

The distributional footprint of monetary policy

Speech by Claudio Borio

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on the occasion of the Bank's Annual General Meeting

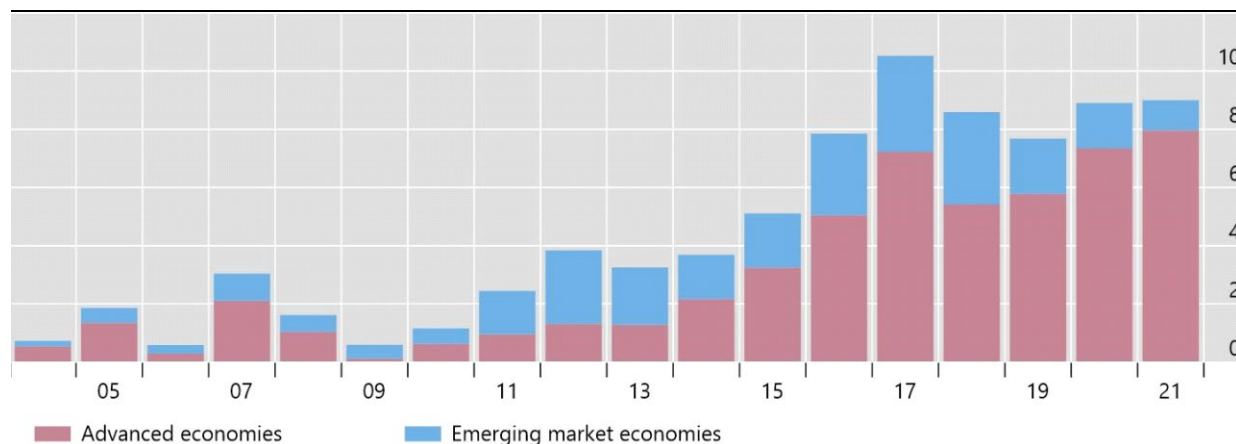
in Basel on 29 June 2021

The nexus between monetary policy and inequality has come to the fore in recent years. In part, this reflects greater concerns about inequality as such, following its secular increase in countries around the world. In part, it reflects the fact that, in the wake of the Great Financial Crisis (GFC), central banks have kept interest rates unusually low for unusually long in order to engineer a recovery and push a stubbornly low inflation rate back to target. Hence the perception that they have been increasing inequality by boosting the prices of assets disproportionately held by the rich, notably equities, and by reducing the yield on bank deposits. The Covid-19 crisis has further heightened attention to these issues. Indeed, the term “inequality” has figured increasingly in central bank speeches (Graph 1).

Share of speeches mentioning inequality¹

Percentage share

Graph 1



¹ Speeches of central bankers mentioning the keywords “inequality” and “distributional consequences/impact of monetary policy” expressed as a share of all central bankers’ speeches in the BIS database. Only selected speeches in English and, for the United States, only speeches by members of the Board of Governors of the Federal Reserve System and the Federal Reserve Bank of New York are included in the database. Data until end-May 2021.

Sources: BIS; BIS calculations.

But what exactly is the relationship between monetary policy and inequality? In this year’s Annual Economic Report we devote a chapter to this question.

We highlight three takeaways.

First, we reaffirm that, fundamentally, long-term trends in inequality are not a monetary phenomenon. They have to do with structural forces that are beyond monetary policy's reach.

Second, and despite this, there is a lot that monetary policy can do to foster a more equitable distribution over business cycles. This is because price, macroeconomic and, hence, financial instability amplify inequality. And fighting such instability is what monetary policy mandates are all about.

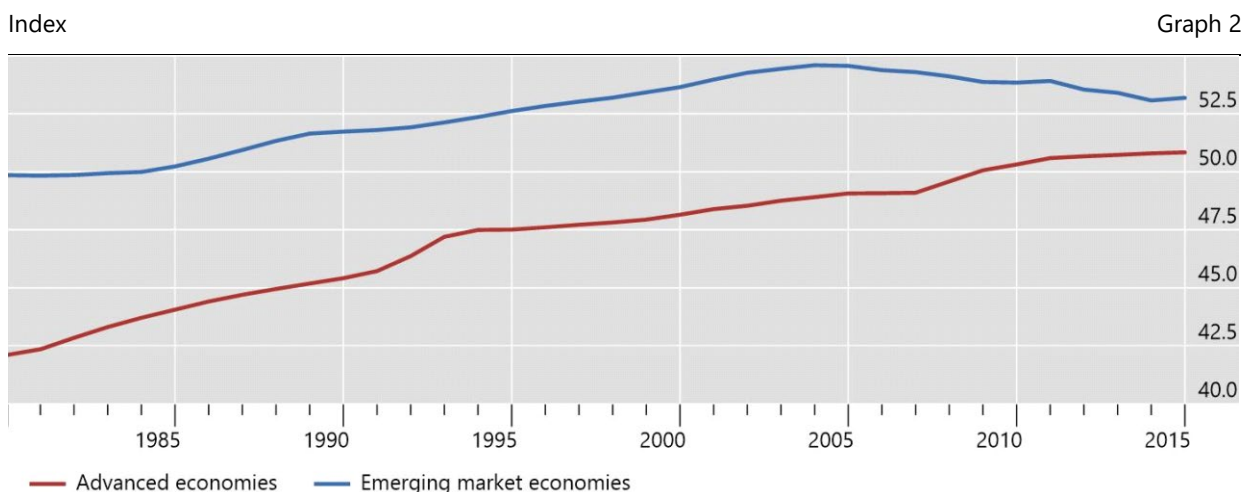
Finally, changes in the nature of the business cycle have complicated this task, and thus the impact of monetary policy on inequality. This means that it is more important than ever for other policies to play a complementary role in stabilising the economy – in particular, prudential, fiscal and structural.

Let me take each point in turn.

A structural problem calls for structural solutions

Inequality within countries has been rising since the early 1980s, in both advanced and emerging market economies (EMEs) (Graph 2). While the graph shows income inequality (here based on the standard Gini coefficient), the same is true of wealth inequality – which, admittedly, is somewhat harder to measure. This has happened even as inequality across countries has declined and so has poverty (Graph 3).

Pre-tax, pre-transfer Gini index¹

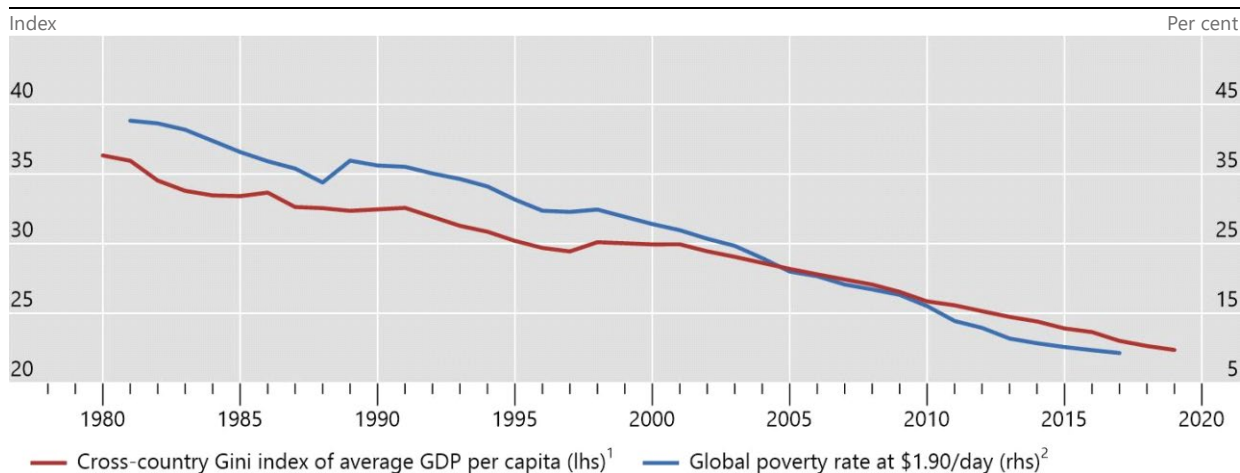


¹ Pre-tax, pre-transfer Gini index is calculated using the amount of money coming into the household pre-tax, excluding government cash or near-cash benefits. Weighted averages of selected economies, based on 1980 GDP and PPP exchange rates. Advanced economies = CA, DE, FR, GB, JP and US; emerging market economies = BR, CN, IN and ZA.

Sources: Standardized World Income Inequality Database (SWIID); World Inequality Database (WID); BIS calculations.

Cross-country inequality and global poverty rate

Graph 3



¹ Gini index of average GDP per capita (constant prices, PPP) on a cross section of countries. AEs: AT, AU, BE, CA, CY, DE, DK, ES, FI, FR, GR, IE, IT, LU, MT, NL, NZ, NO, PT, SE, CH, GB, CN, HK, IN, ID, JP, KR, MY, PH, SG, TH, TW and US; EMEs: AR, BR, CL, CO, MX, PE, HU, PL, SA, ZA and TR. ² Global poverty headcount ratio at \$1.90/day poverty line (2011 PPP).

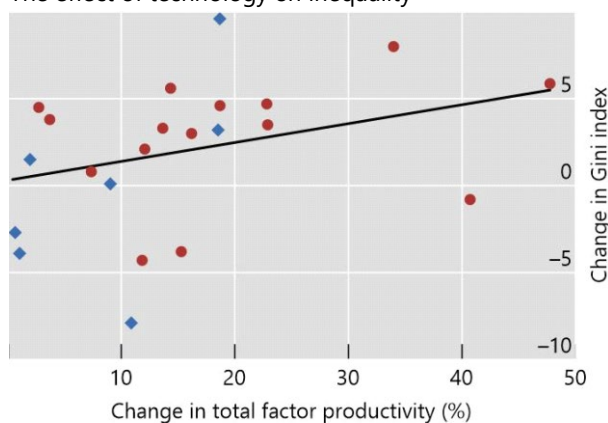
Sources: IMF, *World Economic Outlook*; World Bank; BIS calculations.

Long-term structural developments necessarily have structural causes. Two highlighted in this context are technology and globalisation. Technology is thought to have raised inequality by increasing the demand for the skilled relative to the unskilled; and globalisation, by displacing swathes of workers who lose their comparative advantage. Accordingly, over long periods there is a clear correlation across countries between measures of inequality, on the one hand, and technology (Graph 4, left-hand panel) and globalisation (right-hand panel).

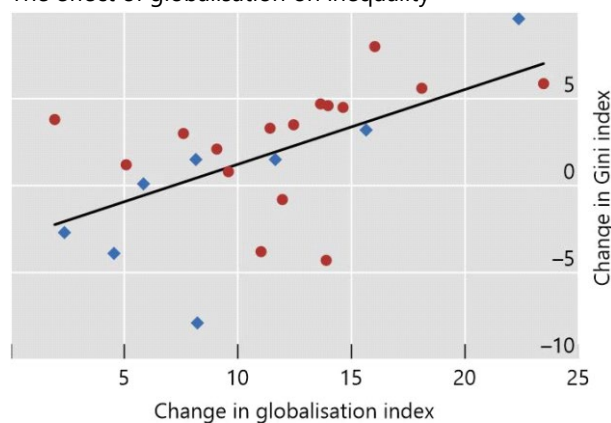
Inequality is driven by structural forces¹

Graph 4

The effect of technology on inequality



The effect of globalisation on inequality²



● AEs ◆ EMEs

¹ The sample includes 15 AEs and nine EMEs; changes are computed over the period 1981–2015 (or shorter, depending on country-level data availability). ² Based on the KOF Globalisation Index.

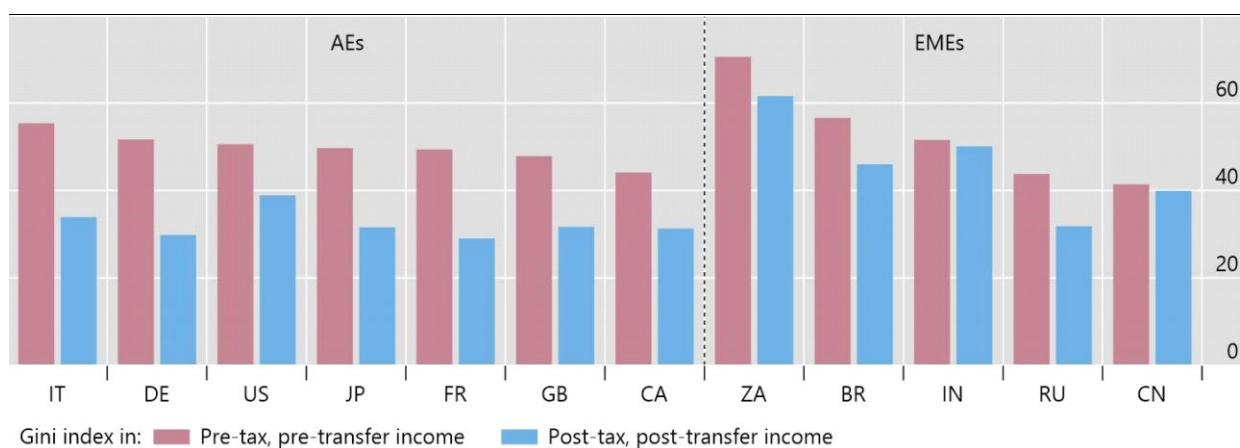
Sources: Penn World Table; UNU-WIDER, World Income Inequality Database (WIID); KOF Swiss Economic Institute; BIS calculations.

Structural causes call for structural remedies. Ultimately, only structural policies can adequately address inequality. They can tackle the underlying forces by improving health, education, antitrust legislation and, more generally, by fostering equal opportunities. In addition, fiscal policy can offset the impact of those forces: inequality is significantly lower after the tax-and-transfer system has done its job (Graph 5).

Income inequality: before and after taxes and transfers¹

Gini index

Graph 5



¹ For FR, 2012; for JP, 2015; for IT, 2017; for CA, DE, GB and US, 2018. For IN, 2013; for BR, 2014; for CN, 2015; for RU and ZA, 2018.

Sources: Luxembourg Income Study (LIS) Database; Standardized World Income Inequality Database (SWIID); BIS calculations.

Moreover, wearing their non-monetary hats – of a more structural character – central banks have a role to play, to an extent that depends on their specific responsibilities and, importantly, the tools at their command. For instance, by fostering financial development, inclusion and literacy, they can offer the more disadvantaged more, better and safer savings vehicles. By contributing to financial consumer protection, they can shield them from predatory practices. And by making payment systems more efficient and competitive, they can help reduce costs, notably for cross-border payments and remittances, which disproportionately hit the poor.

Inequality and monetary policy objectives

None of what I have said so far implies that monetary policy has no role to play in mitigating inequality. Far from it. The two major sources of greater inequality over business cycles are inflation and recessions, or downturns more generally. And this is precisely what monetary policy mandates are all about: seeking to deliver price and macroeconomic stability, for which financial stability is a prerequisite, whether financial instability is interpreted narrowly – as banking or financial crises – or more broadly – as the financial amplification of recessions.

Let me elaborate on inflation and recessions, respectively.

The impact of inflation on inequality has been amply studied. Not surprisingly perhaps, inflation is often portrayed as a regressive tax. And it is generally agreed that its impact rises

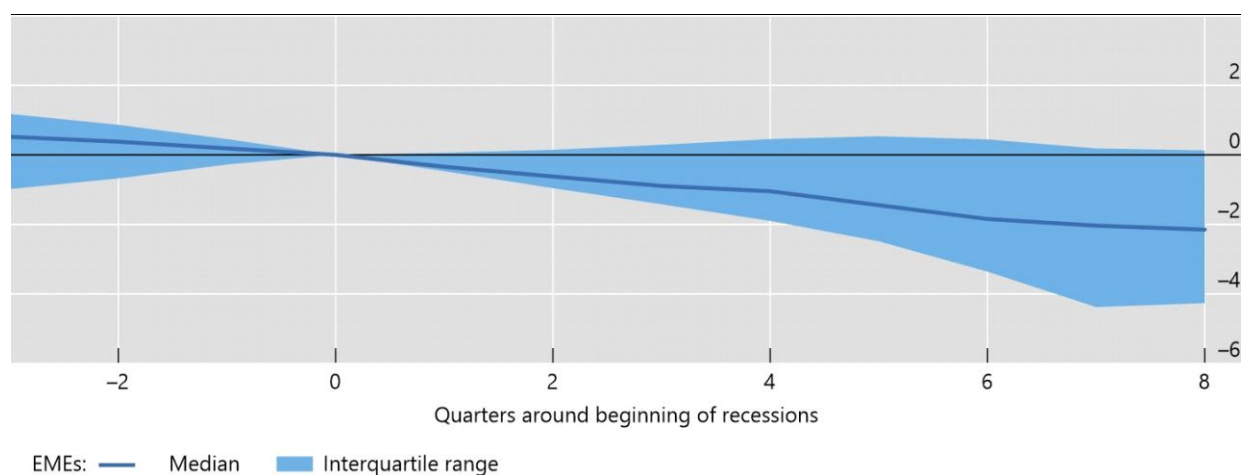
disproportionately with the inflation rate. I can attest to that, having seen first-hand the havoc that high inflation can wreak on the poorer segments of society when I grew up in Argentina. The poor are the most vulnerable. They are the first to lose their jobs when inflation erodes the economic fabric of society. They are the first to see the purchasing power of their wages dwindle when prices soar. And they are the least able to protect their savings.

Graph 6 provides some stylised evidence on the impact of inflation on inequality. It shows what happens to inequality once inflation declines below a 5% threshold on a sustained basis in several episodes in EMEs since the mid-1980s. Income inequality declines – both on average, and in general.

The conquest of inflation and subsequent change in income Gini change¹

Gini index cumulative change

Graph 6



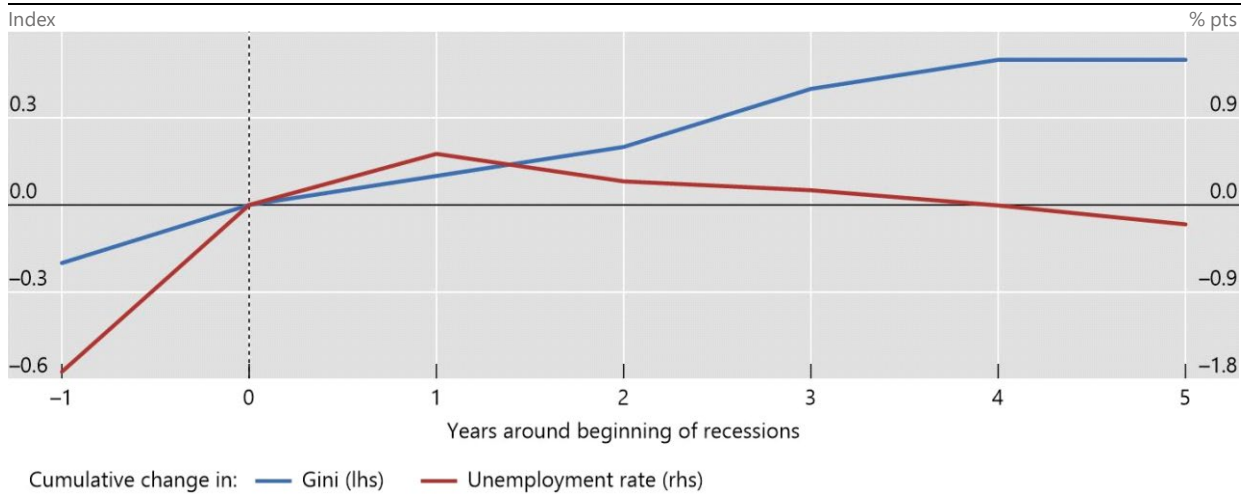
¹ Year t is the year in which the 10-year average realised inflation rate fell below 5% for the first time, without subsequent reversal of average to 1 percentage point above that. The vertical axis represents variation of the net income Gini index relative to year t . Based on 34 "conquest of inflation" episodes which satisfied the above criteria and occurred between 1992 and 2016.

Sources: IMF, *International Financial Statistics* and *World Economic Outlook*; World Bank; BIS; BIS calculations.

What about recessions? It stands to reason that recessions should widen inequality. In particular, the unskilled are the first to swell the ranks of the unemployed. Indeed, following recessions, unemployment rises, and so does inequality, more persistently (Graph 7).

Gini income inequality and unemployment around recessions¹

Graph 7



¹ Based on 79 recession events over the period 1980–2018 for AR, AT, AU, BE, CA, CH, CL, CO, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HK, ID, IT, JP, KR, LT, LV, MT, MX, MY, NL, NO, NZ, PE, PT, RU, SE, SG, SI, SK, TH, TR, TW, US and ZA.

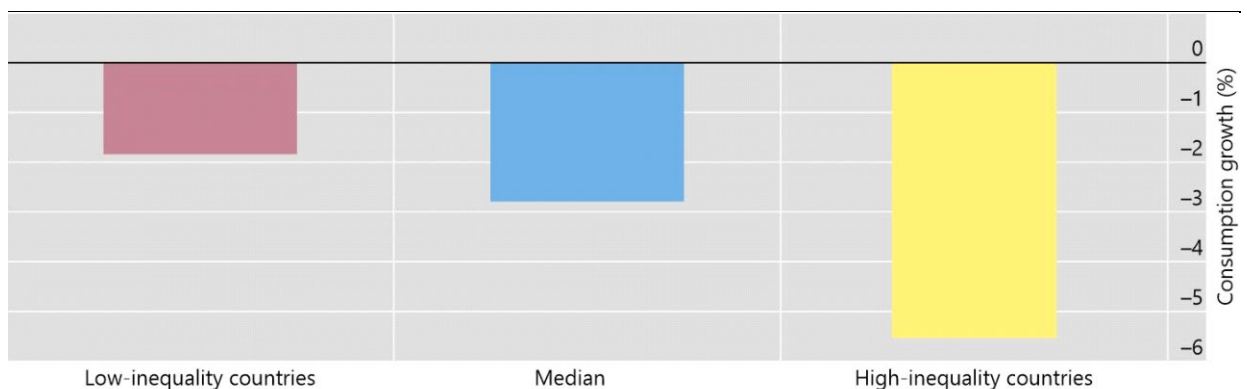
Sources: IMF, *World Economic Outlook*; Standardized World Income Inequality Database (SWIID); BIS calculations.

But the relationship goes further.

For one, evidence suggests that, all else equal, higher inequality goes hand in hand with deeper recessions. In a sample of AEs and EMEs, the higher inequality is, the deeper the recessions are (Graph 8). This could reflect a larger proportion of vulnerable workers.

Depth of recessions and inequality across countries¹

Graph 8

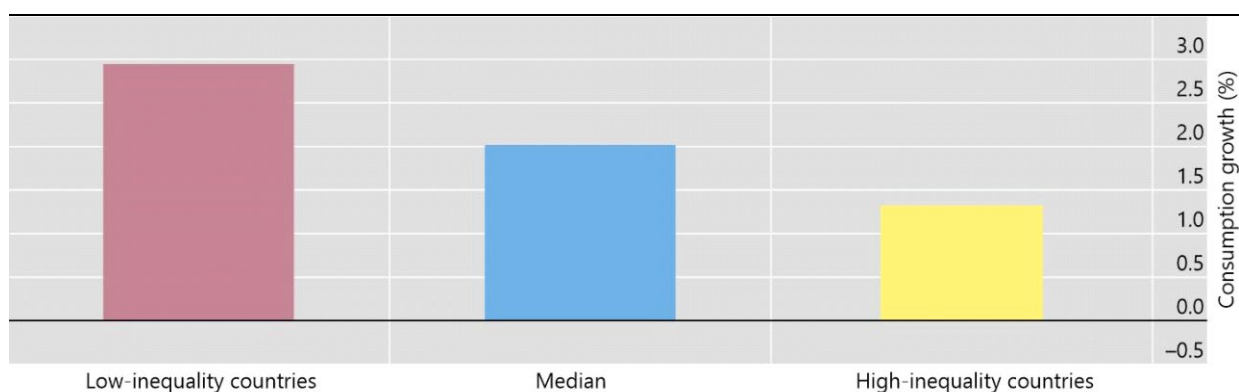


¹ Estimated declines in real per capita private consumption during a recession at the specified percentile of income inequality. Recessions are defined as a year of negative real GDP growth, and the share of income of the top 10% is taken as the indicator of income inequality. Estimates are based on a dynamic panel specification that includes country and time fixed effects. Specifically, real per capita private consumption growth is regressed on its lag, a recession dummy, the share of income held by the top 10% and the interaction between the latter two variables. Based on 1981–2019 data for 91 countries. Financial recessions are recessions that were associated with sovereign debt, banking or currency crises. For further details, see E Kohlscheen, M Lombardi and E Zakrajšek, “Income inequality and the depth of economic downturns”, *Economics Letters*, vol 205, August 2021.

Sources: World Bank; national data; BIS calculations.

In addition, there is evidence that, on balance, higher inequality makes monetary policy less powerful in stimulating economic activity (Graph 9). Across countries, when inequality is higher, the cumulative impact of a monetary policy easing on consumption is smaller. A plausible explanation is that richer people have a lower marginal propensity to consume, while poorer people may find it harder to borrow when interest rates decline, as they may face tighter credit constraints than their richer peers.

Cumulative consumption growth two years after monetary easing¹ Graph 9



¹ The bars represent the estimated response of consumption from year $t-1$ until year $t+2$ to an expansionary monetary policy shock of 100 basis points in year t . These estimates are obtained through a two-step procedure. In the first step, a panel vector autoregression (PVAR) featuring CPI inflation, real GDP growth and the short-term policy interest rate is estimated for AEs using quarterly data from Q1 1999 to Q4 2019. Based on this PVAR, economy-specific monetary policy shocks are identified as quarterly innovations to policy interest rates that are orthogonal to those to economic growth and inflation. In this stage, the euro area is considered as a group. In the second step, we aggregate the quarterly monetary policy shocks to annual frequency for 21 AEs and estimate a local projection equation, where the logarithm of real (per capita) consumption in each country is regressed on its own lag, monetary policy shocks, the share of income accruing to the top 10% of earners and their interaction, as well as country fixed effects.

Sources: World Bank; BIS calculations.

Putting these various findings together, we see the possibility of a perverse amplification. On the one hand, recessions increase inequality; on the other, inequality deepens recessions, and mutes the impact of monetary policy, making its task harder.

Inequality and monetary policy regimes

The analysis so far indicates that, by keeping the economy on an even keel in pursuit of its mandate, monetary policy can also keep in check the major sources of inequality over business cycles: inflation and recessions.

Moreover, if we dig further, we see that this has an additional advantage. It avoids the intertemporal trade-offs that arise when things do go wrong and monetary policy has to bring the economy back on track. The more the economy gets out of kilter, the larger the required changes in interest rates to correct this, and hence the bigger and more prominent the distributional consequences. This can generate unwelcome short-term costs, which are necessary to reap larger long-term benefits.

Consider inflation and recessions, in turn.

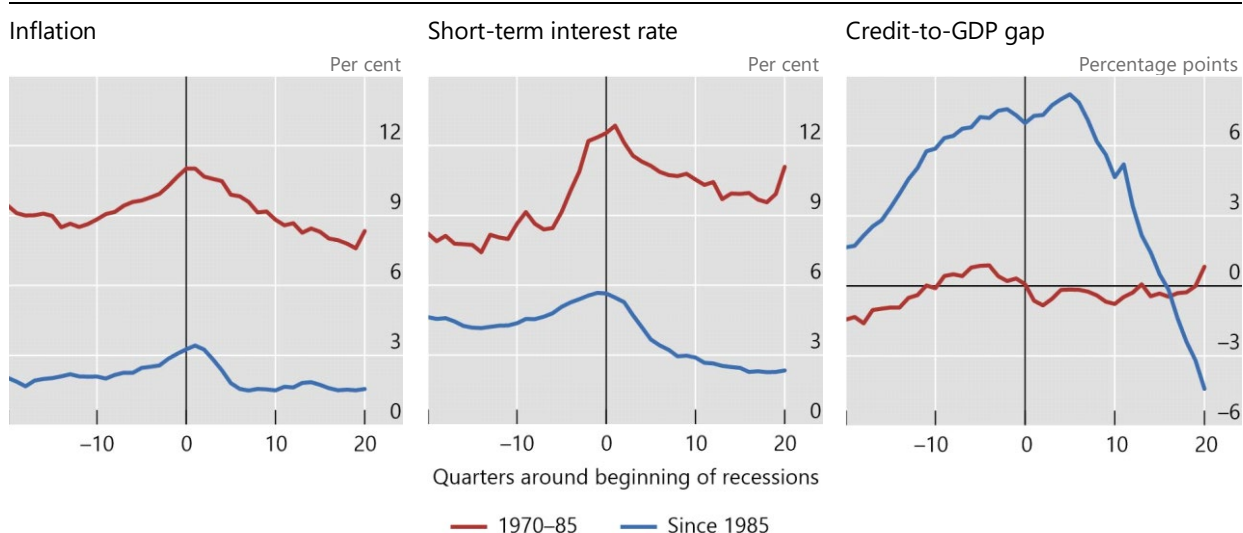
Bringing inflation under control will cause a recession. Unemployment and inequality rise in the short term as the inevitable pain incurred to achieve the bigger longer-term gains – in terms of both employment and equality – of non-inflationary growth.

Fighting recessions involves a more subtle trade-off, which arises from the need to keep interest rates low to nurse a recovery. In this case, there is no trade-off in terms of income inequality: boosting employment is precisely what reduces it. But there may be a trade-off in terms of wealth inequality. This becomes apparent if interest rates stay very low for very long, thereby lifting asset prices a lot, especially those of equities. To be sure, even this adverse outcome is not a given, as it depends on the structure of asset holdings. In particular, if home ownership is sufficiently dispersed, wealth inequality could actually decline according to some measures. But even then, very high house prices have their own distributional consequences, typically benefiting the old at the expense of the young.

Intertemporal trade-offs such as these have always been present. But they have become more salient due to a fundamental change in the nature of the business cycle. As inflation has become low and stable – sometimes too low and too stable, perhaps – and financial factors have come to the fore, there has been a shift from what one could term “inflation” recessions to “financial” recessions (Graph 10). Until the mid-1980s, it was a sharp monetary policy tightening (centre panel) to quell rising inflation (left-hand panel) that caused the recession. Little happened to credit – here measured by the deviation of the credit-to-GDP ratio from its long-term trend (right-hand panel). Since then, with inflation more subdued, monetary policy has tightened only slightly, but a large credit boom has turned to a bust.

More prominent role of financial factors in business cycle fluctuations¹

Graph 10



¹ The horizontal axis denotes quarters around recessions in the business cycles, with the peak date set at zero (vertical lines). Lines show the median evolution across 16 AEs and events in the respective time period.

Source: C Borio, M Drehmann and D Xia, “The financial cycle and recession risk”, *BIS Quarterly Review*, December 2018, pp 59–71.

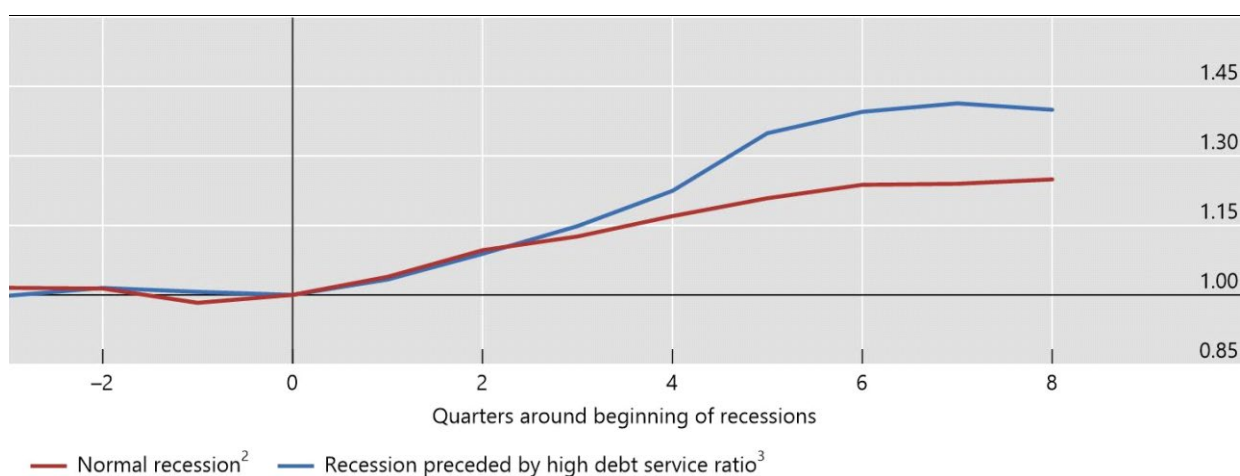
This change has had two major consequences.

The first is that recessions have become deeper and longer – especially, but not only, if banking crises break out. The impact on employment of financial recessions – here identified as those preceded by outside private sector debt service ratios – is larger and more drawn-out than that of other recessions (Graph 11). As a result, central banks cut interest rates more aggressively and for longer, with a potentially bigger impact on wealth inequality.

Impact of financial recessions on unemployment¹

Unemployment index

Graph 11



¹ Based on 1980–2020 data for AT, AU, BE, CA, CH, CZ, DE, DK, ES, FI, FR, GB, HU, IE, IT, JP, KR, LU, NL, NO, NZ, PT, SE and US. ² Recessions for which the preceding debt service ratio for the private non-financial sector (share of interest payments plus amortisations in income) was below the country-specific average plus 2 percentage points. ³ Recessions for which the preceding debt service ratio was at or above the country-specific average plus 2 percentage points.

Sources: National data; BIS; BIS calculations.

Why are financial recessions deeper and longer? Largely because the economy has to tackle the legacy of the financial imbalances that built up during the typically longer previous expansion. Balance sheets – of households, firms and banks – have to be repaired. The debt and capital overhangs have to be worked off. Credit has to be reallocated. In the process, spending is cut back and the supply of funding curtailed. These problems are naturally bigger if a banking crisis breaks out and financial intermediation breaks down. The GFC is just the most recent and remarkable such example.

The second major consequence is that, with inflation expectations well anchored and inflation less responsive to economic slack during expansions – a flatter Phillips curve – central banks have been able to push harder. This does boost employment further, and hence reduces income inequality, in the short to medium run. But by possibly contributing to risk-taking and the build-up of financial imbalances, it raises the risk of a financial recession down the road, with its bigger consequences for inequality.

What is the implication? With financial factors playing a larger role in business fluctuations, a more balanced policy approach is needed – involving prudential, fiscal and structural policies – as part of a more holistic macro-financial stability framework.

Taken together, these policies can improve the trade-offs monetary policy faces in reconciling price, financial and, hence, macroeconomic stability over time, thereby also reducing inequality, on average. As we elaborate in the chapter, these policies do so primarily by helping to tame the financial cycle, and by playing a critical complementary role in crisis management.

Let me conclude.

Monetary policy has neither the responsibility nor the tools to address structural inequality: structural policies are essential.

But by pursuing its mandate effectively, monetary policy can do a lot to tame the macroeconomic forces that amplify inequality over business cycles – inflation, recessions and thus also financial instability.

Changes in the nature of the business cycle have complicated this task, highlighting the need to put in place a more holistic macro-financial stability framework.