FISCAL MULTIPLIERS IN DEVELOPING COUNTRIES: REVIEW OF THE RECENT LITERATURE

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Abstract:

This paper reviews the theoretical and empirical literature on the fiscal multipliers. The focus is on the size of the multipliers, a fundamental question on the variety values of multipliers can be considered problematic of the different methods used to evaluate them for the case of developing countries (in particularly Structural VAR method). This is done by, first, defining the concept of the multiplier used and presenting the main theoretical approach applied for the developing countries. Second, by viewing the recent evidence from the recent empirical studies reported on the measure of fiscal multipliers.

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KEYWORDS: Fiscal multipliers, developing countries, Structural VAR.

I. INTRODUCTION

The financial crisis in 2008 comes to revealsthe debate about the size of fiscal multipliers. In recent years, the slowdown in economic activity caused waves of fiscal stimulus implemented by developed and developing countries to support unequivocally, fiscal policy in stabilizing economic fluctuations.

On the theoretical level, the new endogenous growth models have suggested a number of canals through fiscal policy could have effects on growth rate. This theoretical literature, take in general the evidence from advanced countries, in this circumstance, to evaluate the repercussions of this literature for fiscal multipliers in developing countries, it is important to address a some issues. First, what is the strength of the new endogenous growth models that could be applied to the developing countries? What assumptions conditions need to formulate in order to measure fiscal multipliers? What does the empirical evidence on fiscal multipliers suggest for developing countries?

Empirically, little is known about how these factors influence the values of fiscal multipliers, also if the econometric methods used, are inspired by the Neo-classical approach or Neo-Keynesian. Thosefactors revealseveral causes behind these various estimates.

The rest of the paper is organized as follows. Section **I** briefly reviews the theoretical literature in attempt to identify the factors that determine the size of multipliers. Section **II** describes at great length the recent empirical literature on the study of the fiscal multipliers in developing countries. Section **III** contains a summary and conclusions.

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II. SECTION I. BACKGROUND AND LITERATURE OVERVIEW

There is a restrictedunanimity in the literature on the estimation method and the value of fiscal multipliers. Evidence suggests that they depend over the timing on the business cycle and through countries. They can also depend among other factors, like indicated by Espinoza and Senhadji (2011) in extensiveempirical evidence for advanced economies but less for developing countries.

Baum, Poplawski, et al., (2012) estimate fiscal multipliers for advanced economies, it has been found that the key determinants for the size of fiscal multipliers depend on the state of the business cycle, through the size the economy, the marginal propensity to consume, the prevalence of Ricardian Equivalence, and exchange rate flexibility. More recently, Blanchard and Leigh (2013) and Christiano et al., (2010)note that, much of the empirical studieshave under estimate the government spending multipliers, they argue that the fiscal multipliers tend to be higher than previously estimated, under a binding zero lower bound (ZLB) on interest rates.

Assuming that, in the developing countries, the zero lower bound on interest rates situation is not likely to hold in generaland therefore, this important characteristic may imply smaller fiscal multipliers. On the other hand, households tend to face binding liquidity constraints and have limited access to financial markets,which may indicate that the consumption depends more on current income,in this case the marginal propensity to consume become lower, which should entail a smaller multiplier, the same suggestions make byEggertsson and Krugman (2012)on the investment, which depends more on current rather than future profits.

Besides those factors, Fiscal multipliers can be higher in developing countries, because of frequently exhibit sizable economic slack, as reflected in negative output gaps and high levels of unemployment. Both of these features suggest that any crowding out of private sector activities due to government spending could be theoretically limited, thus suggestinga higher fiscal multipliers (Blanchard and Leigh 2013).

*Definition:*Instatistic form, fiscal multipliers could be estimated in a stylizedframework in several ways. Generally, they are defined as the ratio of a change in output (ΔY) to a discretionary change in government spending or tax revenue (ΔG or ΔT) (Spilimbergo and others, 2009). The fiscal multiplier measures the effect of a 1% change in spending or a 1% change in tax revenue on the level of GDP, the time frame considered are usually a quarter or a year, different multipliers areprovide by the time. Two multipliers are commonly used (focusing on government spending), one for the short-term and the other one for long-Run:

- The *impact* multiplier$\stackrel{\text{def}}{=} \frac{\Delta Y(t)}{\Delta G(t)}$
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In order to assess the effect of fiscal policy at longer forecast horizons, the Cumulative Multiplier at time T can be defined as:

- Cumulative multiplier (T) $\stackrel{\text{def}}{=} \frac{\sum_{t=0}^{T} \Delta Y(t)}{\sum_{t=0}^{T} \Delta G(t)}$

Defined as the cumulative change in output over the cumulative change in fiscal spending at some horizon T, which is often the most appropriate measure for the Long-Run, is typically larger than the *impact* multipliers[1].

Anacute reading of the theoretical literature,tellsthat the size of fiscal multipliers can be divergent; it rely, among other things, on differ theoretical approaches with a controversial assumptions. Moreover, there is an active debate as to whether spending or revenue-basedfiscal shocks have a bigger impact.(See the Table 1 bellow):

Table 1. Theoretical Predictions of Fiscal (Spending) Multiplier

Scenario	Size of Multiplier
Keynesian	
1. Standard Keynesian spending multiplier	>1
(Tax multiplier)*	<1 or >1
Simple Keynesian Extensions	
2. Accommodative monetary policy	>1
3. Liquidity trap (interest rate at the zero bound)	>1
4. Flexible exchange rates	<1
5. Pegged exchange rates	>1
6. Highly open economy	<1
Neoclassical	
7. Neoclassical model	<1
Other considerations	
8. Complete Ricardian equivalence	0
9. Debt/fiscal sustainability issues	<1
10. Expansionary fiscal contractions	<0

*The standard Keynesian spending multiplier is equal to 1/(1-MPC), where: 0<MPC (marginal propensity to consume)<1. Hence, the spending multiplier is ≥1. On the other hand, the tax multiplier= -MPC/(1-MPC). Hence, it is larger than 1 if MPC>0,5.
Sources: Baxter and King (1993), Barro (1974), Mankiw (2000); Hemming et al., (2002), IMF (2008); Alesina and Ardagna (2009), and Woodford (2010).

This theoretical literature is more likely meet the evidence for advanced economies, unlikely for the developing and low income countries(LICs). Indeed, little is known about the size of fiscal multipliers forthis type of countries, from a theoretical point of view, and due to a lack of data deficiencies, there is much less evidence on the short-term effects. It is not clear whether multipliers should be expected to be higher or lower comparativelyto the AEs (Advanced Economies). Let us set up the simple intuitive factors, at least those that gave rise to discussionsin the literature—and their respective sign of influence on the size of fiscal multipliers in developing and LICs(Table 2).

Table 2.Multipliers in Developing and LICs

Aspects increasing multiplier (+) in D &LICs	Aspects decreasing multiplier (-) in D & LICs
Marginal propensity to consume still higher even: (i) Liquidity constraints arise in less developed financial markets. (ii) Agents are less forward looking.	Precautionary saving may be larger in a more uncertain environment.
Monetary policy response in accommodative way.	Inefficiencies in public institutions (*i.e.,*expenditure management and revenue administration.
Automatic stabilizers are lower.	Economies are smaller and more open (*i.e.*, higher leakages into imports).[2]

[1]By the same logic, we can estimate the fiscal multipliers for the revenues of taxes.

Government debt tends to be lower (If the government are able than others to finance simulative fiscal policy actions without causing real interest rates to rise).	When the economy more susceptible to financial market constraints (*i.e*., upward pressure on real interest rates).

As well as mentioned earlier on the theoretical literature, the limited empirical literature available recommends that multipliers in developing and LICs are smaller than in advanced economies (Estevão and Samake(2013); Ilzetzki et al., (2013); Kraay (2012); Ilzetzki (2011); and IMF (2008)). In fact, this outcome could be related to several factors, including expenditure inefficiencies, the difficulty to evaluate the outcome of the public expenditures (with increases more likely to become permanent)[3].Furthermore,in the literature, two types of determinants are identified the fiscal multipliers:

(i) Structural, in normal times the country characteristics affect the economy's response to fiscal shocks; (i.e., the debt level. (Ilzetzki et al., (2013), Kirchner et al., (2010)).

(ii) Conjunctural(temporary factors) that make multipliers diverge and tend to increase or decrease from their normallevels (i.e., the state of the business cycle).

III. SECTIONII. A REVIEW OF RECENT EMPIRICAL STUDIES

In general, there is a large empirical literature on calculating multipliers. With recent estimationapproaches oftenassociated with certain theoretical frameworks, they fall into three major groups. (i) First group utilises New Keynesian Dynamic Stochastic General Equilibrium (NK DSGE) models. These models are theory-guided and impose strong long-run restrictions. (ii)The second group uses VAR models that estimate a system of equations with an attempt to separate the innovations in fiscal shocks by structural form with short-term restrictions. (iii) The third group consists of panel analyses that typically impose no long term restrictions. A few recent studies have been attempts to provide estimates of the multiplier that differ during boom and downswingChristiano et al.,(2011).

In recent study of IMF (Martin Cerisola, Chadi Abdallah, et al., (2015)), useconventional VARs which allow them to estimateand identifythe spending and tax multipliers using a sign-restrictions approach. To assess the fiscal multipliers for a panel of developing countries, they estimate the following Panel Vector Autoregression (PVAR) model:

$$Y_{n,t} = \sum_{k=1}^{k} B_{\boldsymbol{k}} Y_{n,t-k} + \epsilon_{n,t} (1)$$

Where$Y_{n,t}$denotes the vector of macroeconomic variables for a given year *t* and country *n*. The system in equation (1) is the reduced form from a structural VAR model.The table 3present the estimates of fiscal multipliers for the different country groups[4], quantifying theimpact of fiscal measures or shocks on output in their respective countries.Clearly, the impact of the fiscalmultipliers change across countries features, it meet the assumptions discussed in the literature previously. Note that the multipliers report only short-term effects on output.

[2] See the Appendix figure 1 illustrate in empirical way this evidence.

[3]Barrell et al., (2012), permanent consolidations are usually associated with lower multipliers.

[4]For more evidence recent studies for developing countries see the Appendix Table 1, it report the size of fiscal multipliers from studies on EMEs (Emergent Economies) and LICs.

Table 3. Fiscal multipliers in MENAP countries

Panel countries by economic fundamentals	Current Spending	Government Investment Spending
More Open to Trade	0.3	1.0
Less Open to Trade	0.4	1.2
High Income	0.7	1.1
Low Income	0.5	1.1
More Flexible Exchange Rate	0.2	0.6
Less Flexible Exchange Rate	0.7	1.3

Source: IMF (Martin Cerisola, Chadi Abdallah, et al. (2015)).

IV. SECTION III. SUMMARY AND CONCLUSIONS

This paper has reviewed the recent literature on the fiscal multipliers in developing countries, focusing on recent advances in theory and on empirical evidence. It has also tried to find the appropriate relevance theoretical literature for the fiscal multipliers in developing countries, assuming that some theoretical assumptions are not applied for developing economies like advanced economies.

Overall, the literature reviewed **in this paper** suggests that, although theory increasingly provides guidance on the factors influence the size of the fiscal multipliers which might beexpected in developing and LICs, few models address developing economies conditions directly. The context of the developing and LICs, caution must therefore be exercise using these models.

On the empirical side, evidence is depends on the characteristics of the economy. In some senses this observation is obvious. What is less recognized is that the state of the economy, analysis should focus on that than many other aspects**.** While it has been shown by few empirical studies on advanced economies, that the size of the multipliers can be affected by the position on the business cycle (normal or contraction times), this evidence remains largely unknown for the developing countries. Moreover, future research could take into account whether thereis an upswing (expansion) and downswing (contraction) on the business cycle evolution, whichwould basis the estimation of the fiscal multiplier.

REFERENCES

[1] AGENOR, PIERRE-RICHARD, C. JOHN MCDERMOTT, ET ESWAR S. PRASAD, 1999, “Macroeconomic Fluctuations in Developing Countries: Some Stylized Facts”, *IMF Working Paper* 99/35.

[2] Anja Baum, Marcos Poplawski-Ribeiro, et al., (2012), “Fiscal Multipliers and the State of the Economy”. Fiscal Affairs Department, WP/12/286, IMF.pp. 4-6.

[3] Ilzetski, E., 2011, “Fiscal Policy and Debt Dynamics in Developing Countries,” Policy Research Working Paper Series 5666 (Washington: The World Bank).

[4] Ilzetski, E., Mendoza, E., and Vegh, C., 2011, “How Big (Small) Are Fiscal Multipliers?” IMF Working Papers 11/52 (Washington: IMF).

[5] Martin Cerisola, Chadi Abdallah, et al., (2015), "Assessing The Impact Of Fiscal Shocks On Output In MENAP Countries”. Middle East and Central Asia Department, Technical notes and manuals, IMF. PP.5,7.

[6] NicolettaBatini, Luc Eyraud, et al., (2014), “A Simple Method to Compute Fiscal Multipliers”. Fiscal Affairs Department, WP/14/93. IMF Working Paper. pp. 4,8,25.

[7] NicolettaBatini, Luc Eyraud, et al., (September 2014) “Fiscal Multipliers: Size,Determinants, and Use in Macroeconomic Projections”. Fiscal Affairs Department, Technical notes and manuals, IMF.pp.6-7.

[8] Norman Gemmell (2001), “Fiscal Policy in a Growth Framework”, UNU/WIDER.
[9] Olivier Blanchard and Daniel Leigh, (2013), “Growth Forecast Errors and Fiscal Multipliers”. Research DepartmentWP/13/1.IMF Working Paper.Position Note, SPN/09/11, IMF.
[10] PrithaMitra and TigranPoghosyan, March (2015), “Fiscal Multipliers in Ukraine”. European Department,WP/15/71, IMF Working Papers. pp.3-5.
[11] Spilimbergo, A., Symansky, S., and Schindler, M., 2009, “Fiscal Multipliers,” IMF Staff.
[12] WalidQazizada and EngelbertStockhammer, (2014) “Government spending multipliers in contraction and expansion” pp.4-6 *http://www.postkeynesian.net/downloads/wpaper/PKWP1404.pdf*

APPENDIX

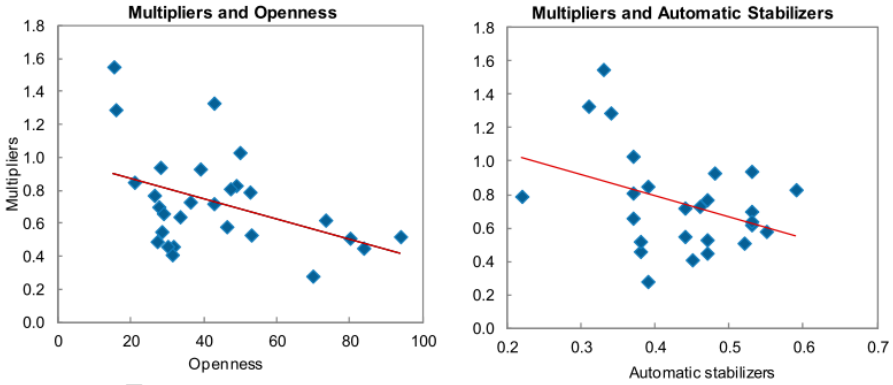

Fig 1. **Country characteristics and fiscal multipliers**

Sources: IMF, Fiscal Affairs Department Fiscal Rules database and Fiscal Transparency database; Organization for Economic Cooperation and Development (OECD); and IMF staff estimates.

Table 1. Short-term multipliers in some Developing countries

Countries	Study	Government Spending & Investment	Taxes Revenues
Argentina	Anós-Casero and others (2010)	0	0
Bulgaria	Muir and Weber (2013)	0.2	0.4
China	Wang and Wen (2013)	1.7/2.8	N/A
Costa Rica	Estevão and Samake (2013)	0.2	0
Croatia	Simovic, Deskar-Škrbić (2013)	0.8	0.6
Dominican Republic	Estevão and Samake (2013)	0.1	0
Guatemala	Estevão and Samake (2013)	0.3	0
Honduras	Estevão and Samake (2013)	0.3	0
Indonesia	Tang and others (2010)	-0.3	0.4
Malaysia	Tang and others (2010)	0.2	0.4
Malaysia	Rafiq and Zeufack (2012)*	2.7/2	0.1/0.2
Nicaragua	Estevão and Samake (2013)	0.1	0
Panama	Estevão and Samake (2013)	0.5	0
Peru	Anós-Casero and others (2010)	0	0
Philippines	Tang and others (2010)	0.4	0.1
Romania	Stoian (2012)	0.5	0.9
South Africa	Jooste (2012)	0.3	0.7
Thailand	Tang and others (2010)	-0.4	1.0
Saudi Arabia	Jooste (2012)	0.3	N/A
Singapore	Tang and others (2010)	-0.2	0.5
El Salvador	Estevão and Samake (2013)	0.2	0
Panel EMs	Ilzetzki (2011)	0.2	0.3
Panel LICs	Kraay (2012)	0.5	N/A
ECCU	Gonzales-Garcia, et al (2013)	0.2	0
GCC	Espinoza and Senhadji (2011)	0.3	N/A
Panel MENAP	Martin Cerisola, Chadi Abdallah, et al (2015)	0.5	-0.4

Source: Nicoletta Batini, Luc Eyraud, and Anke Weber (2014), IMF.