

Fiscal Policy, Quality of Education, and Economic Growth in the Dominican Republic

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Received: August 8, 2023

Accepted: September 28, 2023

Online Published: September 30, 2023

doi:10.5539/ijef.v15n10p57

URL: <https://doi.org/10.5539/ijef.v15n10p57>

Abstract

This paper depicts three mechanisms through which fiscal policy affects economic growth in the Dominican Republic. The first mechanism rests on the evidence that increasing public expenditures on education leads to the reduction of adolescent fertility and the percentage of young females who neither study or work, which gives rise to increasing the ratio of female to male employees and thus increasing domestic savings and economic growth.

The second mechanism consists of increasing social expenditures, which results in decreasing the underground economy and, thus, results in increased productivity, economic growth, and reduced violence.

The third mechanism is based on the evidence that increasing education expenditures leads to the reduction of emigration and, thus, to the reduction of remittances, which in turn increases economic growth.

The operation of these mechanisms is sustained by Figures that show that the postulated relationships exist in the Dominican Republic.

The results imply first, that fiscal policy has important effects that have often been overlooked, such as the reductions in school desertion, the percentages of female and male youth that neither work nor study, and the decrease in informality in the Dominican Republic. And second, a valid development strategy resides in increasing tax revenues to support the expansion of social services.

Keywords: tax revenues, public expenditures on education, underground economy, education quality

Journal of Economic Literature (JEL): E2, I3, O17, H5.

1. Introduction

This paper explores the transmission channels of fiscal policy in the Dominican Republic that are based on the role of increased public spending on education in increasing female employment, education quality, reducing informality, irregular emigration and remittances, and increasing economic growth.

The starting point of the first channel analyzed in this work is the result of Seguino and Floro (2003), who showed, using panel data from 75 countries, that the increase in the ratio of female to male employment is conducive to the increase in the rate of household savings, given the tendency of women to save to be able to meet household needs in the face of economic downturns. This result has been corroborated by Caceres (2021a, 2021b) for Honduras and Guatemala, who showed that the increase of this ratio also leads to an increase in the rate of economic growth. Similar results were obtained by Caceres (2020) in a cross-section of 17 Latin American countries.

The key point of the first model presented in this paper is the impact of fiscal policy on the increase in the ratio of female to male employment; it is shown that as public spending on education increases, the number of students per teacher falls, leading to an increase in the quality of education and thus to drops in the fertility of adolescents and the percentage of young women who neither study nor work, (Neets), which lead to an increase in the ratio of female to male employment and thus to an increase in the rates of domestic savings and economic growth.

The second transmission model is based on the result of Caceres (2017) for the case of a cross-section of Latin American countries which showed that the size of the underground economy falls when public spending on education increases. Thus, by allocating greater amounts of resources to the education sector, a fall in informality is obtained, which gives rise to increases in labor productivity, and the rate of economic growth, to reductions of violence, and of inequality in of income distribution.

The third mechanism is based on the evidence that increasing education expenditures discourages irregular

emigration and thus increases the employment-to-population ratio, which leads to increasing economic growth.

2. Review of the Literature

Extensive literature has analyzed the identification of fiscal policy transmission mechanisms and their repercussions on macroeconomic variables. On the one hand, there are the studies that are framed in the neoclassical model, with an approach that rests on the use of qualitative variables that represent the periods of time when public spending, generally military spending, increases prominently, and these variables capture the effects of such spending on the endogenous variables of interest. The results of these studies show that the increase in public spending leads to an increase in GDP, hours worked, non-residential private investment, interest rates, and the price of manufactured products, while reducing private consumption in durable goods, investment in real estate, and real wages. In this literature, the works of Ramey and Shapiro (1998) and Burnside, Eichenbaum, and Fisher (2004) stand out.

The other approach, based on the estimation of structural Var models, calculates the impulse responses to shocks originating from increases in total public spending, to assess the behavior of a set of endogenous variables to shocks to public spending. The results of this model differ from those of the neoclassical model in that the increases in public spending lead to increases in private consumption of nondurable goods and real wages. The flagship work on this approach is Blanchard and Perotti (2002).

There is also extensive literature in relation to the impact of fiscal policy on economic growth, highlighted by the model of Mankiw, Romer, and Weil (1992), which postulates that taxation subtracts resources from personal savings and therefore leads to a fall in the economic growth rate. Reference must be made to Kaldor's (1957) model of economic growth, which posits that workers' savings are null and therefore the rate of economic growth is determined by capitalists' savings. Consequently, the financing of public spending through taxes leads to a fall in the rate of economic growth.

Recent studies have analyzed the quantification of the public spending multiplier (Kraay, 2012; Ianc & Turc, 2020), as well as its dimension throughout the household indebtedness cycle (Klein, Polattimur, & Winkler, 2022). Of particular relevance is the work that presents evidence that the public spending multiplier increases in times of pandemics, particularly during the Covid-19, (Kinda, Longyel, & Chahcude, 2022) and that that informality tends to reduce the dimension of the public spending multiplier (Colombo, Furceri, Pizzuto, & Trelli, 2022).

Another strand of the literature has focused on the determinants of public debt (Checherita-Westphal, 2012; Dawood et al., 2021; Dong, 2021), and the impact of debt on economic growth (Wamboye & Tochkov, 2015; Yusuf & Mohd, 2021; Rant & Porenta, 2021); as well, the analysis of the pro-cyclical nature of public spending has received attention recently (Maravalle & Claeys, 2012; Temsumrit, 2022; Bashar, Bhattacharya, & Wohar, 2017).

3. Data

The source of data for the Dominican Republic is the World Development Indicators, from the World Bank. The data series, which cover the period 2000-2018, were subjected to unit root tests, and in all cases, the results indicated that they were integrated of order 1, except for the rate of economic growth that was stationary at the level of 10 percent. The estimates were carried out with the methodology "Fully modified Least Squares", developed by Phillips and Hansen (1990).

The average values and standard deviations of the variables are shown in Table 1.

Table 1. Average values and standard deviations of the Dominican Republic variables

Variable	Average	Standard deviation.
Growth	4.7536	3.0802
Gini	48.3500	2.4309
Shadow*	31.3963	1.6774
Homicides (per 100,000 inhabitants)	21.2074	4.4901
Neetfeme	27.4762	1.6932
Educational Expense*	3.6369	0.4752
Health Expenditure*	2.0963	0.5777
Remittances*	7.8712	1.1626
Student/teacher	24.1336	4.5462
Productivity**	32,032.40	4,505.353
Imports*-Exports*	5.9564	3.0727
Adolescent		
Fertility	103.8412	6.5452
Empleo/population		
Feme	38.2772	4.6866

Note. *Percentage of GDP. ** 2010 US dollars.

4. Transmission of Fiscal Policy Through the Quality of Education and the Employment Ratio

The analysis of the transmission of fiscal policy through the increase of the quality of education is based on the relationships shown in Figure 1.

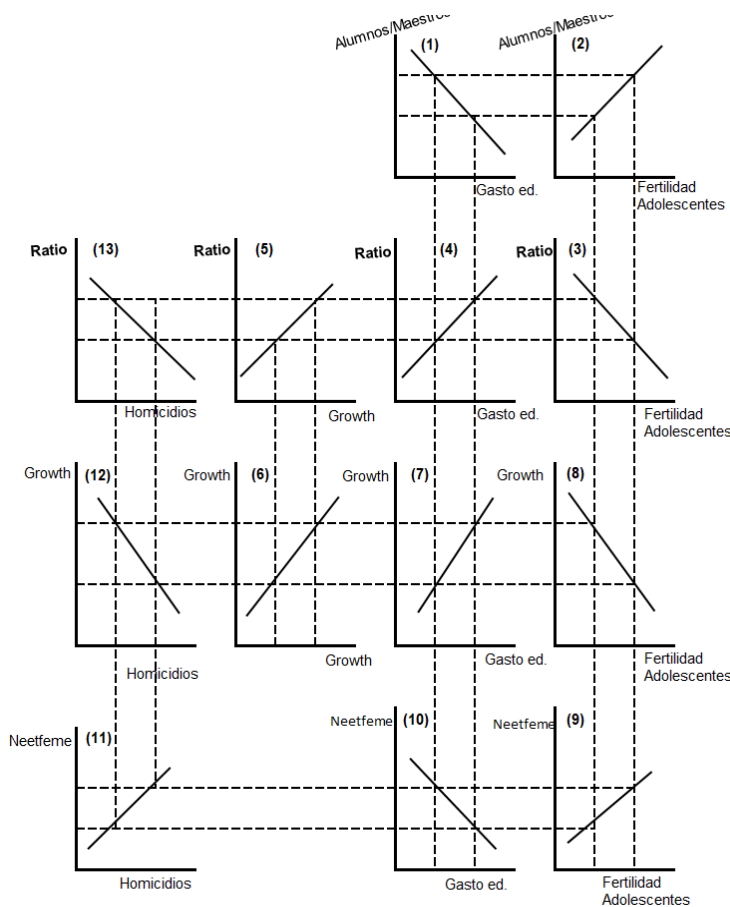


Figure 1. Transmission of fiscal policy through the quality of education

Quadrant (1) of Figure 1 shows that the number of students per teacher at the primary level (Alumnos/maestro), falls as public spending on education as a percentage of GDP, (Gastoed), increases, a relationship shown in Figure 2 for the Dominican Republic.

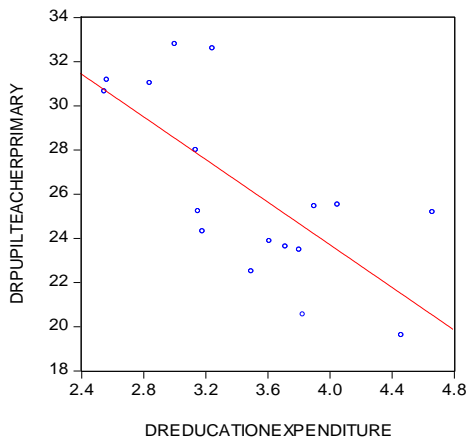


Figure 2. Public spending on education as a percentage of GDP and number of students per teacher

The number of students per teacher is an indicator of the quality of education; the evidence shows that as this number falls, the scores on the standardized math and reading tests of the respective country increase (McEwan

& Marshall, 2004; Caceres, 2018).

Tsounta and Osueke (2014) have presented evidence that in the Latin American countries that participate in the PISA tests, their scores increase as the respective public spending on education as a percentage of GDP increases.

To illustrate this point, Figure 3 shows the negative relationship between the number of students per teacher and the average results in third-grade mathematics tests obtained by the Latin American countries that participated in the Third Comparative and Explanatory Regional Study of the Quality of Education (TERCE, 2016).

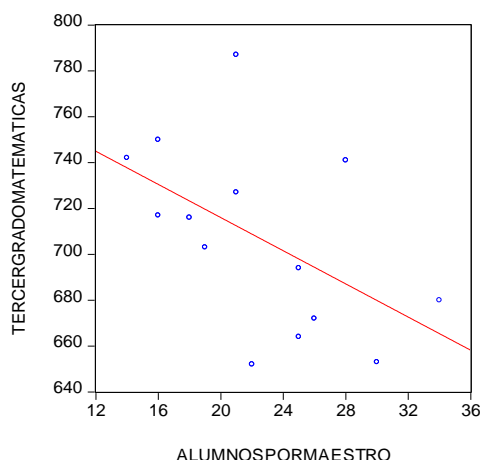


Figure 3. The number of students per teacher and the respective third-grade mathematics tests scores

Cunningham and Bagby (2010) have presented evidence that the quality of education prevents students from dropping out of school, and prevents young people from engaging in drug use and violence. Likewise, Caceres (2018) and de Hoyos, Rogers, and Popova (2016) have shown that the quality of education has a negative relationship with the fertility of adolescents (Note 1). Therefore, the quality of education can lead to an increase in the female-to-male employment ratio.

Quadrant (2) shows that the reduction in the number of students per teacher at the primary level leads to a reduction in the fertility of adolescents, (Fertilidad adolescentes), This relationship can be seen in Figure 4. This is explained by the role of the quality of education in reducing school dropout (Hanushek & Woessman, 2007), and the evidence that girls who drop out of school are likely to become single mothers and do not return to the labor market (Cunningham & Bagby, 2010).

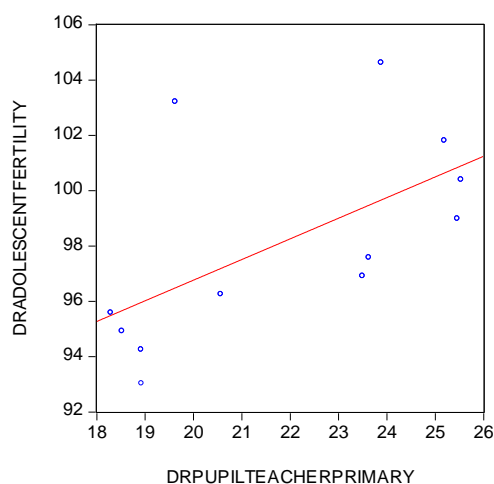


Figure 4. The number of students per teacher and fertility rate of adolescents

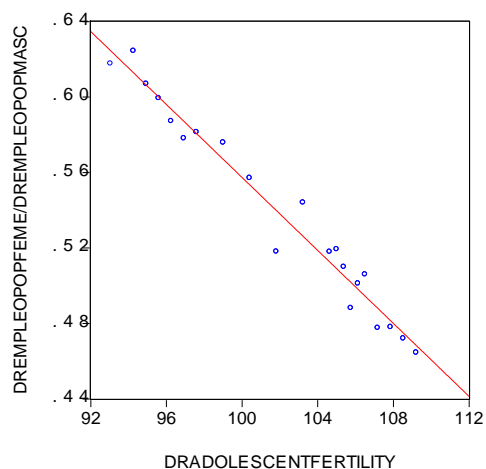


Figure 5. Adolescent fertility rate and female-to-male employment ratio in the Dominican Republic

Quadrant (3) shows that the fall in the adolescent fertility rate leads to an increase in the female-to-male employment ratio, (Ratio). This relationship is shown in Figure 5. This is based on the evidence that adolescent

mothers tend not to return to the labor market (de Hoyos, Rogers, & Popova, 2015).

Based on quadrants (1) and (3), the positive relationship between spending on education and the ratio of female to male employment is constructed in quadrant (4). This relationship is shown in Figure 6.

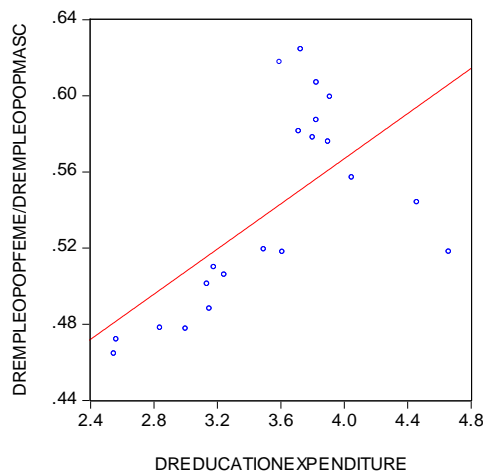


Figure 6. Expenditure on education and ratio of female to male employment

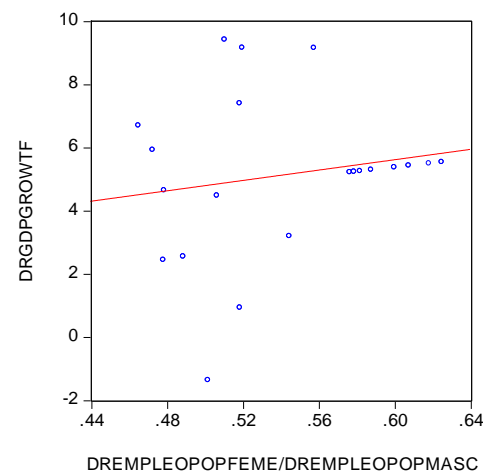


Figure 7. Female to male employment ratio and economic growth rate

Caceres (2020) presented evidence from a sample of 17 Latin American countries that the increase in the female-to-male employment ratio was associated with the increase in the savings rate and, therefore, with the rate of economic growth.

Quadrant (5) shows the positive relationship between the employment ratio and the rate of economic growth in the Dominican Republic, which is shown in Figure 7 (Note 2).

Using the 45-degree line in quadrant (6), the positive relationship between spending on education and the rate of economic growth is constructed in quadrant (7).

The corresponding equation is (Note 3):

$$\text{DRGdpgrowth} = -5.5583\text{DRCualicrisis} + 3.8688\text{DRCualilib} + 1.0353\text{DR Education Expenditure}$$

(4.16) (3.48) (8.31)

R squared = 0.64

This equation synthesizes the transmission of fiscal policy through the quality of education.

Quadrant (8) shows that the rate of adolescent fertility falls as the rate of economic growth increases.

The corresponding equation is:

$$\text{DRAdolescent Fertility} = 101.2433 + 10.9667\text{Cualicrisis} + 8.5680\text{Cualib} - 0.9660\text{DRGrowth}$$

(63.88) (3.11) (4.23) (3.30)

R squared = 0.59

This can be explained by the fact that economic dynamism leads to increased employment and thus to improvements in the well-being of households and, thus, to reduce the school dropout rate of adolescents, which is associated with becoming a Neet. There is evidence that an important determinant of being a Neet is the family’s lack of resources (Cardenas, de Hoyos & Szekeley (2006).

Quadrant (9) shows that as the fertility of adolescents increases, the percentage of young women who neither study nor work increases, Neetfeme. The respective equation is:

$$\text{DRNeetfeme} = 5.1262 + 5.6276\text{Cualineetfeme} + 0.22141 \text{DRAdolescentFertility}$$

(0.67) (6.33) (2.87)

R squared = 0.74

where the variable Cualineet represents the years 2015-2018 when the Neet population was very high.

This equation indicates that adolescent mothers tend to withdraw from the labor market, which would suggest that they and their daughters or sons would have a life marked by poverty. de Hoyos, Rogers, and Popova (2015) have presented evidence that in Latin America 87 percent of young women in a Neet situation do not return to the labor market.

Arceo and Campos (2013) have reported that, in Mexico, women who have young children and stay at home to do household chores, expressed that they left the labor market because they did not have anybody who would help with caring for their children.

It should be noted that another option for Neets is emigration; Figure 8 shows that the percentage of female Neet with a lag of two years is closely associated with remittances as a percentage of GDP received by the Dominican Republic. Remittances can be assumed to reflect emigration that has taken place in the past; therefore, the increase in remittances in response to the increase in the percentage of female Neets can indicate that a part of them chose to emigrate.

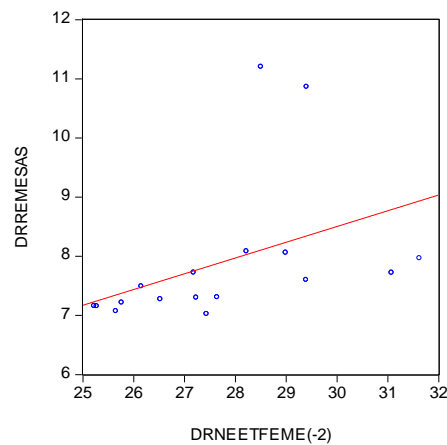


Figure 8. Percentage of female Neet with a two-year lag and remittances as a percentage of GDP

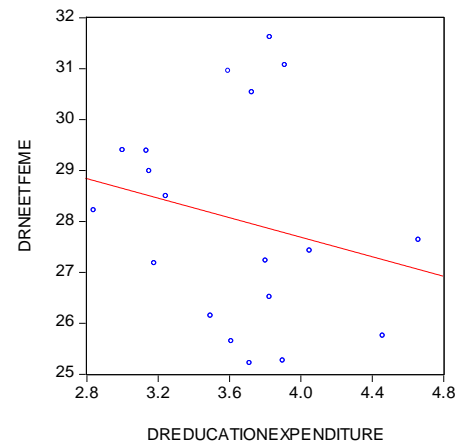


Figure 9. Expenditure on education as a percentage of GDP and percentage of female Neet

With quadrants (7) and (9), the negative relationship between spending on education and the percentage of female Neets is constructed in quadrant (10), which is shown in Figure 9.

This Figure indicates that increased public spending on education is a means of combating irregular emigration.

The evidence presented by Caceres (2017, 2018) for a cross-section of Latin American countries, that the percentage of youth who neither study nor work is reflected in the homicide rate is considered. This relationship is presented in quadrant (11), and is shown in Figure 10:

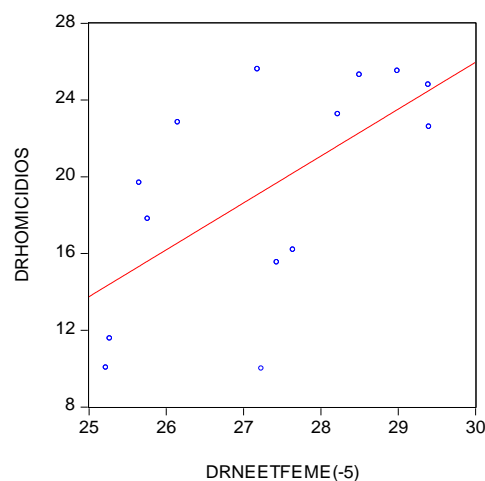


Figure 10. Percentage of female Neet with a five-year lag and homicide rate per 100,000 inhabitants

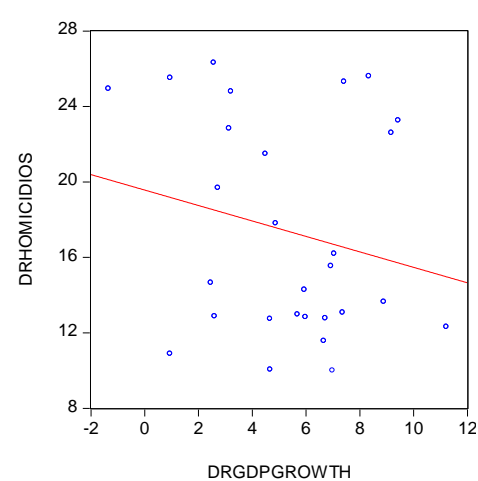


Figure 11. Rate of economic growth and number of annual homicides per 100,000 inhabitants

This Figure indicates that another route for Neets is incurring violence.

With this base, the negative relationship between homicide rate and economic growth is constructed in quadrant (12), which is shown in Figure 11:

Of special interest is the relationship shown in quadrant (13) and Figure 12, which show that the increase in the ratio of female to male employment leads to a fall in the homicide rate. In other words, the increase in female participation relative to male participation contributes to the reduction of violence. Reference should be made to the evidence presented by Caceres (2018) using a cross-section of Latin American countries with data from 2010, of the existence of a close association between the number of people in prison per 100,000 inhabitants and the percentages of female and male Neets.

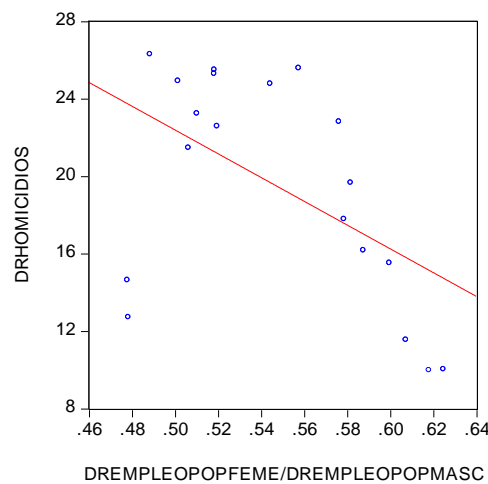


Figure 12. Female to male employment ratio and number of homicides per 100,000 inhabitants.

It should be emphasized that the relationships shown in this model rest on the role of the increase in public spending on education in reducing the ratio of students to teachers, which, as observed, leads to a drop in the fertility rate of adolescents and consequently to increase the female to male employment ratio and thus leads to an increase in the rate of economic growth. Also, increased spending on education leads to a falling homicide rate.

One implication is that after the Covid-19 pandemic, and given the urgency of recovering economic growth, great attention should be given to increasing social spending in general, and education in particular, for its role in increasing the quality of education (quadrant 1), increase the ratio of female to male employment (quadrant 4), increase the rate of economic growth (quadrant 7) reduce the percentage of young women who neither study or work (quadrant 10), and reduce the homicide rate.

Thus, fiscal policy has implications beyond economic growth. It can be expected that the reduction of Neets and violence will impart other rounds of stimulus on economic growth so that the spending multiplier will have a dynamic nature with lasting effects through time.

5. Transmission of Fiscal Policy Through the Reduction of Informality

The other transmission channel of fiscal policy rests on the role that increased public spending on education exerts in improving the quality of education, which leads to reducing the underground economy, that is, informality. This model is described in Figure 13.

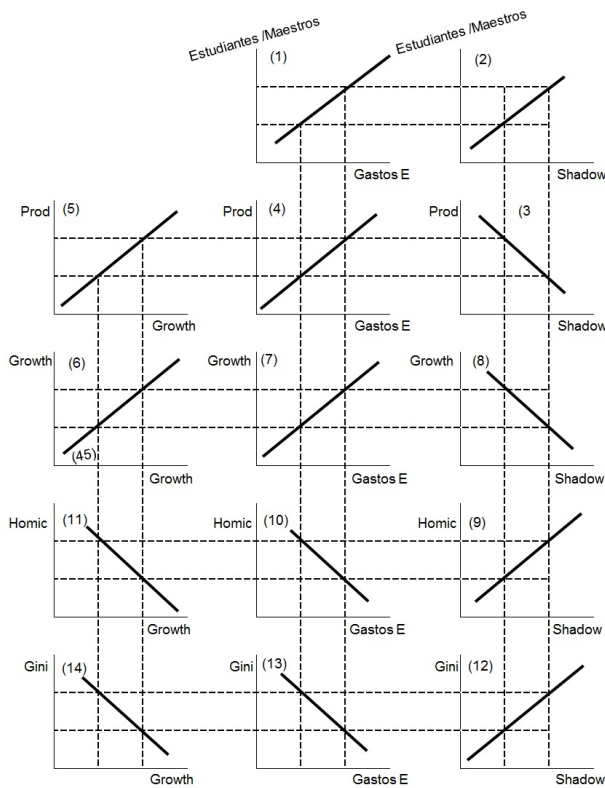


Figure 13. Transmission of fiscal policy through the reduction of informality

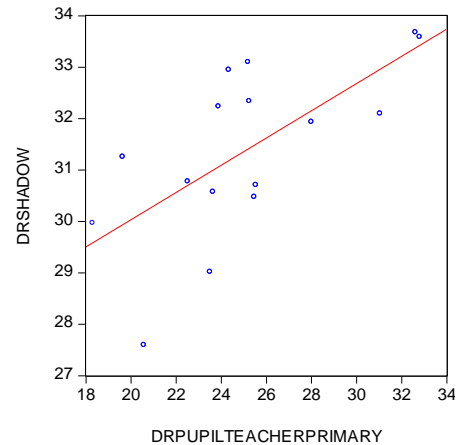


Figure 14. Number of students per teacher and size of the underground economy as a percentage of GDP

Quadrant (1) shows the negative relationship between public spending on education and the number of students per teacher, a relationship that is shown in Figure 2. Quadrant (2) shows that as the number of students per teacher increases, Shadow, the size of the underground economy as a percentage of GDP, also increases (Note 4). Quadrant (3) presents the negative relationship between the dimension of the underground economy and labor productivity, (Prod), which has been explained by the low level of skills that people who work in the informal sector have (Dell’Anno, 2008; Caceres, 2017); this relationship can be seen in Figure 15. It should be noted that labor productivity in the Dominican Republic is relatively high, with values higher than those of Central American countries, which would be associated with the decline in the number of students per teacher, from 33 in 1991 to 27 in 2018.

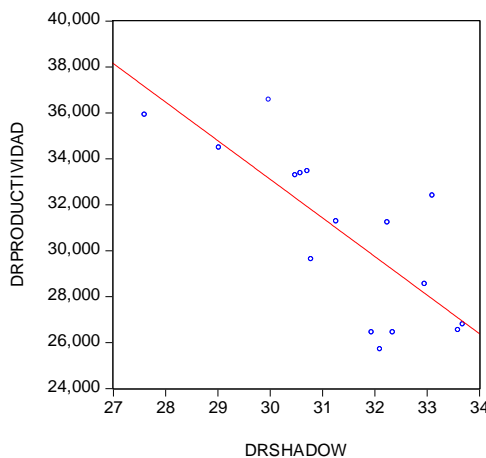


Figure 15. Dimension of the underground economy and labor productivity

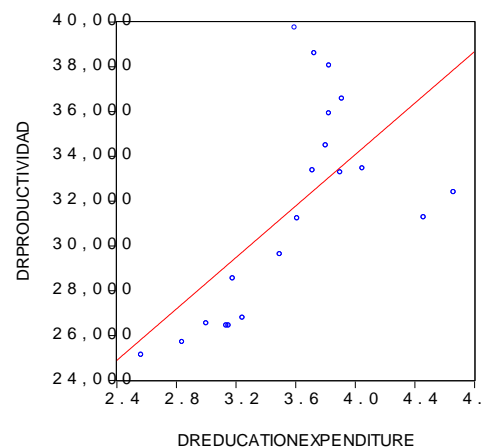


Figure 16. Spending on education and labor productivity

With quadrants (1) and (3), the positive relationship between spending on education and labor productivity is

constructed in quadrant (4). This relationship is shown in Figure 16.

Quadrant (5) shows the positive relationship between labor productivity and the rate of economic growth, which is shown in Figure 17.

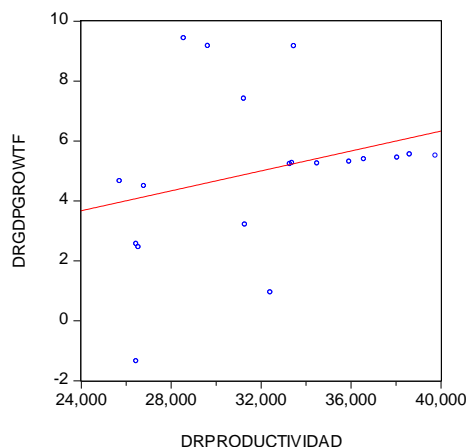


Figure 17. Labor productivity and economic growth rate

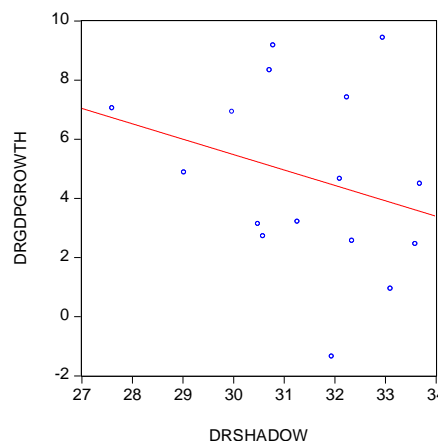


Figure 18. Size of the informal economy and rate of economic growth

Using the 45-degree line in quadrant (6), the positive relationship between spending on education and economic growth is obtained in quadrant (7). The corresponding equation is the following:

$$\begin{aligned}
 DRGrowth = & 0.8417 - 7.2590CualiCrisis + 3.8923Cualib + \\
 & (0.40) \quad (4.61) \quad (3.97) \\
 & 3.5657D(DR EdExpense(-1)) + 1.3089DR EdExpense(-7) \\
 & (2.49) \quad (2.32)
 \end{aligned}$$

R squared = 0.76

Quadrant (8) shows that the size of the underground economy is negatively associated with the rate of economic growth, that is, its size falls when the economy acquires dynamism. This implies that informality is not the result of the inclination of the people who work in it to have “flexible” working conditions, or of their efforts to avoid taxes, but rather that it is the last employment option in times of economic stagnation (Figure 18). This has been shown by Caceres (2017) for a sample of Latin American countries.

Quadrant (9) presents the positive relationship between informality and the number of annual homicides per 100,000 inhabitants. This relationship is shown in Figure 19 for the Dominican Republic. A detailed study of informality in Latin American countries has revealed its relationship with the number of homicides (Caceres, 2017, 2018).

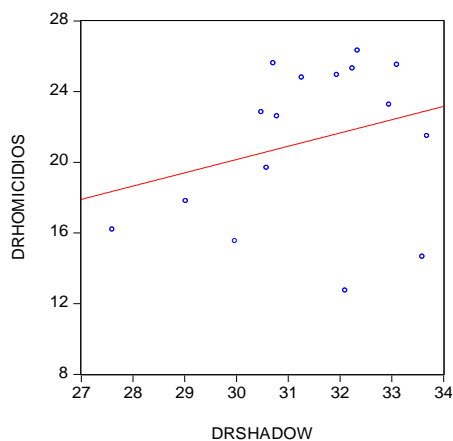


Figure 19. Dimension of the underground economy and number of homicides per 100,000 inhabitants

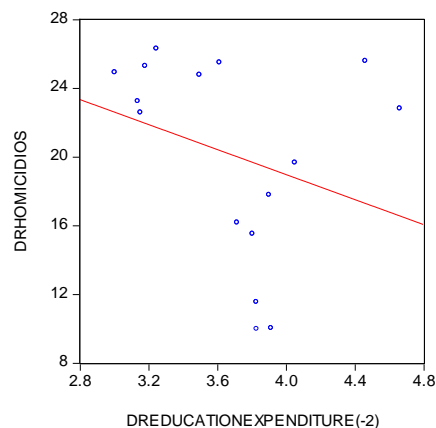


Figure 20. Spending on education and the of homicides per 100,000 inhabitants

Quadrant (10) shows that the homicide rate is negatively related to public spending on education (Figure 20).

This relationship shows that an important means of violence prevention lies in public spending on education.

Quadrant (11) shows that the homicide rate falls as the rate of economic growth increases, a relationship shown in Figure 21. This Figure shows that trends toward economic stagnation lead to increasing homicide rates.

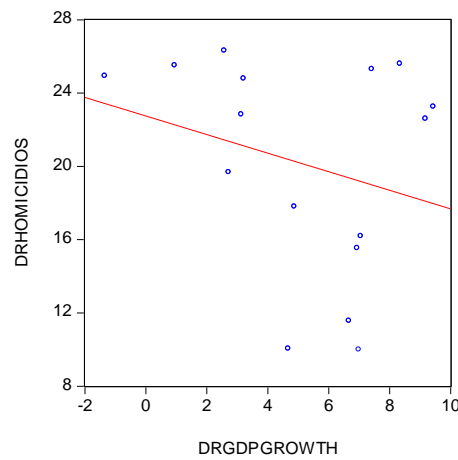


Figure 21. Rate of economic growth and number of homicides per 100,000 inhabitants

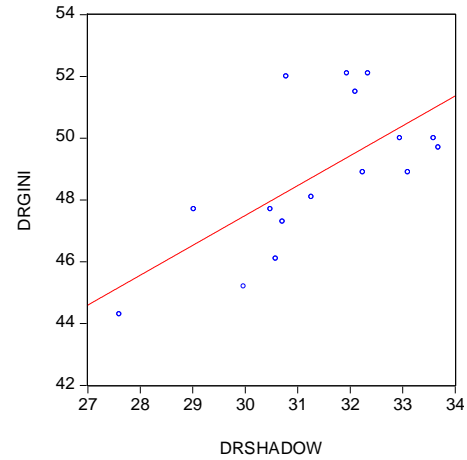


Figure 22. Dimension of the underground economy and Gini coefficient

Of particular importance is the positive relationship shown in quadrant (12) between the dimension of the underground economy and the Gini coefficient, which measures the concentration of the distribution of income. The corresponding Figure is shown below:

Quadrant (13) shows the negative relationship between spending on education and the Gini coefficient, which is shown in Figure 23.

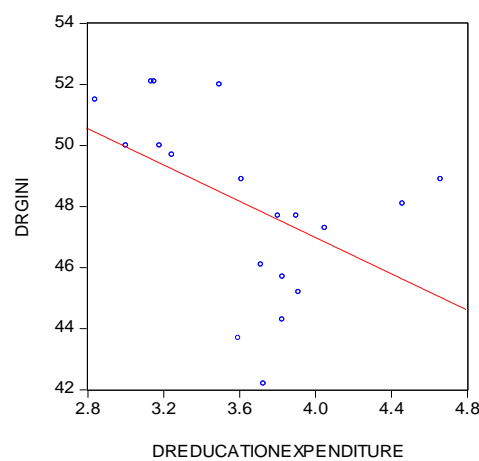


Figure 23. Public spending on education and Gini coefficient

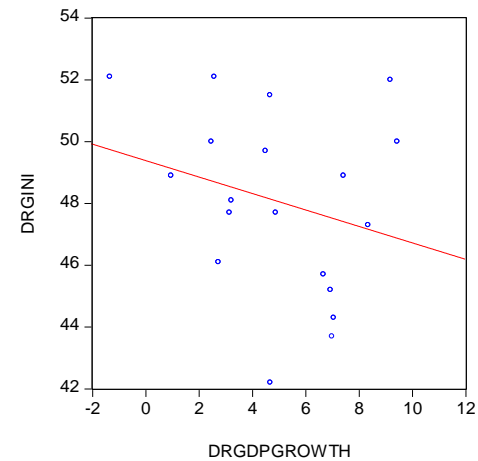


Figure 24. Economic growth rate and Gini coefficient

Also of importance is the negative relationship between the rate of economic growth and the Gini coefficient (Figure 24).

This model has shown that the increase in public spending on education leads to improving the quality of education due to its roles in reducing the number of students per teacher (quadrant 1), reducing informality (quadrant 2), increasing productivity (quadrant 3), and the rate of economic growth (quadrant 7), while reducing the number of homicides per 100,000 inhabitants, (quadrant 10), and reducing the Gini coefficient (quadrant 14).

These results reflect the transmission mechanism of fiscal policy through the reduction of the underground economy. In the current post-pandemic era, it is urgent to support economic growth to recover lost jobs, for which substantial increases in spending on education can be of special relevance.

This model has presented evidence of the far-reaching effects of fiscal policy which are not taken into consideration in the literature on the transmission of fiscal policy. In particular, the second round effects on economic growth resulting from fiscal policy targeted to increasing spending on education, such as the reductions of the underground economy, inequality, and homicides, have received scant attention,

6. Transmission Through the Reduction of Irregular Emigration

Through the increase in public spending on education, fiscal policy also affects economic dynamism, by virtue of its role in reducing irregular emigration, which leads to an increase in the employment ratio and, thus, an increase in the rate of economic growth. This mechanism is shown in Figure 25.

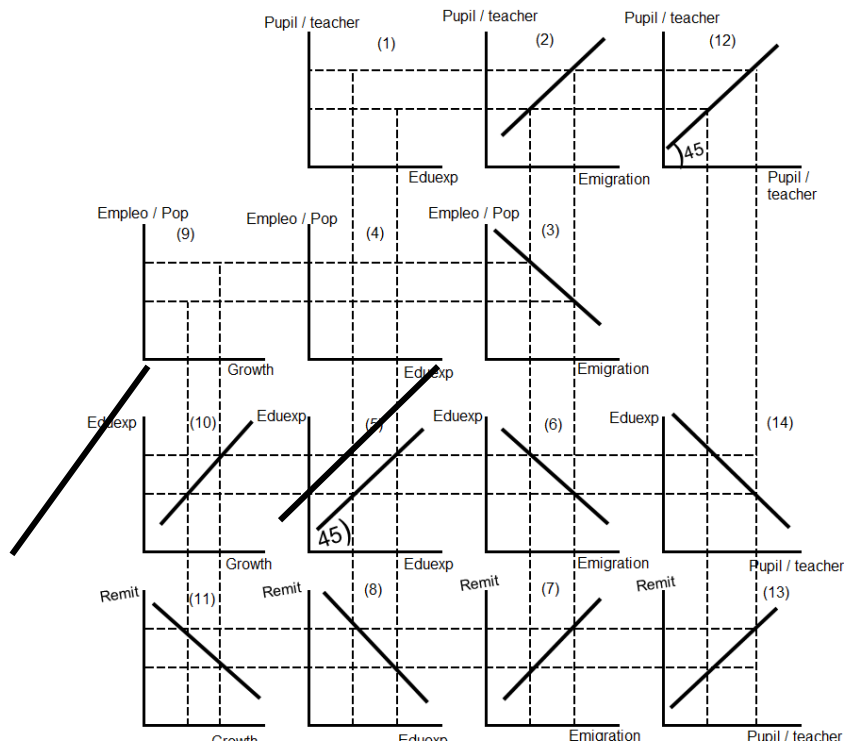


Figure 25. Transmission through the reduction of irregular emigration

Quadrant (1) shows the negative relationship between spending on education and the ratio of students to teachers, which can be seen in Figure 2.

In quadrant (2) it is postulated that there is a positive relationship between the student-teacher ratio and emigration. The explanation lies in the fact that the poor quality of education, represented by a high ratio of students to teachers, leads to an increase in school dropouts, as has been evidenced by Caceres (2011), which eventually gives rise to irregular emigration.

The outflow of potential labor, in turn, leads to a fall in the employment-to-population ratio, which is shown in quadrant (3).

In this way, a positive relationship between spending on education and the employment ratio is built in quadrant (4). That is, inasmuch as increasing spending on education reduces school dropouts resulting from low-quality education, it reduces irregular emigration and, therefore, leads to an increase in the employment ratio, as shown in Figure 26.

Using the 45-degree line in quadrant (5), a negative relationship between spending on education and irregular emigration is obtained in quadrant (6).

A consequence of emigration is remittances, (Remit), so it is postulated in quadrant (7) that there is a positive association between emigration and remittances. Thus, in quadrant (8) a negative relationship is obtained between spending on education and remittances. This relationship is shown in the Figure 27.

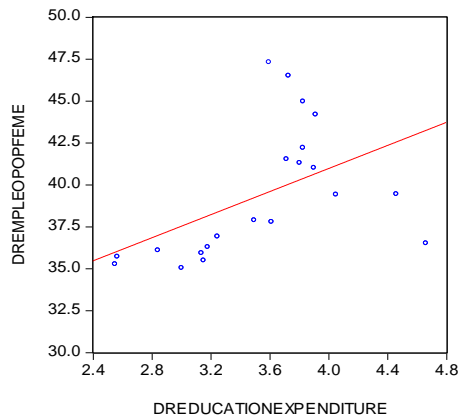


Figure 26. Expenditure on education and employment to population ratio

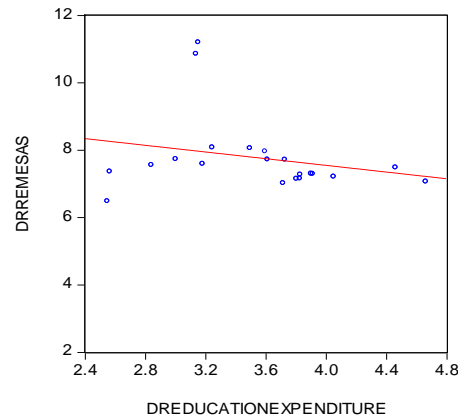


Figure 27. Expenditure on education and remittances

Quadrant (9) presents the positive relationship between the annual increase in the employment-to-population ratio and the economic growth rate, which is shown in the Figure 28.

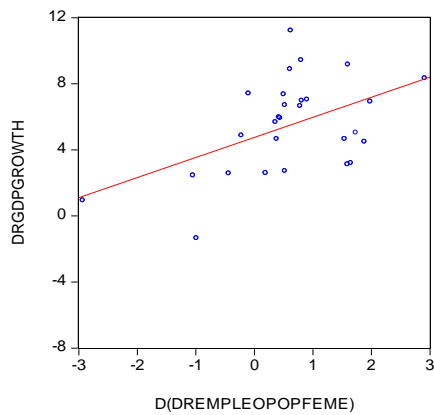


Figure 28. Increase in the ratio of female employment to population and economic growth rate

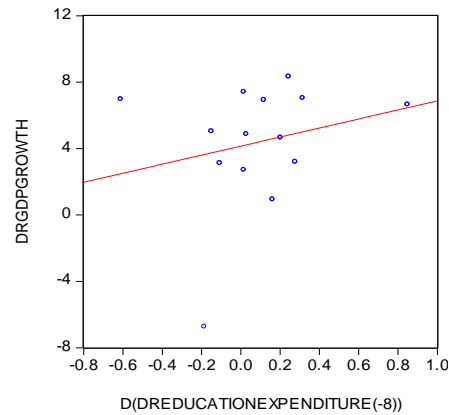


Figure 29. Increase in spending on education and economic growth rate

Based on this quadrant and quadrant (5), the relationship between the annual increase in spending on education and the economic growth rate is constructed in quadrant (10) (Figure 29).

With quadrants (10) and (8), the negative relationship between remittances and the economic growth rate is constructed, which is shown in quadrant (11) This relationship is shown in Figure 30.

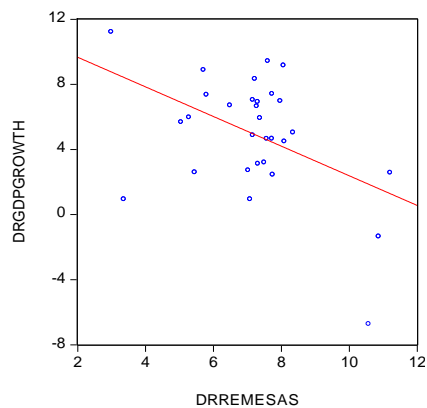


Figure 30. Remittances and economic growth rate

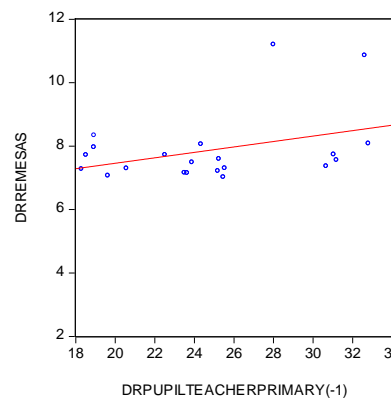


Figure 31. Number of students per teacher and remittances

Using the 45-degree line of quadrant (12), the positive relationship between the number of students per teacher and remittances is obtained in quadrant (13). This relationship is shown in Figure 31.

This Figure emphasizes that poor quality education, represented by the number of students per teacher, generates flows of irregular emigration that are manifested through remittances. Remittances, for their part, reduce the rate of economic growth, which would generate new flows of emigration, thus giving rise to a vicious circle of low-quality education, emigration, remittances, economic stagnation, and a new round of emigration.

This vicious circle can be overcome through substantial increases in education spending that would lead to a fall in the number of students per teacher (quadrant 1), and thus reductions in emigration flows (quadrant 2), and therefore, the increase in employment to population ratio, (quadrant 3), which in turn would lead to the increase in the growth rate, (quadrant 9), thus imparting sustainability to the increase in spending on education. These circuits give rise to the positive relationship between spending on education and the economic growth rate (quadrant 10), which represents the end of the transmission of fiscal policy on growth. It is also observed that the increase in spending on education would also lead to a fall in remittances (quadrant 8).

This is another example of the many benefits that can be achieved through substantial increases in education spending.

7. Role of Taxation

The principal components of the series of public education and health expenditures, both as per cent of GDP, were computed, with results indicating that the first principal component explained 82 percent of the variance of these two variables.

Table 2. Principal components of public spending on education and health

Eigenvalues: (Sum = 2, Average = 1)					
Number	Value	Difference	ratio	Cumulative Value	Cumulative ratio
1	1.633227	1.266455	0.8166	1.633227	0.8166
two	0.366773	---	0.1834	2,000,000	1,0000
Eigenvectors (loadings):					
Variable	1 pcs	pcs 2			
DREDUCATIONEXPENDITURE	0.707107	-0.707107			
DRHEALTHEXPENDITURE	0.707107	0.707107			

The first principal component, (DRCP1HE), is given by the equation:

$$DRCP1HE = 0.7071 * \text{Education expenditure} + 0.7071 * \text{Health expenditure}$$

This principal component synthesizes the attention to the social sector by governments; it is the dimension along which the education and health sectors are attended with greater or lesser priority.

In view of the importance of these sectors in economic development, the first principal component can be viewed as a determinant of future economic growth.

The importance of social spending, which is represented by the first principal component, can be seen in the following Figures.

It should be noted that this first principal component has a negative association with the Gini coefficient, as shown in Figure 25:

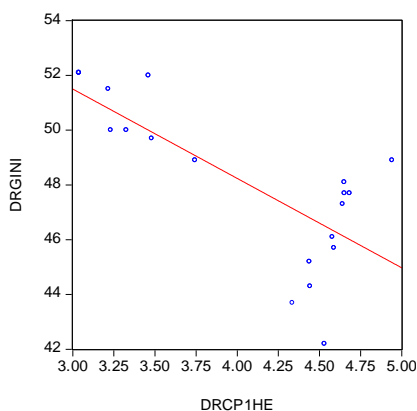


Figure 32. First principal component and Gini coefficient

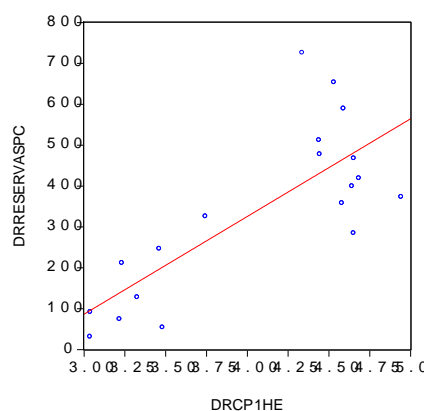


Figure 33. First principal component and reserves per capita

It also shows a positive relationship with international reserves per capita (Figure 33), as well as a negative relationship with the size of the shadow economy (Figure 34).

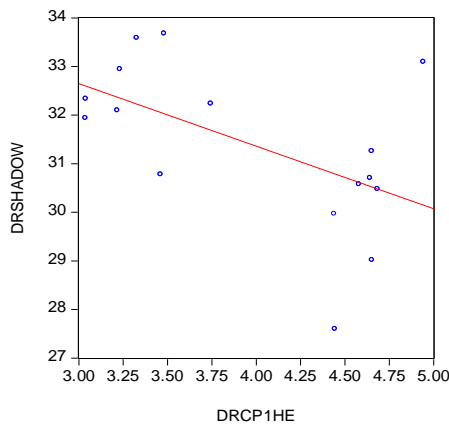


Figure 34. First principal component and dimension of the underground economy

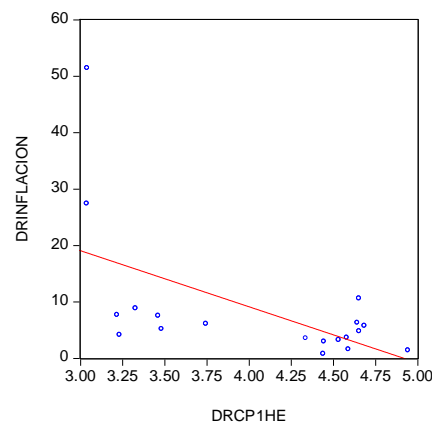


Figure 35. The first principal component and the annual inflation rate

It should be noted that the first principal component has a negative association with the inflation rate (Figure 35). Social spending is conducive to the consolidation of a population with skills and knowledge, which gives rise to higher levels of innovation and productivity and, therefore, to the expansion of aggregate supply, which results in a drop in inflationary pressures.

An implication is that an increase in social spending is an effective response to inflationary trends.

Also relevant is the negative relationship between the first principal component and remittances as a percentage of GDP (Figure 36), which indicates that social spending discourages irregular emigration. The implication is that programs aimed at discouraging emigration must have as an important element the significant expansion of social spending.

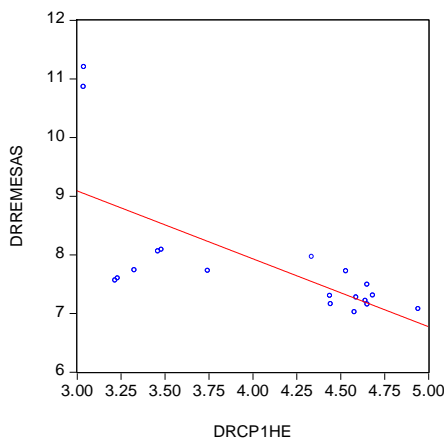


Figure 36. First principal component and remittances as a percentage of GDP

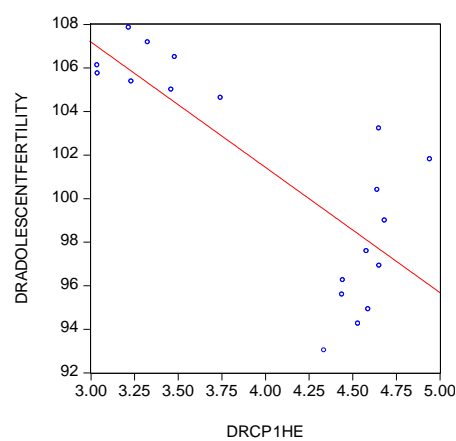


Figure 37. First principal component and adolescent fertility rate

It should be noted that the first principal component has a negative association with the fertility rate of adolescents (Figure 37).

What is particularly relevant is that taxation, measured as tax revenue as a percentage of GDP with a two-year lag, is positively associated with the first principal component, as seen in Figure 38.

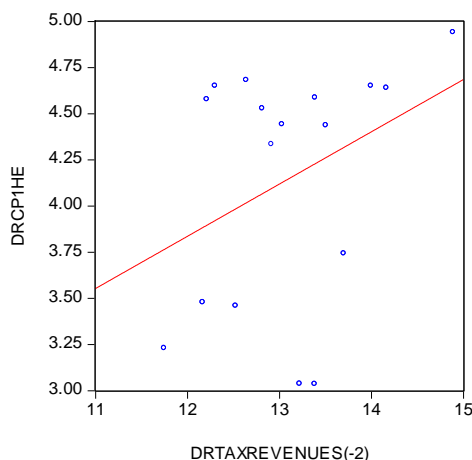


Figure 38. Tax rate and first principal component

This would indicate that the starting point of reducing irregular emigration is increasing taxation.

Table 3 shows the results of Granger causality tests between the first principal component and taxation, whose results indicate that tax revenues cause, in the Granger sense, the first principal component. That is, high tax revenues allow the expansion of social spending and, thus, promote the attainment of sustained development, and, in this way, close the gate for violence and irregular emigration.

This result highlights the important role of fiscal policy in economic development, particularly in the area of increasing tax collection.

Table 3. Granger causality

Sample: 2000 2018			
Lag: 3			
null Hypotheses:	Obs	F- Statistics	Prob .
DRTAXREVENUES does not Granger Cause DRCP1HE	16	6.80920	0.0108
DRCP1HE does not Granger Cause DRTAXREVENUES		0.37159	0.7756

To stress the importance of taxation in a historical perspective, Figure 39 shows the existence of a positive relationship between per capita taxes paid in 1870 in a sample of Latin American countries, taken from Sokoloff and Solft (2004), and the corresponding percentages of female Neets. This Figure shows that countries with low taxation in the past were not able to provide sufficient social services to avoid a deterioration of the social fabric. That is, fiscal weaknesses have been reproducing through time maintaining and giving persistence to situations of low levels of human development.

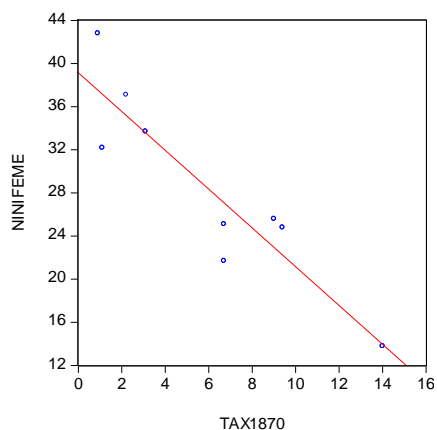


Figure 39. Per capita taxes paid in 1870 and percentages of female Neets in 2010

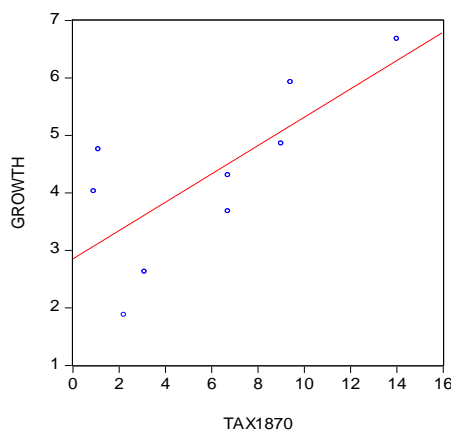


Figure 40. Per capita taxes paid in 1870 and the average rates of economic growth (2005-2012)

Caceres (2018) has shown with a sample of Latin American countries, that this particular 1870 fiscal situation is positively associated with the 2010 values of the dimension of the shadow economy, the number of homicides, the number of incarcerated persons, and remittances. Of particular interest is the relationship between the 1870 per capita taxes and the 2005-2012 average rates of economic growth (Figure 40)..

Figure 40 implies that past low taxation generated a persistent trend of low economic growth. It is valid to argue that the current stagnation tendencies and violence prevailing in some Latin American countries have their origins in past low taxation.

There is no easy answer to the low tax mobilization prevailing in some Latin American countries; one explanation may reside in the assumption that low taxation is a manifestation of the “culture” of abuse that characterizes power groups in the region (CEPAL, 2018).

Another explanation resides in Bardhan and Mookherjee (2000) theory that economic power groups “capture” the government, whose main function becomes to ensure that such groups increase their economic power. The modality of power groups controlling the governments to acquire privileges is further developed by Acemoglu and Robinson (2008) on a model they call the “captured democracy” in which democracy acts as a “window dressing”, or as a “montage”, or a lucrative “soap opera”, with the mission of providing legitimacy to the abuses that are convenient to the elites. In these realities, taxation is not a priority.

In this point, it is relevant to make reference to Luther (2001) work that shows that in the US, the resistance to distributive policies implemented by the public sector decreases when the persons that are going to benefit from such policies belong to the same ethnic group that those persons that are going to pay the additional taxes, to which the author called loyalty by race. This author shows that this sentiment is stronger in high-income persons and in those who have not finished high school.

In the same vein, Roemer and Lee (2004) developed a model that shows that racism motivates large segments of the population to induce the government to lower taxes so that social benefits to ethnic minorities will be curtailed. These authors also showed that some low-income segments of the population also demanded that taxes be lowered to show adherence to political parties with clear racist inclinations. The authors showed that in the US, in the 1976-1992 period, racism had determined the reduction of taxes between 11 and 18 percent.

Lee, Roemer and van der Traten (2005) model shows that in the US, those groups that advocate that the state be reduced do so with the intention that social benefits destined to determined ethnic groups will be curtailed. They showed that in the 1972-1992 period, income taxes were reduced between 10 and 20 percent as a result of racist motivations.

One consideration is that, if loyalty by race exists in Latin American countries, fiscal policies geared toward benefiting the poor, who are in most cases members of the indigenous and Afro-Latino populations, would encounter opposition from the higher income segments of the population. This is a topic that deserves more analysis.

It has to be pointed out that the Cold War brought to the region a commonality of oppressive governments that suppressed unorthodox thinking and, in some cases, led to the exile of those persons who advocated that more attention be given to the solution of social problems. This may have created a current void in progressive thinking and commitment to social causes. Similarly, the onslaught of the “market” reforms had such intensity that may currently discourage considering other views of economic development. More recently, the failures of the models based on the “markets”, plus the absence of capacity or willingness of governments to deliver, may generate a sense of futility and resignation. In these circumstances, it can be expected that there will be no voices advocating increasing taxation to benefit the poorest segments of the population. Moreover, the case may be that the objectives of attending to the needs of the poor, or advocating the expansion of social services, constitute a nuisance to populations that have become zombied by their fierce purpose of being “modern”, or being “white”, (“if you are white in America!”), or comically of being “American”. Thus, in some countries that prevailing model is one of the Economics of Cruelty, as coined by Krugman (2020), in which, to the tune of vulgarity, large segments of the population resort to irregular emigration, drowning in some cases, violence, lack of jobs, despair.

8. Are There Crowding Out Effects from Social Spending?

A large literature has argued that public spending may have effects on the money market in the sense that government borrowing may lead to increases in the interest rate, thus discouraging private investment. To investigate this possible outcome, a Var model was estimated with the variables education spending and investment, both as percentages of GDP, the rate of economic growth, and a qualitative variable representing the years of economic recession. The Var was estimated with 2 lags, with the results shown in Figure 41.

It can be seen in Figure 41 that the lending interest rate decreases in response to an increase in public spending on education, while investment and economic growth increase. These results dissipate any consideration of any crowding-out effect.

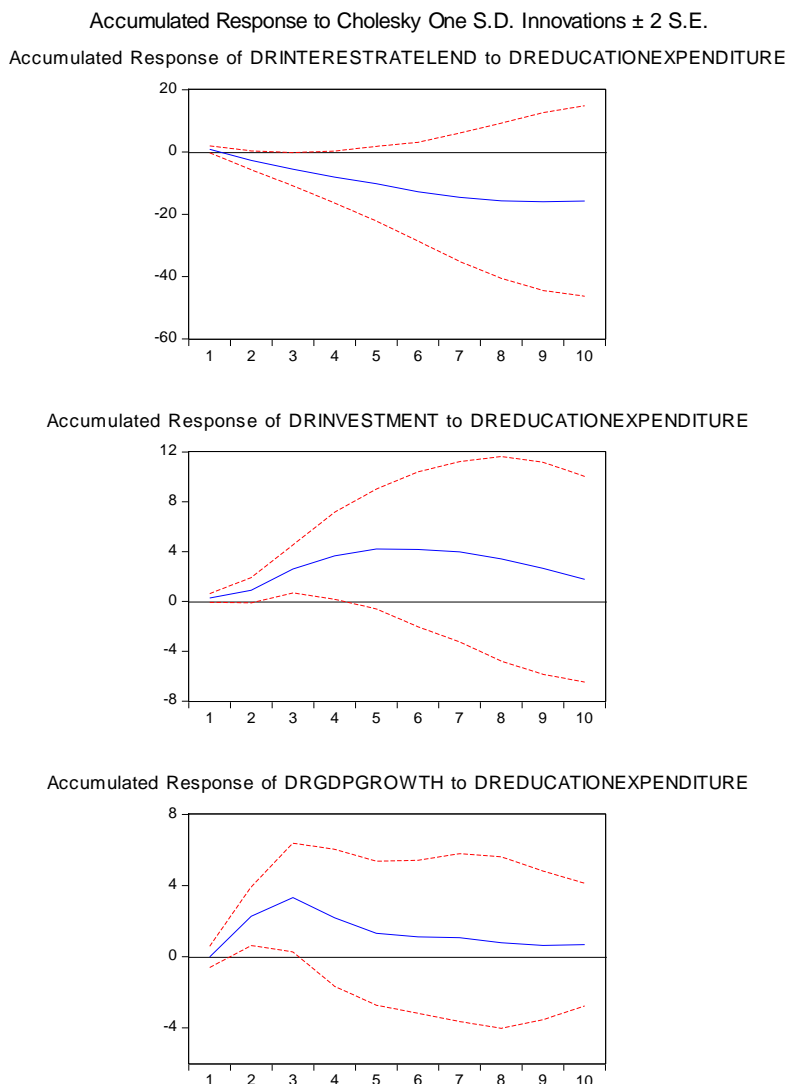


Figure 41. Responses to increase in public sector education spending

Special importance resides in the result shown in Figure 42 that the Gini coefficient decreases in response to a shock to education spending.

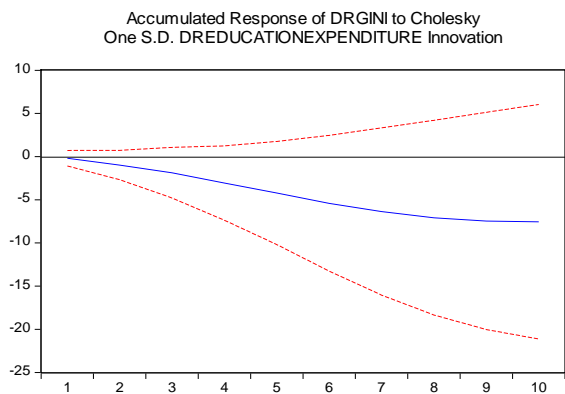


Figure 42. Response of Gini coefficient

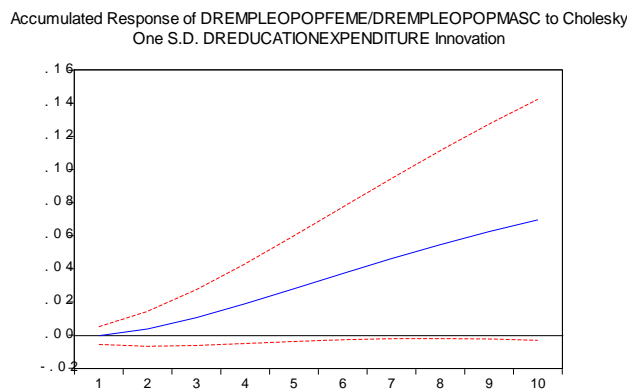


Figure 43. Response of employment ratio

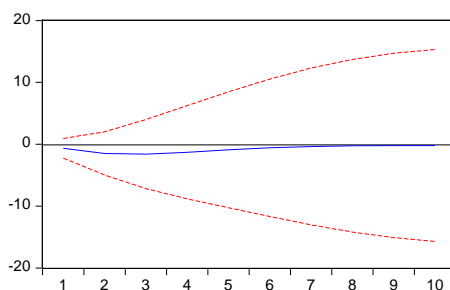
Particular importance also resides in the positive response of the female-to-male employment ratio, shown in Figure 43, which exemplifies the channel through which education expenditures lead to increases domestic savings, investment, and economic growth,

To further investigate the occurrence of crowding-out effects, another Var was estimated including the tax revenues as a percentage of GDP, with the results shown in Figure 44.

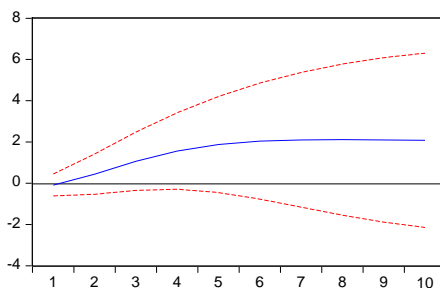
It can be seen that total credit as a percentage of GDP has no response, which can be interpreted as evidence that tax increases have no incidence on the money market. The responses of investment and economic growth are positive. The implication is that taxation does not penalize variables that support economic growth. This result has been encountered in other countries; Korkmaz et al. (2019) reported that in Turkey the increase in indirect taxation gives rise to increases in economic growth; in the case of Croatia, Ravnik, and Zilic (2011) reported tax increases were conducive to increases in industrial production.

Accumulated Response to Cholesky One S.D. Innovations \pm 2 S.E.

Accumulated Response of DRCREDITOTAL to DRTAXREVENUES



Accumulated Response of DRINVESTMENT to DRTAXREVENUES



Accumulated Response of DRGDPGROWTH to DRTAXREVENUES

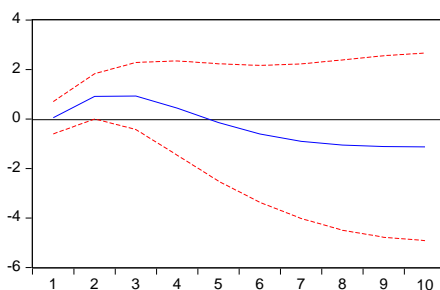


Figure 44. Responses to shocks to tax revenues as a percentage of GDP

9. Imports and Fiscal Multipliers

As noted in the literature review, extensive literature has studied the characteristics and dimensions of fiscal multipliers, that is, the effects of increased public spending, or taxation, on economic growth.

From Figures 1 and 13 it can be deduced that the simplest multiplier is the one exerted by spending on education on economic growth. But an important consideration must be introduced. This lies in the results of Beetsma et al. (2008) and Ilzetzi et al. (2013) that the size of the fiscal multipliers falls with the degree of openness of the corresponding economy.

To investigate this topic in the case of the Dominican Republic, the following equations were estimated:

$$\text{Growth} = a + b(\text{ExpendE}) + c(\text{ExpendE}) * (\text{Deficit}) + d\text{RatioEmp} + e\text{Cuali1}$$

$$\text{RatioEmp} = m + n\text{Growth} - o\text{RatioNeet} + p\text{Usgrowth} + l\text{Cuali2}$$

Where ExpendE is public spending on education as a percentage of GDP, RatioEmp is the ratio of female to male employment, RatioNeet is the ratio of percentages of female to male Neet, Growth is the rate of economic growth, Deficit is the deficit in trade account, that is, imports minus exports, Usgrowth is the growth rate of the US economy and Cuali 1 and Cuali2 are qualitative variables.

By replacing the expression with RatioEmp in the first equation, we obtain:

$$\text{Growth} = a + dm + b\text{ExpendE} + c(\text{ExpendE}) * (\text{Deficit}) + dn\text{Growth} - do\text{RatioNeet} + dp\text{Usgrowth} + dl\text{Cuali2} + e\text{Cuali1}$$

And:

$$\text{Growth} = (1/1 - dn)(a + dm + b\text{ExpendE} + c(\text{ExpendE}) * (\text{Deficit}) - do\text{RatioNeet} + dp\text{Usgrowth} + dl\text{Cuali2} + e\text{Cuali1})$$

In this equation, the multiplier is equal to $1/1 - dn$.

The estimated equations are the following:

$$\begin{aligned} \text{Growth} = & -19.4455 + 14.1272 D(\text{ExpendE}) - 0.8676d(\text{ExpendE}) * \text{DeficitC} \\ & (5.30) \quad (3.46) \quad (2.37) \\ & + 42.8705\text{EmpRatio} + 5.6009\text{Cualib} - 2.7993\text{Uscuali} \\ & (6.78) \quad (7.6009) \quad (2.61) \end{aligned}$$

$$R \text{ squared} = 0.75$$

$$\begin{aligned} \text{RatioEmp} = & 0.8108 + 0.0049\text{Growth} - 0.1470\text{RatioNeet} + 0.72\text{Usgrowth} - 0.0614\text{Cualib} \\ & (23.32) \quad (2.51) \quad (9.06) \quad (2.42) \quad (4.65) \end{aligned}$$

$$R \text{ squared} = 0.79$$

From these equations, the multiplier is computed, which is equal to:

$$1/1 - 48.8705 * 0.0049 = 1/0.7610 = 1.3148$$

The equation for the economic growth rate is given by:

$$\begin{aligned} \text{Growth} = & 1.3148(-19.4455 + 34.7590 + D(\text{ExpenseE}) * (14.1272 - 0.8676 * (\text{Deficit}) - 6.3020\text{RatoNeet} \\ & + 0.3087\text{Usgrowth} - 2.7993\text{CualiUsgrowth} + 2.9686\text{Cualib}) \end{aligned}$$

The role of the multiplier lies in increasing the impact of the increase in Expend on economic growth. For example, if spending on education increases by 0.1 point of GDP, economic growth would increase by 1.41272 in the absence of the multiplier, and by 1.86253 with the effect of the multiplier, assuming everything else remains constant.

This equation indicates that when the deficit in the trade account exceeds 16.94 percentage points of GDP, $(14.1272/0.8676)$, the impact of said deficit nullifies the positive effect of spending on education. In the period under study, this deficit has not exceeded this threshold (Figure 45), however, its presence reduces the multiplier effect of education spending.

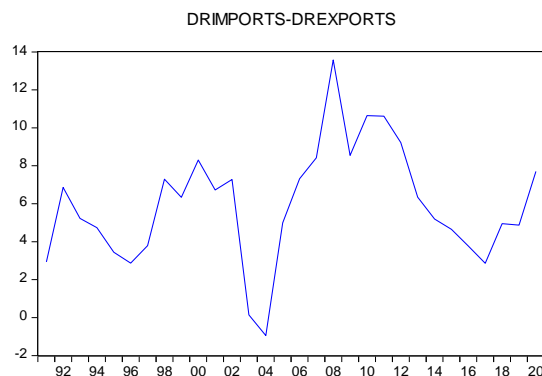


Figure 45. Deficit Figure in the trade account

The previous equation highlights the negative role of the female to male Neet ratio on economic growth.

The results in this paper show that there are various channels that constitute feedback loops on economic growth and that, therefore, give rise to fiscal multipliers that overlap one another, and thus impart dynamism to the economy. The origin of these multipliers may be the reduction of the underground economy, the drop in adolescent fertility, the improvement in the quality of education, and others. That is to say, in relation to fiscal policy, there are repercussions that go beyond the “Keynesian” or “anti-Keynesian” multipliers which arise, basically, from the contribution of public spending to the well-being of the population. It is important to know this network of multipliers and their temporal properties since their identification allows us to avoid a “black box” treatment of fiscal policy.

10. Network of Fiscal Policy Multipliers

The traditional analysis of the effects of fiscal policy on economic growth consists of resorting to a “black box” to which an increase in public spending is applied, the result of which is an increase in the economic growth rate. As shown in previous sections, the reality is different, since increased spending sets in motion a series of social repercussions that act to impart distinctive multipliers on economic growth. In other words, fiscal policy generates a chain of multipliers of different origins that act in the medium term to impart dynamism to the economy.

The chaining of the various multipliers is presented in the Figure 46 in which the succession of multiplier effects derived from an increase in spending on education is described.

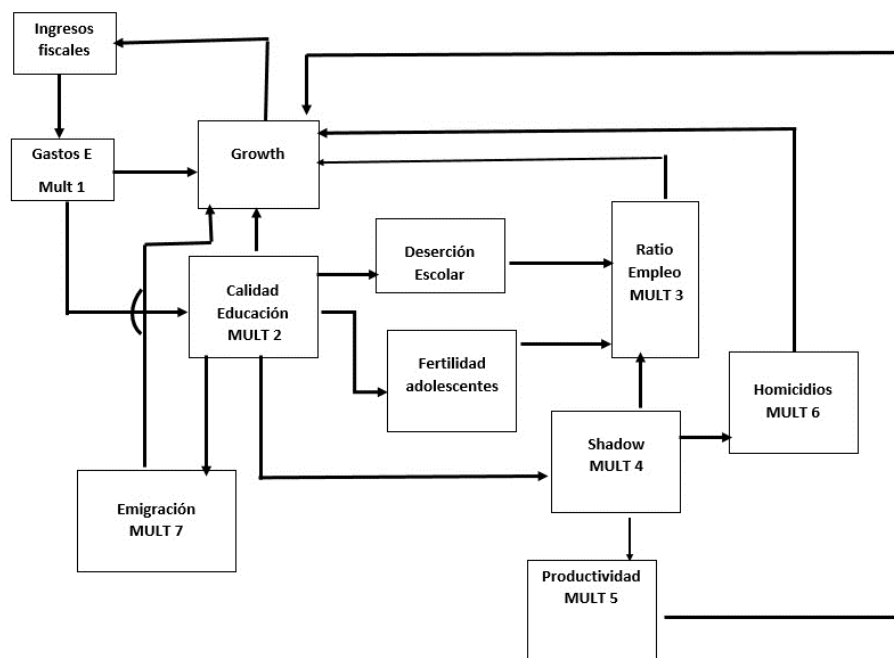


Figure 46. Network of fiscal multipliers

The starting point is the increase in spending on education, which generates the first multiplier (Mult1) on economic growth, due to the increase in aggregate demand resulting from additional public spending. This is the Keynesian multiplier presented in textbooks.

The increase in the quality of education, represented by the fall in the ratio of students to teachers, in itself generates a positive impact on economic growth, called Mult2, by virtue of the increases in the cognitive skills and abilities of the population, as has been highlighted by Jamison, E. Jamison, T. & Hanushek (2007).

The improvement in the quality of education leads to reductions in school dropouts and adolescent fertility, resulting in an increase in the employment-to-population ratio, which has a positive impact on the rate of economic growth. This circuit gives rise to the Mult3 multiplier.

The increase in the quality of education also leads to a fall in the size of the underground economy, as shown in Figure 14. The fall of Shadow, in turn, leads to an increase in the ratio of female employment to population, which leads to an increase in the rate of economic growth. This multiplier is called Mult4.

Reducing the size of the underground economy generates increases in productivity, which increases the rate of economic growth, through the Mult5 Multiplier.

Likewise, the fall of Shadow leads to the fall of the homicide rate which, through the Mult6 multiplier, imparts a positive effect on economic growth. In the case of the Latin American countries, the association between the reduction of the homicide rate and the increase in economic growth has been presented by the World Bank (2011).

And improving the quality of education, through its role in reducing emigration, which means reducing remittances and increasing the employment-to-population ratio, gives rise to another multiplier impact on economic growth, which is called Mult7.

This Figure shows that the fiscal multiplier is actually a chain of multipliers that in different periods of time drive economic growth. The duration of these multipliers depends on the continuity of the increase in spending on education; Given the resulting increase in the rate of economic growth as a result of the multipliers, tax revenues will tend to grow and thus impart sustainability to public finances and spending on education in particular.

11. Quality of Education as a Latent Variable

A common measure of the quality of education is the average scores of students on national or international standardized tests; a related measure is the number of students per teacher, which is the one used in this paper. But the quality of education is much more than what these definitions contain, it is a multifaceted variable with multidimensional determinants and results.

Next, it is proposed that the methodology of latent variables be used to construct a national indicator of the quality of education. In the framework of a given country, Figure 32 presents both the proposed causes and indicators of education quality.

The cause variables are the education expenditures and tax revenues, both as a percentage of GDP, the average number of pupils per teacher at the primary level, GDP per capita, the percentage of teachers with pedagogical training, and the percentage of the population in urban areas.

As indicator variables, the following are suggested: average scores on standardized tests, rate of economic growth, homicide rate, suicide rate, dropout rate, domestic savings rate, and size of shadow economy.

This model can be estimated with the multiple indicators – multiple causes (MIMIC), method. The estimation would provide a measure of the quality of education that captures the roles of ample sets of cause and indicator variables. Moreover, this method would permit computing sensitivity analysis to identify the most significant determinants of the quality of education.

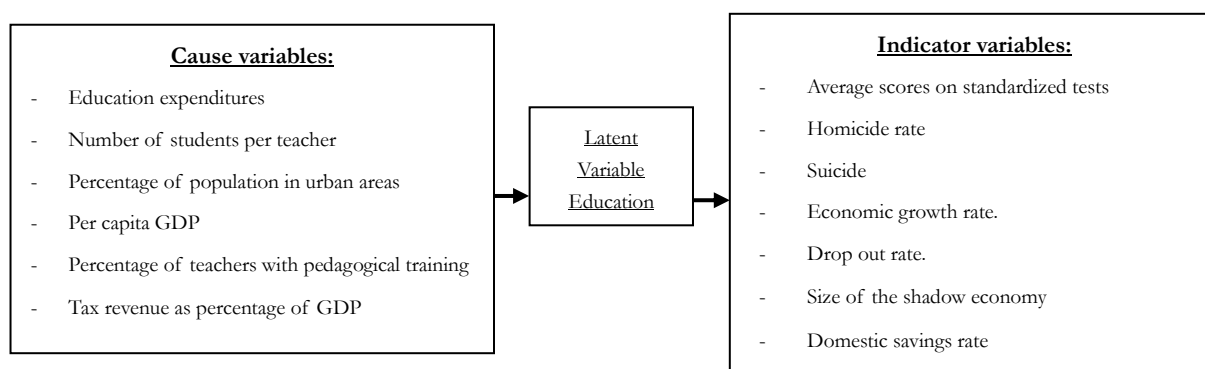


Figure 47. Quality of education as a latent variable

12. Towards a National Education Quality Strategy

It is important that the Dominican Republic undertakes a series of actions geared toward the increase in education quality, which would have important repercussions in terms of improving social indicators and accelerating economic growth. The actions should be framed in a strategy so that there is a clear and shared view of objectives, targets, constraints, and who does what and when. The strategy would involve in the first place, increasing the public resources directed to the education and health sectors, the reduction of the ratio of the

number of students to teachers, improving the pedagogical training of teachers, expanding facilities of continuing education available to teachers, substantial expansion of psychological services to students and teachers at all levels, improving physical and sport facilities, and increasing the number of hours spent by students at school, adopting the modality of full-time schooling.

The execution of this strategy will generate benefits in terms of gains in students' cognitive ability, as well as a series of benefits associated with social development, such as reductions in crime, in the shadow economy, in the percentage of Neets, and others.

The implementation of the strategy would be subjected to periodic evaluations so as to appreciate the progress being made towards a more human and kind society.

The indicators used to measure the results obtained each year are presented in Table 4.

Table 4. Results of implementation of education quality strategy

Indicators	Year 1	Year 2	Year n
Public spending on education percentage of GDP			
Public health spending as a percentage of GDP			
Percentage of full-time schools			
Standardized test scores in math and reading			
Adolescent Fertility			
Coverage Vitamin Supplement Distribution			
Number of mothers trained in childcare			
Child mortality (%)			
Maternal mortality			
Coverage of education at all levels			
Coverage in early childhood education			
School dropout rate at all levels			
Number of young people imprisoned			
Percentages of Neets feminine and masculine			
Number of crimes (by type and geographic area)			
Tax revenues as a percentage of GDP			
Tax evasion rate			
Number of young people trained in trades			
Number of young graduates from on-the-job training			
Number of children and young people served by psychologists			
Public security spending as a percentage of GDP			
Number of students per teacher.			
The ratio of male-to-female salaries			
Homicide rate			
Femicide rate			
Number of cases of violence against women			
Number of attacks against the population GBTL			
Remittances as a percentage of GDP			
Percentage of budget resources destined to attend to the needs of persons with disabilities			
Number of deportees			
Number of suicides, by sex			
Human Development Index			
Gender inequality index			
Amount of exports per capita			
Economic growth rate			
Average teacher salary			

13. Conclusions

This work has demonstrated the existence, in the Dominican Republic, of three channels through which fiscal policy increases economic growth.

The first channel lies in the fall in the adolescent fertility rate, which results from the increase in public spending on education and the subsequent increase in the female-to-male employment ratio, which leads to an increase in the economic growth rate.

The other channel consists of the reduction of the shadow economy that occurs because of increased public spending on education, which leads to increased labor productivity and economic growth.

The third channel rests on the evidence that education expenditures lead to the reduction of emigration and thus to the increase of the employment to population ratio, and thus to increase the rate of economic growth.

These channels are more illustrative of the manner public spending in education impacts economic growth than approaches based on production functions, which are compact “black boxes”. The approach described in this paper depicts the incidence of fiscal policy, namely education expenditure, on adolescent fertility, the percentage of youth that is not working or studying, the employment to population ratio, domestic savings, and hence economic growth.

It is also shown in this work that in the Dominican Republic the increase in public spending on education has negative associations with the number of annual homicides per 100,000 inhabitants, which shows that the fight against violence requires a substantial increase in social spending. Likewise, the relationships of the first principal component of education and health expenditures with per capita reserves, with the size of the underground sector, with inequality, and the inflation rate, and with the fertility of adolescents should be emphasized.

There is ample evidence that middle school students who attended early childhood education development tend to do better in standardized tests than the students who did not enroll at this education level (Schuetz, Ursprung, & Woessmann, 2008), which indicates the convenience of expanding the coverture of early childhood education. Asai et al. (2023) have shown using data from OECD countries that government spending on childcare facilities, and unemployment benefits is conducive to increasing female labor supply participation.

These results show the importance of increasing public social spending as a pillar of economic and social development. The evidence presented by Easterlin (1981) that social development precedes economic development should be noted.

Reference must be made to the results of Hanushek and Wossmann (2009) showing that the main determinant of economic growth of the Latin American countries is the quality of their education.

The main obstacle to undertaking a development strategy based primarily on social development lies in the weakness of public finances, as a result of low tax collection, particularly due to high tax evasion. A recent document from the International Monetary Fund (Werner, Ricci, & Roldós, 2012) proposes that, in response to the COVID-19 pandemic, Latin American governments substantially increase social spending based on a fiscal pact that leads to increased tax revenues.

It can be expected that increased expenditures on education quality will be recovered in the medium term, given the evidence from the US presented by Lochner & Moretti (2004) that the drop in crime resulting from a 1 percent increase in high school graduation, (which is a result from improved education quality), gives rise to benefits to society of \$1.1 billion.

That should be the most urgent task for the countries of the region, as a means not only to improve the living conditions of large sectors but also to combat violence and irregular emigration, which currently undermine the development prospects of several countries in the region.

In order to assess the originality of the results presented in this paper, the following question was presented to ChatGPT: Which are the channels of transmission of fiscal policy in developing countries?

The answers are presented in Appendix 1 and consist mainly of standard textbook contents, without any reference to the roles of female employment, underground economy, education quality, emigration, or youth dropping out of school. These results attest to the originality of the analysis presented in this paper.

Freedom now!

Free at last.

Escribí Libertad,

Escribí Libertad,

Escribí Libertad.

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Notes

Note 1. A broader indicator of education quality has been presented by the organization Research for Action, in Philadelphia, which is associated with the index of children's access to education opportunities. As reported by the Philadelphia Inquirer on October 13, 2022, the index is measured as the weighted sum of the percentage of children that have: "STEM certified teachers, teachers with at least two years of experience, a student-teacher ratio below 15:1, student counselor ratio at or below 250:1, suspension ratio at or below 2.3%, teacher chronic absenteeism at below 25.7%, grade retention rate at or below 0.3%.

Note 2. This relationship that has been evidenced by Caceres (2021a, 2021b) for Honduras and Guatemala.

Note 3. The qualitative variables Cualicrisis and Cualib represent the years when the economic growth rate was negative, or above 8 percent, respectively.

Note 4. The data on the size of the underground economy as a percentage of GDP, have been taken from Medina and Schneider (2018).

Appendix 1. ChatGPT on the Channels of Transmission of Fiscal Policy

Which are the channels of transmission of fiscal policy in developing countries

ChatGPT:

Fiscal policy, which involves government decisions regarding taxation and government spending, can have various channels of transmission in developing countries. These channels describe how fiscal policy actions can affect the economy and influence economic outcomes. Here are some key channels of transmission for fiscal policy in developing countries:

Aggregate Demand and Output: Fiscal policy can directly impact aggregate demand by changing government spending and taxation. An increase in government spending can boost demand and stimulate economic growth, while tax cuts can increase disposable income and consumer spending.

Government Investment: Government spending on infrastructure projects, education, and healthcare can have a direct impact on economic growth and productivity. Investment in these areas can lead to long-term economic development.

Income Distribution: Fiscal policy can be used to address income inequality by implementing progressive taxation and targeted social spending programs. This can help reduce poverty and improve overall welfare.

Interest Rates: Changes in fiscal policy can influence interest rates indirectly. Higher government spending without corresponding revenue increases can lead to increased government borrowing, which can put upward pressure on interest rates. This can affect private sector borrowing and investment.

Crowding Out: An expansionary fiscal policy, if not carefully managed, can lead to crowding out of private investment. When the government borrows extensively to finance its spending, it may compete with the private sector for available funds, driving up interest rates and potentially reducing private investment.

Exchange Rates: Fiscal policy actions can impact a country's exchange rates. For example, expansionary fiscal policies, especially if they are not accompanied by monetary policy measures, can lead to currency depreciation, which can affect trade balances and inflation.

Consumer and Business Confidence: Fiscal policy measures can influence consumer and business confidence. Tax cuts and increased government spending can boost confidence, leading to higher consumer spending and business investment.

Public Debt: Fiscal policy decisions have a direct impact on a country's public debt levels. Accumulating excessive debt can lead to debt servicing costs that divert resources away from other essential public services and investments.

Financial Market Stability: Fiscal policies can affect financial market stability. Excessive deficits and debt levels

can raise concerns among investors, leading to increased volatility in financial markets.

Incentives for Investment and Work: Tax policies, such as tax incentives for investment or work, can influence individuals' and businesses' decisions. For example, tax credits for investment in certain industries can stimulate economic activity in those sectors.

Global Economic Conditions: Fiscal policy in developing countries can also be influenced by global economic conditions, including international trade, financial flows, and foreign aid.

It's important to note that the effectiveness of fiscal policy and the specific channels of transmission can vary widely depending on a country's unique economic circumstances, institutional framework, and the quality of fiscal management. Developing countries often face challenges such as limited fiscal space, weak institutions, and external vulnerabilities, which can affect the outcomes of fiscal policy measures. Therefore, policymakers in these countries need to carefully consider these factors when designing and implementing fiscal policies.

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