UNSTABLE ECONOMIC DEVELOPMENT?

Aggregate Shocks in Latin America and the Caribbean

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1. Executive Summary

The region has made significant progress in the fight against poverty and income inequality.

The Latin American and Caribbean region has made remarkable progress in terms of advancing economic and social conditions in the last decade, gradually becoming a middle income region. Economic growth reached an average annual rate of 3.2% between 2000 and 2014, a markedly higher percentage than in previous decades. This encouraging environment has contributed to the reduction of poverty and the expansion of the middle class. The proportion of the 600 million Latin Americans living in extreme poverty, defined as surviving on less than $2.50 a day, was cut in half between the years 2003 to 2012, standing at 12.3%. Similarly, the percentage of Latin Americans living in the moderate poverty bracket, with less than $4.00 per day, fell from 41.1% to 25.3%. From 2011 to now, there are more Latin Americans within the middle class than living in poverty, and it is projected that the middle class will become the largest group in the region (World Bank 2014a). The benefits achieved extend to other areas of human development, such as greater access to basic services and lower birth and infant mortality.

However, these benefits are not guaranteed due to, in part, the high levels of risk exposure and vulnerability in the face of various shocks

Although, a significant percentage of households progressed to advance out of their socioeconomic group, the largest share continued to be vulnerable to poverty. Many Latin Americans dragged out of poverty driven by more than a decade of solid economic growth and the reduction of inequality. However, the

majority of people who stopped being poor did not become part of the middle class directly, many continued to be vulnerable, having to face economic insecurity, and suffer further periods of poverty in the future.[1] Almost 4 out of 10 households in the region are in this group, which makes it the largest socioeconomic bracket. Due to the high risk, many of these homes could fall back into poverty if one economic shock occurs.

High levels of vulnerability are intensified by exposure to numerous shocks that affect the region, such as the risk of natural disasters. The incidence of these phenomena tripled regionally and globally between 1970 and 2014. The presence of extreme rains and droughts has become a constant threat in the region. Of every ten natural disasters registered in the region, seven are due to storms and floods (Holt 2014). In the Caribbean, at least one country—and often more than one—is impacted by a hurricane or strong cyclone each year. Throughout the Dry Corridor—the tropical dry forest region in Central America—there are recurrent droughts that endanger crops, livestock, and food security. The Andean and Central American countries are within the Pacific Ring of Fire—a transpacific chain of volcanoes where about 90% of the earthquakes in the world occur—which has more than 75% of all active and inactive volcanoes. More than a quarter of all earthquakes, of magnitude 8.0 or greater, occurred within the western areas of South America.

The region must also address the main economic and social risks. The introduction of more restrictive macroeconomic policies in the regulatory framework has increased flexibility in most countries when facing economic crises. Nevertheless, the region is heading toward a long-term period of lower growth,

[1] López-Calva and Ortiz-Juárez (2014) propose a dividing line between economic security and vulnerability, the poor have a 10% chance of falling into poverty. They define the expected income associated with that probability as the upper limit of the vulnerability or the lower limit of the middle class. The lower limit is the poverty line of US$4.00 a day. Based on panel data for Chile and Mexico, per capita income among non-poor individuals facing a 10% chance of falling into poverty was US$9.80.

coupled with an increase in current account deficits, and also a greater exposure to other externalities. Crime and violence continues to be the main issue in the list of problems in many countries; the incidence of crime is such as being comparable with recorded rates of war ravaged countries. A person born in Caracas, San Salvador, or Tegucigalpa—three of the most violent cities in the region—has a probability of one in eight to be killed. In some parts of the region, gangs proliferate violence in youth, they participate in activities such as drug trafficking and money laundering; while some nations have suffered civil wars and other social instability events. Infectious diseases and viruses develop under conditions of heat and humidity, such as the tropical zones in most countries of the region. Great epidemics, like Chikungunya and Zika, represent serious risks to public health.

Aggregate shocks often translate into a fall of economic income

The natural and man-made disasters damage economic expansion possibilities and affects household income. The macro-level negative shocks are usually felt as a reduction in a nation's total production. The Gross Domestic Product (GDP) fell 6% and 11% respectively, during the crises in Mexico (1994-95) and Argentina (2001-02). At the microeconomic level, household income in the region would most likely fall significantly after a GDP contraction. Hurricanes in Central America slash household revenues by 3% for each standard deviation in the intensity of hurricane winds (Ishizawa and Miranda 2016). Similarly, in 2001 two strong earthquakes hit El Salvador, which reduced the median household income by one third compared to before the crisis (Báez and Santos 2009).

The effects of aggregate shocks on revenue can persist for a long period of time

Some households recover quickly after the aggregate shocks, but recovery can take much longer for others, especially the poorest and most vulnerable. Access to fully functioning credit and insurance, as well as savings institutions, and other informal mechanisms of risk distribution, such as money orders, help

households cope with the severe shocks. In general, this is not the case among the poorest and vulnerable brackets, who might be forced to lower their well-being and revenue growth. For example, in Honduras—two and a half years after Hurricane Mitch (1998)—there is evidence that higher income households could recover quickly, while those with less income experienced a downward trajectory and a sustained deterioration of their assets (Carter et al. 2005).

The income shocks translate into consumption deficits and greater susceptibility to poverty

The risks that affect income also influence the level of consumption, especially among the most vulnerable households with the lowest incomes. In the absence of insurance services, vulnerable households only partially protect their expenditure in the face of natural disaster shocks. There is enough evidence to show that consumption (including basic expenses) tends to fall on households and communities that are affected by natural disasters. The median per capita expenditure fell 7.7% in households affected by Agatha—a strong tropical storm that affected Guatemala in 2010 (Báez et al. 2016). Man-made shocks also produce potentially similar results. Households that were forced to move out of conflict zones in Colombia registered a 22% decrease in expenditure, which affected their intake of food and caloric intake (Ibáñez and Moya 2006). Also, temporary impacts in consumption can eventually become chronic. Longitudinal data of rural households in El Salvador, show a lower growth of expenditure between 1995 and 2001 among the poorest households that were affected by major shocks on their income (Rodríguez-Meza and González-Vega 2004).

Due to the volatility in household expenditure, one disaster could suffice for the vulnerable households to fall below the poverty line, or to sink into even greater poverty. When there is no insurance and risk management, or when they are inadequate, the reduction in income and consumption generated by the shocks severely impacts households to fall into poverty. Poverty rates increased by 5.5 percentage points in the flooded areas of Agatha (2010) in Guatemala, which is

equivalent to almost 80,000 additional families that fell below the poverty line (Báez et al. 2016). In 2003-04, the Dominican Republic experienced a banking industry collapse, which led to an accelerated depreciation of the currency, which affected inflation, then it precipitated a domestic crisis that led to the contraction of the economy. The poverty rate rose from 32% in 2002 to more than 50% at the height of the crisis (World Bank 2014b).

Aggregate shocks disturb and limit accumulation of assets

Severe shocks reduce amount of ownership of assets per capita. Human capital is particularly sensitive. Natural disasters, civil wars, and generalized epidemics leave human victims as a result, and negatively impact human capital. The earthquake that ravaged Haiti in 2010 caused almost 250,000 deaths. The internal conflict in Colombia, which lasted more than 50 years, caused a similar number of fatalities. In addition to the loss of lives, these events often cause the destruction of the infrastructure necessary for the attainment of human capital, such as schools, hospitals, and clinics. Similarly, shocks destroy private property (housing, machinery, crops, and livestock), other vital public infrastructure (roads and bridges), and environmental capital. Hurricane Mitch (1998) devastated more than 80,000 hectares of agricultural land, most of which were used by small farmers engaged in activities of subsistence (Ishizawa and Miranda 2016).

Shocks also affect asset investments. Severe shocks can mean a financial burden for households, often forcing them to cut back on expenses of food and health care, thus increasing the risk of malnutrition and other negative health effects. For example, Nicaraguan children between the ages of 0 to 5 years, who lived in households located in the path of Hurricane Mitch (1998), showed 30% less likelihood to be taken to medical consultation after the event, compared to children from unaffected areas (Báez and Santos 2007). Households could also be forced to withdraw their children from school in order to ask them to work; however, the opportunity cost lost results in lower human capital development. Once the

Mexican children are removed from school due to some severe shock, the probability of being re-enrolled is almost 30% lower compared to children who remain in school (Sadouletet et al. 2004).

Not all assets are affected in the same way—the poorest and most vulnerable people often support the heaviest load

By default, aggregate shocks broadly affect different economic and social spheres, but their impact on communities is not distributed uniformly. The earthquakes that affected Chile and Haiti in 2010 were of similar magnitude, but the results associated to them contrast strongly: 525 people died in the first case, compared to around 250,000 fatalities left by the second. The differences in terms of impact are determined by the circumstances of the affected population, such as gender equality, geographical location, educational level, and type of employment. In Mexico, the poor are almost three times more likely to be affected by a natural disaster in terms of loss of housing, crops and livestock, compared to people in the middle class (from source, Ortiz-Juárez and Rodríguez-Castelán 2015).

Aggregate shocks are detrimental to the promotion of investment and use of production factors

The job market is sensitive to severe shocks, sometimes employment increases with shocks, but sometimes it decreases. Aggregate shocks destroy the household capital investment and assets, reducing the income opportunities that can be generated from them. They change prices, therefore, relative wages. In effort to protect private expenditure or to keep expense from falling below subsistence needs, affected people can respond by searching for a second work. Households in northern Colombia, for example, tried to cope with the extreme floods that plagued the country in 2010 by increasing their labor participation (Acevedo 2016). On the other hand, unfavorable economic circumstances or major health calamities could lead to a lower supply labor in the market. Forced migration, a typical risk mitigation strategy, implies high costs for the populations, since it destabilizes their

participation in the labor market and other markets. For example, because of the conflict in Colombia, more than half of displaced household main bread-winners were unemployed three months after settling in their new destinations (Ibáñez and Moya 2006).

Households often rely on their children's work to cope with the shocks, and this has a cost: less accumulation of human capital and productivity. Children represent a buffer, especially among households where resources they are limited. In difficult times, households are forced to resort to the work of the children, who can contribute to the income, or they can take over time consuming activities of the parents. However, children's work involves long-term costs, as it often interferes with the accumulation of human capital and generates a potential reduction in income. For example, Brazilian children, especially girls, showed greater odds to leave school and enter the workforce during several crises between the 1980s and 1990s. Once out of school, they were less likely (10 percentage points) to advance to the following school grades; thus, short-term earnings gains were offset by long-term human capital accumulation (Duryea, Lam, and Levison 2007).

Severe shocks alter employment figures, reducing the demand for labor force. Large natural disasters or civil wars not only destroy homes. They also tighten local economies, therefore, alter businesses, supply chains, and markets. After the 2010 earthquake in Chile, almost 100,000 were out of a job, raising the unemployment rate by 1 percentage point. Economic recessions lead to a production deceleration, a collapse of consumers spending, and a reduction of capital investments. While an aggregate supply shock broad deceleration is triggered, it is likely that companies stop hiring people, they my resort to firing employees, which in the end results in a decrease of labor demand, higher unemployment, and a lower quality of jobs. The 2008-09 global financial crisis raised unemployment rates in Mexico by more than 50% (Freije, López-Acevedo, and Rodríguez-Oreggia 2011).

External risks force households to use their productive assets inefficiently and to sacrifice important economic returns. Households with limited access to credit and insurance, who also have greater risk aversion, tend to mitigate the effects of shocks faster, by making conservative decisions in relation to employment and production. In the agricultural sector for example, the use of fertilizers or improved seeds increases the productivity frontier of crops, and raises expected profits. Yet, conservative households may not use these products for fear of incurring investment losses if a certain shock may result in bad harvests. Vulnerable households assure themselves by diversifying their productive portfolio with safer, but less profitable activities. Farmers of the Cuyocuyo district in Peru, for example, diversify their crops by working small land lots instead of larger and more efficient farms. This type of diversification decreases overall crop yield by 7% (Goland 1993). Likewise, evidence shows that income diversification strategies to reduce risk among vulnerable households often results in lack of specialization, small-scale activities, informality, resulting in income instability (the strategy of leveling expenses, that is to say, saving in good times to be able to spend normally in bad times).

When severe shocks occur, efficiency and net worth losses could be linked to inadequate risk management, and it justifies government intervention

Many of the setbacks in economic development set off by shocks are the result of inadequate risk management. Households have various strategies to manage risks, but such actions are usually partially effective. Unsuitable risk management discourages households from assuming risks inherent to the process of achieving economic benefit, limiting the opportunity of income generation. The household strategies seek self-insuring income stability, usually meaning participating in low risk activities, which are likely to be under performing. The imperfect functioning of the market limits access to alternative economic activities. Similarly, the informal risk management mechanisms tend to collapse when aggregate shocks

occur. Welfare losses caused by these inefficiencies are not trivial. Not only that but also, given that shocks disproportionately affect poor people by a combination of increased exposure, weaker internal conditions, and ineffective risk management, the chance of net worth loss is greater. Likewise, the costs of inaction are substantial.

Risk management policies must address four objectives to help households prepare effectively against shocks. The *World Development Report 2014* maintains that facing aggregate shocks implies three objectives: (1) acquire knowledge in order to better understand the characteristics and possible effects of shocks, therefore, minimizing the uncertainty that people, societies, and countries face; (2) establish protection systems to reduce the probability and magnitude of possible losses; and (3) get risk resilience by transferring public resources over time and between different groups. The fourth objective is related to successfully face shocks once these occur: (4) apply ex-post mitigation mechanisms to recover from the losses caused by the crash.

To strengthen the preparation and coping related to risk management, it is necessary to have policies on five main fronts, putting special attention to the issues of efficiency and income equality.

1. Address market failures and the sub-optimal allocation of public goods. Poor risk management is better explained by the lack of credit, insurance, and jobs. It is possible that these markets already exist, but they fail to develop at all. A better financial inclusion contributes directly to a faster recovery when facing disasters, and it also supports asset diversification, which reduces vulnerability. Often the basic services and public goods, which are fundamental, such as drinking water and sanitation, education, key infrastructure, are lacking to manage risks. Furthermore, weather forecasting systems, a stable economic monetary policy, and rule of law, if they exist, it is below international standards.

2. Internalize social and economic externalities. Economic activities adopted by some agents, including risk management strategies, can imply costs or benefits for other people. For example, the lack of regulations on land use and construction can promote the development of infrastructure in places that are not suitable, which would operate under unsafe building codes. Probably there are cases in which certain groups of the population benefit from prevention or mitigation of risks without increasing costs, which discourages investments in risk management systems by those agents who assume all the costs. It is necessary to adopt normative policies that promote collective action, and help internalize the relevant externalities.

3. Reform the government's incentive mechanisms. Political intertemporal incentives are an impediment to properly manage risk. Preparing against risks requires investing, often expensively, in something whose results can probably materialize only in the medium and long term. Governments prefer to allocate resources for policies and programs that generate benefits in the short term, even if the benefits are lower. In certain cases, governments decide to resort to international aid in times of crisis, which weakens the incentive to actually prepare to face crises before they happen. To address these deficiencies, it is necessary to develop contingency coordination plans, which allow for predefined financing and necessary actions to respond to disasters.

4. Backing for the lack of resources and information. Investment in risk management in the field of infrastructure and technology usually involves high costs. It is probable that households and governments with limited budgets opt for short-term expenditures instead of investing in risk reduction and mitigation. The lack of information about relevant risks and the benefits of risk management limits the capacity of private and public

agencies to assess risk, which undermines public and private efforts to insure against shocks, or offer compensation at fair actuarial rates. One option is to coordinate private funding and government development assistance institutions to achieve important and better investments in terms of risk mitigation.

5. Develop rapidly scalable social protection mechanisms. Households are not fully insured against all types of shocks. Subsequent mechanisms are required, such as public transfers guarantying a minimally acceptable standard of living, especially among the poorest. Adaptive and scalable social protection can provide this type of assurance during a crisis, by increasing the amount transferred to beneficiaries, making the eligibility criteria more flexible upon minimum requirements, thus expanding coverage to new beneficiaries. Latin America and the Caribbean have had success in developing social protection networks to alleviate poverty. The time has come to use them to improve the risk management of those households, especially those that are at a high risk of falling into poverty if they are affected by an aggregate shock.