

Summary of GDN Project:
Economic Growth in Latin American and the Caribbean

The GDN project on Economic Growth in Latin America and the Caribbean consists on eight studies that aim to analyze the determinants of long run economic growth in eight different countries of the region. The following is a summary of the main findings of these studies.

Chile

Chile is an interesting case for analyzing the determinants of economic growth because during the last four decades the country has experienced a variety of episodes ranging from mediocre to very successful economic performances. This provides an ideal ground for measuring what was different among these episodes and what type of lessons could be extracted from them.

Compared to other Latin American countries, the behavior of GDP per capita in Chile was about average in the sixties, below average in the seventies and it outperformed the rest of Latin American economies in the eighties and the nineties. In particular, the economic performance was moderate until the oil crisis, very poor during the two the two major international crises in the early seventies and eighties, and it exhibited accelerated growth rates and decreased volatility after these episodes. It is therefore very instructive to analyze the factors behind these major swings. This is the main purpose of the Chilean study.

A simple look at the evolution of the sources of growth provided some preliminary clue. During the sixties, GDP growth was accompanied by a faster increase in the capital stock and a smooth upward trend in labor. During this period the economy grew at rate close to 5%. After the recession, in the middle of the seventies, the economy grew at very fast rates of above 7% with a relatively slow increase in capital and labor until the beginning of the debt crisis. Finally, after the second recession, in the mid eighties, the economy

experienced GDP growth rates of above 7% again. Although during this last period there was a recovery of employment and capital, these variables did not grow like in the sixties. Given this evidence, the authors argued that while in the sixties physical capital and human capital accumulation were the most important factors behind growth, TFP was the key factor in the middle of the seventies and after the international crisis in the mid eighties. These conjectures were later confirmed by the growth accounting exercises performed.

The main observation from the growth decomposition was that the recovery from the two deep recessions of the seventies and the eighties were both accompanied with significant increases in TFP, but this feature was not present in the sixties. So what was different in the sixties from the later decades? The authors pointed to the inward oriented policies that existed during this period and the series of distortions that they brought. The main hypothesis is that after the trade reform period (during the seventies) the elimination of distortions may have had a significant positive impact on the efficiency of the economy and the growth rate of TFP.

In order to test this hypothesis, the study analyzed if distortions had anything to do with the evolution of TFP. After controlling for external factors like technology and terms of trade shocks and adjusting for the quality of the capital stock, the authors introduced the impact of distortions using the ratio between fiscal expenditure and GDP. They found that this measure of distortions and the terms of trade to be the variables with the largest impact on the level of TFP.

In the study, the measure of distortions not only offsets the positive effects of the improvements of the quality of capital goods, but also it has detrimental effects on the level and volatility of TFP. The most important policy implication of this finding is that good policies matter. The study shows that highly distortionary policies can help to explain several of the episodes of mediocre growth in Chile. Moreover, the removal of such distortions were found to be in the root of the subsequent periods of successful economic performance.

Peru

The experience of the Peruvian economy contrasts sharply with that of the Chilean economy because the country went from high levels of economic growth in the sixties to very poor levels of performance in the late eighties and late nineties. The large swing from being one of the most promising countries in Latin America to a stagnated economy provides also an interesting case for analysis. The key question here is: what went wrong?. This is the main objective of this study.

In 1960, Peru was a country with a relatively large supply of natural resources (minerals, fishing, forest and fertile valleys in the coast) and a stock of human capital that was superior to most of the East Asian countries. According to the study, economic growth was very stable until 1966. Since that year, however, the economy began to decline, and the gradual slowdown in the rate of growth finally turned into a frank deterioration in the observed GDP per capita. After two decades of stagnation, the economy recovered between 1991 and 1997, but in 1998 the growth rate declined again. Provided with these facts, the authors focus the analysis to answer the following questions: (i) what was behind the long period of deterioration?, (ii) what stopped the decline and generated growth between 1991 and 1997?, and (iii) what cause growth to cease again after 1997?.

The most striking feature of the growth accounting exercises performed in the study is the steep downward trend of TFP since the late sixties to the early nineties. This decline in productivity is in the root of the long period of deterioration described above. The finding, however, poses an even more puzzling question: what factors can explain such a long decline in TFP? The authors conjectured some plausible explanations: overwhelming mismatch of job skills and job characteristics and/or the result of a poor agrarian reform. However, the fall is too steep, as the authors acknowledged, so other elements might have been at stake.

Following the literature on TFP growth, the authors performed econometric exercises in which TFP depended on a set of variables that can be divided into: (i) good policies, (ii) just plain good luck, and (iii) a good institutional stance. Good policies were further divided into macroeconomic and social policies.

The results of the econometric exercise seemed to provide a good indication that a combination of bad macroeconomic policies and a weak institution environment were at the roots of the large episode of TFP decline. On the one hand, the exercise showed a strong relationship between the gradual deterioration of macro factors, specially those related with fiscal and monetary mismanagement during the seventies and the eighties, and the decline in TFP growth. On the other hand, the coefficient for the institutional factors during the seventies, a decade of military dictatorship where the rules affecting the security of property rights, and subsequently the incentives to produce and to invest, were taken in a unilateral and arbitrary manner, showed a deep negative impact in TFP. During the eighties, however, this coefficient showed a major positive effect on productivity revealing how important the restoration of democratic institutions was.

The econometric exercise also provided some hints for the second and third questions posed above. First, the improvement in macroeconomic management seemed to be the main factor behind detaining the long downturn in productivity as the fiscal deficit and inflation were reduced dramatically and a new phase of economic growth began in 1991. The positive impact this generated on TFP growth was later offset by the deterioration of the institutions, mostly related to the interference of the Executive branch in the functioning of the Congress, the Judiciary, Municipalities and other government branches. According to the author's results, if it had not been for this institutional deterioration, the yearly GDP per capita growth could have been 1.74 percentage points above its current level.

These findings strongly support the main policy recommendation that follows from the Chilean analysis, this is: good policies matter. Moreover, an additional lesson follows directly from the Peruvian experience on the second half of the nineties, this is: good

policies might not be sufficient without a good institutional stance. This is, even if proper economic policies are pursued, a successful economic performance might not follow if an adequate set of institutions are not put in place.

Brazil

Brazil's economic performance is unique in the sense that it exhibited very rapid growth rates until 1980 precisely when it had a mix of policies that are considered "wrong" by today's economic consensus. The policies were characterized by a widespread government intervention, high external protection and low regard for price stability. Then, after a period of negative growth between 1981 and 1993, the Brazilian economy underwent a dramatic structural change towards an open, price-stable and well economically managed regime. The growth rate between 1994 and 2000 returned to positive figures but they were still below the rates the economy exhibited before 1981. Therefore, the main questions the Brazilian study seek to answer are: (i) how did Brazil manage to grow so rapidly from 1930 to 1980, following so many bad policies?, and (ii) why did Brazil then proceed to perform so poorly in the final two decades of the century?.

According to the study, a closer look at events and the econometrics suggests that Brazil's achievements during the high growth period were in fact remarkably orthodox when set against the economic debates alive at the time. For example, by 1963, investment was stagnant, the public deficit represented half of fiscal revenues and the inflation rate was accelerating. Then, the new military government that took power adopted a stabilization program to lower inflation, reduce the public deficit, and correct relative prices. Other measures like exchange rate devaluation and a tax reform were also implemented, reducing tax distortions, raising revenues and improving the current account. After a time, investment reacted positively to the more stable environment, and by 1967 the economy contained a large amount of idle capacity, which was to prove key in the successful performance in the early seventies. Therefore, despite the high degree of central planning, the macroeconomic management was fairly orthodox.

The second part of the seventies was signed by the first oil shock of 1973. The government opted to sustain the pace of economic growth with the external accounts being left as an adjustment variable, partly under the belief that the oil shock would be transitory. The pace was sustained until the late seventies, when the current account widened considerably and the external debt reached alarming levels. Then, at the beginning of the eighties, the different disequilibria could not be sustained any longer and the growth rate started to decline.

Growth accounting exercises showed that physical capital accumulation and TFP growth explain most of the growth dynamics of the Brazilian economy between 1930 and 1980. TFP growth seemed to have been systematically associated with growth in the stock of machinery and equipment, suggesting that some TFP growth was gained through capital-embodied technological progress.

Turning to the period of post structural reforms (1994-2000), growth accounting exercises suggested that the acceleration of GDP growth was entirely due to higher TFP growth. Indeed, the exercises showed that the reason why the market reforms implemented in the nineties failed to bring economic growth back to pre-1980 levels had been the failure of those reforms to generate factor accumulation.

Additional analysis showed that although TFP was the main factor contributing to growth after 1994, the growth rate was not higher because of possible limitations on innovation activity and the transfer of technological knowledge from abroad. For example, studies on international transfers of knowledge usually finds foreign machinery as an ideal vehicle for technological transfer. This positive effect of foreign machinery on productivity was not found in Brazil. According to the authors this might be the result of a bias towards regional trade or the presence of impediments to technology transfer.

Household evidence provided in the study strongly support the results from the growth accounting exercises that human capital accumulation was not the driver of the country's

economic growth. In fact, Brazil's human capital levels, particularly education indicators, still lag behind those of the Latin American region.

According to the study, the economic transformation that took Brazil in the nineties needs a set of additional policies in order to maximize the country's potential for sustaining economic growth. Elements of the study already summarized above suggest that these policies must stress the role of trade even further and emphasize the importance of innovation activity, knowledge flows, and human capital.

Uruguay

The experience of the Uruguayan economy resembles that of the Peruvian case in the sense that the country went from relatively high levels of economic development in the middle of the century to join the group of less prosperous nations among the middle-income countries. The Uruguayan study seeks to investigate the reasons behind this downturn.

In 1955, Uruguay had a GDP per capita that represented 44% of that in the U.S., it was very close to GDP per capita in France and it was higher than in Austria and Italy. By 1998, however, GDP per capita in Uruguay had fallen to 29% of that in the U.S. and almost half of that in France, Austria and Italy.

According to the study, most of the poor growth performance in Uruguay could be imputed to the stagnation that characterized the economy between 1955 and 1973, when GDP per capita decreased at a cumulative annual average rate of 0.2%. This period coincided with an environment of government intervention, particularly large in external trade but also quite extended throughout the economy by its influence on the determination of critical prices like wages and exchange rates and by imposing limitations to free-entry in certain markets.

The economic performance improved between 1973 and 2000, a period that coincided with an environment of successive application of policies that promoted the development of a market-oriented economy. Although GDP per capita growth averaged 1.7% during this period, which is a significant better figure than that of the previous eighteen years, it was still too far below the records of other developing countries which also introduced market-oriented economic reforms. Two relevant questions arise: (i) what are the factors behind the growth rate in Uruguay?, and (ii) why the growth rate has not being higher?

The growth accounting exercise in this study suggested that factor accumulation had dominated the contribution to economic growth in the country. During the period of low growth (1957-1973), a large part of output was explained by the growth of the labor force and the accumulation of human capital. The role of physical capital accumulation was also large leading to a situation of deep negative TFP growth during this period. According to the author's calculations, these negative rates of TFP growth were present throughout the five decades of the analysis except for the period between 1974 and 1990. During the eighties and the nineties, the contribution of the labor force decreased relative to the period of low growth, but the contribution of human capital remained large, particularly during the nineties.

Further econometric analysis suggested that changes in economic policy in Uruguay had only transitory impacts on investment and growth. The model also suggests that changes in policy had benefited the development of sectors relatively intensive in the use of skilled labor promoting a further formation of human capital.

Why market-oriented reforms introduced in Uruguay during the eighties and nineties only stimulated factor accumulation without any positive impact on productivity levels remains still a puzzle.

Barbados

Barbados has had a history of economic performance that contrast sharply with all the other studies of this project. Over the course of four decades, the typical economic performance in a Latin American country can be characterized by several changes in the growth rate with episodes of accelerated growth and others with severe downturns. Barbados, however, has exhibited a remarkably stable path performing relatively well over the past four decades. Given the small size of its economy and the lack of natural resources, the key question is what factors might have contributed to the relatively good growth performance of this economy over such an extended period of time. This is the main purpose of the Barbadian study.

Growth accounting exercises performed by the author indicates that during the period 1960-73, physical capital accumulation was the main source of growth followed by TFP growth. TFP growth, however, became negative after this period and has remained this way since. Physical capital accumulation was the main driver of economic growth between 1975 and 1989 and according to the author this was the result of an explicit government policy to encourage capital investment via several incentives: accelerated depreciation, low import duties and specific tax rates.

The data suggested a growing importance of the labor factor and human capital with its dominance being shown during the 1992-99 period. According to the author this was also the result of an explicit government policy to invest significant amount of funds in health and education. This investment complemented and supported the investment on physical capital.

Additional econometric analysis showed that the growth rate of output in Barbados has been positively related to macroeconomic stability characterized by a relatively low inflation rate, and monetary and balance of payment stability.

Additional evidence is also provided by the author showing the importance of the tourist services and the country's institutions to the growth process. Barbados institutions have several desirable characteristics: a stable political party system with regular elections, active non-governmental organizations (such as the trade unions, church and social clubs), low levels of industrial disputes and work stoppages, free media, relatively low levels of corruption and a high regard for the "rule of law". This points out to a lesson that already showed up strongly in the Peruvian study: good policies might need to be accompanied by a good framework of institutions in order to generate a positive impact on economic performance.

Still a puzzle in the Barbadian case is the finding that such a good combination of policies and institutional quality has not been able to deliver TFP growth in the last 25 years and the only force driving economic growth has been factor accumulation.

Colombia

The Colombian economic performance is similar to that of Barbados in the sense that it exhibited a long period of ongoing expansion. However, Colombia stopped growing in 1995 and for the first time in the whole century income per capita has been falling. The Colombian study assesses the country's growth determinants during the last three decades and seeks to explore the reasons behind the poor performance of the economy during the second half of the nineties.

Growth accounting exercises performed by the authors showed that TFP contribution to economic growth has been important in several periods. For example, the contribution was very high in 1925-50, still high until 1973, and smaller but still positive between 1990 and 1995. The contribution of TFP was negative between 1973 and 1989 but the effect was fairly small. Starting in 1995, however, the negative effect of TFP on the growth rate of output has been remarkably large.

According to the authors, the declining contribution of productivity has its roots in the pattern of development of the country. This is because manufacturing -the sector with systematically higher productivity- has lost participation in GDP since 1973.

Econometric analysis with Colombian data also shed some light on additional factors that might have influenced the behavior of productivity growth. One of the main results is that pro-market reforms introduced in the economy have had a positive impact on TFP, particularly in the period 1990-95. The specific pro-market reforms analyzed in the study were: openness to trade and financial liberalization.

The study goes on and analyzes the effect of the armed conflict in the growth rate of output. Regression analysis showed that homicides have a highly negative impact on productivity while the deterioration of socio-political conditions affects negatively the investment rate. According to the study, although the pro-market reforms adopted in the early nineties had a positive impact on productivity, this impact proved ephemeral as productivity plunged after 1995 coinciding with the intensification of the war. This result is similar to the lesson already found in other studies that good policies might fail to stimulate growth without a proper set of institutions. In the particular case of Colombia, the failure to reach a peaceful agreement among the different groups involved in the armed conflict can be seen as a special case of institutional brake-down.

Paraguay

The Paraguayan growth performance has been less than satisfactory. The average growth rate between 1950 and 2000 was only 1.7%, and excluding the seventies -when much of the construction of the Itapú project was done- the average growth rate drops to only 0.5%. Naturally, such a poor record implies that Paraguay is among the least developed countries in Latin America. Considering the 2000 levels, its GDP per capita was only 50% of the Latin America average and, when compared with its MERCOSUR partners, it was only 34%. The Paraguayan study seeks to analyze the reasons behind such a mediocre performance of economic growth.

Preliminary evidence provided by the author suggests that the lack of human capital accumulation is an important factor behind the meager growth rates of Paraguay. Capital accumulation, on the one hand, exhibited important growth rate almost during the entire period of the study and the growth rate of labor was also relatively satisfactory. The lack of human capital then, was seen as a prime suspect in the poor performance of the economy.

Growth accounting exercises showed that the evolution of productivity growth was extremely variable. TFP grew in the sixties and seventies and then dramatically fell in the early eighties. During the first part of the nineties TFP showed an steady behavior but after 1995, it declined again sharply.

Seeking to explain the determinants of TFP growth the authors performed some econometric exercises. They indicated that productivity growth was positively influenced by government investment. This explained most of the TFP surge during the sixties, when the government heavily invested in infrastructure to expand the agricultural frontier, and in seventies, with the construction of the Itaipú hydroelectric dam. Openness to international trade and investment flows also appeared in the econometric analysis to be positive forces behind the surge in productivity. These might have been the factors behind the stability of TFP during the early nineties. Finally, government current expenditures were found to have a negative and significant effect on TFP growth throughout all the period.

Argentina

The growth experience in Argentina can be divided in three distinct periods since 1950: a period of relatively stable growth (1950-1974), a period of macroeconomic chaos in which per capita income fell by 25% (1974-1990) and a third period of macroeconomic stability when growth was restored (1990-2000). The purpose of the Argentinean study is to explain the poor performance of the economy during the second period and to measure

how much of the growth experience in the nineties is due to the restoration of macroeconomic stability. Particularly, the study seeks to analyze the role of policy distortions, policy uncertainty and the expectation of big adjustments in accounting for stagnation.

Growth decomposition exercises revealed that the growth rates in the first period were mostly explained by capital and human capital accumulation. The negative growth in the eighties was explained both by a reduction in the capital stock and a fall in TFP, while the high rate of growth in the nineties were the result of capital and human capital accumulation together with positive growth in TFP.

Because sectoral reallocation can affect TFP by shifting labor and capital among sectors with different productivities or relative prices, the authors tried to measure the importance of this effect on the observed changes of TFP growth. The methodology allowed them to decompose the change in productivity of any particular sector on three elements: changes in the relative share of the sector (between-change component), changes in labor productivity within the sector (within-change component) and the interaction of the two components. Results showed that in overall, the within component was responsible for the largest part of the changes in productivity followed by the interaction term. During the nineties, however, the change in shares and interaction term played no role in explaining the high productivity growth while the change within the sector explained all of it. An important finding is that the largest increase in productivity during the third period occurred in the sectors where major privatizations took place.

The authors then go on to evaluate the effect of government policies on investment and growth. The initial presumption is that bad government policies were largely responsible for the collapse of the capital-labor ratio during the eighties inducing the slowdown during this period. Using a theoretical model and simulations, the authors were able to explain 90% of the fall in the capital stock by the negative effect of high interest rates and the levels of protection. This confirm the initial conjecture of the authors that government policies could disrupt economic growth through its pervasive effects on capital

accumulation. The authors argued that the other elements that could potentially explain the remaining 10% fall in capital stock were: higher export taxes, the removal of credit subsidies in import competing sectors, and the expectation of policy reversals, especially in the protected import competing sector.