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Macroeconomic Stability and Inclusive Growth

by Hamid R. Davoodi, Peter Montiel, and Anna Ter-Martirosyan

***IMF Working Papers* describe research in progress by the author(s) and are published to elicit comments and to encourage debate.** The views expressed in IMF Working Papers are those of the author(s) and do not necessarily represent the views of the IMF, its Executive Board, or IMF management.

I N T E R N A T I O N A L M O N E T A R Y F U N D

**IMF Working Paper**  
Institute for Capacity Development

**Macroeconomic Stability and Inclusive Growth<sup>1</sup>**

**Prepared by Hamid R. Davoodi, Peter Montiel, and Anna Ter-Martirosyan**

Authorized for distribution by Valerie Cerra

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**Abstract**

We survey the literature on the relationship between macroeconomic stability and inclusive growth and identify gaps in our knowledge. We examine the role of macroeconomic policies (fiscal, monetary, macroprudential, and exchange rate) and measures of inclusiveness (income inequality, consumption inequality, wealth inequality, poverty, and unemployment) across countries at different income levels. Avoiding procyclical macroeconomic policies and mitigating macroeconomic volatility should be on the agenda of all policymakers concerned with promoting inclusive growth. The emerging theory and evidence suggest a strong role for macroeconomic policies in shaping inclusive growth, both in the short-run and the long-run. The two-way relationship between the macroeconomy and inequality underscores the challenge of identifying and estimating causal relationships. Models with heterogeneous agents have much to offer in this area.

**JEL Classification Numbers:** E61, D31, J64

**Keywords:** macroeconomic policy, inclusive growth, inequality, poverty, unemployment, heterogeneous agents

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## Contents

Abstract.....	2
I. Introduction.....	4
II. Impact of Macroeconomic Volatility on Inclusiveness.....	5
A. Impact of volatility on inclusiveness in advanced economies.....	5
B. Impact of volatility on inclusiveness in developing economies.....	8
C. Impact of economic crises on inclusiveness.....	9
D. Impact of fiscal consolidation on inclusiveness.....	11
III. Impact of Inclusiveness on Macroeconomic Volatility and Crises.....	15
A. Macroeconomy and inequality: A paradigm shift.....	15
B. Impact of inequality on growth, volatility, and other macroaggregates .....	15
C. Impact of inequality on economic crises.....	16
IV. Macroeconomic Policies and Inclusiveness.....	18
A. Fiscal policy .....	18
B. Monetary policy.....	21
C. Macroprudential policies.....	22
D. Exchange rate management.....	23
V. Conclusion.....	25
References.....	27

## Figures

Figure 1. Output losses, employment losses, and income inequality.....	5
Figure 2. Earnings inequality and business cycles in the United States, 1967-2018.....	7

## I. INTRODUCTION

Macroeconomic volatility has considerable impacts on growth and inclusiveness. The absence of inclusiveness, in turn, can both be a source of macroeconomic volatility and amplify the macroeconomic effects of shocks. Evidence suggests, for example, that there is a positive relationship between macroeconomic volatility and inequality. The conventional wisdom prevailing before the Global Financial Crisis (GFC) of 2008-09 considered macroeconomic volatility, driven primarily by productivity shocks, as an important driver of inequality (Krusell and Smith, 1998; Quadrini and Rios-Rull, 2015). However, causation can also run in the opposite direction; namely, high and rising inequality or lack of inclusiveness could be the cause of macroeconomic volatility and economic crises (Kumhof, Ranciere, and Winant, 2015; Mian and Sufi, 2018).

Not surprisingly, new literature in macroeconomics has emerged since the GFC that tackles these complex interactions in novel ways. This literature goes beyond the traditional representative agent models of macroeconomics by explicitly incorporating income and wealth heterogeneity among households. It shows analytically that macroeconomic aggregates and national well-being depend on income and wealth distribution in non-trivial ways. These new models often deliver strikingly different implications for macroeconomic policies and economic fluctuations and, conversely, allow a serious study of the distributional implications of macro policies (Yellen, 2016; Ahn, Kaplan, Moll, Winberry, and Wolf, 2018).

In a similar vein, and from a policy point of view, distributional and inclusive growth implications of macroeconomic policies have been incorporated increasingly in the design and implementation of IMF-supported adjustment programs as well as in the annual consultations of the IMF staff with the IMF's 190 member countries (Georgieva, 2019, 2020). This understanding has gone beyond traditional macroeconomic policies to include structural reforms that support inclusiveness in many areas, including COVID-related financial assistance in excess of \$100 billion that was disbursed by the IMF to more than 80 countries in 2020.<sup>2</sup>

In this paper, we analyze the dynamic relationship between macroeconomic volatility and inclusiveness. First, we look at the impact of economic fluctuations on several measures of inclusiveness, focusing separately on advanced and developing economies (Section II). Then, we study the effects of inequality on macroeconomic volatility (Section III). In both sections, we separately look at the effects of economic crises—an extreme case of economic volatility—on inclusiveness and vice versa. Finally, we shift the discussion to an analysis of the role of fiscal, monetary, macroprudential, and exchange rate policies in supporting inclusiveness (Section IV).

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<sup>2</sup> See <https://www.imf.org/en/Topics/imf-and-covid19/COVID-Lending-Tracker>

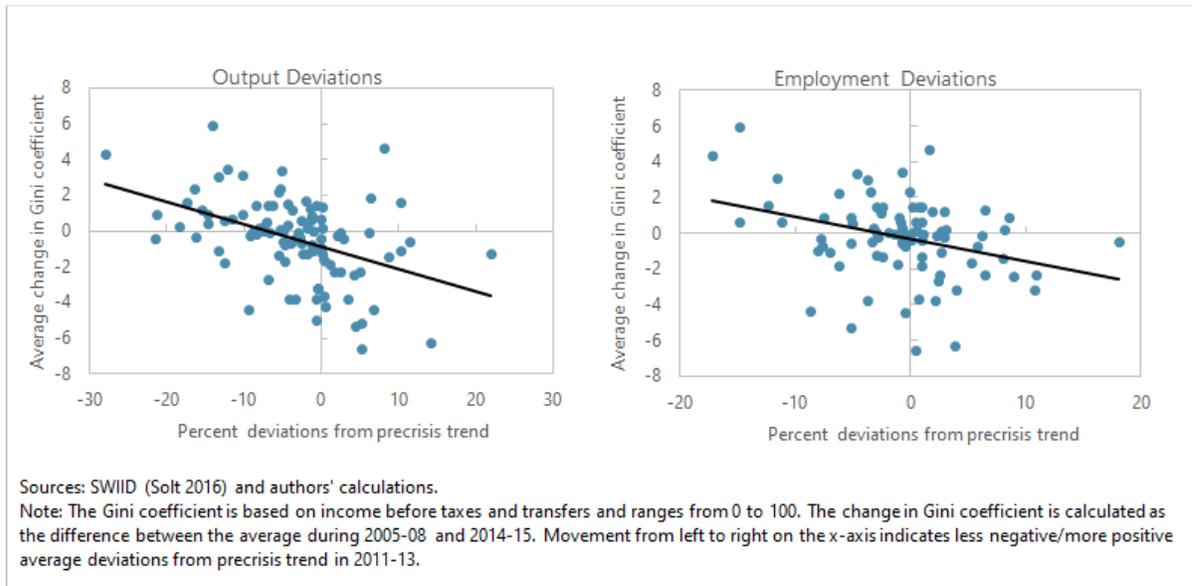
## II. IMPACT OF MACROECONOMIC VOLATILITY ON INCLUSIVENESS

### A. Impact of volatility on inclusiveness in advanced economies

There is extensive evidence that higher output volatility tends to widen income disparities. This positive output volatility-inequality relationship holds across countries, within countries, and across regions within a country (Breen et al., 2005; Chauvet et al., 2019; Huang et al. 2015; Aye et al., 2019). Similarly, business cycle fluctuations have significant effects on poverty and unemployment, two important measures of inclusiveness. For example, earnings volatility in the United States is highly cyclical and closely tracks the unemployment rate, and markedly so during the Great Recession (Carr and Wiemers, 2018).<sup>3</sup> More generally, looking across a broad sample of countries, income volatility tends to vary positively with the volatilities of both poverty and unemployment, and the cyclical components of unemployment and poverty account for a significant share of their total volatility (Camarena and others, 2019).

The GFC underscored an often-over-looked fact that macroeconomic instability could have large distributional consequences. The evidence shows that countries with larger output and employment losses in the initial aftermath of the GFC on average registered greater increases in income inequality compared with their pre-crisis average (Figure 1).

**Figure 1. Output losses, employment losses, and income inequality**



Source: World Economic Outlook, 2018, October

Business cycles affect inclusiveness at many levels. During recessions, income losses are often accompanied by deterioration in numerous indicators of inclusiveness, from inequality (of income or consumption) to inequality of health and education outcomes, such as infant

<sup>3</sup> The Great Recession refers to the recession following the GFC.

mortality and school enrollments, from job losses to physical dislocation of individuals, loss of dignity and skewed gender disparities (Vegh et al., 2019).

There are many studies of business cycles in the United States that provide a rich view of how recessions influence the evolution of income and its distribution. These studies offer valuable insights that may be representative of the experiences in other developed economies. One key insight is that recessions—defined as periods of negative output growth rates—on average, lead to permanent output and income losses, regardless of the cause (Cerra and Saxena, 2008, 2017).

Another important insight is that there are sizable short-run and long-run impacts of U.S. post-war recessions on many measures of inclusiveness—such as unemployment, earnings inequality, intergenerational disparities, socioeconomic status, and mortality rates.<sup>4</sup> Conceptually, unemployment matters for income distribution because increases in the unemployment rate happen faster than declines in the unemployment rate, and the fact that unemployment disproportionately affects the youth, the less skilled, and the less educated.

The history of the labor market in the United States also provides a rich database of inequality dynamics. Figure 2 shows the evolution of earnings inequality between 1969 and 2018 for two measures of inequality. Inequality at the top end of the distribution is captured by the ratio of the earnings in the 90<sup>th</sup> percentile to that of the 50<sup>th</sup> percentile (90/50 ratio). Inequality at the bottom end of the distribution is captured by the ratio of the earnings in the 50<sup>th</sup> percentile to that of the bottom 20<sup>th</sup> percentile (50/20 ratio).

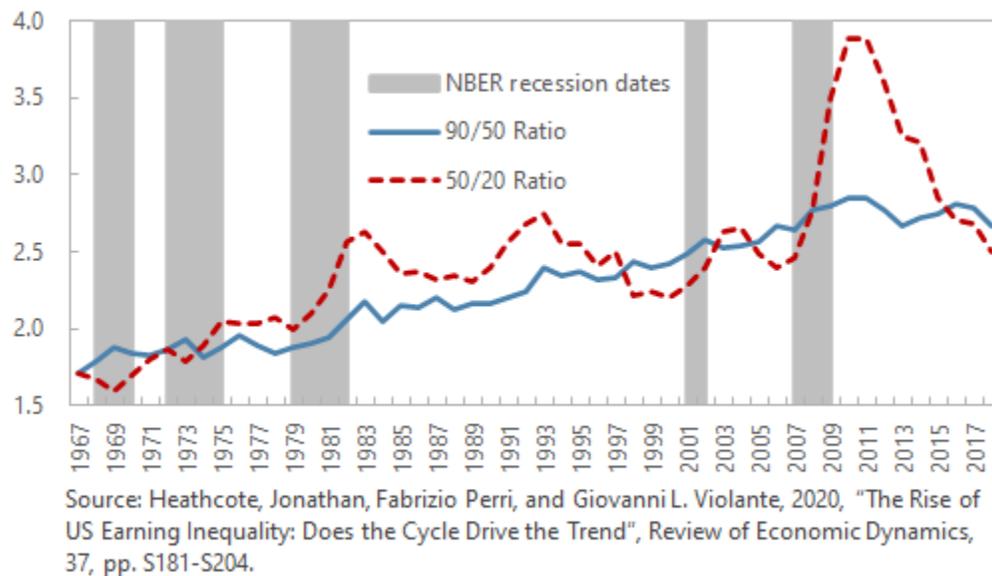
First, inequality is captured by the increasing trend in both ratios but also that the cyclical properties of earnings inequality are different at the bottom and at the top. Second, inequality at the top (the 90/50 ratio) increases steadily and does not exhibit any particular cyclical pattern. In contrast, inequality at the bottom (the 50/20 ratio) increases sharply in each recession. Third, the longer the expansion, the more inequality declines. However, despite improvements in inequality during expansions, the cumulative increase in the 50/20 ratio that happened during all U.S. recessions exceeds the overall increase in the same ratio over the entire 1968-2018 period.

Some of these findings also extend to the dynamics of wealth and income inequality. A study of the U.S. economy that also takes into account different heterogeneous experiences in the labor market finds that business cycle fluctuations can account for about 50 percent of the rise in U.S. wealth inequality, and virtually for the entire increase in income inequality between 1980 and 2015 (Bayer et al. 2020).

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<sup>4</sup> See Dupraz, Nakamura and Steinsson (2020), Schwandt and von Wachter (2020) and Case and Deaton (2020).

**Figure 2. Earnings inequality and business cycles in the United States, 1967-2018**



Changes in earnings inequality over the business cycle in advanced economies are also reflected in asymmetries in unemployment as steep rises in layoffs during recessions are followed by slow hiring during recoveries and slower wage gains for those at the bottom end of the income distribution (McKay and Reis, 2008). The longer workers remain unemployed, the greater is the attenuation in their skills and loss of human capital. Business cycle volatility and its asymmetric effects on unemployment during recessions and recoveries tend to disproportionately affect wage earners at the low end of the income distribution. As a result, recessions can have long-run effects on inequality of income and earnings.

In fact, models of business cycles with hysteresis demonstrate that cyclical fluctuations in inequality are connected to trend movements. In other words, cycles and trends cannot be analyzed independently of each other. For example, Barlevy and Tsiddon (2006) develop a model in which recessions amplify long-run trends in earnings inequality and provide empirical support for this amplification effect from the first half of the 20<sup>th</sup> century in the United States.

More recent studies of the United States provide more direct evidence and insight into the long-run effects of cyclical changes in inequality. One observation is that there has been a marked trend decline in relative wages of low-skilled workers in the U.S. Recessions imply a double whammy for these workers as they are hit disproportionately more during recessions. The higher is the unemployment rate among these workers; the further are declines in their skills and potential earnings, known as a scarring effect. As a result, the cycle tends to drive the trend, with recessions having long-run adverse effects on inequality (Heathcote, Perri, and Violante, 2020). These findings mirror arguments made by Cerra et al. (2020) on the scarring effects of business cycles. Permanent income losses may therefore be associated with permanent setbacks for inclusiveness.

These findings have important policy implications. Welfare gains from stabilization policies (to smooth output fluctuations) are likely to be larger than those estimated in the traditional

business cycle analysis (Lucas, 2003) because stabilization also has the beneficial effect of reducing income inequality. These welfare gains are expected to be even larger under a hysteresis view of the business cycle whereby a crisis or recession delays investment in human capital and spending on research and development, which in turn diminishes long-run growth (Stiglitz, 2012; Cerra, Fatás, and Saxena, 2020).

### **B. Impact of volatility on inclusiveness in developing economies**

Low-income countries and emerging market economies tend to experience more frequent crises (economic, political, and climate-related), as well as deeper recessions than rich countries (Naoussi and Tripier, 2013; Cerra and Saxena, 2008, 2017). As a result, the impact of recessions and volatility on measures of inclusiveness is more pronounced for low-income countries and emerging market economies than for advanced countries.

For example, terms of trade shocks are an important source of volatility for developing and emerging market economies and can drive both growth and inclusiveness. Cross-country evidence shows that higher terms of trade volatility affect growth adversely by reducing investment in human and physical capital (Cavalcanti, Mohaddes, and Raissi, 2014). On perhaps a more positive side, during the commodity boom of 2003-14, poverty in Latin America and the Caribbean region declined by almost 19 percentage points. Much of the progress reflected real labor income gains for lower-skilled workers, especially in services, with a smaller but positive role for government transfers (IMF, 2018b). However, besides the trend decline, cyclical income volatility accounted for about 40 percent of the decline in poverty (Camarena and others, 2019).

A study of short-term growth and income inequality in developing countries also provides evidence that is consistent with the dynamics of inequality in business cycles in advanced economies. In a study of 71 developing countries over the 1980-2014 period, Hacibedel et al (2019) find that reductions in inequality during growth upswings are largely reversed during growth slowdowns. Unemployment, and youth unemployment, in particular, are found to be the main channel through which fluctuations in growth affect future dynamics in inequality.

The global coronavirus pandemic recession caused massive income losses as measured by the drop in labor income due to layoffs, shorter hours worked, and furloughs. According to the International Labor Organization, labor income losses (excluding income support measures) at the global level are estimated to have declined by 35 percent during the first three quarters of 2020 (from the fourth quarter of 2019), a loss of 1 billion full-time equivalent jobs. This is equivalent to US\$3.5 trillion or 5.5 percent of global GDP (International Labor Organization, 2020).

The pandemic-induced collapse in output and employment in 2020 also had devastating effects on many measures of inclusiveness. For example, a World Bank study estimates that the COVID-19 pandemic may have driven some 70 million people into extreme poverty (those living on less than 1.90 US Dollars a day) under the baseline scenario of 5 percent

global GDP contraction in 2020 (Mahler et al. 2020).<sup>5</sup> Under a downside scenario of a global contraction of 8 percent in 2020, an additional 46 million will join the ranks of the extreme poor in 2020. By comparison, the number of extreme poor has declined about 30 million between 2015 and 2019.

### C. Impact of economic crises on inclusiveness

Economic crises affect all countries as evidenced, in this section, by a review of the experiences of advanced economies, developing economies, and emerging market economies. Economic crises are episodes of severe macroeconomic instability, representing an extreme form of volatility. Macroeconomic crises generally result in severe recessions, with accompanying job losses. The depth of output losses and human suffering tends to be much larger and more acute in recessions induced by the crisis than in non-crisis recessions. Crises originate from various sources and are of different types.<sup>6</sup> They include financial-sector, currency (or balance of payments), and debt (public or private) crises. Crises of different types sometimes can also occur together, with “twin crises” of currency/banking and currency/debt more common than a banking/debt twin crisis (Laeven and Valencia, 2018). Unfortunately, crises afflict countries at all income levels. The evidence from across more than 180 countries during 1960-2014 shows that the persistent output losses relative to the pre-crisis trend were as high as 5 percent for the balance of payment crises, 10 percent for banking crises, and 15 percent for twin banking/balance of payment crises (Cerra and Saxena, 2008).

Financial sector crises appear to have a more adverse effect on inequality than crises of other types. Financial crises do not occur in a vacuum. They are often accompanied by credit booms fueled by fickle capital flows, loose lending standards, financial liberalization, capital account liberalizations, and excessive risk-taking. During booms that precede a financial-sector crisis, individuals at the bottom end of the income distribution often incur large amounts of debt to finance current consumption, purchase houses, or acquire other assets. For example, rising income inequality since 1980 in the United States generated a rise in household borrowing by non-rich households, financed by rich households (Mian, Straub, and Sufi, 2020).

A common observation is that systematic differences in asset portfolios and leverage among households at different income levels also mean that the booms and busts associated with financial-sector crises tend to affect inclusiveness in part through their effects on the distribution of wealth (Kuhn, Schularick and Steins, 2020). Since in most advanced economies, portfolios of rich households are dominated by stocks, whereas portfolios of middle-class households are concentrated in real estate and are highly leveraged, other things being equal, housing booms lead to substantial wealth gains for leveraged middle-class households that tend to decrease wealth inequality, while stock market booms primarily boost the wealth of households at the top of the wealth distribution.

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<sup>5</sup> By comparison, during the GFC, global GDP contracted by 0.07 percent in 2009. The estimate of a 5 percent contraction in global output is close to that projected in the October 2020 projection of the IMF’s World Economic Outlook.

<sup>6</sup> See United Nations (2021).

The postwar American history provides a good example of the effects of the economic crisis on wealth distribution in advanced economies. In the United States, portfolio valuation effects have been predominant drivers of shifts in the distribution of wealth. During the four decades before the GFC, the U.S. middle class (50th–90th percentiles) lost ground to the top 10 percent with respect to income, but it largely maintained its wealth share due to substantial gains in housing wealth. However, following the collapse in the housing market in the GFC, the middle class suffered substantial wealth losses, whereas the quick turnaround in stock markets boosted wealth at the top. The housing market did recover, but this occurred much later than the rise in the stock market.

More generally, aside from their effects on the distribution of wealth, financial sector crises tend to increase poverty and inequality. Their immediate effects are unemployment, loss of income, delayed loan repayments, foreclosures on real estate, and outright debt default. The larger is the debt overhang, the deeper is the ensuing recession (Mian, Sufi, and Verner, 2017). As the size of the debt overhang increases, those in the bottom end of the income distribution are hit harder, and inequality, poverty, and unemployment deteriorate more. A number of studies across broad samples of countries have found that banking and currency crises tend to increase income inequality and poverty, though causality is far from clear (Baldacci et al., 2002; De Haan and an-Egbert Sturm, 2017).

The impact of the GFC on income inequality and poverty in OECD countries has been the subject of many studies (Jenkins et al., 2013).<sup>7</sup> A study based on a survey of 100 thousand U.S. households shows that income losses imposed by the GFC were disproportionately borne by low- to middle-income groups (Almeida, 2020). Income losses experienced by richer households were relatively modest and transitory, while those experienced by poorer households were not only large but also highly persistent.<sup>8</sup> The bottom 10 percent of the distribution experienced a 70 percent drop in earnings relative to the pre-crisis year of 2007, long after the official end of the recession, while the top 10 percent experienced a drop of less than 5 percent (Almeida, 2020). The effects of the GFC on inclusiveness have been worldwide. One study estimated that the GFC added some 64 million people to the population living below the poverty line of \$2 a day, an international benchmark at the time (Ravallion and Chen, 2009).

A sovereign debt crisis is another type of macroeconomic crisis that may have significant effects on inclusiveness. Such crises arise when sovereign debt evolves on a trajectory that cannot be sustained as creditors are unwilling to refinance maturing debt. Common reasons for unsustainable sovereign debt, among many, include rising interest rates that increase debt service costs, an unexpected external or domestic shock that leads to persistent fiscal deficits an exchange rate devaluation that raises the domestic currency cost of servicing foreign-currency-denominated debt. These situations can trigger sovereign default or the need to

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<sup>7</sup> To date, there are no systematic cross-country studies of the impact of economic crises on a comprehensive set of social indicators. See Easterly (1999) for a study of the impact of growth on social indicators at decade-long frequencies and Camarena and others (2019) for a study impact of business cycles on social indicators at business cycle frequencies, focusing mostly on Latin America and the Caribbean.

<sup>8</sup> Income is defined as the sum of (pre-tax, pre-transfer) earnings, private transfers, and net asset income, based on person-equivalized household income with individual weights (Almeida, 2020).

reschedule debt, requiring a large fiscal adjustment or fiscal consolidation to restore fiscal sustainability.

The direct distributional consequences of high debt or debt crisis have not received much attention in the literature. However, the *indirect* distributional consequences of unsustainably high debt or debt crisis have received more attention, as unsustainably high debt or debt crises can influence income distribution through many channels, including low or negative growth, higher inflation, and greater inflation instability, higher output volatility, large exchange rate devaluations, abandonment of a pegged exchange rate regime or a large depreciation, and debt write-offs or haircuts in which only a fraction of the debt is repaid to domestic or foreign debt holders.

There is substantial evidence both within countries and across countries that recessions are often preceded by a buildup of sovereign debt and other vulnerabilities (Kumhof, Ranciere, and Winant, 2015; IMF, 2017a; Mian and Sufi, 2018) and that high debt is a good predictor of low or negative economic growth and higher unemployment (Reinhart and Rogoff, 2010; Mian and Sufi, 2018; Kim and Zhang, 2019). An important channel through which high debt and debt crises may exert such contractionary effects caused by subsequent fiscal adjustment or fiscal consolidation that mitigates the crisis.

#### **D. Impact of fiscal consolidation on inclusiveness**

Fiscal consolidation, whether prompted by crisis or not, consists of some combination of tax increases and expenditure cuts aimed to reduce fiscal deficits and improve fiscal sustainability.<sup>9</sup> These measures affect aggregate demand, employment, income, consumption, and investment. They can also change income distribution through their impacts on transfers, public sector wages, and unemployment. The magnitude and direction of these effects are likely to vary depending on the composition of fiscal measures, the state of the economy, and potentially other factors. Understanding these effects can help policymakers in designing consolidation packages that minimize the negative impacts on the economy and inclusiveness.

Although some studies report expansionary consolidations (e.g., Alesina et al., 2019),<sup>10</sup> it is generally accepted that fiscal austerity measures negatively affect output and economic growth, at least in the short run. The magnitude of these effects depends on the composition of the adjustment and its persistence. It also matters whether the adjustment was anticipated and whether other macroeconomic policies were able to cushion some of the impacts. Tax-based fiscal consolidations tend to have a larger negative impact on economic output than spending-based ones, particularly over the medium term. Most estimates show multipliers around -2 to -3 for tax measures but only around or below one for spending. There are several explanations for these findings. First, with expenditure-based austerity, forward-looking households may anticipate that future taxes will not rise as much as

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<sup>9</sup> The more general role of fiscal policy in shaping inclusive growth is discussed in Section IV.A.

<sup>10</sup> Alesina et al. (2019) find a few cases of “expansionary austerity” in which the output costs associated with an expenditure-based austerity plan produce output gains. Examples include Ireland, Denmark, Belgium, and Sweden in the 1980s and Canada in the 1990s.

previously expected and raise their consumption. Similarly, investors would also expect a smaller tax burden in the future and thus increase their investment today. On the supply side, tax distortions may affect the supply of labor, particularly for second earners in a family and younger people who may delay their entry into the labor market, which in turn would have a long negative impact on output (Alesina et al., 2019, Ramey, 2019).

The range of estimated multipliers for fiscal consolidations, however, becomes much wider when considering country-specific characteristics, such as the type of an exchange rate regime, initial tax coverage, and tax rates. For example, the negative effects of spending cuts tend to be larger for countries with a fixed exchange rate regime and higher debt levels. Evidence-based on fiscal consolidations in 10 OECD countries during 1978-2014 shows that if tax-based consolidations are achieved by broadening the tax base, the negative impact on output and employment tends to be much smaller than if they are based on tax rate increases (Dabla-Norris and Lima, 2018). In addition, tax multipliers could be essentially zero under relatively low initial tax rate levels (Gunter et al., 2017).

In addition, as austerity measures are rarely implemented in isolation, other macroeconomic policies can cushion their impact on the economy. For instance, by lowering interest rates, monetary policy can support investment and consumption during consolidation episodes (Ramey, 2019). Thus, a negative impact of fiscal consolidation can be particularly severe during recessions or periods at the zero lower bound of interest rates when support from other policies is constrained.<sup>11</sup> In these situations, countries could enter a negative loop when their attempts to lower government debt through spending cuts or tax increases result in lower growth and even higher debt-to-GDP ratios. These episodes are called hysteresis episodes of self-defeating fiscal consolidations (Fatás and Summers, 2018).

Most studies of the output effects of fiscal consolidation rely on consolidation episodes in advanced economies and limited research in developing countries. This is in part due to data limitations and difficulties in identifying fiscal policy shocks.<sup>12</sup> Available empirical studies suggest that the impact of fiscal policy on output in developing countries is lower than in advanced economies and perhaps more short-lived.<sup>13</sup> Specifically, government consumption cuts have a temporary impact on output, but public investment shocks have a larger and longer-lasting effect, as the private sector is small and public investment is essential for economic growth. In addition, as with advanced economies, the output effects appear to be larger during recessions (Honda et al., 2020).

Fiscal adjustments affect inequality through their output and employment effects as well as through distributional effects of spending cuts and tax increases. The overall effect on inequality depends on the composition of fiscal adjustment, stage of the business cycle, and

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<sup>11</sup> Unconventional monetary policy can and has been used to mitigate possible negative effects of fiscal consolidation particularly when the interest rate is at the zero lower bound; see section IV.

<sup>12</sup> Fiscal shocks are discretionary changes in government spending and taxes that are not correlated with contemporaneous macroeconomic shocks or anticipated by households and businesses.

<sup>13</sup> Kraay (2014) estimates fiscal spending multipliers to be around 0.4 for a large sample of developing countries over the period 1970-2010.

labor market conditions (Woo, 2013). Fiscal consolidations are often accompanied by an increase in long-term unemployment and a decline in the labor share of income. This decline tends to increase inequality because of the relatively high share of wages in the incomes of lower-income groups.<sup>14</sup> In addition, it is generally found that unemployment losses fall disproportionately upon low-income groups (OECD, 2015). Frontloaded adjustments and consolidations are undertaken during recessions tend to have especially strong effects on social welfare if they are implemented when unemployment is already high (Blanchard and Leigh, 2013).

One study found that IMF program conditionalities may have led to higher income inequality (Forster and others, 2019).<sup>15</sup> However, another study finds that the nature of reforms and initial conditions matter to the evolution of inequality. For example, fiscal reforms such as improving the efficiency of public investment, pursued in many IMF-supported programs, tend to reduce income inequality but financial sector reforms neither increased nor decreased inequality (Fabrizio and others, 2017).

There is a broad consensus that in advanced economies, adjustments based on spending cuts have larger effects on income inequality than those based on tax hikes. Based on more than 100 episodes of fiscal consolidation in advanced economies, Woo et al. (2013) show that, on average, inequality increased about 2 percent after the spending-based consolidations, while it rose about 1 percent in the case of the tax-based episodes. Other studies find a similar pattern (Ball, 2014). This could be explained by the fact that most of the redistribution in advanced economies is conducted through government spending. Also, lower-income earners are typically more affected by spending cuts as a larger portion of their disposable income comes from public spending, and they are more vulnerable to job losses. Furceri et al. (2018) report a *medium-term inequality multiplier* for government spending and find significant and long-lasting effects of spending cuts on inequality and poverty, suggesting a unit elasticity.

Income inequality or growth is not the only yardstick for measuring the success or failure of fiscal consolidations. Using a measure of well-being or happiness as reported by over half a million individuals surveyed across 13 European countries between 1980 and 2007, Eklou et al. (2020) find that fiscal consolidations reduce an individual's well-being in the short run, especially when they are based on spending cuts. However, monetary and exchange rate policies (disinflation, depreciation, and the liberalization of capital flows) tend to mitigate the well-being cost of fiscal consolidations. Furthermore, expansionary fiscal consolidations in the case of two countries (Ireland and Denmark) are found to have well-being costs, in contrast to studies that rely on output gains or losses as measured in the literature on expansionary fiscal consolidations (Alesina et al., 2019).

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<sup>14</sup> Low-income households typically rely on labor income, whereas high-income households tend to receive a relatively larger share of their income from capital income.

<sup>15</sup> The IMF's COVID-related emergency financing offered through the Rapid Financing Instrument and the Rapid Credit Facility have no conditionalities.

The net effect of fiscal consolidation on inequality also depends on the specific composition of the spending or revenue adjustment.<sup>16</sup> Reductions in social benefits tend to worsen inequality more than other spending cuts. Proportional reductions in pensions across all beneficiaries are regressive because pensioners in the lower-income groups lose a greater share of their total income (Clements et al., 2015). Finally, cuts in education and health spending have a greater impact on inequality in the longer term (Woo, 2013).

There is less evidence on the distributional effects of fiscal consolidation for developing economies. Several factors suggest a potentially lower impact for spending cuts. First, social spending is, on average, much lower than in advanced economies. Further, in-kind social spending—such as education and health spending—is often not well targeted, which exacerbates post-transfer inequality because the poor have limited access to public services. In cases when consolidation is achieved by cuts in fuel price subsidies, the net effect on inequality and poverty depends on the design of those measures. Across-the-board cuts often hurt the poor more often than the rich unless they are accompanied by mitigating measures such as temporarily maintaining universal subsidies on commodities that are more important in the budgets of the poor while improving targeting that corrects the flaws in the initial design of such programs (Coady et al., 2015). On the revenue side, a larger share of revenues comes from indirect taxes, which tend to be regressive. Therefore, tax hikes could be detrimental to welfare, especially for the poor.<sup>17</sup> In terms of the timing, similar to cases for advanced economies, fiscal consolidation undertaken during recessions tends to have a larger impact on unemployment and inequality (Honda, 2020).

Both spending and revenue measures could be designed to mitigate the negative impact of fiscal consolidation on lower-income groups. In particular, a larger share of fiscal adjustments could be achieved through revenue measures targeted at the higher income segments of the population. Also, broad spending cuts could be accompanied by targeted social benefits and subsidies designed to offset some of the adverse distributional impacts of consolidation (Clements et al., 2015; Fabrizio et al., 2017).<sup>18</sup>

In short, fiscal consolidation in response to unsustainable sovereign debt and sovereign debt crises has costs for both economic output and inequality. Evidence suggests that spending-based consolidation measures tend to be less contractionary for output than tax hikes. Yet, many studies also show that spending cuts can have a large negative impact on inequality.

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<sup>16</sup> For example, fiscal consolidations in Spain (1992-98) and Norway (1993-97) consisted of a cross-the-board spending cuts while protecting social benefits. Tax-based consolidations that rely more on indirect taxes or are combined with expenditure cuts tend to worsen inequality (Iceland, 2004-06). Also, addressing tax evasion and tax loopholes is an alternative way to generate public savings without necessarily elevating the income inequality (Germany 1992-99); see Woo (2013) for more details.

<sup>17</sup> Fabrizio et al. (2017) find that in LICs, increases in value-added tax are associated with an increase in the Gini coefficient by about 1.5 percent in the medium term. Peralta-Alva et al. (2019) show that hikes in the value-added tax rate can substantially reduce welfare in Ethiopia by widening the rural-urban gap, despite having the least efficient costs in terms of implementation.

<sup>18</sup> Analysis of several consolidation episodes in selected European economies in the aftermath of the GFC shows that the overall impact of consolidation could be progressive (Clements et al., 2015). Likewise, for developing countries, in Honduras, negative distributional effects from increases in value-added tax were offset—among other factors—by a targeted cash transfer program, conditional on households' enrolling their children in schools, resulting in the overall progressive distributional impact (Fabrizio et al., 2017).

There is scope for further research about the net effects of consolidation, particularly for developing economies. In the meantime, countries should aim to develop consolidation packages that minimize effects on growth without widening inequality.

### **III. IMPACT OF INCLUSIVENESS ON MACROECONOMIC VOLATILITY AND CRISES**

#### **A. Macroeconomy and inequality: A paradigm shift**

The macroeconomics literature until the GFC was dominated by the view that income distribution did not matter for macroeconomic fluctuations. If anything, a widely held perspective was that macroeconomic aggregates affect income distribution, but not vice versa, a view challenged by Stiglitz (2012). However, there has been a notable paradigm shift in macroeconomics. According to the new paradigm, inequality matters for the macroeconomy, and the macroeconomy matters for inequality (Ahn, Kaplan, Moll, Winberry, and Wolf, 2018). The key to this paradigm shift was the rising inequality leading up to the GFC as well as better data and computational capabilities for macroeconomic modeling, but more importantly, the incorporation of heterogeneity, especially in income and wealth, into models that shifted away from representative agent models that are silent on distributional issues.

Moreover, the new literature also underscores the need to employ better methods and economic theory to establish causality that at least recognizes the two-way relationship between inequality and the macroeconomy. In this regard, recent methods for the identification of causal relationships are promising (Nakamura and Steinsson, 2018; Gabaix and Koijen, 2020). However, these novel methods are yet to be fully embraced in the literature. These observations caution us about reading too much into causality in many studies reviewed in this section, although some studies, as we see shortly, do a good job of using an array of standard causality tests.

#### **B. Impact of inequality on growth, volatility, and other macroaggregates**

The impact of inequality on economic growth has been the subject of many empirical studies that have at times produced conflicting results. For example, Forbes (2000) finds a positive association between inequality and growth. Panizza (2002) finds a negative relationship across a sample of 50 U.S. states. Banerjee and Duflo (2003) find the association to be non-linear. In a dynamic model of 77 countries, Grigoli, Paredes, and Di Bella (2018) allow for cross-country heterogeneity and find that higher income inequality leads to lower growth in three-quarters of the 77 countries in their sample. In general, studies that focus on short-run relationships (e.g., 5-year averages) tend to find a positive association. The results vary due to differences in methodologies, transmission channels, measures of inequality, functional relationships (linear and non-linear), and data frequencies.

With respect to volatility, one line of research has investigated the impact of inequality on the durability of growth. A key finding in this area is that high-income inequality results in a shorter and more fragile growth spell; that is, output growth is only sustained for short periods. In other words, high inequality leads to high output volatility. Conversely, low inequality is associated with faster and more durable growth spells. These findings hold even

after controlling for various determinants of output growth (Berg et al., 2018). Low inequality contributes to the durability of growth (lower output volatility) by (i) relaxing credit market imperfections, easing financing for investment in human capital, (ii) reducing incentives for distortionary taxation to finance public spending; and (iii) reducing political instability and uncertainty and thereby raising incentives for investment.

Another line of inquiry has used an analytically tractable heterogeneous agent model to investigate the impact of rising wealth inequality on long-run trends in key macroeconomic aggregates. Specifically, the rising wealth inequality since the 1980s in the United States accounts for a large part of the decline in trend-level changes in real interest rates, productivity growth rates, capital to income ratios, and consumption to wealth ratios (Lee, 2021). In this regard, the link between wealth inequality and aggregate demand plays an important transmission channel.

Capital market imperfections combined with unequal access to investment opportunities across individuals have also been shown to generate endogenous and permanent fluctuations in output, investment, and interest rates (Aghion, Banerjee, and Piketty, 1999). In some periods, savings are plentiful and underutilized because of investors' borrowing constraints, resulting in slow output and investment growth and low-interest rates. Following deleveraging and rising profitability, investment demand and growth increase, and interest rates climb. As debt burdens become high, profits net of debt payments falls, eventually leading to collapse in investment, taking the economy into recession or slow growth. This implies that economies with less developed financial markets and credit-constrained investors will tend to be more volatile and to grow more slowly. Therefore, improving financial inclusion may be a necessary condition for macroeconomic stabilization. A second-best policy may be to use tax policy to absorb idle savings and provide investment subsidies or tax cuts for investors.

More broadly, weak institutions amplify the impact of high-income inequality on growth and growth volatility. Evidence from a broad sample of countries shows that drops in growth are sharper in countries with divided and socially polarized societies—as measured by high-income inequality and high ethnic fragmentation—and with weak institutions of conflict management, such as quality of governmental institutions, the rule of law, and social safety nets (Rodrik, 1999; Woo, 2011; Grigoli, Paredes and Di Bella, 2018). In these studies, the issue of causality is tackled by using data on income inequality that preceded the growth collapse.

### **C. Impact of inequality on economic crises**

There is extensive literature that examines whether inequality is a cause of the economic crisis. The literature considers different theories about the relationship between various types of economic crises and inequality and investigates the relationship across time periods and countries empirically, using different methodologies and measures of inequality.

A study of financial crises among 14 advanced countries between 1920 and 2000 found that credit booms increased the probability of a banking crisis but found no evidence that a rise in top income shares led to credit booms. Instead, the pattern of the financial crisis seems to fit the standard boom-bust pattern of declines in interest rates, followed by strong growth, credit

booms, asset price booms, and crises (Bordo and Meissner, 2012). However, this study excluded the GFC. When the sample includes the GFC, higher top income shares are found to be positively associated with credit booms, given other determinants of credit booms (Perugini et al., 2016). The study uses some widely used econometric techniques to argue that the relationship is causal, running from inequality to financial crisis. Empirically, the impact of inequality on credit booms and the likelihood of financial crises is also found to depend on the extent of financial deregulation; the more deregulated financial markets are, the greater is the impact of inequality on financial fragility and financial crises (Perugini et al., 2016).

However, to conclude that income inequality can contribute to causing an economic crisis, empirical studies invariably need to address the difficult challenge of identifying changes in income inequality that are truly exogenous with respect to an economic crisis.

Recent empirical studies have shied away from the difficult task of establishing causality and have turned their attention instead to the simpler task of assessing the predictive power of income inequality for crisis episodes. Studies have found that slow-moving trends such as rising top income inequality and prolonged periods of low productivity growth have strong predictive power for both the onset and severity of financial crises. This evidence holds across many developed countries and various historical episodes, given other determinants of crisis (Kirschenmann, Malinen, and Nyberg 2016; Paul, 2020). Moreover, the available evidence also shows that when crises are preceded by these slow-moving trends, the subsequent recoveries also tend to be slower, with significant output and labor productivity effects (Paul and Pedtke, 2020).

A number of studies have used formal theoretical models to show that income inequality can be a cause of the economic crisis.<sup>19</sup> Motivating such models is the important stylized fact that a persistently rising trend in inequality in the United States culminated in the two highest top income shares in the U.S history since 1920. One was in 1928, on the eve of the Great Depression, and the other in 2007, on the eve of the Great Recession. In both episodes, there was also a simultaneous large increase in debt-to-income ratios among lower- and middle-income households as these segments of the population have little savings and must borrow to finance their spending. Therefore, high leverage and economic crisis may have been the endogenous result of growing income inequality (Kumhof, Ranciere, and Winant 2015). The transmission mechanism may work as follows. The rapid rise in the share of top incomes, a shock to income inequality, results in a larger supply of savings in the economy. The wealthy with top income shares have higher savings rates and lend their accumulated savings to lower and middle-income households through the financial system. A greater supply of savings lowers the interest rate. This, in turn, encourages households in the lower and middle segment of the income distribution to borrow to compensate for the loss of consumption entailed by their lower-income share. Low-interest rates may also fuel a credit bubble, in which case borrowing rises even further, leading to higher household debt-to-income ratios. The resulting financial fragility eventually leads to debt default, a financial crisis, and a collapse in real output. High inequality can continue to deepen the scarring from

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<sup>19</sup> See Rajan (2010), Kumhof, Ranciere and Winant (2015), Mian and Sufi (2018), Coibion, Gorodnichenko, Kudlyak and Mondragon (2020).

the crisis, including a slower recovery, as low-income but highly leveraged households reduce their purchases in order to avoid further default and bankruptcy.

Others argue heuristically that the rising inequality exacerbates banking and financial crises but does not cause them (Piketty and Saez, 2013). The fact that debt rose so much and so fast is probably not a coincidence. Piketty and Saez (2013) argue that modern financial systems are highly fragile and can crash by themselves even without rising inequality to push them over the edge.

#### IV. MACROECONOMIC POLICIES AND INCLUSIVENESS

Section II analyzed the adverse effects of macroeconomic instability – and specifically of recessions – on inclusiveness. However, recessions may not necessarily lead to adverse long-run effects on inequality if the policy response is sufficiently aggressive. In fact, this is a key policy implication of the hysteresis literature. “The reason why the Great Depression was followed by huge inequality decline is not the depression, but rather the large political shocks and policy responses—in particular the tremendous changes in institutions and tax policies and rise of the welfare state—which took place in the 1930s–40s” (Piketty and Saez, 2013). Taking into account business cycle asymmetries and hysteresis, recent studies show that in addition to stabilizing the economy, macroeconomic policies can also raise the average level of economic activity, thereby reducing the natural level of unemployment (Dupraz, Nakamura, and Steinsson, 2020). In this section, we provide an overview of the effects of stabilization policies on inclusiveness.

##### A. Fiscal policy

Fiscal policy is often seen as the governments’ most powerful tool to promote inclusiveness by pursuing its main objectives of efficiency and macroeconomic stabilization with a concern for their equity implications. Changes in the level and types of taxes, the scale of spending and its composition, the size of the budget deficit, and the modalities of its financing can all have implications for inclusiveness.

Fiscal policy can help lower inequality through fiscal redistribution, which can operate on both sides of the budget. On the tax side, a progressive income tax structure, whereby richer individuals face higher tax rates, can reduce the inequality of pre-tax incomes. On the expenditure side, governments provide direct cash transfers such as social security payments, disability payments, unemployment benefits, food stamps, as well as in-kind transfers such as spending on education and health and other targeted transfers. Over the long run, spending on education and health also helps reduce inequality because it increases the skill set of individuals, boosts long-term earning capacity, and improves opportunities for social mobility across generations. On the financing side, central bank financing of large deficits can increase the inflation tax, which potentially has more adverse effects on the poor, who tend to hold more of their savings in the form of cash balances than the rich.

Fiscal policy in advanced economies, on average, reduces income inequality (measured by the Gini coefficient) by about 33 percent. Two-thirds of this reduction is achieved by public transfers—such as pension and other social benefits—and about one-third comes from progressive taxation. Developing and emerging economies have much lower distributive capacity because of the lower level of taxes and spending (Clements et al., 2015). In contrast

to advanced economies, fiscal redistribution in Latin America, the region with the highest average level of income inequality, on average reduces income inequality by about 10 percent (Clements et al., 2015).

Fiscal policy also affects income inequality through tax cuts and not just tax increases. Tax cuts, particularly when they are too high, are often advocated on efficiency grounds as they reduce distortions in the economy and could lead to higher growth. Furthermore, it is argued that the benefits of tax cuts trickle down in terms of job creation and higher wages. However, the relationship between tax cuts and inequality is not as widely studied as that between tax cuts and economic growth. Establishing causality has proven difficult in these studies.

Nevertheless, a recent study of 18 OECD countries over the 1965-2015 period uses a standard econometric technique, known as difference-in-difference, to estimate the causal effect of major tax cuts for the rich on income inequality, economic growth, and unemployment (Hope and Limberg, 2020). Using a new encompassing measure of taxes on the rich to identify instances of major reductions in tax progressivity, this study finds that major tax cuts on the rich led to higher income inequality as measured by the top 1 percent share of pre-tax national income. The effect remains stable in the medium term. In contrast, such reforms do not have any significant effect on economic growth and unemployment.

The overall effects of fiscal policy on inclusiveness depend, of course, on the joint effects of tax and expenditure policies. If progressive taxes are used to finance progressive, pro-poor public expenditures, the net incidence of fiscal policy favors the poor. In this case, fiscal policy would contribute to lower disposable income inequality relative to the inequality that arises from market incomes.<sup>20</sup>

As argued previously, lower output volatility tends to go hand in hand with lower income inequality. The contribution that fiscal policy makes to reducing or aggravating macroeconomic instability thus provides a separate link between fiscal policy and inclusiveness. One important vehicle through which fiscal policy influences macroeconomic volatility is through the operation of automatic stabilizers. These are components of taxes and spending that are designed to respond automatically to economic cycles. Automatic stabilizers are generally regarded as the most efficient tool for fiscal stabilization of output and employment fluctuations. Thus, countries with strong automatic stabilizers tend to have lower output volatility (IMF, 2015). Indeed, automatic stabilizers are estimated to account for up to two-thirds of the overall fiscal stabilization effort in advanced countries, a contribution that is twice as large as in emerging markets and developing economies (IMF, 2015).

Besides automatic stabilizers, fiscal policy also has a component referred to as discretionary fiscal policy. Discretionary countercyclical fiscal policy occurs when the government actively raises taxes and/or reduces spending during booms and cuts taxes and/or increases spending during recessions. To the extent that such policies reduce macroeconomic volatility, they can be expected to have favorable effects on inclusiveness. These effects can be enhanced if the specific spending and revenue measures are pro-poor, in the form of

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<sup>20</sup> Pre-tax, pre-transfer income inequality, and post-tax, post-transfer inequality are also referred to as gross and net inequality, respectively, or market and disposable income inequality, respectively.

progressive tax-and-transfer policies or spending on infrastructure, health, and education that favors the poor.

Unfortunately, not all countries manage to use countercyclical fiscal policy for stabilization. Some countries have procyclical fiscal policies characterized by expansions during economic booms and contractions during busts. Fiscal procyclicality tends to exacerbate economic cycles by magnifying economic expansions and prolonging economic downturns. Brueckner and Carneiro (2017), for example, show that the negative effects of terms of trade shocks are significantly higher in countries with procyclical government spending. This magnification of volatility resulting from procyclicality is likely to have negative effects on inclusiveness through the channels discussed in Section II.

The procyclicality of fiscal policy has also been linked more directly to poor social outcomes. Vegh and Vuletin (2015) show that procyclical fiscal policy causes a deterioration of poverty rate, income inequality, and the unemployment rate in a number of Latin American and European countries. In a related study of 30 Sub-Saharan economies, the effect of procyclical fiscal policy on income inequality is shown to vary by type of spending. Procyclical government investment is associated with a higher level of inequality than procyclical government consumption (Ouedraogo, 2015). This appears to be driven by the fact that cuts in government investment in recessions happen more frequently than cuts in government consumption.

Why do some countries pursue procyclical fiscal policies that are detrimental to economic stability and inclusiveness? Explanations in the literature tend to focus on lack of access to credit markets in bad times as well as political pressures in good times.<sup>21</sup> High levels of public debt, limited fiscal space, and low quality of institutions also affect governments' ability to conduct countercyclical fiscal policy (Aizenman et al., 2019, Frankel et al., 2013). A separate strand of literature notes that causation between non-inclusiveness and procyclicality may be bidirectional since social polarization may promote fiscal procyclicality. For example, Woo (2011) presents strong evidence that countries with high initial income inequality tend to have greater fiscal policy volatility and procyclicality.<sup>22</sup> All of these factors tend to be more prominent in developing economies. Not surprisingly, therefore, IMF (2015) shows that while about three-fourths of advanced economies can conduct countercyclical stabilizing fiscal policies, only slightly more than a quarter of the emerging market and developing economies have countercyclical fiscal policies.

Strengthening institutions and building fiscal space during economic upturns would allow countries to pursue more stabilizing fiscal policies and move away from fiscal procyclicality, supporting more sustainable and equitable economic growth. Many countries would also benefit from building deeper safety nets, which would strengthen the operation of automatic

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<sup>21</sup> Credit constraints compel governments to cut spending and raise taxes during downturns, while political pressures for additional spending in good times prevents governments from savings, particularly when there is a need for more spending in critical social areas. In addition, Alesina et al. (2008) offer the “starve-the-Leviathan” reasoning, arguing that distrust in the government and fear that resources will be “wasted” cause the general public to demand tax cuts in good times, resulting in procyclical fiscal policies and higher levels of public debt.

<sup>22</sup> Woo (2011) uses empirical cross-country data over the period 1960-2000 to show that more unequal societies are more likely to use procyclical fiscal policies that are detrimental to growth. In the study, social polarization is measured by income and educational inequality.

stabilizers as well as add a countercyclical fiscal buffer, thereby mitigating the adverse income effects of recessions and reducing income inequalities over time. The good news is that a growing share of developing economies has been graduating from procyclical fiscal policies in the last two decades as the result of improvements in their fiscal institutions (Frankel et al., 2013).<sup>23</sup>

Besides fiscal policy, the government has other macroeconomic policy instruments for stabilization, especially monetary policy, macro and macro-prudential policies, and exchange rate policy, all of which may affect growth and the distribution of income and wealth.

## **B. Monetary policy**

Many central banks employ monetary policy to achieve low and stable inflation with the objective of promoting high and sustainable growth. Countercyclical monetary policy (i.e., raising interest rates during booms and episodes of rising inflation while cutting them during recessions) can reduce business cycle fluctuations and volatility of output and inflation. However, as is true of fiscal policy, many developing countries have traditionally pursued procyclical monetary policies, thereby magnifying volatility, in part because of their pursuit of exchange rate objectives. As it is true of fiscal policy, this situation is also changing in desirable directions during recent years, as one-third of developing countries have transitioned to pursuing countercyclical monetary policy over the last decade (Vegh and Vuletin, 2013).

Monetary policy can affect inequality and poverty through various channels.<sup>24</sup> Monetary policy expansion can increase growth and contribute to employment creation, at least in the short run, and thereby favor the poor and the middle class, for whom labor income constitutes a higher share of their total income than for the rich. Expansionary monetary policy can increase inflation and inflation expectations, eroding the real value of debt to the benefit of debtors, who are generally poorer than creditors. However, higher inflation may disproportionately hurt the poor, too, as they tend to hold a higher share of their savings in cash. Likewise, lower interest rates reduce debt service costs to the benefit of middle- and lower-income groups who tend to be borrowers but also increase equity and property values owned disproportionately by the wealthy. Given these multiple channels, the theoretical net effect of monetary policy on inequality is ambiguous (Bernanke, 2015).

Empirical studies examining the impact of monetary policy shocks on income inequality generally find modest effects. A study of 32 advanced and emerging market economies over the 1990-2013 period found that expansionary monetary actions reduce income inequality and vice versa. The effect, however, varies over time and depends on the state of the business cycle as well as country characteristics such as the share of labor income and fiscal

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<sup>23</sup> Frankel et al. (2013) argue that Chile is a good example of a country that has succeeded in developing stronger fiscal institutions over time and, as a result, has been able to conduct countercyclical fiscal policy.

<sup>24</sup> Although central banks' mandates do not typically involve distributional considerations, they have begun to engage the public about income inequality and social issues such as unemployment, regional disparities, and access to education, especially since the GFC. For the U.S. Federal Reserve, see Yellen (2014) and Bank of England, see Financial Times (August 20, 2017). This trend has increased significantly during the COVID-19 pandemic.

redistribution policies (Furceri, Loungani, and Zdzienicka, 2018). However, Coibion et al. (2017) looked at the U.S. experience since 1980 and found that contractionary monetary policy systematically increased inequality in labor earnings, total income, consumption, and total expenditures. Furthermore, monetary policy shocks accounted for a non-trivial component of the historical cyclical variation in income and consumption inequality.

The differential response across income distribution underscores the need to look at heterogeneity of labor earnings and to go beyond a summary statistic of the income distribution such as the Gini coefficient. Models that incorporate wealth and income heterogeneity better disentangle the transmission channels of monetary policy. One such study found that a monetary policy rule that emphasizes price stability redistributes income towards rich households, while one that stresses output stability redistributes it towards poor households who are more exposed to unemployment risk, and that the median household prefers output stability (Gornemann, Kuester, and Nakajima, 2016). Another study showed that when marginal propensities to consume vary, three channels affect aggregate spending: an earnings heterogeneity channel from unequal income gains, a Fisher channel from unexpected inflation, and an interest rate exposure channel from real interest rate changes. Italian and U.S. data suggest that all three channels are likely to amplify the effects of monetary policy (Auclert, 2019).

A recent review of the evidence concludes that empirical research yields mixed findings on the effects of conventional monetary policy on income and wealth inequality (Colciago, Samarina, and de Haan, 2019). However, there seems to be a consensus that higher inflation, at least above some threshold, increases inequality. Similarly, conclusions regarding the impact of unconventional monetary policies on inequality are also not clear cut. To better understand policy effects on inequality, future research should focus on the estimation and analytics of general equilibrium models with heterogeneous agents (Kaplan, Moll, and Violante, 2018; Colciago, Samarina, and de Haan, 2019). One such recent study found that making consumption equality an explicit target for monetary policy, particularly if central banks follow standard Taylor rules, can increase welfare compared with the case in which inequality is not part of the mandate of a central bank (Hansen, Lin, and Mano, 2020). Clearly, more work is needed in this area.

### **C. Macroprudential policies**

Macroprudential policy is part of a country's macroeconomic framework designed to limit systemic risk and ensure financial stability. It, therefore, contributes to macroeconomic stability while complementing monetary policy. Macroprudential policy limits systemic risks by addressing two externalities: the interconnectedness of financial entities and the financial accelerator. The first occurs when different financial entities do not internalize their risk to the financial system as a whole through their transactions with other entities. The financial accelerator is the phenomenon of amplifying feedbacks within the financial sector and between the financial sector and the macroeconomy, which can generate unsustainable credit booms. As an economic boom turns to bust, the financial markets can magnify the disruption and cause a deep economic recession. So, like fiscal and monetary policies, a macroprudential policy can, in principle, contribute to inclusiveness by mitigating financial sector vulnerabilities and reducing macroeconomic volatility.

An extensive literature has documented procyclicality in financial markets and systemic risk (Cerutti, Claessens, and Laeven, 2017). Macroprudential policy instruments such as a cap on loan-to-value ratio (LTVs) ratio, loan-to-income ratio (LTI), and debt service-to-income ratios (DSTI) are often used to contain the buildup of systemic vulnerabilities by reducing the procyclical feedback between credit and asset prices and by containing unsustainable increases in leverage.

Moreover, a successful macroprudential policy can enhance the volatility-reducing effectiveness of monetary policy by reducing the frequency and intensity of financial disruptions that amplify economic fluctuations and by lowering the pressure to cut interest rates unduly in order to address threats to financial stability during downturns. A recent empirical study showed the complementarity between monetary policy and macroprudential policy. A study of 37 emerging and advanced economies over 2000-14 found that (i) an overall tightening in macroprudential policies is associated with a reduction in credit growth; (ii) a restrictive monetary policy enhances the impact of macroprudential tightening on credit growth; and (iii) monetary policy helps to reduce the transmission delay of macroprudential policy actions (Garcia Revelo, Lucotte, and Pradines-Jobet, 2020).

There are limited studies that look at the relationship between macroprudential policy and inequality. One study finds that that higher concentration limits, macro-prudential reserve requirements, and interbank exposure limits are positively associated with the higher market and net income inequality in the subsequent year, while LTV and DTI limits are positively associated with net inequality though not statistically significant (Frost and van Stralen, 2018). Another study found that high LTV ratios at the time of asset acquisition contributed to wealth inequality, while house price increases reduced it. The cost of credit did not exhibit a significant link to the distribution of wealth (Carpantier, Olivera and, Van Kerm, 2018).

#### **D. Exchange rate management**

Policymakers also rely on exchange rate policy as part of a macroeconomic policy toolkit when responding to shocks, especially those that generate large trade or current account imbalances that undermine macroeconomic stability. Much like other macroeconomic policies, the choices of an exchange rate regime and exchange rate policy have both direct and indirect effects on measures of inequality.

It may be useful to distinguish the inclusiveness effects of exchange rate regimes from those of specific exchange rate movements. To the extent that macroeconomic stability promotes inclusiveness, a fixed or floating regime is more likely to be conducive to inclusiveness if it is more successful in stabilizing the economy in response to shocks. The automatic stabilizing effects of fixed or floating regimes, however, are not clear-cut: they depend on a variety of factors, such as the sources of shocks to the economy, the nature of the country's financial links to the rest of the world, the country's monetary policy regime, and the effectiveness of domestic prudential policies, which can influence the balance-sheet effects of exchange rate fluctuations.

However, in spite of this theoretical ambiguity, empirical evidence finds that flexible exchange rate regimes tend to be more effective in stabilizing output (Hausmann and Gavin, 1996; Levy-Yeyati and Sturzenegger, 2003; Aizenman, Jinjark, Estrada and Tian, 2018).

Flexible rate regimes can also help countries recover more quickly from commodity price shocks and global recessions than pegs (Roch, 2019; Terrones, 2020, Carrière-Swallow et al., 2021) and mitigate the transmission of global financial shocks to domestic financial markets (Obstfeld, Ostry, and Qureshi, 2019). In this sense, flexible exchange rates can reduce output volatility and be an income equalizing force during the recovery stage of the business cycle.

On the other hand, pegs are associated with lower inflation, which may benefit the poor (Levy-Yeyati, 2019). In the long run, pegs help monetary policy not only by anchoring inflation expectations but also by disciplining monetary policy. However, floating exchange rate regimes may also be able to protect the poor if they have a credible inflation-targeting framework that anchors inflation at low levels.

Large discrete exchange rate movements can arise either under fixed or flexible exchange rate regimes but are more likely under fixed exchange rates in the form of currency crises. The effects of such movements on inclusiveness are also likely to depend on country characteristics. Large exchange rate depreciations tend to favor the expansion of the traded goods sector relative to nontraded goods, and to the extent that the export and import-competing sectors are dominated by large firms owned by the rich, while the poor are concentrated in the nontraded goods sector, such movements may promote wealth inequality by increasing the value of firms producing traded goods and increase income inequality by reducing real wages in the nontraded goods sector. On the other hand, to the extent that firms owned by the rich in the nontraded goods sector are characterized by balance sheet mismatches, the effects of large depreciations on wealth inequality may not be clear.

So, in general, it is difficult to state conclusively whether fixed or flexible exchange rate regimes help inclusive growth as this depends on many factors. New research in this area should be able to throw additional light on this important question (Berg and Kpodar, 2019), but it must also pay attention to the role of exchange rate policy in amplifying or attenuating balance sheet vulnerabilities (Finger and Lopez Murphy, 2019) which can affect macroeconomic volatility and inclusiveness.

## V. CONCLUSION

This paper analyzed the relationship between macroeconomic stability and macroeconomic policies, on the one hand, and measures of inclusiveness such as income inequality, wealth inequality, poverty, and unemployment, on the other. Macroeconomic instability and inclusion have a complex relationship, affecting each other through multiple channels. Macroeconomic policies can play a key role in promoting economic stability while minimizing the adverse consequences for inclusiveness when the economy faces aggregate shocks and uncertainty. However, at times, aggregate fluctuations can also originate from poor policies, weak macroeconomic frameworks, and weak institutions. Mitigating macroeconomic volatility and avoiding procyclical policies should be on the agenda of all policymakers concerned with promoting inclusive growth as these policies have first-order economy-wide effects. This is imperative since the evidence shows many countries continue to pursue procyclical macro policies.

The paper also described the evolving paradigm in macroeconomics of inequality, an important aspect of inclusive growth. This includes emerging macroeconomic models that incorporate heterogeneity in income and wealth and use of “big data,” large surveys of income and wealth distribution, and surveys of labor markets that are typically used in microeconomics. Nonetheless, we need to be upfront about the limitations of our knowledge of the macroeconomics of inclusive growth. Policymakers faced with tradeoffs, uncertainty, and political economy considerations may not be as much aware of these limitations and gaps in our knowledge as the experts are.

The emerging empirical and theoretical literature demonstrates that the macroeconomy affects inequality, and inequality affects the macroeconomy. Heterogeneity can magnify business cycle fluctuations, and initial wealth disparities can have short-run and long-run effects. This implies that there is a stronger role for macroeconomic stabilization policies than thought previously. A review of the evidence and theory showed that many seemingly short-run temporary fluctuations or cycles in fact, have long-run effects. Specifically, the paper summarized evidence on the scarring effects of recessions, across a diverse set of countries, on unemployment, human capital formation, and health conditions, as well as the skewed and the fanning effects of recessions on the earnings of those in the bottom and top ends of the income distribution. These findings are bound to show up even more strongly when we take stock of the scarring effects of the global coronavirus pandemic on an array of measures of inclusiveness.

Moreover, to make more progress on the crucial role of macroeconomic policy in contributing to inclusiveness, we must employ more innovative methods and economic theory that can more effectively establish causality between measures of inclusiveness and macroeconomic policies. At a minimum, we must recognize the two-way relationship between inequality and the macroeconomy. In this regard, recent research has identified methods for establishing causal relationships, but these methods are yet to be fully embraced in the literature.

This is particularly relevant on the crisis-inequality nexus where disagreements on causes and effects are plentiful. Policymakers must constantly watch for their actions on a buildup of economic vulnerabilities and take steps to avoid them as these can lead to costly economic

crises with adverse consequences for inclusiveness. Specifically, a buildup of vulnerabilities can happen in the financial sector as manifested through policies that fuel credit booms; it can happen in the fiscal sector as manifested through pursuing procyclical fiscal policies and adopting a deficit bias; it can happen in the currency market as manifested through active involvement of the public and private sector involved in external borrowing or encouraging capital flows in the face of possibly misaligned exchange rates, and in the area of monetary policy and macroprudential policy as manifested through following excessively accommodative and excessively tight monetary policy as well as through macroprudential policies that encourage excessive risk-taking in the financial sector.

Finally, more research is needed to better understand the relationship between macroeconomic policies such as monetary policy, macroprudential policies, and exchange rate policy on the one hand and measures of inclusiveness on the other.

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