).

To understand the reaction of discretionary fiscal policy to the business cycle, we follow Gali and Perotti (2003) and estimate a fiscal rule of the following type:

$$d_t = \alpha + \beta gap_t + \delta debt_{t-1} + \varphi d_{t-1} \quad (1)$$

such that the dependent variable d_t is the cyclically adjusted primary balance as a percentage of potential output; gap_t is the deviation of actual from potential output in percentage of potential output; $debt_{t-1}$ is the gross government debt in percent of GDP; d_{t-1} is the first lag of the dependent variable.

The coefficient of interest is β, which measures the reaction of the discretionary fiscal policy to the business cycle. A value of $\beta > 0$ implies that discretionary fiscal policy tightens during economic expansions while it loosens during slowdowns, thus effectively smoothing income fluctuations. A value of δ>0 indicates that fiscal policy is tighter when the debt-to-GDP ratio is higher, as discussed for example in Bohn (1999) and Wyplosz (2002). To ensure that our estimates are not subject to endogeneity of the business cycle, we rely on instrumental variable estimates (IV) and use as instruments for the variable gap_t its own lag, the output gap of the US, and the average output gap of the three other Nordic countries (Denmark, Norway, and Finland).

Finally, to address the time varying response of fiscal policy to the business cycle and check whether fiscal policy has become more countercyclical over time, in particular following the introduction of the fiscal rule in 1997, we run two types of tests. First, we test for a structural break in the fiscal reaction function (1) by interacting the variable gap_t with an indicator variable equal to one for the period post 1997:

[1] While this methodology is often used for policy analysis, it suffers from limitations. For example, the underlying assumption is that the cyclicality of fiscal revenues and spending items to the cycle is constant over the business cycle, while it could be that the cyclicality is asymmetric during recessions or expansions. Similarly, the methodology does not take into account the effect that asset prices fluctuations (like housing prices) may have on the fiscal budget.

$$d_t = \alpha + FR_t + \beta_1 gap_t + \beta_2 FR_t * gap_t + \delta_1 debt_{t-1} + \delta_1 FR_t * debt_{t-1} + \varphi_1 d_{t-1} + \varphi_2 FR_t * d_{t-1} \quad (2)$$

such that FR_t is the indicator variable equal to one for the post 1997 time period, while the coefficient β_2 now represents reaction of fiscal policy to the business cycle after 1997. A test of $\beta_1 = \beta_2$ will indicate whether a structural break has occurred after 1997. A second test will involve estimating equation (1) over a rolling sample of 20 observations, and check the stability of the coefficients over time.

Results

The estimation results are presented in Tables A1 and A2. In Table A1, Column 1 presents the OLS estimate of equation (1), while Column 2 presents the IV estimates of equation (1). Table A2 contains analogous results for equation (2).

The results in Table A1 show that overall fiscal policy has been countercyclical over the period 1970 to 2012.

However, the results in Table A2 suggest lower countercyclicality in the second part of the sample. In particular, it seems that fiscal policy is acyclical after 1997. To investigate this result further, we estimate a rolling IV regression of specification (1) with a fixed twenty-year window. Based on this exercise, Figure 4 in the main text reports the time-variation of the coefficient on the output gap over time. The first point in the figure is an estimate of the coefficient on the output gap estimated over the period 1973 to 1992. Similarly, the second point is the coefficient estimated over the period 1974 to 1993, and so on.

Table A1. Estimation Results for Model 1

Dependent Variable: CAPB	**OLS**	**IV (using all three Instruments)**
Variables	(1)	(2)
One Period Lagged CAPB	0.76***	0.75***
	(0.12)	(0.11)
Output Gap (percent of potential GDP)	0.32**	0.38**
	(0.15)	(0.18)
Gross Government Debt (percent of GDP)	0.05*	0.06**
	(0.03)	(0.03)
Observations	39	39
R-squared	0.681	0.679
AIC	173.5	173.7
Weak Identification Test		6.608
Test for Over-Identification		3.976

Robust standard errors in parentheses.
*** p<0.01, ** p<0.05, * p<0.1.