Università degli Studi di Pavia

Economics and Management of Cooperation and Development

Working Paper: The Role of Financial Crises in Altering Wealth and Growth Patterns in South America
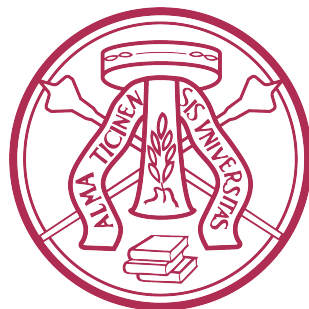
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December 5, 2025

1   Introduction

Financial crises represent recurrent phenomena in Latin American economies, disrupting macroeconomic stability and generating substantial social costs. Beyond their immediate effects on output and employment, these episodes carry profound distributional consequences that reshape income and wealth inequality within societies. Understanding how financial crises alter inequality dynamics is essential for policymakers confronting both crisis prevention and recovery strategies, particularly given the region's historical vulnerability to external shocks and volatile capital flows.

The relationship between macroeconomic crises and inequality remains complex, though recent evidence suggests a clear directionality. Bodea et al. (2021) demonstrate that financial crises systematically increase income inequality, often leaving "scarring effects" that persist long after macroeconomic indicators have stabilized. This gap is especially relevant for Latin America, where high baseline inequality, large informal labor markets, and fiscal constraints on social protection programs intensify household vulnerability to these shocks.

Latin America offers a strategically important case for studying these linkages because of the specific mechanics of its instability. The region is frequently subject to "sudden stops" of foreign capital inflows that trigger deep recessions and asset price collapses through balance sheet constraints, as characterized by Mendoza (2010). These distinct volatility patterns suggest that the transmission of shocks to households may operate differently in the region compared to advanced economies, operating through distinct real economy, financial, and policy channels.

Yet, systematic quantitative assessment of how these varied episodes have reshaped income distribution across Latin American countries over the last decades remains fragmented. The next section reviews the theoretical and empirical literature on financial crises and inequality, establishing the conceptual foundations and transmission mechanisms through which aggregate shocks reach household welfare distributions.

To address these complexities, we will adopt the identification framework developed by Nguyen et al. (2022). Unlike other methodologies, this one allows for a granular distinction between single crisis events and complex "twin" or "triple" episodes (Kaminsky and Reinhart, 1999), while providing precise dating for currency and sovereign debt crises alongside systemic banking shocks. By leveraging this multidimensional database, we can isolate the impacts of specific crisis typologies and their compounding effects, offering a more complete assessment of how these varied episodes have reshaped income distribution across Latin American countries over the last decades. The next section reviews the theoretical and empirical literature on financial crises and inequality, establishing the conceptual foundations for this analysis.

2   Literature Review

The relationship between macroeconomic instability and income distribution is a structural feature of Latin American economic history. The region has long been characterized by high volatility, where frequent financial crises act as "inequality amplifiers." This chapter reviews the theoretical definitions of financial crises, identifies the transmission mechanisms through which aggregate shocks impact household welfare, and provides a historical taxonomy of crises in the region from the 1980s to the post-COVID-19 era.

2.1 Conceptual Framework

Types of Financial Crises

Financial crises are multifaceted events that manifest in distinct forms, each with specific implications for the real economy. Claessens and Kose (2013a) provide a comprehensive structure distinguishing between four primary types:

- *Currency Crises*: Where there are sharp depreciations or collapses of exchange rate regimes.

- *Banking Crises*: Characterized by systemic bank runs and failures requiring government intervention.

- *Sovereign Debt Crises*: Happens when governments default or restructure obligations.

- *Sudden Stops*: Occur when there is a fall in international capital inflows or a sharp reversal in aggregate capital flows to a country

In the Latin American context, Mendoza (2010) emphasizes the critical role of **Sudden Stops**, the abrupt reversals in capital inflows that trigger balance of payment (BOP) crises. When capital flees, emerging markets in the region often face binding collateral constraints, which, unlike in advanced economies, sharply restrict their ability to smooth shocks and result in deep recessions and asset price declines. These reversals in capital inflows are typically driven by shifts in global risk appetite and associated with pronounced real exchange rate depreciations Calvo et al. (2003). At the same time, international banking retrench and investors rebalance away from riskier assets, tightening access to external finance and potentially accelerating currency, banking, and sovereign debt crises, particularly where financial systems are shallow and regulation weak Claessens and Kose (2013b). For low- and middle-income countries, these mechanisms are amplified by heavy reliance on external demand, commodity exports, and foreign credit, so that global downturns and capital-flow reversals quickly transmit through trade, financial, and expectations channels into domestic financial crises Claessens and Kose (2013b); Calvo et al. (2003). Consistent with this, Nguyen et al. (2022) documents the prevalence of "twin" or "triple" crises, in which currency, banking, and sometimes sovereign debt crises occur simultaneously—substantially deepening economic contractions. These transmission dynamics prove especially powerful in South America, where a history of external-debt-led growth, financial liberalization, and commodity dependence heightens vulnerability to such shocks.

Transmission Mechanisms to Inequality

The literature identifies three primary channels through which these macroeconomic shocks transmit to household inequality: the labor market channel, the wealth channel, and the fiscal policy channel.

First, the *labor market channel* is the dominant transmission mechanism in Latin America. Messina and Silva (2018) demonstrate that during crises, unemployment disproportionately impacts low-skilled workers and the informal sector, hitting labor income at the bottom of the distribution with special harsh. Bodea et al. (2021) confirm that these labor shocks lead to **persistent** increases in income inequality, as the "scarring effects" of unemployment lower future earnings potential.

Second, the *wealth channel* operates through asset prices. While Shchepeleva et al. (2022) find that global wealth inequality can sometimes decrease during crises if asset prices (stocks,

real , commodities and futures) held by the higher income population collapse, this effect is often temporary. In Latin America, high inflation often accompanying crises erodes the cash savings of the low income population, while the wealthy possess financial instruments to hedge against devaluation, ultimately exacerbating the wealth gap.

Third, the *policy channel* involves the state's response. Lustig et al. (2023) argues that historically, Latin American governments were forced to adopt austerity measures during crises to satisfy external creditors, cutting social spending precisely when it was most needed. However, Bodea et al. (2021) note that post-crisis policies often favor financial sector bailouts over social transfers, further skewing distribution.

2.2 Historical Evolution

The Lost Decade

The 1980s, can be called the *Lost Decade.* It represents the archetypal period of regressive crisis adjustment. Triggered by the 1982 debt crisis, the region experienced a collapse in growth and hyperinflation. Devlin and Ffrench-Davis (1995) document how the burden of adjustment fell asymmetrically on the working class through real wage repression and the elimination of subsidies. The resulting surge in poverty and inequality was structural, taking decades to reverse.

Within the region, the severity of the crisis varied considerably depending on countries debt composition and development strategies during the 1970s. Brazil and Mexico, which had channeled external credit primarily into productive investment, faced substantial adjustment pressures but possessed somewhat greater capacity for export-led recovery. In contrast, Argentina, Chile, and Uruguay (The Southern Cone) which had used external financing to finance consumption and import surges under liberal monetarist policy frameworks experienced particularly acute contractions and inflationary spirals. The Southern Cone countries' shorter debt maturity and higher reliance on short-term borrowing magnified their vulnerability when credit dried up. Peru exemplified the catastrophic consequences of delayed stabilization, with policy postponement during the mid 1980s culminating in devastating real wage collapse and hyperinflation.

Across all countries, however, the distributive dimension remained consistent: the lower income population got the biggest hit, through the real wage hit, and the reduction of social security due to austerity measures by the governments. Thus, social equity was sacrificed to preserve international credibility.

The Volatile 90's

The 1990s brought a shift toward market liberalization and inflation stabilization, yet volatility persisted. Calvo et al. (2003) characterizes this era by the recurrence of Sudden Stops. While inflation was tamed, labor markets became more precarious. Gasparini et al. (2009) note that inequality remained stubbornly high or increased during this period, as the benefits of modernization accrued to skilled labor while crises periodically wiped out the gains of the poor.

Argentina's experience exemplifies how these *Sudden Stop* episodes reversed developmental gains and entrenched inequality. Following the 1998 Russian crisis, Argentina faced capital flow reversals that exposed weak institutional finances. The subsequent Sudden Stop triggered a *war of attrition* over wealth redistribution, as the government lacked fiscal space to absorb private sector losses while external creditors remained unscathed. This dynamic explains why

inequality remained stubbornly high: the lower income population, lacking access to formal safety nets, suffered irreversible human capital losses while the middle class bore the brunt of expenditure cuts, yet the financial sector and foreign creditors were largely protected through debt restructuring. The crisis ultimately validated Gasparini et al. (2009) observation that modernization gains accrued exclusively to skilled labor and asset-holders, while crises periodically wiped out the meager advances of the lower income population through unemployment and real wage collapse

The Golden Decade and the 08' Crisis

The 2000s marked a turning point. Lustig et al. (2012) documents a widespread decline in inequality across the region, driven by the commodities boom and progressive redistribution policies. Crucially, the region showed resilience during the 2008 Global Financial Crisis. Unlike previous episodes, many countries were able to implement counter-cyclical fiscal policies. Shchepeleva et al. (2022) suggest that this resilience helped mitigate the wealth shocks observed elsewhere, although the structural deceleration of growth post-2010 began to threaten these social gains.

This institutional transformation reflected the region's hard-won learning from repeated crises. Brazil, Mexico, and Chile entered the 2008 Global Financial Crisis with strengthened macroeconomic frameworks and accumulated fiscal buffers, enabling them to sustain public investment and credit availability when northern financial markets froze. Rather than adopting the contractionary policies of the 1980s and 1990s, governments prioritized employment protection and social spending, allowing wages and consumption to stabilize where earlier episodes had triggered sharp declines. Yet this relative success masked structural fragility rooted in commodity dependence. When commodity-driven revenues collapsed and capital inflows reversed after 2010, the region faced a fundamental growth deceleration that exposed the cyclical nature of inequality reduction achieved during the boom years.

2.3 Recent times and COVID-19

The unique nature of the Pandemic Crisis

The COVID-19 crisis represented a fundamentally different shock structure: a simultaneous supply and demand collapse driven by non-economic factors. Busso and Messina (2020) highlight that the pandemic hit the informal sector hardest—a reversal of typical recessions where formal manufacturing often leads the downturn. Since the informal sector houses the region's most vulnerable workers, the initial inequality shock was severe. However, Lustig et al. (2023) find that massive, albeit temporary, government transfer expansions significantly dampened the immediate rise in poverty and inequality, showcasing a shift in state capacity compared to the 1980s.

Across the region, Latin American governments responded swiftly by deploying emergency measures to sustain household incomes during lockdowns. Brazil and El Salvador implemented generous transfer programs, while Argentina and Colombia achieved significant offsetting effects on poverty and inequality (Lustig et al., 2023; Busso and Messina, 2020). Chile's response is particularly instructive: the government established the *Ingreso Familiar de Emergencia* (IFE), targeting vulnerable households whose income derived primarily from informal sources (Busso and Messina, 2020). Unlike Brazil's nearly universal coverage, Chile's initial reach was more modest, though subsequent expansions broadened it. The Chilean case illustrates fiscal capacity built over decades of disciplined policy: drawing on its sovereign wealth funds, Chile

financed substantial countercyclical spending without compromising long-term sustainability (Fuentes et al., 2020). Mexico stands as a contrast, as federal authorities neither expanded nor introduced new safety nets, resulting in minimal mitigation of the poverty shock (Lustig et al., 2023). These heterogeneous responses reflect differing political choices and underlying institutional capacity accumulated during periods of relative stability.

Recent Macro Stresses

Post-pandemic recovery has been marred by the return of inflation and tighter fiscal constraints, which limit governments' ability to sustain the large social transfers deployed during the acute phase of the COVID-19 crisis.(ECLAC, 2024; Lustig et al., 2023) Beyond these macro-fiscal pressures, ECLAC has framed the "silent crisis" in education and human capital as a core threat to social mobility, warning that learning losses and stalled schooling trajectories could lock in higher levels of poverty and inequality well beyond the current business cycle.(ECLAC, 2024)

Going deeper, recent research and cohort-based evidence suggests that COVID-19 has altered the entire life-course distribution of opportunities for today's school-age cohorts, especially those from disadvantaged backgrounds.(Lustig et al., 2023) Lustig et al. (2023) show that in Argentina, Brazil, Colombia, and Mexico, the combination of prolonged school closures, uneven access to remote learning, parental job loss, and health shocks is projected to reduce secondary completion rates disproportionately among children of low-educated parents, raising intergenerational persistence of low schooling even under optimistic mitigation scenarios. In parallel, ECLAC (2024) document how these education related effects interact with already high baseline inequality and weakened social protection systems, implying that the post-pandemic period risks a structural shift towards wider skill divide and more rigid class stratification unless countries implement robust, countercyclical social protection and ambitious remedial education policies.

The next chapter moves from conceptual foundations to empirical evidence. It will go trough recent empirical literature and real data evaluation that can guide through our thesis.

3   Empirical Evidence

The question of how financial crises affect economic growth and income distribution has generated substantial empirical investigation, yet the evidence remains fragmented. Past research has concentrated predominantly on single crisis types like banking crises and the Great Financial Crisis. This methodology usually restrict generalized application of methods, and fails to adequately address key threats to causal inference such as reverse causality, measurement error, and the persistent nature of inequality (Bodea et al., 2021; Nguyen, 2022). To advance this literature, this chapter presents a comprehensive empirical examination of financial crises in Latin America utilizing authoritative databases that integrate macroeconomic indicators from the World Bank's World Development Indicators, income inequality data from the World Inequality Database, and crisis identification from the IMF Systemic Banking Crises Database. The following section reviews the existing literature on financial crises and distributional consequences, while subsequent sections present our empirical findings spanning 1970–2020 across three Latin American subregions, revealing some regional heterogeneity in crisis impacts on both growth and income distribution.

3.1 Descriptive Evidence

This subsection examines the empirical relationships between financial crises and development indicators in Latin America's and its subregions. By visually inspecting growth trajectories in relation to different crisis episodes, we establish baseline patterns of regional heterogeneity in crisis exposure and macroeconomic performance. The analysis begins with an overview of regional growth dynamics before turning to disaggregation by crisis type.

GDP Growth Dynamics and Crisis Periods

Figure 1 presents the average annual GDP growth rate of Latin America from 1970 to 2020, disaggregated by different crises types as defined before: Banking, Currency and Debt. This provides dynamics on how the region as whole reacts to these different situations.
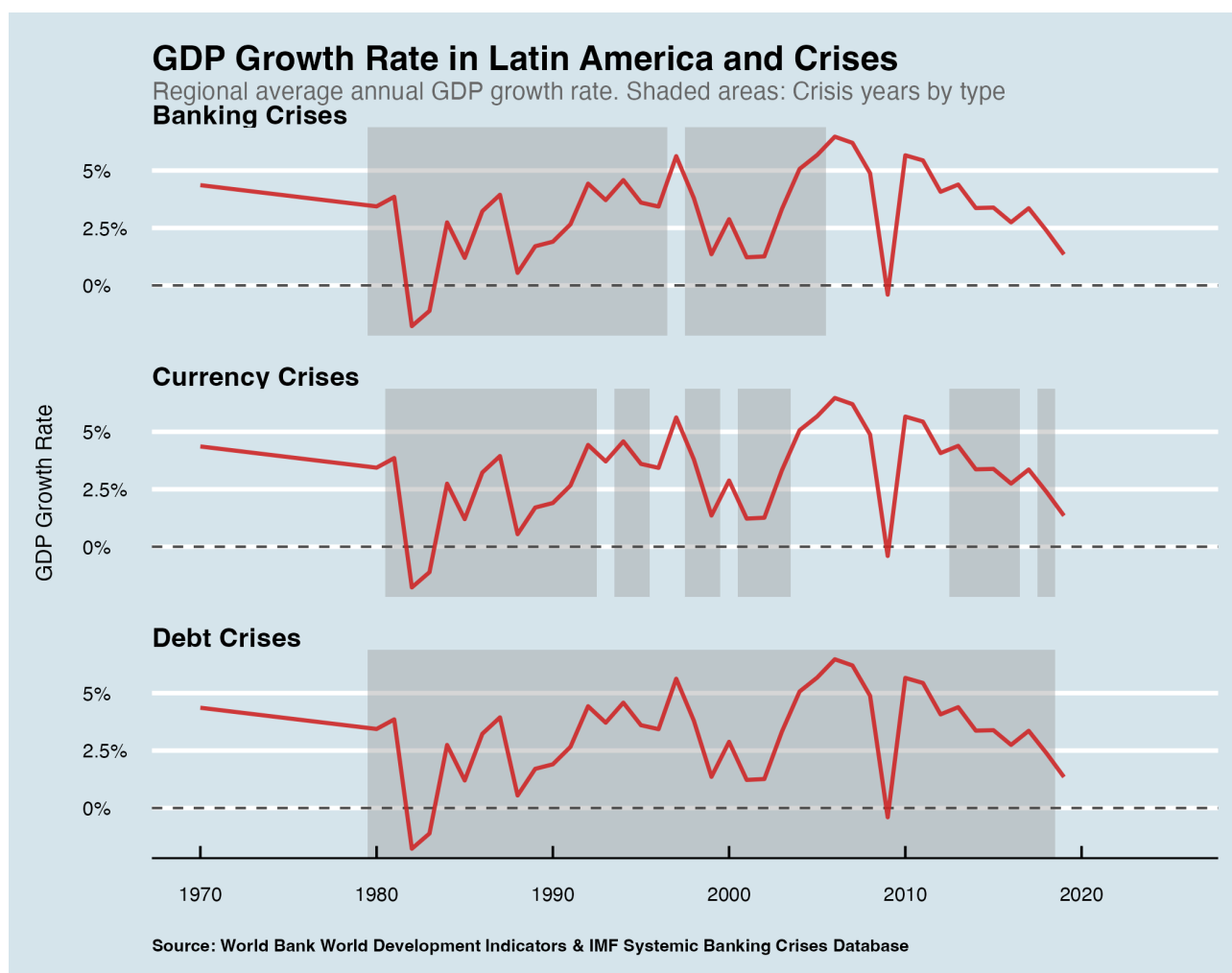
Figure 1: Average GDP Growth Rate in Latin America by Crisis Type, 1970–2020 with shaded areas indicating crisis periods by type.

The empirical evidence reveals some distinctions among crises types. *Banking crises*, showed in the first panel, show concentrated episodes in the early 1980s and around the 2008-2009 crisis. With the early period being accompanied of a severe output contraction. *Currency crises* display a more disperse pattern, with multiple episodes, with several ones trough the 1990s and mid 2010s, so their effect on output growth is also dispersed. The third case in the

bottom panel correspond to *Debt crises*, which can be seen as a constant for the region, showing a long and sustained period of economic distress.

These patterns are consistent with the crises identification methodology of Laeven and Valencia (2013), who define systematic banking crises based on significant poly interventions, currency based on exchange rate depreciation thresholds and debt based on sovereign default events. The overlapping nature of many crises reflect what Kaminsky and Reinhart (1999) defined as "twin" and "triple" crises, involving simultaneous banking, currency and debt distress.

The output costs associated with different crisis types vary substantially. Saxena and Cerra (2005) estimate that while currency and banking crises result in permanent output losses of approximately 5% and 10% respectively, twin crises generate losses of approximately 15%. This hierarchy of crisis severity is consistent with the patterns observed in Figure 1, where debt crises often occur in conjunction with other crisis types and are associated with the most prolonged periods of below-trend growth.

Subregional Dynamics

While Latin America often appears as a culturally and economically homogeneous region, substantial institutional and structural differences between subregions obscure important variations in how countries navigate financial crises. To capture these distinctions, we partition the region into three analytically meaningful groupings based on geographic proximity and institutional characteristics:

1. **The Caribbean**: Encompasses Central America and Caribbean nations—Panama, Guatemala, Nicaragua, Mexico, Honduras, Belize, Cuba, Dominican Republic, Haiti, and the minor Caribbean islands.

2. **Andes & Amazons**: Covers the northern South American continent—Venezuela, Colombia, Ecuador, Peru, Bolivia, Brazil, French Guiana, Suriname, and Guyana.

3. **The South Cone**: Comprises the southern cone nations—Chile, Paraguay, Argentina, and Uruguay.

These subregions exhibit sufficient cultural, institutional, and economic differences to justify separate analysis while maintaining sufficient internal homogeneity to enable meaningful comparison. Figure 2 illustrates how these three subregions have experienced financial crises and their effects on average growth trajectories:
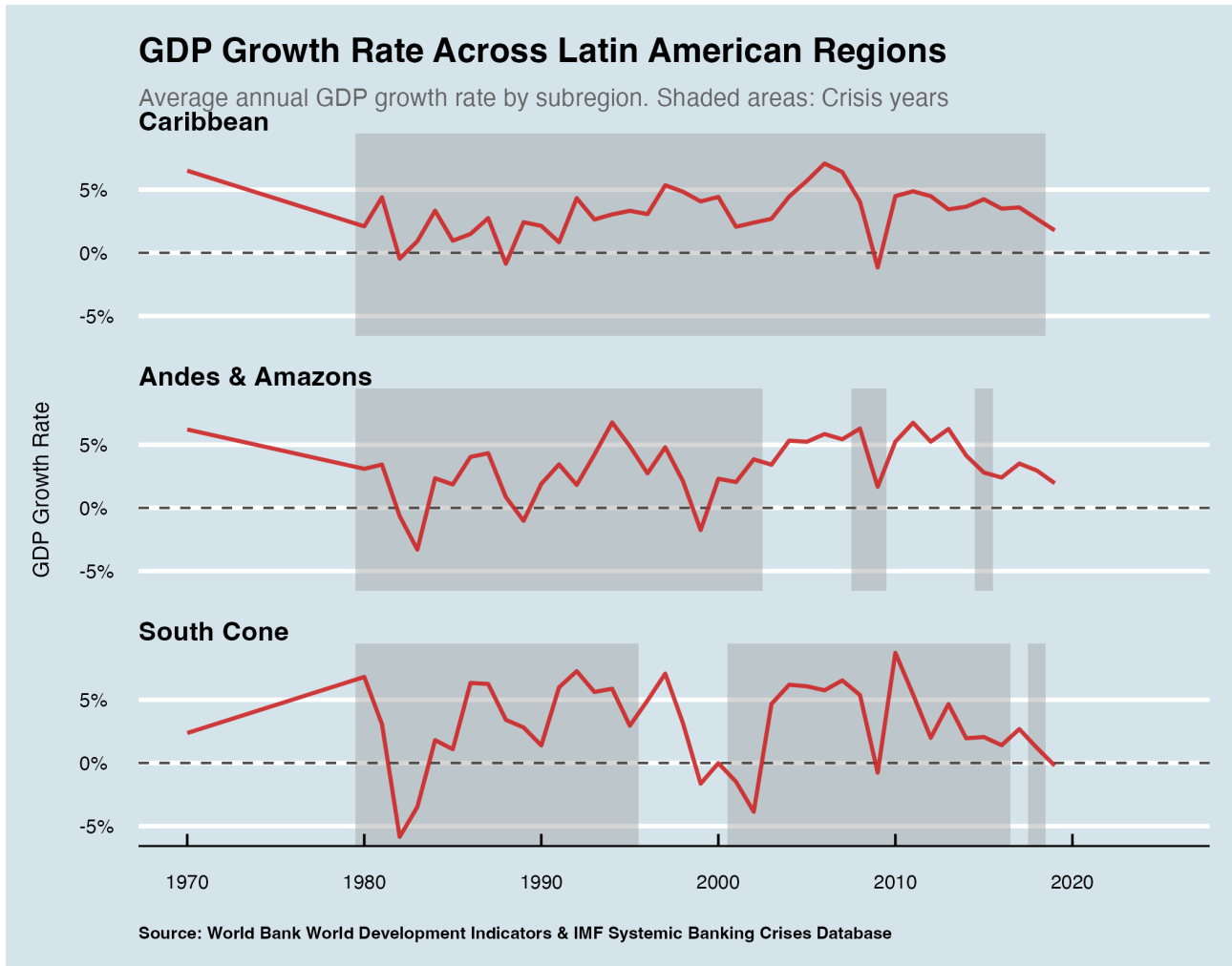
Figure 2: GDP Growth Rate Across Latin American Subregions, 1970–2020. Average annual GDP growth rate by subregion with shaded areas indicating crisis periods.

The empirical evidence demonstrates several patterns. First, the South Cone region exhibits the highest volatility in GDP growth, with pronounced contractions during the early 1980s debt crisis (reaching over -5%) and during the Argentine crisis of 2001–2002. The Caribbean displays comparatively more stable growth trajectories, though the 1980s decade marked by external debt difficulties shows sustained below-trend performance. The Andes & Amazons region presents intermediate volatility, with notable contractions in the early 1980s and during the commodity price shocks of the mid-2010s.

These regional patterns align with the theoretical framework articulated by Claessens and Kose (2013a), who identify three broad categories of transmission channels through which financial crises affect economic activity: financial transmission channels operating through asset prices and credit market access, monetary transmission channels via interest rate effects, and real economy channels manifesting through unemployment and fiscal policy responses. The prolonged crisis period of the 1980s—often termed the "lost decade"—is particularly visible across all three subregions. During this period, Latin America experienced what Devlin and Ffrench-Davis (1995) characterize as "asymmetric adjustment", a characteristic where debtor nations bore disproportionate adjustment costs while creditor institutions underwent gradual portfolio restructuring. The data indicate that per capita output in the region declined by approximately 7% between 1980–1981 and 1983–1990, with domestic expenditure contracting

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by 15%.

Next, the relationship between financial crises and income inequality represents a central concern in development economics. Figure 3 presents the evolution of income shares for the top 1% and bottom 50% of the population across the three Latin American subregions from 1960 to 2020.
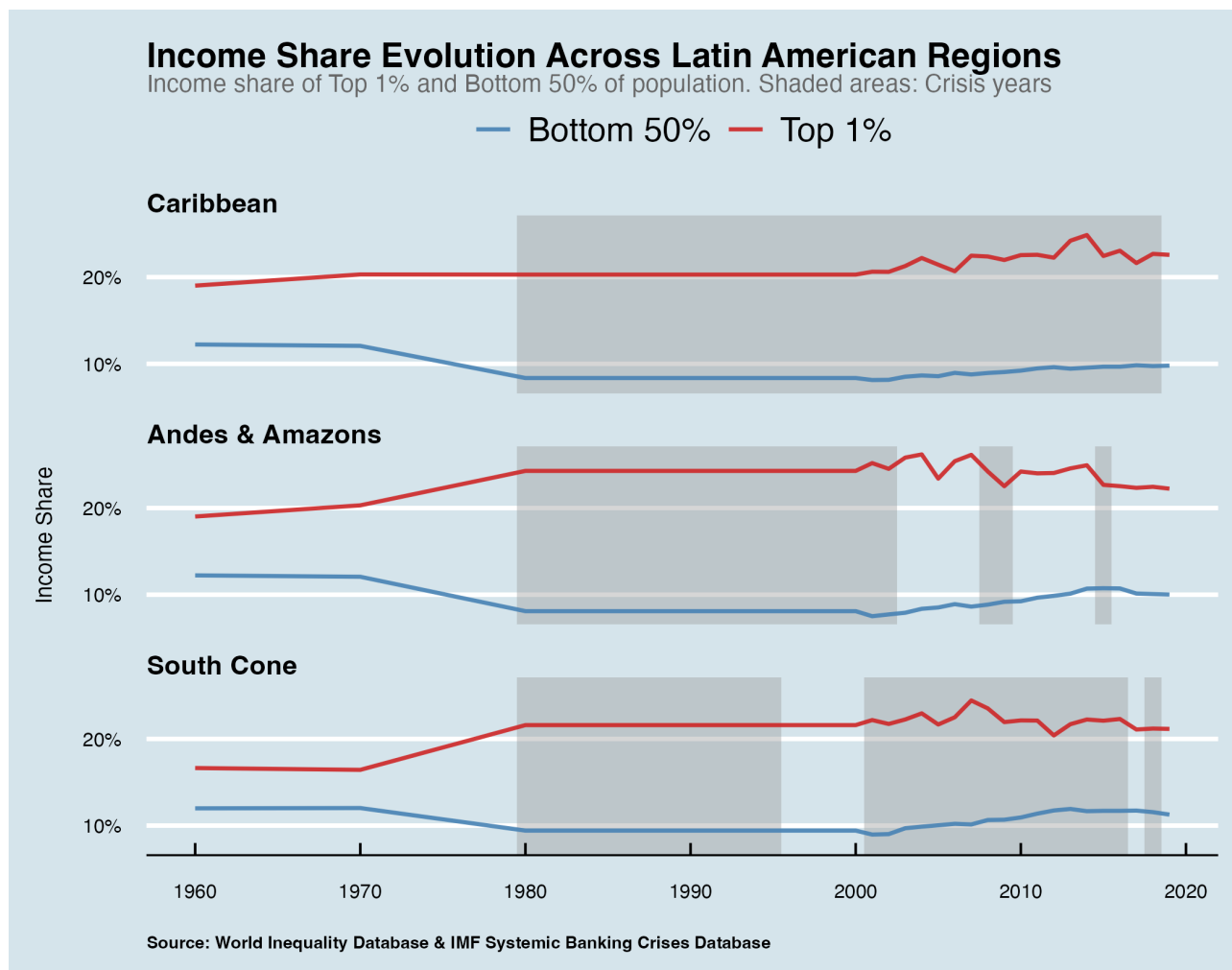

Figure 3: Income Share Evolution Across Latin American Regions, 1960–2020. Income share of Top 1% (red) and Bottom 50% (blue) of population by subregion. Shaded areas indicate crisis periods.

The empirical patterns reveal a persistent and widening divergence between the income shares of the top 1% and bottom 50% across all regions, with this gap particularly pronounced during and following crisis episodes. **Caribbean Region:** The top 1% income share increased from approximately 19% in 1960 to peak values exceeding 23% by 2010, while the bottom 50% share declined from roughly 13% to approximately 10% over the same period. The prolonged crisis period from 1980 onward coincides with a late acceleration in top income concentration. The **Andes & Amazons:** region exhibits a violent deviation and the highest different between income groups in the region, with a notable difference since the 1980s of around 15% throughout the crisis period, with notable short-term increases during acute crisis episodes. The bottom 50% share shows gradual erosion from approximately 13% to 10%. Lastly, the **South Cone:** demonstrates moderate increases in top income concentration, from roughly 17% to 22%, with corresponding declines in the bottom 50% share from approximately 12% to 11%, in line with

the trend of the continent, but in a more controlled manner than the other two subregions. The dynamics however follow similar trends in a manner that **there is no reason to treat the regions separatelly** during the empirical part of this research.

These distributional dynamics are consistent with the empirical literature on crises and inequality. Bodea et al. (2021) find robust evidence that currency, banking, inflation, and debt crises increase income inequality, particularly in the long run. Their error-correction models suggest that the full effect of crises on inequality may *take decades to materialize*, with banking crises increasing the Gini coefficient by approximately 7 points in the long term.

Similarly, Nguyen (2022) demonstrate that any type of financial crisis results in a larger income gap between rich and poor, with debt crises and twin/triple crises associated with particularly severe distributional consequences.

Beyond growth and income dynamics, fiscal sustainability represents a critical dimension through which financial crises manifest and propagate across economies. Figure 4 presents the average central government debt-to-GDP ratio by subregion from 1990 to 2020, with shaded areas indicating crisis periods. The shorter period refers to the less available data on most countries for fiscal debt information.
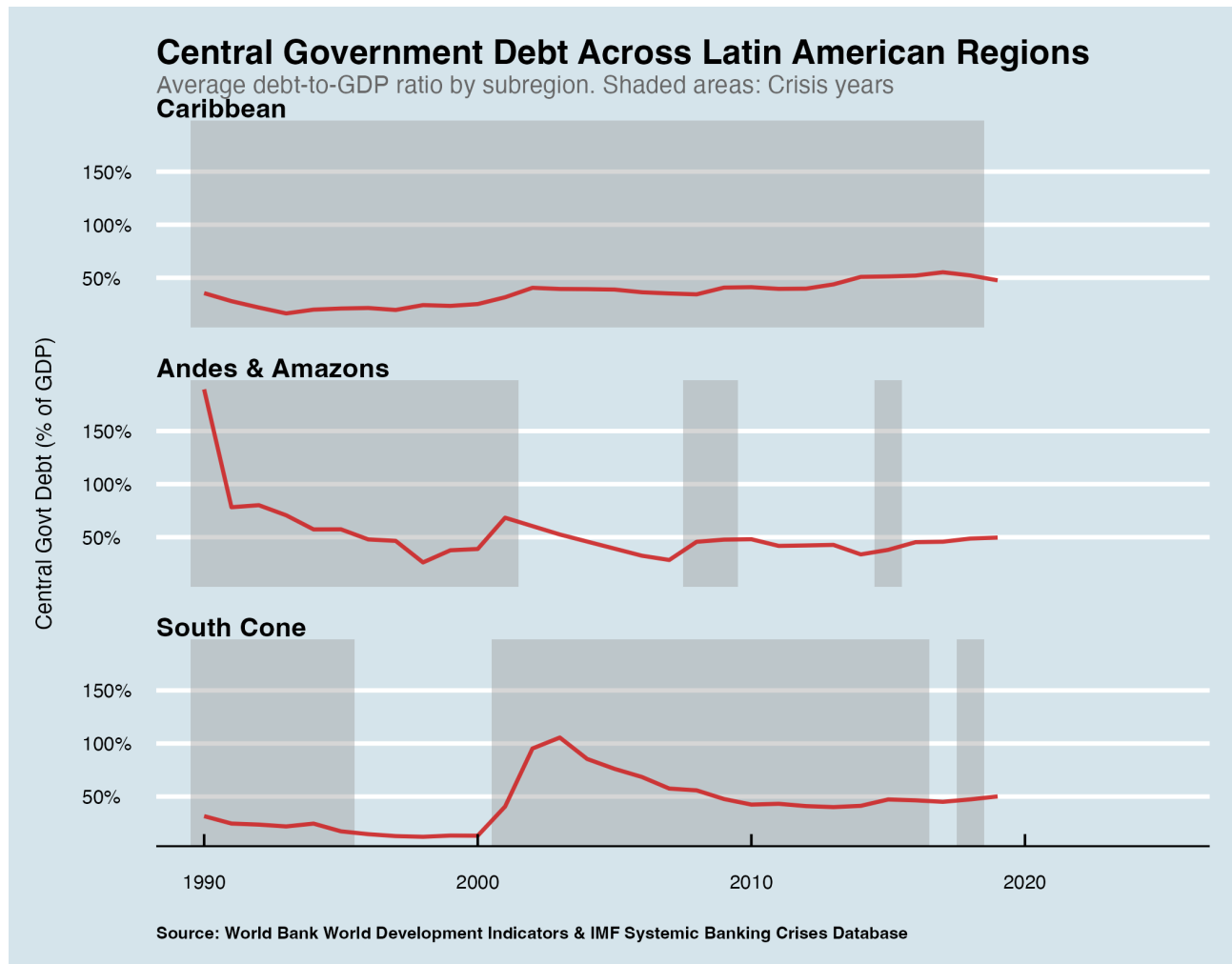

Figure 4: Central Government Debt Across Latin American Regions, 1990–2020. Average debt-to-GDP ratio by subregion with shaded areas indicating crisis periods.

The Andes & Amazons region shows the most dramatic debt trajectory, peaking above 150% of GDP in the early 1990s (legacy of the 1980s crisis), then declining to approximately

40% by the late 1990s following Brady Plan restructurings. Finally, *The South Cone* exhibits a distinctive spike exceeding 100% during the 2001–2002 Argentine crisis, followed by rapid recovery. The Caribbean maintains relatively stable debt around 50% throughout.

These debt patterns illustrate the fiscal transmission channel: crises generate substantial fiscal costs while eroding tax revenues, forcing governments to implement welfare retrenchment precisely when vulnerable populations require support most (Bodea et al., 2021; Nguyen et al., 2022). This mechanism explains why income inequality increases persist and worsen during fiscal consolidation phases, extending distributional consequences far beyond immediate crisis periods. To formally test these relationships and quantify their magnitude,

3.2 Synthesis and Implications

The empirical evidence presented in this section establishes several findings central to understanding financial crises in Latin America:

1. GDP growth exhibits substantial volatility across all subregions, with crisis periods associated with severe contractions that often require extended recovery periods.

2. Income inequality tends to increase during and following crisis episodes, with the gap between top and bottom income shares widening persistently across all subregions examined.

3. Different crisis types exhibit distinct temporal patterns and severity profiles, with debt crises associated with the most prolonged economic disruption.

4. Regional heterogeneity exist, with the South Cone displaying highest growth volatility and the Caribbean showing most persistent increases in top income concentration during crisis periods, but neither trend too much away from the regional averages.

These empirical patterns provide the foundation for the analytical framework developed in subsequent sections, particularly regarding the mechanisms through which financial crises transmit to real economic outcomes and distributional consequences.

4 Data and Empirical Strategy

4.1 Indicators and Variables

Independent variables: Financial Crisis Indicators

Our analysis will use the comprehensive crisis typology developed by Nguyen et al. (2022), which identifies banking, currency, debt, and twin crises. This database provides data about banking crises across 151 episodes globally between years 1970-2019 and includes rich details on crisis dates, policy responses, fiscal costs and output losses. Each type of crisis is coded as a binary indicator (1 = crisis year, 0 = no crisis year). Figure 5 shows most of the countries in the sample and their crises evolution trough the years.

- `banking_crisis` – Dummy variable for systemic banking crises.

- `currency_crisis` – Dummy variable for exchange-rate collapses.

- `debt_crisis` – Dummy variable for sovereign or external debt distress.

- `twin_crisis` – Dummy variable for concurrent banking and currency crises.

Figure 5: Financial Crises in South and Central American Countries (Post 1950)

Dependent variables: Income Inequality Measures

For the purpose of this study, we have decided to use the income inequality data provided by the World Inequality Database (Alvaredo et al., 2024). WID.World by Alvaredo et al. (2024) offers fine-grained measures of income distribution, including top percentile shares, based on tax records, surveys, and national accounts. This allows for deeper analysis of concentration of income among the top 1% and lower 50%, capturing inequality dynamics not visible in aggregate indices alone. In our empirical models, we will be using the following measures as dependent variables:

- `top1_share` – Pre-tax income share of adults (20+), top 1%

- `lower50_share` – Pre-tax income share of adults (20+), bottom 50 %

The income share accruing to the top 1% of adults (aged 20+) serves as our primary measure of inequality at the upper tail of the distribution. This variable captures concentration among economic elites whose income derives predominantly from capital returns, entrepreneurial profits, and high-skilled labor compensation—precisely the income sources most exposed to financial market disruptions and macroeconomic volatility. Complementing top income concentration, the income share of the bottom 50% of adults captures distributional dynamics affecting the majority of the population and those most vulnerable to crisis-induced welfare losses. This measure proves particularly relevant for Latin America given the region's characteristically high inequality and large informal sector, where workers at the bottom of the income distribution lack access to formal safety nets and unemployment insurance (Busso and Messina, 2020).

The use of pre-tax rather than post-tax income shares deserves particular justification given the potential importance of fiscal redistribution. Pre-tax income captures the "market" distribution resulting directly from crisis-induced economic disruptions, before government tax-and-transfer policies intervene to modify outcomes. This choice reflects our focus on understanding the transmission mechanisms through which crises affect household income generation—the labor market, wealth, and sectoral reallocation channels—rather than the efficacy of redistributive policy responses.

Dependent variables: Growth Rates

The inclusion of GDP growth as a dependent variable alongside income inequality measures reflects the dual objective of our focus: to examine both the macroeconomic consequences of financial crises and their distributional effects. By estimating parallel specifications with GDP growth and income shares as alternative dependent variables, we can assess whether financial crises generate merely temporary output losses or whether they produce persistent structural changes that alter both the level and distribution of national income. We will use the following variable as dependent in our models:

- `gdp_growth` – Annual growth rate of real GDP (% per country-year)

The empirical specification using GDP growth as the dependent variable also addresses methodological concerns regarding measurement error and data availability that complicate inequality analysis. Although income distribution data from the World Inequality Database provide unprecedented granularity for top and bottom income shares, these measures derive from tax records and survey data that may exhibit discontinuities, particularly during crisis periods when tax compliance deteriorates and survey response rates decline (Alvaredo et al.,

2024). GDP growth, measured through national accounts, offers a complementary outcome variable with greater temporal consistency and cross-country comparability.

Control Variables

In order to be able to answer our research questions, it is essential to control for key macroeconomic and structural factors that could confound or moderate the relationship between financial crises, growth rates and inequality while avoiding the omitted variable bias.

Following the framework established by Bodea et al. (2021); Nguyen et al. (2022), we include a set of macro-structural controls to capture key differences in countries' exposure and adjustment to crises. Drawing upon the World Bank's World Development Indicators, the controls in our baseline specification are:

- `trade_open` – Trade (as a % of GDP in a given country-year)

- `gdp_percap` – Log of GDP per capita

- `sec_school` – Secondary school enrollment, secondary (% gross)

Based on the literature review, we control for GDP per capita (log) to account for baseline development levels and institutional capacity that could moderate crisis transmission; trade openness to capture external exposure and structural integration into global markets that shapes vulnerability to sudden stops; and secondary school enrollment to proxy for human capital accumulation and the skill composition of the labor force and shapes post-crisis recovery prospects. These variables account for structural features that could potentially moderate crisis severity, without being direct consequence of the crisis itself.

We deliberately exclude contemporaneous unemployment and inflation from our main specifications with controls despite their prominence in the literature, as these variables are not confounders, but rather central components of the transmission mechanism through which financial crises affect GDP growth. By controlling for them we would not only introduce endogeneity bias into our models, but they also would absorb much of the variation we seek to explain, preventing us from identifying the total causal effect of crises on inequality and growth.

4.2   Methodology

To empirically assess the distributional consequences of financial crises in Latin America, a panel data framework will be employed. Following recent contributions on financial crises and inequality (Nguyen et al., 2022; Bodea et al., 2021), the objective is to isolate the impact of distinct crisis episodes on income inequality and economic growth while controlling for unobserved heterogeneity across countries.

Estimation strategy: Country fixed effects and intertemporal efects

Given the longitudinal structure of the data, country fixed effects model will be preferred (individual fixed effects).[1] This approach mitigates omitted variable bias by controlling for all time-invariant country characteristics. Along this fix effect, and due to the lagged nature of fiscal budgets and time permanence of financial crises, three lagged varies will be also included to capture said effect. Then, the baseline naive specification is

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[1]See the documentation for the `plm` package in R: https://journal.r-project.org/articles/RJ-2023-086/RJ-2023-086.pdf

$$Y_{it} = \beta_0 \text{Crisis}_{it} + \sum_{k=1}^{3} \beta_k \text{Crisis}_{it-k} + \alpha_i + \varepsilon_{it} \qquad (1)$$

where i indexes countries and t years. The dependent variable Y_{it} takes three alternative forms in separate regressions: (i) the pre-tax income share of the bottom 50% of adults, (ii) the pre-tax income share of the top 1% of adults, and (iii) real GDP growth.

The variable Crisis_{it} is a binary indicator equal to 1 if country i experiences a specific type of financial crisis in year t, and 0 otherwise. Separate regressions are estimated for banking, currency, debt and twin crises, in order to allow for heterogeneous effects across crisis types (Kaminsky and Reinhart, 1999; Nguyen et al., 2022). The coefficient β therefore measures the **average within-country change** in the outcome associated with entering a crisis episode of a given type.

The term α_i denotes country fixed effects, capturing time-invariant characteristics such as geography, long-run institutional quality, and historical inequality patterns that may jointly affect both crisis risk and the income distribution. The error term ε_{it} is assumed to be mean-zero and uncorrelated with the crisis indicator, conditional on the fixed effects.

4.2.1 Controls

As mentioned before, several control variables are tested to clean for colliders and provide a cleaner causal relation between growth and/or inequality and financial crises. In this case, the specification will be similar to the Naive one. The augmented specification with macroeconomic controls is:

$$Y_{it} = \beta_0 \text{Crisis}_{it} + \sum_{k=1}^{3} \beta_k \text{Crisis}_{it-k} + \gamma' \mathbf{X}_{it} + \alpha_i + \varepsilon_{it} \qquad (2)$$

where $\mathbf{X}_{it}$ is a vector of control variables including trade openness, GDP per capita and secondary school enrollment.

5 Results and Discussion

5.1 Naive Regression Results

The first regressions growth are the ones from equation (1), a simple model without controls used to roughly test our hypothesis of relationship between financial crises and average wealth distribution in the region. Table 1 presents the first results of the lagged model on average growth of the region.

Table 1: Comparison of Financial Crisis Types on Growth

	Banking	Currency	Debt	Twin
Crisis (t)	−3.190***	−3.439***	−2.923***	−1.616
	(0.594)	(0.443)	(0.604)	(1.081)
Crisis (t-1)	−0.180	−2.324***	1.803**	0.191
	(0.690)	(0.434)	(0.738)	(1.165)
Crisis (t-2)	1.510**	1.174***	1.357*	0.697
	(0.673)	(0.428)	(0.706)	(1.110)
Crisis (t-3)	1.413**	0.727*	−0.425	2.538**
	(0.554)	(0.416)	(0.551)	(1.029)
Num.Obs.	666	629	664	666
R2	0.088	0.162	0.040	0.017
R2 Adj.	0.058	0.134	0.008	−0.015

* p <0.1, ** p <0.05, *** p <0.01
Dependent variable: GDP growth (annual %)

The table shows that banking, currency and debt crises are followed by sharp output contractions on impact. In levels, GDP growth drops by roughly 3 percentage points for all three types, with highly significant effects. While twin crises also reduce growth, the effect is less precise. The effects are also highly persistence, with crises keeping significance in most of the four year span of the study. From year two onward, there is evidence of partial recovery, with significant positive coefficients for banking and currency crises at horizons $t + 2$ and $t + 3$, and for debt and twin crises at some lags, suggesting that economies **tend to bounce back after the initial collapse.**

However, given the size of the initial losses and the relatively modest R^2, these rebounds likely do not fully compensate for the early output fall, and crisis dummies account for only a small part of the variation in GDP growth.

Next, table 2 shows the study of the growth on individual subregions as presented in the evidence chapter.

Table 2: Effect of Financial Crisis Types on GDP Growth by Subregion

	Caribbean				Andes & Amazons				South Cone			
	Banking	Currency	Debt	Twin	Banking	Currency	Debt	Twin	Banking	Currency	Debt	Twin
Crisis(t)	−2.418**	−3.715***	−2.533**	−1.990	−2.987***	−2.550***	−2.044*	−13.906***	−5.277***	−4.097***	−3.287***	2.200
Crisis(t−1)	0.221	−1.851**	1.533	−0.678	−0.959	−3.824***	−0.384	0.111	0.077	−2.029**	2.930**	−0.888
Crisis(t−2)	0.404	1.511**	1.013	1.496	0.901	−0.227	1.663	−1.437	3.611***	2.254**	2.114	0.459
Crisis(t−3)	2.038**	−0.043	−0.342	2.680**	0.964	0.979	−1.342	5.928*	0.711	1.572*	0.497	1.468
Observations	333	296	331	333	148	148	148	148	148	148	148	148
R²	0.053	0.113	0.019	0.031	0.092	0.301	0.087	0.137	0.196	0.193	0.134	0.014
Adj. R²	0.017	0.079	−0.018	−0.005	0.046	0.266	0.041	0.094	0.156	0.153	0.091	−0.036

Note: $^*p < 0.1$; $^{**}p < 0.05$; $^{***}p < 0.01$. Panel FE regressions.

Across all three subregions, crises trigger sizable output losses on impact, but the patterns differ by type and region. In the Caribbean and Andes & Amazon, banking, currency and debt

crises all reduce GDP growth by around 2-4 percentage points in the crisis year, though the hit from twin crises is specially dramatic in the Andes & Amazon with a statistically significant -14% loss. Two or three years later there is partial rebound, with several positive and significant coefficients, particularly for currency crises in the Caribbean and for twin crises in the Andes & Amazons and the South Cone, indicating some overshooting after the initial collapse. Still, the magnitudes suggest that even with this catch-up, crises likely leave a net medium-run output loss, and the modest R^2 values imply that crisis dummies capture only part of growth variation within each subregion.

Comparing with the greater region results of Table 1, the qualitative pattern is similar, with sharp contractions in the crisis year followed by a rebound two to three years later—but the magnitudes are often larger in specific Latin American subregions, especially for twin crises in the Andes & Amazons and for banking and currency crises in the South Cone.

Now, Tables 3 and 4 will go into show the crisis effect on the share of pre tax income of both the wealthier and poorer population.

Table 3: Effects of different Financial Crisis Types on Highest 1% of Income Share

	Banking	Currency	Debt	Twin
Crisis (t)	−0.003	−0.005	−0.005	−0.012
	(0.005)	(0.004)	(0.005)	(0.008)
Crisis (t-1)	0.001	−0.005	−0.001	−0.007
	(0.005)	(0.004)	(0.006)	(0.009)
Crisis (t-2)	−0.001	−0.004	−0.004	−0.007
	(0.005)	(0.004)	(0.005)	(0.008)
Crisis (t-3)	−0.005	−0.006*	−0.003	−0.012
	(0.004)	(0.004)	(0.004)	(0.008)
Num.Obs.	666	629	664	666
R2	0.007	0.024	0.038	0.017
R2 Adj.	−0.026	−0.008	0.007	−0.015

* p <0.1, ** p <0.05, *** p <0.01
Dependent variable: Pre-tax income share, top 1% (adults 20+)

Table 3 suggest that in this specification, financial crises have a very limited explanatory power for changes in the income of the wealthier population. Coefficients are all close to zero, implying that even if there were any statistical significance (of which there barely is), **crises would affect the income of the top 1% by well under the percentage point**. The only notable effect is a small decline in top income three years later after a currency crisis, that is later equalized. Banking, debt, and twin crises do not display significant coefficients at any lag, and the near zero R^2 indicate that there are other forces rather than crises episodes that are driving most of the observed variation in the wealthier population income share.

Next Table 4 does the same specification but this time on the effect of the pre-tax income of the bottom 50% of the population.

Table 4: Effects of different Financial Crisis Types on lowest 50% of Income Share

	Banking	Currency	Debt	Twin
Crisis (t)	−0.005***	−0.001	−0.004**	−0.003
	(0.002)	(0.001)	(0.002)	(0.003)
Crisis (t-1)	−0.002	−0.002	−0.002	−0.002
	(0.002)	(0.001)	(0.002)	(0.003)
Crisis (t-2)	−0.001	−0.002	0.001	−0.002
	(0.002)	(0.001)	(0.002)	(0.003)
Crisis (t-3)	−0.004**	−0.002*	−0.002	−0.003
	(0.002)	(0.001)	(0.002)	(0.003)
Num.Obs.	666	629	664	666
R2	0.065	0.027	0.070	0.007
R2 Adj.	0.034	−0.005	0.039	−0.025

* p <0.1, ** p <0.05, *** p <0.01
Dependent variable: Pre-tax income share, bottom 50%
(adults 20+)

This time, Table 4 shows higher levels of significance than 3, however the coefficients are still very low and mostly negative. This mean that when a crisis hits, the lower income population tends to lose income share; meaning that inequality worsens. Banking and Debt crises have the clearest contemporaneous effect in levels, reducing the bottom share income by 0.5 and 0.4 percentage points respectively while being statistically significant.

There is also evidence of persistence on banking crises, three years after the initial shock, the bottom income population remains significantly lower, albeit by a really small ammount. This suggest that **losses from the poorer households are not quickly reversed.** Overall R^2 remains low, also indicating the the crisis dummies explain just a small fraction of the variation in the lower poorer population income share, as seen in the previous case with the higher income population.

5.2 Regression with Controls

Now, results of the specification (2), with controls such as Trade Opennes, School Enrollment and Log GDP Percap. First table 5 presents estimates of the effect of financial crises on GDP growth, controlling for structural macroeconomic characteristics that moderate crisis transmission.

Table 5: Effects of Financial Crises on GDP Growth (with Controls)

	Banking	Currency	Debt	Twin
Crisis (t)	−2.8695***	−4.4192***	−1.6256*	−1.3533
	(0.9323)	(0.6885)	(0.8723)	(1.4260)
Crisis (t-1)	1.0524	−2.3792***	1.1853	0.2912
	(1.0226)	(0.6353)	(1.0275)	(1.5252)
Crisis (t-2)	2.5568***	1.4738**	1.7814*	1.5653
	(0.9723)	(0.6475)	(0.9606)	(1.4996)
Crisis (t-3)	1.7310**	0.4597	−0.8789	2.5132*
	(0.8353)	(0.6255)	(0.7406)	(1.4811)
Trade openness	0.0484***	0.0554***	0.0465***	0.0493***
	(0.0116)	(0.0114)	(0.0122)	(0.0121)
School enrollment	−0.0422**	−0.0659***	−0.0549***	−0.0508***
	(0.0183)	(0.0173)	(0.0192)	(0.0193)
Log of GDP per capita	5.3360***	4.8529***	5.5894***	5.2325***
	(1.1500)	(1.1299)	(1.1948)	(1.1461)
Num.Obs.	430	394	429	430
R2	0.169	0.237	0.114	0.108
R2 Adj.	0.120	0.190	0.061	0.055

* p <0.1, ** p <0.05, *** p <0.01
Dependent variable: GDP growth (annual %)

The results reveal a certain heterogeneity across crisis types. Currency crises generate the most severe and persistent effects, reducing GDP growth by 4.42 percentage points in the crisis year, with a continued drag of 2.38 percentage points one year later. Only in a year two does a modest recovery begin (+1,47 percentage points). This prolonged contraction could be revealing the sudden stops and exchange rate collapses, making them uniquely costly for Latin American economies, in comparison with other crisis types.

The set of control variables perform as expected. **Trade openness** is consistently positive and significant across all crisis types, reflecting growth benefits and international integration. Which mean that more trade-integrated Latin American economies experience faster GDP growth, even after accounting for crisis exposure. Each percentage point increase in trade openness (trade as a % of GDP) is associated with roughly 0.05 percentage points higher annual growth. Importantly, since our crisis dummies already capture how openness amplifies crisis transmission, this positive coefficient reflects the net beneficial effect of trade in normal times.

On the other hand, countries experiencing rapid expansion in **secondary education** exhibit temporarily slower GDP growth. Rather than suggesting that education is detrimental to growth, this coefficient likely reflects the short-term resource costs and reallocation effects associated with rapid educational expansion. Moreover, since education investments typically require years to translate into productivity gains, the growth payoff likely occurs beyond the three-year lag structure of our model.

GDP per capita enters with large positive coefficients, indicating that within countries over time, periods of higher income per capita are associated with faster subsequent growth. This pattern stands in contrast to standard convergence theory, which predicts that poorer countries should grow faster as they catch up to richer ones. Instead, our results suggest positive momentum effects operate in Latin America: prosperity generates further prosperity through enhanced fiscal capacity and stronger investments dynamics. This explains why the recovery patterns differ so dramatically across crisis types: banking crises, which often trigger aggressive policy interventions and institutional reforms, can restore momentum relatively quickly (hence the +2.56 percentage point rebound). Currency crises, by contrast, devastate confidence and external balance sheets so severely that momentum remains broken even two years after onset—explaining the prolonged negative effects we observe.

Table 6 examines the effects of different financial crisis types on income inequality (measured by pre-tax income share of the top 1% of adults 20+) while controlling for economic and institutional factors.

Table 6: Effects of Financial Crises on Income Inequality (with Controls)

	Banking	Currency	Debt	Twin
Crisis (t)	0.0046	−0.0060	−0.0055	0.0034
	(0.0067)	(0.0057)	(0.0061)	(0.0101)
Crisis (t-1)	0.0028	−0.0031	−0.0003	−0.0034
	(0.0074)	(0.0053)	(0.0071)	(0.0108)
Crisis (t-2)	0.0079	0.0013	−0.0065	−0.0006
	(0.0070)	(0.0054)	(0.0067)	(0.0106)
Crisis (t-3)	0.0093	−0.0035	−0.0050	−0.0002
	(0.0060)	(0.0052)	(0.0051)	(0.0104)
Trade openness	0.0003***	0.0003***	0.0004***	0.0003***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
School enrollment	0.0004***	0.0002	0.0002*	0.0003**
	(0.0001)	(0.0001)	(0.0001)	(0.0001)
Log of GDP per capita	−0.0128	−0.0094	−0.0262***	−0.0179**
	(0.0083)	(0.0094)	(0.0083)	(0.0081)
Num.Obs.	430	394	429	430
R2	0.086	0.064	0.096	0.063
R2 Adj.	0.032	0.006	0.043	0.008

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Dependent variable: Pre-tax income share, top 1% (adults 20+)

Once macroeconomic and structural controls are included, financial crises show no statistically significant contemporaneous effects on the income share of the top 1% in Latin America. The low R^2 values suggest that the annual panel specification captures just a very small fraction of the variation in top income inequality. First, as Bodea et al. (2021)demonstrates, crisis effects on inequality operate primarily in the long run, taking decades to fully materialize rather

than manifesting within single years. The significant coefficients on trade openness (positive) and GDP per capita (negative) do, however, confirm that structural integration into global markets and baseline development levels shape top income concentration.

Table 7 examines how different financial crisis types affect the income share of the bottom 50% of the population—a measure that captures distributional dynamics for the majority and most vulnerable segments of Latin American societies.

Table 7: Effects of Financial Crises on Income Inequality (with Controls)

	Banking	Currency	Debt	Twin
Crisis (t)	−0.0039*	0.0036*	0.0026	0.0037
	(0.0023)	(0.0019)	(0.0021)	(0.0034)
Crisis (t-1)	−0.0021	0.0030*	−0.0013	0.0033
	(0.0025)	(0.0017)	(0.0024)	(0.0037)
Crisis (t-2)	−0.0005	0.0012	0.0033	0.0019
	(0.0024)	(0.0018)	(0.0023)	(0.0036)
Crisis (t-3)	−0.0048**	0.0012	0.0025	0.0011
	(0.0021)	(0.0017)	(0.0017)	(0.0036)
Trade openness	0.0000	0.0000	0.0000	0.0000
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
School enrollment	0.0001*	0.0001***	0.0001***	0.0001**
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Log of GDP per capita	0.0307***	0.0303***	0.0368***	0.0333***
	(0.0028)	(0.0031)	(0.0028)	(0.0028)
Num.Obs.	430	394	429	430
R2	0.463	0.413	0.469	0.447
R2 Adj.	0.431	0.376	0.437	0.414

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
Pre-tax income share, bottom 50% (adults 20+)

The results reveal more nuanced patterns than the top 1% analysis, with substantially higher explanatory power indicating that the model specification better captures variation in bottom-income dynamics. Currency crises display positive effects and significant one-year lagged effects, an unexpected finding that may reflect real exchange rate depreciation temporarily boosting tradable sector employment where lower-income workers concentrate. The control variables reinforce key structural relationships: GDP per capita shows strong positive effects across all specifications, indicating that economic development significantly increases bottom-income shares, while school enrollment exhibits modest positive effects, consistent with human capital accumulation benefiting lower-income populations. The stronger model fit compared to 6 suggests that financial crises have more detectable and policy-relevant impacts on the welfare of vulnerable populations than on top income concentration.

5.3 Discussion

The empirical results we presented in the previous section offer a nuanced perspective on the economic and distributional consequences of financial crises in Latin America. The initial naive regressions confirm the widely held view that financial crises, regardless of type, are followed by sharp and statistically significant contractions in GDP growth. The immediate impact is a reduction in GDP growth of approximately 3 percentage points, a substantial shock to any economy. While the results also show a partial recovery in the two to three years following a crises, the magnitude of this rebound appears insufficient to fully offset the initial losses. This important information suggests that **crises inflict a lasting scar on the region's economic trajectory.**

This effect and trend also happens at a Subregional level. However, there are quantitative differences where some regions experienced a more severe impact from certain types of crises. A relevant example is the -14% drop in GDP growth in the Andes & Amazin region following a twin crisis. Similarly, the larger impacts of banking and currency crises in the South Cone highlight the importance of local economic structures and policy frameworks in mediating the effects of financial shocks. This subregional heterogeneity suggests that while the core transmission mechanisms of crises may be similar across Latin America, their ultimate impact is shaped by a complex interplay of local factors.

The most striking findings, however, relate to the distributional consequences of these crises. Our results indicate a stark asymmetry in how different income groups are affected. The income share of the top 1% of the population appears to be largely insulated from the effects of financial crises, with the regression coefficients being both small and statistically insignificant. This suggests that the wealthiest segment of the population has effective mechanisms to shield itself from the economic turmoil that follows these events.

In stark contrast, the income share of the bottom 50% of the population is significantly and negatively affected by financial crises, particularly banking and debt crises. The fact that the negative impact of banking crises persists for up to three years is particularly concerning, as it suggests that poorer households experience losses that are not quickly reversed, leading to a lasting increase in inequality. The regression models with controls further refine this picture, suggesting that while the general level of economic development and educational attainment can mitigate some of these effects, the fundamental vulnerability of lower-income groups remains.

Transmission Mechanisms

The asymmetric impact of crises on different income groups points to the crucial role of transmission mechanisms in determining the ultimate distributional consequences of these events. An important caveat to our directional focus—from crises to inequality and GDP growth—is that the causal relationship may also operate bidirectionally. Treeck (2014) demonstrates that in developed economies like the United States, rising inequality contributed to financial crises through household debt accumulation. While Latin America's shallower credit markets and large informal sectors have historically limited this transmission mechanism, ongoing financial deepening across the region suggests these dynamics may become more relevant in the future.

The pronounced effect of crises on the bottom 50% of the income distribution, compared to the negligible impact on the top 1%, can be attributed to fundamental differences in income sources and the capacity to hedge against shocks. The wealthier segments of the population typically derive a significant portion of their income from capital gains, profits, and rents, and they often hold a diversified portfolio of assets, including foreign assets. This allows them to shield their wealth from domestic economic downturns and, in some cases, even profit from

them. (Lewis, 2010)

In contrast, poorer households are overwhelmingly reliant on labor income and social transfers. Financial crises hit these income sources from multiple directions (Gasparini et al., 2009). The economic contraction that follows a crisis leads to job losses and downward pressure on wages, directly reducing labor income. Simultaneously, the fiscal pressures that crises place on governments often lead to contractive fiscal policies. These austerity measures frequently involve cuts to social spending, such as unemployment benefits and other forms of social assistance, precisely when the need for them is greatest. Furthermore, the rising cost of debt that often accompanies a crisis can further strain household budgets, pushing many into poverty.

While our results provide strong evidence for the asymmetric impact of crises, a more detailed, micro-level investigation into these transmission mechanisms would be a valuable area for future research. Such a study could provide a more granular understanding of how different types of households cope with economic shocks and inform the design of more effective social protection policies to mitigate the distributional consequences of financial crises in Latin America.

6 Conclusion

Financial crises in Latin America emerge from this analysis as events that generate sharp and often long-lasting output losses across the region and its subregions, while their distributional impact is markedly asymmetric: the top 1% is largely insulated, whereas the bottom 50% tends to lose income share and sees these losses persist beyond the immediate shock, especially around banking and debt crises.

Even once macroeconomic controls are introduced, the main pattern holds, where crises remain hurting growth but structural variables like trade openness and education help shape the recovery, and the welfare of poorer households is more tightly linked to macro fluctuations than the fortunes of the rich. Taken together, the findings suggest that **crises in Latin America primarily operate as a mechanism that deepens existing inequalities rather than dramatically reshaping the income distribution at the top**, underscoring the need for crisis-response and social protection policies that explicitly target the majority of the population.

At the same time, the evidence points to substantial scope for further research on both directions of causality between inequality and crises and on the micro-level transmission channels, an agenda that is currently constrained by data quality and coverage, particularly before 2000, but that will become increasingly feasible as longer and more reliable distributional series accumulate.

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