Income Inequality, Household Debt, and Financial Crises

Ali Ari and Raif Cergibozan

Abstract This chapter aims to examine why and how rising income inequality in developed countries over the last four decades has led to higher household debt stock which in turn may increase the likelihood of financial crises. To do that, we run simple regressions over a sample of 31 OECD and/or EU member countries over the period of 1980–2020. We find that income inequality leads to higher household debt stock, but mainly in developed countries where the financial sector is more developed and interest rates are lower. These results, in line with the early literature, indicate that governments should implement appropriate tax and benefit policies to decrease income inequality, instead of using monetary policy as a temporary tool to alleviate the consequences of income inequality for low- and middle-income parts of the population.

Keywords Inequality · Leverage · Bank credit · Financial crises

1 Introduction

Over the past four decades, income inequality has significantly augmented within most developed countries (Piketty, 2014; Morelli et al., 2015; OECD, 2015), contrary to the predictions of the Kuznets hypothesis. This rise in inequality has been mainly associated with increasing globalization of trade and capital movements. The relationship between inequality and trade openness is partly explained by the Stolper-Samuelson theorem based on the Heckscher-Ohlin model. When a country endowed with skilled-workers opens to trade, it produces more skill-intensive goods for export, resulting in higher wages for the skilled at the

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A. Ari (ed.), *Capitalism at a Crossroads*, Springer Studies in Alternative Economics,
https://doi.org/10.1007/978-3-031-23257-2_6

expense of the unskilled. Moreover, increased trade with developing countries may lead to deindustrialization in developed countries, resulting in a decline in manufacturing, thus, higher unemployment among the less-skilled (Feenstra & Hanson, 1996).

Financial openness generally brings improvements in the quality and type of financial services, but this mainly benefits high-income individuals and well-established firms (Greenwood & Jovanovic, 1990). Because financial imperfections, such as asymmetric information and transactions costs in financial markets, mostly penalize the poor who lack collaterals, credit records, and networks. Furthermore, the rising delocalization of domestic firms to developing countries—outward foreign direct investment (FDI)—causes job losses, lower wages, and less job security for unskilled workers (Jaumotte et al., 2013).

Technological progress is another factor in explaining the increase in income inequality, since it produces proportionately more high-skill, better-paid jobs, benefiting those with the required skills (Aghion et al., 1999). On the other hand, regulatory reforms in labor markets (i.e., declining union coverage) and a decrease in marginal tax rates for high earners are also crucial to understand the long-term rise in income inequality in advanced countries (OECD, 2015).

Note also that both the global financial crisis of 2007–08 and the recent Covid-19 pandemic exacerbated the inequality of income distribution in both developing and advanced countries. With lower growth and higher unemployment, both crises not only reduced incomes from work and capital but also made their distribution more unequal. Furthermore, higher inflation rates over the last two years—leading to a fall of incomes in real terms—are another important factor in aggravating income inequality.

As underlined by Stiglitz (2012), income inequality results in higher crime and health problems, lower educational achievements, social cohesion, and life expectancy. The social unrest can weaken the social structure and trust in institutions, driving then populist and protectionist feelings, and leading to political instability (OECD, 2015).

Beyond its considerable impact on social cohesion, higher inequality also produces a negative impact on economic growth and its sustainability. Berg and Ostry (2011) indicate that social unrest and political instability may discourage investment which leads in turn to lower growth rates. Moreover, rising inequality may reduce economic opportunity that may limit the growth potential of economies (OECD, 2015). This is mainly materialized through lowering investment opportunities in education of the poorer parts of the population if they cannot afford the fees. This may diminish the accumulation of human capital—which is considered a key factor of economic growth in modern growth theories (i.e., Romer, 1994). This "underinvestment" by the poor or structural demand gap causes lower aggregate output (Akyüz, 2017), on the one hand, and jeopardizes social mobility, on the other.

However, contrary to expected negative outcomes of rising inequality on demand, investment, and growth, many advanced economies, particularly the US, performed well in terms of consumption and economic growth over the last three decades. Cynamon and Fazzari (2016) show that in the decades prior to the global financial crisis unemployment fell, consumption increased, macroeconomic volatility declined, and recessions were modest. This fact actually presents a paradox from the theoretical point of view as discussed above. So, how did consumption and growth increase despite increasing income inequality in the US or other developed countries?

The answer to this question is borrowing by the low- and middle-income households facilitated by easy credit conditions in financial markets due to growing financial development and low inflation rates. This process is also encouraged by financial regulators and policymakers. Because it is an easier way to support growth compared to bringing structural solutions to rising inequalities through reforming tax and benefit policies as well as promoting and increasing access to quality public services. Thus, low- and middle-income individuals incited by low interest rates borrow beyond their means to maintain their consumption. This "overborrowing syndrome" leads in turn to overindebtedness of households in most advanced countries. These overborrowing and overindebtedness, coupled with financial liberalization and deregulation of financial markets, generate then speculative bubbles in stock and real estate markets. When those bubbles burst, countries face a severe economic and financial crisis. Recessions and higher unemployment as a common consequence of crises then exacerbate the unequal distribution of income.

Therefore, this paper aims to empirically investigate the relationship between inequality and household debt, which could be a structural cause of financial crises. To do that, we first clarify how and why inequality leads to higher household debt and financial bubbles which in turn generate a financial crisis by reviewing early literature. Then, we run a regression analysis to assess the role of different macroeconomic factors on household debt accumulation. Our analysis consists of 31 OECD and/or European Union (EU) member countries over a sample period of 1980–2020. Our empirical results show that income inequality leads to higher household debt stock, but mostly in developed countries where the financial sector is more developed and interest rates are lower.

These results are in line with the early literature (i.e., Rajan, 2010; Kumhof et al., 2015). Theoretical work mainly shows that with rising inequalities easy credit conditions helped low- and middle-income households to keep up with the higher consumption levels of top earners (Bazillier & Hericourt, 2017). Van Treeck (2014) proposes two arguments for this macroeconomic trend. First, supply-side argument puts emphasis on the role of government in supporting credit to those households with decreasing relative incomes. Second, demand-side argument points out the active behavior of low- and middle-income households to sustain their consumption level. Empirical studies generally indicate that rising income inequality leads to higher demand for credit (i.e., Malinen, 2016) and higher income-to-debt ratios (i.e., Gu et al., 2019), on the one hand, and engenders financial or banking crises (i.e., Kirschenmann et al., 2016; Bellettini et al., 2019; Gu et al., 2019), on the other hand.

This chapter is organized as follows. Section 2 assesses the causality between inequality, household debt, and crises. Section 3 presents model and discusses estimation results. Section 4 concludes with some policy implications.

2 Inequality and Financial Crises

Nearly all countries faced one or more financial crises during the last three decades with severe negative economic consequences. The increase in frequency and cost of financial crises seem to be related to deregulation of domestic financial markets and

liberalization of capital movements.[1] The occurrence of those crises is theoretically and empirically linked to some macroeconomic (i.e., budget and current deficits) and microeconomic factors (i.e., low profitability, asset quality, liquidity, and reserves of financial and nonfinancial institutions) as well as to the structure of financial markets (i.e., asymmetric information leading to adverse selection and moral hazard, integration of financial markets leading to contagion, and quality of regulatory institutions), and psychological factors (i.e., limited rationality leading to myopia, euphoria, and overconfidence).

The same approach is adopted by the large body of literature that analyzes the global financial crisis which started in the US banking system in late 2007. For instance, Acharya et al. (2009) underlined the role of a credit boom and a housing bubble, mainly associated with the FED's loose monetary policy, on the occurrence of the banking crisis in the US. Low interest rates encouraged investors to search for higher yield that further worsened the asset quality, particularly in a lax regulatory framework due to deregulation of the financial system and development of new but complex financial instruments such as securitized assets and derivatives.

Moreover, high growth and low volatility in the world economy led investors to misprice the credit risk and/or take excessive risks. The mispricing could be explained to some extent by the global imbalances: saving surpluses in China and oil-exporting Middle Eastern countries flowed into the US and European assets, leading to excess liquidity, low volatility, and spreads (Ari, 2014). The rise in equity prices increased then the level of perceived wealth, thus reducing domestic savings and increasing current deficits, particularly in the US.

Obstfeld et al. (2009) were one of the first to empirically examine whether the cross-country incidence of the 2007–08 global crisis is related to macroeconomic and financial factors. They found that the excess of reserves over M2 was a statistically significant determinant of currency depreciation during the 2007–09 period. In addition to reserves, real currency appreciation (Frankel & Saravelos, 2012), weak current account positions, high direct financial exposure vis-à-vis the US (Fratzscher, 2009), and bank credit growth (Claessens et al., 2010) were found to be linked to the crisis incidence.

Lane and Milesi-Ferretti (2011) and Berkmen et al. (2012) examined the cross-country severity of the 2007–08 global crisis, and they found that strong credit growth and trade openness affected the crisis severity. Berkmen et al. (2012) also showed that countries with more leveraged financial systems and weak fiscal positions experienced worse crises, while Lane and Milesi-Ferretti (2011) indicated that high current deficits and large precrisis net capital inflows are relevant for understanding crisis intensity. Rose and Spiegel (2011) and Feldkircher (2014) confirmed the findings above: countries with higher current deficits and stronger growth in bank credit suffered worse crises. Giannone et al. (2011) and Rose and Spiegel (2011) found empirical support to the importance of loose banking

[1] See Ari (2010) for a detailed analysis on financial crises.

regulation and high financial leverage in affecting the response of the real economy to the global crisis.

Above explanations on the occurrence and the severity of the global financial crisis seem to focus on "visible" factors such as FED's loose monetary policy, stronger credit growth, high leverage of financial institutions, misprice of credit risk, etc. But the "real" question here is why the FED kept interest rates quite low. One may argue that fears of recession following the dot-com crisis in 2000 and 9/11 terrorist attacks on World Trade Center pushed the FED to lower interest rates. Or others may underline the impact of capital inflows to advanced countries, in particular the US, that increased money supply. However, we argue that FED's loose monetary policy was a response to increasing income inequality in order to allow low- and middle-income groups to maintain their consumption. In other words, it was a medium to support the living standards of those who suffer from stagnating real incomes. However, this policy aiming to temporarily alleviate the consequences of inequality through access to cheap borrowing led to a debt-driven consumption and growth, paving the way for the emergence of the global financial crisis.

There is a growing body of literature focusing on the probable relationship between inequality, leverage, and financial crises. Rajan (2010) argues that increasing inequality, due to technological development and institutional factors in labor market, creates pressures on the political system. To appease this tension, government provides cheap credit to the bottom of the income distribution through government-sponsored enterprises, like Fannie Mae and Freddie Mac, to buy houses. This sowed the seeds of the global financial crisis of 2007–08 through a housing boom as many who bought houses did not have the purchasing power. When the FED started to increase interest rates in late 2005 to contract housing demand, many sub-prime people could not pay back their credits. This is how the banking crisis started in the US in late 2007.

Beside housing boom, Fitoussi and Saraceno (2010a) and Goda et al. (2017) demonstrate the impact of another bubble in asset prices in the outbreak of the global financial crisis. This bubble is mainly linked to the search for higher yield by top earners who benefited from the increase in inequality. Stiglitz (2012) also claims that increasing political influence of the rich and the financial industry contributed to the financial excesses. Hence, net wealth became overvalued, and high asset prices sustained high levels of debt. But when the bubble burst, net wealth radically reduced to unsustainable levels, generating the crisis in the US.

Ahlquist and Ansell (2017) pay attention to countries' institutional and policy context that may impact on demand for credit. They show that higher levels of borrowing are closely related to increasing income inequality, but only in countries where right-wing governments are more frequent. Because in countries with historically more left-wing governments, there exists substantial redistribution to the bottom part of the society. Fiscal redistribution can moderate the effect of inequality on credit demand by reducing the gap in disposable incomes between the rich and poor.

Kumhof et al. (2015) provide a theoretical framework on the mechanisms that link income distribution, leverage, and financial crises. Their model is based on two groups of households: top earners that constitute 5% of the population whose income share has increased over decades and bottom earners who represent 95% of the

population with lowering or stagnating incomes. The first group utilizes a large share of the increased income to accumulate financial wealth in the form of loans to bottom earners, rather than using it for higher consumption. This allows bottom earners to sustain their consumption, but their debt-to-income ratio reaches to higher levels, generating financial fragility that eventually makes a financial crisis more likely. The crisis occurs when economic and/or financial conditions change, i.e., an increase in interest rates rising debt burden leads bottom earners to default on their debt. Iacoviello (2008), with a quantitative dynamic model, provides convincing evidence that income inequality was the primary driver of the increase in household debt in the US during the 1980s and 1990s. Cardaci (2018) develops an agent-based model to examine the impact of growing inequality on home equity borrowing. He shows that the resulting debt-financed consumption increases the financial fragility. Rising nonperforming loans deteriorating the banks' balance sheets paves the way for a financial crisis. Note that in those models, the role of government in easing credit conditions is ignored.

On the other hand, we see an increasing number of empirical studies to test the conclusions of theoretical models. First group of studies examine whether income equality leads to higher demand for credit, hence, to higher household debt. Bordo and Meissner (2012) estimate the effect of change in income inequality on the growth of bank credit in 14 advanced countries over the period between 1880 and 2008. They find little evidence relating credit booms to rising inequality. On the other hand, Chang et al. (2020) find different results using same 14 developed countries over the period of 1920–2008, but by employing different estimation techniques and by dividing the sample period into two. Their results indicate a positive relationship between income inequality and credit growth. Using data for the period of 1959–2008 for developed countries, Malinen (2016) also shows that there is a positive long-run steady relationship between income inequality and bank credit. In other words, income inequality contributes to the increase of leverage in accordance with the theories by Rajan (2010) and Kumhof et al. (2015). Perugini et al. (2016) is another study that indicates a robust correlation between private sector credit/indebtedness and inequality. The econometric analysis is performed on a panel of 18 OECD countries for the period of 1970–2007.

The second group of empirical studies indicate that rising income inequality leads to higher income-to-debt ratios, hence, rises the crisis risk. Kirschenmann et al. (2016) assess whether income inequality is a direct driver of financial crises or it indirectly engenders a crisis through credit booms. Their empirical evidence, based on a dataset of 14 developed countries over the 1870–2008 period, presents a high predictive power of inequality on financial crises, but the impact of bank loans is relatively small. Using same 14 developed countries over the 1870–2013 period, Paul (2022) also finds that income inequality is a robust predictor of financial crises. Bellettini et al. (2019) perform an empirical analysis on a panel of 33 advanced countries in the period of 1970–2011. They find a statistically significant and positive relationship between income inequality and the probability of banking crises. Gu et al. (2019) use a relatively short sample period covering the years 1995 and 2007 for OECD countries. Their empirical results show that rising inequality has a significantly positive impact on credit growth and banking crises.

3 Model and Estimation Results

In the study, we aim to empirically demonstrate how income inequality leads to a substantial increase in household debt stock which is considered a structural cause of financial crises in theoretical models and a good predictor of crises in empirical studies. To do that, we use simple regressions on a dataset of 31 OECD and/or EU member countries over the period of 1980–2020.

To measure the indebtedness of households, we use the ratio of household debt over GDP. The data for this indicator are taken from the Bank for International Settlements (BIS) statistics. We use two measures of income inequality: inequality in market income and inequality in disposable income. Inequality in market income is measured by the Gini coefficient and represents the pretax and pretransfer inequality in income. Inequality in disposable income is also measured by the Gini coefficient, but it takes into account taxes and transfers from the government. The Gini coefficient is based on the comparison of cumulative proportions of the population versus cumulative proportions of income they get, and it takes a value between 0 indicating perfect equality and 1 representing perfect inequality The data for Gini coefficients are gathered from the Standardized World Income Inequality Database (SWIID).

As the income inequality is not the only determinant of household debt stock, we use some control variables such as financial development, inflation rates, and interest rates. We utilize two different interest rates, and the data for both are gathered from the Organization for Economic Co-operation and Development (OECD) database. Short-term interest rates are the rates at which short-term borrowings are made between financial institutions or the rate at which short-term government paper is issued or traded in the market. Short-term interest rates are based on three-month money market rates and/or treasury bill rates. Long-term interest rates refer to government bonds maturing in ten years. Rates are mainly determined by the price charged by the lender, the risk from the borrower, and the fall in the capital value. These interest rates are implied by the prices at which the government bonds are traded on financial markets, not the interest rates at which the loans were issued.

Inflation rate measures change in general level of prices. The data for inflation rates are taken from the World Bank–WDI and are based on annual changes of consumer price index (CPI). Financial development may be defined as the improvements in the size, efficiency of, and access to the financial system. A well-developed financial system spurs economic growth because it channels and mobilizes savings into profitable large-scale investments; it reduces the costs of acquiring and evaluating information on prospective projects; and it helps to monitor investments to reduce the risk of resource mismanagement (Levine, 2005; Ari, 2018). However, there is no consensus on how to measure financial development as it is a vast concept and has several dimensions. For instance, total market capitalization and market trading volume are used to measure the sophistication of the stock and bond markets, or ratio of total deposits to GDP and ratio of bank credit to private sector over GDP are utilized for the level of development of the banking system. But all these measures are rough estimation and do not capture all aspects of financial

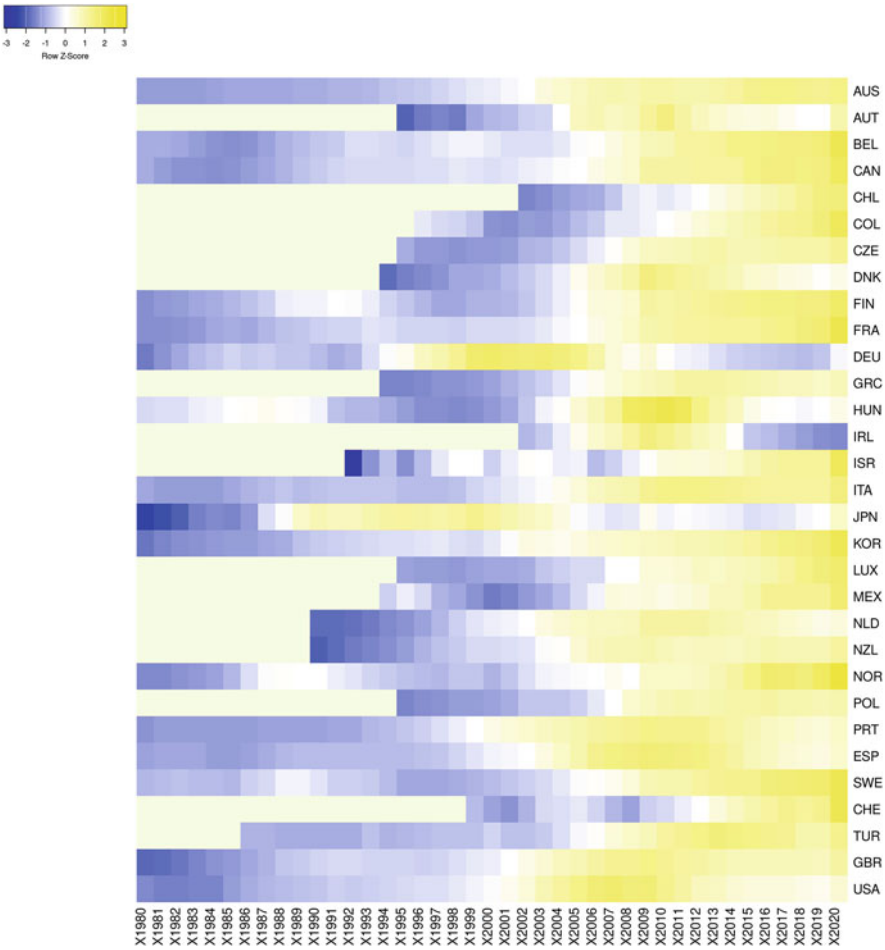

Fig. 1 Heatmap of household debt over GDP (1980–2020). Source: Authors' calculations based on BIS statistics

development. Therefore, we use a new broad-based index of financial development proposed by Svirydzenka (2016).

Figures 1, 2, 3, 4, 5, 6, and 7 present the evolution of our variables from 1980 to 2020. We use heatmaps[2] which is a data visualization technique that shows magnitude of a phenomenon as color in two dimensions. Here blue/yellow colors indicate low/high values that the variables have.

Figure 1 shows the heatmap of the household debt-to-GDP ratio for 31 selected countries. We see that, except for Ireland (over the last 5 years), Germany, Hungary,

[2]For detailed information on heatmaps, see Babicki et al. (2016).

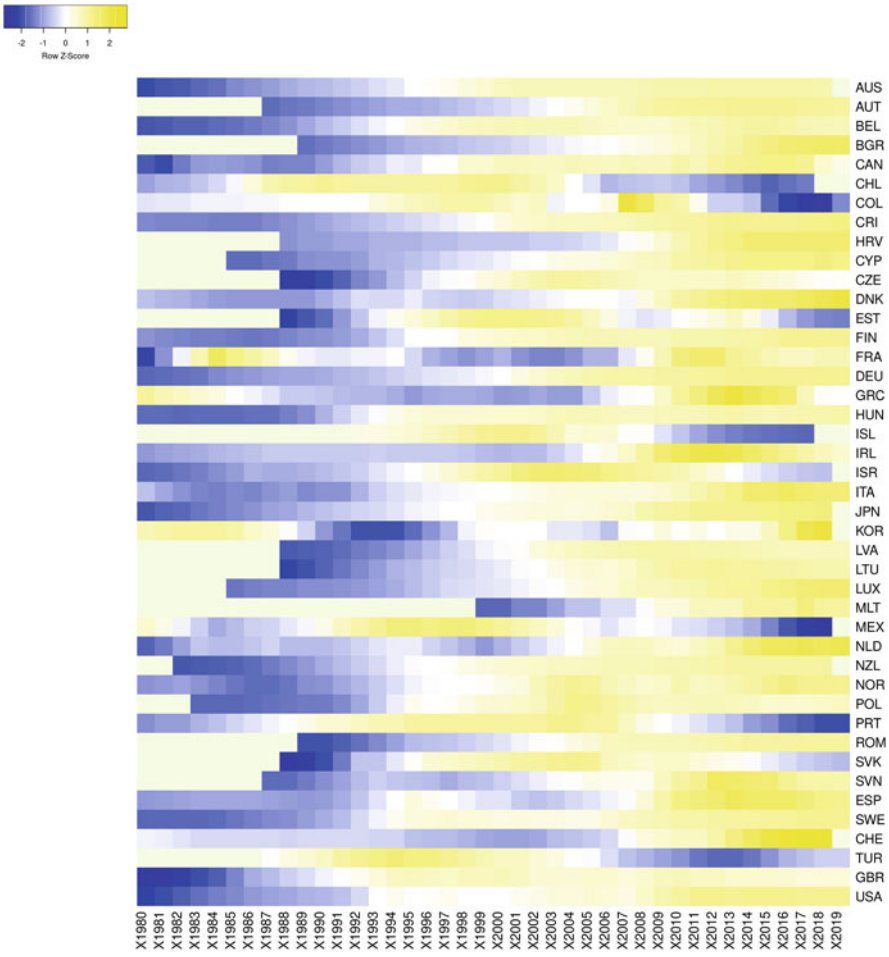

Fig. 2 Heatmap of Gini market (1980–2019). Source: Authors' calculations based on SWIID

and Japan to lower extent, household debt recorded a strong growth, particularly from the beginning of 2000s. It is quite interesting to see that yellow color becomes darker in 2020 reflecting the impact of the Covid-19 pandemic on household debt stock.

Figures 2 and 3 show heatmaps of inequality in market income and inequality in disposable income, respectively for 31 countries over the period of 1980–2019. We observe in Fig. 2 that, except for Iceland and Portugal, income inequality has highly increased in advanced countries, particularly from 1990s. Note that income inequality was higher for both countries before and during the global financial crisis. However, in some emerging countries such as Chile, Czechia, Colombia, Mexico, and Turkey, income inequality has remained constant or declined in 2000s. One may see in Fig. 3 that disposable income inequality considering redistribution policy of

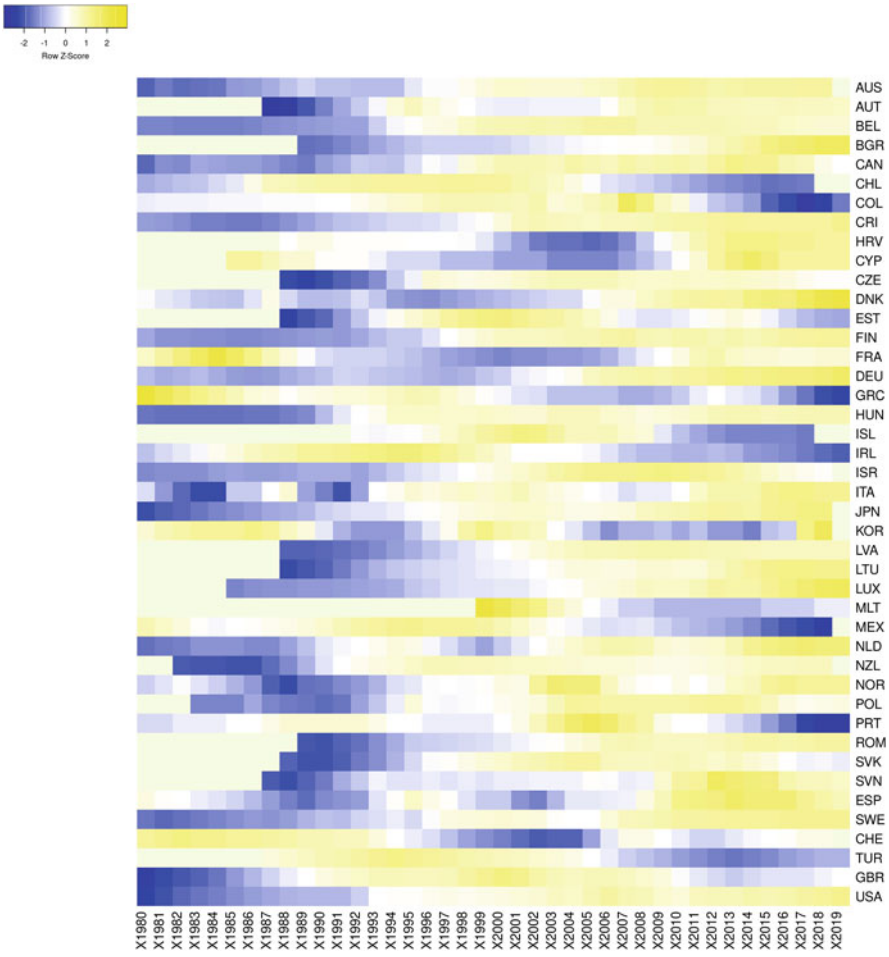

Fig. 3 Heatmap of Gini disposable (1980–2019). Source: Authors' calculations based on SWIID

the governments has only fallen in Estonia, Greece, and Ireland, and remained stagnant in France.

Figure 4 shows heatmap of inflation rates over the period from 1980 to 2020. As seen in Fig. 4, monetary authorities in both developing and advanced countries seem to have resolved the inflation issue in 1990s. We do not ignore growing inflationist pressures in the last two years due to the breakdown of supply chains and excessive money supply following the Covid-19 pandemic. But our data does not cover these last two years.

As seen in Figs. 5 and 6, both short- and long-term interest rates have drastically decreased in all 31 countries included in our sample. This is mainly related to

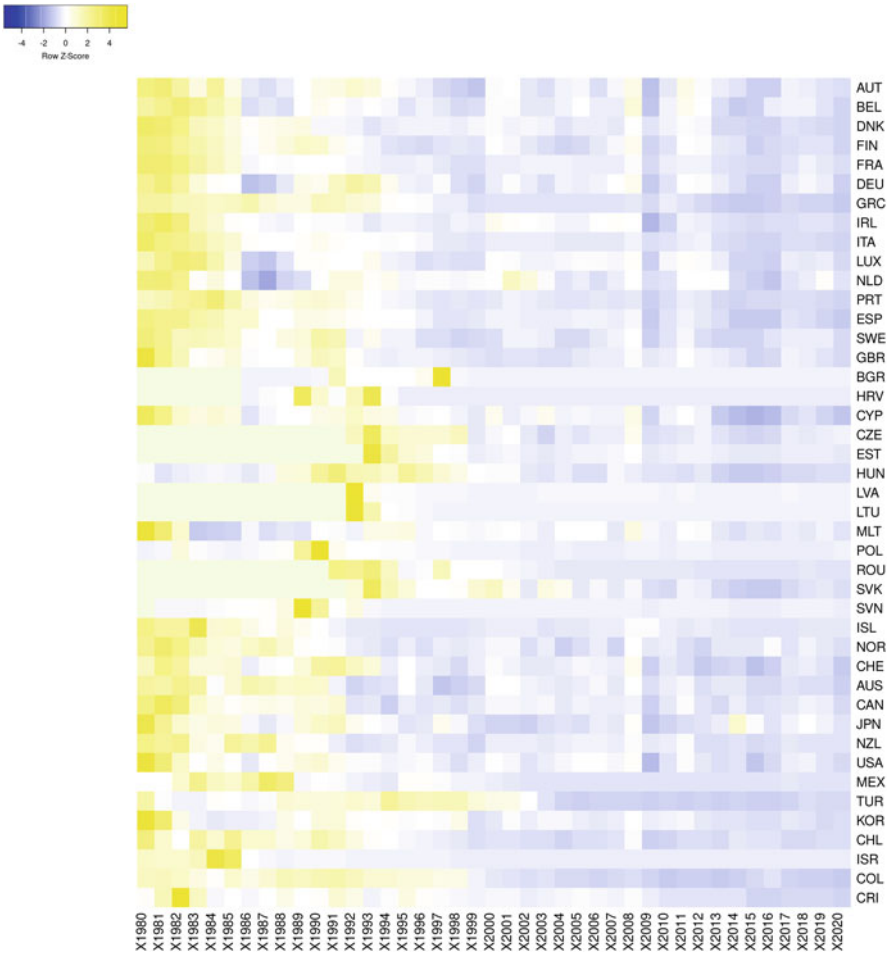

Fig. 4 Heatmap of inflation rates (1980–2020). Source: Authors' calculations based on World Bank–WDI

lowering inflation rates as mentioned above, but also to increasing financial development (see Fig. 7), particularly from the second half of the 1990s.

Figure 8 presents estimation results of our regression analysis on the relationship between household debt and income inequality. As seen in different graphs, there is a statistically significant relationship between household debt and income inequality in 24 countries out of 31. The exceptions are Czechia, Germany, France, Hungary, Ireland, New Zealand, and Portugal. This result is consistent with what we see in Figs. 1, 2, and 3. In Germany, Hungary, and Ireland to some extent household debt stock did not record increases while income inequality remained constant (France) or decreased (Czechia and Portugal).

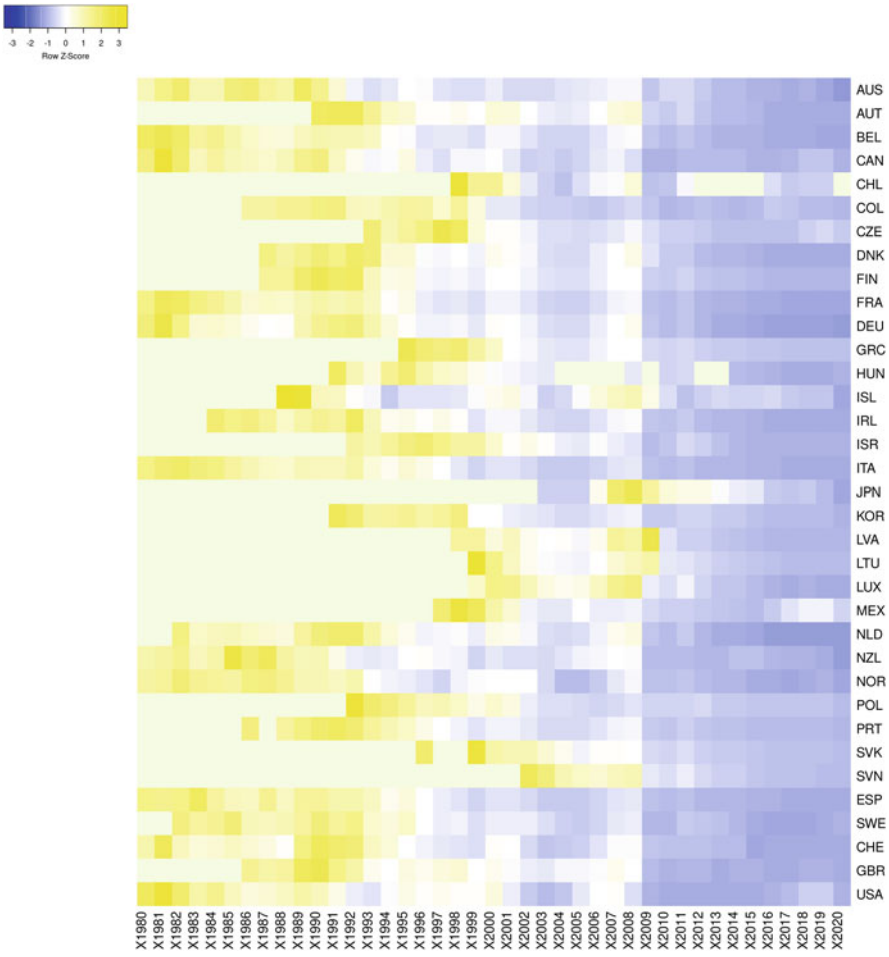

Fig. 5 Heatmap of short-term interest rates (1980–2020). Source: Authors' calculations based on OECD database

An interesting point to underline is the curve is downward/upward sloping for emerging/advanced countries. This means that income inequality leads to higher household debt stock in most developed countries, but it generates lower debt in developing countries. This result would indicate the important role of financial development in easing credit conditions, hence the increasing probability of borrowing for households. Our empirical results confirm this claim as we find a statistically significant relationship between household debt over GDP and financial development. As seen in Fig. 9, except for Czechia, Luxembourg, and Japan, an increase in financial development index leads to a higher household debt-to-GDP ratio in both developing and advanced countries.

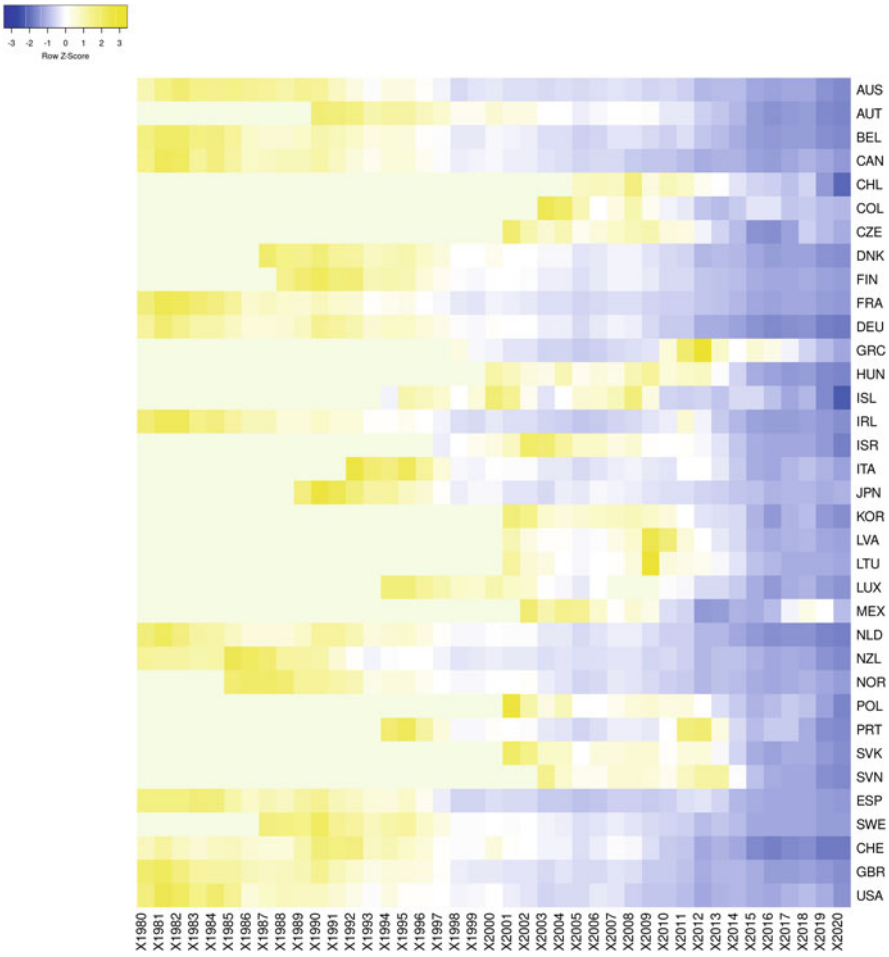

Fig. 6 Heatmap of long-term interest rates (1980–2020). Source: Authors' calculations based on OECD database

Our estimation results are in line with the existing theoretical and empirical literature: increasing income inequality leads to higher household debt stock over GDP (i.e., Malinen, 2016; Gu et al., 2019), but mostly in countries where financial sector is developed. Because although we observe a growing trend for financial development index in all countries of the sample from the 1990s, its level is still quite different between developing and developed countries. Therefore, income inequality increases household debt only in developed countries where borrowing opportunity is higher.

Borrowing opportunity has increased with financial openness, implemented in 1980s. This, by giving banks the possibility to securitize and trade loans (Shleifer & Vishny, 2010) structurally prompted credit supply to low- and middle-income

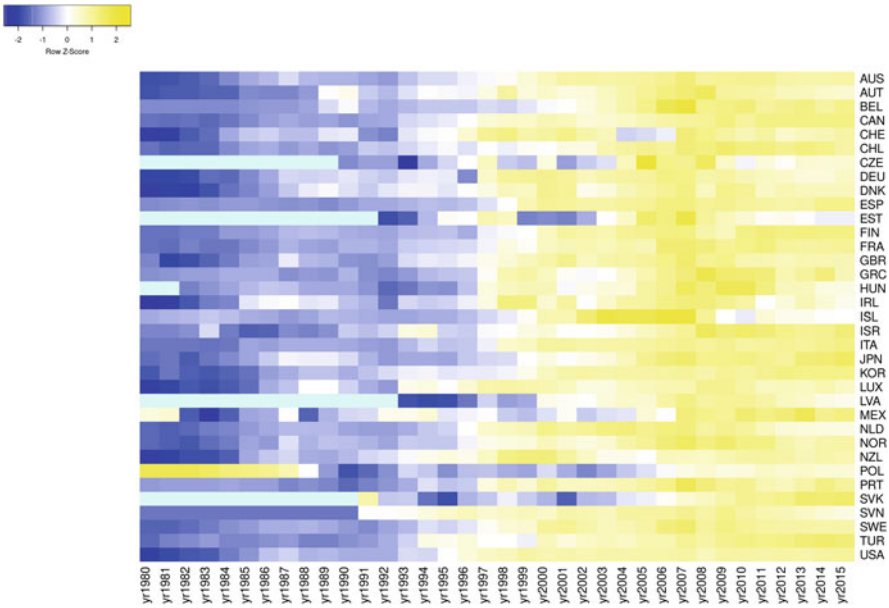

Fig. 7 Heatmap of financial development (1980–2015). Source: Authors' calculations based on Svirydzenka (2016)

earners. This explains how and why increased inequality and financial liberalization—a result of the general political shift toward a more free-market stance (Bazillier & Hericourt, 2017)—would result in higher credit supply, thus, higher household debt stock.

On the other hand, recurrent expansionist monetary policy (see Figs. 5 and 6) supported by low inflation rates (see Fig. 4) provided cyclical support to easy credit conditions. As suggested by Rajan (2010) and Fitoussi and Saraceno (2010b), increasing income inequality, which depressed aggregate demand, forced monetary authorities to keep interest rates low. This policy generated higher credit supply leading then to "excessive" household debt or leverage that played an important role in the outbreak of the global financial crisis. Credit growth to private sector is underlined as a key driver of the global financial crisis by several theoretical and empirical studies (i.e., Acharya et al., 2009; Claessens et al., 2010).

Until now, we have drawn attention to macroeconomic factors on credit demand and supply. But the analysis would be incomplete if we do not assess the role of microeconomic factors (i.e., consumer behavior) on credit demand. There are two approaches that explain why and how credit demand by low- and middle-income households increased prior to the global financial crisis of 2007–08. The first one is often referred to as "keeping up with the Joneses", where the economic agent, described as "outward-looking", pays attention to the average consumption of the overall economy. The second is the relative income hypothesis, introduced by

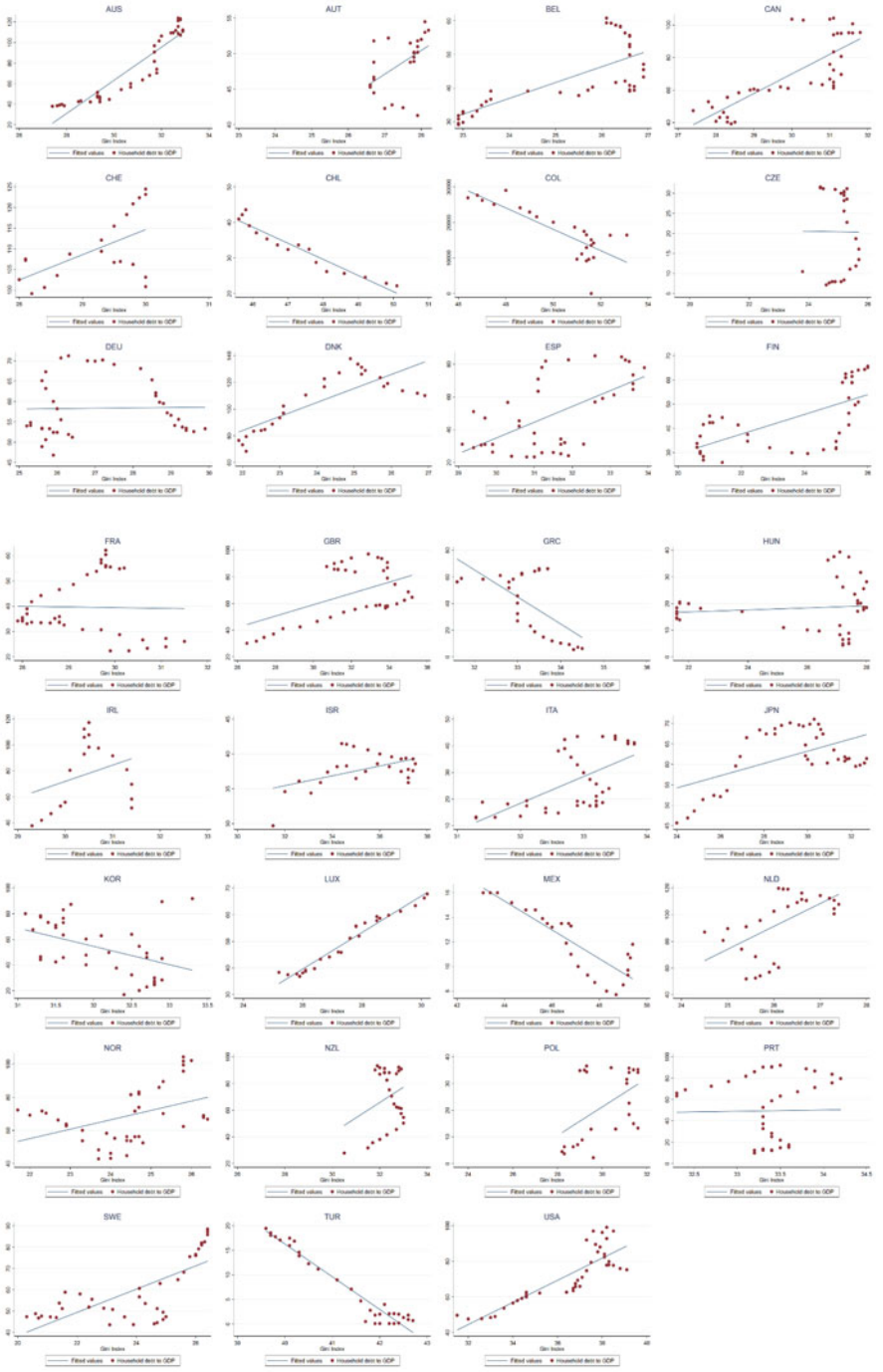

Fig. 8 Scatter plots with trend lines of correlations between household debt and Gini index

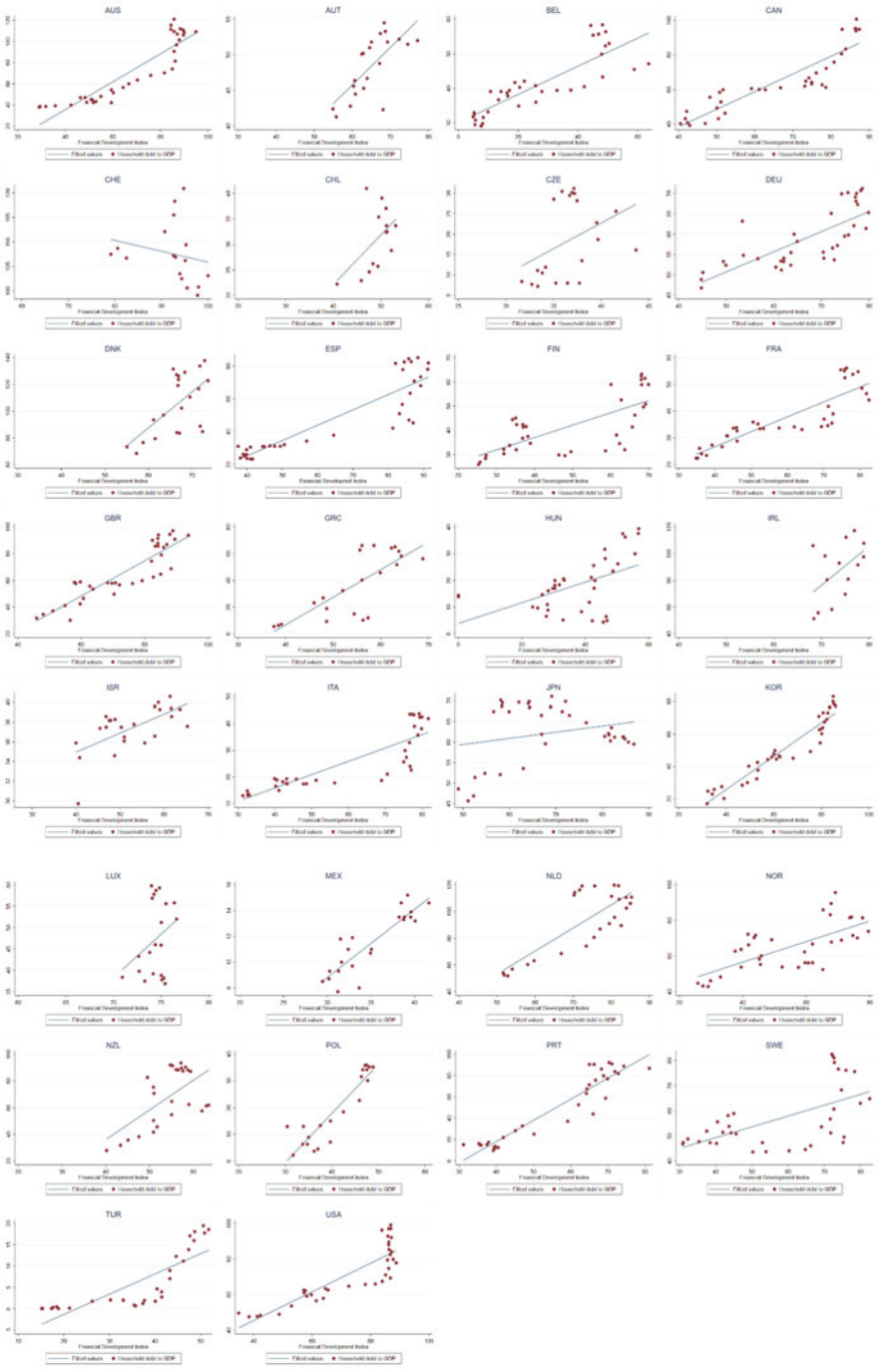

Fig. 9 Scatter plots with trend lines of correlations between household debt and financial development

Duesenberry (1949), in which the demand function of the agent, described as "inward-looking" is based on past income and consumption level. These two arguments show that how increasing inequality between the poor and the rich pushes the poor to borrow in order to maintain the living standards.

4 Conclusion

In this chapter, we examined the inequality-leverage-financial crisis nexus in the light of the global financial crisis of 2007–08. We first explained why the inequality of income distribution has increased over the last four decades in developed countries, putting emphasis on globalization, financialization, and reduced bargaining power of labor due to free-market policies. We then underlined the fact that advanced economies performed well in terms of consumption, investment, and growth despite growing inequality which is expected to lead to negative economic outcomes such as underconsumption. We showed that increasing borrowing, related to financial development and openness, expansionist monetary policies, low inflationist framework, and changing consumer behavior for credit demand, compensated possible negative outcomes of the income inequality. However, we next showed how this excessive borrowing, particularly by low- and middle-income households led to overindebtedness and spending booms, as in the US prior to the crisis. These credit and asset bubbles engendered the global financial crisis, as suggested by the early literature.

In order to test our hypothesis, we ran a regression analysis on a sample of 31 OECD and/or EU member countries over the period of 1980–2020. Our empirical results indicate that income inequality leads to higher household debt stock, but mainly in developed countries where the financial sector is more developed and interest rates are lower. Our results are in line with the theoretical (i.e., Kumhof et al., 2015) and empirical literature (i.e., Malinen, 2016).

Based on literature review and our estimation results, we can affirm that excessive borrowing—encouraged by loose monetary policy and increased financial development—to respond to growing income inequality may only provide partial and temporary solutions to underconsumption, but it may even aggravate the structural problems of the economy. As underlined by Akyüz (2017), excessive borrowing leading to boom-bust cycles creates supply-side distortions, hindering productivity, slowing economic growth, and preparing the ground for financial crises. When the crisis occurs, inequality is exacerbated, and the economy would need bigger bubbles to recover and grow.

Therefore, as Akyüz (2017, p. 51) suggests "the solution is to be found not in monetary policy and negative interest rates but in reversing the secular decline in wages and concentration of wealth, restraining financialization, and assigning a greater role to the public sector in stabilizing aggregate demand." Doing this requires significant increases in wages in real terms, but also a more substantial fiscal policy with additional public spending and a reform on tax policy. As high-income groups

will be more taxed, higher levels of public spending would not cause an increase in public debt stocks. However, doing this is not so simple, because it requires not only a structural reform in economic sphere but also a structural change in political area.

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