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**Growth after Debt
Restructuring in 1999-2014:
an econometric analysis**

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GROWTH AFTER DEBT RESTRUCTURING IN 1999-2014: AN ECONOMETRIC ANALYSIS

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ABSTRACT. The aftermath of sovereign defaults is extremely interesting but it also an highly debatable topic. This paper starts with the inquiry of the consequences of sovereign debt restructurings on growth performance during the period 1999-2014 with panel data analysis using a sample 26 countries that defaulted in this period. Hence, this treatment group is also compared to a control group using also difference-in-difference and fixed effects estimations. The concluding chapter briefly evaluates the debt relief initiatives of multilateral organizations, such as the IMF and the World Bank, pertaining to the economic policy prescriptions related to the "Washington consensus" implemented to the Sub-Saharan countries.

1. INTRODUCTION

Defaults usually started as missed payment or distressed exchanges. According to Moody's investor service (2012), the loss in sovereign restructurings seems to correlate with the level of debt-to-GDP ratio. Losses have depended on the economics conditions at the time of default, the debt maturity, the features of contracts, the presence of official debt, and the concentration of bondholders. Failure entails costs and benefits. In fact, default can cause reputation damage and provoke sanctions and output losses. On the other hand, it could be favorable for growth because reduces future debt repayments.

This paper analyses the history of bond defaults and examines the aftermath of sovereign defaults. In particular, it aims to evaluate how growth carries out in the period after restructurings. In particular, the analysis of economic consequences of the countries that restructured in the period from 1999 to 2014 is implemented. A number of divergent factors influence how these 26 countries recovered from a default. Countries that restructured are compared with those that did not to evaluate the effect of assistance on development. Moreover, data are difficult to obtain for the smallest countries.

Definition of debt restructuring of Papaioannou and Trebesch (2013) and two ways of calculating debt relief are illustrated in the second chapter, with holdout issues concluding the section. After a brief introduction of panel data theory in the third chapter, the core econometric model is presented. In particular, per capita GDP growth is adopted as the dependent variable, while external debt stocks, real exchange rate with respect to the US, global real GDP growth, and a dummy for restructuring are employed. In order to validate the results, 12 countries composed the control group. The motivations for the selection of those countries to assemble the control group are exhibited with

per capita GDP growth charts, with a particular focus on the macroeconomic situation of Costa Rica, Mexico, Iraq, Nigeria, Brazil and Peru.

This analysis has the aim to enrich the effort of Forni et al. (2016) by considering a different period from their research and a slightly contrasting method of interpretation. This period is selected in order to focus on the consequences of the global financial crisis of 2007. In particular, the seven years after and before this event are chosen. Therefore, as illustrated in chapter 5, the results obtained are quite similar. Then, disparate types of regressions are performed. A fixed effect and a difference-in-difference model are estimated. Finally, factor variables are combined with lagged and forwarded variables of the restructuring dummy and a linear regression with multiple fixed effects is implemented.

In the last section, policies of multilateral institutions carried out in poor countries are then discussed, in order to contribute to the so-called "Washington Consensus" debate (Archibong et al. 2021, Spence 2021). In this context, high interest payments on poor countries affect growth prospects (Ferrari 2008, Gamel and Pham 2018, Kingston 2011).

The literature in this topic is wide, with particular focus on the cost associated with default (Land et al. 2021, Sturzenegger and Zettelmeyer 2006, 2008). Recent theory analyzed also the economic consequence of haircuts, suggesting that sovereign debt relief combines with finance embargo and high spreads (Cruces and Trebesch 2013, Fang et al. 2021). Moreover, materials for public debt history are extensive (Abbas et al. 2010, Das et al. 2013, Reinhart and Rogoff 2009). The studies of Panizza 2008, Panizza and Presbitero 2013 and Panizza 2015 were critical to comprehend how high public debt alter countries' policies in different economic shapes.

2. DEBT RESTRUCTURING

In line with Standard and Poor's, a country default when it does not meet a principal or interest payment on the due date. Usually restructurings occur after default. In line with Papaioannou and Trebesch (2013), a sovereign debt restructuring represents a swap of outstanding sovereign debt instruments in exchange for new ones. In order to recover the ability to repay, a country can be involved either in debt rescheduling, where maturities are extended at lower interest rate, or debt reduction, resulting in a reduction of the nominal value of the old instrument. Sometimes, these strategies are implemented together.

A credit event happens as a result of either failure to pay a coupon or principal, a restructuring that modifies the terms of a debt obligation, or debt repudiation. As a consequence, sovereign weaken in the creditworthiness or financial condition.

2.1. Haircuts and calculation of debt relief. To calculate the losses bear by creditors (or "haircut"), a present value strategy is used. In this framework there are two main approaches. The first one relates present value of the new debt instruments to the face value total of the old overdue debt. Default empowers creditors to prompt and full repayment of the face value amount.

$$(1) \quad H1_t^i = 1 - \frac{\text{Present Value of New Debt}(r_t^i)}{\text{Face Value of Old Debt}}$$

The second one relates present value of the new debt instruments to the present value of the old overdue debt.

$$(2) \quad H2_t^i = 1 - \frac{\text{Present Value of New Debt}(r_t^i)}{\text{Present Value of Old Debt}(r_t^i)}$$

Now the old debt instrument is discounted at the same rate of the new debt instruments. In this scenario, the sovereign continues to service old debt instruments in order to calculate realized loss in the transaction bore by the creditors.

According to Sturzenegger and Zettelmayer (2008), the discount rate r_t^i is the secondary market "exit" return implicit in the price of the new debt instrument at the first day of trading after debt swap.

2.2. Elements in a debt restructuring process. Default triggers restructuring. Then, the government starts to renegotiate debt in order to obtain debt relief and resolve the distress situation.

The country needs to assess the characteristics of its total debt claims, such as face and market value, amortization schedule, interest rates and coupons. In this way, creditors have a better understanding of debt stock, debt-service profile, and the financial worth of debt instruments. Then, they

can accept or reject restructuring offer, leading to creditor coordination problems and holdout problem. A holdout dilemma arises when a bond issuer is in default and starts an exchange proposal in an effort to restructure debt held by current bond holders. Such exchange bids need the agreement of holders of some minimum portion of the total overdue debt, because, unless the bounds of the bond provide otherwise, non-consenting bondholders will keep their legal right to claim repayment of their bonds at par. Bondholders who deny their consent and keep their right to try the full repayment of original bonds, may interrupt the restructuring process, creating a situation known as the holdout problem. If the restructuring occurs regardless of their consent, holdout creditors can receive full repayment of their bonds, while other bondholders collect reduced disbursement. If the restructuring does not happen, they earn nothing, but holdouts may set up expensive lawsuits, resulting in direct and indirect economic damage to the debtor. Where bondholders are widely spread, it can be hard to reach many holders. Further, many holders of small amounts of bonds have little reason to devote time and energy in appraising the terms of the exchange offer. Disputes have reinforced a holdout's right to litigate on the basis of an interest obtained in the secondary market. However, when a sovereign reaches a debt restructuring agreement with a majority of creditors, holdout behaviors should be limited or, in some cases, even undone.

In late 1970s creditors managed to intimidate to attach sovereign assets or hamper international transactions. Since the 1980s, juridical shelter of sovereign from lawsuits by creditors have diminished. However, it is still debatable if creditors were able to extract repayment or a favorable settlement from a defaulted State. In all cases whereabouts holdouts were rewarding, they owned only a small portion of debt. The punishment concerned with repaying those holdouts would have been too small to discourage a default. Furthermore, the capability for holdouts to hinder defaults is still bounded by the availability of debtor country assets abroad, and the cleverness of debtors in structuring international financial sales so as to dodge large asset holdings in jurisdictions where holdouts have obtained court judgments.

2.2.1. *Paris club*. It is an association of creditors with the objective of harmonious resolution to the payment difficulties of debtor countries. The country has to prove its payment difficulties and to join a structural adjustment program with the IMF. The degree of debt relief hinges on the richness of the country involved. Actually, low income countries (LICs) carry higher levels of long-term debt relief. This scheme foresees the "comparability of treatment" provision, meaning that all creditor groups share the same debt burden.

2.2.2. *London club*. It is an informal group of private creditors, such as commercial banks. The word characterizes a restructuring routine established in the late 1970s. A small committee mediates for all banks interested in restructurings in order to set aside coordination problems. The procedure initiates when the debtor country reaches the major banks creditors. They meet routinely until an "agreement in principle" is settled, in which the main restructuring bounds had been attained. However, holdout problems might still arise.

2.2.3. *The Brady Plan*. It is a policy focus on debt reduction. It expected an exchange of loans into sovereign bonds, offering to the creditors involved the best possible solution.

3. ECONOMETRIC BACKGROUND

According to Cameron and Trivedi (2005), panel data are reproduced observations on the same cross section. As the number of observations boost, the pooling effect results in the accuracy of the estimation increase. A general model enables the intercept and slope coefficients to alter over both individual and time. One of the side effect by the use of this model is the overestimation of the precision gains, due to the correlation of regression model errors leading to underestimation of standard errors.

The individual-specific effects model allows each cross-sectional unit to have a different constant term. The α_i random variables capture unobserved heterogeneity. However, this paper treats α_i as an unobserved random variable potentially correlated with the observed regressors x_{it} . So, the fixed effects model, a variant of individual specific effects model, is used. The fixed effects model specification allows for unobserved individual heterogeneity that may be correlated with regressors causing omitted variable bias. This bias could be corrected by instrumental variables methods.

The random effects model is not considered because α_i are not random variables distributed independently of the regressors.

The between estimator uses the cross-sectional variation. It uses the variation between different individuals and is the analogue of cross-section regression. Also, it is consistency if the regressors \tilde{x}_i are independent of the composite error ($\alpha_i - \alpha + \tilde{\epsilon}_i$).

The various panel specifications include error terms. However, they are potentially serially correlated and/ or heteroskedastic.

4. THE MODEL

4.1. **Data.** According to Papaioannou and Trebesch (2013), there have been 19 distressed sovereign bond exchanges with foreign creditors in 15 countries, and 6 domestic bond restructurings since 1998 until 2010. Sovereign debt exchanges involve three different conversions of the debt: extension of the maturity, discount in the coupon, nominal haircut on the principal. The database of Cruces and Trebesch (2013) of sovereign bond restructurings with external debt is used in this paper. They mainly comprise foreign currency denominated debt.

On average, a debt restructuring results in a 38.0% haircut, involving 11.2% of GDP and delivering an NPV reduction of 5.3% of total debt outstanding. Per capita GDP growth is normalized to 1 in 1999.

4.2. **Process.** This model of restructuring growth is applied to a panel of 26 different countries over the period 1999-2014. In this example, changes in the level of GDP per capita are the outcome of changes in the external debt stocks, real exchange rates, world growth and whether a country is restructuring its debt in a particular year. The software STATA is used to analyze the database previously described.

$$(3) \quad y_{i,t+1} = c + \beta_{restr}HC_{i,t} + \gamma_i + \beta_{reer}[X_{i,t \rightarrow t-3}] + \beta_{dom}W_{i,t} + \beta_{ext}[Z_{t+1}]$$

In the equation above,

- $y_{i,t}$ is the per capita GDP growth normalized in 1999;
- γ_i refers to the country-specific fixed effects;
- $HC_{i,t}$ is a dummy for restructuring;
- Z_{t+1} is global real GDP growth;
- $X_{i,t}$ contains real exchange rate with respect to US dollars;
- $W_{i,t}$ is external debt stocks.

The proposed model fits the data found for the following countries:

- | | | |
|---------------------------|------------------------|---------------|
| • 1 Argentina | • 6 Dominican Republic | • 11 Guyana |
| • 2 Belize | • 7 Dominica | • 12 Honduras |
| • 3 Cameroon | • 8 Ecuador | • 13 Iraq |
| • 4 Republic of the Congo | • 9 Greece | • 14 Liberia |
| • 5 Cote d'Ivoire | • 10 Grenada | • 15 Moldova |

- 16 Mozambique
- 17 Nicaragua
- 18 Pakistan
- 19 Russia
- 20 Serbia
- 21 Seychelles
- 22 St. Kitts and Nevis
- 23 Tanzania
- 24 Ukraine
- 25 Uruguay
- 26 Yemen

Moreover, we can divide 70% of the countries above in 5 clusters. These 5 clusters are not evaluated separately in this paper. According to IMF, some of them are also listed as countries at Risk of Major Natural Disasters: all Caribbean and Central America states, plus Guyana, Cameroon, Liberia and Mozambique.

- Caribbean: Belize, Dominican Republic, Dominica, Grenada, St. Kitts and Nevis;
- Central America: Honduras, Nicaragua;
- South America:
 - North Part: Ecuador, Guyana,
 - South Part: Argentina, Uruguay;
- West Africa: Cameroon, Cote d'Ivoire, Liberia;
- East Africa: Republic of the Congo, Mozambique, Seychelles, Tanzania.

A control group is used to establish a cause-and-effect relationship by isolating the effect of an independent variable. The motivation behind the decision of each country will be disclosed in the next section. This group is made up by the following countries:

- 27 The Bahamas
- 28 Brazil
- 29 Colombia
- 30 Egypt
- 31 Indonesia
- 32 Jamaica
- 33 Mexico
- 34 Nigeria
- 35 South Africa
- 36 Costa Rica
- 37 Ghana
- 38 Malaysia
- 39 Peru
- 40 Senegal
- 41 Venezuela

4.3. Control countries. In order to argue why a particular State has been added, graphs and economic situations are exploited. The order followed is the same as the presentation of different clusters in the section before. So, Caribbean countries used in the regression are The Bahamas and Jamaica. A graph analyzing the real GDP per capita growth of the countries in the group is displayed.

The Caribbean region is a diverse group of countries, both in terms of culture and the nature of their economies. The growth of the GDP per capita from 2000 to 2015 are quite similar to the trend of the other Caribbean countries (Dominican Republic, Dominica, Grenada, St. Kitts and

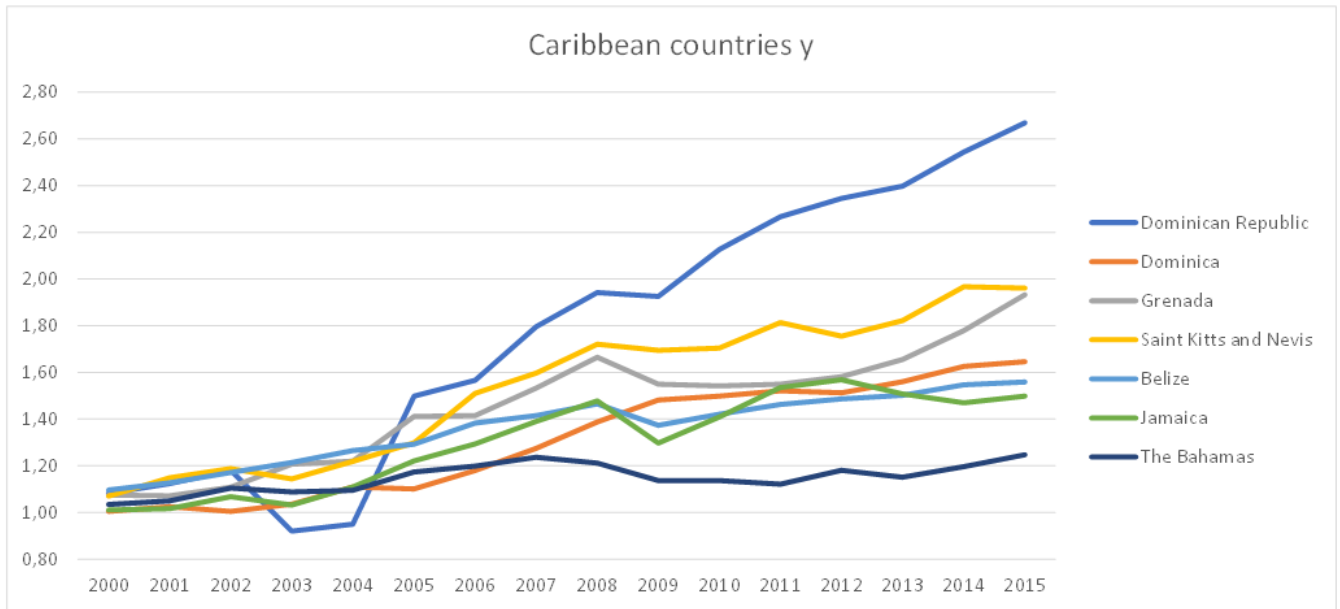


FIGURE 1. This image shows the pattern of GDP per capita growth of Caribbean countries.

Nevis, and Belize). Between 2004 and 2006, four restructurings out of five in this sample affected these countries, with the exception of St. Kitts and Nevis. One of the few cases in which $H2$ is less than $H1$ involves Dominica ($H2_{2004}^{DMA} = 63.5$ and $H2_{2004}^{DMA} = 53.0$). While the values of Grenada differ only slightly ($H1_{2005}^{GRD} = 37.5$, $H2_{2005}^{GRD} = 35.0$), the difference of the results of Belize is more pronounced ($H1_{2006}^{BLZ} = 17.1$ and $H2_{2006}^{BLZ} = 24.0$). Jamaica GDP per capita growth follows more or less the same trajectory of Belize, while the one of The Bahamas reflects the one of Dominica until 2006. Dominican Republic has a very different pattern from the others. According to IMF, in 2001 its economy was affected by two external shocks: the economic slowdown in the United States and Europe and the September 11 terrorist attacks. These events coexisted with the introduction of a bundle of fiscal measures in response to the overheating of the economy following the 2000 presidential election. Therefore, GDP growth rate fell by two-thirds. The banking issues supported pressures on the peso and caused a severe hike in public sector debt. The deep financial crisis led to a severe recession combined with a significant rise in public indebtedness, high inflation, and depreciation of the currency. In this context, confidence towards the banking system declined due to the failure of three of the largest banks (Baninter, Bancredito, and Banco Mercantil). In 2003 the Executive Board of the IMF approved a two-year US\$600 Stand-By Arrangement for the country to support its economic program. In addition, authorities were able to renegotiate almost US\$200 million in debt service relief from the Paris Club. According to Fang et al.(2020), $H2_{2005}^{DOM} = 0.09$,

while the estimate of Moody's (2012) is $H1_{2005}^{DOM} = 5.0$. Following prudent fiscal and monetary policies and reforms, the economy has turned around and investor confidence has returned. Real growth continued at a fast pace and underlying inflation remained low despite the adverse effect of the oil price shock. As a result, real GDP grew 40 percent from 2004 to 2008, one of the highest expansions in Latin America. The public debt-to-GDP ratio was reduced by almost one-half, from about 60 percent in 2003 to 35 percent in 2008. In 2009 an additional Stand-By Arrangement for the Dominican Republic was approved by the IMF in the amount of US\$1.7 billion to support the country's strategy to cope with the adverse effects of the global economic environment. This boosted real GDP per capita growth once more, as the blue line in Graph 1 underlines. The Dominican economy has continued its vibrant performance, with growth averaging above 7 percent during 2014–15.

The following region to be considered is Central America. The countries included in the control group are Costa Rica and Mexico. Costa Rica profited from a sustained growth period during

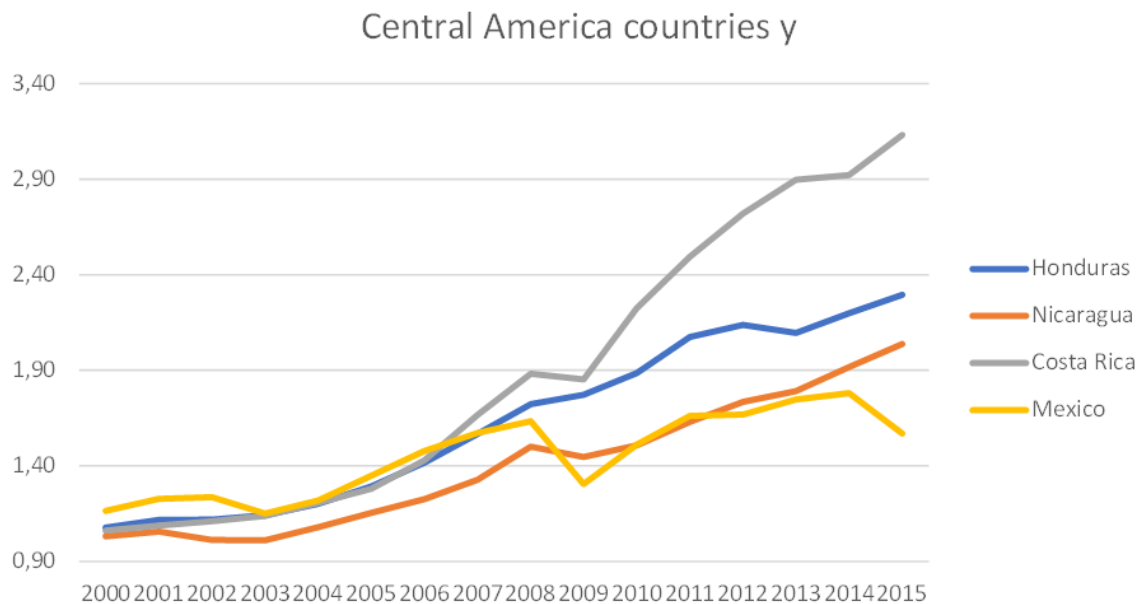


FIGURE 2. This image shows the pattern of GDP per capita growth of Central America countries.

2003–07, which resulted in continued increases in real household incomes and critical poverty reduction. Wise macroeconomic policies during those years also helped lower vulnerabilities, including a considerable cut in the public sector debt-to-GDP ratio. In 2008, its economy was influenced by the turbulence in global financial markets and declining trades. As previously described with the

TABLE 1. External debt (in millions of US dollar \$) of Costa Rica.

Year	2009	2010	2011	2012	2013	2014
External debt (in millions of US\$)	7.760	8.150	10.270	14.310	17.135	19.720
Increase with respect 2009 (in %)		1,05	1,32	1,84	2,21	2,54

Dominican Republic case, once again in 2009 the Executive Board of the IMF approved US\$735 million Stand-By Arrangement for Costa Rica to support the country's strategy to deal with the adverse global economic environment. After falling modestly in this year, real GDP grew strongly in 2010-12 with low inflation, even though the fiscal deficit increased. Then, it decelerated in 2013 and remained stable in 2014, opening a small output gap.

The other country analyzed in this subsection is Mexico. Once again, in the period 2003-07 Mexico enjoyed strong growth established by robust macro policy frameworks along with the flexible exchange rate regime. Considerable progress was made in improving debt profiles, and the strong regulatory framework gave rise to a sound banking sector. Then, the global crisis of 2008 triggered a sharp downturn of financial flows from emerging markets. In addition, Mexico experienced a rapid decline in manufacturing exports in 2009, leading to an output contraction in 2009. Prompt and effective policy measures were adopted in response to the crisis. Macroeconomic policies were eased significantly and the Central Bank made substantial interventions to maintain orderly liquidity conditions in the foreign exchange market. On the back of these strong policy measures, growth has resumed since mid-2009, while domestic financial stability has been maintained.

Then, Mexico growth appears quite similar to the one of Nicaragua and Honduras until 2015, when asset prices were affected by the increased volatility in global financial markets and uncertainties related to the risk of rising protectionism. The peso had depreciated by about 25 percent. Foreign exchange implied volatility and bid-ask spreads have also increased. Mexico has benefited from the strong recovery of capital flows in emerging markets, although the exchange rate remains volatile.

Note that both the countries analyzed so far, Dominican Republic and Costa Rica, had the highest GDP at current US\$ in their respective groups. In the period consider, they are also the countries that grew the most.

Also, an organization is included in this analysis: OPEC. The Organization of the Petroleum Exporting Countries (OPEC) is a permanent, intergovernmental Organization created in 1960 by Iran, Iraq, Kuwait, Saudi Arabia and Venezuela. The five Founding Members were later joined also

by Nigeria in 1971. OPEC's objective is to co-ordinate and unify petroleum policies among Member Countries, in order to secure fair and stable prices for petroleum producers and an economic and regular supply of petroleum to consuming nations. The countries included in the control group are Venezuela and Nigeria.

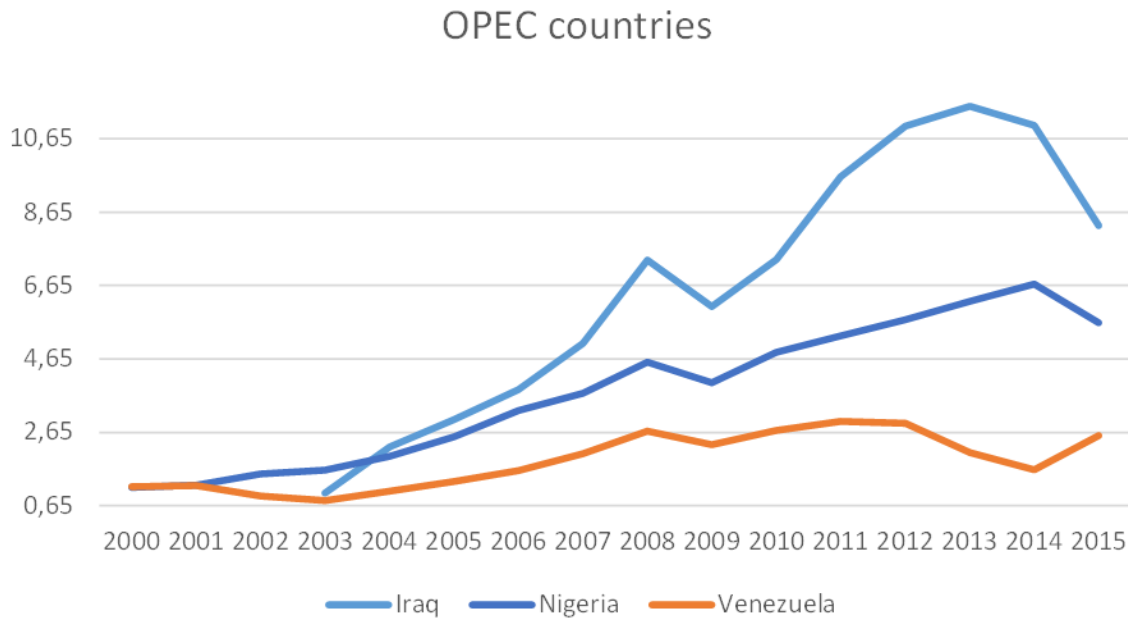


FIGURE 3. This image shows the pattern of GDP per capita growth of the OPEC countries.

Iraq's reserves of oil are among the highest in the world, with extremely low oil extraction costs. The increase in production since 2003 has contributed to a rise in GDP. Poor governance, an inefficient judiciary system, inconsistent regulations, and insufficient security keep Iraq at the bottom of global rankings for doing business. The political situation deteriorated steadily since the withdrawal of U.S. troops in December 2011. The government has been plagued by political infighting with increasing fanatic connotations. Tensions between the semi-autonomous Kurdistan Regional Government (KRG) and the central government remain high due to disagreements about sharing of oil export revenues and territorial disputes. Then, from 2013 Iraq has faced a double shock arising from the ISIS insurgency and the plunge in global oil prices.

In the figure 3, a common pattern for the three countries depicted can be easily determined until 2012. Then, the growth of Venezuela got slower before recovering in 2015 due to protests, political demonstrations, and civil insurrection began in Venezuela due to the country's high levels of urban violence and inflation.

In 2015 also, the Nigerian economy faced many challenges. Lower oil prices significantly affected the fiscal and external accounts, decimating government revenues and resulting in the doubling of the general government deficit. Exports dropped, pushing the current account to a deficit. Exchange restrictions introduced by the Central Bank of Nigeria to protect reserves have impacted significantly segments of the private sector that depend on supply of foreign currencies.

Another part of the world to be introduced is Western Africa. The countries included in the control group are Ghana and Senegal.

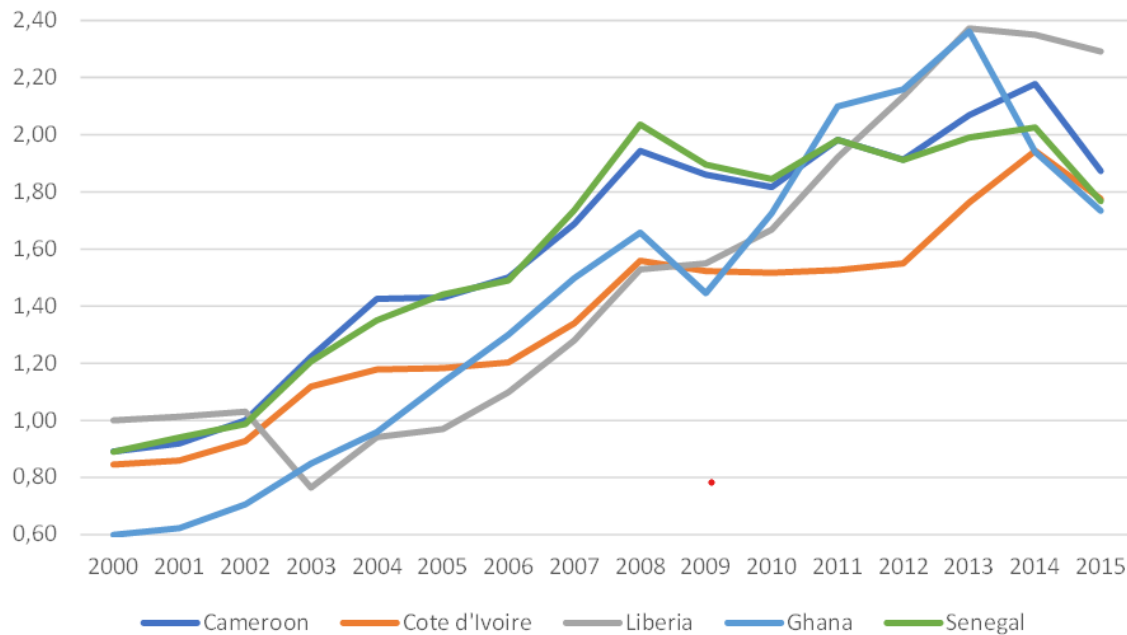


FIGURE 4. This image shows the pattern of GDP per capita growth of West African countries.

Ghana has experienced strong and broadly inclusive growth over the last two decades and its medium-term economic prospects are supported by rising hydrocarbon production. In 2010s, a ballooning wage bill, poorly targeted subsidies and rising interest payments outpaced rising oil revenue and resulted in double digit fiscal deficits. These imbalances have led to high inflation. So, growth decelerated markedly in 2014 driven by a sharp contraction in the industrial and service sectors. This was due to the negative impact of the currency depreciation on input costs, declining domestic demand and increasing power outages. Inflationary pressures rose on the back of a large depreciation of the cedi, the local currency. In addition, the government started facing increasing financing difficulties. Delays in implementing adjustment measures and unbudgeted wage allowances resulted in a higher-than-budgeted cash fiscal deficit. The government has had to resort increasingly

to short-term domestic debt. Also, the external position weakened, with net international reserves reaching low levels and the exchange rate depreciating sharply. The currency depreciation and the economic slowdown led to a substantial contraction of imports and a narrowing in the current account deficit.

The trend of GDP per capita of Senegal is similar to the one of Cameroon but more linear. They reached a peak in 2008, but only the one of Cameroon surpassed the maximum in 2014. For this reason, Senegal has been included in the control group. The results hold since they both rely on the export of oil as main drive of sovereign economic revenues. Of course, it is very difficult to evaluate different African countries due to black markets. National account statements rarely represent the true value of economic transactions in the Sub-Saharan region. In fact, according to Tom Burgis, exploitation and illegal exportation of mineral resources by private companies connected to the local government are common practice.

The countries included in the control group from Latin America are Brazil, Peru and Colombia. They will be appraised with Argentina, Ecuador, Guyana, and Uruguay.

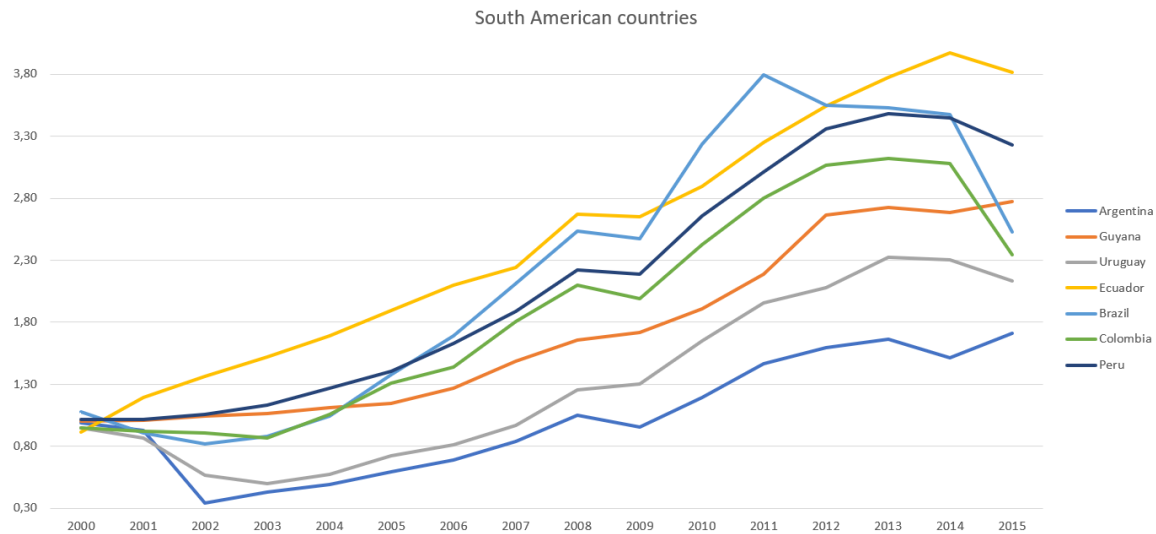


FIGURE 5. This image shows the pattern of GDP per capita growth of Latin American countries.

In this region, $H1$ and $H2$ are derived for Uruguay, Argentina and Ecuador. One of the major discrepancy in these two values is registered in Uruguay, where $H1_{2003}^{URY} = 14.5$ and $H2_{2003}^{URY} = 34.0$. $H1_{2005}^{ARG} = 74.0$ and $H2_{2005}^{ARG} = 73.0$ are quite similar. For Ecuador, the NPV haircut is less than the face value reduction because it involved a buyback and the old bond was worth less in NPV value terms than the cash payment offered. So, $H2_{2009}^{ECU}$ equals 60.8 and $H2_{2009}^{ECU} = 72.0$.

The economy of Brazil came under considerable stress in 2002. The volatile external environment and concerns about the continuity of macroeconomic policies following the change in government led to a sharp decline in external capital flows. The depreciation of the currency contributed to a sharp rise in the trade balance. The rapid adjustment in the current account made possible by the floating exchange rate regime. It allowed the economy to absorb the significant shocks experienced in 2002 without a decline in output growth.

Then, strong macroeconomic policies and the pursuit of ambitious structural reforms have restored macroeconomic stability. High primary surpluses helped to improve debt sustainability. The resulting decline in vulnerabilities and rising confidence have helped to fuel a strong economic recovery. The recovery has been aided by a very strong export performance. However, domestic demand also rebounded significantly during 2004, helped by declining real interest rates and reforms facilitating access to credit. The health of the banking system has continued to improve over recent years and progress has been made in strengthening financial sector supervision.

Fast export growth has underpinned sustained external current account surpluses which have allowed the authorities to build a comfortable cushion of foreign exchange reserves. Reflecting the effect of substantial primary surpluses, net public debt declined to 46 percent at end-2006. By 2007, the government repaid a large share of its external debt, contributing to a significant reduction in vulnerabilities. At the same time, debt management operations have eliminated exchange rate-linked domestic debt and raised the share of inflation-linked and fixed-rate debt.

A slowdown began in mid-2011. The external current account deficit widened, reflecting weaker external demand, and temporary disruptions in oil production. Global financial volatility and higher global risk aversion during the financial crisis have further dampened portfolio inflows to Brazil. Equity prices declined and corporate debt and equity issuance slowed, in line with other major emerging markets. The economy contracted markedly in 2015, reflecting tighter financial conditions, slowing credit and uncertainty surrounding the political scene.

Peru follows a similar trend of Brazil. Its economic resilience during the global financial crisis was the result of the policy response and strong economic fundamentals. Growth in Peru decelerated sharply in 2009, due to the global financial crisis, but remained positive at about 1 percent for the year. In fact, Peru was able to implement a significant monetary and fiscal policy response, which helped to avoid a credit crunch, support domestic demand and sustain employment. Peru's financial sector proved resilient to the global financial crisis thanks to the sound prudential framework put in place in past years and its strong initial standing.

However, like most of the region, Peru faced a challenging external environment in 2014. Lower metal prices and weaker demand from trading partners were a major drag on private investment and exports. On the domestic front, an unexpected drop in subnational public investment level and temporary supply disruptions in mining, fishing, and agriculture compounded external shocks. The authorities embarked on a series of fiscal and structural packages, including tax cuts, increases in fiscal spending, and structural measures to support investment, consumption, and growth. In fact, unlike most of its peers in Latin America, Peru's growth bounced back in 2015 largely due to increased production in primary sectors, as long-planned mining projects became active.

Since 1999 Colombia's economic policies focused on fiscal consolidation, lowering inflation, and strengthening the financial system through several revenue measures and expenditure restraint. Other reforms focused on restructuring and downsizing the nonfinancial public sector, improving financial supervision, and privatizing or liquidating the remaining public banks.

In 2003-04 economic performance improved significantly. Real economic growth recovered and the public sector deficit was reduced, reflecting a rise in the export price of oil and an unusually large surplus of the autonomous local and regional governments. This turnout helped reduce public debt to 53 percent of GDP.

A very strong policy framework and skillful policy management provided the authorities to undertake effective countercyclical measures to mitigate the impact of the global crisis of 2008-09. Domestic demand began recovering in the second half of 2009, led by public investment and consumption. The financial system did not experience major strains from the global crisis. Output growth rebounded strongly in 2010.

Colombia showed strong resilience to changing global conditions in 2015. The decline in oil prices eroded exports and fiscal revenue, and led to a strong depreciation of the peso which fueled inflationary pressures.

TABLE 2. Results of the regression in the paper Forni et al. (2016).

Variables	Coefficients
Restructuring dummy in year t	-0.013**
Size of haircut for final restructurings	0.047**
Real GDP gap	-0.004***
Debt to GDP ratio	-0.079***
Banking Crisis in year $t+1$	-0.005
Banking Crisis in year t	-0.024***
Currency Crisis in year $t+1$	-0.037***
Currency Crisis in year t	-0.019***
REER change in year t	-0.011***
REER change in year $t - 1$	-0.016***
REER change in year $t - 2$	-0.000
US interest rate	-0.002***
World growth	0.007***
Constant	0.005
Observations	1,711
R-squared	0.262

5. RESULTS

The results in Table 2 are the ones of Forni et al. (2016). They use a set of 65 countries over the period 1970-2010. Since the restructuring dummy is not significant, restructurings are not correlated with growth. As a proxy of growth it is adopted the GDP per capita. The debt to GDP ratio is negatively correlated. Also, the real effective exchange rate and world growth are connected with higher growth. Finally, higher US policy interest rate lowers growth.

This paper, instead, analyzes a slightly modified model. First of all, as a proxy of real GDP gap, unemployment rate is used, due to the lack of data for the countries evaluated. According to Investopedia, GDP gap is the difference between the actual gross domestic product and the potential GDP of an economy as represented by the long-term trend. A negative GDP gap represents the forfeited output of a country's economy resulting from the failure to create sufficient jobs for all those willing to work. A large positive GDP gap, on the other hand, generally signifies that an economy

is overheated and at risk of high inflation. Moreover, GDP gap requires a lot of computations and its effectiveness and efficiency are highly debatable. To avoid this problem, unemployment rate is preferred this time. Unfortunately, unemployment rate is not statistically significant.

The second variation concerns the adoption of US GDP growth instead of World growth. Basically, this variable awards consistency with US interest rate. Likewise, all external debt of the countries involved in this analysis, except for Greece, are denominated in dollars. So, these countries are highly expose to the US.

External Debt to GDP ratio also is used instead of Debt to GDP ratio. In this way, US interest rate is expected to have a bigger impact. Both variables are statistically significant. Obviously, US growth has a positive impact on the real GDP per capita, while US interest is negatively correlated. Moreover, the main difference from the results of Forni et al. (2016) comes from the impact of these last two variables.

This dissimilarity can be explained by the periods considered. The impact of globalization is much higher in the period 1999-2014 rather than 1970-2010. Since 1997, the development of capital markets and the improvement of economic policies have driven the growth of local currency bond financing in emerging markets. As a consequence, external debt service is much more expensive and growth of rich countries has a boomerang effect on poor countries.

5.1. Regressions. The fixed effect model is estimated. The standard error reported allow for intragroup correlation in countries. Then, another regression is computed adding the control group. These latest results in Table 3 reinforce previous findings.

The type of standard error reported are robust to some kinds of misspecification. Robust standard errors are used to account for autocorrelation between pre/post in same individual.

To address omitted variables issue, country-fixed effects are included to capture time-invariant characteristics. In fact, it is interesting studying the impact of variables that change over time. It explores the connection between predictor and outcome variables within a country. According to Torres-Reyna (2007), the underlying assumption is that something may impact or bias the predictor or outcome variables and must be controlled for this. There may be correlation between entity's error term and predictor variables. In this way, net effect of the predictors on the outcome variable can be assessed with the FE specification. The equation for the fixed effects model becomes:

$$(4) \quad Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it}$$

TABLE 3. Results of the two regressions based on the countries that did restructure alone and with the control group in the period 1999-2014. Dependent variable: real GDP per capita.

Variables	Treatment group	Group with control
Restructuring dummy in year t	-0.657** (-2.79)	-0.635** (-2.68)
Unemployment rate	-0.017 (-0.41)	-0.024 (-0.85)
External Debt to GDP ratio	-0.329 (-1.50)	-0.474* (-1.86)
REER change in year t	0.002 (1.49)	0.000** (2.23)
REER change in year $t - 1$	0.001 (1.36)	-0.000 (-0.16)
REER change in year $t - 2$	-0.003*** (-4.65)	-0.000 (-0.03)
US interest rate	-3.735** (-2.75)	-3.369*** (-3.89)
US GDP growth	2.084*** (5.30)	2.018*** (7.26)
Constant	3.421 (2.37)	2.978 (3.11)
Observations	406	646
R-squared	0.1019	0.2058

where α is the unknown intercept, Y_{it} is the dependent variable, X_{it} represents one dependent variable and β_1 is its coefficient, u_{it} is the error term. As reported by Bartels (2008), the meaning of the beta values would be as X varies across time by one unit, Y increases or decreases by β units.

The option "robust" controls for heteroskedasticity. Since $Prob > F$ is less than 0.05, the model is acceptable. This is a F test to see whether all the coefficients in the model are different from zero. $R - squared$ shows the amount of variance of Y explained by X . The errors u_i are correlated

with the regressors in the fixed effects model. *AdjR – squared* shows the same as *R – squared* but adjusted by the number of cases and number of variables. When the number of variables is small and the number of cases is very large then they are very similar.

5.2. Difference-in-Difference Estimation. The difference-in-difference technique is a design that adopts longitudinal data from treatment and control groups to acquire an appropriate counterfactual to assess a causal effect. DID is used in this case to estimate the effect of a specific treatment by comparing the changes in outcomes over time between a group of countries that did restructure and a population that did not.

DID is usually implemented as an interaction term between time and treatment group dummy variables in a regression model. DID is very intuitive to interpret and focuses on change rather than absolute levels. However, this approach has also some restraints. Of course, it takes baseline data and a non-intervention group but it cannot use if testing groups have different outcome trend. It demands that, in the absence of treatment, both classes would follow the same time trend.

In order to assess any causal effect, some assumptions must hold. The parallel trend assumption is strategic to secure internal validity of DID models but is very hard to fulfill. It requires that without treatment the difference between the treatment and control group is stable over time. However, in this case this supposition is breached, since violation of parallel trend assumption drives to biased estimation of the causal effect. Hence, it is difficult to derive any conclusion from the analysis.

However, this canonical estimator that contains two time periods ("pre" and "post") and two groups is not sufficient to the study of this model. The modification in this paper exploit variation across groups of units that receive treatment at different times. Hence, a causal interpretation can be very challenged, as showed in the last subsection of this paper. Factor variables create indicator variables from categorical variables, interactions of indicators of categorical variables, interactions of categorical and continuous variables, and interactions of continuous variables. Factor variables may be combined with lagged and forwarded variables.

In table 4 the regressions computed include yearly fixed effects. As external debt increases, growth decreases. Real effective exchange rate does not seem to make any impact on growth, as well as unemployment rate. Obviously, the restructuring dummy of the control group is less than the one of the treatment group because in the control group are not included more countries that did restructure in the period 1999-2014. The years 2000, 2001 and 2002 are not statistically significant at the 0.1 threshold for both the regressions. The yearly coefficients increase until 2007, before dropping in

TABLE 4. Results of the regressions with yearly fixed effects. Dependent variable: Real GDP per capita.

Variables	Treatment group	Group with control
Restructuring dummy	-0.643** (-2.65)	-0.612** (-2.50)
External Debt to GDP ratio	-0.303 (-1.30)	-0.439 (-1.64)
REER change in year t	0.001 (1.30)	0.000** (2.07)
REER change in year $t - 1$	0.001 (0.89)	0.000 (0.17)
REER change in year $t - 2$	-0.003*** (-3.04)	0.000 (0.24)
Unemployment rate	-0.020 (-0.46)	-0.028 (-0.93)
Constant	1.796 (4.18)	1.664 (4.78)
Yearly fixed effects	Yes	Yes

2008. Then it boosts to 1.99 for the countries in the first group and 1.80 for the others in 2012. Overall, the coefficients of the second group are slightly smaller than the ones in the first group.

The values 2 years lagged and forwarded values of "Restructuring_dummy" are reported in table 5. This regression is computed to analyze the situation of the countries before and after the restructuring episode. Before this event, the countries in the treatment group seem to have some difficulties, in particular two years before the restructuring episode. Then, the beta coefficient slightly improve and does not change significantly from lag 1 to the year of defaulting. One of the possible explanation is that countries' government just before defaulting decided to postpone repayments. One year after the restructuring, the beta decrease again. In order to evaluate the benefit of restructuring, the time span need to be extended.

By estimating the regressions using 4 years before and 3 years after the restructuring episode, the outcomes are similar. So, the explanation described above holds. However, the beta coefficients of the restructuring dummy at the time of restructuring is worse than before, -0.73 instead of -0.57 for the first group as shown in table 6. After the restructuring the betas increase significantly, from

TABLE 5. Results of the regressions with two lagged and forwarded periods using two datasets. Dependent variable: Real GDP per capita.

Variables	Treatment group	Group with control
Restructuring dummy		
L2	-0.696** (-2.72)	-0.691** (-2.57)
L1	-0.557*** (-3.46)	-0.572*** (-3.33)
–	-0.567** (-2.62)	-0.504** (-2.48)
F1	-0.627** (-2.48)	-0.518** (-2.34)
F2	-0.437*** (-2.81)	-0.411** (-2.18)
Unemployment rate	0.029 (0.85)	-0.004 (-0.15)
External Debt to GDP ratio	-0.356* (-1.88)	-0.484** (-2.18)
REER change in year t	0.000 (0.28)	-0.000 (-0.76)
REER change in year $t - 1$	0.001 (0.70)	0.000 (0.81)
REER change in year $t - 2$	-0.003*** (-4.97)	0.000 (-0.54)
US interest rate	-1.507* (-1.97)	-1.269** (-2.53)
US GDP growth	3.431*** (2.89)	3.439*** (4.68)
Constant	-0.399 (-0.19)	-0.641 (-0.42)
Observations	307	487
R-squared	0.0243	0.0341

TABLE 6. Results of the regressions with two lagged and forwarded periods using two datasets. Dependent variable: Real GDP per capita.

Variables	Treatment group	Group with control
Restructuring dummy		
L4	-0.615** (-2.14)	-0.578* (-1.99)
L3	-0.667** (-2.70)	-0.601** (-2.61)
L2	-0.608** (-2.78)	-0.567** (-2.50)
L1	-0.584*** (-2.86)	-0.527** (-2.52)
-	-0.730*** (-2.87)	-0.675** (-2.48)
F1	-0.729*** (-2.84)	-0.591** (-2.25)
F2	-0.502*** (-3.06)	-0.431** (-2.17)
F3	-0.393*** (-3.68)	-0.326*** (-2.80)
Unemployment rate	0.020 (0.48)	-0.022 (-0.79)
External Debt to GDP ratio	-0.332** (-2.14)	-0.451** (-2.28)
REER change in year t	-0.003* (-1.84)	-0.001 (-1.01)
REER change in year $t - 1$	-0.000 (-0.35)	0.000** (2.46)
REER change in year $t - 2$	-0.002* (-1.84)	-0.001 (-0.95)
US interest rate	-4.819*** (-3.06)	-5.001*** (-4.22)
US GDP growth	2.460*** (3.46)	2.438*** (4.16)
Constant	4.659 (2.34)	4.483 (1.856)
Observations	233	368
R-squared	0.0007	0.0019

-0.67 of lead 1 to -0.45 of lead 3. Three years after the restructuring the countries seem revitalized. However, there can be a problem of lack of data after three years from default. Actually, the impact of a unit change of US interest rate in the growth of both groups are much higher than the values estimated in table 5.

TABLE 7. Results of the two regressions based on the countries that did restructure and the one with the control group. The treatment variable is smaller for the treatment group. In fact, after a restructuring, growth recovery of the treatment group is slower compare to the group with controls. In fact, the countries in the first group has to spend more on interest payments due to the lower credit score. Dependent variable: Real GDP per capita.

Variables	Treatment group (t-statistic)	Group with control (t-statistic)
treat_perm	-0.554 (-1.55)	-0.402 (-1.64)
Unemployment rate	-0.025 (-0.61)	-0.028 (-0.96)
External Debt to GDP ratio	-0.383* (-1.75)	-0.524** (-2.12)
REER change in year t	0.001 (1.09)	0.000* (1.86)
REER change in year $t - 1$	0.001 (1.66)	-0.000 (-0.14)
REER change in year $t - 2$	-0.003*** (-4.61)	-0.000 (-0.17)
US interest rate	-3.800** (-2.64)	-3.320*** (-4.00)
US GDP growth	2.977*** (4.82)	2.453*** (7.09)
Constant	2.693 (2.22)	2.566 (3.07)
Observations	406	646
R-squared	0.0801	0.1646

Once a country has restructured, a dummy variable equals to 1 for every year of and after the first restructuring is used as dependent variable. The result of the regression is shown in table 7.

TABLE 8. Results of the two regressions with no fixed effects using. Dependent variable: Real GDP per capita.

Variables	Treatment group (t-statistic)	Group with control (t-statistic)
Restructuring dummy	-0.454** (-2.46)	-0.316* (-1.80)
Unemployment rate	0.001 (0.09)	-0.019*** (-2.91)
External Debt to GDP ratio	-0.281*** (-3.38)	-0.104 (-1.67)
REER change in year t	-0.003 (-1.40)	-0.000 (-0.65)
REER change in year $t - 1$	0.001 (0.32)	0.000 (0.46)
REER change in year $t - 2$	0.003 (1.11)	0.000 (1.53)
US interest rate	-3.737** (-2.21)	-3.676*** (-3.15)
US GDP growth	2.386*** (3.07)	2.401*** (4.40)
Constant	2.535 (0.99)	2.491 (1.40)
Observations	406	646
R-squared	0.217	0.228

In the last analysis of this paper, a regression with no fixed effects is retrieved. Robust standard error is included in order to make the variable *Restructuring_dummy* statistically significant at the 5% threshold. In Table 8 the results are displayed. It is the first time that the variable *Unemployment_rate* is significant at the 5% threshold. This can also in part explain why the impact of *Debt_to_GDP* is the half with respect the regression with the countries that did restructure. Indeed, it is extremely hard to compare one group that received treatment in different years with another that never suffered of debt restructuring.

Then, a linear regression with multiple fixed effects is then performed. However, the outcomes are not so satisfying. The only values that change from the last regression are the t-statistic. In the regression with the control group, the variable *Debt_to_GDP* is not significant at the 10% significant threshold. Since this specification does not allow for difference-in-difference with time varying effect, results are not satisfying. Callaway and Sant'Anna (2021) provide a unified framework for average treatment effects in DiD setups with multiple time periods and variation in treatment timing. Their approach allows for estimation and inference on explicable causal parameters allowing for arbitrary treatment effect heterogeneity and dynamic effects.

6. POLICIES FOR A SUSTAINABLE DEBT IN POOR COUNTRIES

The World Bank provide long-term loans to support development projects, while IMF supply loans to sustain countries with short-financial crises. IMF requires the borrowers to enforce privatization of industries, liberalizing of capital markets, market based pricing and higher interest rates and trade liberalization. Their interventions broaden during the economic crisis of the early 1980s. They also impose a standard policy package to correct trade imbalances and government financial deficits to force borrowers to repay. According to Kingston (2011), this kind of strategy usually resulted in unemployment, poverty and concentration of resources.

For example, the largest cocoa industry was privatized under SAP in Ivory Coast. Moreover, due to the urge of boosting cocoa production, children were exploited, obliged to work instead of studying. To correct budget deficit, government was obliged to cut expenditure on national health system and education. Zimbabwe had to cut fiscal deficit and the tax rate on the private sector to deregulate the labor market and reduce minimum wage. As a consequence, spending on education slumped and total private investment dropped. In these countries, governments should invest in human capital development and intangible infrastructure, such as transparent regulatory framework, improvement of capital markets and enforce property rights.

According to Archibong et al. (2021), the early 1980s saw an increase in the real interest rates that raised interest payments on previously contracted US dollar-denominated loans. Many African governments in financial difficulties and increasing poverty addressed to international financial institutions for debt relief. Initiatives based on fiscal discipline, market-oriented domestic reforms, privatization and openness to trade were included in structural adjustment programs dictated by IMF and the World Bank. The market would correct domestic policy-encouraged policy distortions in order to preserve stability in inflation, public finances, and the balance of payments. In 1989 John Williamson referred to these market-oriented directives as Washington Consensus. He identified ten different policies aimed to promote stability and economic development. According to this list, budget deficits must be small, public expenditures shifted to primary education and health, and market liberalization. However, it was never meant to be a set of actions, reforms, and investments, adapted to the specific initial conditions. This type of growth strategy must be tailored to a specific countries and time. The effect of these policies on economic events stands as a subject of debate. Unfortunately, a model to fully apprehend the economic and political economic dynamics associated with growth and development. According to Spence (2021), the Washington Consensus was never expected to be a one-size-fits-all development program. In this context, the market-oriented reforms

of the 1980s and 1990s could have played a role in the Sub-Saharan Africa's improved economic performance. These policies would correct domestic policy-induced distortions in prices.

Comparing countries that adopted reforms with those that did not is challenging. Of course, there are different opinions on how to analyze those data. One can argue that countries under pressure to adopt reforms tended to be worse off. In particular, such actions cause short-term burden to poor people. Countries involved in debt relief enjoys growth compared to those that did not. Some studies examine the negative effects of the reforms felt by rural farmers. The advanced economies subsidized agricultural production made difficult for African farmers to compete due to the removal of agricultural subsidies. Many trade liberalization policy reforms underestimated the role of incentives facing producers in incomplete markets. Liberalization in the agricultural sector negatively impacted terms of trade for farmers who were sometimes unable to compete with international prices. Higher prices for agricultural commodities in the 1980s and 1990s worsened local food shortages and led to protests in African countries.

The premise of the Washington Consensus policies reforms rested on two interdependent and testable hypotheses. In the years following the reforms, economies that adopted reforms would perform better than they did in the preceding years. Reform adopters would outperform non-reformers. Archibong et al. assessed two possible alternative explanations for the improved economic performance of sub-Saharan Africa over the past two decades. The first regards African countries benefited from debt relief and resulting additional fiscal space allowed governments to increase public expenditures. Official from major creditor countries and multilateral organization adopted Multilateral Debt Relief Initiative. The IMF and World Bank instituted the Heavily Indebted Poor Countries initiative. New loans, improved policies and enhanced investment incentives were expected to increase economic outcomes. Debt relief through programs was often conditioned on strict adoption of market liberalization reforms.

The second refers to the sustained increase in commodity prices driven by the high demand of China. Commodities have featured heavily in the exports of many African countries, with exports of mineral resources and oil as high as over 80 percent of total exports in countries like Congo and Nigeria. Over the past two decades, they benefited from higher commodity prices. However, increase in commodity prices was not the only driver of the economic performance of sub-Saharan Africa.

The reforms related to the Washington Consensus led to an improved macroeconomic environment with lower inflation combined with debt reductions. These changes did help to attract more private investment. However, there are a number of other factors to be considered.

Many of the especially indebted countries were already suffering from lower per capita economic growth over the reform period. Thus, comparing the experience of reformers and non-reformers, the low economic performance may have been a motivator for the reforms, or the lower economic performance may have resulted from the short-term negative effect of the reforms. Also, the speed with which many of these reforms were carried out initially played a role. Domestic reforms were implemented without careful consideration of incomplete markets and the institutional challenges faced by African governments. For effective reforms to be implemented, stable and committed governments with a high level of social and political capital are required. The reforms often placed too much emphasis on macroeconomic stability without adequate provision of social safety nets. Unfortunately, that contributed to weaken governments and sabotage the reform agenda. Political policy adoption has been ignored in previous analyses of Washington Consensus policy reforms. While international financial institutions often blamed the failure of the reform agenda to weak state capacity, the focus on market orientation and limiting state intervention in development activities led to market failures.

Moreover, it is not obvious that the market-oriented reforms are the best or only route to successful economic development. In many development efforts around the world, governments played a prominent role for much of the critical phase of their economic development. Several features, such as financial liberalization and a unified exchanged rate, are not consistent with strategy and performance in Asian developing countries.

According to Spence, there are six key areas to uncover sustained growth: macroeconomic stability, exploitation of world markets and knowledge, high levels of investment and saving, allowing markets to play a role in resource allocation and incentives, leadership and governance, put boundaries of inequality. In the early stage of development, foreign demand has to be enough to thrive specialization, scale economies and learning curves. Thus, Washington Consensus imposed lowering trade restrictions. However, sudden shifts may take place too fast for the domestic economy to adapt structurally. A step-by-step progression is essential to avoid economically and socially damaging disruption and unemployment. It is extremely difficult to come up with models dealing with equilibria, as mostly economic theory handle with equilibrium. Economists need to give a clear guidance on how to reach stability.

According to Romer (1994), knowledge transfer is a powerful accelerator of potential growth. In his view, a major drawback of the Washington Consensus was the little attention to knowledge sharing and the instruments through which it took place, alongside national circumstances and

investments that favored this process. In fact, national resources are not essential for development. According to Cipolla (2002), the existence of coal was only one of the requirements for the Industrial Revolution in Great Britain to be successful. In fact, also Belgium had coal sites in Wallonia but not the other five components that could create novelties, such as high levels of agricultural productivity to provide excess manpower and food; a pool of managerial and entrepreneurial skills; available ports, rivers, canals, and roads to cheaply move raw materials and outputs; political stability and a legal system that supported business; and financial capital available to invest. Hence, sub-Saharan states must have stable political systems, modern infrastructure to connect different parts of the continent, and a prolonged period of peace in order to benefit from the importation of technology from richer countries. It is fundamental to adapt every innovation to the cultural background of the destination site.

Private sector incentives, investment and dynamics are helpful elements in transformation and growth, but human capital, infrastructure, and knowledge are the fundamental aspects. According to Spence, these investments have high rates of return, improving also the ones to private investment. Another important matter is to leave no one behind, since non-inclusive growth patterns commonly are unsuccessful. Growth obtained with large-scale inequality of opportunity or access will suffer resistance.

Asian development strategies tried to access and take advantage of comparative advantage. Since these countries had a huge supply of low income workers, labor-intensive manufacturing came out as an essential element of the growth model. In China labor market changes caused incomes and prices to rise because more people are employed in modern urbanized sectors. This is the reason why China is investing hardly in Africa in order to secure once again low income workforce and cheap natural resources.

According to Gamel and Pham(2018), debt relief influences enrollment rates for primary school students both in the short and the long term. Investment in education increase due to the less resource allocated in debt service. However, the consequence of this policy will materialize only in the long-term. By taking the perspective of an European person, this can be interpreted as the main reason why an industrial culture has never developed yet.

In response to the recent COVID-19 pandemic, the international institutions proposed to poor countries a moratorium of debt service due in the second half of 2020. Therefore, debt service repayments are postponed in order to improve debt sustainability in poor countries. This policy is called Debt Service Suspension Initiative (DSSI). In the other hand, creditors do not worse off

from this arrangement since the NPV of public debt is not affected. In this context, Lang et al. (2021) tested how this suspension altered financing costs for low-income countries in private bond markets. According to them, there is a trade-off between signals of debt vulnerabilities and the liquidity effect from saving in interest expenditures. In fact, markets may recognize assistance as a signal of debt stressed, even if these operations only affect official creditors and do not adjust the NPV value. But the new liquidity can be used to manage with negative shocks. The authors though synthetic control and DiD designs demonstrated the decrease in spread after the debt relief allotment. Average sovereign bond spreads in the DSSI-eligible countries raised when the pandemic exploded in March 2020. Then, when the DSSI was launched, sovereign spreads started a constant downward path. The authors also failed to find any relationships with other conditions attached to the initiative, such as the IMF program. So, debt service is one of possible options to deal with a debt impasse.

The low-interest loans provided by the IMF the country can resurrect the growth of countries in difficulty, restructure obligations and reduce debt repayment obligations. However, member countries should not become over-dependent on IMF loans. In exchange, governments hand over some sovereignty and independence on economic policies. IMF also inflicts important surcharges. They are seasonal financial penalties charged on countries with large borrowings that are not reimbursed within short time. According to Gallagher et al. (2021), borrowing countries will pay over \$4 billion in extra surcharges from the beginning of the COVID-19 crisis to the end of 2022. These fines have become the largest source of revenue. IMF aimed to damage potential outcomes for both the borrowing country and its investors. The accidental repercussions are two-fold. First, the surcharges unfairly interest middle-income countries with lower quotas that demand considerable support to repay and longer repayment intervals to overcome deadlock. Second, they impose borrowing members to pay just when they are most exerted from market access in any other form.

7. CONCLUSION

The analysis of economic consequences of the countries that restructured in the period from 1999 to 2014 was performed in this paper. This analysis has the aim to enrich the effort of Forni et al. (2016) by considering a different period from their research and a slightly different method of interpretation.

Governments resort to default or IMF borrowings only in painful economic situations. They hope to solve their debt crisis in order to enhance macroeconomic performance. Unfortunately, economic theory is still equivocal about the benefits or the costs of sovereign debt restructurings for growth of the defaulters. In particular, restructurings with external private creditors can alter per capita GDP performance. Indeed, growth downturns after restructurings.

In the last section, policies of multilateral institutions implemented in poor countries are then discussed, in order to contribute to the so-called "Washington Consensus" debate.

Further analysis need to be inquired the effects of final restructurings. They allow countries to exit a default and focus on debt sustainability issues. It would be interesting to analyze the improvements of growth performance of a country dealing with low debt ratio but high interest expenses.

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