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An Assessment of Cross-country
Fiscal Consolidation

Bruno Carrasco
and Seung Mo Choi

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AN ASSESSMENT OF CROSS-COUNTRY FISCAL CONSOLIDATION

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February 2006

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FOREWORD

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ABSTRACT

This paper analyzes fiscal adjustment by reviewing the cross-country experience of the Organization for Economic Cooperation and Development (OECD) or mature economies, and the emerging market economies during 1970–2002. We find that initial conditions, composition, and timing of adjustment matter for successful fiscal adjustment (SFA). First, countries with higher primary deficits and larger government debts are more likely to pursue SFA. Second, in mature economies, SFA is driven by *expenditure compression* measures (largely cutbacks in subsidies) rather than by *revenue augmentation* measures. On the other hand, in emerging market economies, while *expenditure compression* measures (in particular, a decrease in capital expenditure) drive SFA, *revenue augmentation* measures also play an important role. Third, synchronizing fiscal adjustment to an expansionary phase of the business cycle increases the likelihood of its success. A probit analysis tends to support these findings. Finally, we review whether fiscal adjustment can indeed be expansionary. The findings point to a weak inclination toward noncontractionary outcomes, although further research is required to explain what drives this non-Keynesian result.

I. INTRODUCTION

Fiscal imbalance and measures to address this are once again an issue of heightened concern for policymakers. In mature economies (MEs) such as of the Organisation for Economic Co-operation and Development (OECD), fiscal deficits reflect a combination of greater global imbalances rooted in structural constraints and linked to a constellation of policy objectives ranging from tax-cutting measures (United States), to bank restructuring imperatives and measures to reflate the economy (Japan), to a tax and spend culture in support of a social model of development (European Union [(EU])). In emerging market economies (EMEs), fiscal deficits generally reflect large demands on public expenditure by way of employment absorption and infrastructure development combined with limited revenue generating capacity.

Governments across the world struggle with measures to reduce fiscal deficits, recognizing the long-term benefits of fiscal consolidation together with the complexities and costs associated with short-term fiscal adjustment. Large fiscal deficits generally reduce national saving and capital formation, leading to adverse consequences including reduced economic growth, lowered real incomes, and even increased risks of financial crisis. Against this backdrop, the underlying consensus has tended to favor the adoption of some form of fiscal balance over the cycle (see, for example, OECD 2003).

This paper focuses on the analysis of fiscal adjustment¹ or the process by which governments attempt to address fiscal imbalance, by reviewing the cross-country experience of both the OECD countries or MEs, and emerging market economies over the 1970–2002 period. We attempt to address key questions that policymakers are typically confronted with: (i) When does fiscal adjustment lead to successful fiscal consolidation?² (ii) What drives *expansionary* fiscal adjustment? (iii) Do initial conditions matter for fiscal adjustment and fiscal consolidation? (iv) Is the composition of fiscal adjustment relevant? (v) Are there differences in characteristics between successful fiscal adjustment in emerging market economies and MEs?

The paper extends the results of Ardagna (2004) and Alesina and Ardagna (1998) by including a wider sample estimation that covers EMEs and provides further evidence of standard results. However, it also provides new insights into commonalities and differences between ME and emerging market economy subsamples that may provide valuable lessons to policymakers (who may otherwise have generalized results from MEs).

Our results support the view that while expenditure compression measures drive successful fiscal adjustment in MEs, in emerging market economies the combination of *revenue augmentation*

¹ Fiscal adjustment in this paper is defined as the active process of compressing expenditure and/or augmenting revenue with the objective of improving the fiscal balance.

² While successful fiscal adjustment is defined more formally in Section III, for the time being it can be understood as a fiscal adjustment process that leads to an improvement in the fiscal balance.

measures and expenditure compression drives this process. However, a closer look at the adjustment process supports the view that the *initial conditions* also matter in explaining successful fiscal adjustment.

According to our results, on average, MEs have higher revenue yields compared to EMEs, suggesting little room for introducing further revenue augmentation measures to correct fiscal imbalance. In parallel, our results indicate that, on average, expenditure to gross domestic product (GDP) ratios are higher in MEs than EMEs, providing further room in MEs to introduce expenditure cutbacks without undermining the provision of essential public goods and services. On a more worrying note, our results suggest that in those EMEs that have managed to successfully reduce their fiscal deficits, one half of the decrease in primary expenditure is on average due to a decrease in capital spending.

Turning to the question of when is the policymaker more likely to succeed in fiscal consolidation, our results suggest that coinciding with the expansionary phase in the economy, *the timing of the introduction of fiscal adjustment matters*, and supports, synchronizing fiscal adjustment measures. Furthermore, on average, EMEs have higher debts and attendant debt servicing costs—or deadweight losses—than MEs and hence the opportunity cost to the policymaker of not succeeding in fiscal consolidation is far greater than in economies with lower debts.

Our findings also point to a common fiscal adjustment process that leads to non-Keynesian results, that is, *successful fiscal adjustment does appear to have an impact on the economy—it decreases the unemployment rate steadily*. This is consistent with the literature (see Alesina, Perotti, and Tavares 1998) and attributed to the supply-side effects from fiscal consolidation processes, which, if deemed credible by economic agents, may lead to expectations of higher household disposable incomes (through lower taxes) and higher profits for businesses (from lower taxes and interest costs), resulting in an increase in aggregate demand in the economy. Finally, our results point to the importance of sustainability of the adjustment process. Adjustment processes that extend beyond one year are likely to be more successful in reducing primary deficits. Our results are in line with Obstfeld (1998) who argues that the effects of fiscal adjustment will depend on initial conditions, particularly on whether fiscal policy is on a sustainable course.

Section II of this paper presents a review of the literature. Section III presents a heuristic framework that brings together initial conditions and composition of adjustment considerations and describes the methodology and definitions. Section IV reviews results from the sample of countries focusing on the fiscal adjustment process. Section V reviews results focusing on macroeconomic adjustment and explains why fiscal adjustment may be expansionary. Section VI concludes.

II. LITERATURE REVIEW

The applied literature on fiscal adjustment was significantly influenced by Alesina and Perotti (1997) who studied how the composition of adjustment influences both the likelihood of success and the macroeconomic consequences across OECD countries. Their findings suggested that composition does matter. In particular, fiscal adjustments resulting from spending cuts in transfers and the government wage bill (type 1) have both a better chance of success and are likely to lead to expansionary effects as compared to adjustments that rely primarily on tax increases and cuts in public investment (type 2).

To explain the greater likelihood of success, the authors referred to type 1 adjustment as inducing a more lasting consolidation of the budget as they tackle two key items, government wages and welfare programs, which have the strongest tendency to automatically increase. To explain the macroeconomic consequences, Alesina and Perotti (1999) refocused the arguments away from conventional wisdom that referred to how credibility and wealth effects of adjustment would affect consumption and emphasized the effects of fiscal policy on unit labor costs and competitiveness. Indeed their results suggest that unit labor costs may be more empirically relevant for consumption than the wealth effects and credibility channel.

Alesina, Perotti, and Tavares (1998) further developed the importance of unit labor costs in explaining the supply-side effects from fiscal consolidation processes. According to them, if the announced fiscal policy effects on unit labor costs are deemed credible by economic agents, this may lead to expectations of higher household disposable incomes (through lower taxes) and higher profits for businesses (from lower interest costs), resulting in an increase in aggregate demand in the economy. These results contributed to a literature that was characterized by non-Keynesian results, that is, that fiscal contractions could indeed be expansionary as they signaled a permanent and decisive change in the stance of fiscal policy (see for example, Giavazzi and Pagano 1996).

More recently, Ardagna (2004) has posited two possible explanations of successful fiscal adjustment: the “expectation view” and “labor market view.” The former refers to the impact of the fiscal stance on the economy through its influence on agents’ expectations (i.e., what type of expenditure contraction and/or revenue augmentation measures are deemed credible) and the latter focuses on the effect of the composition of adjustment on the economy (i.e., do reductions in growth of wages and salaries or pensions lead to more favorable supply-side effects on the economy). Blanchard (1990a) and Bertola and Drazen (1993) are considered to fall under the former category. In their models, initial conditions may influence expectations formation and, in particular, changes in expectations in economies “close to the edge” could prove expansionary. Alesina and Perotti (1995 and 1997) are included under the latter, stressing that expenditure reduction programs succeed because they induce higher growth. Bertola and Drazen (1993) attempt to reconcile the differing results by suggesting that while in a static model the fiscal policy measures may be contractionary, it could well be that in a dynamic, forward-looking model, it induces sufficiently strong expectations of future policy changes that may lead to expansionary effects.

III. FRAMEWORK AND METHODOLOGY

In our view, any stylized model should (i) attempt to answer the question of what is it that makes a fiscal adjustment process turn out to be successful and (ii) integrate these explanations into a unified structure. An alternative explanation to Ardagna (2004) is described below.

To begin, we postulate that the success of fiscal adjustment will critically depend on whether economic agents perceive the *adjustment* to be credible or not. We consider two polar cases across the spectrum.

If fiscal adjustment is deemed *credible*, forward-looking, rational agents—firms and households—will adjust behavior following the fiscal announcement or shortly thereafter. Firms

would anticipate that the announced fiscal measures would result in a combination of *future* lower interest rates, perhaps lower corporate taxes and even a pick-up in aggregate demand and, *ceteris paribus*, would react by increasing capital expenditure *today*. Similarly, households would anticipate *future* higher disposable income from lower income taxes as public spending is cut and expand private consumption *early on*.

The key is that the credibility of the announcement generates an *endogenous adjustment process* in agents' behavior. The resulting expansionary effect may, in turn, lead to a ***virtuous cycle*** where supply side factors may result in an increase in economic activity, which may stimulate demand and sustain higher tax revenues. Resulting higher economic growth would reduce the political costs to the policymaker of *sustaining* the fiscal measures in place, hence ensuring a degree of *persistence* of the fiscal consolidation process and thereby validating the rational expectations equilibrium.

The point to highlight is the interaction between credibility of the announced actions and the resulting behavior of economic agents. It is the adjustment by private agents triggered by the credibility of the announcement that accounts for the resulting expansionary impact on the economy and explains the non-Keynesian results. The fiscal adjustment is therefore considered *successful*.

If fiscal adjustment is *not credible*, forward-looking rational agents are not likely to react to changes in taxation policy and or expenditure policies and hence there is no endogenous adjustment process that kicks in. As a result, there is no expansionary effect and the tight fiscal stance is too costly for the policymaker to maintain. The fiscal measures prove to be unsustainable thereby validating the rational expectations equilibrium. The fiscal adjustment is therefore considered *not successful*.

In the analysis above, the credibility of the policymaker drives the results. An important issue therefore is how to assess credibility. While it is not possible to measure credibility, we can *ex post* infer from the size and timing of the behavior of (a pick-up in) consumption expenditure and private investment whether the fiscal measures were deemed credible. However, it would be important to be able to control for other influences on these variables.

While credibility drives the model, on the other hand, *initial conditions* and *composition of adjustment* do matter.

A. Initial Conditions

In the presence of significant fiscal imbalance at the time of the fiscal reforms announcement (i.e., large debt to GDP), there may be nonlinearities associated to the supply-side adjustment path that may lead to expansionary effects on the economy. If the initial conditions are particularly bad, this expansionary effect from fiscal correction could conceivably happen with less than full credibility on the part of economic agents. In this same spirit, and based on political economy, the political orientation of the government in power may partly influence the degree of credibility of the announced fiscal reform measures. This variable could have an even greater impact on the expectations with regard to the persistence of the fiscal tightening measures. This would be in a manner similar to the conservative inflation-hawk central bank governor who is more likely to

lean against the wind for a longer time for the sake of entrenching his inflation-fighting credentials on the market.

B. Composition of Adjustment

The composition of adjustment is important as it influences the particular adjustment path of the economy through its effect on economic agents' behavior. For example, increasing taxes over and above the increase in spending is not likely to be equivalent to decreasing spending in excess of the decrease in taxation. What is critical to bear in mind is that in the end it is the reaction by economic agents that is key in determining whether a fiscal adjustment is sustainable.

C. Initial Conditions vs. Composition of Adjustment

An interesting question is which of the two dominates, initial conditions or composition of adjustment? Prior beliefs would suggest that *ceteris paribus*, composition of fiscal adjustment matters more than initial conditions to the extent that it directly influences credibility. Consider, for example, untouchable budget items such as transfers, wages, and public employment. Cutbacks in these items are clearer signals of the government's intent on "biting the bullet" than, for instance, politically less painful measures such as cutbacks in investment spending, reductions in the operations and maintenance budget, or even increases in taxation.

Accordingly, the pay-off matrix in Box 1 could summarize the analysis above.

Box 1 FISCAL ADJUSTMENT MATRIX INITIAL CONDITIONS		
COMPOSITION	LOW DEBT	HIGH DEBT
Expenditure Contraction	M -	S
Revenue Augmentation	NS	M +
S= successful, M + = above average success, M - = below average success, NS = not successful.		

D. Methodology

Our main interest in pursuing this research is to understand what happens during and after a "successful" (and/or "sustained") fiscal adjustment: For example, which components in the government expenditure (or revenue) are driving "successful" fiscal adjustment on average? Is "successful" (or "not successful") fiscal adjustment expansionary or contractionary in the short run? In addition, we also try to reconcile the results with the heuristics presented above.

As a first step, it is useful to establish a metric to be able to compare fiscal behavior across countries and time. Accordingly, the following three concepts are defined below: (i) fiscal adjustment, (ii) “successful” fiscal adjustment, and (iii) “sustained” fiscal adjustment.

- (i) A period of **FISCAL ADJUSTMENT** is the year in which the primary balance (which, by definition, excludes the expenditure on interests) improves by at least 1.5% of GDP. That is, the year t is a period of fiscal adjustment if and only if

$$PD_t < PD_{t-1} - 1.5\%,$$

where PD_t is the cyclically adjusted³ primary deficit as a percentage of GDP in year t . This definition is adapted from Alesina, Perotti, and Tavares (1998).⁴

- (ii) A fiscal adjustment in year t is **SUCCESSFUL** (and referred to as SFA) if one of the following two conditions applies: either, (i) in the 3 years after the adjustment year, the ratio of the primary deficit to GDP is *on average* at least 2% below its level in the initial year, that is,

$$(PD_{t+1} + PD_{t+2} + PD_{t+3}) / 3 < PD_t - 2\%,$$

or; (ii) 3 years after the year of the adjustment, the debt-to-GDP ratio is at least 5% below its level in the adjustment year, that is,

$$Debt_{t+3} < Debt_t - 5\%.$$

We define a fiscal adjustment to be “not successful” (and referred to as NSFA) if none of the above conditions apply.⁵ This criterion is used by both of Alesina, Perotti, and Tavares (1998) and Alesina and Ardagna (1998).

Appendix Table 1 lists all 455 episodes of fiscal adjustment (110 SFA and 345 NSFA), identified by these definitions based on the “cyclically adjusted” primary deficits. As observed in the table, some specific countries may have more episodes of fiscal adjustment than others. Although this may raise considerations of robustness of the results, we treat all of those episodes in the same way in order not to lose any information that each case may reveal.

- (iii) A fiscal adjustment is **SUSTAINED** if the fiscal adjustment (in our definition) continues in the following year. That is, the year t is a period of “sustained” fiscal adjustment if and only if

$$PD_t < PD_{t-1} - 1.5\%, \text{ and}$$

$$PD_{t+1} < PD_t - 1.5\%.$$

³ For a description of the data including the cyclical adjustment procedure, see Appendix.

⁴ Alesina and Ardagna (1998) also use a similar but stronger definition: They consider a fiscal adjustment if in any year there is an improvement on the primary balance of at least 2%, or if in two consecutive years there is an improvement of at least 1.5% each.

⁵ If both “primary deficit data of the next 3 years” and “debt data after 3 years” are missing, a fiscal adjustment is considered neither “successful” nor “not successful.”

By definition, if the year t is a period of “sustained” fiscal adjustment, then the year $t+1$ is a period of fiscal adjustment. Since we want to count two consecutive years of fiscal adjustment as one “sustained” episode, we do not count the year $t+1$ as either “sustained” or “not sustained” if the year t is the year of sustained fiscal adjustment to avoid double counting.

From the definitions, a “sustained” fiscal adjustment is more likely to be “successful” because it implies a subsequent strong improvement in the primary balance in the following year, and thereby decreases the three-year average of primary deficits used in the definition of “successful” fiscal adjustment. Appendix Table 2 confirms this conjecture. Out of 84 sustained episodes of fiscal adjustment, 52 episodes turn out to be successful, so the (sample) probability of success for sustained fiscal adjustment is about 62%. On the other hand, out of 295 “not sustained” episodes, only 35 were successful, or a probability of success of about 12%.

As is pointed out by Alesina and Ardagna (1998), this definition of fiscal adjustment is relatively strong. This strong definition enables us to focus on the adjustment episodes resulting from proactive, fiscal consolidation-oriented policy engagements.

As a second step, we calculate how the descriptive statistics of the variables of interest evolve over time, that is in years $t-1$, t , $t+1$, $t+2$, etc., where “successful” (or “not successful”) fiscal adjustment is initiated in year t . For example, by comparing the mean values of the GDP growth rate⁶ in years $t-1$ and $t+2$, we can figure out whether it is increasing and hence fiscal adjustment is expansionary or contractionary, on average, during the fiscal reform process.

How the variables differ when a “successful” fiscal adjustment is achieved can be (at least partly) understood by considering how the mean values (and other statistics) change over time. For example, the average GDP growth rate across all countries (say, in Group 1) during the chosen time frame is 3%, and if the average GDP growth rate in case of SFA has increased from 3% in $t-1$ to 5% in $t+2$, then it would be plausible (although not certain) to conclude that economies tend to be better off following SFA.

Also, to understand how SFA differs from NSFA, we can compare the descriptive statistics in different years around SFA and NSFA outcomes. If the average GDP growth rates are the same in $t-1$ but “successful” cases show a higher average growth rate in $t+2$ and later, then we infer that a SFA is accompanied by a higher GDP growth rate.

This methodology, however, raises an econometrical issue; it is not ideal to compare SFA and NSFA episodes to understand what results from SFA episodes against what *would* have resulted if they were NSFA ones because NSFA episodes are not the counterfactuals themselves. Since we do not control for other variables (e.g., the monetary policy stance or whether there was an external shock) we are not able to assume *ceteris paribus* in comparing the results. This problem exists in similar studies, and we do note this caveat when we interpret our results.

⁶ In the actual analysis, we consider the real GDP growth net of its “trend” (calculated by Hodrick-Prescott filter) as a proxy for the business cycle.

IV. FISCAL ADJUSTMENT

In this section, we analyze the dynamics of key *fiscal variables* during SFA versus NSFA.⁷

A. Primary Deficit and Government Debt

To begin, we start by looking at how the level of primary deficits and government debts (as a percent of GDP), change over time during episodes of fiscal adjustment. By definition, it is straightforward to see that the improvements in primary deficits and government debts will be larger in case of SFA rather than NSFA episodes, and in case of “successful and sustained” (which are more painful to the policymaker) rather than “successful and not sustained” episodes. Such predictions are empirically observed in Table 1 (on primary deficit) and Table 2 (on government debt). We notice the following results in these tables:

- (i) *Sample Averages*: On average, Group 1⁸ (high-income OECD economies) has the lowest level of primary deficit (–0.4% of GDP⁹) and debt (35.9% of GDP). Group 3 (middle-income economies) has an average level of primary deficit (0.4% of GDP) and debt (43.6%). According to our sample, on average, the levels of primary deficit and debt are not necessarily related to the income level. At the same time, OECD economies seem to have relatively greater fiscal discipline compared to non-OECD economies.
- (ii) *Initial Conditions*: The levels of primary deficit and government debt at $t-1$ or period prior to the fiscal adjustment are much higher in SFA episodes than in NSFA ones across the two income groups. (This tends to support the view that given worse initial conditions, governments are generally under greater pressure and have greater incentives to be serious about fiscal adjustment, thereby increasing the likelihood of SFA).
- (iii) *Magnitude of Improvements*: The magnitude of improvements in both primary deficit and debt from $t-1$ to $t+2$ are, as predicted, much greater in SFA episodes than in NSFA episodes for all two income groups. (Primary deficits: –6.6 percentage points [pp] versus –1.9pp in Group 1, and –7.6pp versus –2.2pp in Group 3. Debts: –3.0pp versus 3.3pp in Group 1, –6.0pp versus 9.5pp in Group 3.)¹⁰ Also, “successful and sustained” episodes always show greater improvements in primary deficits, on average, than “successful and not sustained” ones.¹¹

⁷ In this paper, for the purpose of easy reference, we limit the presentation to the results under Groups 1 and 3. Interested readers who would like to refer to results of Groups 2 and 4 are asked to contact the authors.

⁸ For the breakdown of the groups see Section A under Appendix.

⁹ Throughout the paper a negative primary deficit corresponds to a primary surplus.

¹⁰ Group 3 shows an extremely large drop in debt, caused by a few episodes.

¹¹ Such a trend is not very clearly observed in government debt. However, for the first two income groups, the sample size is too small to conclude anything, and for Group 3, the movements of medians and maxima suggest that sample means do not seem to be representative enough.

TABLE 1
MOVEMENT OF CYCLICALLY ADJUSTED PRIMARY DEFICIT (AS PERCENT OF GDP)

“Successful” versus “Not Successful”

ITEM		SUCCESSFUL				NOT SUCCESSFUL			
		t-1	t	t+1	t+2	t-1	t	t+1	t+2
Group 1: High-income OECD Economies [-0.4]	Mean	2.6	-0.3	-2.5	-4.0	1.1	-1.8	-1.2	-0.8
	(Diff w/ t-1)		-2.9	-5.1	-6.6		-3.0	-2.3	-1.9
	Median	1.3	-2.0	-3.6	-3.7	1.0	-1.3	-0.9	-0.5
	Min	-5.2	-7.2	-10.2	-10.2	-7.3	-10.2	-10.4	-8.7
	Max	15.7	14.1	7.4	1.4	14.3	6.3	8.1	15.7
	SD	5.3	5.1	4.1	3.5	3.2	3.0	3.3	3.7
	#		25 / 1 / 24			70 / 12 / 58			
Group 3: Middle- income Economies [0.4]	Mean	5.9	0.0	-1.6	-1.7	2.4	-2.3	0.1	0.2
	(Diff w/ t-1)		-5.9	-7.5	-7.6		-4.7	-2.2	-2.2
	Median	5.2	-0.1	-1.3	-1.5	1.7	-2.0	0.1	-0.1
	Min	-9.2	-14.9	-21.6	-21.8	-17.5	-21.6	-21.8	-18.8
	Max	24.2	13.0	12.5	17.3	24.0	13.8	17.7	14.8
	SD	7.0	5.5	6.0	6.5	5.3	4.9	5.4	5.5
	#		54 / 5 / 49			159 / 42 / 117			

“Successful and Sustained” versus “Successful and Not Sustained”

ITEM		SUCCESSFUL AND SUSTAINED				SUCCESSFUL AND NOT SUSTAINED			
		t-1	t	t+1	t+2	t-1	t	t+1	t+2
Group 1: High-income OECD Economies	Mean	3.2	0.7	-2.4	-4.0	0.9	-2.5	-2.2	-3.7
	(Diff w/ t-1)		-2.5	-5.6	-7.2		-3.4	-3.2	-4.6
	Median	1.3	-0.4	-3.6	-3.7	1.1	-2.8	-0.7	-3.6
	Min	-2.6	-6.4	-10.2	-10.1	-4.3	-6.9	-6.7	-7.8
	Max	15.7	14.1	7.4	1.4	7.7	1.7	0.8	-0.5
	SD	5.2	5.6	5.1	3.8	4.7	3.4	3.3	2.8
	#		13 / 0 / 13			5 / 1 / 4			
Group 3: Middle-income Economies	Mean	8.8	2.6	-2.5	-1.5	5.4	-0.6	1.2	0.6
	(Diff w/ t-1)		-6.2	-11.3	-10.3		-6.0	-4.2	-4.8
	Median	6.7	2.4	-1.5	-1.0	4.1	-2.1	-0.4	-1.2
	Min	-0.7	-9.2	-16.3	-21.6	-1.6	-6.2	-4.5	-6.9
	Max	20.8	13.0	10.0	11.4	24.2	8.7	12.5	17.3
	SD	6.1	5.5	5.8	6.8	6.9	4.3	4.5	5.2
	#		23 / 0 / 23			19 / 4 / 15			

Note: Other tables in this paper follow a similar structure to this table. Consider “successful” fiscal adjustments under the top left half of Table 1. We consider two groups of economies: Group 1, with a cyclically adjusted primary deficit (as % of GDP) sample mean of -0.4%, and Group 3 with 0.4%. (These numbers are put in “[]” in the far left column with the names of the groups. The sample mean is calculated by taking a simple average over all available observations for this income group.)

For each of the two income groups, the table shows the sample means of the variable for the years from t-1 to t+2, and their differences
continued.

TABLE 2
MOVEMENT OF GOVERNMENT DEBT (AS PERCENT OF GDP)

“Successful” versus “Not Successful”

ITEM		SUCCESSFUL				NOT SUCCESSFUL			
		<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>	<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>
Group 1: High-income OECD Economies [35.9]	Mean	46.7	46.2	45.3	43.7	33.3	34.0	36.1	36.7
	(Diff w/ <i>t-1</i>)		-0.4	-1.4	-3.0		0.7	2.8	3.3
	Median	45.0	45.4	44.7	39.5	26.9	25.2	27.7	25.1
	Min	6.0	6.4	6.3	6.3	0.4	0.0	0.0	0.0
	Max	80.1	85.6	93.8	109.8	109.4	115.6	113.7	117.9
	SD	23.4	23.6	25.4	27.3	28.2	30.0	33.2	34.9
	#	16 / 6 / 10				29 / 16 / 13			
Group 3: Middle-income Economies [43.6]	Mean	56.1	54.7	51.1	50.1	41.3	40.6	45.0	50.8
	(Diff w/ <i>t-1</i>)		-1.4	-5.0	-6.0		-0.7	3.7	9.5
	Median	40.5	43.7	41.7	43.7	33.3	35.2	35.9	40.1
	Min	3.0	2.6	1.6	2.6	0.0	0.0	0.0	0.0
	Max	190.1	152.4	134.7	152.4	243.8	229.0	332.1	401.0
	SD	36.4	31.8	31.4	33.3	35.9	35.8	46.0	56.7
	#	51 / 21 / 30				72 / 45 / 27			

“Successful and Sustained” versus “Successful and Not Sustained”

ITEM		SUCCESSFUL AND SUSTAINED				SUCCESSFUL AND NOT SUSTAINED			
		<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>	<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>
Group 1: High-income OECD Economies	Mean	47.5	47.4	46.1	46.5	49.3	50.8	51.9	47.8
	(Diff w/ <i>t-1</i>)		-0.2	-1.4	-1.0		1.4	2.5	-1.6
	Median	38.9	44.3	46.4	42.9	49.5	51.7	50.7	47.9
	Min	6.0	6.4	6.7	6.3	28.0	30.4	29.9	27.7
	Max	80.1	85.6	93.8	109.8	70.4	69.3	76.1	67.6
	SD	26.9	28.0	30.0	35.2	17.6	17.3	21.8	20.1
	#	7 / 3 / 4				4 / 1 / 3			
Group 3: Middle-income Economies	Mean	49.9	49.5	47.3	47.8	55.8	56.8	51.0	50.1
	(Diff w/ <i>t-1</i>)		-0.4	-2.6	-2.1		1.0	-4.8	-5.8
	Median	39.2	43.7	39.3	39.8	38.45	42.6	43.1	42.6
	Min	3.0	2.6	1.6	2.6	11.3	13.0	9.9	9.3
	Max	112.1	108.7	99.8	109.8	134.7	152.4	134.7	152.4
	SD	29.5	26.8	29.0	30.3	36.9	37.3	33.8	36.6
	#	19 / 9 / 10				20 / 7 / 13			

against the initial value of sample mean in year *t-1* (which we call the “initial condition”). For example, Group 1’s primary deficits in case of successful adjustments have the sample means of 2.6%, -0.3%, -2.5%, and -4.0%, in *t-1*, *t*, *t+1*, and *t+2*, respectively. The differences against the initial conditions are -2.9%, -5.1%, and -6.6% for *t*, *t+1*, and *t+2*, respectively. The table also shows the medians, minimums (Min), maxima (Max), and standard deviations (SD). The first number (out of three) in the cell denoted by “#” implies the total number of episodes. The second and third numbers are the numbers of episodes in which the observed values in year *t+2* are higher and lower than those in year *t-1* (i.e., “initial conditions”), respectively. For example, there are 25 episodes of successful fiscal adjustments for Group 1. For 24 episodes out of these 25, the primary deficit had dropped from *t-1* to *t+2*, while it increased in only one episode.

B. Primary Expenditure and Total Revenue

A key question facing the policymaker is what type of reform measure is more likely to contribute to SFA on average—decreasing primary expenditure or increasing total revenue? Furthermore, how are the movements of these two fiscal variables different between SFA and NSFA episodes?

Alesina, Perotti, and Tavares (1998) and Alesina and Ardagna (1998) analyzed the OECD fiscal data to answer these questions. Their results can be summarized as follows. For OECD economies, a larger part of improvement on primary deficit is, on average, due to a decrease in *primary expenditure* (which is total expenditure net of interest payments) rather than an increase in *total revenue*. At the same time, SFA and NSFA episodes are more clearly distinguished by the magnitude of the decrease in *primary expenditure* than that of the increase in *total revenue*.

To confirm their findings and extend the analysis to EMEs, Table 3 reports the movements of these two fiscal variables during episodes of fiscal adjustment. The result supports the arguments of previous studies on OECD economies, although—as will be made apparent—EMEs seem to demand special attention:

- (i) *Sample Averages*: The sample average of primary expenditure and total revenue (as % of GDP) over the whole sample is higher for Group 1 (about 30-31%) than for Group 3 (about 25-26%). That is, government spending and total revenue account for a smaller share of GDP in middle-income economies than in high-income economies.
- (ii) *Initial Conditions*: The average levels of primary expenditure and total revenue at $t-1$ are higher in SFA episodes than in NSFA ones in Group 1 while in Group 3 the results hold for primary expenditure although the two total revenue figures are the same. This is probably because when the government share of GDP is already larger, governments are under greater pressure and hence have greater incentives to decrease expenditure.
- (iii) *Magnitude of Adjustment—Reason for Successful Episodes*: For Group 1, in the case of SFA episodes, the primary expenditure has decreased on average by 4.4pp of GDP over three years, while the total revenue has increased by only 1.6pp. This implies *that for Group 1, expenditure contraction contributes about 2.7 times more to successful fiscal adjustment than what revenue augmentation does, which confirms the results of previous studies*. On the other hand, for Group 3, expenditure contraction (4.0pp reduction) contributes by 1.8 times more than what revenue augmentation (2.2pp increase) does. The bottom line is that for MEs (Group 1), expenditure contraction relative to revenue augmentation is more effective to reduce fiscal imbalance than for EMEs (Group 3). A possible explanation is that the revenue as share of GDP is on average higher in MEs, so there are no alternative means other than to reduce expenditure.

TABLE 3
MOVEMENTS OF PRIMARY EXPENDITURE AND TOTAL REVENUE
(AS PERCENT OF GDP)

ITEM		SUCCESSFUL				NOT SUCCESSFUL			
		t-1	t	t+1	t+2	t-1	t	t+1	t+2
Group 1: High-income OECD Economies									
(Cyclically Adjusted) Primary Expenditure [30.1]	Mean	35.9	33.8	32.1	31.6	32.0	30.6	31.1	31.6
	(Diff w/ t-1)		-2.1	-3.8	-4.4		-1.3	-0.8	-0.4
	Median	36.9	34.1	32.7	33.1	32.2	31.1	31.6	32.7
	Min	19.0	18.1	18.0	17.8	16.4	12.5	13.3	11.1
	Max	46.9	45.5	44.0	42.9	51.4	49.2	49.1	50.3
	SD	6.8	6.8	6.7	6.5	8.0	8.3	8.2	8.2
	#		25 / 4 / 21				70 / 34 / 36		
(Cyclically Adjusted) Total Revenue [30.5]	Mean	33.7	34.1	34.6	35.3	31.3	32.1	32.4	32.5
	(Diff w/ t-1)		0.5	0.9	1.6		0.7	1.1	1.2
	Median	34.8	35.6	36.1	37.4	30.3	31.3	32.7	33.0
	Min	20.1	18.8	18.8	19.5	16.6	16.3	16.7	16.8
	Max	43.3	45.0	44.6	44.1	49.4	49.1	49.1	48.8
	SD	5.5	6.4	7.0	7.3	8.4	8.6	8.6	8.6
	#		25 / 19 / 6				70 / 52 / 18		
Group 3: Middle-income Economies									
(Cyclically Adjusted) Primary Expenditure [25.7]	Mean	30.5	28.0	26.5	26.5	27.8	25.9	26.7	27.1
	(Diff w/ t-1)		-2.6	-4.0	-4.0		-1.8	-1.1	-0.7
	Median	29.7	26.6	25.1	25.4	25.9	25.1	25.8	25.5
	Min	13.4	10.6	11.3	11.8	11.2	10.9	10.9	12.0
	Max	62.8	61.8	52.8	51.3	55.2	52.0	52.5	56.5
	SD	11.7	10.5	9.0	7.9	9.9	9.0	9.0	9.3
	#		54 / 15 / 39				159 / 72 / 87		
(Cyclically Adjusted) Total Revenue [25.1]	Mean	26.0	27.6	27.8	28.2	26.0	27.5	26.7	26.7
	(Diff w/ t-1)		1.6	1.8	2.2		1.6	0.7	0.7
	Median	23.9	25.7	26.0	26.5	24.1	26.2	25.3	25.7
	Min	12.3	12.7	15.2	15.1	10.4	11.9	11.4	10.8
	Max	51.9	52.9	52.9	55.2	54.1	54.8	55.2	55.8
	SD	9.2	9.5	9.3	8.9	9.8	9.8	9.1	9.4
	#		54 / 39 / 15				159 / 94 / 65		

- (iv) *Magnitude of Adjustment—SFA versus NSFA:* For Group 1, on the expenditure side, the magnitude of the improvement of primary expenditure across SFA episodes dominates NSFA episodes (-4.4pp versus -0.4pp). The difference is almost negligible for the revenue side (1.6pp versus 1.2pp). On the other hand, for Group 3, the average decreases in primary expenditure are 4.0pp and 0.7pp for SFA and NSFA cases, while the average increases in total revenues are 2.2pp and 0.7pp, respectively. Hence, our results suggest *that the revenue side is also important for SFA in EMEs, although the expenditure side still dominates.*
- (v) *Magnitude of Adjustment in Year t —SFA versus NSFA:* Another result, which is closely related to the discussion so far, is that for the two groups, at the initial year t of fiscal adjustment, the decreases in primary expenditure are higher in SFA episodes (for example, 2.1pp for SFA and 1.3pp for NSFA in Group 1). However, the increases in total revenues are higher in NSFA episodes (for example, 0.7% and 0.5% for Group 1) except for Group 3 where the two figures are the same (1.6%). This implies that whether the fiscal adjustment had focused on the expenditure or on the revenue side in the initial year seems to matter for the likelihood of success—that is, at the initial year of adjustment, *the economies that successfully adjusted tended to focus on decreasing expenditure rather than increasing revenue measures.*

In order to assess the importance of sustainability of fiscal adjustment, we repeated the exercise for “successful and sustained” versus “successful and not sustained.” Only in Group 3—middle-income economies—was the sample size meaningful and the results very similar to Table 3, SFA vs. NSFA. Moreover, of the 37 episodes of successful adjustment, 24 of them or 62% were sustainable. In both cases, primary expenditure cutbacks dominated increases in total revenue. Not surprisingly, the primary expenditure cutbacks for periods t and $t+1$ were greater in the case of “successful and not sustained” than in “successful and sustained”, suggesting some trade-off between depth and duration of the primary expenditure consolidation process.

C. Components of Expenditure and Revenue

If decreasing expenditure is important for SFA, then is there any particular component in primary expenditure, which plays a more significant role than others? What about such a breakdown by components in total revenue, if any? Table 4 reports the movements of the components of primary expenditure—that is, (i) wages and salaries, (ii) goods and services (excluding wages and salaries), (iii) capital expenditure, and (iv) subsidies.¹² Table 5 reports the components of total revenue—that is, (i) income taxes, (ii) taxes on goods and services, (iii) social security taxes, (iv) taxes on international trade, (v) other taxes, and (vi) nontax revenue.

A smart policymaker may tend to focus on getting the most “bang for the buck” and concentrate efforts on components comprising the highest share of GDP. Hence, (as we will see in Group 1), a priori, we predict that a “larger” component should contribute more to SFA. We also acknowledge that the current literature highlights that EMEs tend to respond to the pressure of fiscal consolidation

¹² Subsidies include all unrequited, nonrepayable transfers on current account to private and public enterprises, and the cost of covering the cash operating deficits of departmental enterprise sales to the public by departmental enterprises.

TABLE 4
MOVEMENTS OF COMPONENTS OF PRIMARY EXPENDITURE (AS PERCENT OF GDP)

ITEM		SUCCESSFUL				NOT SUCCESSFUL			
		t-1	t	t+1	t+2	t-1	t	t+1	t+2
Group 1: High-income OECD Economies									
Wages and Salaries	Mean	5.2	4.9	4.6	4.6	5.2	5.1	5.2	5.2
	(Diff w/ t-1)		-0.3	-0.5	-0.6		-0.1	0.0	0.0
	#		24 / 4 / 20				68 / 30 / 38		
Goods and Services	Mean	4.2	4.0	3.8	3.8	3.7	3.6	3.7	3.7
	(Diff w/ t-1)		-0.1	-0.3	-0.4		-0.2	-0.1	0.0
	#		24 / 8 / 16				68 / 32 / 36		
Capital Expenditure	Mean	2.5	2.4	2.3	2.2	3.2	2.9	2.9	2.8
	(Diff w/ t-1)		-0.2	-0.3	-0.3		-0.3	-0.3	-0.3
	#		25 / 6 / 19				70 / 17 / 53		
Subsidies	Mean	23.8	22.3	21.1	20.7	19.9	19.2	19.5	20.0
	(Diff w/ t-1)		-1.4	-2.7	-3.0		-0.7	-0.4	0.1
	#		25 / 3 / 22				70 / 39 / 31		
Group 3: Middle-income Economies									
Wages and Salaries	Mean	7.9	7.6	7.4	7.3	7.6	7.3	7.6	7.7
	(Diff w/ t-1)		-0.3	-0.5	-0.6		-0.2	-0.0	0.1
	#		54 / 19 / 35				158 / 77 / 81		
Goods and Services	Mean	7.1	6.4	5.9	5.6	5.7	5.4	5.3	5.6
	(Diff w/ t-1)		-0.6	-1.1	-1.4		-0.3	-0.4	-0.1
	#		54 / 18 / 36				158 / 67 / 91		
Capital Expenditure	Mean	7.4	6.1	5.5	5.2	6.1	5.3	5.2	5.4
	(Diff w/ t-1)		-1.3	-1.9	-2.2		-0.8	-0.8	-0.7
	#		55 / 15 / 40				161 / 62 / 99		
Subsidies	Mean	8.1	7.6	7.8	7.8	8.4	8.1	8.4	8.4
	(Diff w/ t-1)		-0.5	-0.3	-0.3		-0.3	0.0	0.1
	#		55 / 24 / 31				161 / 85 / 76		

Note: Goods and Services do not include Wages and Salaries.

TABLE 5
MOVEMENTS OF COMPONENTS OF TOTAL REVENUE (AS PERCENT OF GDP)

ITEM		SUCCESSFUL				NOT SUCCESSFUL			
		t-1	t	t+1	t+2	t-1	t	t+1	t+2
Group 1: High-income OECD Economies									
Income Taxes	Mean	11.0	11.7	12.2	12.2	9.1	9.5	9.6	9.6
	(Diff w/ t-1)		0.6	1.2	1.1		0.3	0.4	0.5
	#		25 / 20 / 5				70 / 44 / 26		
Taxes on Goods and Services	Mean	11.0	11.1	11.3	11.5	9.6	9.8	9.9	9.9
	(Diff w/ t-1)		0.1	0.2	0.5		0.2	0.3	0.2
	#		25 / 18 / 7				70 / 39 / 31		
Social Security Taxes	Mean	6.6	6.2	5.9	6.1	7.4	7.5	7.7	7.8
	(Diff w/ t-1)		-0.4	-0.7	-0.5		0.1	0.3	0.4
	#		25 / 13 / 12				70 / 49 / 21		
Taxes on International Trade	Mean	0.3	0.3	0.2	0.2	0.9	0.9	0.8	0.7
	(Diff w/ t-1)		0.0	0.0	0.0		-0.1	-0.1	-0.2
	#		25 / 12 / 13				68 / 32 / 36		
Other Taxes	Mean	1.2	1.3	1.3	1.5	1.4	1.5	1.5	1.5
	(Diff w/ t-1)		0.0	0.1	0.3		0.0	0.1	0.1
	#		25 / 16 / 9				70 / 41 / 29		
Nontax Revenue	Mean	3.8	3.9	3.8	4.0	3.0	3.1	3.1	3.1
	(Diff w/ t-1)		0.1	0.0	0.2		0.1	0.1	0.1
	#		25 / 11 / 14				70 / 41 / 29		
Group 3: Middle-income Economies									
Income Taxes	Mean	5.0	5.5	6.0	6.1	6.1	6.6	6.4	6.3
	(Diff w/ t-1)		0.4	1.0	1.1		0.6	0.3	0.2
	#		54 / 41 / 13				159 / 85 / 74		
Taxes on Goods and Services	Mean	6.3	6.6	6.6	6.8	5.5	6.0	6.0	6.2
	(Diff w/ t-1)		0.3	0.2	0.4		0.5	0.5	0.6
	#		54 / 36 / 18				159 / 107 / 52		
Social Security Taxes	Mean	2.5	2.6	2.6	2.7	2.8	3.0	3.0	2.9
	(Diff w/ t-1)		0.0	0.1	0.1		0.1	0.1	0.1
	#		54 / 35 / 19				159 / 109 / 50		
Taxes on International Trade	Mean	4.5	4.9	4.4	4.3	4.3	4.4	4.2	4.1
	(Diff w/ t-1)		0.4	-0.1	-0.2		0.0	-0.1	-0.2
	#		54 / 26 / 28				159 / 66 / 93		
Other Taxes	Mean	1.2	1.2	1.2	1.2	1.1	1.0	1.0	1.0
	(Diff w/ t-1)		0.0	0.0	0.1		0.0	0.0	-0.1
	#		54 / 31 / 23				159 / 73 / 86		
Nontax Revenue	Mean	6.6	7.0	7.1	7.3	6.2	6.6	6.2	6.3
	(Diff w/ t-1)		0.4	0.5	0.7		0.4	0.0	0.1
	#		54 / 31 / 23				159 / 83 / 76		

by decreasing *capital expenditure*. This may be politically less costly for various reasons, but on the other hand, public investments need to be safeguarded in EMEs in view of the importance of capital formation on growth and tax and nontax revenues. Can we observe the same phenomenon in our data?

The following results are observed from Tables 4 and 5:

- (i) *Group 1*: In SFA episodes, average primary expenditure declined by about 4.4pp of GDP from $t-1$ to $t+2$ (see Table 3). Out of this 4.4pp reduction, the decrease in subsidies account for 3.0pp (see Table 4). Subsidies play an important role possibly (and partly) because they represent a large share of GDP (23.8% across the sample at $t-1$).¹³

On the revenue side, income taxes—accounting for the largest share of GDP together with taxes on goods and services—contribute relatively more to the revenue increase (by 1.1pp of GDP over 3 years) than other components do (see Table 5). *An interesting finding is that the 3-year average increase in social security taxes is negative for SFA episodes (-0.5pp), while it is positive for NSFA ones (0.4pp)*. While somewhat paradoxical, it may reflect, on the positive side, increased government awareness of the need to avoid taxing social welfare-enhancing activities during periods of fiscal adjustment. Alternatively, it could simply reflect the other side of the reduction in subsidies. That is, in line with cutbacks in subsidies, the government also reduces taxes (although presumably by less than the cutback in spending). Alesina and Perotti (1997) may provide a further clue for this behavior when they refer to the fact that social security contributions like taxes on households tend to have the strongest effects on unit labor costs. A savvy supply-side oriented policymaker would therefore be tempted to target this revenue measure! (However, as we will see later, this may have something to do with the automatic stabilizer properties or sensitivity of social security to GDP growth).

- (ii) *Group 3*: According to Table 3, the reduction in primary expenditure in SFA episodes for Group 3 was 4.0pp. Table 4 suggests that *slightly over one half of this improvement is due to the drop in the capital expenditure, which further contributes to the ongoing debate about whether and how to safeguard capital spending in fiscal consolidation strategies*. (We revisit this issue in the next subsection.) In fact, as one moves up in income group (from three to one) across successful episodes, reductions in capital spending represent a smaller share of the reduction of the primary deficits. This may suggest that higher- income countries are better able to safeguard capital spending. Turning to goods and services, reductions in spending on this category account for the second largest contribution to successful fiscal adjustment in Group 3.

On the revenue side, one half of the total revenue increase of 2.2pp of GDP (see Table 3) is attributed to the increase in income taxes (1.1pp in Table 5). Furthermore, 0.7pp of the total revenue increase is attributed to nontax revenue. This suggests that policymakers in EMEs are increasing efforts to improve tax and nontax revenues.

¹³ The other three primary expenditure components, wages and salaries, goods and services, and capital expenditure account for 5.2%, 4.2% and 2.5% of the GDP in year $t-1$, respectively, much less than the share of subsidies (23.8%). Group 1's share of subsidies is very large compared to 14.5% and 8.1% (in $t-1$) for Group 2 and Group 3, respectively.

D. Capital Expenditure in EMEs

The results in Table 5 so far point out that over one half of the primary expenditure decrease in SFA episodes of Group 3 is driven, on average, by the cutbacks in capital expenditure.¹⁴ These findings are not inconsistent with other studies on public spending in EMEs, such as, for example, Calderon, Easterly, and Serven (2002b) who argue that in five out of nine Latin American economies in the 1980s and 1990s, infrastructure investment cuts contributed half or more to total fiscal adjustment.¹⁵ To better understand this result we need to drill deeper. In particular, we address whether a heavy reliance on capital expenditure component is in fact commonly observed in EMEs pursuing fiscal adjustment.

First, we examine whether the results are driven by a few influential episodes or whether it tends to be a common occurrence. Table 6 lists all 55 successful episodes of fiscal adjustment in Group 3. According to the table, as many as 31 out of 55 episodes have experienced a decline of capital expenditure of 1pp or more suggesting that decreasing capital expenditure tends to accompany SFA across a majority of EMEs.

Second, we examine the relative importance of the decline in capital spending as a share of the decline in primary spending. Table 6 also shows the decrease (as pp) in primary expenditure from $t-1$ to $t+2$ and the *ratio* of capital expenditure cut to primary expenditure cut. From the results, in 19 out of 55 episodes, the decline in capital spending comprised 50% or more of the decline in primary expenditure. Therefore, we interpret that our analysis in the previous subsection on the capital expenditure is *not* driven by a few influential episodes.

E. Expenditure on Interests

Primary expenditure, by definition, excludes government expenditure on interests. However, a SFA has an indirect impact on interest expenditure, mainly because it tends initially to decrease the growth of government debt (and perhaps even decrease the stock of debt) and hence the government can reduce the deadweight loss and free up more resources on noninterest payments. Therefore, we predict that during SFA episodes the growth of expenditure on interests should at least slow down (especially if debt level is high), if not, decrease.

¹⁴ As “capital expenditure” is largely contributing to “public investment” particularly in EMEs, some economists have argued that it should be given special consideration in the analysis of fiscal space creation and should not be treated simply as “one more component” of primary expenditure (for an analysis of whether fiscal deficit targets should or should not include public investment, see IMF 2004). As is observed in the result, it may be questionable to assert that a decline in primary expenditure resulting from a reduction in capital expenditure is considered a “successful” fiscal adjustment. Therefore, in a later subsection, we try to introduce a new definition on (successful) fiscal adjustments for developing economies.

¹⁵ While it could be argued that with liberalization, private investment in infrastructure could make up for the shortfall in public infrastructure investment. This does not seem to be the case. According to Calderon, Easterly, and Serven (2002a, 20), “...there is only limited evidence to support the common perception that privatization ... explains the observed downward trend in public infrastructure spending.”

TABLE 6
MOVEMENTS OF CAPITAL EXPENDITURES (AS PERCENT OF GDP)
IN INDIVIDUAL SUCCESSFUL EPISODES IN GROUP 3

EPISODE	CAPITAL EXPENDITURE (% OF GDP)					CHANGE IN PRI. EXP. (B)*	*(A) / (B) X 100
	t-1	t	t+1	t+2	CHANGE (A)*		
Oman 1976	21.4	20.6	14.1	9.3	-12.0	-11.5	104.2
Oman 1977	20.6	14.1	9.3	9.8	-10.7	-21.1	50.8
Malaysia 1982	15.1	10.9	8.1	5.4	-9.7	-13.1	74.2
St. Kitts and Nevis 1989	12.6	8.6	3.4	4.0	-8.6	-8.7	98.8
Jamaica 1997	13.7	6.9	5.2	5.1	-8.5	-6.7	126.7
Malaysia 1983	10.9	8.1	5.4	2.7	-8.2	-11.2	72.8
Egypt, Arab Rep. 1977	16.4	8.4	6.9	8.4	-7.9	-13.7	57.8
Oman 1987	13.4	8.0	7.1	5.8	-7.6	-13.4	56.6
Swaziland 1987	7.7	4.3	8.0	0.9	-6.8	-24.6	27.6
Morocco 1982	12.9	12.7	8.0	6.4	-6.4	-9.8	65.5
Jordan 1983	12.6	11.0	8.7	7.4	-5.2	-1.3	411.2
Namibia 1988	9.4	7.0	4.1	5.0	-4.4	-7.3	59.7
Iran, Islamic Rep. 1983	8.7	8.3	5.6	4.7	-4.0	-9.2	43.2
Sri Lanka 1981	16.6	13.2	15.5	13.0	-3.6	-12.3	29.3
Sri Lanka 1989	10.3	8.2	6.1	6.8	-3.5	-2.1	169.3
Botswana 1983	10.2	6.7	6.4	6.7	-3.5	-7.5	46.4
Oman 1995	6.9	6.4	3.9	3.7	-3.2	-13.5	23.8
Hungary 1994	7.6	6.1	4.7	4.6	-3.0	-14.7	20.6
South Africa 1994	3.5	2.0	1.7	1.4	-2.1	-3.1	67.7
Botswana 1977	11.2	10.0	12.0	9.2	-1.9	-4.9	39.9
Belarus 1998	6.6	4.2	6.4	4.9	-1.7	-6.8	24.9
Jordan 1992	7.5	6.9	5.0	6.0	-1.6	-3.6	43.6
Bolivia 1995	5.0	4.1	5.0	3.6	-1.4	-0.5	267.8
Chile 1977	4.9	3.9	3.9	3.5	-1.4	-2.8	50.2
Jamaica 1998	6.9	5.2	5.1	5.5	-1.4	-2.3	59.6
Costa Rica 1981	5.2	3.5	2.5	4.0	-1.3	-2.6	47.7
Chile 1978	3.9	3.9	3.5	2.7	-1.2	-3.0	39.9
Tunisia 1979	11.7	9.1	9.5	10.5	-1.2	-1.2	97.0
Hungary 1995	6.1	4.7	4.6	5.0	-1.1	-13.0	8.7
Peru 1995	4.3	2.8	2.2	3.2	-1.1	-0.7	149.0
Morocco 1990	7.9	8.0	6.1	6.9	-1.0	0.1	N/A#
Thailand 1988	3.2	2.6	2.0	2.5	-0.8	-4.7	16.2
Peru 1996	2.8	2.2	3.2	2.2	-0.6	-1.2	52.8
Mexico 1995	2.6	1.5	2.3	2.0	-0.6	0.6	N/A
Uruguay 1990	2.0	1.7	1.4	1.4	-0.6	2.5	N/A
Uruguay 1985	2.2	1.5	1.2	1.6	-0.6	-1.8	34.9
Bolivia 1994	5.4	5.0	4.1	5.0	-0.4	-1.4	32.0
Belarus 1994	5.9	5.3	4.5	5.5	-0.4	-5.1	6.8
Jordan 1990	7.0	6.8	7.5	6.9	-0.2	3.8	N/A
Mauritius 1983	4.0	2.8	2.5	3.9	-0.1	-2.6	3.3
Chile 1990	2.8	2.1	2.6	3.0	0.2	0.0	N/A
Thailand 1989	2.6	2.0	2.5	2.8	0.2	-2.5	-9.0
Mauritius 1986	3.9	3.3	4.4	4.2	0.2	-1.3	-18.4
Chile 1993	3.0	3.0	3.3	3.3	0.3	0.1	N/A
Botswana 1984	6.7	6.4	6.7	7.1	0.3	3.2	N/A

continued.

Turkey 1997	2.1	3.4	2.3	2.7	0.5	0.1	N/A
Belarus 1997	5.5	6.6	4.2	6.4	0.8	-8.7	-9.5
Venezuela, RB 1973	4.4	3.6	6.4	5.7	1.3	1.8	N/A
Uruguay 1976	1.3	2.3	2.6	2.6	1.4	-0.5	-256.7
Morocco 1988	6.2	7.0	7.9	8.0	1.9	0.3	N/A
Iran, Islamic Rep. 1990	3.1	5.0	4.9	5.0	1.9	1.9	N/A
Croatia 1995	2.7	3.6	5.4	4.6	1.9	5.6	N/A
Egypt, Arab Rep. 1991	4.8	5.6	12.1	6.7	2.0	3.5	N/A
Swaziland 1975	8.2	9.7	5.0	10.8	2.5	7.3	N/A
Iran, Islamic Rep. 1991	5.0	4.9	5.0	7.6	2.7	3.9	N/A

* "Change" implies the difference between the observed values of $t-1$ and $t+2$.

** "Change" on Primary Expenditure, as percent of GDP.

"N/A" in this column implies that primary expenditure has not decreased from $t-1$ to $t+2$.

Table 7 reports the movement of expenditure on interests during fiscal adjustment.

- (i) *Group 1:* For Group 1, expenditure on interests has increased from 4.7% of GDP to 5.1% from $t-1$ to t , and remains constant until $t+2$. "Not successful" cases reveal a very small increase during the same period.
- (ii) *Group 3:* A similar trend is observed in Group 3. From t to $t+2$, expenditure on interests in successful episodes (where government debt was significantly higher than in "not successful" episodes) has moderately increased by 0.1pp of GDP, while it has increased by a larger 0.4pp in "not successful" episodes.

TABLE 7
MOVEMENTS OF EXPENDITURE ON INTEREST (AS PERCENT OF GDP)

ITEM	SUCCESSFUL				NOT SUCCESSFUL			
	$t-1$	t	$t+1$	$t+2$	$t-1$	t	$t+1$	$t+2$
Group 1: High-income OECD Economies [3.1]								
Mean	4.7	5.1	5.1	5.1	3.1	3.4	3.4	3.5
(Diff w/ t)			0.0	0.0			0.0	0.1
Median	4.4	4.6	5.1	3.9	1.9	2.4	2.3	2.4
Min	0.4	0.4	0.5	0.6	0.0	0.1	0.2	0.2
Max	10.3	10.3	9.3	10.9	11.3	13.7	12.3	13.7
SD	2.3	2.6	2.7	2.9	3.0	3.1	3.0	3.1
#		25 / 13 / 12				70 / 45 / 25		
Group 3: Middle-income Economies [2.9]								
Mean	2.9	3.1	3.3	3.2	2.6	2.8	2.9	3.3
(Diff w/ t)			0.2	0.1			0.1	0.4
Median	2.3	2.3	2.3	1.7	1.9	2.1	2.3	2.5
Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max	12.5	13.3	14.9	14.9	11.0	15.1	19.8	29.2
SD	2.4	2.8	3.2	3.5	2.1	2.7	2.9	3.7
#		55 / 28 / 27				161 / 101 / 60		

- (iii) *Initial Conditions:* For all two groups, the initial level of expenditure on interests is higher in SFA episodes than in NSFA episodes. This suggests that initial conditions—reflecting higher interest expenditure—are likely to positively affect the probability of a SFA.

F. Removing Capital Expenditure

As discussed above, approximately one half of the decrease in primary expenditure in SFA in EMEs is on average due to a decrease in capital expenditure. However, capital expenditure is critical especially in EMEs, given the importance of capital formation for economic growth, especially in the presence of limited private sector investment. In this context, our current definitions of SFA does not distinguish between a “smart” fiscal adjustment—whereby the government “saves” by decreasing noninvestment expenditure and/or increasing total revenue *and* reallocates these savings for public investment—and a conventional adjustment.

To address this issue, we introduce an alternative definition, namely the “primary deficit net of capital expenditure” to replace the “primary deficit.” All the other definitions are the same as before. Table 8 is the duplication of previous Tables 1-5 and 7 using the alternative definition for Group 3 where reductions in capital spending were contributing to fiscal adjustment. Although the numbers are different, most of the conclusions we have derived so far still hold for this new definition. Hence, whether we include capital expenditure in defining fiscal adjustment or not does not seem to affect our main arguments.

V. MACROECONOMIC ADJUSTMENT

In the previous section, we described salient features of SFA across category of countries by examining the behavior of *fiscal* variables. In this section, we focus on the relation between fiscal adjustment and economic growth and, more generally, *macroeconomic* variables. In particular, we examine what explains either expansionary or contractionary fiscal adjustment. The first subsection reviews possible explanations on why fiscal adjustment can be expansionary. The second and third subsections present empirical results on the evolution of GDP growth, unemployment, and the national accounts components of GDP over periods of fiscal adjustment. The fourth subsection discusses whether initial conditions on fiscal variables affect the movement of macroeconomic variables; that is, we try to answer, “If initial fiscal conditions are worse, is SFA accompanied by different macroeconomic performance?” The final subsection discusses the probit result in order to answer which explanatory variables account for the success probability of fiscal adjustment.

A. Why Fiscal Adjustment is Not Necessarily Contractionary

In the standard Keynesian IS-LM framework, fiscal consolidation—whether through a reduction in public spending or an increase in the tax rate—is contractionary. Aggregate demand declines due to (i) lower public spending (and consequent impact through the Keynesian multiplier) or

(ii) lower private spending as higher taxes reduce household disposable income. In the goods market, as demand for goods declines, equilibrium output declines. In the money markets, income declines and therefore the quantity of money demanded is lower. There is excess supply for real balances and in equilibrium interest rates decline. Consequently, following fiscal consolidation, the goods and money markets clear at a lower (level of) equilibrium income and interest rates with planned spending equal to income, at the same time, the quantity of real money balances demanded equal to the given real money stock.

However, this standard IS-LM construct faces various criticisms. The first critique is that the framework is essentially static whereas macroeconomic systems are intrinsically dynamic. This has repercussions especially as these short-run macro models do not incorporate the role of capital accumulation in the macro-dynamic analysis. Instead the focus is on the demand side of investment. As a consequence, the supply-side response of firms and its impact on the stock of capital in the economy and the resulting productive capacity is largely unaccounted for.

The second critique is that agents' expectations in these early models take a back-seat role and when they figure more prominently these tend to be associated with adaptive expectations hypothesis. In other words, expectations are formed by looking at past evolution of the relevant variable. Embedding alternative rational expectations hypothesis, that is, assuming that on average forecasters are correct has significant implications on macroeconomic theory particularly on the analysis of macroeconomic policy (see Turnovsky 2000).

Returning to the impact of fiscal consolidation, empirical studies (for example, Alesina and Ardagna 1998; and Alesina, Perotti, and Tavares 1998) have reported that many episodes of fiscal adjustment were indeed expansionary. These non-Keynesian results have been reconciled according to one of the following hypotheses.

1. Consumption–Expectations Hypothesis

A first hypothesis is derived from a longer-term analysis based on forward-looking expectations and the degree of credibility of the policymaker. In particular, following an announcement of fiscal consolidation—and assuming forward-looking households indeed believe the announcement to be credible—the resulting reduction in public spending may lead to an expectation of lower taxes and higher disposable income over the medium term and lead to changes in consumption behavior today.¹⁶ In the extreme case, if agents were to believe that fiscal adjustment was to render the decrease in government spending permanently, then there could be a more robust change in behavior.¹⁷ In this case, growth in consumption could jump in order to mimic the perceived sudden growth in life-time after tax “permanent” income. It may be argued that following a country's entry

¹⁶ This is predicated on the underlying assumptions of (i) the time horizon such that households have finite horizons (and bequests are not fully transferable) in contrast to the dynastic households with fully transferable bequests where Ricardian equivalence would hold; (ii) public and private consumption are not perfect substitutes; and/or (iii) taxes are distortionary.

¹⁷ There may be a further argument to explain the non-Keynesian results. Indeed if taxes are distortionary, a decrease in public spending may usher in a period of lower taxes, thereby reducing tax distortions in the economy, *ceteris paribus*, leading to an expansion of economic activity through a more efficient allocation of resources.

TABLE 8
DUPICATED TABLES EXCLUDING CAPITAL EXPENDITURE FOR GROUP 3 (AS PERCENT OF GDP)

ITEM		SUCCESSFUL				NOT SUCCESSFUL			
		t-1	t	t+1	t+2	t-1	t	t+1	t+2
Table 1									
(Cyclically Adjusted) Primary Deficit minus Capital Expenditure [-5.0]	Mean (Diff w/ t-1) Median Min Max SD #	-1.9 -5.0 -2.2 -15.9 15.0 6.6 49 / 6 / 43	-6.9 -5.7 -6.0 -21.3 3.7 5.3 6 / 6 / 43	-7.6 -6.1 -7.2 -28.4 3.1 6.3 6 / 6 / 43	-8.0 -6.1 -7.1 -28.8 11.7 7.0 6 / 6 / 43	-3.3 -4.4 -2.6 -24.1 11.6 5.6 155 / 51 / 104	-7.7 -1.8 -6.8 -28.4 2.1 5.6 51 / 51 / 104	-5.1 -1.8 -4.5 -28.8 15.0 5.9 51 / 51 / 104	-4.8 -1.4 -4.4 -24.6 10.4 5.3 104 / 104 / 104
Table 2									
Government Debt [43.6]	Mean (Diff w/ t-1) Median Min Max SD #	52.4 3.0 40.5 3.0 134.7 38.1 35 / 12 / 23	55.4 -3.0 44.3 2.6 152.4 38.8 12 / 12 / 23	49.4 -3.0 38.3 1.6 152.4 38.1 12 / 12 / 23	46.2 -6.3 31.7 2.6 152.4 37.2 12 / 12 / 23	38.8 1.3 31.3 0.0 243.8 34.4 79 / 57 / 22	40.0 4.0 32.3 0.0 243.8 39.6 57 / 57 / 22	42.8 4.0 35.0 0.0 332.1 46.5 57 / 57 / 22	49.0 10.3 36.7 0.0 401.0 58.5 22 / 22 / 22
Table 3									
(Cyclically Adjusted) Primary Expenditure minus Capital Expenditure [20.1]	Mean (Diff w/ t-1) Median Min Max SD #	23.2 -1.5 21.1 8.8 45.6 9.3 49 / 14 / 35	21.7 -1.8 19.9 6.0 44.9 9.1 14 / 14 / 35	21.4 -2.0 20.6 8.1 43.1 8.5 14 / 14 / 35	21.2 0.0 19.8 6.2 41.9 8.0 35 / 35 / 35	21.4 -0.9 20.3 5.1 51.3 8.7 155 / 76 / 79	20.5 -0.3 19.6 8.2 48.3 7.9 76 / 76 / 79	21.1 0.8 20.0 7.4 48.7 7.9 79 / 79 / 79	21.4 0.0 20.4 7.9 52.4 8.2 79 / 79 / 79
(Cyclically Adjusted) Total Revenue [25.1]	Mean (Diff w/ t-1) Median Min Max SD #	26.4 1.9 23.2 11.9 51.9 9.7 49 / 36 / 13	28.3 2.4 26.1 11.7 52.9 9.9 36 / 36 / 13	28.8 3.1 26.3 15.2 52.9 9.9 13 / 13 / 13	29.5 0.5 26.7 13.6 55.2 9.7 13 / 13 / 13	25.5 2.1 24.1 10.4 54.1 9.6 155 / 91 / 64	27.5 0.8 26.3 11.9 54.8 9.7 91 / 91 / 64	26.3 0.8 25.3 10.7 55.2 9.1 64 / 64 / 64	26.0 0.5 25.7 10.4 55.8 9.2 64 / 64 / 64
Table 4: Components of Primary Expenditure									
Wages and Salaries	Mean (Diff w/ t-1) #	7.6 -0.3 50 / 18 / 32	7.3 -0.3 18 / 18 / 32	7.3 -0.3 18 / 18 / 32	7.1 -0.5 32 / 32 / 32	7.5 -0.1 152 / 78 / 74	7.4 0.1 78 / 78 / 74	7.7 0.1 74 / 74 / 74	7.8 0.2 74 / 74 / 74
Goods and Services*	Mean (Diff w/ t-1) #	7.0 -0.7 50 / 17 / 33	6.3 -0.9 17 / 17 / 33	6.1 -1.2 33 / 33 / 33	5.7 -1.2 33 / 33 / 33	5.7 -0.3 152 / 70 / 82	5.3 -0.4 70 / 70 / 82	5.3 -0.4 82 / 82 / 82	5.5 -0.2 82 / 82 / 82
Capital Expenditure	Mean (Diff w/ t-1) #	6.6 -0.5 50 / 23 / 27	6.1 -0.7 23 / 23 / 27	5.9 -0.6 27 / 27 / 27	5.9 -0.6 27 / 27 / 27	6.0 0.1 158 / 72 / 86	6.1 -0.2 86 / 86 / 86	5.8 -0.2 86 / 86 / 86	5.5 -0.5 86 / 86 / 86

continued.

ITEM		SUCCESSFUL				NOT SUCCESSFUL			
		t-1	t	t+1	t+2	t-1	t	t+1	t+2
Subsidies	Mean	8.7	7.9	8.2	8.0	8.1	7.8	8.1	8.1
	(Diff w/ t-1) #		-0.8 50 / 20 / 30	-0.5	-0.7		-0.3 158 / 80 / 78	0.0	0.0
Table 5: Components of Total Revenue									
Income Taxes	Mean	4.7	5.3	5.8	6.0	6.0	6.6	6.4	6.3
	(Diff w/ t-1) #		0.6 49 / 37 / 12	1.1	1.3		0.6 155 / 92 / 63	0.3	0.2
Taxes on Goods and Services	Mean	6.0	6.3	6.3	6.5	5.5	6.1	5.9	6.1
	(Diff w/ t-1) #		0.3 49 / 32 / 17	0.2	0.4		0.6 154 / 103 / 51	0.4	0.6
Social Security Taxes	Mean	3.0	3.0	3.0	3.1	2.7	2.8	2.8	2.8
	(Diff w/ t-1) #		0.0 49 / 32 / 17	0.0	0.0		0.1 155 / 107 / 48	0.1	0.1
Taxes on International Trade	Mean	4.8	5.2	4.7	4.7	4.5	4.7	4.4	4.3
	(Diff w/ t-1) #		0.4 49 / 29 / 20	-0.1	-0.1		0.3 154 / 67 / 87	-0.1	-0.2
Other Taxes	Mean	1.3	1.3	1.4	1.4	1.0	1.0	1.0	0.9
	(Diff w/ t-1) #		0.0 49 / 30 / 19	0.1	0.1		0.0 155 / 71 / 84	-0.1	-0.1
Nontax Revenue	Mean	6.6	7.2	7.7	8.0	5.8	6.3	5.9	5.8
	(Diff w/ t-1) #		0.6 49 / 33 / 16	1.1	1.4		0.5 155 / 80 / 75	0.1	-0.1
Table 6: Expenditure on Interests									
Expenditure on Interests	Mean	2.7	2.8	2.9	2.9	2.5	2.6	2.9	3.1
	(Diff w/ t)			0.1	0.2			0.2	0.5
	Median	2.2	2.0	2.1	1.6	1.8	1.7	1.9	2.1
	Min	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Max	9.4	10.3	11.6	13.5	14.6	15.1	19.8	29.2
	SD	2.2	2.5	2.8	3.2	2.4	2.8	3.3	3.8
	#		50 / 25 / 25				158 / 98 / 60		

Note: Goods and Services do not include Wages and Salaries.

into OECD, EU, Euro Area (EA), or other economic clubs requiring fiscal discipline, there might be some element of greater credibility, perhaps giving an additional boost to private consumption.

2. Supply-side-plus Hypothesis

Another hypothesis considers in more detail the impact of supply-side effects from fiscal consolidation on investment and capital formation. In the case of a credible government commitment to fiscal consolidation through lower public spending, forward-looking firms could react by increasing investment today on account of (i) lower perceived future taxes (a similar argument to the above on the investment side) and (ii) longer-term implications for firms and households' cost of funds as government demand on loanable funds declines.¹⁸ This could be considered a first phase of adjustment.

However, there could be a more significant second round effect stemming from the reaction of financial markets in an open economy context to the perceived sustainability of the fiscal consolidation measures. Indeed if improved fiscal conditions were to lower the country risk premium as usually happens, there could be significant capital flows into the economy leading to increased investment and eventually higher potential GDP growth. This would particularly hold true for EMEs where capital flows may be volatile and where access to external funding and overall high risk premium may represent binding constraints to improved investment and economic growth.

3. More Supply Side: Unit Cost of Labor

Fiscal consolidation may further stimulate the economy by decreasing unit cost of labor. Compared to "not successful" episodes, successful ones are on average accompanied by a larger expenditure cutback—or containment in the growth—of "wages and salaries" component (see Table 4.) This decline in growth of public sector wages may spillover to the rest of the economy resulting in a (relative) decline in the unit cost of labor and labor market equilibrium wages, which in turn reduces firms' costs of production. Empirically, Alesina and Ardagna (1998) find that wages and salaries as a share of GDP has decreased on average after successful fiscal adjustment in OECD economies.¹⁹

B. GDP Growth Rate and Unemployment Rate

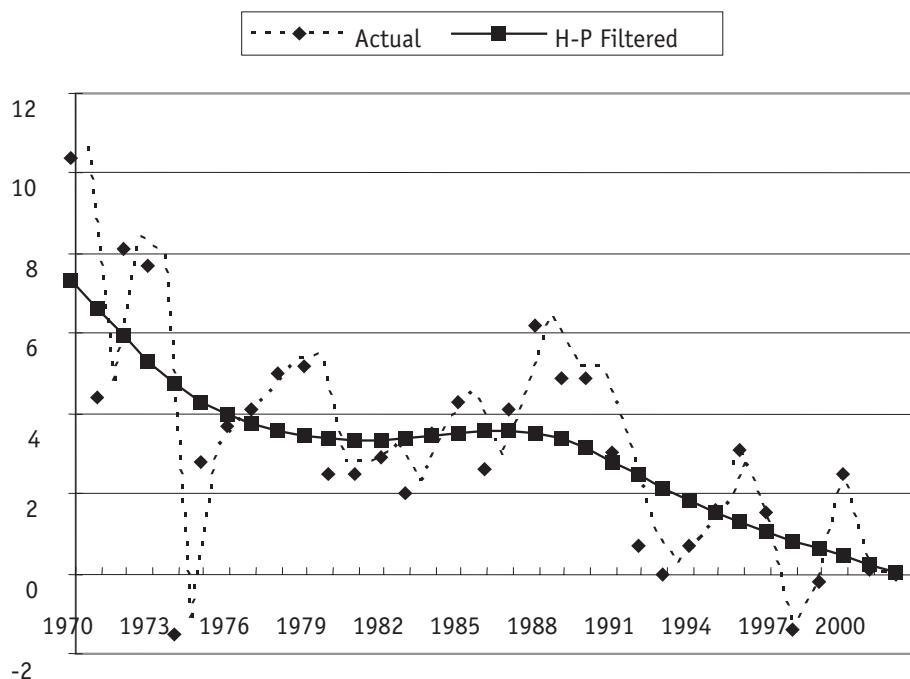
Against the theoretical underpinnings in the previous section, we now turn to the empirical evidence to answer whether SFA is indeed expansionary. To answer this question, we first need to identify a proxy for business cycle. In this paper, we use the GDP growth rate net of its "trend",

¹⁸ In this instance, changes in the yield curve could capture the perceived market sentiment.

¹⁹ However, we find it is not possible to confirm this argument with EMEs because of data limitations on unit labor cost.

which is obtained by the Hodrick-Prescott filter.²⁰ As is shown in Figure 1, the filtered series shows the “trend” growth rate, reflecting an economy’s possible “*mid-term change*” over time. Hence, our indicator (or “normalized” growth) reflects short-term changes, and also has a sample mean equal to zero for each country.

FIGURE 1
EXAMPLE OF HODRICK-PRESCOTT FILTER (JAPAN)



This figure shows the movements of the actual GDP and its Hodrick-Prescott filtered series from 1970 to 2002 in Japan. The difference between these two is used as a proxy for a business cycle.

The descriptive statistics of our business cycle proxy (“normalized” growth) are summarized in Table 9. Figure 2, based on the figures reported in Table 9, provides a clearer depiction of the evolution of the proxy. The left figures in Figure 2 show the *means* normalized GDP growth rates while the right ones show the *first, second and third quartiles* of the same variable.

The following results are observed from Table 9 and Figure 2:

- (i) *Movement of Mean in Year t-2, t-1: One year prior to fiscal adjustment (in year t-1), the sample mean for our proxy stays at a peak of about 0.9% for high-income group and 1.5% for middle-income group, compared to a mean close to yet below zero in year t-2 for both groups. This implies that the economy is, on average, expanding right before the fiscal adjustment. Furthermore, in SFA the sample mean in year t-1 is never below that*

²⁰ This proxy was already introduced previously when we defined the cyclical adjustment.

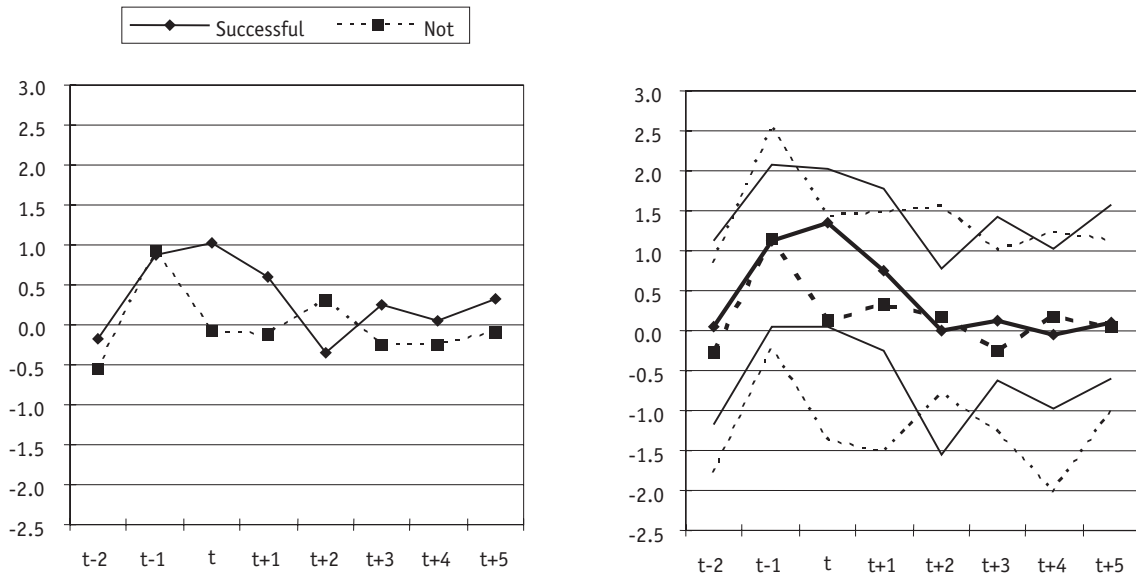
TABLE 9
MOVEMENT OF THE "NORMALIZED" GDP GROWTH RATE (REAL GDP GROWTH RATE NET OF ITS TREND)

ITEM	SUCCESSFUL					NOT SUCCESSFUL										
	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
Group 1: High-income OECD Economies																
Mean	-0.2	0.9	1.0	0.6	-0.3	0.2	0.1	0.3	-0.5	0.9	-0.1	-0.1	0.3	-0.3	-0.2	-0.1
25%	-1.2	0.0	0.1	-0.2	-1.5	-0.6	-1.0	-0.6	-1.8	-0.2	-1.4	-1.5	-0.8	-1.3	-2.0	-1.0
Median	0.0	1.1	1.3	0.8	0.0	0.1	0.0	0.1	-0.3	1.1	0.1	0.3	0.2	-0.2	0.2	0.0
75%	1.1	2.1	2.0	1.8	0.8	1.4	1.0	1.6	0.8	2.5	1.4	1.5	1.6	1.0	1.2	1.1
Min	-3.6	-3.3	-2.5	-3.0	-8.8	-3.7	-2.1	-2.6	-8.8	-5.5	-5.5	-8.8	-5.5	-9.4	-5.0	-5.5
Max	4.0	3.5	5.4	2.4	3.4	4.8	3.0	2.7	3.8	6.0	3.9	4.8	3.9	3.7	3.9	3.9
SD	2.2	1.7	1.8	1.4	2.4	2.0	1.5	1.5	2.3	2.3	2.0	2.4	2.0	2.3	2.0	1.9
#					25							71				
Group 3: Middle-income Economies																
Mean	-0.3	1.5	1.3	0.5	0.2	0.2	-0.2	-0.3	-0.2	0.9	-0.3	0.4	-0.4	-0.5	0.0	-0.3
25%	-2.6	-0.9	-2.0	-1.5	-1.8	-1.8	-2.1	-2.7	-2.5	-1.4	-2.2	-1.5	-2.3	-2.4	-2.1	-2.1
Median	0.3	0.8	0.7	0.2	0.3	0.4	0.4	0.6	-0.3	1.1	-0.2	0.6	0.1	0.2	0.2	-0.1
75%	1.6	3.4	4.7	2.3	2.4	2.3	2.0	1.8	2.2	3.4	2.1	2.4	2.1	1.8	2.4	1.7
Min	-13.0	-15.5	-10.8	-12.5	-12.5	-10.5	-13.8	-13.8	-15.4	-12.5	-13.0	-11.4	-13.8	-15.5	-12.8	-15.5
Max	16.3	16.3	15.7	31.5	15.7	10.1	9.9	9.9	14.5	14.7	13.5	9.5	8.5	9.9	7.8	14.5
SD	4.6	5.2	5.5	5.8	4.2	3.5	4.1	4.2	4.5	3.9	3.9	3.8	4.1	4.1	3.7	4.1
#					53							153				

Note: See the text for definition of normalized GDP growth rate.

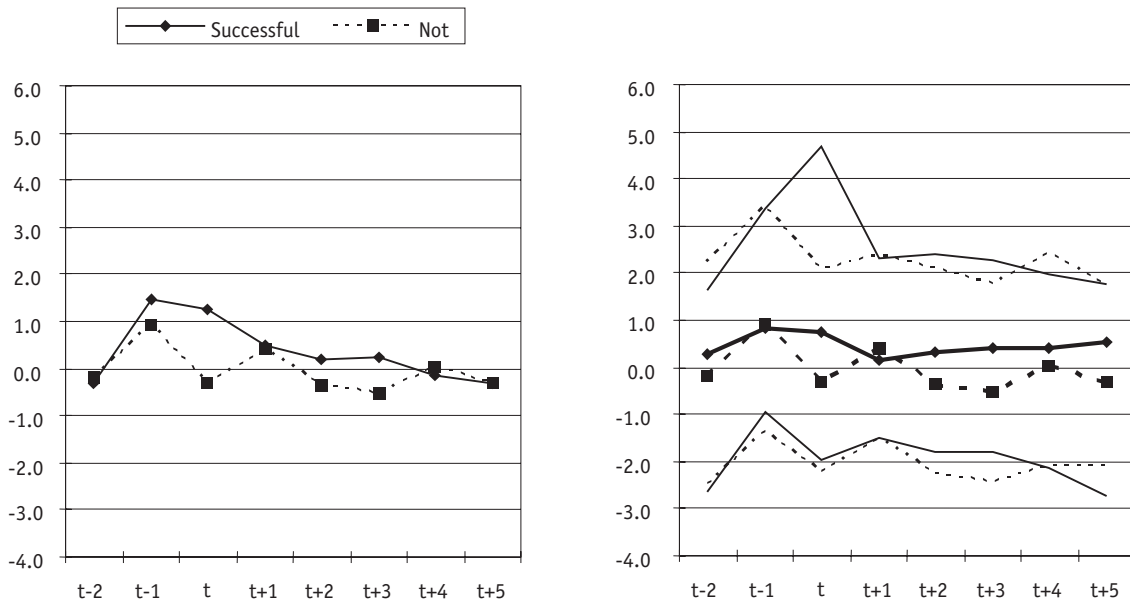
FIGURE 2
MOVEMENT OF THE "NORMALIZED" GDP GROWTH RATE
(REAL GDP GROWTH RATE NET OF ITS TREND; VISUALIZATION OF TABLE 9)

Group 1: Mean (Left) and three Quartiles (Right)



*Two bold lines denote the median.

Group 3: Mean (Left) and three Quartiles (Right)



*Two bold lines denote the median.

of NSFA. Therefore, we may “expect” that the better the cycle is in $t-1$, the higher the probability of SFA in t or that *the timing of the introduction of a fiscal adjustment matters*.

- (ii) *Movement of Mean in Year t : In the year of fiscal adjustment (in year t), our proxy in SFA episodes has a mean greater than or equal to 1% for both Groups 1 and 3, while it drops to about the proxy’s average level, 0%, in NSFA episodes in Groups 1 and 3. A possible interpretation is that if economic growth remains buoyant in year t , then the greater the likelihood that the government will continue its fiscal reform in the following years.*
- (iii) *Movement of Mean in Year $t+1$ and Later: In $t+1$, the mean stays relatively higher in SFA episodes than in NSFA ones, at least for Group 1. Furthermore, in Group 1, SFA episodes have higher mean values than NSFA in all periods up to $t+5$ except for $t+2$. The mean value in those episodes for Group 3 is higher than or similar to the one in NSFA episodes. (The median in SFA cases in Group 3 is steadily increasing from $t+1$ to $t+5$, and always higher than the one in NSFA cases from $t+2$ onward.) In NSFA episodes, the mean (which has already dropped to about 0% in year t) seems to stay around or below 0% although there are some fluctuations. For Group 1, there is an increase of the mean from -0.3% to 0.2% in year $t+3$, but we do not think it contains significant information if the observed mean in $t+2$ (-0.3%) is too low, perhaps because of small sample size. For Group 3, the mean level is declining from $t+1$ to $t+5$: this may be simply a coincidence or it may reflect that the economy is deteriorating because deficits are accumulating (we will come back to this issue later).*

Presenting only the mean might be misleading especially when outliers exist. This may be true in our case—we observe a maximum of 31.5% (in $t+1$ for SFA Group 3), which may affect the sample mean value and a minimum of -15.5% in NSFA for Group 3. However, as seen in the right side diagram in Figure 2, where quartiles are presented (for 25%, 50%, 75% range) these outliers do not change the time trend significantly.

According to the above results, it is not clear whether fiscal adjustment tends to support “sustainable” growth of the economy over the medium term. Alternatively, we consider whether the unemployment rate may be affected by fiscal adjustment. As noted, a problem using this variable is that for EMEs there are cases of missing data. Accordingly, we focus on the evolution of unemployment rates across MEs. Table 10 and Figure 3 report its movement for Group 1 and Group 3. We do caveat that due to the few observations remaining once missing data cases are removed (i.e., only 13 SFA episodes, in contrast to 53 in Table 9), our results for Groups 3 cannot be considered robust.

- (iv) *Unemployment Rate:*²¹ For Group 1, the mean and the median observations point to a SFA that appears to lead to a continuous decrease of the unemployment rate (from 8.4% in t to 6.7% in $t+5$). On the other hand, in NSFA episodes, the unemployment rates in t and $t+5$ are rather similar (despite a small decline in between. *Therefore, SFA does appear to have an impact on the economy—it decreases the unemployment*

²¹ The unemployment rate is not normalized because we do not have sufficient observations to apply appropriate regressions for Hodrick-Prescott filtering, especially for EMEs.

TABLE 10
MOVEMENT OF THE UNEMPLOYMENT RATE

ITEM	SUCCESSFUL								NOT SUCCESSFUL							
	<i>t-2</i>	<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>	<i>t+4</i>	<i>t+5</i>	<i>t-2</i>	<i>t-1</i>	<i>t</i>	<i>t+1</i>	<i>t+2</i>	<i>t+3</i>	<i>t+4</i>	<i>t+5</i>
Group 1: High-income OECD Economies																
Mean	8.8	8.8	8.4	7.8	7.5	7.2	6.9	6.7	7.2	7.3	7.2	7.0	6.9	6.9	7.1	7.3
25%	6.8	7.3	6.7	6.1	6.1	6.1	6.1	5.7	3.9	3.5	3.5	2.9	3.2	3.1	3.4	3.5
Median	9.5	9.5	8.9	8.0	7.7	7.3	7.0	7.2	7.1	7.0	6.9	6.1	5.8	6.8	7.0	6.5
75%	10.4	10.2	9.6	9.1	9.5	9.0	9.0	8.7	8.9	9.0	9.9	9.2	9.4	9.2	9.7	10.5
Min	1.0	1.3	3.2	2.7	2.9	2.3	1.9	1.6	0.7	0.4	0.6	1.6	1.5	1.6	1.5	1.6
Max	16.4	16.6	15.5	14.6	12.7	11.5	11.6	10.3	19.6	21.0	20.6	19.9	18.9	17.2	17.0	16.4
SD	3.4	3.3	3.0	3.0	2.8	2.8	2.8	2.7	4.4	4.6	4.4	4.4	4.4	4.3	4.3	4.4
#	20								41							
Group 3: Middle-income Economies																
Mean	7.4	7.1	6.7	6.4	6.3	6.0	6.1	6.5	8.8	9.1	9.1	8.6	8.3	8.6	8.4	8.7
25%	5.3	4.4	4.5	4.3	4.0	2.9	2.3	2.2	5.9	5.6	5.5	5.9	5.7	5.9	5.9	5.6
Median	7.5	6.5	6.7	6.8	7.7	6.6	7.0	7.0	8.1	8.6	8.7	8.7	8.3	8.7	7.7	7.9
75%	9.9	8.9	8.5	9.0	8.7	8.0	8.0	7.9	11.1	13.0	11.8	10.4	11.0	11.4	11.2	11.4
Min	0.5	1.4	1.4	1.4	2.2	1.4	1.4	1.3	1.3	2.8	2.9	2.4	3.4	2.4	3.0	3.1
Max	14.8	14.5	14.5	10.2	9.9	11.4	13.5	16.1	19.9	21.4	20.0	16.3	15.6	16.0	16.1	18.2
SD	3.9	3.7	3.7	3.0	2.8	3.0	3.6	4.3	4.2	4.2	3.9	3.6	3.3	3.4	3.4	4.0
#	13								35							

rate steadily. Results from Group 3—subject to the small observations caveat—also support this finding. The mean value in SFA episodes decreases marginally from 6.7% in *t* to 6.0% in *t+3* (and then increases to 6.5% in *t+5*). However, we do note that for Group 3 in NSFA episodes the mean unemployment rate also declines from 9.1% in *t* to 8.7% in *t+5*.

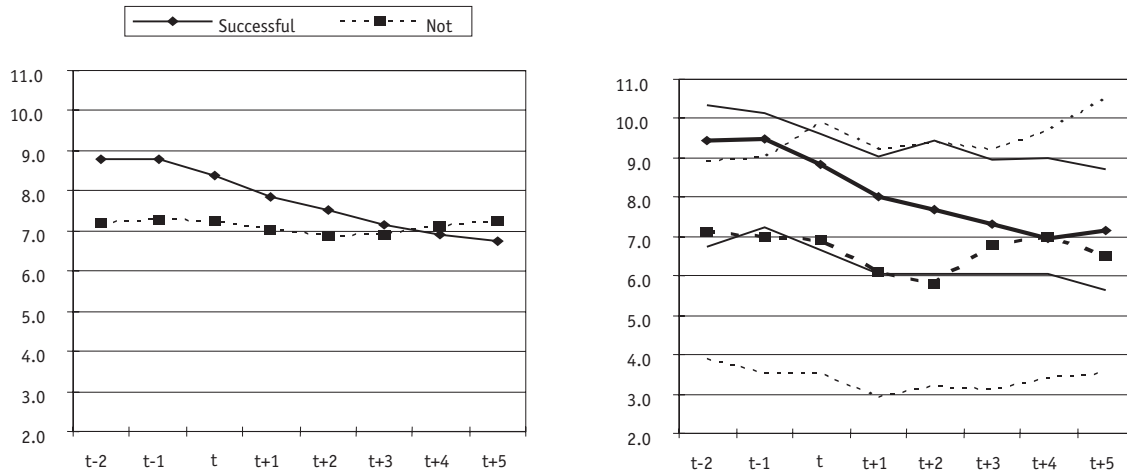
1. Is Monetary Policy Influencing the Results?

Bearing in mind the possible effect of monetary policy on equilibrium output over the short term, we examine below this consideration. In particular, to what extent can easy money resulting from a more accommodating monetary policy stance drive the adjustment process in the economy and lead to a temporary expansion in the economy over and beyond the impact from fiscal consolidation? If fiscal adjustment is in fact accompanied by expansionary monetary policy, one needs to be more careful about the interpretation of the results. Table 11 and Figure 4 report the movements of inflation rates (measured by the GDP deflator) during periods of fiscal adjustment. We observe that (i) the inflation rate is lower in successful episodes and (ii) in both SFA and NSFA episodes for both Groups 1 and 3, the inflation rates are steadily declining over time.²²

²² Notice that the mean of inflation rate for Group 3 is not representative because it is driven by some hyperinflation cases. (The median can be more representative in this case.)

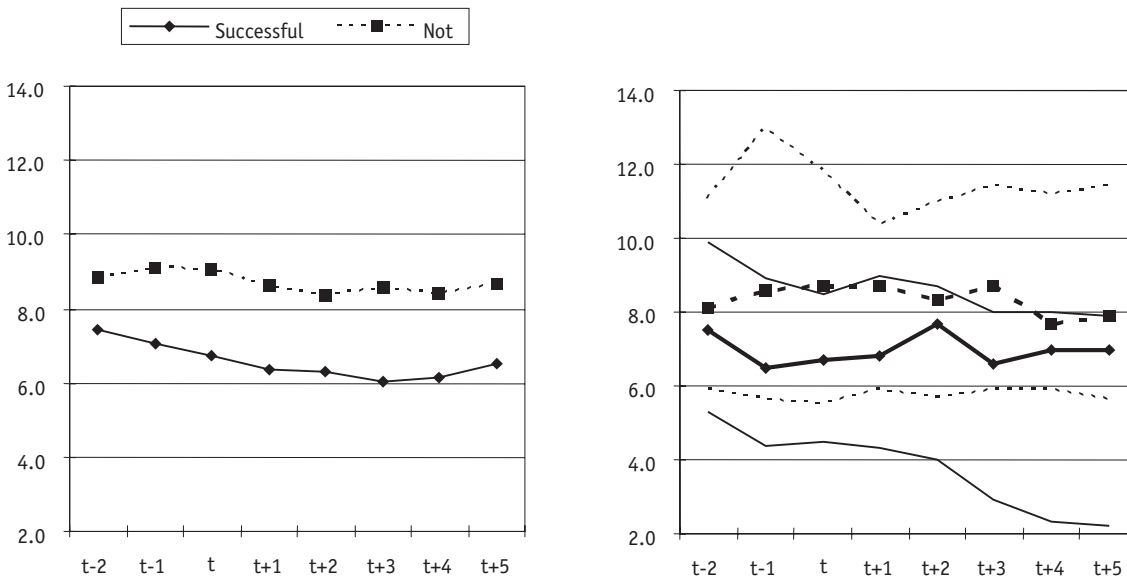
FIGURE 3
MOVEMENT OF THE UNEMPLOYMENT RATE
(VISUALIZATION OF TABLE 10)

Group 1: Mean (Left) and three Quartiles (Right)



*Two bold lines denote the median.

Group 3: Mean (Left) and three Quartiles (Right)



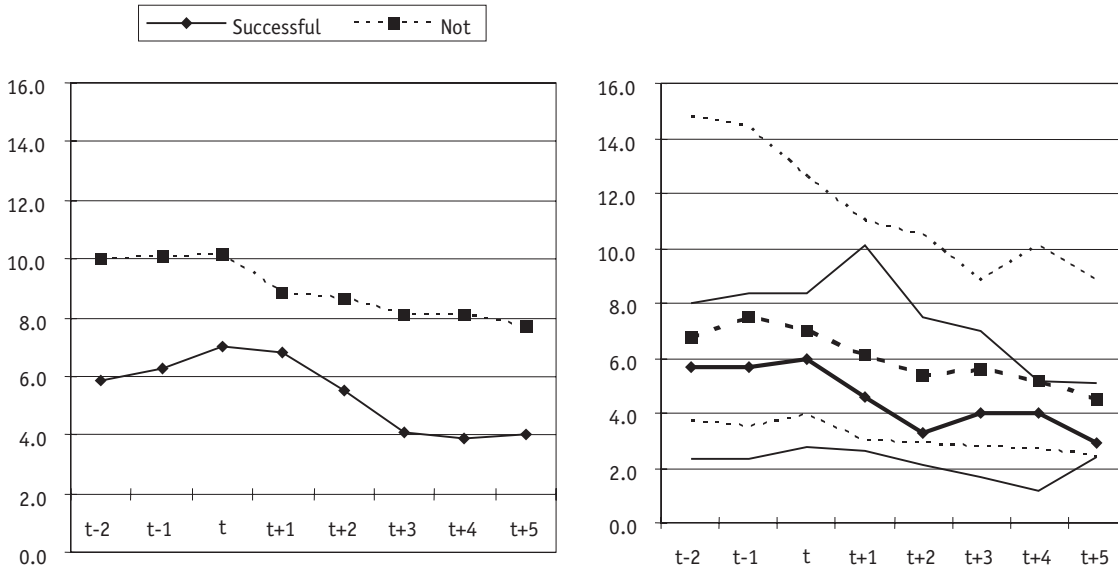
*Two bold lines denote the median.

TABLE 11
MOVEMENT OF THE INFLATION RATE (MEASURED BY GDP DEFLATOR, %)

ITEM	SUCCESSFUL					NOT SUCCESSFUL										
	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
Group 1: High-income OECD Economies [7.3]																
Mean	5.8	6.3	7.0	6.8	5.5	4.1	3.9	4.0	10.0	10.1	10.1	8.9	8.6	8.1	8.1	7.7
25%	2.3	2.3	2.8	2.6	2.1	1.7	1.2	2.4	3.7	3.5	3.9	3.0	2.9	2.8	2.7	2.4
Median	5.7	5.7	6.0	4.6	3.3	4.0	4.0	2.9	6.8	7.5	7.0	6.1	5.4	5.6	5.2	4.5
75%	8.0	8.4	8.4	10.1	7.5	7.0	5.2	5.1	14.8	14.4	12.6	11.0	10.5	8.8	10.1	8.8
Min	-0.8	-0.1	1.2	-0.5	-0.9	-0.7	-0.3	-1.2	-0.9	-0.1	0.1	-1.2	-0.7	0.7	0.5	-0.3
Max	16.7	20.7	20.7	19.8	18.4	14.4	11.2	15.9	40.9	52.5	49.8	53.3	76.2	49.8	53.3	76.2
SD	4.4	5.0	5.5	6.0	5.0	4.1	3.0	3.5	8.7	9.2	9.7	9.3	11.5	8.8	9.0	11.2
#	25															
Group 3: Middle-income Economies [54.9] [median: 8.3]																
Mean	89.5	43.2	57.3	33.2	22.3	19.6	15.6	18.9	24.5	29.2	37.4	21.1	20.9	29.7	30.0	39.5
25%	6.9	6.6	6.6	6.5	5.8	6.2	3.8	4.0	6.0	5.3	7.1	4.7	5.0	4.4	4.5	4.5
Median	13.1	11.8	11.2	12.1	10.6	10.6	9.7	8.0	12.1	12.1	15.5	10.6	9.8	9.7	10.4	9.0
75%	22.4	19.5	21.2	23.6	22.3	18.0	13.8	17.0	22.3	23.6	25.7	22.1	18.5	22.7	20.5	21.0
Min	-7.7	-20.6	1.3	-8.1	-2.4	-13.4	-11.4	-6.7	-8.6	-8.1	-2.4	-13.4	-13.4	-7.7	-10.0	-20.6
Max	1466.8	1053.4	1945.1	661.5	316.8	185.3	79.6	316.8	414.0	665.4	1466.8	250.6	231.7	948.5	1322.5	2509.5
SD	261.7	147.2	265.5	91.2	44.5	30.2	20.7	45.1	43.2	75.7	125.0	34.4	36.0	94.7	111.1	209.4
#	53															

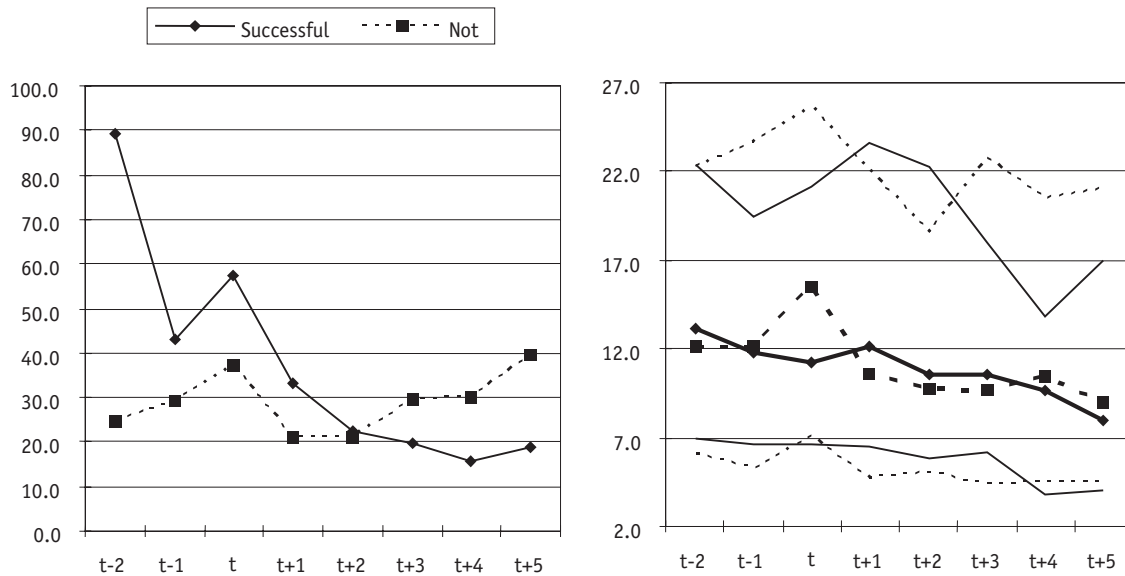
FIGURE 4
MOVEMENT OF THE INFLATION RATE (MEASURED BY GDP DEFLATOR, %)
(VISUALIZATION OF TABLE 11)

Group 1: Mean (Left) and three Quartiles (Right)



*Two bold lines denote the median.

Group 3: Mean (Left) and three Quartiles (Right)



*Two bold lines denote the median.

Table 12 and Figure 5 also show the movements of money and quasi-money growth rate, which is a better indicator of the monetary policy stance. Observing the movement of medians, successful episodes in Group 1 do not reveal any severe tendency of expansionary monetary policy.²³ Similarly in Group 3, although the movement of medians shows a mildly higher level in $t+2$ for SFA episodes than for NSFA ones, we cannot conclude that monetary conditions are influencing the results. In general our results suggest that there is no evidence in our sample that an accommodating monetary policy stance is supporting the expansionary fiscal adjustment outcomes.

2. Consumption, Investment, and Net Export

Analyzing the behavior of GDP by components (private consumption, investment, and net export) may shed further light on the non-Keynesian effect of fiscal adjustment. For example, as argued above, if total consumption is observed to suddenly increase following the start of a fiscal adjustment process, there may be a stronger case in favor of the consumption-expectations hypothesis.²⁴ On the other hand, if investment increases, then there may be a stronger case in favor of the supply-side hypothesis.

Unfortunately, we could not derive particularly interesting results from our analysis mainly due to data insufficiency. For example, there are only 11 (in Group 1) and 17 (in Group 3) SFA episodes that contain private consumption data, so we were unable to analyze whether consumption or investment dominates the non-Keynesian effect of fiscal adjustment. While we expect future research to address this question, here we summarize what we have learned from our analysis that may direct future work.²⁵

First, for Group 1, the *median* of consumption growths (i.e., the growth rates of consumption as a share of GDP) in t to $t+3$ seems to be higher in SFA episodes than in NSFA episodes. (For Group 3, a similar trend is observed but the gap between the medians of SFA and NSFA episodes is smaller.) However, the *mean* of consumption growth does not suggest clear evidence in favor of the consumption-expectations hypothesis. Second, for both Groups 1 and 3, successful episodes show relatively higher cumulative growth rates in investment share from t to $t+5$. (This trend is found more clear for Group 3.) The result may be interpreted in favor of the supply-side hypothesis although we would require further analysis for conclusive evidence. Third, the trade balance is improved especially in SFA episodes for both Groups 1 and 3.²⁶

²³ Higher levels of means in $t+3$ and $t+4$ are driven by an outlier. Since only 12 observations exist, the mean may not be representative.

²⁴ In a rational expectations model, the argument would be refined to reflect the behavior following on the credible announcement of the fiscal adjustment. However data constraints on announcements prevent us from a more robust assessment of this hypothesis.

²⁵ The detailed results are not reported in this paper. Detailed tables and figures available from authors upon request.

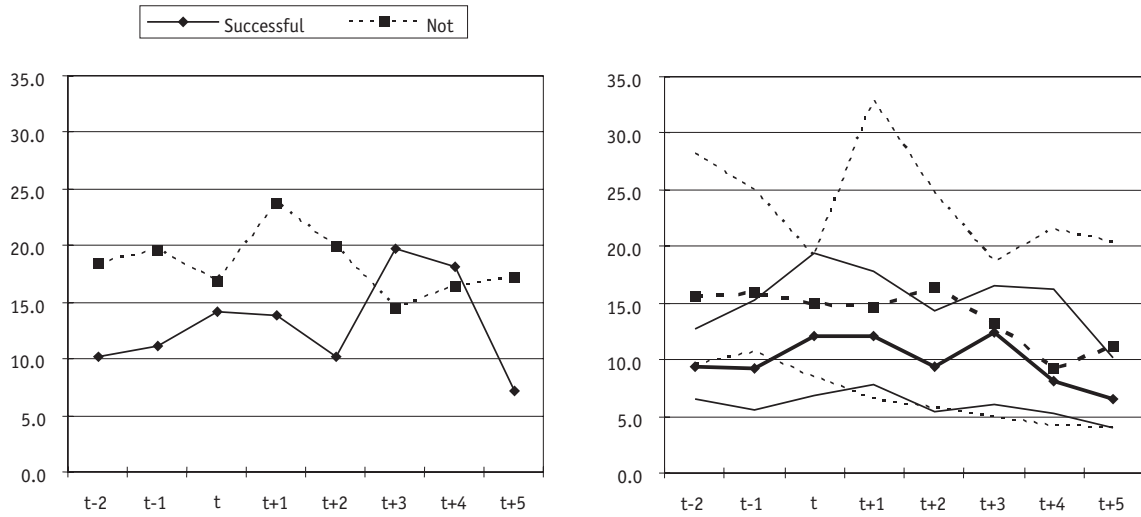
²⁶ The result suggests that there may be some link between fiscal adjustment and trade balance. A possible explanation is that a declining fiscal deficit removes upward pressure on interest rates as competing (i.e., government) demand for loanable funds falls. The lower interest rates could initially lead to reduced capital inflows operating through the effects of the uncovered interest rate parity condition, hence resulting in a depreciation of the exchange rate that induces an improvement in the net trade position. While the expansionary fiscal adjustment through the effect on GDP could lead to stronger imports, in the context of small open economies the conjecture would be that exchange rate effect operating on exports and imports would dominate any impact over the short term from income-induced, expanded imports.

TABLE 12
MOVEMENT OF THE MONEY/QUASI MONEY GROWTH RATE (%)

ITEM	SUCCESSFUL					NOT SUCCESSFUL										
	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
Group 1: High-Income OECD Economies [13.0]																
Mean	10.2	11.1	14.1	13.9	10.2	19.8	18.1	7.2	18.5	19.5	16.8	23.8	19.9	14.4	16.4	17.3
25%	6.6	5.6	6.8	7.8	5.5	6.1	5.3	3.9	9.5	10.6	8.4	6.5	5.8	4.9	4.2	3.9
Median	9.4	9.2	12.1	12.2	9.4	12.4	8.2	6.5	15.6	15.9	14.9	14.7	16.4	13.2	9.2	11.1
75%	12.7	15.4	19.4	17.8	14.3	16.6	16.2	10.3	28.2	24.9	19.1	32.9	24.6	18.6	21.5	20.4
Min	-0.7	2.0	2.5	2.3	1.4	1.8	1.3	1.3	-10.0	0.5	3.1	1.4	0.5	-0.9	-5.2	1.7
Max	27.8	27.8	32.6	32.6	24.9	116.0	116.0	15.0	57.2	65.3	48.4	116.0	80.1	48.4	70.3	80.1
SD	6.9	7.5	9.5	8.6	7.0	30.8	31.4	4.3	13.8	14.7	11.3	27.1	19.5	11.3	19.1	19.5
#					12							23				
Group 3: Middle-Income Economies [44.9] [median: 17.8]																
Mean	43.1	42.3	32.1	31.8	30.2	29.3	22.1	18.9	28.0	31.8	31.9	32.3	28.7	37.0	36.3	41.3
25%	15.2	16.3	15.0	11.7	12.2	12.9	9.8	7.0	12.3	14.3	11.7	13.2	11.1	10.8	10.9	10.6
Median	20.6	23.0	20.8	23.3	23.5	17.2	15.7	14.3	19.9	21.5	20.1	21.1	17.8	17.9	16.9	17.8
75%	37.2	33.7	31.7	29.8	31.5	29.1	25.6	24.3	28.3	34.0	36.8	31.3	26.6	26.4	28.0	26.0
Min	-4.4	-6.8	3.3	-57.2	3.3	0.6	-4.4	-5.7	-57.2	-2.9	-57.2	-0.4	-14.0	-27.6	-8.7	-27.6
Max	411.8	411.8	118.5	276.0	132.7	219.3	104.0	118.5	334.0	297.3	322.5	411.8	322.5	1511.1	1462.7	1511.1
SD	72.0	66.3	30.1	44.2	26.6	37.9	21.8	19.5	36.9	37.2	43.6	47.9	39.3	128.4	121.7	161.2
#					50							149				

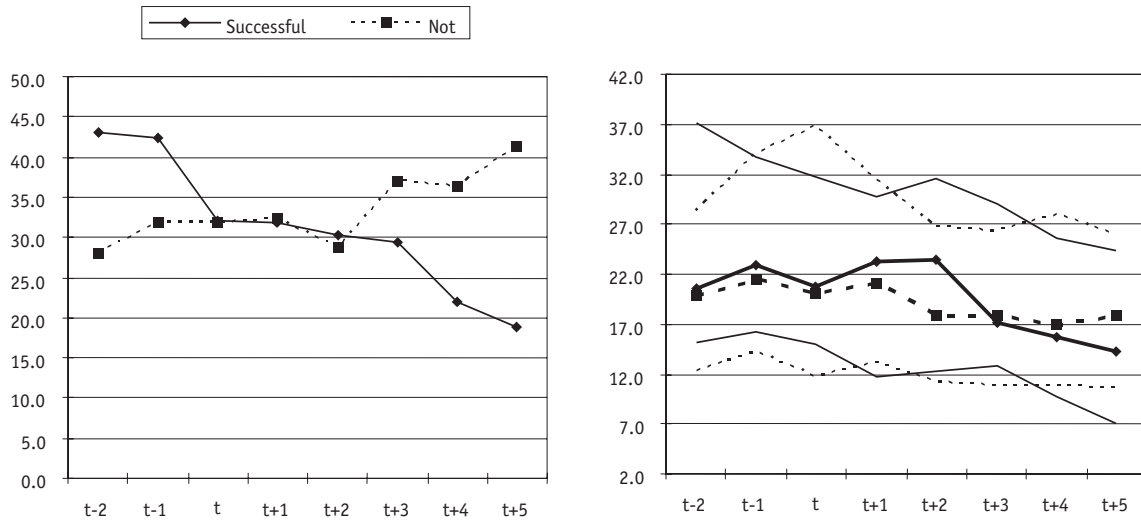
FIGURE 5
MOVEMENT OF THE MONEY/QUASI MONEY GROWTH RATE (%)
(VISUALIZATION OF TABLE 12)

Group 1: Mean (Left) and three Quartiles (Right)



*Two bold lines denote the median.

Group 3: Mean (Left) and three Quartiles (Right)



*Two bold lines denote the median.

C. Role of Initial Fiscal Conditions on Macro Variables

If economies are characterized by differing degrees of fiscal imbalance, should we expect the impact of fiscal adjustment on these economies also to vary given different initial conditions? Perotti (1999, 1399), for example, argues that “in times of fiscal stress, shocks to government revenues and, especially, expenditure have very different effects on private consumption than in normal times.” In what follows we try to confirm this observation. Table 13 reports the movements of “normalized” growth rate for different “fiscal groups” in each of income Groups 1 and 3: high versus low (cyclically adjusted) primary deficits in Part A, and high versus low government debts in Part B.

- (i) *Primary Deficits:* For SFA episodes in Group 1, SFA episodes with worse initial conditions on primary deficit result in higher levels of means and medians in all periods from t to $t+5$. However, such a distinction is not clear for Group 3 except for mean and median in t . (Perhaps, the government debt is a better indicator of initial fiscal condition because it is a cumulated version of primary deficits over many periods.)
- (ii) *Government Debt:* During periods of SFA in t , $t+1$ and $t+2$, both Groups 1 and 3 show relatively higher levels of mean and median in episodes with worse initial conditions compared to the ones with better conditions. For example, the Group 3 mean values for normalized growth are 1.0% (t), 1.8% ($t+1$), and 0.6% ($t+2$) with worse initial conditions, compared to -0.5% (t), -1.6% ($t+1$), and -0.6% ($t+2$) with better initial conditions. This is consistent with Perotti’s (1999) findings. That is, it seems that different initial fiscal conditions matter in determining whether a fiscal adjustment can be expansionary or not.

D. Probit Analysis

In this subsection, we undertake a probit analysis to see whether specific fiscal or macroeconomic variables before or during the fiscal adjustment actually affect the success probability. We consider (subsets of) the following variables based on our discussion so far: (i) initial level of primary deficit at $t-1$, (ii) initial level of government debt at $t-1$, (iii) initial decrease in primary expenditure from $t-1$ to t , (iv) interim decrease in primary expenditure from t to $t+2$, (v) initial increase in total revenue from $t-1$ to t , (vi) interim increase in total revenue, (v) decrease in subsidy (especially for Group 1) from $t-1$ to $t+2$, (vi) decrease in capital expenditure (especially for Group 3) from $t-1$ to $t+2$, (vii) time- $(t-1)$ “normalized” growth rate at $t-1$, and (viii) time- t “normalized” growth rate at t . The probit results are summarized in Table 14.

The first model (Model 1) in Table 14 includes all the explanatory variables listed above.

However, since “(v) decrease in subsidy from $t-1$ to $t+2$ ” and “(vi) decrease in capital expenditure from $t-1$ to $t+2$ ” are parts of the sum of “(iii) initial decrease in primary expenditure from $t-1$ to t ” and “(iv) interim decrease in primary expenditure from t to $t+2$ ”, the results on these variables reported in Model 1 may reflect some interactions between them. Hence, to examine the effects of these variables separately, Model 2A excludes (v) and (vi) while Model 3A excludes (iii) and (iv). Also, one may argue that “(viii) time- t “normalized” growth rate at t ” cannot be interpreted

TABLE 13
MOVEMENT OF THE "NORMALIZED" GDP GROWTH RATE: DO INITIAL CONDITIONS ON PRIMARY DEFICIT MATTER?

A. (Cyclically Adjusted) Primary Deficit

ITEM	WORSE FISCAL CONDITION*					BETTER FISCAL CONDITION										
	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
Group 1																
Mean	-1.0	0.3	1.1	0.8	0.1	0.5	0.1	0.5	0.6	1.4	1.0	0.4	-0.8	0.0	0.0	0.2
Median	-1.7	0.4	1.6	1.0	0.0	0.2	0.0	0.3	0.1	1.7	1.3	0.6	0.1	0.1	-0.4	0.1
SD	2.4	2.0	1.2	1.1	1.8	2.0	1.2	1.5	1.6	1.4	2.3	1.7	2.9	2.0	1.7	1.5
#					12								13			
Group 3																
Mean	-1.0	2.1	2.1	0.2	0.4	-0.7	-0.3	-1.0	0.4	0.8	0.4	0.8	0.0	1.1	0.0	0.4
Median	-0.2	0.9	1.1	-0.1	0.3	0.0	-1.2	-0.2	0.3	0.8	0.7	0.3	0.6	1.3	0.4	0.7
SD	5.7	6.9	5.6	4.3	5.0	3.7	3.2	4.1	3.0	2.8	5.4	7.1	3.3	3.2	4.8	4.3
#					26								27			

*This table reports the movement of normalized GDP growth rate for successful episodes. Successful episodes for each group are equally divided into two groups again, "worse fiscal condition" (with higher [cyclically adjusted] primary deficit in t-1) and "better fiscal condition." The cut-off level for Group 1 is 1.3%. For Group 3, it is 5.2%.

B. Government Debt

ITEM	WORSE FISCAL CONDITION*					BETTER FISCAL CONDITION										
	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5	t-2	t-1	t	t+1	t+2	t+3	t+4	t+5
Group 1																
Mean	0.8	0.9	0.9	0.5	0.5	-0.1	0.0	-0.6	-0.8	1.2	0.8	0.3	-1.2	0.8	0.1	1.2
Median	0.6	0.9	1.2	0.7	0.3	-0.2	-0.4	-0.8	-0.7	1.7	0.8	0.4	0.0	0.4	-0.2	0.8
SD	2.2	1.8	1.4	0.7	1.6	1.7	1.6	1.6	1.3	1.6	2.5	2.0	3.3	2.4	1.7	1.1
#					8							9				
Group 3																
Mean	0.4	-0.4	1.0	1.8	0.6	-0.2	-0.3	-0.9	0.5	1.9	-0.5	-1.6	-0.6	1.4	1.3	1.2
Median	0.2	0.0	0.6	0.4	0.4	0.4	-0.3	-0.3	0.5	1.2	-1.0	-1.1	-0.1	1.2	1.3	1.6
SD	3.4	5.0	4.9	7.3	4.8	2.9	3.3	3.2	4.9	5.1	6.0	4.7	4.1	3.8	4.3	3.9
#					20								20			

*Same table, but use government debt instead of primary deficit. The cut-off levels are 45.9% and 40.5% for Groups 1 and 3, respectively.

TABLE 14
PROBIT ANALYSIS

NAME OF VARIABLE	GROUP 1					GROUP 3				
	MODEL 1	MODEL 2A	MODEL 2B	MODEL 3A	MODEL 3B	MODEL 1	MODEL 2A	MODEL 2B	MODEL 3A	MODEL 3B
Initial Level of Primary Deficit at $t-1$	-2.58 (0.16)	-2.59 (0.16)	-2.70 (0.22)	-2.60 (0.23)	-2.78 (0.22)	1.23 (0.46)	1.12 (0.49)	1.34 (0.38)	1.98 (0.17)	1.95 (0.17)
Initial Level of Government Debt at $t-1$	0.42 (0.05)*	0.49 (0.02)*	0.45 (0.04)*	0.39 (0.10)*	0.34 (0.16)	0.52 (0.12)	0.47 (0.15)	0.47 (0.15)	0.58 (0.06)*	0.58 (0.06)*
Initial Decrease in Primary Expenditure from $t-1$ to t	-2.64 (0.68)	-0.86 (0.82)	3.45 (0.34)			3.23 (0.41)	1.12 (0.68)	2.08 (0.44)		
Interim Decrease in Primary Expenditure from t to $t+2$	8.92 (0.18)	9.69 (0.00)*	8.68 (0.00)*			10.21 (0.01)*	8.84 (0.01)*	8.61 (0.01)*		
Initial Increase in Total Revenue from $t-1$ to t	4.07 (0.49)	4.42 (0.45)	4.56 (0.49)	5.79 (0.37)	5.71 (0.38)	2.96 (0.36)	2.36 (0.45)	2.81 (0.39)	1.59 (0.54)	1.62 (0.54)
Interim Increase in Total Revenue from t to $t+2$	11.16 (0.01)*	10.37 (0.01)*	9.88 (0.02)*	8.08 (0.04)*	8.71 (0.03)*	10.25 (0.00)*	9.90 (0.00)*	9.82 (0.00)*	4.84 (0.02)*	4.78 (0.01)*
Decrease in Subsidy from $t-1$ to $t+2$	3.53 (0.63)			9.90 (0.01)*	10.71 (0.00)*	-1.45 (0.66)				
Decrease in Capital Expenditure from $t-1$ to $t+2$	-6.37 (0.60)					-3.09 (0.42)			4.00 (0.10)*	4.57 (0.07)*
Time- $(t-1)$ Normalized Growth Rate at $t-1$	2.90 (0.40)	3.06 (0.41)	3.18 (0.41)	1.27 (0.73)	2.08 (0.58)	3.39 (0.20)	2.45 (0.32)	1.34 (0.56)	2.60 (0.25)	1.96 (0.35)
Time- t Normalized Growth Rate at t	7.38 (0.02)*	8.00 (0.01)*		5.05 (0.09)*		-2.94 (0.12)	-2.86 (0.13)		-1.49 (0.38)	
No. of Observations	64	64	64	64	64	61	61	61	61	61
Log Likelihood	-22.14	-22.95	-26.97	-25.19	-26.79	-19.95	-20.27	-21.55	-27.06	-27.40

“*” means the variable is significant at 10% level.

Note: The upper number in each cell is the marginal change in probability, and the lower number (in parenthesis) is the p-value.

as an *independent* variable because it may be affected by fiscal adjustment itself. In this sense, Models 2B and 3B excludes (viii) from Models 2A and 3A. We apply 90% confidence interval. The interpretation for each group is summarized below.

- (i) *Group 1*: First of all, we observe that “(ii) initial level of government debt at $t-1$ ” significantly affects the success probability in four out of five models. This is not surprising in light of our previous discussion. Second, and perhaps more interesting, not only “(iv) interim decrease in primary expenditure from t to $t+2$,” but also “(vi) interim increase in total revenue from t to $t+2$,” is significant. We have seen that relatively small fraction of improvement in fiscal deficit is due to a revenue increase in Group 1, but still, a higher level of revenue seems to help to achieve fiscal consolidations. Third, “(v) decrease in subsidy from $t-1$ to $t+2$,” is significant in Models 3A and 3B, which is not surprising based on our previous discussion. Fourth, while “(vii) time- $(t-1)$ normalized growth rate” is not significant, “(viii) time- t normalized growth rate” does affect the success of fiscal adjustment significantly. (This is in line with our earlier discussion in support of synchronizing fiscal adjustment to an expansionary phase of the business cycle.)
- (ii) *Group 3*: The result is more or less similar to the case of Group 1. First, the initial debt level still seems to be important; it is significant in Models 3A and 3B and only marginally rejected in other models. Second, just as in Group 1, both expenditure decrease and revenue increase are significant. Third, “(vi) decrease in capital expenditure (especially for Group 3) from $t-1$ to $t+2$,” is significant. Perhaps the most notable difference between Group 1 is that now neither “(vii) time- $(t-1)$ ” nor “(viii) time- t normalized growth rate” is significant. This result implies that synchronizing fiscal adjustment to an expansionary phase is less important than other factors in fiscal consolidation in EMEs.

VI. CONCLUSION

The analysis of cross-country fiscal consolidation presented above provides a set of results that may guide policymakers to better understand what constitutes effective measures leading to SFA. Both composition and timing of fiscal adjustment matter for SFA. However, whereas expenditure cutbacks drive SFA in MEs, providing some validation for non-Keynesian results, revenue-enhancing measures combined with expenditure cutbacks constitute the driving force in EMEs. In particular, MEs adjust primarily by decreasing subsidies on average, which account for one half of expenditure savings. On the revenue side, MEs reduce social security taxes during SFA. In contrast, EMEs tend to pursue measures to increase total revenue, especially income tax and nontax revenue. This is likely to reflect greater scope for increasing taxes in many EMEs compared to MEs, given the relatively lower tax yields and perhaps less leeway for reducing a lower level of government expenditure.

The results for EMEs raise a note of caution as on average slightly over one half of the decrease in primary expenditure in EMEs during SFA is traced to a decrease in capital expenditure. This result is in line with standard models of political business cycles as politicians may find it to be politically expedient to reduce public investment instead of cutting back on salaries, pensions, and even subsidies, even at the cost of sacrificing the country's long-term growth rate.

On the importance of timing, the results point to a greater likelihood of SFA, stemming from weak initial conditions such as higher levels of primary deficit and government debt and consequently higher debt servicing interest payments. The deadweight loss that is freed does tend to contribute to increasing resolve on the part of the policymaker to see the adjustment through to a successful end. Improved macroeconomic conditions at the start of the adjustment phase do appear to affect whether an economy can achieve a SFA.

We also examine whether monetary policy through an easing of liquidity conditions may be affecting the results above. This is not supported by the findings as there is no evidence of excess liquidity in the system coinciding with periods of SFA.

Finally, the findings point to a slightly more sustainable period of economic growth following SFA (although results according to group are mixed). In parallel, the unemployment rate is decreasing over time following SFA episodes, which is therefore generally consistent with the behavior of GDP growth.

An attempt is made to reconcile the statistical findings with several of the theoretical variants in support of the non-Keynesian results. The results are inconclusive given the limitations in the GDP decomposition data. However, on the basis of the behavior of investment, there appears to be a weak inclination in favor of the supply-side hypothesis as compared to the consumption–expectation hypothesis.

Finally, we reviewed the results derived above by undertaking a probit analysis based on various fiscal and macroeconomic variables. The probit findings indicate that initial fiscal conditions matter; both the revenue and expenditure sides are significant and important (although on average, expenditure side has larger contribution, especially in Group 1); subsidy component or capital expenditure component is significant in each group; and finally, the time- t growth rate is significant for MEs.

While our findings are based on relatively simple statistical analysis, we expect future research to provide more statistically robust results. For example, future research may control for the effects of country or period-specific characteristics instead of depending on basic comparisons of averages or medians or simple probit analyses. Furthermore, with a richer dataset it may be possible to provide more conclusive evidence as to which one of the two hypotheses—consumption–expectation or supply-side—better explains the non-Keynesian results of fiscal adjustment. Finally, a richer data set may lead to a better understanding of variables such as political orientation of the government that may have a strong bearing on the credibility of announced fiscal reforms.

APPENDIX

A. Data

Most of the fiscal and macroeconomic data—government revenue, government expenditure, government debt, real GDP growth, unemployment rate, and many others—used in this paper are obtained from *World Development Indicators 2004* by the World Bank. For each of these variables, we have the observations of 33 years (from 1970 to 2002) for 208 economies, although many “missing” observations exist especially for EMEs.

To examine how variables react to fiscal adjustment in different income groups, we classify those 208 economies into the following four groups: (i) Group 1: high-income OECD economies; (ii) Group 2: high-income non-OECD economies, (with 2002 income per-capita of US\$9,075 and above); (iii) Group 3: middle-income economies (with 2002 income per capita between US\$735 and US\$9,075,); and (iv) Group 4: low-income economies (with income per capita of US\$735 and below). The cutoff levels of \$9,075 and \$735 are adapted from the World Bank criterion. High-income economies are regrouped into OECD and non-OECD economies for the following reasons: First, OECD economies are largely open economies and therefore require (and are characterized by) a relatively higher degree of fiscal discipline than non-OECD ones. Second, there are many oil-exporting (high-income) economies among the high-income non-OECD group that may be subject to different country risk assessments from more conventional OECD countries as oil reserves may reduce solvency constraints.

Throughout this paper, we present the results for Group 1 and Group 3 only. Group 2 results were excluded for the purpose of easy reading as the results were in line with findings straddling Group 1 and Group 3 results. Group 4, or low-income economies, is excluded from our analysis because too many observations are missing, and even for existing data, reliability may be an issue.

B. Cyclical Adjustment

The performance of fiscal variables depends on the business cycle: Automatic stabilizer properties suggest that the government *revenue* adjusts quickly to the business cycle, while the government *expenditure* does not. Hence, not adjusting the data may lead to distortions in the results and in particular in the (unadjusted) government deficit as changes in the deficit may simply reflect the effects of the cyclical change. A conventional way to deal with this problem is to “cyclically adjust” the fiscal data, following the method suggested by Blanchard (1990b).

Blanchard’s method uses the unemployment rate to reflect the changes in the business cycle: The “cyclically adjusted fiscal data” are obtained by assuming the unemployment rate had been the same as in the previous year. First, we run the following regression for each of the economies:

$$fiscal_t = \alpha + \beta \cdot u_t + \varepsilon_t$$

where $fiscal_t$ is the fiscal variable of our interest (at time t), α is the intercept, β is the slope, u_t is the unemployment rate, and ε_t is the error term. For a and b (estimates for α and β), the cyclically adjusted fiscal variable for time t is obtained by calculating:

$$adjusted_fiscal_t = fiscal_t - b (u_t - u_{t-1}).$$

However, in view of our large sample size comprising MEs and EMEs, the unemployment rates for EMEs (including middle-income economies) is problematic as data are often missing or inaccurate. Under the circumstances, we instead use the “GDP growth rate *net of the GDP trend*” (where the GDP trend is calculated using the Hodrick-Prescott filter).¹

Government expenditure, government revenue, and primary deficit are cyclically adjusted using this variable instead of the unemployment rate in the equations above. In addition, to avoid the unnecessarily large impacts of sizable changes to GDP growth rate (for example, during and after a crisis) on cyclically adjusted fiscal variables, we have deleted from our dataset those cyclically adjusted government deficit or revenue observations that lie outside a range of between 10% and 70% of GDP.²

APPENDIX TABLE 1 LIST OF EPISODES OF FISCAL ADJUSTMENT

For each episode of fiscal adjustment, this table lists the country name, the country’s income group (IG), and the year of the episode. The IG is defined in the Data section of the Appendix (see above). For example, “1” denotes that the country is a high-income OECD economy (with income per capita above US\$9,075).

¹ A more detailed explanation on the “GDP growth rate net of the GDP trend” is provided in Section IV.

² As in Alesina, Perotti, and Tavares (1998), we also find that there is not much difference to the results whether we use “cyclically adjusted” or “unadjusted” fiscal variables. In this paper, we present the results based on “cyclically adjusted” fiscal variables.

Successful Fiscal Adjustments (110 episodes)

COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR
Bahamas, The	(2)	1977	Egypt, Arab Rep.	(3)	1977	Liberia	(4)	1983	Peru	(3)	1995
Bahrain	(2)	1989	Egypt, Arab Rep.	(3)	1991	Luxembourg	(1)	1973	Peru	(3)	1996
Belarus	(3)	1994	Finland	(1)	1995	Luxembourg	(1)	1983	Singapore	(2)	1988
Belarus	(3)	1997	Greece	(1)	1990	Malawi	(4)	1981	Solomon Islands	(4)	1988
Belarus	(3)	1998	Greece	(1)	1991	Malawi	(4)	1983	South Africa	(3)	1994
Belgium	(1)	1984	Hungary	(3)	1994	Malaysia	(3)	1982	Sri Lanka	(3)	1981
Bhutan	(4)	1989	Hungary	(3)	1995	Malaysia	(3)	1983	Sri Lanka	(3)	1989
Bhutan	(4)	1991	Iceland	(1)	1995	Malta	(2)	1975	St. Kitts and Nevis	(3)	1989
Bolivia	(3)	1994	India	(4)	1993	Mauritius	(3)	1983	Swaziland	(3)	1975
Bolivia	(3)	1995	Indonesia	(4)	1987	Mauritius	(3)	1983	Swaziland	(3)	1987
Botswana	(3)	1977	Iran, Islamic Rep.	(3)	1983	Mexico	(4)	1999	Sweden	(1)	1984
Botswana	(3)	1983	Iran, Islamic Rep.	(3)	1990	Moldova	(4)	1999	Sweden	(1)	1994
Botswana	(3)	1984	Iran, Islamic Rep.	(3)	1991	Morocco	(3)	1982	Sweden	(1)	1995
Burundi	(4)	1993	Israel	(2)	1985	Morocco	(3)	1988	Thailand	(3)	1988
Canada	(1)	1996	Israel	(2)	1986	Morocco	(3)	1990	Thailand	(3)	1989
Canada	(1)	1997	Israel	(2)	1993	Namibia	(3)	1988	Togo	(4)	1982
Chile	(3)	1977	Israel	(2)	1997	New Zealand	(1)	1984	Togo	(4)	1983
Chile	(3)	1978	Italy	(1)	1988	New Zealand	(1)	1985	Tunisia	(3)	1979
Chile	(3)	1990	Jamaica	(3)	1997	New Zealand	(1)	1995	Turkey	(3)	1997
Chile	(3)	1993	Jamaica	(3)	1998	Norway	(1)	1980	United Kingdom	(1)	1988
Congo, Rep.	(4)	1994	Jordan	(3)	1983	Norway	(1)	1981	United Kingdom	(1)	1994
Costa Rica	(3)	1981	Jordan	(3)	1990	Norway	(1)	1995	United Kingdom	(1)	1995
Cote d'Ivoire	(4)	1996	Jordan	(3)	1992	Oman	(3)	1976	Uruguay	(3)	1976
Cote d'Ivoire	(4)	1997	Kenya	(4)	1990	Oman	(3)	1977	Uruguay	(3)	1985
Croatia	(3)	1995	Kuwait	(2)	1994	Oman	(3)	1987	Uruguay	(3)	1990
Denmark	(1)	1983	Kuwait	(2)	1995	Oman	(3)	1995	Venezuela, RB	(3)	1973
Denmark	(1)	1984	Kuwait	(2)	1996	Papua New Guinea	(4)	1983	Yemen, Rep.	(4)	1995
Denmark	(1)	1985	Lesotho	(4)	1989						

continued.

Not Successful Fiscal Adjustment (345 episodes)

COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR
Algeria	(3)	1996	Estonia	(3)	1998	Lesotho	(4)	1974	Romania	(3)	1997
Argentina	(3)	1998	Ethiopia	(4)	1984	Liberia	(4)	1980	Seychelles	(3)	1994
Australia	(1)	1980	Ethiopia	(4)	1988	Liberia	(4)	1984	Sierra Leone	(4)	1976
Australia	(1)	1983	Fiji	(3)	1974	Luxembourg	(1)	1974	Singapore	(2)	1973
Australia	(1)	1987	Fiji	(3)	1978	Luxembourg	(1)	1977	Singapore	(2)	1974
Australia	(1)	1977	Fiji	(3)	1980	Luxembourg	(1)	1985	Singapore	(2)	1977
Austria	(1)	1980	Fiji	(3)	1982	Luxembourg	(1)	1987	Singapore	(2)	1982
Austria	(1)	1984	Fiji	(3)	1985	Luxembourg	(1)	1989	Singapore	(2)	1985
Bahamas, The	(2)	1983	Fiji	(3)	1987	Luxembourg	(1)	1989	Singapore	(2)	1989
Bahamas, The	(2)	1990	Fiji	(3)	1990	Luxembourg	(1)	1992	Singapore	(2)	1989
Bahamas, The	(2)	1991	Fiji	(3)	1993	Luxembourg	(1)	1994	Singapore	(2)	1994
Bahamas, The	(2)	1994	Fiji	(3)	1993	Macao, China	(2)	1998	Singapore	(2)	1998
Bahrain	(2)	1994	Finland	(1)	1976	Madagascar	(4)	1990	Solomon Islands	(4)	1979
Bahrain	(2)	1997	Finland	(1)	1980	Malawi	(4)	1976	Solomon Islands	(4)	1981
Bahrain	(2)	1985	Finland	(1)	1984	Malawi	(4)	1984	Solomon Islands	(4)	1983
Bahrain	(2)	1987	Finland	(1)	1988	Malaysia	(3)	1978	Solomon Islands	(4)	1984
Bahrain	(2)	1990	France	(1)	1977	Malaysia	(3)	1979	South Africa	(3)	1975
Bahrain	(2)	1993	France	(1)	1989	Malaysia	(3)	1984	South Africa	(3)	1979
Bahrain	(2)	1995	Gambia, The	(4)	1976	Malaysia	(3)	1985	South Africa	(3)	1982
Bahrain	(2)	1996	Gambia, The	(4)	1979	Malaysia	(3)	1988	South Africa	(3)	1985
Barbados	(2)	1974	Germany	(1)	1977	Malaysia	(3)	1991	South Africa	(3)	1989
Barbados	(2)	1976	Germany	(1)	1980	Malaysia	(3)	1994	South Africa	(3)	1995
Barbados	(2)	1978	Germany	(1)	1989	Maldives	(3)	1998	South Africa	(3)	1997
Barbados	(2)	1980	Germany	(1)	1995	Malta	(2)	1978	Spain	(1)	1973
Barbados	(2)	1984	Ghana	(4)	1986	Malta	(2)	1988	Spain	(1)	1986
Barbados	(2)	1985	Greece	(1)	1983	Malta	(2)	1992	Sri Lanka	(3)	1977
Belgium	(1)	1974	Greece	(1)	1987	Malta	(2)	1995	Sri Lanka	(3)	1983

continued.

COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR	COUNTRY NAME	IG	YEAR
Belgium	(1)	1982	Greece	(1)	1992	Mauritius	(3)	1997	Sri Lanka	(3)	1984
Belgium	(1)	1985	Greece	(1)	1994	Mexico	(3)	1980	Sri Lanka	(3)	1990
Bhutan	(4)	1993	Guyana	(3)	1977	Mexico	(3)	1983	Sri Lanka	(3)	1992
Bhutan	(4)	1997	Guyana	(3)	1978	Mongolia	(4)	1995	St. Kitts and Nevis	(3)	1990
Bhutan	(4)	1998	Guyana	(3)	1981	Mongolia	(4)	1996	Swaziland	(3)	1974
Botswana	(3)	1979	Hungary	(3)	1984	Morocco	(3)	1973	Swaziland	(3)	1979
Botswana	(3)	1985	Hungary	(3)	1988	Morocco	(3)	1978	Swaziland	(3)	1982
Botswana	(3)	1988	Hungary	(3)	1990	Morocco	(3)	1979	Sweden	(1)	1976
Botswana	(3)	1990	Iceland	(1)	1975	Morocco	(3)	1984	Sweden	(1)	1985
Brazil	(3)	1983	Iceland	(1)	1978	Namibia	(3)	1989	Sweden	(1)	1987
Brazil	(3)	1985	Iceland	(1)	1981	Namibia	(3)	1994	Sweden	(1)	1996
Bulgaria	(3)	1991	Iceland	(1)	1988	Namibia	(3)	1997	Switzerland	(1)	1978
Bulgaria	(3)	1994	Iceland	(1)	1992	Netherlands	(1)	1977	Switzerland	(1)	1981
Burundi	(4)	1994	India	(4)	1978	Netherlands	(1)	1985	Thailand	(3)	1977
Cameroon	(4)	1979	India	(4)	1981	Netherlands	(1)	1991	Thailand	(3)	1979
Cameroon	(4)	1982	India	(4)	1982	New Zealand	(1)	1976	Thailand	(3)	1983
Cameroon	(4)	1988	India	(4)	1984	New Zealand	(1)	1979	Tunisia	(3)	1975
Cameroon	(4)	1990	India	(4)	1989	New Zealand	(1)	1987	Tunisia	(3)	1981
Cameroon	(4)	1992	India	(4)	1991	Nicaragua	(4)	1973	Tunisia	(3)	1984
Chile	(3)	1975	India	(4)	1995	Nicaragua	(4)	1978	Tunisia	(3)	1986
Chile	(3)	1979	Indonesia	(4)	1974	Nicaragua	(4)	1997	Tunisia	(3)	1988
Chile	(3)	1980	Indonesia	(4)	1979	Nicaragua	(4)	1998	Tunisia	(3)	1991
Chile	(3)	1985	Indonesia	(4)	1982	Norway	(1)	1985	Tunisia	(3)	1993
Chile	(3)	1996	Indonesia	(4)	1984	Norway	(1)	1996	Tunisia	(3)	1997
Colombia	(3)	1985	Indonesia	(4)	1990	Oman	(3)	1979	Turkey	(3)	1974
Colombia	(3)	1987	Indonesia	(4)	1994	Oman	(3)	1981	Turkey	(3)	1978
Colombia	(3)	1993	Iran, Islamic Rep.	(3)	1977	Oman	(3)	1989	Turkey	(3)	1981
Congo, Dem. Rep.	(4)	1975	Iran	(3)	1984	Oman	(3)	1990	Turkey	(3)	1986
Congo, Dem. Rep.	(4)	1989	Iran	(3)	1986	Oman	(3)	1996	Turkey	(3)	1990
Congo, Rep.	(4)	1995	Iran	(3)	1988	Oman	(3)	1997	Turkey	(3)	1992
Congo, Rep.	(4)	1996	Iran	(3)	1992	Pakistan	(4)	1980	Turkey	(3)	1995
Costa Rica	(3)	1982	Iran	(3)	1997	Pakistan	(4)	1982	Turkey	(3)	1998
Costa Rica	(3)	1984	Ireland	(1)	1976	Pakistan	(4)	1990	United Kingdom	(1)	1980
Costa Rica	(3)	1988	Ireland	(1)	1983	Pakistan	(4)	1998	United Kingdom	(1)	1982
Costa Rica	(3)	1991	Ireland	(1)	1988	Panama	(3)	1977	United States	(1)	1987
Costa Rica	(3)	1992	Ireland	(1)	1989	Panama	(3)	1980	Uruguay	(3)	1979
Costa Rica	(3)	1995	Israel	(2)	1974	Panama	(3)	1983	Uruguay	(3)	1981
Cote d'Ivoire	(4)	1986	Israel	(2)	1977	Panama	(3)	1985	Uruguay	(3)	1987
Croatia	(3)	1993	Israel	(2)	1978	Panama	(3)	1990	Uruguay	(3)	1988
Croatia	(3)	1996	Israel	(2)	1982	Panama	(3)	1991	Uruguay	(3)	1993
Croatia	(3)	1998	Italy	(1)	1976	Papua New Guinea	(4)	1980	Uruguay	(3)	1995
Cyprus	(2)	1984	Italy	(1)	1993	Papua New Guinea	(4)	1984	Uruguay	(3)	1997
Cyprus	(2)	1986	Italy	(1)	1995	Papua New Guinea	(4)	1987	Vanuatu	(3)	1984
Cyprus	(2)	1989	Jordan	(3)	1981	Papua New Guinea	(4)	1995	Vanuatu	(3)	1996
Cyprus	(2)	1993	Jordan	(3)	1984	Papua New Guinea	(4)	1996	Venezuela, RB	(3)	1974
Czech Republic	(3)	1996	Jordan	(3)	1986	Paraguay	(3)	1994	Venezuela	(3)	1979
Denmark	(1)	1977	Kenya	(4)	1974	Paraguay	(3)	1996	Venezuela	(3)	1981
Denmark	(1)	1986	Kenya	(4)	1978	Paraguay	(3)	1998	Venezuela	(3)	1984
Denmark	(1)	1996	Kenya	(4)	1983	Peru	(3)	1975	Venezuela	(3)	1989
Dominican Rep.	(3)	1975	Kenya	(4)	1986	Peru	(3)	1998	Venezuela, RB	(3)	1990
Dominican Rep.	(3)	1980	Kenya	(4)	1991	Philippines	(3)	1979	Venezuela, RB	(3)	1996
Egypt. Arab Rep.	(3)	1978	Kenya	(4)	1994	Poland	(3)	1996	Vietnam	(4)	1998
Egypt. Arab Rep.	(3)	1980	Korea, Rep.	(1)	1977	Portugal	(1)	1983	Yemen, Rep.	(4)	1996
Egypt. Arab Rep.	(3)	1981	Korea	(1)	1984	Portugal	(1)	1986	Zambia	(4)	1974
Egypt. Arab Rep.	(3)	1983	Korea	(4)	1987	Portugal	(1)	1988	Zambia	(4)	1977
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Egypt. Arab Rep.	(3)	1989	Latvia	(3)	1998	Romania	(3)	1987	Zimbabwe	(4)	1981
Egypt. Arab Rep.	(3)	1993	Lebanon	(3)	1995	Romania	(3)	1989	Zimbabwe	(4)	1986
Egypt. Arab Rep.	(3)	1994	Lesotho	(4)	1973	Romania	(3)	1993	Zimbabwe	(4)	1989
Estonia	(3)	1996									

APPENDIX TABLE 2
BREAKDOWN OF FISCAL ADJUSTMENT

ITEM	SUSTAINED: 84	NOT SUSTAINED: 295	UNCLASSIFIED: 76
Successful: 110	52	35	23
Not Successful: 345	32	260	53

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