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Fiscal Multipliers in the ECCU

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Abstract

The multipliers of taxes, and government consumption and investment expenditure for the Eastern Caribbean Currency Union (ECCU) are estimated using vector autoregression models with panel data. The impact and long-run multipliers are below unity, suggesting that a great extent of the intended impulse ends up expanding imported demand. The long-run multipliers of taxes and consumption expenditure are non-different from zero statistically, while public investment has a long-run multiplier of 0.6. The results suggest that countercyclical policies to stimulate growth should focus on public investment.

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I. Introduction

Fiscal policies play an important role in the management of output fluctuations. A number of countries in the Eastern Caribbean Economic and Monetary Union (ECCU) used fiscal policies to stimulate economic activity in response to the fallout from the 2008–09 global economic and financial crisis. This paper quantitatively analyzes the effects of government revenue and expenditures on output dynamics in the union. Given the relatively large share of government in the Eastern Caribbean economies,[1] the currency peg to the U.S. dollar, and the level of development, changes in tax and public expenditure policies may play an important role in output dynamics. Conversely, factors such as the high degree of trade openness and the high level of public indebtedness may weaken the effectiveness of fiscal policy in stimulating economic activity. To assess the possible impact of fiscal policy, this paper empirically evaluates the fiscal multipliers for the group of ECCU members.

The second section discusses the role of fiscal multipliers and their usefulness in the design of fiscal policies aimed at managing output fluctuations. The methodology and data are discussed in the third section. The models used and the results of the estimation are discussed in the fourth section. The conclusions presented in the fifth section suggest that public investment is more effective to stimulate economic activity in the ECCU region than public consumption or tax cuts.

II. The Role of Fiscal Multipliers

Tax and public expenditure multipliers provide a quantitative measure of the change in output resulting from an increase in taxes or government spending, and are key parameters for evaluating the effectiveness of fiscal policies in managing output fluctuations. A public spending multiplier greater than 1 indicates that public expenditure is able to stimulate economic activity and produce a final increase in output larger than the initial increase in public spending. A multiplier less than 1 means that the initial increase in aggregate demand is eroded by effects that counteract the initial unitary increase in public spending. These counteracting effects are often due to the crowding out of productive private sector activities and because part of the intended fiscal impulse translates into higher imports that do not increase output. Taxes are expected to have a negative effect on GDP, so a multiplier of less than –1 would imply that collecting one unit of taxes causes a decrease in economic activity larger than one unit. This outcome could be due to the accompanying distortions created by an increase in taxes or to disincentives for productive private sector activities. A tax multiplier less than zero but more than −1 indicates that economic activity is able to at least partially recover from the initial effect of the extraction of one unit of output in the form of taxes.

[1] In 2008–11, total central government revenues averaged 26 percent of GDP while total expenditure was on average about 30 percent of GDP.

An estimate of the size of fiscal multipliers is essential to the design and implementation of fiscal policies. If public spending multipliers are smaller than expected, a country's economy may end up in a trajectory that compromises the sustainability of public finance because expansionary fiscal policies will fail to boost economic activity sufficiently, and public indebtedness (together with the associated debt service) will increase as a percentage of GDP. Also, a tax multiplier that is larger than expected (more negative) may end up depressing economic activity more than anticipated, ultimately eroding the tributary base from which all taxes are collected.

The magnitude of fiscal multipliers has been under close scrutiny since the 2008–09 global financial and economic crisis. The crisis prompted large government intervention through tax reductions and expenditure programs across the world aimed at preventing a global deflationary scenario (see, for instance, Spilimbergo and others, 2008; Freedman and others, 2009; Hall, 2009; and Spilimbergo, Symansky, and Schindler, 2009). However, the estimation of the magnitude of fiscal multipliers, for both advanced economies and emerging markets, has proven to be challenging, and there is still uncertainty about their size (see Blanchard and Leigh 2013).

III. Methodology and Data

A. The approach

The empirical evaluation of the fiscal multipliers for the eight members of the ECCU is based on the estimation of structural vector autoregression (SVAR) models using panel data. Panel-VAR techniques are well suited to the study of this group of economies for two reasons. First, the members of the currency union share several features— a single currency, broad participation of the government in the economy, a high degree of trade openness, high levels of public indebtedness, and the economies are subject to similar exogenous economic and natural shocks. These shared characteristics facilitate pooling the data. Second, using a panel data set allows the data of all ECCU members to be combined, increasing the sample size considerably. Individual estimations for each member of the union could be considered unreliable because of the limited number of observations available for each economy.[2]

The calculation of tax and public spending multipliers presented in this paper is based on the dynamic response of GDP to shocks in those fiscal variables. These responses are the impulse response functions obtained after estimation of the VAR models. Short- and long-run fiscal multipliers are constructed using the series of responses to shocks in the fiscal

[2] Given the available quarterly data, the number of observations available for each ECCU member is about 64, at most, which would not allow for reliable estimations of VAR models with several lags that rapidly consume degrees of freedom.

variables. The statistical significance of the calculated multipliers is determined with confidence intervals that are obtained from Monte Carlo simulations.[3]

The three fiscal multipliers presented result from shocks in tax revenue, government consumption, and investment expenditure. It is important to distinguish between these three multipliers because they tend to affect output in different ways. A priori, a positive shock in tax revenues is expected to show a negative effect on output, whereas upward shocks in government consumption and investment are expected to have positive effects. Also, public investment is expected to have a larger effect on output than public consumption because—in addition to the direct effect of expenditure on aggregate demand—public investment should improve the productive capacity of the economy.

B. Data issues

The estimation of fiscal multipliers using annual data presents some shortcomings that make use of higher-frequency information more desirable. The main shortcoming of annual data is that the model may fail to describe accurately the dynamic effects of fiscal variables on GDP because the interactions between the variables may occur within a year, and thus are not observable in annual data. In addition, lower-frequency data means smaller samples, which may weaken the efficiency of estimations even when panel data methods could help to overcome the problem of small samples.

Using data with quarterly frequency facilitates the identification of structural shocks. More specifically, it allows following the identification strategy proposed by Blanchard and Perotti (2002), which states that fiscal variables can react only with a lag after a shock in GDP due to institutional constraints, while a shock in fiscal variables can impact GDP contemporaneously. As a result of this identification strategy, the Cholesky decomposition of errors can be used to generate the impulse responses, assuming that the system has a recursive structure in which GDP is ordered after the fiscal variables. Regarding the specific ordering of fiscal variables, it was decided to always order consumption expenditure after investment expenditure, as it is quite reasonable that investment generates current consumption. Regarding the ordering of taxes, there is no solid ground in the literature to propose a given order. Later, alternative estimations are used to check the sensitivity of the results.

The data set used in this paper includes quarterly time series of tax revenues and government expenditure on consumption and on investment for each of the eight members of the ECCU from 1994:Q1 to 2009:Q4. Government consumption expenditure is defined as government

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[3] The estimations presented in this paper are based on an extensive recent effort to estimate fiscal multipliers by Ilzetzki, Mendoza, and Vegh (2011), who estimated fiscal multipliers for a large set of countries using quarterly data and explored the impact of different country characteristics. Their results suggest that fiscal multipliers tend to be small and usually less than unity. Developed and closed economies usually have relatively larger fiscal multipliers that are statistically significant, while developing and open economies show smaller multipliers that often are not statistically different from zero.

expenditure net of investment, interest payments, and contributions to pensions systems. Government investment expenditure is taken directly as reported by the authorities. The tax revenue variable used in the estimations is defined as total tax revenue net of taxes on international trade, and transfers and direct subsidies to households. Taxes on international trade are netted out because a positive shock in tourism-related activities may end up increasing both tax revenues and output, which could provide counterintuitive results.

The following transformations were applied to the series of fiscal variables and GDP: All variables were transformed into natural logs, seasonally adjusted and de-trended by subtracting a quadratic time trend. As a result, the transformed variables used in the VAR are the cyclical components of the original series, expressed as percentage deviations from the trend. These series are called tax, *con*, *inv*, and *gdp*, for tax revenues, consumption expenditure, investment expenditure, and GDP, respectively.

Real GDP is compiled for ECCU members annually. To obtain quarterly GDP series for each member, the interpolation method of Chow and Lin (1971) was used. Quarterly series are obtained by using annual aggregates of GDP along with several quarterly indicators of economic activity that help estimate the distribution of GDP within each year.

C. Interpolation of real GDP to obtain quarterly series

The interpolation method used consists in obtaining quarterly series using annual aggregates of GDP and several indicators of economic activity with quarterly frequency that help estimate the distribution GDP within each year.

Given the importance of tourism activities in the ECCU, and that the United States is the main source of tourists for the region, the following quarterly time series were used to estimate the interpolated GDP series: tourism stayovers in each ECCU member, real compensation to employees in the United States, real U.S. GDP, the U.S. index of industrial production, and banks' claims on the private sector in each of the ECCU economies.

The method for calculating, or interpolating, quarterly real GDP from annual GDP data was originally developed in a short, elegant article by Chow and Lin (1971). The idea is to find the best unbiased linear interpolator by using higher-frequency proxy time series and by enforcing a consistency constraint

Chow and Lin assume that econometricians have high frequency (monthly or quarterly) observations on a set of time series X and lower frequency (quarterly or annual) observations on a time series *y*. If we could observe both X and *y* at the high frequency, the relationship would read

(1) $$y = X\beta + u .$$

In equation (1), the vector of proportionality parameters is β and u is the vector of error terms. Since y is not observed at a high frequency, a distribution matrix is used to convert the latent equation (1) into an equation containing only observables. To interpolate annually observed time series at a quarterly frequency the distribution matrix has the following form

$$(2) \qquad C_D = \frac{1}{4}\begin{pmatrix} 1 & 1 & 1 & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \cdots & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 1 & 1 & 1 & 0 & 0 & 0 & \cdots & 0 & 0 & 0 & 0 \\ & & & & & & & \cdots & & & & \cdots & & & & \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \cdots & 1 & 1 & 1 & 1 \end{pmatrix}$$

The distribution matrix averages quarterly observations to obtain annual observations. Using the distribution matrix, the following observed linear relationship can be expressed

$$(3) \qquad y. = C_D y = C_D X\beta + C_D u = X.\beta + u.$$

In (3) the quantities that precede a dot indicate annual averages. The equation is a bona fide linear regression with annual data that could be used to estimate parameters β . The error terms in (3) yield the following result

$$(4) \qquad \mathrm{E}\left[u.u.'\right] = V. = C_D V C_D{}' .$$

The goal of the estimation is to obtain a series of interpolated high frequency values, *z* by using a linear projection onto X. The estimator must agree with the observed values of *y* at annual frequencies, which implies that

$$(5) \qquad \hat{z} = A\,y. = A(X.\beta + u.) .$$

Because *z* is unbiased, the following condition results:

$$(6) \qquad AX. - X = 0 .$$

By definition, it also follows that

$$(7) \qquad \hat{z} - z = Au. - u$$

To obtain the best unbiased *z*, its covariance must be minimized, which is given by

$$(8) \qquad \operatorname{cov}\left(\hat{z} - z\right) = E\left(Au. - u\right)\left(Au. - u\right)' = AV.A' - AV. - V.A' + V .$$

Minimizing the trace of equation (8) subject to (6) with respect to all elements in matrix *A* gives a quadratic program with a solution for the optimal estimator $\hat{z}$. This estimator is

$$(9) \qquad \hat{z} = Ay. = X\hat{\beta} + \left(VV.^{-1}\right)\hat{u} .$$

The estimate of the regression coefficient β is

(10) $$\hat{\beta} = \left(X.'V.X. \right)^{-1} X.'V.^{-1} y.$$

and the vector of residuals $\hat{u}$ in (9) is given by

(11) $$\hat{u} = y. - X.\hat{\beta}$$

The practical recipe for high frequency interpolation, based on equations (9), (10) and (11) follows: regress low frequency data on aggregated regressors *X.* to obtain an estimator of β, and then calculate the residuals as in equation (11) and distribute them according to equation (2).[4]

IV. Methodology for Estimation of Fiscal Multipliers

A. Description of the SVAR models used

As in Ilzetzki, Mendoza, and Vegh (2011), and Blanchard and Perotti (2002), the evaluation of fiscal multipliers is based on the impulse responses obtained from structural vector autoregression (SVAR) models that assume a recursive structure (that is, that use a Cholesky decomposition of errors). The initial VAR models estimated include only two endogenous variables: government consumption expenditure, *con* (or investment expenditure, *inv*, or tax revenue, *tax*) and GDP, *gdp*.[5] The model can be written as follows:

(12) $$A\,Y_{i,t} = \sum_{k=1}^{K} C_k Y_{i,t-k} + \sum_{p=1}^{P} D_p Z_{i,t-p} + B\varepsilon_{i,t}$$

Where $Y_{i,t}$ represents a two-variable vector including *con* (or *inv* or *tax*) and *gdp* of country *i* in quarter *t*. The matrix *A* represents the contemporaneous interaction between the variables and it is assumed to be a lower triangular matrix. Following Blanchard and Perotti (2002), this assumption about the structure of the model is based on the observation that because of institutional constraints, fiscal policies can react to shocks in output only with a lag, but fiscal policies can affect output contemporaneously. The matrix C_k contains the effects of the own-lags of the endogenous variables; D_p contains the effects of control variables that are considered exogenous to the system described by the SVAR. *B* is a diagonal matrix such that the vector ε_t contains orthogonal independent, identically distributed shocks to the

[4] Feasible generalized least squares should be used to obtain estimates of *V*, the covariance matrix of residuals. In practice, it turns out that the choice of *V* does not matter much and a one-stage ordinary least squares estimator of β is adequate.

[5] All variables are in real terms. Fiscal variables are deflated using consumer price indexes due to the lack of specialized indexes.

endogenous variables. The expectation of this vector is zero, $E[\varepsilon_{i,t}] = 0$, and $E[\varepsilon_{i,t} \times \varepsilon'_{i,t}]$ is an identity matrix. The reduced form estimation of $A^{-1} \times C_k$ and $A^{-1} \times D_p$ is performed with ordinary least squares (OLS).[6]

Although the models include only two endogenous variables, they also include the control variables contained in the vector $Z_{i,t-p}$. The set of control variables considered for each ECCU member includes: the current account-to-GDP ratio, the interest rate of monetary policy, the ratio of public debt-to-GDP, the real exchange rate in each ECCU economy, and the U.S. GDP (the latter two variables are log deviations from their trends, just as the endogenous variables are).

Note that the set of control variables included in each bivariate SVAR model estimated depends on the multiplier in question. If the multiplier in question is the one corresponding to government consumption expenditure, public investment and tax revenues are included in the control variables. When the public investment multiplier is estimated, both tax revenues and public consumption expenditure are among the control variables. Finally, the estimation of the tax revenues multiplier implies that public consumption and investment expenditure are in the set of control variables.

The described estimation offers the following advantage. All three models are estimated using the same set of regressors, but the impulse responses the model yields describe only the dynamic relationship between two variables. This is called the “pure” effect of the fiscal variable in question on the output series. This is useful for focusing only on the effect of the fiscal variable in question on GDP without the interactions that such a variable may have with other fiscal variables. Thus, the fiscal multipliers measure only the effect of the fiscal variable in question on GDP. Estimations of these “pure” effects and the corresponding multipliers can also be found in Perotti (2004), and Ilzetzki, Mendoza, and Vegh (2011).

A complete description of the effects of shocks in the fiscal variables on output can be obtained from impulse responses that take into account the dynamic interaction of fiscal variables in the economic system. To obtain the corresponding multipliers, multivariate VAR models are estimated using as endogenous variables *tax*, *inv*, *con*, and *gdp*, as well as the set of control variables described above to ensure a complete description of the system.[7] The

[6] All estimations included four lags. The Akaike information criteria (AIC) was not useful for determining the best number of lags as it always accepted a larger number of lags, whereas the Schwarz information criteria (SIC) suggested five lags. Four lags were used because the results do not differ substantially from those using five lags and to maintain comparability with the paper by Ilzetzki, Mendoza and Vegh (2011), on which this work is based.

[7] In the approach used, the effects of changes in expenditure or taxes start only when the changes in the magnitude of those variables occur. Other approaches rely on the so-called ‘narrative” approach in which government’s announcements are studied and interpreted to identify policy changes even if those changes actually occur on a later date.

impulse responses obtained from these multivariate models were simulated as before, and the corresponding multipliers were calculated, as well as their confidence intervals.[8]

B. Calculation of fiscal multipliers

The impact multiplier (IM) is a quantitative indicator of the contemporaneous effect (in date *t=1*, the date of the shock) of a unit increase in the fiscal variable in question, for instance, public consumption expenditure *CON* on output *Y*: ($\Delta Y_1 / \Delta CON_1$). Clearly, if IM is greater than one, government expenditure truly has a multiplier effect because the increase in output is larger than the initial increase in spending. If the estimated IM is less than 1, the effect of the increase in expenditure has been partially eroded and the final GDP expansion is smaller than the initial increase in government spending.

The variables used in the estimations are in natural logarithms and the resulting impulse response functions have the same unit. It is necessary to correct the "multiplier" calculated directly from the impulse-response functions in order to obtain IM in multiplier units. The corrected value is obtained by dividing the ratio of the contemporaneous response of *gdp* to a shock in *con* (or *inv* or *tax*) by the average ratio of government consumption (investment or taxes) to GDP in the sample used to estimate the VAR. In the following expression, Δgdp_1 and Δcon_1 come from the impulse response series at time *t=1*, the time of the shock.

(13) $$\text{IM} = \frac{\Delta Y_1}{\Delta CON_1} = \frac{\Delta gdp_1}{\Delta con_1} \div \frac{\overline{CON}}{\overline{Y}}$$

A cumulative multiplier (CM) is obtained as the ratio of the cumulative effect on GDP to the cumulative changes in public consumption after the shock: $\sum_j \Delta Y_j \big/ \sum_j \Delta CON_j$.

Again, it is necessary to correct the ratio calculated from the cumulated impulse responses to obtain the cumulative multiplier in the appropriate units using the average ratio of government consumption to GDP in the sample.

(14) $$\text{CM} = \frac{\sum_{j=1}^{J} \Delta Y_j}{\sum_{j=1}^{J} \Delta CON_j} = \frac{\sum_{j=1}^{J} \Delta gdp_j}{\sum_{j=1}^{J} \Delta con_j} \div \frac{\overline{CON}}{\overline{Y}}$$

[8] The estimation does not distinguish periods of expansion or recession. The multipliers are average estimators for the sample considered, which contains two recessions, in 2002–03 and 2009, and two periods of rapid expansion in 1994–95 and 2006–07.

The long-run multiplier is defined as the cumulative multiplier when $J \to \infty$, but in practice is used the number of periods needed for the multiplier to stabilize at its long-run value. In this paper, 24 periods are used as all multipliers stabilize after that number of quarters.

Confidence intervals are necessary to evaluate statistical significance. Each multiplier is simulated 500 times and the empirical distribution is obtained. The reported multipliers are the means obtained from the simulations. In all cases, these means were almost identical to the point estimates obtained directly from the models.

C. Direct effects of fiscal shocks on GDP

As a first approach to the evaluation of fiscal multipliers, it is useful to explore the magnitude of the direct or "pure" effects of shocks in fiscal variables on output. These multipliers are calculated using the impulse responses that describe only the effect of the fiscal variable in question on GDP, without taking into account the interaction of that fiscal variable with other variables. Figure 1 shows the multipliers for government consumption, investment, and tax revenue (solid lines) for different time horizons (number of quarters after the shock are on the horizontal axis) and the corresponding 95 percent confidence intervals (dashed lines).

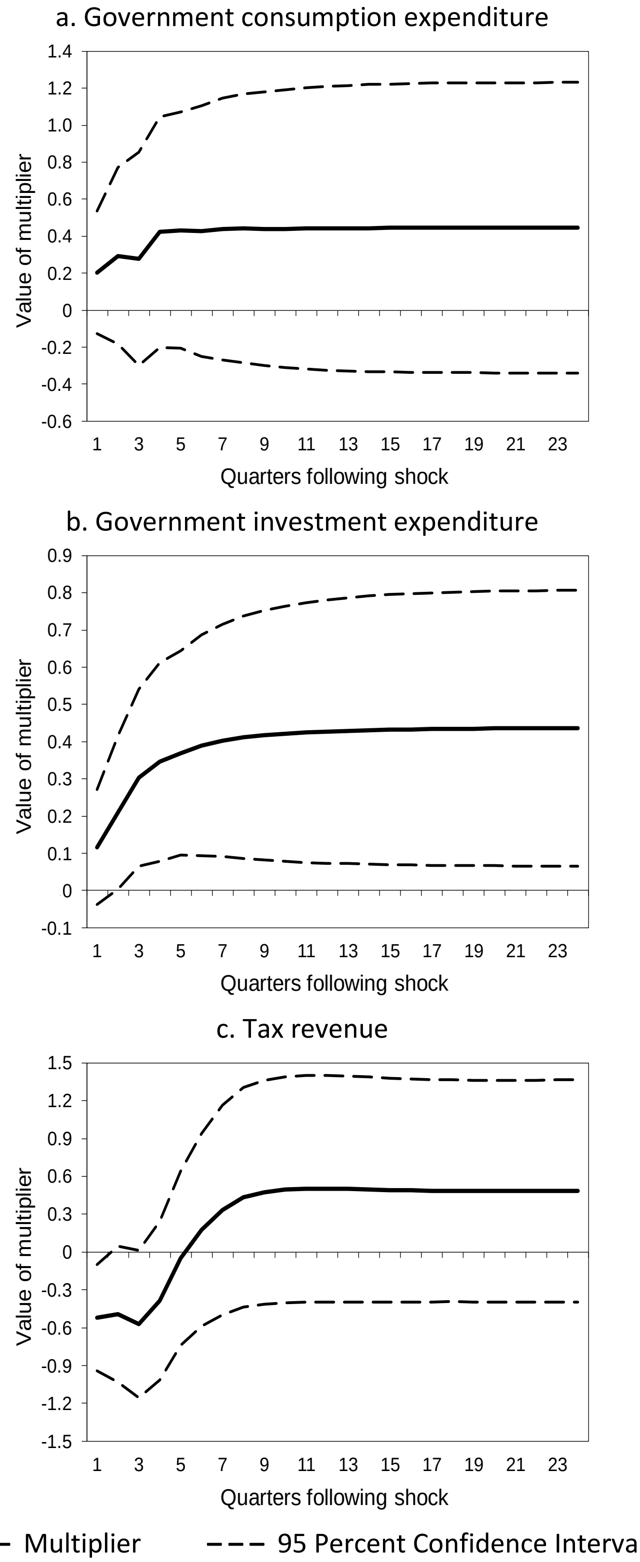
The impact multiplier (at $t=1$, the period of the shock) of government consumption expenditure is 0.20, but the confidence interval is between −0.13 and 0.54, it is not statistically different from zero (Figure 1, panel a). After one year, the cumulative multiplier is about 0.42, but still not statistically different from zero and remains so for the whole projection period. The effect of a shock in government consumption expenditure rapidly fades in the economic system and cannot be considered as different from zero.

The impact multiplier for public investment expenditure (Figure 1, panel b), is 0.12, but the cumulative effects make it increase to 0.37 after four quarters. The 95 percent confidence interval is above zero, which makes the multiplier statistically different from zero. After eight quarters the multiplier stabilizes, and after four years it is about 0.44. This multiplier is different from zero, but smaller than 1, meaning that although public investment has a positive effect on output, it ends up being smaller than the initial shock to public investment. A considerable portion of the fiscal impulse fades as it makes its way through the economy, most probably because of the high import content of investment in ECCU countries.

For taxes, the multiplier at impact is about −0.5, and it is statistically different from zero (Figure 1, panel c). In the following periods it turns positive, which is a surprising development as it would mean that a tax increase ends up stimulating economic activity.[9] However, the multiplier remains as not statistically different from zero, according to its confidence interval: an unexpected shock in taxes does not have a significant lasting effect on output.

[9] A way to rationalize a positive effect on GDP resulting from an increase in tax collection would be that the expectation of improved public finances in the future stimulates economic activity by reducing the probability of future tax hikes or spending cuts of unknown magnitude and timing.

Figure 1. Fiscal multipliers based on the direct effects of fiscal shocks



Source: Authors' calculations.

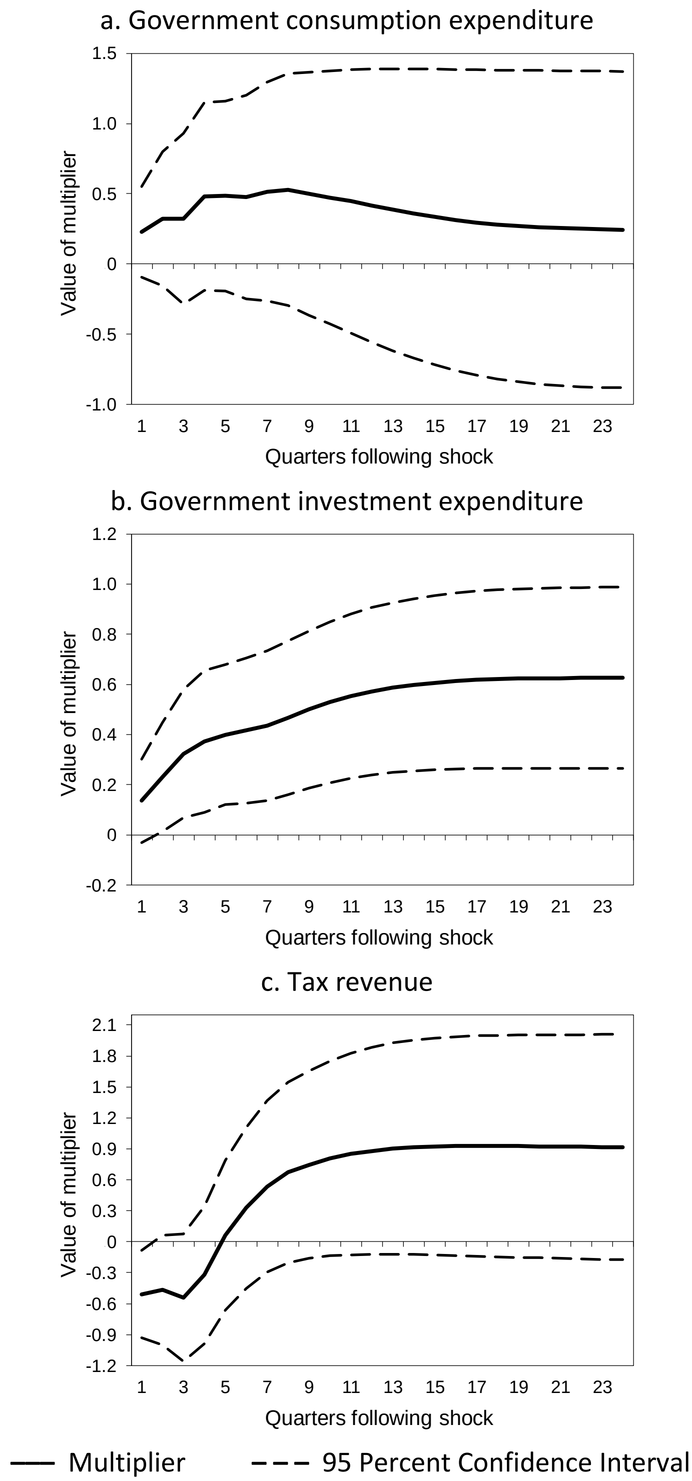
D. A complete description of the effects of fiscal shocks on GDP

The fiscal multipliers can also be estimated taking into account a complete picture of the interaction of the shocks in fiscal variables by using multivariate panel-VAR models. The estimated model includes the following endogenous variables for each ECCU member: tax revenue, government consumption expenditure, government investment expenditure, and GDP. This ordering of endogenous variables is based on Blanchard and Perotti (2002). The important feature of these simulations is that the impulse response functions take into account all the dynamic interactions between the endogenous variables in the model.

The fiscal multipliers presented in this section offer a more complete picture of the effects of fiscal shocks because the fiscal variables are allowed to interact contemporaneously and dynamically with each other and with GDP. That is, the effects of fiscal variables on output include the dynamic interaction of the shock variable with other variables as the effects of the initial shock are propagated through the economy. The ordering of the variables in the estimated model and the assumed recursive structure of the model imply that public investment shocks can contemporaneously affect public consumption spending, tax revenue, and GDP, and that shocks in public consumption expenditure can contemporaneously affect tax revenues and GDP. Tax revenues, in turn, have a contemporaneous impact only on GDP. The results using alternative orderings of the variables are summarized below to check the effects on the magnitude of the multipliers.

Figure 2 shows the results obtained from multivariate VAR models. The solid lines show the magnitude of the multipliers for 24 quarters and the dashed lines show the 95 percent confidence intervals. The government investment expenditure multiplier is positive and statistically different from zero (Figure 2, panel b). This multiplier is larger than in the previous bivariate simulations and reaches 0.62 in the long run, implying that the effect of a shock in public investment is reinforced by the interaction of public investment with other fiscal variables. Most likely, this reinforcement results from an increase in public consumption spending accompanying the increase in public investment, which contributes further to the expansion of GDP. A review of the detailed results of the estimation shows that the shock in public investment expenditure has a positive effect on government consumption expenditure over time. Meanwhile, as in previous estimations, the public consumption expenditure multiplier (Figure 2, panel a) and tax revenues multiplier (Figure 2, panel c) are considered statistically zero, according to the corresponding confidence intervals.

Figure 2. Fiscal multipliers taking into account interaction of variables



Source: Authors' calculations.

Alternative orderings of the variables were used to check the robustness of the results. Following Blanchard and Perotti (2002), a model with tax revenue ordered before public spending was estimated. The results are very similar. Public investment shows a positive long-run multiplier of 0.63, and it is statistically different from zero. Meanwhile, both government consumption expenditure and tax revenues have multipliers that are not different from zero. Also, the multipliers obtained from a model in which public consumption expenditure is ordered first produces similar results, with an investment multiplier of 0.59. Given that monetary policy in the ECCU is closely linked to U.S. monetary policy, the central bank's monetary policy rate was replaced in the estimation by the U.S. federal funds rate. The results are similar: only the long-run multiplier of public investment, estimated at 0.54, is statistically different from zero.

V. Conclusion

In the absence of the ability to set monetary policy and exchange rate policy, fiscal policy is one of the few instruments governments in the ECCU have at their disposal to manage output fluctuations. It is therefore not surprising that a number of countries in the union used fiscal policies to stimulate economic activity in response to the fallout from the 2008–09 global economic and financial crises.

Given the relatively large share of government in the economies of the ECCU, the peg to the U.S. dollar, and the level of development, changes in tax and public expenditure policies may play an important role in output dynamics. At the same time, other factors such as the high degree of trade openness and the high level of public indebtedness may weaken the effectiveness of fiscal policy to stimulate economic activity. Hence, fiscal multipliers are estimated to assess the possible impact of fiscal policy in the ECCU.

Fiscal multipliers of government expenditure on consumption, of government expenditure on investment, and of tax revenue were estimated for the ECCU using panel data and VAR models. The results suggest that only the government investment expenditure multiplier is statistically different from zero in the various estimations performed. The value of the multiplier is positive and less than one (0.60), suggesting that much of the intended impulse ends up expanding demand for imports given that ECCU members are small island economies highly open to international trade. Conversely, public consumption expenditure and tax revenue consistently show multipliers that are not statistically different from zero. The results suggest that countercyclical policies should focus on changes in public investment to stimulate economic activity in the ECCU.

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