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Long-Term Impact of IMF Lending Programs on Income Inequality

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Abstract

This thesis studies the long-term impact of participation in IMF lending arrangements on the distribution of income in low- and middle-income countries. The analysis focuses on two main measures of inequality: the Gini index and the income shares of the lowest and highest 10%. The main findings are that participation in an IMF program increases income inequality in the short run. In the long-run income inequality is lowered, yet this effect is smaller than the short-run rise. The effects are driven by non-concessional loans. Changes at the extremes of the income distribution can explain the short-run increase of inequality but not the reduction in the long-run. The advice for the IMF is to favour concessional over non-concessional loans if the goal is to preserve equality.

Contents

1. Introduction

Many developing countries have undergone severe economic policy reforms designed by the International Monetary Fund (IMF). The institution can function as an important lender of last resort (Vreeland, 2002). But the reforms have not always been welcomed and implementation is often protested against by citizens. For instance, anti-IMF protestors in Argentina warned that austerity measures will further damage the economy while South Korean protests have accused the IMF of economic imperialism (BBC News, 1997; 2000). Not only citizens but also politicians have criticised the IMF agreements. The former prime minister of Jamaica, Michael Manley, states that the IMF is set up to serve the interest of the United States and Western Europe while imposing detrimental policies on poor countries (Black, 2001). The IMF responds that the policies might be challenging in the short-run but that a country will benefit from them in the long-run by achieving macroeconomic stability (Ames et al., 2001). This thesis aims to understand whether the IMF lending arrangements have a long-term impact on income inequality in developing countries.

Not only citizens and politicians have questioned the impact of the IMF arrangements, economists debate about it as well. The IMF serves as an important lender of last resort, but Sachs (1989) questions whether it is appropriate to lend to nations classified as uncreditworthy by the market. The loans are tied to conditions which can be beneficial for countries if the IMF has more advanced knowledge and if commitment to conditions increases access to credit by sending a positive signal to private investors (Bird, 2009; Kenen, 1986). But it is questioned whether the IMF has better knowledge than national governments and the power of signalling is doubted as loans are disbursed to both trustworthy and not trustworthy governments (Dreher, 2009a; 2009b).

Therefore the central research question to this thesis is: what is the long-term impact of the IMF lending arrangements on income inequality in the participating low- and middle-income countries? To answer this question, I use a panel data of 73 countries that covers the period 1979-2018 and focus on four main outcome variables: the Gini index of disposable income, the Gini index of market income, the income share of the highest 10% and the income share of the lowest 10%. The Gini index of disposable income includes taxes and transfers whereas that of market income does not. Comparing these to each other shows whether redistributive policies strengthen or weaken the effect of program participation. Additionally, I study whether concessional and non-concessional programs have a different impact.

The reforms imposed by the IMF conditions involve trade liberalisation, privatisation, fiscal austerity, financial and labour market reforms (Handa & King, 1997; Oberdabernig,

2013). The Stolper-Samuelson Theorem forecasts that trade liberalisation can benefit unskilled labour if this type of worker is abundant in the economy (Chiquiar, 2008). This impact is however small and slow while the reduced protection of sectors quickly gives rise to poverty (Handa & King, 1997). Privatisation is argued to be more efficient but might be advantageous for banks while disadvantageous for the poor (Rhodes, 2011; Van de Walle, 1989). Fiscal austerity reduces social spending and a simpler tax system enlarges its regressiveness, this is detrimental for the poor (Oberdabernig, 2013; Handa & King, 1997). Financial reforms often entail currency devaluations. Theoretically this could benefit a country through import substitution, but empirically it frequently leads to greater borrowing costs and capital flights (Oberdabernig, 2013). Reforms of the banking sector benefit large firms over small ones (Oberdabernig, 2013). The fiscal and financial reforms depress domestic demand and lower the welfare of the poor and labour (Oberdabernig, 2013; Heller, 1988). Labour market reforms produce both winners and losers but usually favour the employed and formal sector over the unemployed and informal jobs (Handa & King, 1997). Dosi et al. (2018) model the policies and find that they lead to more unemployment and income inequality.

Given the mixed evidence regarding the benefit of the IMF lending arrangements, I expect treatment to increase income inequality and lower the income share of the poor. Most empirical research finds a negative short-run effect of program participation on equality, therefore I expect the long-run impact to also be negative (Forster et al., 2019; Garuda, 2000; Oberdabernig, 2013; Pastor, 1987; Vreeland, 2002). There is no conclusive evidence as to how inequality develops in the long run. Here this paper makes an important contribution by estimating the impact up to fifteen years following treatment. In addition to the Gini indices the income shares of the lowest and highest 10% are observed to see if there are any changes at the extremes of the income distribution. I use the methodology of Oberdabernig (2013) but with important extensions to the income shares and the long run, the latter is achieved by combining her approach with the local projection method of Jordà and Taylor (2013). The sample is also longer than other works as it ranges from 1979 to 2018. Solt (2019) provides the Gini coefficients and the World Bank (2020a) reports the income shares. Information on program participation is collected from the IMF (2020a) and most explanatory variables from the World Bank (2020a).

There are several potential threats to the validity of this research. There is selection bias as countries that lend from the IMF are often under distinct macroeconomic circumstances (Przeworski & Vreeland, 2000). To mitigate this concern the Heckman approach is applied by setting up Mills ratios that account for selection mechanisms (Heckman, 1978; 1979). Other

determinants of inequality are controlled for by including several economic, demographic and political variables, argued by the literature to be relevant (Oberdabernig, 2013). The choice of control variables can bias the treatment effect as the observed relationship can be dependent on a specific set of explanatory variables. To mitigate this model uncertainty, multiple treatment effect regressions with different combinations of explanatory variables are set up. To analyse the long-run impact the local projections method is applied for fifteen periods after program participation, following the work of Jordà and Taylor (2013).

The main findings are that IMF agreements are related with higher income inequality in the short run. The impact of concessional programs is insignificant. Important are the effects of non-concessional loans as these increase the Gini indices two till six years after treatment. In the long-run, income inequality declines, yet this effect is smaller than the increase in the short-run. An important implication for policy is that concessional loans should be favoured over non-concessional ones if one aims at maintaining the distribution of income.

The next section discusses other relevant empirical works. Section 3 describes the lending arrangements present in my sample, followed by an examination of the theory related to conditionality, reforms and debt. My hypothesis is stated in section 4. Section 5 describes the dataset as well as the outcome variables, treatment and control variables. Section 6 presents the estimation strategy and describes how the threats to validity are mitigated. The results are discussed in section 7, which starts with the selection regressions, then presents the treatment effect of IMF program participation and after that compares the impacts of concessional to non-concessional loans. Section 8 presents the findings of the robustness check. The conclusion is stated in section 9 and paired with a summary of the paper and recommendations for policy. Section 10 provides a discussion of the limitations of my study and suggestions for future research. The paper ends with a bibliography and additional information can be found in the appendices.

2. Literature Review

This section discusses the related literature. Oberdabernig (2013) assesses the short-run impact of taking part in an IMF arrangement on poverty and inequality. The sample includes 86 low- and middle-income countries and runs from 1982 till 2009. A Heckman approach is combined with model averaging to mitigate selection issues and model uncertainty. The author finds that IMF programs raise the Gini index. With regards to poverty, both headcount ratios and poverty gaps rise in response to treatment. These observed treatment effects vanish after two years. Additionally, it is observed that concessional loans raise poverty yet lower income

inequality. The paper concludes that the poorest bear the costs of IMF program participation as poverty and inequality rise (Oberdabernig, 2013).

Oberdabernig (2013) is not the first to write about inequality caused by IMF arrangements. It has been a topic of research for decades as illustrated by the works of Garuda (2000) and Pastor (1987). Garuda (2000) uses propensity scores to mitigate selection bias and researches 58 IMF programs between 1975 and 1991. It is found that equality and the income of the poor deteriorate if the country has large initial balance of payment problems. But with smaller initial imbalances, participating countries actually experience distributional improvements (Garuda, 2000). Pastor (1987) researches the impacts of IMF lending facilities in 18 Latin American countries between 1965 and 1981 by comparing pre- to post-program outcomes. It is found that the income share of labour is reduced during IMF programs (Pastor, 1987). From today's point of view the methodologies of Garuda (2000) and Pastor (1987) are outdated and do not mitigate selection issues convincingly, as Vreeland (2002) points out. Similar to Oberdabernig (2013), Vreeland (2002) uses a dynamic Heckman model to account for non-random selection. The impact of IMF program participation on the labour share of income from manufacturing between 1961 and 1993 is analysed. His findings are in line with Garuda (2000), Oberdabernig (2013) and Pastor (1987) as he observes adverse distributional effects. IMF arrangements reduce labour income from manufacturing while that of capital increases. Vreeland (2002) concludes that the negative effects are most substantial for labour, while the earnings of the wealthy rise.

More recent works include Forster et al. (2019) and Bird et al. (2020). Forster et al. (2019) researches the impact of IMF programs and conditionality on the Gini index of low- and middle-income countries from 1980 till 2014. The paper employs an advanced instrumental variables approach by forming two compound instruments. Similar to the previously mentioned papers, the conclusion is that IMF reforms increase income inequality. The more focussed study of conditionality shows that the negative distributional effects are caused by lower government spending, controlling inflation, financial liberalisation and reducing external debt and trade. The effects occur with a one-year lag and persevere in the medium run (Forster et al., 2019). The main findings of Bird et al. (2020) contradict the work of others as they observe that poverty and inequality are not significantly enlarged by IMF arrangements. The treatment effect varies greatly across countries and programs, in some cases it is even found to lower poverty and inequality. An approach similar to Garuda (2000) is taken as propensity score matching is applied to 48 countries between 1990 and 2015 (Bird et al., 2020). It is possible that the different findings are due to the more recent period researched by Bird et al. (2020).

Inequality is not the only outcome investigated in this context. Closely related is the impact on poverty. Oberdabernig (2013) and Garuda (2002) find that participation enlarges poverty while Bird et al. (2020) observe no such effect. Hajro and Joyce (2009) use infant mortality and the human development index (HDI) as proxies for poverty and find no significant impact of IMF arrangements. In addition to this the effect of program participation on economic growth has been debated as Przeworski and Vreeland (2000) and Hutchison and Noy (2003) find it to be negative. Dreher (2006) also finds a negative impact but notes that the effects are eased if a country complies with program conditions. Pastor (1987) observes mixed effects and Conway (1994) states that the adverse effects vanish after the first program year. Whereas Bird and Rowlands (2017) find that concessional IMF loans have a significant positive impact on growth in poor countries.

To conclude, most of the existing literature has found that IMF program participation is related with higher income inequality (Forster et al., 2019; Garuda, 2000; Oberdabernig, 2013; Pastor, 1987; Vreeland, 2002). Bird et al. (2020) however contradict this by observing no significant increase. Oberdabernig (2013) and Garuda (2002) find poverty to rise with IMF lending arrangements but Bird et al. (2020) and Hajro and Joyce (2009) observe no effect. The impact on economic growth is ambigous.

This thesis builds on the methodology of Oberdabernig (2013) but with some vital contributions. First, by exploiting the large period covered by the dataset, I will explore the long-run effect of IMF programs, in particular up to fifteen years after participation. Second, I analyse whether there are any changes at the extremes of the income distribution by not only studying the Gini indices but also the income share of the bottom and top 10%. Many papers signal that selection bias is an important threat, in my methodology I will explain how I mitigate this problem.

3. IMF Lending Arrangements

In this section, I first describe the IMF lending programs present in my sample and after that provide some general information about IMF arrangements. These arrangements may differ in several dimensions, for instance in duration and conditionality. The countries included in this study are affected by eight different programs.

The four concessional programs considered are the Exogenous Shock Facility, Extended Credit Facility, Standby Credit Facility and Structural Adjustment Facility. They all carry an interest rate of 0 to 0.5% (IMF, 2020b; 2020d; 2020f; Landell-Mills, 1992). The Exogenous Shock Facility is designed to alleviate brief balance of payment deficits and lasts for one or two

years (IMF, 2006). Conditionality is low and structural reforms are not the focus, the resources are used to respond to an exogenous disturbance. The Extended Credit Facility offers medium term relief to mitigate macroeconomic shortcomings (IMF, 2020b). The facility is part of the Poverty Reduction and Growth Trust (PRGT), typically accompanied by fewer conditions (Dreher, 2004). The Standby Credit Facility is also part of the PRGT and alleviates short-term credit shortages (IMF, 2020f). It runs for one to three years. Structural Adjustment Facilities aim to meet lasting balance of payment needs (Landell-Mills, 1992). The program is characterized by low conditionality (Polak, 1991).

The four non-concessional programs included in my sample are the Extended Fund Facility, Precautionary and Liquidity Line, Stand-By Arrangements and Supplemental Reserve Facility. The interest rate here is called the basic rate of charge and is market based (IMF, 2020h). Surcharges are added to large and long outstanding loans. In addition to this a service charge of 0.5% is levied on each drawn amount. There is also a commitment fee to be paid at the beginning of each period. It is greater for large amounts and countries are reimbursed if they use the available funds. The Extended Fund Facility aims at mitigating medium term credit needs caused by structural vulnerabilities (IMF, 2020h). The agreements lasts three to four years and centre around structural adjustment and entail high conditionality. The Precautionary and Liquidity Line is designed to address liquidity demands of countries with a solid economic foundation (IMF, 2020c). It lasts for a maximum of two years and conditionality is low. The Stand-By Arrangements have a duration of at most three years and aim at upholding structural adjustments (IMF, 2020e). Oberdabernig (2013) argues that the conditionality here is highest, compared to other IMF arrangements. The Supplemental Reserve Facility complements Extended Fund Facilities or Stand-By Arrangements with a maximum duration of one year (IMF, 2006).

The evident difference between concessional and non-concessional arrangements is that borrowing costs are much higher for the latter one. But from the above-described programs it also arises that concessional loans are characterised by lower conditionality while non-concessional programs are typically accompanied by higher conditionality. This is except for the Precautionary and Liquidity Lines, but these account for only 1.7% of the non-concessional agreements. To research whether different forms of agreements have different impacts, not only the treatment effect of all IMF programs is determined, but additionally concessional and non-concessional arrangements are analysed separately.

Conditionality

This section describes conditionality in more detail and discusses theoretical advantages as well as disadvantages, as the lending practices of the IMF and conditionalities are not spared of criticism. Conditionality plays an important role in the IMF agreements. There are four types of conditionalities (IMF, 2020g). There are prior actions that need to be completed beforehand, for instance the eradication of price regulations. Quantitative performance criteria (QPCs) are distinct and measurable requirements concerning the macro economy: monetary and credit variables, foreign borrowing, reserves and fiscal balances. An example is setting an upper limit on government borrowing. Indicative targets are placed when there is ambiguity about economic forecasts. The country for instance agrees to a minimum level of social security distribution. The final type is structural benchmarks which are important to reach program objectives but non-measurable, such as improved functioning of the financial sector (IMF, 2020g).

Authors bring forth multiple advantages of conditionality, the first one is that the IMF holds more advanced knowledge and experience and thus develops more effective policies (Kenen, 1986). Governments might not recognize this and here conditionality can be used to convince countries to implement policies they otherwise would not have (Dreher, 2009a). Or conditions can serve as a commitment tool to oppose time inconsistency issues. Dreher (2009a) states that governments have less incentives to implement better policies when they have accrued a large amount of debt, as creditors then collect the benefits of reforms. Conditionality can help governments to actually carry out reforms and lower their debt levels. This is in line with Bird (2009) who states that the terms can secure lasting economic reforms. A vital assumption here is that conditions can be enforced, Dreher (2009a) however points out that this is not the case empirically.

A second advantage is signalling as conditions can signal the type of government a debtor country is (Dreher, 2009a). The IMF would rather spend its resources on states with adequate governments. Also, conditions could signal commitment to reforms and lead to a capital influx (Bird, 2009). If there is asymmetric information between lender and borrower, conditions can account for this and combat the adverse selection the IMF might face (Dreher, 2009a).

A third gain is that conditions help ensure that the IMF loans are repaid (Khan & Sharma, 2003). The IMF provides financial relief accompanied by conditions to ensure that a nation’s economic shortcomings are resolved so that the country is able to repay the loan. The authors argue that the IMF is like any creditor, conditionality is an alternative for collateral that

guarantees that the resources are used for agreed upon purposes. It also opposes moral hazard as the loans are a form of income insurance against unfavourable shocks, which is an incentive for governments to be less cautious (Vaubel, 1983).

The existing literature however also raises many concerns when it comes to conditionality. The above-mentioned advanced knowledge of the IMF is questioned, is it better than the information of domestic authorities (Dreher, 2009b)? If this is the case, the IMF could simply inform governments instead of pressuring them. The benefits of commitment are waivered with the argument that conditions cannot be imposed and that defiance is barely penalised (Vreeland, 2006). The effectiveness of signalling is questioned as the IMF lends to both adequate and inadequate administrations (Dreher, 2009a). In addition to this, higher conditionality can indicate economic problems, sending a negative signal to investors (Bird, 2001). There are also political costs attached as lending from the IMF can be seen as evidence of failure (Dreher, 2009a).

Another concern is that the terms restrict the abilities of a borrower to maximise their utility (Dreher & Vaubel, 2004). The authors argue that donors should respect the debtors' choices. Sovereign countries should be free to design their own policies and it is argued that the IMF interferes too much (Dreher, 2009a). Allen (2005) expresses that it is illegitimate to exploit conditions to convince a nation to pursue policies they would otherwise not have.

Another disadvantage is that conditionality comes with large administrative costs (Dreher & Vaubel, 2004). It is argued that IMF reforms divert experts, time and political capital away from core financial problems (Radelet & Sachs, 1998). This can be devastating for already resource scarce developing countries. Dreher (2009a) points out that the IMF has been criticised for not bearing in mind the social results of its conditions.

Reforms

I now discuss the content of the reforms enforced by the IMF agreements. Although conditionality is usually higher for non-concessional arrangements, all IMF agreements come with reforms.[1] Typical adjustment programs include trade liberalisation, privatisation, fiscal austerity, financial and labour market reforms (Handa & King, 1997; Oberdabernig, 2013). I now discuss each of these in turn.

Handa and King (1997) argue that as prices respond to trade liberalisation, there is an advantage for labour intensive goods in the typical developing economy. Either employment or

[1] With the exception for Precautionary and Liquidity Line loans. These are targeted at countries already meeting the policy standard of the IMF, so reforms are only imposed if crucial for an agreements' success (IMF, 2020c).

wages are raised which improves the income distribution. This relation is captured by the Stolper-Samuelson Theorem which predicts that trade liberalisation is beneficial for unskilled workers in countries rich in unskilled labour (Chiquiar, 2008). Handa and King (1997) however argue that this impact is small and takes time. In the meantime, poverty rises as previously protected sectors shrink before new one's surge (Handa & King, 1997).

Privatisation is used to cut government spending (Van de Walle, 1989). But the effect on public finances is not straightforward. On the one hand, according to theory the sale price of the public company should be equal to its discounted future profits. There are thus no fiscal benefits to the government. On the other hand, it might be expected that the private company is more efficient at running the company and that therefore the sale price is greater than future profits. It is argued that privatisation can lead to more allocative and productive efficiency while reducing inefficiencies from public intervention (Van de Walle, 1989). Rhodes (2011) argues that privatisation is especially appealing for banks as it facilitates the acquiring of cheap assets in debtor countries. Van de Walle (1989) expresses that there can be disadvantages to the poor if privatisation causes goods and services to become unaffordable for them. This could be the case if products like public transport, healthcare and education do not seem profitable for private companies to provide for the poor (Van de Walle, 1989).

Regarding the effect of fiscal austerity, Handa and King (1997) describe that in the short run the decline of real expenditure usually implies a reduction of social spending. A smaller public sector combined with privatisation leads to the firing of public sector workers which causes at least a brief rise in unemployment. Oberdabernig (2013) argues similarly and predicts an increase in poverty. Oberdabernig (2013) and Handa and King (1997) describe that in addition to this, a simpler tax system is created with less income and more expenditure taxes, enlarging its regressiveness and deteriorating the income distribution.

Common financial reforms are more liberal financial sectors, currency devaluation and banking sector reorganisations (Oberdabernig, 2013). The author states that financial liberalisation is frequently correlated with an unstable domestic banking industry and currency crises, which give rise to poverty. The liberalisation thus needs to be supported by proper economic policies and lawful supervisory structures (Bird & Rajan, 2001). The effect of currency devaluation is ambiguous. It is paired with negative associations in developing economies as it gives rise to foreign borrowing costs and departures of foreign capital (Oberdabernig, 2013). But theoretically it could create import substitution as the price ratio of non-tradable to tradable products is lowered. It is however uncertain whether poor people profit from this as it is highly dependent on economic circumstances and consumption habits. Reforms

of the banking sector lower the availability of domestic credit and favour large firms over small and medium-sized companies as interest rates rise and reserve requirements and credit ceilings emerge. The common fiscal and financial reforms such as expenditure reductions, credit restrictions, higher taxes and lower real wages are expected to lower domestic demand (Oberdabernig, 2013). This leads to an evaporation of spending which most likely lowers the welfare of the poor and those whose primary income source is labour (Heller, 1988).

The IMF programs are also accompanied by labour market reforms, examples include the imposing of wage bill ceilings and pension reorganisations (Kentikelenis et al., 2016). Handa and King (1997) state that the impact of labour market reforms is difficult to forecast. It creates both winners and losers and it is uncertain how this affects the income distribution. Labour market regulations usually benefit the employed and formal sector as opposed to the unemployed and informal markets. Dosi et al. (2018) attempt to model the effects of structural labour market reforms like those proposed by the IMF. They find that is gives rise to unemployment and income inequality. Macroeconomic conditions deteriorate in terms of employment, productivity and long-run growth. According to the model of the authors this is caused by firms having more bargaining power than employees, workers not benefitting from productivity improvements and diminishing unemployment benefits (Dosi et al., 2018).

Debt

In this section, I discuss the role of debt in IMF lending arrangements. The IMF can serve as an important lender of last resort to meet the liquidity needs of its members (Sachs, 1989). When private lenders panic and withdraw their funds, the IMF loans can mitigate market failure and help out both the borrowing country and its creditors. Sachs (1989) however notes that for many countries the problem is not just liquidity shortages but rather structural issues regarding solvency and willingness to repay. He questions whether it is correct for the IMF to lend to countries that have been classified as uncreditworthy by the market. This further raises the debt level and when countries are greatly indebted, there are less incentives to reform economic policy as the payoffs go to debt servicing (Dreher, 2009a; Sachs, 1989). Cohen (1993) finds no evidence that a high debt level lowers investment, but greater debt service does crowd out investment. Table 4 in Appendix B shows that debt service is on average 5.36 in my sample and the median is 4.14. This is higher than the world average of 4.76 with a median of 3.31.[2] If

[2] Own calculations based on all countries included in the world development indicators databank between 1979 and 2018 (World Bank, 2020a).

not debt levels but debt service reduces investment it could be beneficial to lend more under concessional terms.

4. Hypothesis

In this section, I state my hypothesis. I expect IMF program participation to be related with higher income inequality in both the short- and long-run. Forster et al. (2019), Garuda (2000), Oberdabernig (2013), Pastor (1987) and Vreeland (2002) find a positive impact in the short-run of treatment on inequality and I expect my findings to be in line with this. According to Oberdabernig (2013), fiscal austerity and financial reforms imposed by the IMF are likely to lower domestic demand. Less domestic demand lowers employment and income opportunities which raises income inequality. This development could amplify in the long run. I anticipate that both concessional and non-concessional loans increase inequality as both are paired with reforms. But I expect the effect of non-concessional arrangements to be larger. As described in the previous section, conditionality is higher with the non-concessional programs, leading to more substantial policy reforms. Also, the borrowing costs are much higher for this type of loan, which increases a country's debt service. Cohen (1993) points out that this crowds out investment.

5. Data

This section describes the dataset used in the empirical analysis and the outcome variables, treatment and control variables. The analysis relies on a panel dataset of 73 countries that covers the period from 1979 till 2018. The included countries correspond to countries that have been classified as low or middle income between 1979 and 2018 by the World Bank (1979, 2020b), provided that there is sufficient data available for them. Appendix A presents a list of the included countries.

Outcome Variables

As for the outcome variables, the Gini coefficient is taken from the Standardized World Income Inequality Database (Solt, 2019). The Gini index captures income inequality within a country. Solt (2020) specifies that the Gini coefficient is the mean difference in income between all pairs in a country, divided by double the mean income of that country. The Gini index ranges between 0 and 100, with 0 corresponding to an equal income distribution. The dataset includes the Gini value for both disposable and market income. Market income refers to any money received by the household, not counting any government benefits or private transfers (Solt,

2020). It considers the earnings of a household before any taxes or transfers. Disposable income includes both taxes and transfers. Considering both of these Gini indices gives insight in the impact of a country's income redistribution policies. If treatment raises the Gini coefficient of market income more than that of disposable income, this indicates that the government redistributes income towards poorer citizens. Table 2 in Appendix B presents the descriptive statistics for the outcome variables. The Gini coefficient for disposable income is on average 41.9 and ranges from 23.4 to 59.8 in my sample. For market income the mean is a higher and equals 45.11, this is in line with intuition as redistributive policies are excluded here. Observations lie between 22.4 and 68.7. For the analysis of the income shares the World Development Indicators are used (World Bank, 2020a). Both the income share of the lowest and highest 10% are considered. This is to analyse whether there are any changes at the extremes of the income distribution. If the Gini index responds to treatment it is not clear which income shares drive this change. By considering the income shares of the lowest and highest 10% I can observe whether a rise in income inequality is driven by the poorest becoming poorer or the richest becoming richer. If there are no changes at the extremes, a change of the Gini index is driven by income shifts closer to the middle of the income distribution. Table 2 in Appendix B shows that the income share of the lowest 10% is on average 2.25% in this sample with a minimum of 0.10% and a maximum of 4.8%. The income share of the highest 10% is on average 33.12% and observations range from 20.6 to 61.5%.

Treatment

I now discuss the treatment and the control group. The main independent variable is the treatment dummy for program participation. The IMF provides information about each member country's past and present lending arrangements, including type of program and duration (IMF, 2020a). Using this information, I created three treatment dummy variables that equal 1 if in year *t* a country participates in any, a concessional or a non-concessional IMF program, and zero otherwise. The control group is constructed in two ways. Firstly, the dataset includes countries that have never been under an IMF agreement in my sample, but these are only two countries. It was my intention to consider more untreated countries, but available data did not permit this. Secondly, in each period there are countries not participating in an IMF program that year. The outcomes of these countries are compared to the countries participating in an IMF agreement to find the treatment effect. There are on average 21 countries treated each year, which leaves 52 untreated countries for the control group.

Table 3 in Appendix B states that in the whole sample period 28.3% of the countries are under an IMF agreement. There are more countries in a non-concessional program in my sample as this concerns 17.5% of the observations while concessional loans make up for 11.9%. The majority of the concessional arrangements in my sample are Extended Credit Facilities with 79.8%, while 16.2% are Structural Adjustment Facilities, 2.3% are Standby Credit Facilities and 1.7% are Exogenous Shock Facilities. Most of the non-concessional programs in my sample are Stand-By Arrangements with 71.2%, whereas 26.6% are Extended Fund Facilities, 1.7% are Precautionary and Liquidity Lines and 0.4% are Supplemental Reserve Facilities. Table 4 in Appendix B shows that there are on average 20.7 countries in an agreement each year. The observed minimum is 5 and the maximum is 41, which entails 56.2% of the sample and occurs in 1996. The total number of years that a country has been under an IMF program in its past is on average 7, the highest is Sierra Leone with 28 past program years in 2018. The average consecutive number of program years is 1.2, the longest program streak is 25 years in Kyrgyz Republic.

Control Variables

In this section, I describe the control variables. The independent variables explaining selection and inequality are based on models created by Oberdabernig (2013). Selection into treatment is not random and Appendix C lists the variables that I use to account for this issue. I will now briefly motivate the variables that control for selection. The number of countries under an IMF agreement is incorporated to account for global conditions (Vreeland, 2002). Intuitively, more countries resort to the lending facilities of the IMF in a global economic downturn and the political costs of participating, mentioned by Dreher (2009a), are lower if many other countries are also entering an IMF agreement. Similarly, the number of years a country was under an IMF program in the past is expected to increase the probability that another agreement is signed (Vreeland, 2002). Several economic and financial variables are included to account for the economic state of a country. A country experiencing economic hardship is more likely to demand credit from the IMF. The variables debt service, current account balance, reserves, trade, GDP growth and change in GDP growth are added for this. Additionally, GDP per capita is a relevant determinant of selection as poorer countries are more likely to require IMF loans, though the IMF might be more hesitant to lend to these nations as it involves a higher risk of default. The square of GDP per capita is added to account for any non-linear relationship as wealthy countries demand less IMF credit. GDP is included to control for an economy's size. The IMF might be more willing to lend to a larger economy to create

positive spill over effects to the region. GDP squared is added to recognise any non-linear relationship as a large economy requires more credit, and the IMF may be more hesitant to provide a large loan. In addition to this, a variable measuring how much a country votes in line with the G7 countries at the UN General Assembly is included. There is evidence that political allies of the G7 obtain greater and more frequent loans (Barro & Lee, 2005). Finally, the geographical region is controlled for by adding six dummy variables which are equal to 1 if a country lies in the region and 0 otherwise. Regions are relevant for selection as nearby political and economic instability affect a country and can raise the demand for IMF credit.

I now turn to the variables that may influence inequality, they are listed in Appendix D. Besides the IMF agreements, there are many factors of influence on inequality. GDP per capita is added as a control, there are more income opportunities in a wealthier country. But a richer country does not necessarily share its wealth with all citizens, GDP per capita squared is included to account for any non-linear relationship. Other variables capturing the state of the economy are GDP per capita growth, investment, trade, exchange rate growth, government consumption, inflation and hyperinflation. Good economic circumstances increase employment and income which lower income inequality if the poor are able to benefit from these developments. Whether or not they are is influenced by the level of democracy of a country, which is included as a control. Many consecutive program years strengthen the impact of the IMF programs, whereas more years having passed after an agreement lowers their influence, both are added as controls. Population growth and life expectancy are included as they relate to the living standards in a country. When these are higher, income inequality is arguably lower as it shows that the population can afford to take care of themselves. Credit is added because it influences income inequality, better access to credit raises investments which generate employment and income. The value added of agriculture and the seize of the urban population are included as Kuznets (1955) suggests that they help explain inequality, the income distribution of urban and rural populations are likely to differ. Larger natural resource rents are controlled for as they can benefit equality by providing more government revenue for income redistribution. However, Collier (2007) points out that natural resources can also trouble political systems by lowering political participation, which influences income inequality. Voting in line with the G7, the number of countries under a program and a country's total past program years function as exclusion restrictions. They are presumably correlated with the selection decision but not with the outcome variables. A time trend variable is added to control for the unobservable distinctive circumstances of each year.

As data sources the World Development Indicators of the World Bank (2020a) are drawn upon for most explanatory variables. Information on a country's level of democracy is provided by Marshall, Gurr, and Jaggers (2018) and Dreher and Sturm (2012) record how much a nation votes in line with G7 at the General Assembly of the UN. Appendix E provides a description of all included variables and their sources.

6. Methodology

In this section I describe my empirical estimation strategy. The most straightforward approach to this research question is to estimate the following regression

$$y_{i,t+h} = a_h + \boldsymbol{b}_h \boldsymbol{x}_{i,t+h-1} + c_h D_{i,t-1} + \eta_i + \xi_{i,t+h}, \quad (1)$$

where $y_{i,t+h}$ is an outcome variable, so one of the two Gini indices or the income share of the lowest or highest 10%. To analyse the long-run effects the local projection method, following Jordà and Taylor (2013), is applied. A period of 15 years is analysed after an IMF agreement of a country, so h = 0,1,…,14. $D_{i,t-1}$ is the program participation dummy and the main independent variable. It is equal to one when country *i* is taking part in an IMF agreement at time t-1. It is equal to zero if a country is not participating in a program that year. It is possible for a country to be in an agreement multiple periods in a row, but this is not observed often in my sample as the number of consecutive program years is on average 1.2. The coefficient of interest is c_h which measures the effect of participating in an IMF program on the outcome variables. If it is positive, treatment raises inequality when the outcome variable is a Gini index or the income share of the highest 10%. If the dependent variable is the income share of the lowest 10%, a positive coefficient is related to lower income inequality. To infer whether the short differs from the long run impact, the treatment effects of the different *h*'s are analysed. When c_h declines the higher *h* is, the short-run effect fades out in the long-run. But if c_h rises as *h* increases, the effect amplifies overtime. Country fixed effects are captured by η_i and control for unobserved time invariant country characteristics. The controls in vector $\boldsymbol{x}_{i,t+h-1}$ are included to account for other factors that influence income inequality so that I can isolate the causal effect of treatment. It is important to add all relevant variables to mitigate omitted variable bias. The treatment effect is biased if a significant variable is left out. For instance, if no trade variable is included, a rise in inequality can wrongfully be attributed to IMF program participation, while it is actually due to declining trade revenues, leading to fewer employment and income opportunities. Appendix D lists the controls included in $\boldsymbol{x}_{i,t+h-1}$, following Oberdabernig (2013), and they are discussed and motivated in the data section. To control for

the current economic conditions of the outcome variable, the controls are lagged one year and are thus observed at t+h-1.

There are however several threats to the validity of the empirical estimation as depicted by Equation 1 (Oberdabernig, 2013). The first one is that of selection. Countries that participate in IMF agreements differ from countries that do not. Nations that resort to the lending facilities of the IMF are often under distinct macroeconomic circumstances (Przeworski & Vreeland, 2000). These selection mechanisms should be accounted for to avoid bias. This threat is resolved by forming treatment effect regressions following the Heckman model (Heckman, 1978; 1979). This approach allows to control for determinants of selection. To do this, a Mills ratio for the program participation dummy is added to Equation 1. Hence the following outcome equation is estimated with maximum likelihood (Oberdabernig, 2013; Briggs, 2004)

$$y_{i,t+h} = a_h + \boldsymbol{b}_h \boldsymbol{x}_{i,t+h-1} + c_h D_{i,t-1} + d_h \lambda_i\left(\mathrm{D}^*_{\mathrm{i,t-1}}, s_i\right) + \eta_i + \xi_{i,t+h}, \tag{2}$$

where $D_{i,t}$ is instrumented by the following selection equation (Briggs, 2004)

$$D^*_{i,t} = \alpha + \boldsymbol{\omega}_1 \boldsymbol{z}_{i,t-1} + u_{it}. \tag{3}$$

So that the value of the dummy is assigned by

$$D_{i,t} = \begin{cases} 1 & \text{if } D^*_{i,t} > 0 \\ 0 & \text{otherwise.} \end{cases}$$

In Equation 3 $\boldsymbol{z}_{it-1}$ is a vector term that explains program participation. Following Oberdabernig (2013) the variables included in the selection equations are listed in Appendix C and are motivated in the data section. Three variables are added to both $\boldsymbol{z}_{i,t-1}$ and $\boldsymbol{x}_{i,t+h-1}$ as exclusion restrictions, namely voting in line with G7, the number of countries under a program and a country's total past program years. It is assumed that these correlate with the selection decision but not with the outcome variables. Having at least one valid exclusion restriction is important for mitigating bias and is part of the Heckman approach (Oberdabernig, 2013). In the results section it is verified whether the exclusion restrictions are valid. The term $\lambda_i\left(\mathrm{D}^*_{\mathrm{i,t-1}}, s_i\right)$ in Equation 2 is the Mills ratio and allows to control for the unobserved factors that determine selection (Vreeland, 2002). The general form of the Mills ratio is (Briggs, 2004)

$$\lambda(t) = \frac{\Phi(t)}{1 - \Phi(\mathrm{t})} \tag{4}$$

where Φ captures the probability density and Φ the cumulative distribution function. Let $s_i = a + \boldsymbol{\omega}_1 \boldsymbol{z}_{i,t-1}$. Briggs (2004) derives a definition suitable for applications:

$$\lambda_i\left(\mathrm{D}^*_{\mathrm{i,t}}, s_i\right) = \mathrm{D}^*_{\mathrm{i,t}}\left(\frac{\Phi(s_i)}{1 - \Phi(s_i)}\right) + \left(1 - \mathrm{D}^*_{\mathrm{i,t}}\right)\frac{-\Phi(s_i)}{\Phi(s_i)}. \tag{5}$$

This formula is used to derive the Mills ratio. If the coefficient d_h of the Mills ratio is found to be statistically significant this implies that a treatment effect from estimating a regression without the Heckman approach would be biased by selection.

Another issue is that of model uncertainty, it is unknown what exactly determines inequality measures and program participation. The choice of explanatory variables can bias the estimation. This problem is mitigated by constructing multiple treatment effect regressions (Oberdabernig, 2013). Different combinations of explanatory variables are included following the example of Oberdabernig (2013), as five selection and seventeen outcome specifications are produced, as listed in Appendices C and D.

The next step is to subject these various equations to model averaging by placing more weight on specifications with a larger explanatory power. Following Buckland, Burnham, and Augustin (1997) the weight of model *k* is

$$w_k = \frac{\exp\left(-\frac{I_k}{2}\right)}{\sum_{j=1}^{k} \exp\left(-\frac{I_j}{2}\right)} \tag{6}$$

where *k* is the number of model specifications in which a variable is included. *I* is the Bayesian Information Criteria (BIC) defined as

$$I = -2\log(L) + p\log(n) \tag{7}$$

where *p* is the number of parameters, *n* the number of observations and *L* the likelihood function in which the maximum likelihood estimates of the variables can be inserted (Buckland, Burnham, and Augustin, 1997). The model averaged coefficients and their variance are estimated following Sala-i-Martin, Doppelhofer and Miller (2004)

$$\hat{\beta} = \sum_{j=1}^{k} w_j \hat{\beta}_j \tag{8}$$

$$Var(\hat{\beta}) = \sum_{j=1}^{k} w_j Var(\hat{\beta}_j) + \sum_{j=1}^{k} w_j (\hat{\beta}_j - \hat{\beta})^2. \tag{9}$$

And the standard errors are found by

$$SE(\hat{\beta}) = \sqrt{Var(\hat{\beta})}. \tag{10}$$

All regressions are carried out with standard errors clustered at the country level. This methodology is repeated for each of four dependent variables. Both the Gini index of market and disposable income are analysed. This is to consider redistribution effects as disposable income includes taxes and transfers whereas market income does not. To research if there are any developments at the extremes of the income distribution, the income shares of the lowest and highest 10% are examined. In addition to this it is researched whether concessional and

non-concessional arrangements impact inequality differently. The same approach is followed but now with a distinction between concessional and non-concessional loans.

The baseline results are followed by a robustness check to confirm the observed treatment effect. It is possible for a country to be under an IMF agreement multiple times within the sample period, either consecutively or with breaks between agreements. If a country enters another arrangement this can bias the observed treatment effect. To mitigate this, I add a dummy variable to Equation 2 that controls for any additional treatments after the initial selection decision. It is equal to one if a country enters an IMF agreement, either concessional or non-concessional, between t-1 and t+h. It is equal to zero if a country is not treated in any of the periods between t-1 and t+h. Apart from this additional control the methodology for the baseline and robustness results is the same. If the findings of the robustness check are in line with the baseline results, the treatment effect is confirmed and program participation between t-1 and t+h has no significant influence on the observed causal effect.

7. Results

This section presents the main results. I first discuss the results of the selection regressions and then turn to the effect of all IMF programs on the Gini index of disposable and market income and the income shares of the highest and lowest 10%. After that I compare the impact of concessional to non-concessional arrangements. The section ends with a summary and some concluding remarks.

Selection Regressions

I now discuss the findings from the selection equation used to form the Mills ratio, which is added to the outcome regressions to mitigate selection bias. Table 9 in Appendix F reports the results with participation in any IMF program as the dependent variable. The number of countries under an IMF program, debt service, total past program years, reserves and trade significantly explain selection into IMF programs. Voting in line with the G7, the number of countries under a program and a country's total past program years function as exclusion restrictions. Voting in line with the G7 is never significant and thus not a valid exclusion restriction. Number of countries under a program and total past program years are both significant. These are valid exclusion restrictions if their coefficients are insignificant in the outcome regressions. Table 10 in Appendix F presents the results for selection into concessional IMF programs. The number of countries under an IMF program, GDP per capita, total past program years, GDP, GDP growth and the current account balance significantly explain

selection. With regards to the exclusion restrictions, voting in line with the G7 is insignificant, but the number of countries under a program and total past program years are significant. This is similar to the exclusion restrictions for selection into all IMF arrangements. Table 11 in Appendix F presents the findings for selection into non-concessional IMF programs. The number of countries under an IMF program, debt service, reserves, change in GDP growth and GDP growth significantly explain participation. As for the exclusion restrictions, for selection into non-concessional programs both voting in line with the G7 and total past program years are insignificant but the number of countries under a program is significant.

Baseline Results All IMF Programs

I now turn to presenting the baseline results for each of four outcomes.

Gini Index of Disposable Income

Table 12 in Appendix G presents how participation in any IMF lending arrangement is related with the Gini index of disposable income in my sample. Recall that the Gini index is measured on a scale from 0 to 100 were a higher value signals more income inequality. One and two years after treatment there is no significant effect. But three till five years after participation the Gini index increases by between 0.94 and 1.09. This increase represents between 2.2 and 2.6% of the average Gini value of disposable income in my sample. There is no significant effect between six and twelve years after treatment. Yet after thirteen years IMF program participation is negatively associated with income inequality. If a country participates in an IMF agreement this lowers the Gini index thirteen till fifteen years later by between 0.49 and 0.58. This decline represents between 1.2 and 1.4% of the Gini index sample mean. These findings suggest that entering an IMF agreement is associated with an increase of income inequality that is partially offset in the long run. However, the short-run rise in income inequality is almost double the long-run decline. The estimated effect is much smaller than that found by Oberdabernig (2013). Her findings show a coefficient of 2.89 one year after treatment and 2.21 two years after treatment. This could be due to the different sample studied, the time span and included countries are not the same. The number of countries under a program is not significant at *h* zero and is thus a valid exclusion restriction in this period, but it is significant in later years. The coefficient of the number of program years in the past of a country is significantly correlated with income inequality and therefore not suited as an exclusion restriction. More total past program years, consecutive program years and years passed after a program are negatively correlated with the Gini index. At least one Mills ratio is significant in

eight *h*'s and in each period that the treatment coefficient is significant. I expected more coefficients of the Mills ratios to be significant, signalling selection bias as countries do not randomly enter an IMF program. It is possible that the selection equations do not adequately explain selection. Or selection bias is small and sufficiently mitigated by the control group and control variables.

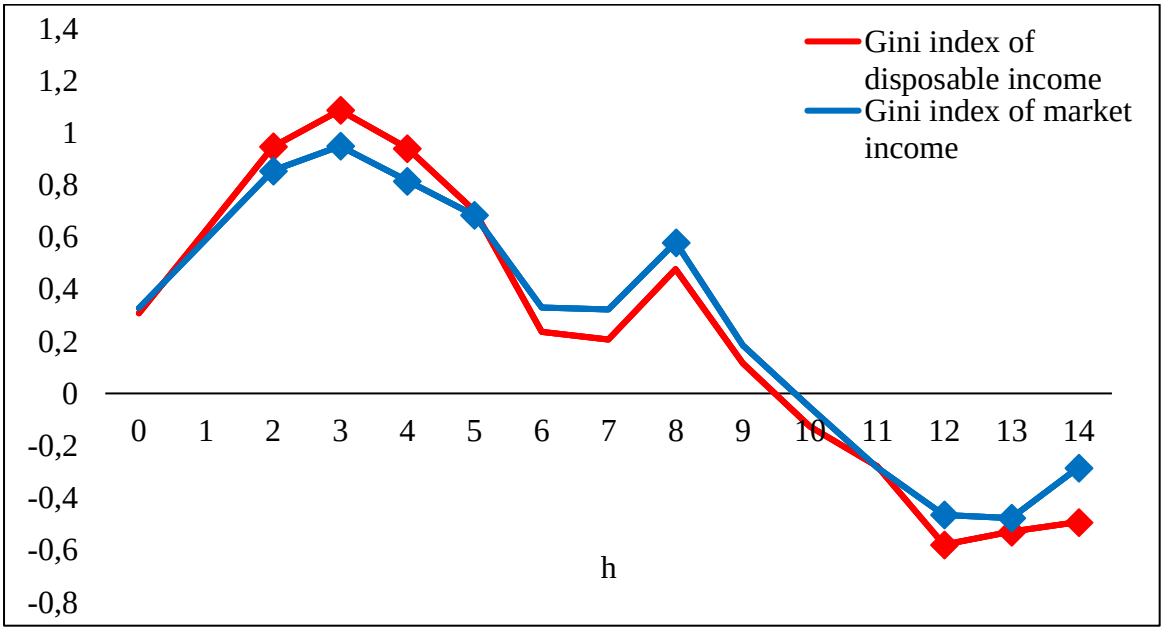
Gini Index of Market Income

Table 13 in Appendix G shows how participation in any IMF lending arrangement is related with the Gini index of market income. Participation increases the Gini index three till six years later by between 0.68 and 0.95. This increase represents between 1.5 and 2.1% of the average Gini index of market income in my sample. Nine years after treatment the index is raised by 0.58, which is 1.3% of the Gini index sample mean. In the long run the effect reverses as income inequality is lowered thirteen till fifteen years after treatment by between 0.28 and 0.48. This decline represents between 0.63 and 1.1% of the mean Gini value in my sample. In the other years, the impact is not significant. But the increase in income inequality in the short-run is about twice as large as the long-run decline. The findings are similar to the impact on the Gini index of disposable income, although the effect on market income is smaller in magnitude but observable in more periods. A possible explanation is that IMF reforms affect income redistribution through changes in the tax system and by reducing governments' social spending (Handa & King, 1997). The impact of treatment is again smaller than as observed by Oberdabernig (2013) whose findings show a rise of 3.43 after one year. The number of countries in an IMF program is not significant as a control one year after participation and is thus a valid exclusion restriction in this period, but it is significant in other years. The total number of program years in the past of a country is significant and therefore not valid. More total past program years, consecutive program years and years passed after a program are correlated with lower income inequality. At least one Mills ratio is significant in eleven periods, but the Mills ratios do not mitigate selection bias in every regression.

Figure 1 plots the treatment estimates for the Gini indices and shows that they move closely together. When the coefficient of the Gini index of disposable income is significant it is affected more by program participation than the Gini value of market income.

Figure 1

Model averaged coefficients of IMF program participation and the Gini index of disposable and market income



Note: coefficients marked if statistically significant at p<0.1.

Income Share of the Highest 10%

So far there is evidence that income inequality is impacted by participation in an IMF arrangement. The Gini index rises in the short-run but is lowered in the long-run. I now turn to analysing whether this effect is caused by shifts at the extremes of the income distribution. The relationships between program participation and the income share of the highest and lowest 10% are considered. Table 14 in Appendix G shows model averaged regression results for the income share of the highest 10%. There is no substantial effect of program participation. The income share of the highest 10% is only significantly impacted four years after treatment, as it raises the share by 1.94 percentage points. This explains why the Gini indices increase four years after participation but does not clarify the findings in other years. The number of countries under an IMF program is not significant and thus a valid exclusion restriction, except in *h* eight and twelve. The total program years in the past of a country are not significant one year after treatment and is a valid exclusion restriction in that period, but it is significant in later years. The other controls behave similar as before. At least one Mills ratio is significant in only five periods. In the other periods their inclusion does not mitigate selection bias.

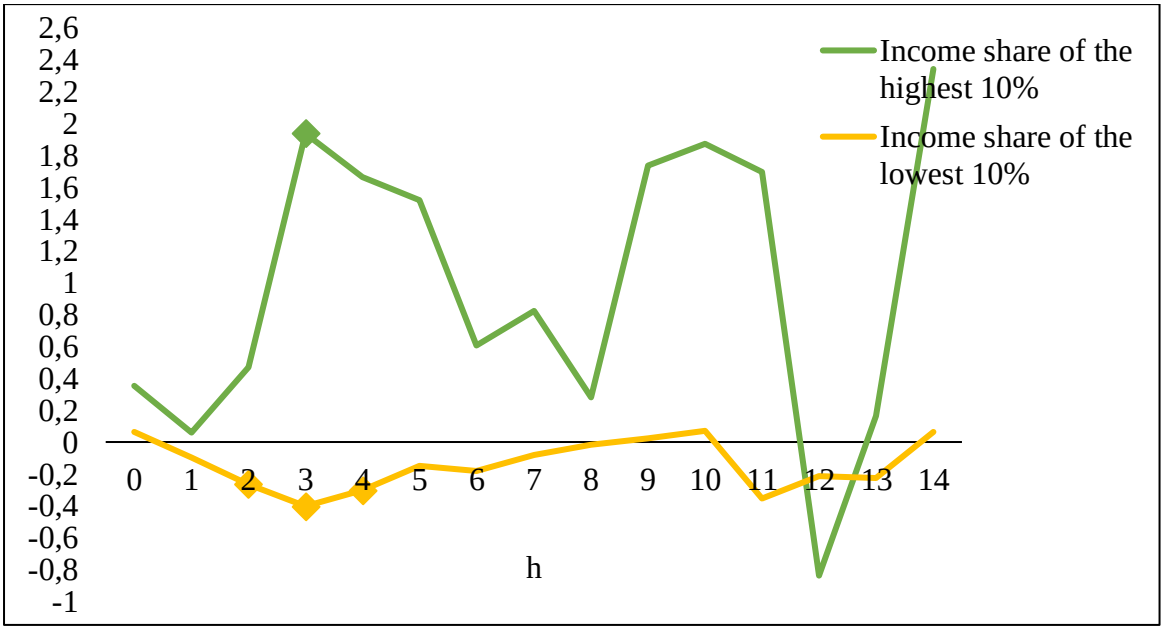
Income Share of the Lowest 10%

Table 15 in Appendix G shows the findings for the relationship between participation in an IMF program and the income share of the lowest 10%. Treatment lowers this income share three till five years later by between 0.26 and 0.40%. The effects are small but significant. In other years there is no observable impact. This explains why the Gini indices increase in the short-run but not why income inequality is lowered in the long-run. The number of countries in an IMF lending arrangement is not a valid exclusion restriction here as its coefficient is significant in *h* zero. The total past program years is insignificant in every year and thus valid. Total past program years, consecutive program years and years passed after a program are correlated with a larger income share of the poorest. At least one Mills ratio is significant in eight periods and in each period that the treatment coefficient is significant, but in the other years they do not mitigate selection bias.

Figure 2 plots the treatment estimates for the income shares. The coefficient of the income share of the highest 10% is usually positive and is large compared to that of the lowest 10%, which is close to zero and usually negative.

Figure 2

Model averaged coefficients of IMF program participation and the income share of highest and lowest 10%



Note: coefficients marked if statistically significant at p<0.1.

Taking the results for the different dependent variables together, there is evidence that participating in an IMF lending arrangement is associated with an increase in income inequality three till five years after treatment. The Gini index of market income is affected in more years, redistributive policies mitigate this so that the effect is not observable for the Gini index of disposable income. After thirteen till fifteen years income inequality is lowered by treatment, but this effect is smaller than the short-run increase. These long-run effects are observed after the average duration of the programs, which is 1.2 years. The changes in income inequality in the short run can be explained by changes at the extremes of the income distribution. Treatment raises the income share of the highest 10% four years later while lowering the income share of the lowest 10% three till five years later. However, the decrease of the Gini indices in the long run cannot be explained by shifts at the extremes of the income distribution. Presumably, there are income shifts closer to the middle that lower income inequality in the long run, but these are not included in my empirical estimation.

Baseline Results Concessional IMF Programs

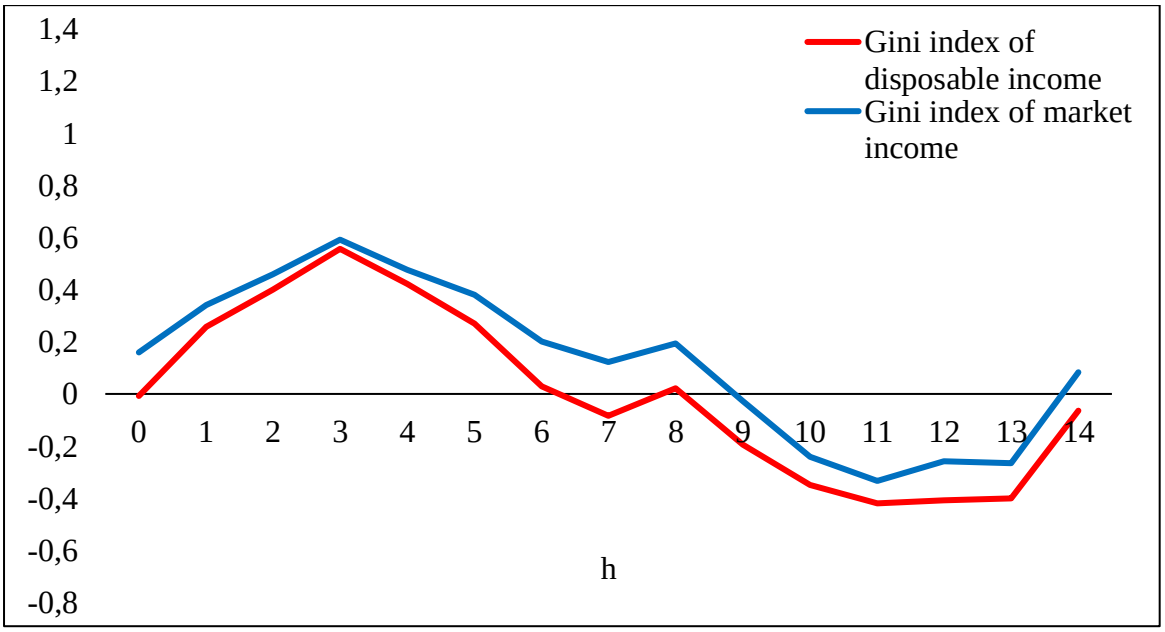
Up until now all IMF programs have been considered. Now the effects of concessional and non-concessional arrangements are isolated to analyse whether their treatment effects differ. Tables 16 till 19 in Appendix G present the findings for the relationship between concessional IMF agreements and the Gini index of disposable income, market income and the income share of the highest and lowest 10%. Participating in a concessional lending arrangement has no significant effect on either of the Gini indices but does influence the extremes of the income distribution. The income share of the highest 10% is raised with 2.76% four years after treatment and 4.02% eleven years later. Yet fourteen years after participation the share of the richest is lowered by 3.48%. The impact on the income of the poorest is smaller in magnitude. The income share of the lowest 10% is reduced by 0.29% four years after a country entered a concessional IMF arrangement. The income share is also lowered by 0.28% twelve years after treatment and 0.34% thirteen years later. The impact reverses after fifteen years when participation raises the income of the poorest by 0.24%. These findings suggest that concessional IMF programs can raise income inequality till thirteen years after treatment and start lowering income inequality fourteen years after treatment. Yet the impact is not substantial as there is no significant effect on the Gini indices. Countries under an IMF program is usually a valid exclusion restriction for the Gini index of disposable income, market income and the income share of the highest 10% and total past program years is valid for the income share of the lowest 10%. A mills ratio is significant in seven periods for the Gini index of disposable

income, ten years for that of market income, four periods for the income share of the highest 10% and nine years for the lowest 10%. In other periods their inclusion does not mitigate selection bias.

Figure 3 shows that for the Gini indices the treatment coefficients move similarly. A positive impact of treatment is larger on the Gini index of market income, while a negative effect is larger for the Gini value of disposable income.

Figure 3

Model averaged coefficients of concessional IMF program participation and the Gini index of disposable and market income

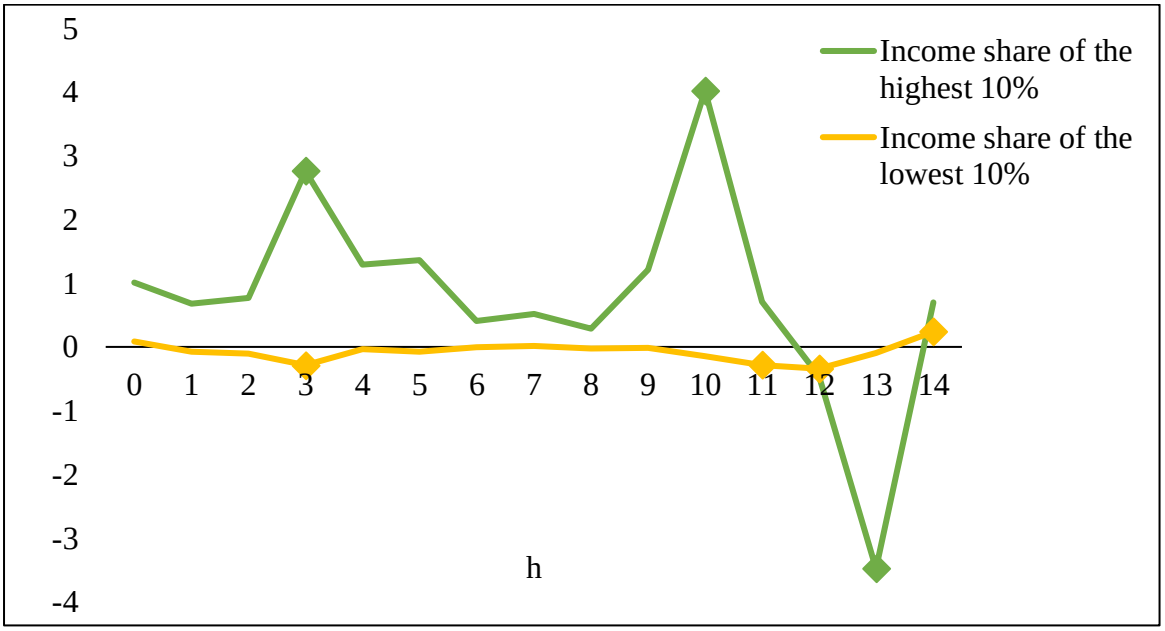


Note: coefficients marked if statistically significant at p<0.1.

Figure 4 shows that the treatment estimates for the income share of the highest 10% is large compared to those of the lowest 10%, whose coefficients are close to zero.

Figure 4

Model averaged coefficients of concessional IMF program participation and the income share of highest and lowest 10%



Note: coefficients marked if statistically significant at p<0.1.

Baseline Results Non-Concessional IMF Programs

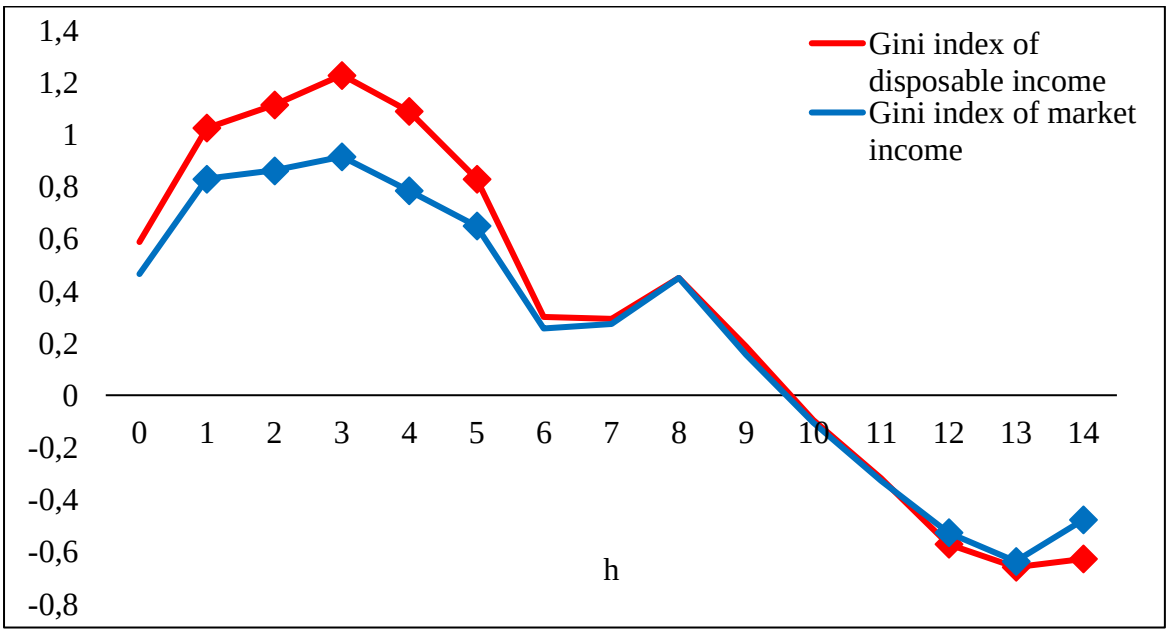
Tables 20 till 23 in Appendix G present the findings for non-concessional IMF programs. The impact on the Gini indices is similar to that observed for all IMF programs. If a country participates in a non-concessional IMF arrangement the Gini index of disposable income rises in the short run. This effect is observed two till six years after treatment and ranges from 0.83 till 1.23. This increase represents between 2% and 2.9% of the average Gini value of disposable income in my sample. The sign of the coefficient reverses in the long run as it lowers the Gini index thirteen till fifteen years after participation by between 0.57 and 0.66, which is between 1.4 and 1.6% of the mean Gini coefficient. For the Gini index of market income, the effect takes place in the same years but is smaller. If a country enters a non-concessional arrangement this increases the Gini index of market income two till six years after participation by between 0.65 and 0.91. This increase represents between 1.4 and 2% of the average Gini value of market income in my sample. In the long-run income inequality is reduced as the Gini index is lowered thirteen till fifteen years after treatment by between 0.48 and 0.64, which is between 1.1 and 1.4% of the mean Gini value. Therefore, income inequality rises two till five years after entering a non-concessional lending arrangement but is lowered in the long run. The coefficients are similar in size to the findings for all IMF programs. Non-concessional programs

barely affect the income shares of the bottom and top 10%. The income share of the highest 10% is raised six years after treatment by 1.50%. The impact on income share of the lowest 10% is smaller as it is lowered by 0.27% three years after participation. This partly explains the short-run income inequality changes in response to all IMF programs. The number of countries under an IMF program is a valid exclusion restriction for the income shares in most years and the Gini indices at *h* zero, although it is significant in later years. At least one mills ratio is significant in nine years for both the Gini index of disposable income and market income, in only three years for the income share of the highest 10% and eight periods for the lowest 10%. In other periods they are not able to mitigate selection bias.

Figure 5 shows that the treatment estimates of the Gini indices move closely together. Similar to Figure 1, program participation affects the significant coefficients of the Gini index of disposable income more than of market income.

Figure 5

Model averaged coefficients of non-concessional IMF program participation and the Gini index of disposable and market income

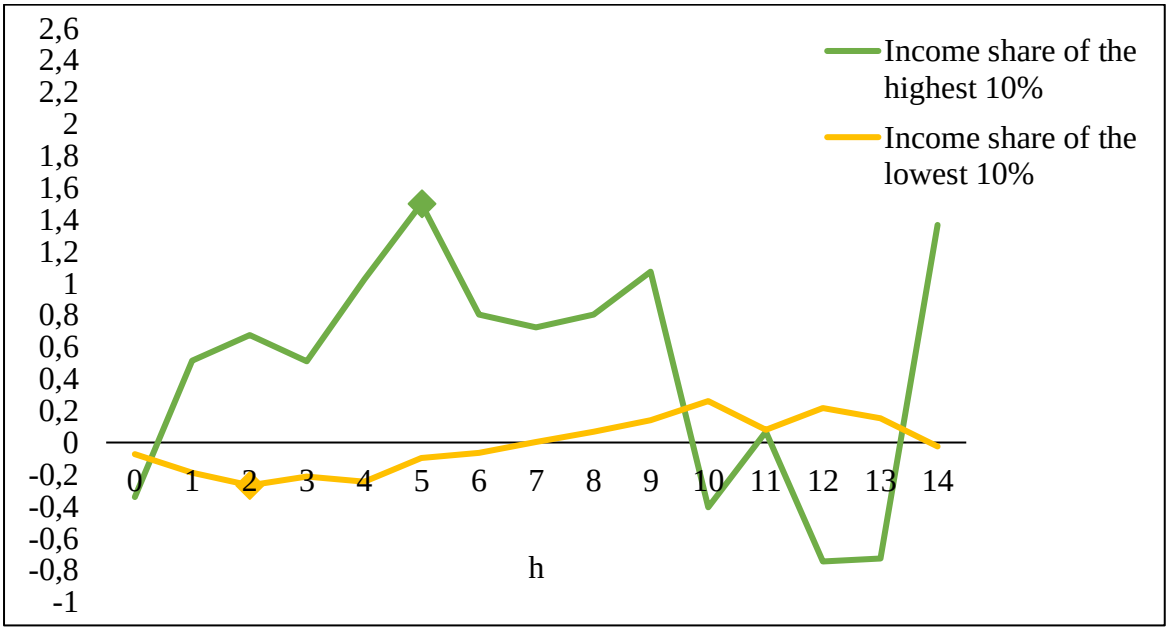


Note: coefficients marked if statistically significant at p<0.1.

Similar to before, Figure 6 shows that the treatment estimates for the income shares of the highest 10% are larger than that of the lowest 10%.

Figure 6

Model averaged coefficients of non-concessional IMF program participation and the income share of highest and lowest 10%



Note: coefficients marked if statistically significant at p<0.1.

Conclusion Baseline Results

To summarize, participation in an IMF program is related with higher income inequality in the short run. The Gini index of disposable income increases three till five years after treatment and for market income the rise is observable three till six years after program participation. Income inequality in market income also increases nine years after treatment. The estimated effect on the Gini index of market income is more frequent but smaller in magnitude, so it is ambiguous whether redistributive policies weaken or strengthen the impact of IMF programs. In the long-run income inequality is lowered. Program participation reduces both Gini indices thirteen till fifteen years later. However, the rise in income inequality in the short-run is about twice as large as the decline in the long-run. The Gini index might be lowered further outside my sample period. Program participation barely impacts the income share of the highest 10%. There is a small but significant impact on the income share of the lowest 10% as it is reduced three till five years after participation. The changes at the extremes of the income distribution help explain the rise of the Gini indices three till five years after treatment but do not explain why income inequality is lowered in the long run. Presumably, the improvement is caused by changes more to the middle of the income distribution.

Participation in a concessional lending arrangement does not significantly impact the Gini indices, they neither improve nor worsen income inequality. There is no clear pattern as to how concessional programs affect the income share of the highest 10% and lowest 10%. The changes at the extremes of the income distribution suggest that concessional IMF programs can raise income inequality till thirteen years after treatment and start lowering income inequality from fourteen years after treatment. But these changes have no observable effect on the Gini index.

If a country participates in a non-concessional IMF program income inequality is raised two till six years later. The impact on the Gini index of disposable income is larger than on that of market income. In the long-run income inequality is reduced as participation lowers the Gini indices thirteen till fifteen years after treatment. My findings suggest that the increase in income inequality in response to IMF programs is driven by non-concessional IMF agreements. Non-concessional agreements barely impact the income shares, whereas concessional lending arrangements have a more significant impact on the extremes of the income distribution. The increase of the Gini indices in the short-run can only partly be explained by changes at the extremes of the income distribution and the cause of the reduction of income inequality in the long-run remains unexplained. The rest of the income distribution needs to be analysed in order to determine which income shifts cause this long-run effect.

The short-run findings are in line with Forster et al. (2019), Garuda (2000), Oberdabernig (2013), Pastor (1987) and Vreeland (2002), who also observe positive effects of IMF program participation on inequality. Although the methodology for the short-run is similar to Oberdabernig (2013), my research suggests a much smaller impact on the Gini indices. The results for concessional programs are also different as Oberdabernig (2013) finds them to lower inequality whereas I observe no significant effect one year after participation. These different findings can be due to the different countries and time period studied by Oberdabernig (2013) as her work researches 1982 till 2009 whereas my sample ranges from 1979 till 2018. It is possible that the effect on inequality is large between 1982 and 2009 and smaller outside those years, for instance due to different reform strategies employed by the IMF. None of the papers study the long-run effect so I cannot compare my estimates to the findings of others.

There are also alternative explanations for these results. Firstly, the Mills ratios are often insignificant. This could be evidence that selection bias is small and already sufficiently mititgated by the control variables, control group and significant Mills ratios. However, I expected selection bias to be a substantial threat to the empirical estimation as countries do not enter IMF agreements randomly. It is also possible that the selection equations do not

adequetealy explain selection, so that selection bias is still present in the observed treatment effect. But in the periods with significant treatment coefficients there is usually at least one significant Mills ratio. So the observed treatment estimates are still close to the true causal effect. Secondly, countries participating in agreements might have higher income inequality regardless of the IMF loans. Thirdly, no distinction is made between time periods, different treatment effects can be present in different time samples. Fourthly, the effects observed for the non-concessional loans might entirely be due to Stand-By Arrangements, as they make up for 71% of the non-concessional sample and have the highest conditionality, when compared to other IMF programs (Oberdabernig, 2013). Finally, the treatment effect can also be biased if countries enter another arrangement between t-1 and t+h, a robustness check is carried out to consider this.

8. Robustness Check

This section presents the results of the robustness check. I first discuss the impact of all IMF programs and then compare the effect of concessional to non-concessional arrangements and end with some concluding remarks. As explained in the methodology section, it is possible that a country enters an IMF agreement multiple times within the sample period. A program can also last for more than one year, although the average consecutive program years in my sample is 1.2. To control for this I add a dummy variable that accounts for any additional program participation after the initial treatment decision. It is equal to one if a country enters an IMF agreement, either concessional or non-concessional, between t-1 and t+h. It is equal to zero if a country is not treated in any of the periods between t-1 and t+h. Table 5 in Appendix B lists the descriptive statistics for the subsequent treatment variable. It occurs frequently that a country participates in an IMF program after observing the treatment decision at t-1. Between t-1 and t+1 this concerns 28.3% of the sample, and between t-1 and t+14 this is 53.2%. Except for this additional variable the methodology is identical to the baseline's. The findings are presented in tables 24 till 35 and show that the baseline results are robust to countries being in a different program between t-1 and t+h. Thus, the estimated treatment effect at t+h reflects the effect of participating in a program at t-1 and not the effect of being in a new program at t+h.

Robustness Results All IMF Programs

Tables 24 till 27 in Appendix H present the robustness results for the relationship between participation in an IMF agreement and the Gini index of disposable income, of market income and the income shares of the highest and lowest 10%. The findings are similar to the

baseline results. The subsequent treatment variable is significant in several periods, in those years additional program participation affects the outcome variable. In the baseline results of the Gini index of market income there was no significant impact two years after participation, but there was a significant impact nine years after treatment, here that effect is no longer observable. The Gini index of market income is affected less by program participation between t-1 and t+h than the Gini value of disposable income. A possible explanation for this is that IMF reforms alter redistributive policies so that disposable income is changed more than market income. For the income share of the highest 10% there is a more substantial effect of program participation observed than in the baseline. If a country participates in an IMF agreement this raises the income share of the highest 10% four till six years later whereas in the baseline results the only significant impact is an increase after four years. The robustness findings for the income share of the lowest 10% are similar to the baseline results.

Robustness Results Concessional IMF Programs

Tables 28 till 31 in Appendix H present the results for the relationship between participation in a concessional IMF program and the four outcomes. Similar to the baseline findings, concessional IMF programs barely impact the Gini indices. The only significant effect is a reduction of 0.5 of the Gini index of disposable income twelve years after treatment, this effect is not observed in the baseline results. The findings for the income share of the highest 10% are similar to the baseline results. The results for the income share of the lowest 10% are similar to the baseline results as well, except that the baseline findings suggest a significant reduction twelve years after treatment which is not observable in the robustness check.

Robustness Results Non-Concessional IMF Programs

Tables 32 till 35 in Appendix H present the findings for the relationship between participation in a non-concessional IMF agreement and the four outcomes. The results are similar to the baseline. Except that there is a significant impact of treatment on the income share of the lowest 10% after two years which was not observable in the baseline results.

Conclusion Robustness Results

I now make some concluding remarks about the robustness results. Generally, the baseline and robustness results are similar. Program participation between t-1 and t+h did not affect the observed treatment effect greatly. But controlling for subsequent treatments improved the significance of several treatment coefficients, resulting in a more accurate estimate of the

causal effect of IMF program participation. The general conclusions remain the same. Income inequality increases in the short run if a country participates in any IMF lending arrangement. The Gini index of disposable income increases three till five years after treatment and the Gini index of market income rises two till six years after participation. The treatment estimates are larger for disposable income but longer for market income, so with participation in any IMF program the effect of redistributive policies is ambiguous. The robustness findings suggest that the income share of the highest 10% partly explain the short-run rise of the Gini indices, more than is observed in the baseline. Moreover, the short-run rise of income inequality is caused by non-concessional IMF lending arrangements, they raise both Gini indices two till six years after treatment. The Gini index of disposable income is raised more than that of market income. A possible explanation for this is that the non-concessional IMF programs reform taxes and transfers so that the redistribution of income towards the poor is lowered. Concessional programs have no substantial effect on the Gini index. In the long run the higher income inequality is partially offset as the Gini index is lowered thirteen till fifteen years after participation in any or a non-concessional IMF program. However, this reduction of income inequality in the long-run is smaller than its rise in the short-run. The increase of the Gini index in the short run can partly be explained by changes at the extremes of the income distribution. There is evidence that in some short-run periods program participation increases the income share of the top 10% while reducing that of the bottom 10%. But these developments do not explain the long-run reduction of income inequality. Presumably, this is caused by income shifts closer to the middle of the income distribution, but these are not included in my study.

9. Conclusion

This thesis studies both the short and long-term impact of IMF lending arrangements on income inequality in low and middle income countries, focusing on four different outcome variables: the Gini index of disposable income, the Gini index of market income, the income share of the highest 10% and the income share of the lowest 10%. The empirical analysis relies on a sample of 73 countries that covers the period 1979 till 2018 and builds on the methodology of Oberdabernig (2013) with two important extensions. First, it covers a larger period of time, allowing me to assess the long-term effects of IMF programs, which I do using the local projection methods by Jordà and Taylor (2013). Second, I also assess the relationship between participating in an IMF program and the income shares of the bottom and top 10%. My methodology combines the Heckman approach, which mitigates selection bias, with Bayesian

model averaging, to account for model uncertainty, and the local projections method, which allows me to estimate the short- and long-run effect.

The results suggest that participation in an IMF lending arrangement is related with higher income inequality in the short run. In the long-run program participation is associated with lower income inequality. However, the increase in the short-run is about double the long-run decline. These effects are driven by non-concessional lending arrangements. Non-concessional programs increase the Gini index of disposable income more than the Gini index of market income. A possible explanation for this is that reforms of the tax system, imposed by non-concessional IMF programs, lower income redistribution towards the poor. Concessional programs do not impact income inequality. The short-run increase in income inequality can partly be explained by changes at the extremes of the income distribution. But the long-run reduction of income inequality is not caused by the income share of the lowest or highest 10%. The long run lowering of inequality is presumably driven by income shifts in the middle eighty percent of the income distribution, but these are not part of my empirical estimation. My hypothesis that treatment is related with higher income inequality in the long run is refuted. But it is confirmed that non-concessional agreements have a more substantial impact.

My findings have important policy implications. Concessional loans should be preferred, and non-concessional lending should be reduced if one aims at maintaining the distribution of income. In addition, non-concessional programs should be reformed if the aim is to not redistribute income away from the poor. I furthermore advise the IMF to bear in mind that its lending practices have a lasting impact on equality and the lives of economically disadvantaged people. Lending terms should be drawn up carefully and not make matters worse.

10. Discussion

There are some limitations to my empirical estimation. Firstly, the same selection equations are used to model selection into any, concessional and non-concessional IMF programs. It is probable that countries participate in different forms of programs for different reasons, but this is not accounted for. Secondly, there are 29 observations in which a country participates in both a concessional and non-concessional program at the same time as it is possible to participate in more than one arrangement in one year. This biases the treatment effect. Thirdly, an important limitation is that the Mills ratios are insignificant in many regressions. This signals that they do not mitigate selection bias. It is not known whether selection bias is already sufficiently reduced by significant Mills ratios, the control group and control variables, or if the observed treatment effect still includes selection bias. Fourthly,

another shortcoming is that different time periods are not studied separately. It is possible that the treatment effect differs overtime as the IMF's ideas about economic development can change. Fifthly, there are data restrictions when researching developing countries over a long period. It could be that the treatment effect is different in countries that are excluded due to lack of data. A final threat is that the non-concessional loans in my sample are for 71% Stand-By Arrangements, which have the highest conditionality compared to other IMF programs (Oberdabernig, 2013). It could be that these programs cause the observed treatment estimates.

But these limitations offer possibilities for future research. Other studies could separately analyse different time periods and investigate how different economic development strategies impact inequality. In addition to this it can be analysed whether the Stand-By Arrangements alone cause the observed causal effects. Also, the long-run decline of income inequality cannot be explained by changes at the extremes of the income distribution, the other eighty percent should be analysed to see where the income shifts take place. Additionally, it can be studied whether the reduction in income inequality I observe thirteen till fifteen years after treatment continues after that. Furthermore, it should be researched what about non-concessional programs leads to greater income inequality, are it the large borrowing costs or the more substantial reforms imposed by higher conditionality?

[13144]

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12. Appendix A. Included Countries

Table 1

Included countries

1.	Algeria	26.	Ghana	51.	Nigeria
2.	Argentina	27.	Guatemala	52.	North Macedonia
3.	Armenia	28.	Guinea	53.	Pakistan
4.	Azerbaijan	29.	Guyana	54.	Papua New Guinea
5.	Bangladesh	30.	Honduras	55.	Paraguay
6.	Belarus	31.	India	56.	Peru
7.	Bolivia	32.	Indonesia	57.	Philippines
8.	Brazil	33.	Jamaica	58.	Russian Federation
9.	Bulgaria	34.	Jordan	59.	Rwanda
10.	Burundi	35.	Kazakhstan	60.	Sierra Leone
11.	Cameroon	36.	Kenya	61.	Solomon Islands
12.	Central African Republic	37.	Kyrgyz Republic	62.	South Africa
13.	Chad	38.	Lao PDR	63.	Sri Lanka
14.	China	39.	Liberia	64.	Sudan
15.	Colombia	40.	Madagascar	65.	Tajikistan
16.	Comoros	41.	Malawi	66.	Tanzania
17.	Congo, Rep.	42.	Mauritania	67.	Thailand
18.	Costa Rica	43.	Mauritius	68.	Tunisia
19.	Dominican Republic	44.	Mexico	69.	Turkey
20.	Ecuador	45.	Moldova	70.	Uganda
21.	Egypt, Arab Rep.	46.	Mongolia	71.	Ukraine
22.	El Salvador	47.	Morocco	72.	Vietnam
23.	Gabon	48.	Mozambique	73.	Zambia
24.	Gambia, The	49.	Nepal		
25.	Georgia	50.	Nicaragua		

13. Appendix B. Descriptive Statistics

Outcome variables

Table 2

Descriptive statistics outcome variables

	Observations	Mean	Std. Dev.	Min	Max
Gini index disposable income	2,097	41.90	6.89	23.4	59.8
Gini index market income	2,097	45.11	7.12	22.4	68.7
Income share of lowest 10%	815	2.25	1.06	0.1	4.8
Income share of highest 10%	815	33.12	7.04	20.6	61.5

Treatment

Table 3

Descriptive statistics treatment variables

	Observations	= 0	= 1
Concessional IMF program	2920	88.15%	11.85%
IMF program	2920	71.68%	28.32%
Non concessional IMF program	2920	82.53%	17.47%

Control variables

Table 4

Descriptive statistics continuous control variables

	Observations	Mean	Std. Dev.	Min	Max
Change in GDP growth	2,709	-28.47	1205.50	-40613.05	24414.42
Countries under program	2,920	20.68	10.36	5	41
Ln(Credit)	2,599	2.99	0.88	-0.04	5.12
Current account balance	2,500	-4.41	8.11	-65.03	33.68
Debt Service	2,703	5.36	5.66	0	102.22
Democracy index	2,778	1.59	6.38	-10	10
Exchange rate growth	2,682	136.36	5084.84	-99.99	262676.70
Ln(GDP)	2,102	24.94	1.93	20.29	30.67
GDP growth	2,731	3.55	5.33	-50.25	35.22
Ln(GDP per capita)	2,102	8.48	0.89	6.08	10.25
GDP per capita growth	2,731	1.67	5.27	-47.50	37.54
Government consumption	2,605	13.56	5.33	0.91	53.23
Ln(Inflation)	2,561	2.28	1.35	-4.41	9.65
Ln(Investment)	2,594	3.01	0.40	-1.23	4.49
Life expectancy	2,920	63.34	9.19	26.17	80.10
Natural resource rents	2,673	8.18	9.29	0	59.62
Population growth	2,880	1.86	1.22	-9.08	8.12
Program years, trend	2,920	1.20	2.80	0	25
Reserves	2,667	44.42	187.46	0.01	3840.12
Total past program years	2,920	6.97	5.80	0	28
Ln(Trade)	2,688	4.08	0.54	1.84	5.74
Urban population	2,920	44.48	20.08	4.18	91.87
Value added of agriculture	2,594	20.11	12.75	2.09	79.04
Vote in line with G7	2,074	0.40	0.15	0	0.90
Years after program, trend	2,432	6.46	7.54	0	35

Table 5

Descriptive statistics categorical control variables

	Observations	= 0	= 1
Hyperinflation dummy	2,718	91.76%	8.24%
Subsequent treatments h=1	2,920	71.68%	28.32%
Subsequent treatments h=2	2,920	65.75%	34.25%
Subsequent treatments h=3	2,920	61.95%	38.05%
Subsequent treatments h=4	2,920	59.14%	40.86%
Subsequent treatments h=5	2,920	56.88%	43.12%
Subsequent treatments h=6	2,920	55.07%	44.93%
Subsequent treatments h=7	2,920	53.49%	46.51%
Subsequent treatments h=8	2,920	52.12%	47.88%
Subsequent treatments h=9	2,920	50.86%	49.14%
Subsequent treatments h=10	2,920	49.86%	50.14%
Subsequent treatments h=11	2,920	48.94%	51.06%
Subsequent treatments h=12	2,920	48.18%	51.82%
Subsequent treatments h=13	2,920	47.47%	52.53%
Subsequent treatments h=14	2,920	46.82%	53.18%

14. Appendix C. Selection Equations

Table 6

Selection equations

Variable	1	2	3	4	5
Countries under program $_{t-1}$	x	x	x	x	x
Debt service $_{t-1}$	x	x	x	x	x
Ln(GDP per capita) $_{t-1}$	x	x	x	x	x
Ln(GDP per capita) $_{t-1,}$ squared	x	x	x	x	x
Total past program years $_{t-1}$	x	x	x	x	x
Region dummies	x	x	x	x	x
Reserves $_{t-1}$	x	x	x	x	x
Trade $_{t-1}$	x	x	x	x	x
Vote in line with G7 $_{t-1}$	x	x	x	x	x
Ln(GDP) $_{t-1}$		x			x
Ln(GDP) $_{t-1}$, squared		x			x
Change in GDP growth $_{t-1}$			x		x
GDP growth $_{t-1}$			x		x
Current account balance $_{t-1}$				x	x

Note: This table shows the variables used in the selection equations following Oberdabernig's (2013) methodology.

15. Appendix D. Outcome Equations

Table 7

Outcome equations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Ln(GDP per capita) $_{t-1}$	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Democracy index $_{t-1}$	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Program years $_{t-1}$, trend	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Years after program $_{t-1}$, trend	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Vote in line with G7 $_{t-1}$	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Countries under program $_{t-1}$	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Total past program years $_{t-1}$	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Ln(GDP per capita) $_{t-1}$, squared		x															x
GDP per capita growth $_{t-1}$			x													x	x
Population growth $_{t-1}$				x													x
Ln(Investment) $_{t-1}$					x											x	x
Ln(Trade) $_{t-1}$						x										x	x
Exchange rate growth $_{t-1}$							x									x	x
Ln(Credit) $_{t-1}$								x								x	x
Government consumption $_{t-1}$									x							x	x
Ln(Inflation) $_{t-1}$										x							x
Hyperinflation dummy $_{t-1}$										x						x	x
Natural resource rents $_{t-1}$											x					x	x
Value added of agriculture $_{t-1}$												x					x
Urban population $_{t-1}$													x				x
Life expectancy $_{t-1}$														x			x
Time trend $_{t}$															x		x

Note: This table shows the variables used in the outcome equations following Oberdabernig's (2013) methodology.

16. Appendix E. Description of Variables

Table 8

Variables description and sources

Variable	Description	Source
Concessional IMF program dummy	Equal to 1 if a country is under a concessional IMF arrangement for at least 4 months in year *i* and 0 if not	IMF (2020)
Change in GDP growth	Annual change	World Bank (2020a)
Countries under program	Number of nations in an IMF arrangement	IMF (2020)
Country	Capturing country fixed effects	
Credit	National credit to private sector, as a percentage of GDP	World Bank (2020a)
Current account balance	As a percentage of GDP	World Bank (2020a)
Debt Service	As a percentage of GNI	World Bank (2020a)
Democracy index	Polity IV index where -10 signals greatly autocratic and +10 is greatly democratic	Marshall, Gurr, and Jaggers (2018)
Subsequent treatments dummy	Equal to 1 if a country is in an IMF agreement in any of the years between t-1 and t+h. Equal to 0 otherwise.	
Exchange rate growth	Yearly growth of official currency rate, local currency unit (LCU) per USD	World Bank (2020a)
GDP	Purchasing power parity (PPP), constant 2017 international dollars	World Bank (2020a)
GDP growth	Yearly growth	World Bank (2020a)
GDP per capita	PPP, constant 2017 international dollars	World Bank (2020a)
GDP per capita growth	Yearly growth	World Bank (2020a)
Gini index disposable income	Inequality of income after tax and transfers, on a scale of 0 to 100	(Solt, 2019)
Gini index market income	Inequality of income before tax and transfers, on a scale of 0 to 100	(Solt, 2019)
Government consumption	As a percentage of GDP	World Bank (2020a)
Hyperinflation dummy	Equal to one for inflation larger than 50%	World Bank (2020a)
IMF program dummy	Equal to 1 if a country is under an IMF arrangement for at least 4 months in year *i* and 0 if a country is not or less than 4 months under an IMF arrangement in year *i*	IMF (2020)
Inflation	GDP deflator, yearly percentage	World Bank (2020a)

(continued on next page)

Table 8: Continued

Investment	Gross fixed capital formation, as a percentage of GDP	World Bank (2020a)
Income share of highest 10%	Percentage share of income	(World Bank, 2020a)
Income share of lowest 10%		(World Bank, 2020a)
Life expectancy	At birth, in years	World Bank (2020a)
Natural resource rents	As a percentage of GDP	World Bank (2020a)
Non-concessional IMF program dummy	Equal to 1 if a country is under a non-concessional IMF arrangement for at least 4 months in year *i* and 0 if not	IMF (2020)
Population growth	Annual percentage	World Bank (2020a)
Program years, trend	Number of consecutive programs years of a state	IMF (2020)
Region dummies		World Bank (2020a)
Reserves	As a percentage of external debt	World Bank (2020a)
Total past program years	Cumulative number of years that a nation has been in an IMF arrangement in the past	IMF (2020)
Trade	As a percentage of GDP	World Bank (2020a)
Time trend	Time trend capturing time fixed effects	
Urban population	Percentage of total	World Bank (2020a)
Value added of agriculture	Percentage of GDP	World Bank (2020a)
Vote in line with G7	Definition according to Barro and Lee (2005), voting in line with the G7 countries at the UN General Assembly	Dreher and Sturm (2012)
Years after program, trend	Number of years after the last IMF arrangement	IMF (2020)

Note: source Oberdabernig (2013). [3]

[3] The same variables as in Oberdabernig (2013) are considered but for a few exceptions. The income share of the lowest and highest 10% are added for this thesis. A dummy signalling deprecation larger than 200%, a dummy for deflation and the variable years before program are removed due to collinearity. Years of schooling is excluded as it is only observed once every five years and this lowered complete observations.

17. Appendix F. Selection Equation Results

All IMF Programs

Table 9

Probit regression results for selection into all IMF programs

	(1)	(2)	(3)	(4)	(5)
Countries under program	0.0117***	0.0117***	0.0116***	0.0111***	0.0109***
	(0.0016)	(0.0016)	(0.0016)	(0.0016)	(0.0016)
Debt service	0.0129***	0.0134***	0.0127***	0.0123***	0.0131***
	(0.0045)	(0.0046)	(0.0045)	(0.0042)	(0.0043)
Ln(GDP per capita)	0.5281	0.1857	0.5159	0.3947	0.2182
	(0.7332)	(0.7038)	(0.7236)	(0.6899)	(0.7008)
Ln(GDP per capita), squared	-0.0409	-0.0190	-0.0402	-0.0311	-0.0189
	(0.0446)	(0.0430)	(0.0441)	(0.0417)	(0.0424)
Total past program years	0.0117**	0.0109*	0.0116**	0.0110*	0.0114*
	(0.0059)	(0.0060)	(0.0058)	(0.0065)	(0.0066)
Reserves	-0.0025**	-0.0023*	-0.0027**	-0.0043***	-0.0042***
	(0.0013)	(0.0012)	(0.0013)	(0.0014)	(0.0014)
Ln(Trade)	-0.0015*	-0.0017**	-0.0016**	-0.0014*	-0.0017**
	(0.0008)	(0.0009)	(0.0008)	(0.0007)	(0.0009)
Vote in line with G7	0.0310	0.0271	0.0281	-0.0847	-0.0836
	(0.1358)	(0.1344)	(0.1339)	(0.1591)	(0.1560)
Ln(GDP)		0.5755			0.2462
		(0.3758)			(0.3655)
Ln(GDP), squared		-0.0119			-0.0054
		(0.0075)			(0.0072)
Change in GDP growth			-0.0000		-0.0000
			(0.0000)		(0.0000)
GDP growth			0.0013		-0.0003
			(0.0022)		(0.0032)
Current account balance				0.0022	0.0023
				(0.0023)	(0.0024)

Notes: All explanatory variables are lagged 1 year. Marginal effects are presented. Robust standard errors in parentheses. Region dummies included in regression but not shown in table. *** p<0.01, ** p<0.05, * p<0.1

Concessional IMF programs

Table 10

Probit regression results for selection into concessional IMF programs

	(1)	(2)	(3)	(4)	(5)
Countries under program	0.0051***	0.0049***	0.0052***	0.0052***	0.0051***
	(0.0013)	(0.0013)	(0.0013)	(0.0012)	(0.0012)
Debt service	0.0046	0.0047	0.0043	0.0041	0.0041
	(0.0032)	(0.0031)	(0.0031)	(0.0032)	(0.0031)
Ln(GDP per capita)	1.3112*	0.9888	1.1644*	1.4661**	1.3021*
	(0.7104)	(0.6320)	(0.6955)	(0.7443)	(0.7200)
Ln(GDP per capita), squared	-0.0985**	-0.0765*	-0.0892**	-0.1057**	-0.0934**
	(0.0456)	(0.0406)	(0.0446)	(0.0475)	(0.0459)
Total past program years	0.0107**	0.0100**	0.0098**	0.0106**	0.0096**
	(0.0045)	(0.0045)	(0.0041)	(0.0047)	(0.0043)
Reserves	-0.0007	-0.0004	-0.0008	-0.0015*	-0.0014*
	(0.0007)	(0.0007)	(0.0008)	(0.0008)	(0.0008)
Ln(Trade)	-0.0005	-0.0005	-0.0005	-0.0003	-0.0004
	(0.0005)	(0.0005)	(0.0005)	(0.0005)	(0.0005)
Vote in line with G7	0.0608	0.0644	0.0618	-0.0124	-0.0051
	(0.0891)	(0.0843)	(0.0850)	(0.0958)	(0.0870)
Ln(GDP)		1.1895***			0.8157**
		(0.4148)			(0.3199)
Ln(GDP), squared		-0.0252***			-0.0176***
		(0.0086)			(0.0066)
Change in GDP growth			0.0000		0.0000
			(0.0000)		(0.0000)
GDP growth			0.0038**		0.0053***
			(0.0016)		(0.0019)
Current account balance				0.0030*	0.0030**
				(0.0015)	(0.0014)

Notes: All explanatory variables are lagged 1 year. Marginal effects are presented. Robust standard errors in parentheses. Region dummies included in regression but not shown in table. *** p<0.01, ** p<0.05, * p<0.1

Non-Concessional IMF Programs

Table 11

Probit regression results for selection into non-concessional IMF programs

	(1)	(2)	(3)	(4)	(5)
Countries under program	0.0067***	0.0067***	0.0064***	0.0064***	0.0061***
	(0.0013)	(0.0013)	(0.0012)	(0.0014)	(0.0014)
Debt service	0.0044**	0.0043**	0.0048**	0.0060**	0.0064**
	(0.0019)	(0.0019)	(0.0020)	(0.0030)	(0.0029)
Ln(GDP per capita)	0.3906	0.4954	0.3896	0.1751	0.3062
	(0.4686)	(0.4871)	(0.4424)	(0.5547)	(0.5548)
Ln(GDP per capita), squared	-0.0187	-0.0251	-0.0182	-0.0060	-0.0130
	(0.0281)	(0.0294)	(0.0265)	(0.0328)	(0.0330)
Total past program years	-0.0013	-0.0010	-0.0001	-0.0023	-0.0008
	(0.0048)	(0.0047)	(0.0048)	(0.0055)	(0.0054)
Reserves	-0.0030**	-0.0031**	-0.0028**	-0.0036**	-0.0034**
	(0.0012)	(0.0012)	(0.0011)	(0.0015)	(0.0014)
Ln(Trade)	-0.0003	-0.0003	-0.0003	-0.0005	-0.0005
	(0.0006)	(0.0007)	(0.0006)	(0.0007)	(0.0007)
Vote in line with G7	0.0579	0.0611	0.0541	-0.0154	-0.0257
	(0.0996)	(0.1004)	(0.1023)	(0.1160)	(0.1165)
Ln(GDP)		-0.2218			-0.2818
		(0.2720)			(0.2967)
Ln(GDP), squared		0.0045			0.0056
		(0.0054)			(0.0059)
Change in GDP growth			-0.0000*		-0.0000*
			(0.0000)		(0.0000)
GDP growth			-0.0040*		-0.0054**
			(0.0020)		(0.0022)
Current account balance				0.0007	0.0006
				(0.0019)	(0.0019)

Notes: All explanatory variables are lagged 1 year. Marginal effects are presented. Robust standard errors in parentheses. Region dummies included in regression but not shown in table. *** p<0.01, ** p<0.05, * p<0.1

18. Appendix G. Tables Baseline Results

All IMF Programs, Gini Index Disposable Income

Table 12

Model averaged panel regression results for the Gini index of disposable income, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.3077	0.0084	-0.1469**	-0.0329	-0.1113***	-0.2714	-0.3156
	(0.3800)	(0.0068)	(0.0672)	(0.0285)	(0.0419)	(0.2206)	(0.2001)
h=1	0.626	-0.0013	-0.1888**	-0.0477**	-0.1341***	-0.29	-0.3993*
	(0.4218)	(0.0082)	(0.0761)	(0.0217)	(0.0463)	(0.2173)	(0.2214)
h=2	0.9457**	-0.011	-0.2452***	-0.0481**	-0.1691***	-0.2774	-0.5322**
	(0.4674)	(0.0098)	(0.0871)	(0.0224)	(0.0516)	(0.2324)	(0.2399)
h=3	1.0856**	-0.0299**	-0.346***	-0.0314	-0.2275***	-0.2656	-0.5683**
	(0.4881)	(0.0140)	(0.1069)	(0.0253)	(0.0620)	(0.2359)	(0.2461)
h=4	0.9398*	-0.0324**	-0.3812***	-0.0181	-0.2355***	-0.2286	-0.4815*
	(0.5021)	(0.0143)	(0.1158)	(0.0272)	(0.0645)	(0.2196)	(0.2511)
h=5	0.6997	-0.0282**	-0.3775***	-0.0127	-0.2241***	-0.1423	-0.3561
	(0.4610)	(0.0121)	(0.1181)	(0.0315)	(0.0588)	(0.1823)	(0.2410)
h=6	0.2349	-0.0192*	-0.351***	-0.0146	-0.2018***	-0.0162	-0.0968
	(0.3709)	(0.0116)	(0.1199)	(0.0338)	(0.0532)	(0.1523)	(0.1973)
h=7	0.2062	0.0011	-0.3154**	-0.025	-0.184***	-0.0859	-0.0708
	(0.3645)	(0.0087)	(0.1228)	(0.0365)	(0.0478)	(0.1439)	(0.1844)
h=8	0.4768	0.0696***	-0.2812**	-0.0505	-0.1744***	-0.2546*	-0.2648
	(0.3830)	(0.0211)	(0.1227)	(0.0374)	(0.0473)	(0.1508)	(0.2063)
h=9	0.1157	0.0357***	-0.2845**	-0.0609	-0.1829***	-0.1412	-0.0788
	(0.3427)	(0.0119)	(0.1270)	(0.0372)	(0.0495)	(0.1213)	(0.1720)
h=10	-0.1283	0.0266**	-0.2747**	-0.0843**	-0.1782***	-0.0455	0.0293
	(0.2751)	(0.0109)	(0.1345)	(0.0407)	(0.0542)	(0.0963)	(0.1489)
h=11	-0.2788	0.0194**	-0.2659**	-0.0985***	-0.1561***	-0.0008	0.1016
	(0.2661)	(0.0088)	(0.1313)	(0.0314)	(0.0533)	(0.1023)	(0.1566)
h=12	-0.5798**	0.02**	-0.2606*	-0.0806***	-0.1165***	0.1678*	0.2808**
	(0.2433)	(0.0096)	(0.1375)	(0.0284)	(0.0438)	(0.0881)	(0.1323)
h=13	-0.5299***	0.0043	-0.2883*	-0.0602**	-0.1147*	0.1105	0.2344**
	(0.1990)	(0.0202)	(0.1674)	(0.0272)	(0.0631)	(0.0963)	(0.1016)
h=14	-0.4932***	0.0958***	-0.144	-0.0608***	0.0589	0.1898**	0.2529**
	(0.1914)	(0.0324)	(0.1847)	(0.0227)	(0.0475)	(0.0864)	(0.1118)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

All IMF Programs, Gini Index Market Income

Table 13

Model averaged panel regression results for the Gini index of market income, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.328	0.0089	-0.1562***	-0.0385	-0.1047***	-0.2621	-0.2966*
	(0.3351)	(0.0060)	(0.0589)	(0.0279)	(0.0384)	(0.1951)	(0.1741)
h=1	0.591	-0.0001	-0.1921***	-0.0502**	-0.1236***	-0.2598	-0.3603*
	(0.3661)	(0.0074)	(0.0673)	(0.0213)	(0.0420)	(0.1924)	(0.1896)
h=2	0.854**	-0.0082	-0.2378***	-0.0518**	-0.1519***	-0.2427	-0.4648**
	(0.3982)	(0.0090)	(0.0760)	(0.0208)	(0.0464)	(0.2035)	(0.2026)
h=3	0.9479**	-0.0248**	-0.3235***	-0.0358	-0.2025***	-0.2217	-0.4878**
	(0.4120)	(0.0125)	(0.0919)	(0.0221)	(0.0553)	(0.2075)	(0.2061)
h=4	0.8147*	-0.0267**	-0.3523***	-0.0234	-0.2093***	-0.2028	-0.4201**
	(0.4159)	(0.0126)	(0.0990)	(0.0236)	(0.0568)	(0.1970)	(0.2086)
h=5	0.6833*	-0.0242**	-0.3512***	-0.0199	-0.2047***	-0.178	-0.3674*
	(0.3731)	(0.0106)	(0.1007)	(0.0272)	(0.0522)	(0.1682)	(0.2002)
h=6	0.329	-0.0174	-0.3256***	-0.023	-0.1881***	-0.0838	-0.1868
	(0.3012)	(0.0106)	(0.1026)	(0.0293)	(0.0482)	(0.1397)	(0.1698)
h=7	0.3218	0.0018	-0.2883***	-0.036	-0.1682***	-0.1581	-0.1796
	(0.2882)	(0.0082)	(0.1031)	(0.0315)	(0.0430)	(0.1232)	(0.1563)
h=8	0.5792*	0.0676***	-0.253**	-0.0591*	-0.1534***	-0.3061**	-0.3679**
	(0.3232)	(0.0172)	(0.1016)	(0.0320)	(0.0416)	(0.1289)	(0.1859)
h=9	0.1847	0.0303***	-0.2606**	-0.0626*	-0.1593***	-0.1807*	-0.1491
	(0.2982)	(0.0101)	(0.1075)	(0.0321)	(0.0438)	(0.1048)	(0.1571)
h=10	-0.0538	0.0194*	-0.2589**	-0.0801**	-0.1543***	-0.0615	-0.0253
	(0.2461)	(0.0100)	(0.1103)	(0.0345)	(0.0472)	(0.0785)	(0.1358)
h=11	-0.2845	0.0162**	-0.2544**	-0.0851***	-0.1297***	0.0257	0.1184
	(0.2661)	(0.0080)	(0.1098)	(0.0295)	(0.0464)	(0.0864)	(0.1607)
h=12	-0.4652**	0.0171**	-0.2462**	-0.0693***	-0.0927**	0.1346*	0.2258*
	(0.2354)	(0.0084)	(0.1201)	(0.0253)	(0.0391)	(0.0786)	(0.1317)
h=13	-0.478***	-0.0031	-0.2882*	-0.0516**	-0.0994*	0.116	0.2066**
	(0.1791)	(0.0164)	(0.1572)	(0.0230)	(0.0533)	(0.0755)	(0.0919)
h=14	-0.2845**	0.0472*	-0.2123	-0.0479**	0.0078	0.084	0.1232
	(0.1398)	(0.0266)	(0.1758)	(0.0190)	(0.0426)	(0.0703)	(0.0797)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

All IMF Programs, Income Share of Highest 10%

Table 14

Model averaged panel regression results for the income share of highest 10%, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.3542	0.0568	-0.1593	-0.1258	-0.0831	-0.2809	-0.3308
	(1.1030)	(0.0427)	(0.1980)	(0.1430)	(0.1086)	(0.3627)	(0.2468)
h=1	0.0606	0.0365	-0.2606	-0.1268	-0.2184*	-0.608*	-0.2829
	(1.0690)	(0.0458)	(0.2041)	(0.1018)	(0.1295)	(0.3665)	(0.3255)
h=2	0.4678	0.0442	-0.2675	-0.1382*	-0.2698**	-0.7963	-0.6286
	(0.9882)	(0.0476)	(0.1846)	(0.0720)	(0.1249)	(0.6216)	(0.4412)
h=3	1.9357**	0.0181	-0.3775*	-0.1826**	-0.26	-0.8787	-0.6196
	(0.9588)	(0.0549)	(0.2146)	(0.0798)	(0.1637)	(0.7170)	(0.4849)
h=4	1.6608	0.0303	-0.3761	-0.1106	-0.1976	-0.223	-0.4889
	(1.0345)	(0.0519)	(0.2654)	(0.0897)	(0.1728)	(0.6133)	(0.4901)
h=5	1.518	-0.0006	-0.5351**	-0.0966	-0.4354***	-0.8635	-0.9505*
	(0.9310)	(0.0538)	(0.2462)	(0.0846)	(0.1272)	(0.6609)	(0.5026)
h=6	0.6051	0.0197	-0.3306	-0.0908	-0.3638**	-0.3691	-0.6079
	(1.1490)	(0.0466)	(0.2699)	(0.0873)	(0.1840)	(0.6290)	(0.5659)
h=7	0.8215	0.0617	-0.5457*	-0.032	-0.3252**	-0.2788	-0.4328
	(1.2318)	(0.0604)	(0.2902)	(0.1057)	(0.1311)	(0.6098)	(0.6857)
h=8	0.2801	0.1239*	-0.5223**	0.0247	-0.3289**	0.3549	0.2797
	(1.3422)	(0.0638)	(0.2581)	(0.1103)	(0.1371)	(0.7369)	(0.7657)
h=9	1.7364	0.093	-0.6871**	-0.0232	-0.3471**	-0.4213	-0.73
	(1.1396)	(0.0687)	(0.3254)	(0.1401)	(0.1576)	(0.8543)	(0.6180)
h=10	1.8732	0.0636	-0.7064**	-0.1372	-0.4656***	-1.1859*	-1.0364
	(1.2749)	(0.0713)	(0.2816)	(0.0948)	(0.1703)	(0.7202)	(0.7311)
h=11	1.6942	0.0802	-0.5538*	-0.0875	-0.3899*	-1.5645*	-1.4896*
	(1.5544)	(0.0856)	(0.3247)	(0.0817)	(0.2320)	(0.8428)	(0.8712)
h=12	-0.8384	0.1637**	-0.4993	0.0014	-0.3629	-0.1626	0.4666
	(1.4874)	(0.0662)	(0.5065)	(0.0869)	(0.4396)	(1.0237)	(0.9030)
h=13	0.162	0.1342	-0.2851	-0.011	-0.471	-0.495	-0.7182
	(1.8080)	(0.2029)	(0.8049)	(0.0932)	(0.7066)	(0.9766)	(1.1018)
h=14	2.3409	-0.1461	-1.2127	0.1227	-1.977	-0.9623	-2.027
	(2.1525)	(0.2495)	(7.7933)	(0.2048)	(7.7990)	(0.9452)	(1.3235)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

All IMF Programs, Income Share of Lowest 10%

Table 15

Model averaged panel regression results for the income share of lowest 10%, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.0621	-0.0075*	-0.0003	0.0082	0.0261*	0.109	0.0801
	(0.1387)	(0.0042)	(0.0256)	(0.0153)	(0.0134)	(0.0754)	(0.0551)
h=1	-0.0976	-0.0036	0.0001	0.0235**	0.0344**	0.0942	0.0761
	(0.1359)	(0.0041)	(0.0261)	(0.0119)	(0.0151)	(0.0588)	(0.0540)
h=2	-0.2644*	-0.0029	0.0012	0.0304***	0.0411**	0.1471	0.1312*
	(0.1473)	(0.0048)	(0.0216)	(0.0110)	(0.0170)	(0.0920)	(0.0769)
h=3	-0.4029***	0.0007	0.0182	0.0306***	0.0416**	0.1735*	0.1508**
	(0.1339)	(0.0059)	(0.0250)	(0.0111)	(0.0209)	(0.0925)	(0.0634)
h=4	-0.3033*	0.0009	0.0082	0.0183*	0.0409*	0.1168	0.1312*
	(0.1674)	(0.0057)	(0.0298)	(0.0102)	(0.0214)	(0.0981)	(0.0762)
h=5	-0.151	-0.0002	0.0185	0.0129	0.0524**	0.0799	0.0937
	(0.1732)	(0.0049)	(0.0241)	(0.0117)	(0.0204)	(0.1133)	(0.1057)
h=6	-0.1803	-0.0071	0.0065	0.0061	0.0498***	0.1562	0.13
	(0.1678)	(0.0062)	(0.0263)	(0.0115)	(0.0181)	(0.1151)	(0.0991)
h=7	-0.0811	-0.0124	0.0089	0.0011	0.038**	-0.0088	0.0596
	(0.1647)	(0.0094)	(0.0311)	(0.0092)	(0.0160)	(0.0722)	(0.0983)
h=8	-0.0176	-0.0135	0.0169	0.0009	0.0328*	-0.0379	-0.0437
	(0.1760)	(0.0113)	(0.0263)	(0.0111)	(0.0178)	(0.0925)	(0.0926)
h=9	0.0213	-0.006	0.0475	-0.0073	0.0522**	0.042	-0.0283
	(0.1147)	(0.0072)	(0.0341)	(0.0145)	(0.0229)	(0.0855)	(0.0609)
h=10	0.0701	-0.0135*	0.0229	0.0074	0.0566*	0.1267	-0.0307
	(0.1740)	(0.0082)	(0.0378)	(0.0109)	(0.0326)	(0.1177)	(0.0943)
h=11	-0.3545	-0.0046	0.0581	0.0013	0.0606	0.2878**	0.1879
	(0.2431)	(0.0078)	(0.0459)	(0.0059)	(0.0448)	(0.1346)	(0.1324)
h=12	-0.2124	-0.0104	0.0705	-0.0053	0.0529	0.2004**	0.115
	(0.1465)	(0.0099)	(0.0641)	(0.0075)	(0.0471)	(0.0952)	(0.0864)
h=13	-0.2268	-0.0098	0.0324	0.0052	0.066	0.2288**	0.1594
	(0.2607)	(0.0317)	(0.1231)	(0.0140)	(0.0805)	(0.1114)	(0.1668)
h=14	0.0643	-0.0171	0.0748	-0.0195	0.0866	0.07	-0.0313
	(0.2131)	(0.0221)	(0.7161)	(0.0182)	(0.7159)	(0.1188)	(0.1183)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Concessional IMF Programs, Gini Index Disposable Income

Table 16

Model averaged panel regression results for concessional programs and Gini index of disposable income, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	-0.0074	0.0063	-0.1311**	-0.0395	-0.1014**	0.1344	-0.2143
	(0.3631)	(0.0066)	(0.0650)	(0.0278)	(0.0421)	(0.1569)	(0.1681)
h=1	0.2572	-0.0018	-0.1725**	-0.0485**	-0.1302***	0.0217	-0.2977
	(0.3906)	(0.0081)	(0.0751)	(0.0242)	(0.0471)	(0.1479)	(0.1827)
h=2	0.4005	-0.009	-0.2168***	-0.0502**	-0.1608***	-0.0542	-0.3522*
	(0.4308)	(0.0095)	(0.0836)	(0.0243)	(0.0524)	(0.1481)	(0.1991)
h=3	0.5561	-0.0252*	-0.3078***	-0.0391	-0.2188***	-0.092	-0.3854**
	(0.4368)	(0.0130)	(0.1005)	(0.0254)	(0.0619)	(0.1511)	(0.1875)
h=4	0.4216	-0.0276**	-0.3478***	-0.0274	-0.2281***	-0.0842	-0.3019*
	(0.4078)	(0.0128)	(0.1099)	(0.0259)	(0.0628)	(0.1372)	(0.1797)
h=5	0.27	-0.0258**	-0.3584***	-0.0193	-0.2255***	-0.0788	-0.2128
	(0.3698)	(0.0113)	(0.1154)	(0.0296)	(0.0587)	(0.1235)	(0.1618)
h=6	0.0285	-0.0192*	-0.3483***	-0.0183	-0.2107***	-0.0297	-0.0752
	(0.3361)	(0.0116)	(0.1203)	(0.0318)	(0.0557)	(0.1286)	(0.1500)
h=7	-0.0837	-0.0002	-0.314***	-0.0295	-0.1923***	-0.0548	-0.0126
	(0.3389)	(0.0090)	(0.1204)	(0.0338)	(0.0511)	(0.1334)	(0.1402)
h=8	0.0207	0.0592***	-0.284**	-0.0559*	-0.1812***	-0.1458	-0.0579
	(0.3303)	(0.0211)	(0.1139)	(0.0322)	(0.0500)	(0.1350)	(0.1375)
h=9	-0.1949	0.0337***	-0.2889**	-0.0601*	-0.1846***	-0.0707	0.065
	(0.3316)	(0.0122)	(0.1219)	(0.0345)	(0.0514)	(0.1373)	(0.1294)
h=10	-0.3491	0.0302***	-0.2805**	-0.0809**	-0.1735***	0.015	0.1145
	(0.3298)	(0.0102)	(0.1339)	(0.0400)	(0.0542)	(0.1278)	(0.1356)
h=11	-0.4194	0.0194**	-0.2742**	-0.0957***	-0.1568***	0.068	0.1272
	(0.2895)	(0.0086)	(0.1297)	(0.0306)	(0.0526)	(0.1289)	(0.1391)
h=12	-0.4078	0.0172*	-0.2756*	-0.0742**	-0.1158***	0.1556	0.1447
	(0.3288)	(0.0091)	(0.1435)	(0.0304)	(0.0439)	(0.1323)	(0.1546)
h=13	-0.3993	0.0054	-0.3196*	-0.0554**	-0.1124*	0.1359	0.0504
	(0.3793)	(0.0220)	(0.1730)	(0.0278)	(0.0668)	(0.1307)	(0.1498)
h=14	-0.0645	0.0763**	-0.2076	-0.0541**	0.0174	0.1801	0.0055
	(0.1483)	(0.0370)	(0.1965)	(0.0230)	(0.0600)	(0.1328)	(0.1313)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Concessional IMF Programs, Gini Index Market Income

Table 17

Model averaged panel regression results for concessional programs and Gini index of market income, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.1586	0.0077	-0.1396**	-0.0474*	-0.0974**	0.0982	-0.2366
	(0.3676)	(0.0065)	(0.0594)	(0.0276)	(0.0385)	(0.1554)	(0.1571)
h=1	0.3411	-0.0004	-0.1775***	-0.0519**	-0.1213***	0.0117	-0.2875*
	(0.3803)	(0.0076)	(0.0669)	(0.0235)	(0.0428)	(0.1449)	(0.1642)
h=2	0.459	-0.0066	-0.2141***	-0.0536**	-0.1459***	-0.0543	-0.3233*
	(0.4050)	(0.0087)	(0.0731)	(0.0225)	(0.0470)	(0.1409)	(0.1729)
h=3	0.5913	-0.021*	-0.2916***	-0.0419*	-0.1962***	-0.0865	-0.3476**
	(0.3975)	(0.0117)	(0.0861)	(0.0226)	(0.0549)	(0.1421)	(0.1582)
h=4	0.4752	-0.0228**	-0.3242***	-0.0314	-0.204***	-0.0908	-0.286*
	(0.3673)	(0.0113)	(0.0932)	(0.0230)	(0.0549)	(0.1287)	(0.1497)
h=5	0.3807	-0.0217**	-0.3314***	-0.0266	-0.2035***	-0.1114	-0.2336*
	(0.3290)	(0.0098)	(0.0973)	(0.0263)	(0.0507)	(0.1131)	(0.1327)
h=6	0.2001	-0.0166	-0.3193***	-0.027	-0.1907***	-0.0798	-0.1327
	(0.2998)	(0.0103)	(0.1015)	(0.0282)	(0.0481)	(0.1115)	(0.1226)
h=7	0.123	0.0005	-0.2846***	-0.0401	-0.1708***	-0.1122	-0.0852
	(0.2954)	(0.0083)	(0.1015)	(0.0298)	(0.0439)	(0.1134)	(0.1144)
h=8	0.1936	0.0529***	-0.2585***	-0.063**	-0.1573***	-0.1789	-0.1135
	(0.2951)	(0.0156)	(0.0968)	(0.0287)	(0.0430)	(0.1132)	(0.1117)
h=9	-0.0263	0.0259**	-0.2675**	-0.0613**	-0.1574***	-0.0934	0.0208
	(0.2887)	(0.0103)	(0.1067)	(0.0298)	(0.0442)	(0.1155)	(0.1094)
h=10	-0.2419	0.0229**	-0.2675**	-0.0753**	-0.1457***	0.0239	0.1006
	(0.2886)	(0.0099)	(0.1133)	(0.0346)	(0.0462)	(0.1101)	(0.1168)
h=11	-0.3334	0.0165**	-0.2652**	-0.0833***	-0.1288***	0.0932	0.139
	(0.2478)	(0.0076)	(0.1132)	(0.0297)	(0.0464)	(0.1173)	(0.1139)
h=12	-0.259	0.0154*	-0.2609**	-0.0667**	-0.0906**	0.1464	0.1092
	(0.2701)	(0.0083)	(0.1279)	(0.0279)	(0.0395)	(0.1166)	(0.1208)
h=13	-0.2643	-0.0013	-0.321*	-0.0492**	-0.0942*	0.1242	0.0198
	(0.3260)	(0.0180)	(0.1674)	(0.0233)	(0.0569)	(0.1116)	(0.1257)
h=14	0.0829	0.0317	-0.2768	-0.0421**	-0.0244	0.1187	-0.0593
	(0.2436)	(0.0309)	(0.1886)	(0.0190)	(0.0473)	(0.1107)	(0.1239)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Concessional IMF Programs, Income Share of Highest 10%

Table 18

Model averaged panel regression results for concessional programs and income share of the highest 10%, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	1.0057	0.0572	-0.1056	-0.1643	-0.0823	-0.2197	-0.295
	(1.2697)	(0.0439)	(0.1787)	(0.1061)	(0.1080)	(0.5100)	(0.3261)
h=1	0.6754	0.0472	-0.1901	-0.1661*	-0.2118	-0.8201*	-0.578*
	(1.0455)	(0.0488)	(0.2090)	(0.0972)	(0.1328)	(0.4371)	(0.3385)
h=2	0.7658	0.0453	-0.2343	-0.1868**	-0.2306*	-0.6697	-0.4325
	(0.9465)	(0.0484)	(0.1929)	(0.0800)	(0.1258)	(0.4200)	(0.3272)
h=3	2.7588**	0.0211	-0.3666*	-0.1879**	-0.3249**	-0.8517*	-0.7026**
	(1.3164)	(0.0511)	(0.2223)	(0.0868)	(0.1496)	(0.4371)	(0.3293)
h=4	1.2897	0.0414	-0.3268	-0.1274	-0.255	-0.3058	-0.3622
	(1.4205)	(0.0525)	(0.2825)	(0.0920)	(0.1758)	(0.4047)	(0.3422)
h=5	1.3604	0.0074	-0.506**	-0.108	-0.4172***	-0.7179	-0.4889
	(0.9584)	(0.0545)	(0.2415)	(0.0831)	(0.1324)	(0.5432)	(0.3453)
h=6	0.4085	0.0318	-0.3287	-0.0859	-0.3061*	-0.4091	-0.0724
	(1.1198)	(0.0476)	(0.2710)	(0.0903)	(0.1793)	(0.4664)	(0.3663)
h=7	0.5179	0.0566	-0.5416**	-0.0406	-0.3394***	-0.2348	-0.072
	(1.1170)	(0.0596)	(0.2762)	(0.1085)	(0.1273)	(0.4728)	(0.3565)
h=8	0.2909	0.1535**	-0.473*	0.042	-0.3665***	0.0464	0.3025
	(0.9582)	(0.0652)	(0.2864)	(0.1367)	(0.1405)	(0.3437)	(0.3371)
h=9	1.2123	0.0829	-0.6348*	-0.0338	-0.3667**	0.098	0.1609
	(1.1276)	(0.0624)	(0.3716)	(0.1919)	(0.1708)	(0.4011)	(0.3824)
h=10	4.0203***	0.0429	-0.6771**	-0.2621**	-0.5088***	-0.446	-0.4513
	(1.0509)	(0.0619)	(0.2726)	(0.1043)	(0.1398)	(0.4951)	(0.3852)
h=11	0.7112	0.0886	-0.6234*	-0.0741	-0.3187	-0.2455	-0.5755
	(1.0560)	(0.0819)	(0.3667)	(0.1105)	(0.2652)	(0.4346)	(0.4049)
h=12	-0.4593	0.1579**	-0.492	-0.0036	-0.3599	-0.1751	-0.2395
	(1.3434)	(0.0646)	(0.3977)	(0.1158)	(0.3388)	(0.3903)	(0.5731)
h=13	-3.4799***	0.0282	-0.8869	0.2324**	-0.5405	0.2161	0.2428
	(1.0982)	(0.1556)	(0.5737)	(0.1153)	(0.5570)	(0.4036)	(0.4052)
h=14	0.695	-0.0503	-1.2244	-0.1206	-1.7542	-1.1035*	-0.7145
	(1.5708)	(0.2594)	(8.2886)	(0.2485)	(8.3290)	(0.6301)	(0.5774)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Concessional IMF Programs, Income Share of Lowest 10%

Table 19

Model averaged panel regression results for concessional programs and income share of the lowest 10%, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.088	-0.0083*	-0.0181	0.019	0.0195	0.0296	0.0745*
	(0.1168)	(0.0046)	(0.0231)	(0.0121)	(0.0120)	(0.0473)	(0.0402)
h=1	-0.0778	-0.0036	-0.0068	0.0268**	0.0309**	0.0551	0.0516
	(0.1021)	(0.0044)	(0.0246)	(0.0114)	(0.0146)	(0.0438)	(0.0337)
h=2	-0.1065	-0.0032	-0.0043	0.0311***	0.0354**	0.0305	0.0604
	(0.1183)	(0.0047)	(0.0219)	(0.0108)	(0.0161)	(0.0538)	(0.0430)
h=3	-0.2905**	-0.0008	0.0094	0.0302**	0.0404*	0.0224	0.0826*
	(0.1413)	(0.0055)	(0.0247)	(0.0121)	(0.0206)	(0.0609)	(0.0497)
h=4	-0.036	-0.0013	-0.0038	0.0194**	0.0396*	-0.002	0.0531
	(0.1418)	(0.0053)	(0.0287)	(0.0097)	(0.0211)	(0.0373)	(0.0486)
h=5	-0.0758	-0.0007	0.0143	0.0141	0.0521***	0.0341	0.0702
	(0.1436)	(0.0050)	(0.0253)	(0.0113)	(0.0189)	(0.0616)	(0.0471)
h=6	-0.0023	-0.0078	0.007	0.0077	0.0511***	0.1029	0.0723
	(0.1161)	(0.0065)	(0.0273)	(0.0116)	(0.0179)	(0.0770)	(0.0448)
h=7	0.0164	-0.0127	0.007	0.0045	0.0412**	-0.0012	0.0441
	(0.1100)	(0.0083)	(0.0287)	(0.0084)	(0.0173)	(0.0458)	(0.0406)
h=8	-0.0246	-0.0226**	0.009	0.0025	0.0429**	0.0196	0.0322
	(0.1098)	(0.0101)	(0.0291)	(0.0142)	(0.0181)	(0.0458)	(0.0502)
h=9	-0.0138	-0.0088	0.0408	-0.0034	0.0566**	0.0421	0.0112
	(0.1064)	(0.0068)	(0.0330)	(0.0147)	(0.0248)	(0.0412)	(0.0441)
h=10	-0.141	-0.0092	0.0223	0.0114	0.0586*	0.1371*	0.1035**
	(0.1436)	(0.0082)	(0.0382)	(0.0123)	(0.0333)	(0.0798)	(0.0430)
h=11	-0.284*	-0.007	0.0492	-0.0002	0.0624	0.1033**	0.1365**
	(0.1553)	(0.0072)	(0.0548)	(0.0084)	(0.0486)	(0.0486)	(0.0626)
h=12	-0.3415***	-0.0112	0.0487	-0.0029	0.0494	0.1244***	0.1608**
	(0.1325)	(0.0097)	(0.0592)	(0.0070)	(0.0459)	(0.0377)	(0.0650)
h=13	-0.0965	-0.0019	0.074	-0.0018	0.0895	0.1231*	0.1055
	(0.1876)	(0.0239)	(0.1047)	(0.0150)	(0.0894)	(0.0655)	(0.0741)
h=14	0.2384**	-0.0095	0.0482	0.0315*	0.0842	0.0499	0.0626
	(0.0936)	(0.0232)	(0.6392)	(0.0167)	(0.6399)	(0.0582)	(0.0498)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Non-Concessional IMF Programs, Gini Index Disposable Income

Table 20

Model averaged panel regression results for non-concessional programs and Gini index of disposable income, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.5874	0.0075	-0.1548**	-0.0517**	-0.1034**	-0.2492	-0.2752*
	(0.3942)	(0.0070)	(0.0718)	(0.0250)	(0.0402)	(0.1664)	(0.1584)
h=1	1.0249**	-0.0015	-0.2186***	-0.0487**	-0.1364***	-0.2914*	-0.4414**
	(0.4198)	(0.0087)	(0.0791)	(0.0225)	(0.0443)	(0.1757)	(0.1793)
h=2	1.1132**	-0.0123	-0.2724***	-0.0469**	-0.1636***	-0.3574*	-0.4283**
	(0.4436)	(0.0099)	(0.0897)	(0.0224)	(0.0498)	(0.2012)	(0.1869)
h=3	1.2277***	-0.0309**	-0.3752***	-0.0283	-0.2246***	-0.3923*	-0.4592**
	(0.4510)	(0.0138)	(0.1097)	(0.0248)	(0.0609)	(0.2008)	(0.1896)
h=4	1.0882**	-0.0335**	-0.4078***	-0.0162	-0.2334***	-0.2887	-0.3807**
	(0.4566)	(0.0140)	(0.1192)	(0.0267)	(0.0632)	(0.2012)	(0.1816)
h=5	0.83**	-0.0289**	-0.3973***	-0.0112	-0.2208***	-0.1896	-0.2469
	(0.4105)	(0.0116)	(0.1184)	(0.0311)	(0.0567)	(0.1695)	(0.1705)
h=6	0.2996	-0.0188*	-0.3586***	-0.0151	-0.1968***	-0.0032	-0.0026
	(0.4232)	(0.0110)	(0.1183)	(0.0337)	(0.0508)	(0.1585)	(0.1928)
h=7	0.2932	0.0021	-0.3251***	-0.0238	-0.1794***	-0.0508	-0.0027
	(0.4371)	(0.0092)	(0.1192)	(0.0357)	(0.0468)	(0.1611)	(0.2022)
h=8	0.4492	0.0582***	-0.3003**	-0.049	-0.1739***	-0.1403	-0.1277
	(0.4661)	(0.0194)	(0.1183)	(0.0354)	(0.0471)	(0.1701)	(0.2278)
h=9	0.1861	0.0338***	-0.2925**	-0.0598	-0.1812***	-0.1495	-0.0592
	(0.3602)	(0.0121)	(0.1253)	(0.0369)	(0.0489)	(0.1484)	(0.1643)
h=10	-0.0959	0.0257**	-0.2755**	-0.0839**	-0.1741***	-0.1015	0.0404
	(0.2742)	(0.0107)	(0.1351)	(0.0420)	(0.0534)	(0.1168)	(0.1229)
h=11	-0.3195	0.02**	-0.2632**	-0.1012***	-0.1488***	-0.0083	0.1425
	(0.2476)	(0.0091)	(0.1303)	(0.0333)	(0.0531)	(0.1134)	(0.1196)
h=12	-0.5704**	0.0232**	-0.2557*	-0.0891***	-0.1073**	0.0775	0.2724**
	(0.2648)	(0.0102)	(0.1349)	(0.0311)	(0.0425)	(0.1136)	(0.1197)
h=13	-0.6592***	0.0016	-0.305*	-0.0675**	-0.116*	0.0945	0.3094***
	(0.2553)	(0.0186)	(0.1585)	(0.0273)	(0.0623)	(0.1066)	(0.1006)
h=14	-0.6268***	0.103***	-0.1447	-0.055***	0.0752*	0.166	0.3178***
	(0.1835)	(0.0325)	(0.1684)	(0.0206)	(0.0420)	(0.1054)	(0.0904)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Non-Concessional IMF Programs, Gini Index Market Income

Table 21

Model averaged panel regression results for non-concessional programs and Gini index of market income, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.4654	0.0077	-0.1676***	-0.0492**	-0.1003***	-0.2374	-0.2453*
	(0.3372)	(0.0062)	(0.0640)	(0.0229)	(0.0376)	(0.1486)	(0.1324)
h=1	0.8297**	-0.0004	-0.2183***	-0.0475**	-0.1268***	-0.2545*	-0.3701**
	(0.3603)	(0.0077)	(0.0702)	(0.0208)	(0.0411)	(0.1521)	(0.1541)
h=2	0.8616**	-0.009	-0.2577***	-0.0479**	-0.1478***	-0.2845	-0.3338**
	(0.3895)	(0.0090)	(0.0788)	(0.0210)	(0.0457)	(0.1793)	(0.1653)
h=3	0.9145**	-0.0251**	-0.3419***	-0.0316	-0.1994***	-0.2959	-0.3379*
	(0.4066)	(0.0124)	(0.0947)	(0.0222)	(0.0554)	(0.1845)	(0.1727)
h=4	0.7848*	-0.0266**	-0.3669***	-0.0214	-0.2053***	-0.2101	-0.2703
	(0.4054)	(0.0123)	(0.1024)	(0.0233)	(0.0570)	(0.1947)	(0.1675)
h=5	0.6497*	-0.0241**	-0.3633***	-0.0176	-0.2002***	-0.1728	-0.2126
	(0.3530)	(0.0101)	(0.1019)	(0.0269)	(0.0518)	(0.1732)	(0.1574)
h=6	0.2563	-0.0167	-0.3296***	-0.0223	-0.1833***	-0.0408	-0.0545
	(0.3472)	(0.0102)	(0.1027)	(0.0291)	(0.0473)	(0.1574)	(0.1725)
h=7	0.2727	0.0007	-0.2966***	-0.0344	-0.1654***	-0.1072	-0.0732
	(0.3401)	(0.0085)	(0.1013)	(0.0309)	(0.0427)	(0.1497)	(0.1720)
h=8	0.4506	0.0541***	-0.2708***	-0.0568*	-0.1542***	-0.193	-0.2077
	(0.3652)	(0.0167)	(0.0982)	(0.0307)	(0.0413)	(0.1531)	(0.1939)
h=9	0.1555	0.029***	-0.266**	-0.0619*	-0.1586***	-0.1754	-0.1153
	(0.2996)	(0.0105)	(0.1059)	(0.0319)	(0.0430)	(0.1318)	(0.1449)
h=10	-0.1047	0.0198**	-0.2578**	-0.081**	-0.1529***	-0.0967	-0.0042
	(0.2549)	(0.0094)	(0.1097)	(0.0355)	(0.0467)	(0.1101)	(0.1163)
h=11	-0.3285	0.0166**	-0.2483**	-0.0888***	-0.1248***	0.0168	0.1297
	(0.2688)	(0.0082)	(0.1057)	(0.0306)	(0.0460)	(0.1197)	(0.1360)
h=12	-0.5262**	0.0207**	-0.2367**	-0.0779***	-0.085**	0.0688	0.2364**
	(0.2558)	(0.0088)	(0.1124)	(0.0271)	(0.0377)	(0.1083)	(0.1171)
h=13	-0.6367***	-0.0051	-0.297**	-0.0593***	-0.0997*	0.0993	0.2763***
	(0.2444)	(0.0151)	(0.1450)	(0.0224)	(0.0519)	(0.1001)	(0.0987)
h=14	-0.4774***	0.0576**	-0.202	-0.0435**	0.031	0.1012	0.2157***
	(0.1657)	(0.0256)	(0.1628)	(0.0176)	(0.0413)	(0.0915)	(0.0793)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Non-Concessional IMF Programs, Income Share of Highest 10%

Table 22

Model averaged panel regression results for non-concessional programs and income share of the highest 10%, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	-0.342	0.0485	-0.2106	-0.1019	-0.1023	-0.1852	-0.1862
	(0.9392)	(0.0430)	(0.1967)	(0.1061)	(0.1102)	(0.2228)	(0.1935)
h=1	0.5143	0.032	-0.3095	-0.1206	-0.2388*	-0.198	-0.5014
	(0.9410)	(0.0462)	(0.2049)	(0.0957)	(0.1260)	(0.2963)	(0.4359)
h=2	0.6728	0.0377	-0.312*	-0.1373*	-0.2713**	-0.8428*	-0.7571*
	(0.9997)	(0.0472)	(0.1794)	(0.0738)	(0.1235)	(0.4710)	(0.4333)
h=3	0.5101	0.0248	-0.3567*	-0.168**	-0.2649	-0.4233	-0.0696
	(1.4297)	(0.0564)	(0.2141)	(0.0806)	(0.1619)	(0.7142)	(0.6819)
h=4	1.022	0.0366	-0.3704	-0.116	-0.1951	-0.0172	-0.1616
	(1.1285)	(0.0533)	(0.2527)	(0.0870)	(0.1679)	(0.6267)	(0.5461)
h=5	1.4985*	-0.0018	-0.548**	-0.0857	-0.4478***	-0.8012	-0.9496*
	(0.8518)	(0.0530)	(0.2421)	(0.0810)	(0.1246)	(0.6444)	(0.4991)
h=6	0.8018	0.0169	-0.352	-0.075	-0.363**	-0.1369	-0.7252
	(1.1178)	(0.0449)	(0.2738)	(0.0926)	(0.1815)	(0.5879)	(0.5700)
h=7	0.7208	0.0552	-0.5574*	-0.0266	-0.328**	0.01	-0.4793
	(1.3647)	(0.0576)	(0.2901)	(0.1040)	(0.1290)	(0.6488)	(0.6992)
h=8	0.8013	0.1579***	-0.5038*	0.0161	-0.3438**	0.271	-0.3479
	(1.6236)	(0.0600)	(0.2586)	(0.1126)	(0.1412)	(0.9667)	(0.7232)
h=9	1.0708	0.1124	-0.6898**	-0.0327	-0.4098***	-0.3327	-0.661
	(1.4020)	(0.0737)	(0.2947)	(0.1265)	(0.1516)	(0.9705)	(0.5973)
h=10	-0.4082	0.0985	-0.6814**	-0.1263	-0.5312***	-0.5588	0.0955
	(1.3193)	(0.0756)	(0.2734)	(0.0954)	(0.1744)	(0.7760)	(0.5665)
h=11	0.0685	0.0963	-0.6154	-0.0854	-0.42	-1.3248	-0.4746
	(1.3726)	(0.0852)	(0.4224)	(0.0808)	(0.3209)	(0.9100)	(0.6319)
h=12	-0.7464	0.1681**	-0.5252	0.0124	-0.3493	-0.538	0.5099
	(1.0624)	(0.0709)	(0.4348)	(0.0921)	(0.3544)	(0.8780)	(0.5920)
h=13	-0.7274	0.0659	-0.8431	0.0201	-0.6333	0.1495	0.2621
	(1.4355)	(0.1843)	(0.8415)	(0.1030)	(0.7203)	(0.7252)	(0.7333)
h=14	1.3664	-0.015	-1.1598	0.2296	-1.6704	-0.2959	-1.193
	(1.9385)	(0.2281)	(7.9702)	(0.2088)	(7.9833)	(0.5941)	(1.0490)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Non-Concessional IMF Programs, Income Share of Lowest 10%

Table 23

Model averaged panel regression results for the non-concessional programs and income share of the lowest 10%, baseline

	IMF program	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	-0.0736	-0.0062	-0.0102	0.0244**	0.0196	0.0608	0.0431
	(0.1141)	(0.0043)	(0.0259)	(0.0122)	(0.0136)	(0.0503)	(0.0415)
h=1	-0.1912	-0.0033	0.0129	0.0194*	0.0409***	0.0651	0.1389**
	(0.1292)	(0.0043)	(0.0261)	(0.0116)	(0.0138)	(0.0497)	(0.0594)
h=2	-0.2688*	-0.0024	0.0066	0.0283**	0.0408**	0.1685**	0.1235
	(0.1612)	(0.0048)	(0.0229)	(0.0119)	(0.0162)	(0.0710)	(0.0826)
h=3	-0.2117	-0.0005	0.014	0.0291**	0.0396*	0.124	0.0358
	(0.1830)	(0.0059)	(0.0269)	(0.0117)	(0.0220)	(0.0824)	(0.0793)
h=4	-0.2473	0.0002	0.0072	0.019*	0.0362*	0.1088	0.0515
	(0.1813)	(0.0055)	(0.0293)	(0.0098)	(0.0218)	(0.1001)	(0.0898)
h=5	-0.097	-0.0006	0.017	0.0123	0.05***	0.037	0.0306
	(0.1427)	(0.0047)	(0.0246)	(0.0111)	(0.0188)	(0.1279)	(0.0770)
h=6	-0.0632	-0.0092	0.0062	0.0045	0.0386**	0.0099	0.012
	(0.1572)	(0.0063)	(0.0264)	(0.0119)	(0.0159)	(0.1116)	(0.0897)
h=7	0.0052	-0.0109	0.0125	0.0006	0.0344**	-0.0489	-0.0232
	(0.1621)	(0.0090)	(0.0309)	(0.0088)	(0.0139)	(0.0968)	(0.0924)
h=8	0.0673	-0.0111	0.0164	0.004	0.0341**	-0.0709	-0.108*
	(0.1545)	(0.0107)	(0.0241)	(0.0086)	(0.0168)	(0.1089)	(0.0653)
h=9	0.1388	-0.0025	0.0494	-0.0071	0.0525**	-0.0745	-0.108**
	(0.1150)	(0.0082)	(0.0311)	(0.0125)	(0.0217)	(0.0945)	(0.0531)
h=10	0.26	-0.0143*	0.0165	0.0071	0.054*	-0.0294	-0.1642**
	(0.1637)	(0.0077)	(0.0368)	(0.0110)	(0.0313)	(0.0836)	(0.0756)
h=11	0.0778	-0.0105	0.0547	0.0008	0.0628	0.1489	-0.0722
	(0.2416)	(0.0080)	(0.0476)	(0.0068)	(0.0460)	(0.1209)	(0.1117)
h=12	0.216	-0.0127	0.0352	0.0024	0.0406	0.0216	-0.1272*
	(0.1316)	(0.0095)	(0.0628)	(0.0089)	(0.0515)	(0.1169)	(0.0694)
h=13	0.1528	0.0126	0.1215	-0.0045	0.1101	0.0192	-0.095
	(0.2248)	(0.0340)	(0.1149)	(0.0144)	(0.0786)	(0.1038)	(0.1404)
h=14	-0.0256	-0.0206	0.0744	-0.0295	0.0561	0.1095*	-0.0542
	(0.2089)	(0.0255)	(0.6013)	(0.0180)	(0.6020)	(0.0595)	(0.0911)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

19. Appendix H. Tables Robustness Check

All IMF Programs, Gini Index Disposable Income

Table 24

Model averaged panel regression results for the Gini index of disposable income, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.3075	-	0.0084	-0.147**	-0.0328	-0.1113***	-0.2716	-0.3157
	(0.3800)		(0.0068)	(0.0671)	(0.0285)	(0.0419)	(0.2205)	(0.2001)
h=1	0.6807	-0.2621	-0.0015	-0.2047**	-0.0243	-0.1441***	-0.308	-0.414*
	(0.4269)	(0.1708)	(0.0081)	(0.0798)	(0.0291)	(0.0487)	(0.2198)	(0.2255)
h=2	1.0593**	-0.298*	-0.0103	-0.2602***	-0.0324	-0.1857***	-0.2947	-0.5622**
	(0.4645)	(0.1585)	(0.0096)	(0.0889)	(0.0236)	(0.0551)	(0.2312)	(0.2396)
h=3	1.198**	-0.2819*	-0.0291**	-0.3558***	-0.0233	-0.2473***	-0.2788	-0.601**
	(0.4838)	(0.1481)	(0.0136)	(0.1070)	(0.0248)	(0.0650)	(0.2348)	(0.2456)
h=4	1.0189**	-0.182	-0.0321**	-0.3868***	-0.0158	-0.2512***	-0.2255	-0.5073**
	(0.4948)	(0.1576)	(0.0142)	(0.1156)	(0.0269)	(0.0673)	(0.2158)	(0.2495)
h=5	0.7307	-0.0664	-0.0282**	-0.379***	-0.0132	-0.2308***	-0.1225	-0.3699
	(0.4594)	(0.1684)	(0.0121)	(0.1183)	(0.0318)	(0.0633)	(0.1825)	(0.2412)
h=6	0.1556	0.1836	-0.0191	-0.3447***	-0.0125	-0.1821***	0.0363	-0.0713
	(0.3586)	(0.1661)	(0.0117)	(0.1186)	(0.0342)	(0.0544)	(0.1567)	(0.1953)
h=7	0.0959	0.2766*	0.0022	-0.3068**	-0.0203	-0.1529***	-0.0421	-0.0328
	(0.3528)	(0.1640)	(0.0088)	(0.1202)	(0.0365)	(0.0479)	(0.1477)	(0.1822)
h=8	0.3348	0.3871**	0.0707***	-0.2732**	-0.0422	-0.1326***	-0.2069	-0.2166
	(0.3643)	(0.1657)	(0.0208)	(0.1191)	(0.0368)	(0.0434)	(0.1478)	(0.2007)
h=9	-0.0164	0.4243**	0.0309***	-0.2842**	-0.0502	-0.1449***	-0.0989	-0.0339
	(0.3134)	(0.1894)	(0.0115)	(0.1233)	(0.0361)	(0.0429)	(0.1142)	(0.1622)
h=10	-0.1947	0.3573**	0.0229**	-0.2746**	-0.0735*	-0.1431***	-0.0296	0.0447
	(0.2670)	(0.1676)	(0.0108)	(0.1312)	(0.0398)	(0.0467)	(0.0936)	(0.1450)
h=11	-0.3343	0.2934**	0.0175*	-0.2654**	-0.0894***	-0.1257***	0.0278	0.1162
	(0.2589)	(0.1453)	(0.0090)	(0.1294)	(0.0302)	(0.0464)	(0.0996)	(0.1547)
h=12	-0.581**	0.0114	0.0199**	-0.2604*	-0.0803***	-0.1154***	0.1715*	0.2811**
	(0.2397)	(0.1656)	(0.0096)	(0.1370)	(0.0291)	(0.0445)	(0.0875)	(0.1319)
h=13	-0.5341***	0.055	0.0036	-0.2895*	-0.0592**	-0.1109*	0.1167	0.2355**
	(0.1980)	(0.1975)	(0.0212)	(0.1684)	(0.0277)	(0.0619)	(0.1002)	(0.1017)
h=14	-0.4952**	-0.0672	0.0976***	-0.1383	-0.0623***	0.0566	0.1886**	0.2538**
	(0.1931)	(0.1958)	(0.0334)	(0.1863)	(0.0241)	(0.0481)	(0.0862)	(0.1128)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

All IMF Programs, Gini Index Market Income

Table 25

Model averaged panel regression results for the Gini index of market income, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.3278	-	0.0089	-0.1563***	-0.0385	-0.1047***	-0.2622	-0.2967*
	(0.3351)		(0.0060)	(0.0589)	(0.0279)	(0.0384)	(0.1950)	(0.1741)
h=1	0.6294*	-0.184	-0.0003	-0.2033***	-0.0338	-0.1307***	-0.2702	-0.3705*
	(0.3691)	(0.1535)	(0.0073)	(0.0685)	(0.0288)	(0.0438)	(0.1946)	(0.1931)
h=2	0.942**	-0.2305*	-0.0078	-0.2494***	-0.0397*	-0.1647***	-0.2525	-0.4879**
	(0.3976)	(0.1373)	(0.0088)	(0.0763)	(0.0218)	(0.0488)	(0.2033)	(0.2036)
h=3	1.0315**	-0.2144	-0.0242**	-0.3315***	-0.0295	-0.2176***	-0.2293	-0.5112**
	(0.4087)	(0.1366)	(0.0123)	(0.0912)	(0.0217)	(0.0573)	(0.2078)	(0.2061)
h=4	0.8773**	-0.1478	-0.0265**	-0.3574***	-0.0215	-0.2222***	-0.2003	-0.4396**
	(0.4097)	(0.1521)	(0.0125)	(0.0982)	(0.0232)	(0.0585)	(0.1959)	(0.2072)
h=5	0.71*	-0.0626	-0.0241**	-0.3532***	-0.0202	-0.2111***	-0.1648	-0.3783*
	(0.3738)	(0.1626)	(0.0106)	(0.1006)	(0.0275)	(0.0557)	(0.1707)	(0.2008)
h=6	0.2779	0.1158	-0.0173	-0.3221***	-0.0215	-0.1758***	-0.0463	-0.1703
	(0.2966)	(0.1559)	(0.0106)	(0.1017)	(0.0298)	(0.0488)	(0.1442)	(0.1692)
h=7	0.258	0.1598	0.0024	-0.2834***	-0.0333	-0.1503***	-0.1299	-0.1578
	(0.2882)	(0.1414)	(0.0082)	(0.1020)	(0.0318)	(0.0435)	(0.1273)	(0.1575)
h=8	0.4962	0.2259*	0.0682***	-0.2484**	-0.0542*	-0.129***	-0.2768**	-0.3398*
	(0.3230)	(0.1325)	(0.0171)	(0.1000)	(0.0318)	(0.0398)	(0.1292)	(0.1872)
h=9	0.1064	0.2513	0.0274***	-0.2605**	-0.0563*	-0.1368***	-0.1549	-0.1225
	(0.2879)	(0.1534)	(0.0098)	(0.1057)	(0.0314)	(0.0405)	(0.1021)	(0.1553)
h=10	-0.0929	0.2104	0.0172*	-0.2589**	-0.0738**	-0.1337***	-0.0513	-0.0162
	(0.2451)	(0.1472)	(0.0096)	(0.1088)	(0.0339)	(0.0434)	(0.0773)	(0.1359)
h=11	-0.3177	0.1753	0.015*	-0.2542**	-0.0796***	-0.1115***	0.045	0.1272
	(0.2653)	(0.1401)	(0.0079)	(0.1089)	(0.0285)	(0.0413)	(0.0860)	(0.1615)
h=12	-0.4687**	0.0327	0.0169**	-0.2457**	-0.0684***	-0.0894**	0.1402*	0.2268*
	(0.2361)	(0.1532)	(0.0082)	(0.1201)	(0.0252)	(0.0384)	(0.0797)	(0.1326)
h=13	-0.4844***	0.0836	-0.0043	-0.29*	-0.05**	-0.0937*	0.1246	0.2082**
	(0.1780)	(0.1807)	(0.0170)	(0.1574)	(0.0231)	(0.0539)	(0.0791)	(0.0917)
h=14	-0.2846**	-0.0032	0.0473*	-0.212	-0.048**	0.0077	0.0839	0.1232
	(0.1415)	(0.1777)	(0.0281)	(0.1770)	(0.0200)	(0.0427)	(0.0699)	(0.0801)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

All IMF Programs, Income Share of Highest 10%

Table 26

Model averaged panel regression results for the income share of the highest 10, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.2498	-	0.0545	-0.1836	-0.1123	-0.0988	-0.2988	-0.327
	(1.1202)		(0.0427)	(0.2045)	(0.1440)	(0.1127)	(0.3435)	(0.2407)
h=1	0.2871	-0.7399	0.0373	-0.2966	-0.0625	-0.2264	-0.6774*	-0.3255
	(1.0214)	(1.0014)	(0.0442)	(0.2431)	(0.1692)	(0.1379)	(0.4047)	(0.3310)
h=2	0.8433	-0.9923	0.0482	-0.307*	-0.0887	-0.308**	-0.9012	-0.7039
	(1.0049)	(0.8213)	(0.0461)	(0.1852)	(0.0850)	(0.1261)	(0.6381)	(0.4584)
h=3	2.4137**	-1.3524**	0.0289	-0.4008*	-0.1426*	-0.333**	-1.1143	-0.7615
	(0.9453)	(0.6302)	(0.0524)	(0.2065)	(0.0774)	(0.1598)	(0.7449)	(0.4905)
h=4	2.1235**	-0.9774	0.0313	-0.396	-0.1017	-0.2833	-0.4391	-0.6308
	(1.0355)	(0.6728)	(0.0509)	(0.2530)	(0.0843)	(0.1734)	(0.6128)	(0.4972)
h=5	1.725*	-0.3472	-0.0028	-0.5381**	-0.1095	-0.4843***	-0.9548	-1.0571**
	(0.9107)	(0.5525)	(0.0534)	(0.2536)	(0.0815)	(0.1408)	(0.6484)	(0.4799)
h=6	0.5868	0.5875	0.0244	-0.3563	-0.0539	-0.273	-0.2382	-0.568
	(1.1709)	(0.5706)	(0.0474)	(0.2667)	(0.0940)	(0.1950)	(0.5931)	(0.5669)
h=7	0.6294	0.6762	0.0715	-0.5212*	-0.0157	-0.2091	-0.2018	-0.3456
	(1.2001)	(0.6297)	(0.0644)	(0.2780)	(0.1003)	(0.1909)	(0.5574)	(0.6661)
h=8	0.1449	0.4734	0.1301**	-0.5095*	0.0347	-0.2574	0.4277	0.3124
	(1.3508)	(0.3680)	(0.0632)	(0.2629)	(0.1086)	(0.1585)	(0.7165)	(0.7664)
h=9	1.4176	0.6037	0.0783	-0.5756	-0.0034	-0.2013	-0.6455	-0.6419
	(1.2163)	(0.6924)	(0.0645)	(0.3573)	(0.1403)	(0.2287)	(1.0321)	(0.6864)
h=10	1.7181	0.4447	0.0655	-0.6002*	-0.128	-0.3483	-1.2132	-1.0317
	(1.3014)	(0.5957)	(0.0692)	(0.3273)	(0.0939)	(0.2232)	(0.7452)	(0.7529)
h=11	1.5635	0.5967	0.0707	-0.5386	-0.0632	-0.279	-1.6135*	-1.3754
	(1.5230)	(0.5466)	(0.0851)	(0.3296)	(0.0754)	(0.2407)	(0.8300)	(0.8472)
h=12	-0.9123	-1.0131	0.1687***	-0.4253	-0.0287	-0.4355	-0.1619	0.4851
	(1.5081)	(0.6348)	(0.0634)	(0.5279)	(0.0841)	(0.4616)	(1.0189)	(0.9351)
h=13	0.178	0.6965	0.1395	-0.335	0.0009	-0.4292	-0.4904	-0.7145
	(1.8043)	(0.6181)	(0.2012)	(0.7813)	(0.0981)	(0.7088)	(0.9551)	(1.0878)
h=14	1.9283	-1.03**	-0.1187	-1.8375	-0.0149	-2.8784	-0.8146	-1.758
	(2.1953)	(0.4184)	(0.2562)	(11.5730)	(0.2016)	(11.5914)	(0.9718)	(1.3517)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

All IMF Programs, Income Share of Lowest 10%

Table 27

Model averaged panel regression results for the income share of the lowest 10%, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.0624	-	-0.0075*	-0.0002	0.0081	0.0262*	0.109	0.0802
	(0.1387)		(0.0042)	(0.0255)	(0.0153)	(0.0134)	(0.0754)	(0.0551)
h=1	-0.1361	0.2574**	-0.004	0.0182	0.0021	0.0415***	0.1073*	0.0836
	(0.1303)	(0.1106)	(0.0039)	(0.0280)	(0.0174)	(0.0158)	(0.0611)	(0.0545)
h=2	-0.3109**	0.1404*	-0.0033	0.0091	0.0236**	0.0479***	0.1625*	0.1383*
	(0.1471)	(0.0837)	(0.0047)	(0.0220)	(0.0114)	(0.0174)	(0.0911)	(0.0770)
h=3	-0.4509***	0.1366*	-0.0001	0.023	0.0265**	0.0504**	0.1988**	0.1641***
	(0.1326)	(0.0823)	(0.0058)	(0.0244)	(0.0108)	(0.0205)	(0.0933)	(0.0624)
h=4	-0.3336*	0.0674	0.0009	0.0108	0.0178*	0.0474**	0.1338	0.1397*
	(0.1706)	(0.0722)	(0.0056)	(0.0297)	(0.0100)	(0.0218)	(0.1017)	(0.0758)
h=5	-0.1943	0.0837	-0.0002	0.0222	0.0133	0.0616***	0.0761	0.1074
	(0.1754)	(0.0628)	(0.0050)	(0.0234)	(0.0117)	(0.0210)	(0.1186)	(0.1059)
h=6	-0.1886	0.0175	-0.0071	0.0068	0.0063	0.0518***	0.1535	0.1328
	(0.1724)	(0.0670)	(0.0061)	(0.0259)	(0.0117)	(0.0179)	(0.1146)	(0.1004)
h=7	-0.0643	-0.0552	-0.0129	0.0087	-0.0002	0.0304*	-0.0235	0.0518
	(0.1715)	(0.0672)	(0.0094)	(0.0304)	(0.0092)	(0.0159)	(0.0711)	(0.1022)
h=8	-0.0203	0.0082	-0.0134	0.017	0.0011	0.0339**	-0.039	-0.0427
	(0.1883)	(0.0684)	(0.0107)	(0.0262)	(0.0111)	(0.0146)	(0.0964)	(0.0965)
h=9	0.0992	-0.1266*	-0.0032	0.0492	-0.0114	0.0361*	-0.0012	-0.0653
	(0.1246)	(0.0679)	(0.0078)	(0.0319)	(0.0137)	(0.0196)	(0.0836)	(0.0670)
h=10	0.0956	-0.052	-0.0127	0.0234	0.0053	0.0502*	0.1128	-0.0421
	(0.1819)	(0.0494)	(0.0081)	(0.0372)	(0.0107)	(0.0303)	(0.1125)	(0.0971)
h=11	-0.3651	0.0594	-0.0053	0.0591	0.0039	0.0718	0.2962**	0.1959
	(0.2365)	(0.0673)	(0.0078)	(0.0462)	(0.0073)	(0.0526)	(0.1293)	(0.1283)
h=12	-0.2162	-0.0335	-0.0103	0.073	-0.0064	0.0504	0.2006**	0.1162
	(0.1470)	(0.0907)	(0.0099)	(0.0614)	(0.0078)	(0.0486)	(0.0949)	(0.0869)
h=13	-0.229	-0.0918	-0.0105	0.0387	0.0037	0.0604	0.2282**	0.159
	(0.2628)	(0.1078)	(0.0312)	(0.1188)	(0.0144)	(0.0766)	(0.1141)	(0.1665)
h=14	0.0825	0.0489	-0.0181	0.0895	-0.0129	0.1145	0.064	-0.0433
	(0.2160)	(0.0521)	(0.0218)	(0.8993)	(0.0197)	(0.9000)	(0.1203)	(0.1226)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Concessional IMF Programs, Gini Index Disposable Income

Table 28

Model averaged panel regression results for the concessional programs and Gini index of disposable income, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	-0.0075	-	0.0063	-0.1311**	-0.0395	-0.1014**	0.1344	-0.2143
	(0.3631)		(0.0066)	(0.0650)	(0.0278)	(0.0421)	(0.1569)	(0.1681)
h=1	0.3059	-0.2778	-0.0017	-0.1884**	-0.0222	-0.1426***	0.0123	-0.3223*
	(0.3997)	(0.1942)	(0.0080)	(0.0777)	(0.0301)	(0.0498)	(0.1509)	(0.1879)
h=2	0.4857	-0.2552	-0.0082	-0.2274***	-0.0356	-0.177***	-0.0583	-0.382*
	(0.4407)	(0.1810)	(0.0093)	(0.0848)	(0.0246)	(0.0569)	(0.1487)	(0.2026)
h=3	0.6372	-0.2495	-0.0241*	-0.3144***	-0.0315	-0.2385***	-0.0941	-0.4144**
	(0.4397)	(0.1710)	(0.0127)	(0.1002)	(0.0244)	(0.0663)	(0.1519)	(0.1893)
h=4	0.4748	-0.1429	-0.0272**	-0.351***	-0.026	-0.2418***	-0.0723	-0.3227*
	(0.4067)	(0.1741)	(0.0127)	(0.1097)	(0.0255)	(0.0667)	(0.1366)	(0.1800)
h=5	0.2774	-0.0197	-0.0257**	-0.3589***	-0.0195	-0.2278***	-0.0549	-0.2192
	(0.3711)	(0.1804)	(0.0113)	(0.1154)	(0.0299)	(0.0629)	(0.1260)	(0.1627)
h=6	-0.0539	0.228	-0.0191*	-0.3433***	-0.0143	-0.1844***	0.0173	-0.051
	(0.3380)	(0.1834)	(0.0116)	(0.1190)	(0.0322)	(0.0555)	(0.1364)	(0.1518)
h=7	-0.1959	0.3361*	0.0011	-0.3064***	-0.0216	-0.1517***	-0.0112	0.0262
	(0.3477)	(0.1934)	(0.0089)	(0.1179)	(0.0339)	(0.0492)	(0.1398)	(0.1460)
h=8	-0.1143	0.4222**	0.0585***	-0.2792**	-0.0447	-0.1329***	-0.0973	-0.0079
	(0.3370)	(0.1971)	(0.0210)	(0.1112)	(0.0316)	(0.0445)	(0.1391)	(0.1470)
h=9	-0.3133	0.4446**	0.0277**	-0.2926**	-0.0471	-0.1417***	-0.0287	0.1078
	(0.3340)	(0.2096)	(0.0119)	(0.1189)	(0.0332)	(0.0434)	(0.1401)	(0.1369)
h=10	-0.4353	0.3634**	0.027***	-0.2832**	-0.0687*	-0.1349***	0.0423	0.1488
	(0.3377)	(0.1762)	(0.0102)	(0.1312)	(0.0392)	(0.0457)	(0.1288)	(0.1410)
h=11	-0.4987*	0.2962**	0.0176**	-0.2776**	-0.0861***	-0.1254***	0.1029	0.1634
	(0.2982)	(0.1474)	(0.0087)	(0.1285)	(0.0295)	(0.0455)	(0.1329)	(0.1433)
h=12	-0.4157	0.0275	0.017*	-0.2755*	-0.0734**	-0.1131**	0.1626	0.148
	(0.3227)	(0.1656)	(0.0091)	(0.1434)	(0.0310)	(0.0445)	(0.1320)	(0.1521)
h=13	-0.41	0.0594	0.0044	-0.3219*	-0.0542*	-0.1088	0.1423	0.0542
	(0.3790)	(0.1985)	(0.0230)	(0.1744)	(0.0284)	(0.0663)	(0.1312)	(0.1484)
h=14	-0.0545	-0.0609	0.0773**	-0.2043	-0.0553**	0.0139	0.1776	0.0004
	(0.1471)	(0.1955)	(0.0375)	(0.1965)	(0.0241)	(0.0588)	(0.1311)	(0.1267)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Concessional IMF Programs, Gini Index Market Income

Table 29

Model averaged panel regression results for the concessional programs and Gini index of market income, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.1586	-	0.0077	-0.1396**	-0.0474*	-0.0974**	0.0982	-0.2366
	(0.3676)		(0.0065)	(0.0594)	(0.0276)	(0.0385)	(0.1554)	(0.1571)
h=1	0.3759	-0.1985	-0.0003	-0.1889***	-0.0332	-0.1302***	0.0094	-0.3055*
	(0.3863)	(0.1728)	(0.0075)	(0.0671)	(0.0297)	(0.0448)	(0.1488)	(0.1685)
h=2	0.5254	-0.1987	-0.0059	-0.2224***	-0.0422*	-0.1585***	-0.0545	-0.3469**
	(0.4134)	(0.1556)	(0.0086)	(0.0731)	(0.0227)	(0.0501)	(0.1423)	(0.1755)
h=3	0.6541	-0.1917	-0.0201*	-0.2966***	-0.0361*	-0.2114***	-0.0866	-0.3703**
	(0.3994)	(0.1545)	(0.0115)	(0.0854)	(0.0216)	(0.0578)	(0.1441)	(0.1594)
h=4	0.5238	-0.1293	-0.0224**	-0.327***	-0.0301	-0.2164***	-0.0828	-0.3046**
	(0.3667)	(0.1643)	(0.0113)	(0.0928)	(0.0226)	(0.0580)	(0.1304)	(0.1499)
h=5	0.3968	-0.044	-0.0216**	-0.3324***	-0.027	-0.2084***	-0.0963	-0.2424*
	(0.3327)	(0.1708)	(0.0098)	(0.0973)	(0.0267)	(0.0548)	(0.1173)	(0.1339)
h=6	0.155	0.1242	-0.0166	-0.3166***	-0.0249	-0.1764***	-0.049	-0.1203
	(0.3028)	(0.1627)	(0.0103)	(0.1011)	(0.0287)	(0.0484)	(0.1178)	(0.1239)
h=7	0.0632	0.1789	0.0012	-0.2806***	-0.0358	-0.1491***	-0.0865	-0.065
	(0.3050)	(0.1576)	(0.0082)	(0.1008)	(0.0302)	(0.0435)	(0.1185)	(0.1196)
h=8	0.1204	0.229	0.0525***	-0.2559***	-0.057**	-0.1311***	-0.1517	-0.0862
	(0.3053)	(0.1546)	(0.0156)	(0.0961)	(0.0286)	(0.0404)	(0.1168)	(0.1202)
h=9	-0.0925	0.2485	0.0225**	-0.2696**	-0.054*	-0.1335***	-0.0697	0.045
	(0.2961)	(0.1705)	(0.0099)	(0.1056)	(0.0291)	(0.0400)	(0.1180)	(0.1158)
h=10	-0.2908	0.206	0.0211**	-0.269**	-0.0684**	-0.1239***	0.0406	0.1199
	(0.2988)	(0.1577)	(0.0096)	(0.1122)	(0.0341)	(0.0413)	(0.1112)	(0.1221)
h=11	-0.3815	0.1798	0.0154**	-0.2673**	-0.0775***	-0.1097***	0.1168	0.161
	(0.2579)	(0.1474)	(0.0075)	(0.1127)	(0.0288)	(0.0408)	(0.1202)	(0.1187)
h=12	-0.2709	0.0414	0.0151*	-0.2607**	-0.0655**	-0.0865**	0.156	0.1142
	(0.2721)	(0.1580)	(0.0080)	(0.1280)	(0.0280)	(0.0388)	(0.1179)	(0.1214)
h=13	-0.2789	0.0813	-0.0027	-0.3242*	-0.0475**	-0.0893	0.1324	0.0254
	(0.3261)	(0.1829)	(0.0185)	(0.1678)	(0.0236)	(0.0580)	(0.1123)	(0.1237)
h=14	0.0841	-0.0066	0.0319	-0.2764	-0.0422**	-0.0248	0.119	-0.0599
	(0.2380)	(0.1766)	(0.0319)	(0.1889)	(0.0198)	(0.0456)	(0.1092)	(0.1201)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Concessional IMF Programs, Income Share of Highest 10%

Table 30

Model averaged panel regression results for the concessional programs and income share of highest 10%, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	1.0057	-	0.0572	-0.1056	-0.1643	-0.0823	-0.2197	-0.295
	(1.2697)		(0.0439)	(0.1787)	(0.1061)	(0.1080)	(0.5100)	(0.3261)
h=1	0.7507	-1.1524	0.0498	-0.2796	-0.0619	-0.2536*	-0.952**	-0.6475*
	(1.0408)	(1.0835)	(0.0469)	(0.2454)	(0.1579)	(0.1397)	(0.4375)	(0.3376)
h=2	1.1154	-1.3118	0.0498	-0.3155*	-0.1114	-0.3172**	-0.7977*	-0.5513
	(1.0012)	(0.8576)	(0.0460)	(0.1911)	(0.0843)	(0.1306)	(0.4155)	(0.3355)
h=3	3.149**	-1.4102**	0.0323	-0.4068*	-0.1443*	-0.4373***	-1.0184**	-0.8697***
	(1.2829)	(0.6556)	(0.0481)	(0.2195)	(0.0808)	(0.1483)	(0.4345)	(0.3167)
h=4	1.5578	-0.8131	0.0433	-0.3508	-0.123	-0.3493*	-0.399	-0.4547
	(1.4403)	(0.7067)	(0.0519)	(0.2852)	(0.0913)	(0.1918)	(0.4101)	(0.3487)
h=5	1.5902	-0.4865	0.0078	-0.5174**	-0.1135	-0.4819***	-0.7609	-0.5573*
	(1.0010)	(0.5644)	(0.0545)	(0.2447)	(0.0851)	(0.1305)	(0.5379)	(0.3342)
h=6	0.2396	0.4617	0.0323	-0.3222	-0.0787	-0.2421	-0.3247	0.0168
	(1.0752)	(0.5817)	(0.0474)	(0.2725)	(0.0878)	(0.1983)	(0.4567)	(0.3559)
h=7	0.2928	0.5837	0.0623	-0.5469**	-0.022	-0.2527	-0.1354	0.0148
	(1.0959)	(0.5934)	(0.0607)	(0.2668)	(0.1050)	(0.1666)	(0.4391)	(0.3695)
h=8	0.0814	0.7264*	0.1575**	-0.4714*	0.0603	-0.2541	0.1047	0.397
	(0.9870)	(0.4413)	(0.0650)	(0.2805)	(0.1331)	(0.1618)	(0.3537)	(0.3792)
h=9	0.817	0.6686	0.0704	-0.6036*	-0.0077	-0.2509	0.1817	0.2148
	(1.2499)	(0.7100)	(0.0607)	(0.3614)	(0.1833)	(0.2033)	(0.4490)	(0.4220)
h=10	3.9608***	0.1272	0.0414	-0.6768**	-0.256**	-0.489***	-0.415	-0.4369
	(1.1490)	(0.5708)	(0.0600)	(0.2705)	(0.1028)	(0.1652)	(0.4954)	(0.4122)
h=11	0.5558	0.6791	0.0779	-0.6072	-0.0457	-0.1974	-0.2074	-0.4833
	(1.1159)	(0.5056)	(0.0819)	(0.3792)	(0.1065)	(0.2765)	(0.4731)	(0.4032)
h=12	-0.0114	-1.1352	0.1635**	-0.4217	-0.0338	-0.4496	-0.2474	-0.4858
	(1.4425)	(0.6974)	(0.0643)	(0.4191)	(0.1086)	(0.3535)	(0.3915)	(0.6102)
h=13	-4.2713***	1.1165	0.0097	-1.0352*	0.2795**	-0.5078	0.3092	0.5895
	(1.3153)	(0.7630)	(0.1526)	(0.5934)	(0.1173)	(0.5742)	(0.3939)	(0.5661)
h=14	1.1793	-1.2337**	-0.0966	-2.1356	-0.2606	-2.9682	-1.2681**	-1.0696*
	(1.5327)	(0.5297)	(0.2742)	(10.9692)	(0.2135)	(11.0207)	(0.6090)	(0.5991)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Concessional IMF Programs, Income Share of Lowest 10%

Table 31

Model averaged panel regression results for the concessional programs and income share of lowest 10%, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.088	-	-0.0083*	-0.0181	0.019	0.0195	0.0296	0.0745*
	(0.1168)		(0.0046)	(0.0231)	(0.0121)	(0.0120)	(0.0473)	(0.0402)
h=1	-0.0963	0.2733**	-0.0043	0.013	0.0024	0.0402***	0.0763*	0.0672*
	(0.0991)	(0.1199)	(0.0042)	(0.0263)	(0.0168)	(0.0153)	(0.0420)	(0.0353)
h=2	-0.1405	0.1299	-0.0037	0.003	0.0237**	0.0437**	0.0425	0.0729*
	(0.1209)	(0.0907)	(0.0046)	(0.0221)	(0.0108)	(0.0171)	(0.0485)	(0.0442)
h=3	-0.3162**	0.1036	-0.0017	0.0116	0.027**	0.0482**	0.034	0.0957*
	(0.1455)	(0.0836)	(0.0056)	(0.0243)	(0.0117)	(0.0207)	(0.0611)	(0.0502)
h=4	-0.0404	0.0173	-0.0013	-0.0035	0.0194**	0.0414*	-0.0004	0.0565
	(0.1383)	(0.0669)	(0.0053)	(0.0284)	(0.0096)	(0.0215)	(0.0365)	(0.0476)
h=5	-0.1111	0.0819	-0.0009	0.0162	0.015	0.0626***	0.0286	0.0833*
	(0.1460)	(0.0575)	(0.0050)	(0.0251)	(0.0115)	(0.0197)	(0.0616)	(0.0483)
h=6	-0.0099	0.0245	-0.0077	0.0073	0.0081	0.0545***	0.1004	0.077*
	(0.1130)	(0.0613)	(0.0064)	(0.0274)	(0.0119)	(0.0181)	(0.0778)	(0.0449)
h=7	0.0414	-0.0611	-0.0132	0.0069	0.0029	0.0321**	-0.0177	0.0356
	(0.1185)	(0.0708)	(0.0082)	(0.0280)	(0.0087)	(0.0157)	(0.0465)	(0.0463)
h=8	-0.0181	-0.0211	-0.0227**	0.0093	0.0019	0.0398**	0.0166	0.0305
	(0.1231)	(0.0737)	(0.0100)	(0.0291)	(0.0142)	(0.0163)	(0.0485)	(0.0557)
h=9	0.0384	-0.1291*	-0.0066	0.0429	-0.0084	0.0384*	0.0201	-0.0044
	(0.1209)	(0.0743)	(0.0071)	(0.0307)	(0.0137)	(0.0206)	(0.0407)	(0.0516)
h=10	-0.1264	-0.034	-0.0087	0.0226	0.0098	0.0537*	0.1327*	0.1009**
	(0.1494)	(0.0514)	(0.0080)	(0.0378)	(0.0123)	(0.0311)	(0.0755)	(0.0445)
h=11	-0.2615	0.0799	-0.008	0.0496	0.0035	0.0766	0.1086**	0.144**
	(0.1684)	(0.0673)	(0.0071)	(0.0563)	(0.0097)	(0.0572)	(0.0461)	(0.0610)
h=12	-0.3491***	0.0193	-0.0113	0.0484	-0.0025	0.0514	0.1241***	0.1648***
	(0.1271)	(0.0836)	(0.0095)	(0.0586)	(0.0072)	(0.0478)	(0.0390)	(0.0620)
h=13	-0.0581	-0.0603	-0.0011	0.0813	-0.0041	0.0874	0.1161*	0.0881
	(0.1772)	(0.0988)	(0.0241)	(0.1046)	(0.0152)	(0.0892)	(0.0616)	(0.0690)
h=14	0.22**	0.0452***	-0.0082	0.06	0.0355**	0.1065	0.0551	0.0754
	(0.0951)	(0.0120)	(0.0238)	(0.7531)	(0.0169)	(0.7542)	(0.0571)	(0.0519)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Non-Concessional IMF Programs, Gini Index Disposable Income

Table 32

Model averaged panel regression results for the non-concessional programs and Gini index of disposable income, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.5874	-	0.0075	-0.1548**	-0.0517**	-0.1034**	-0.2492	-0.2752*
	(0.3942)		(0.0070)	(0.0718)	(0.0250)	(0.0402)	(0.1664)	(0.1584)
h=1	1.0929***	-0.3008*	-0.0016	-0.2381***	-0.0205	-0.1485***	-0.3012*	-0.4591**
	(0.4157)	(0.1699)	(0.0084)	(0.0825)	(0.0282)	(0.0465)	(0.1776)	(0.1796)
h=2	1.179***	-0.2551	-0.0116	-0.2848***	-0.0321	-0.1781***	-0.366*	-0.4418**
	(0.4443)	(0.1704)	(0.0097)	(0.0910)	(0.0232)	(0.0525)	(0.2009)	(0.1865)
h=3	1.2845***	-0.2195	-0.03**	-0.3824***	-0.0217	-0.2398***	-0.3971**	-0.4693**
	(0.4497)	(0.1626)	(0.0136)	(0.1093)	(0.0240)	(0.0622)	(0.1996)	(0.1883)
h=4	1.1106**	-0.1099	-0.0331**	-0.4107***	-0.0149	-0.2424***	-0.287	-0.384**
	(0.4534)	(0.1752)	(0.0141)	(0.1187)	(0.0262)	(0.0637)	(0.1990)	(0.1806)
h=5	0.834**	-0.0221	-0.0288**	-0.398***	-0.0113	-0.223***	-0.1842	-0.2477
	(0.4101)	(0.1771)	(0.0116)	(0.1182)	(0.0313)	(0.0592)	(0.1685)	(0.1705)
h=6	0.2623	0.1759	-0.0189*	-0.3531***	-0.0128	-0.1783***	0.0107	0.0042
	(0.4211)	(0.1768)	(0.0111)	(0.1172)	(0.0340)	(0.0515)	(0.1595)	(0.1932)
h=7	0.2494	0.2581	0.0036	-0.3157***	-0.0192	-0.1499***	-0.0435	0.0019
	(0.4295)	(0.1674)	(0.0092)	(0.1180)	(0.0358)	(0.0464)	(0.1601)	(0.2007)
h=8	0.4106	0.3767**	0.0629***	-0.2897**	-0.0403	-0.1316***	-0.1458	-0.1385
	(0.4500)	(0.1665)	(0.0194)	(0.1168)	(0.0353)	(0.0430)	(0.1625)	(0.2227)
h=9	0.1527	0.4039**	0.03***	-0.2908**	-0.0492	-0.1433***	-0.161	-0.0651
	(0.3419)	(0.1906)	(0.0115)	(0.1236)	(0.0363)	(0.0419)	(0.1396)	(0.1587)
h=10	-0.0783	0.3425**	0.0215**	-0.2766**	-0.0742*	-0.1405***	-0.1353	0.0181
	(0.2667)	(0.1650)	(0.0103)	(0.1330)	(0.0408)	(0.0462)	(0.1068)	(0.1194)
h=11	-0.313	0.2652*	0.0181**	-0.2631**	-0.0939***	-0.1203**	-0.0287	0.1245
	(0.2482)	(0.1444)	(0.0091)	(0.1293)	(0.0324)	(0.0469)	(0.1069)	(0.1209)
h=12	-0.5728**	-0.0196	0.0233**	-0.2559*	-0.0896***	-0.1094**	0.0759	0.2739**
	(0.2689)	(0.1696)	(0.0103)	(0.1347)	(0.0321)	(0.0441)	(0.1147)	(0.1205)
h=13	-0.6569**	0.0247	0.0013	-0.3054*	-0.0671**	-0.1141*	0.0914	0.3083***
	(0.2577)	(0.1998)	(0.0193)	(0.1593)	(0.0280)	(0.0613)	(0.1051)	(0.0999)
h=14	-0.6353***	-0.0823	0.1054***	-0.137	-0.0568***	0.073*	0.1732	0.3213***
	(0.1889)	(0.1940)	(0.0341)	(0.1701)	(0.0218)	(0.0423)	(0.1080)	(0.0925)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Non-Concessional IMF Programs, Gini Index Market Income

Table 33

Model averaged panel regression results for the non-concessional programs and Gini index of market income, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	0.4654	-	0.0077	-0.1676***	-0.0492**	-0.1003***	-0.2374	-0.2453*
	(0.3372)		(0.0062)	(0.0640)	(0.0229)	(0.0376)	(0.1486)	(0.1324)
h=1	0.8751**	-0.2005	-0.0005	-0.2313***	-0.0287	-0.1348***	-0.2597*	-0.3815**
	(0.3585)	(0.1563)	(0.0076)	(0.0711)	(0.0269)	(0.0425)	(0.1528)	(0.1550)
h=2	0.906**	-0.1714	-0.0086	-0.2661***	-0.0379*	-0.1575***	-0.2882	-0.3426**
	(0.3913)	(0.1501)	(0.0089)	(0.0784)	(0.0214)	(0.0473)	(0.1787)	(0.1657)
h=3	0.9506**	-0.1391	-0.0245**	-0.3464***	-0.0274	-0.209***	-0.2975	-0.3442**
	(0.4077)	(0.1528)	(0.0123)	(0.0937)	(0.0213)	(0.0559)	(0.1838)	(0.1725)
h=4	0.799**	-0.0684	-0.0264**	-0.3687***	-0.0207	-0.2109***	-0.2081	-0.2723
	(0.4043)	(0.1685)	(0.0124)	(0.1015)	(0.0227)	(0.0569)	(0.1933)	(0.1670)
h=5	0.6501*	-0.0026	-0.0241**	-0.3634***	-0.0176	-0.2005***	-0.1683	-0.2127
	(0.3557)	(0.1694)	(0.0101)	(0.1014)	(0.0272)	(0.0537)	(0.1731)	(0.1578)
h=6	0.2278	0.1344	-0.0168	-0.3254***	-0.0206	-0.1691***	-0.0301	-0.0492
	(0.3509)	(0.1640)	(0.0103)	(0.1020)	(0.0297)	(0.0478)	(0.1587)	(0.1736)
h=7	0.2439	0.1698	0.0017	-0.2904***	-0.0314	-0.1461***	-0.102	-0.0701
	(0.3404)	(0.1435)	(0.0083)	(0.1008)	(0.0313)	(0.0431)	(0.1495)	(0.1716)
h=8	0.4256	0.2437*	0.0572***	-0.2639***	-0.0511*	-0.1268***	-0.1966	-0.2147
	(0.3587)	(0.1315)	(0.0167)	(0.0977)	(0.0307)	(0.0395)	(0.1483)	(0.1905)
h=9	0.1346	0.2522*	0.0266***	-0.2649**	-0.0553*	-0.135***	-0.1829	-0.119
	(0.2899)	(0.1511)	(0.0101)	(0.1051)	(0.0315)	(0.0395)	(0.1258)	(0.1415)
h=10	-0.0938	0.2106	0.0172*	-0.2585**	-0.075**	-0.1322***	-0.1194	-0.0178
	(0.2523)	(0.1434)	(0.0088)	(0.1086)	(0.0348)	(0.0432)	(0.1035)	(0.1144)
h=11	-0.3246	0.1587	0.0154*	-0.2483**	-0.0845***	-0.1077***	0.0029	0.119
	(0.2705)	(0.1387)	(0.0081)	(0.1054)	(0.0299)	(0.0417)	(0.1157)	(0.1366)
h=12	-0.5252**	0.0084	0.0206**	-0.2367**	-0.0777***	-0.0841**	0.0651	0.2357**
	(0.2562)	(0.1536)	(0.0086)	(0.1124)	(0.0274)	(0.0379)	(0.1069)	(0.1150)
h=13	-0.6306***	0.0579	-0.0056	-0.298**	-0.0582**	-0.0952*	0.0944	0.2739***
	(0.2447)	(0.1819)	(0.0157)	(0.1454)	(0.0227)	(0.0525)	(0.0980)	(0.0973)
h=14	-0.479***	-0.0159	0.0581**	-0.2005	-0.0439**	0.0306	0.103	0.2164***
	(0.1703)	(0.1767)	(0.0275)	(0.1639)	(0.0185)	(0.0413)	(0.0928)	(0.0799)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Non-Concessional IMF Programs, Income Share of Highest 10%

Table 34

Model averaged panel regression results for the non-concessional programs and income share of highest 10%, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	-0.342	-	0.0485	-0.2106	-0.1019	-0.1023	-0.1852	-0.1862
	(0.9392)		(0.0430)	(0.1967)	(0.1061)	(0.1102)	(0.2228)	(0.1935)
h=1	0.592	-0.7186	0.0324	-0.3667	-0.0568	-0.2599*	-0.2202	-0.4985
	(0.9112)	(0.9879)	(0.0451)	(0.2471)	(0.1586)	(0.1362)	(0.3049)	(0.4427)
h=2	0.8029	-0.9147	0.0402	-0.3665**	-0.0875	-0.316**	-0.8761*	-0.7251
	(0.9819)	(0.7755)	(0.0452)	(0.1812)	(0.0869)	(0.1244)	(0.4766)	(0.4457)
h=3	0.669	-1.0574	0.0329	-0.3876*	-0.1356*	-0.3268**	-0.4764	-0.0669
	(1.4519)	(0.6727)	(0.0537)	(0.2101)	(0.0788)	(0.1590)	(0.7244)	(0.6744)
h=4	1.1543	-0.7923	0.0382	-0.4005	-0.1124	-0.273	-0.0625	-0.1585
	(1.1128)	(0.7254)	(0.0521)	(0.2559)	(0.0868)	(0.1740)	(0.6176)	(0.5320)
h=5	1.5171*	-0.1368	-0.0015	-0.5542**	-0.085	-0.4617***	-0.8025	-0.9406*
	(0.8217)	(0.5351)	(0.0528)	(0.2426)	(0.0816)	(0.1333)	(0.6453)	(0.4995)
h=6	0.6932	0.6896	0.017	-0.3555	-0.0556	-0.2844	-0.1146	-0.7184
	(1.1075)	(0.6082)	(0.0450)	(0.2665)	(0.0940)	(0.1853)	(0.5784)	(0.5764)
h=7	0.7999	0.6831	0.0686	-0.5507**	-0.009	-0.2234	0.0171	-0.5193
	(1.3596)	(0.6329)	(0.0607)	(0.2791)	(0.1008)	(0.1718)	(0.6234)	(0.7029)
h=8	0.7461	0.5091	0.1677***	-0.5042*	0.0298	-0.2724*	0.2777	-0.3671
	(1.6123)	(0.3793)	(0.0610)	(0.2574)	(0.1129)	(0.1504)	(0.9518)	(0.7126)
h=9	0.944	0.6575	0.0984	-0.6764**	-0.0147	-0.3076*	-0.3226	-0.5974
	(1.3701)	(0.7118)	(0.0679)	(0.2914)	(0.1234)	(0.1842)	(0.9902)	(0.5982)
h=10	-0.4413	0.5855	0.0848	-0.68**	-0.1061	-0.4517**	-0.6408	0.082
	(1.3072)	(0.6530)	(0.0687)	(0.2680)	(0.0878)	(0.1825)	(0.7885)	(0.5708)
h=11	0.2461	0.6389	0.0773	-0.5577	-0.0636	-0.2817	-1.6734*	-0.5085
	(1.4168)	(0.5592)	(0.0847)	(0.4511)	(0.0776)	(0.3627)	(0.9270)	(0.6306)
h=12	-1.2958	-1.111*	0.1791***	-0.4084	-0.0313	-0.4177	-0.3202	0.7911
	(1.1385)	(0.6619)	(0.0664)	(0.4129)	(0.0901)	(0.3412)	(0.9202)	(0.6615)
h=13	-0.291	0.7358	0.0957	-0.8228	0.0275	-0.5446	-0.0583	0.0105
	(1.3722)	(0.6655)	(0.1853)	(0.8271)	(0.1015)	(0.7460)	(0.7262)	(0.6965)
h=14	0.3742	-1.0138*	0.0435	-1.6285	0.0781	-2.3836	-0.0718	-0.6772
	(2.2678)	(0.5556)	(0.2373)	(11.2521)	(0.2385)	(11.2782)	(0.6767)	(1.1608)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.

Non-Concessional IMF Programs, Income Share of Lowest 10%

Table 35

Model averaged panel regression results for the non-concessional programs and income share of lowest 10%, robustness check

	IMF program	Subsequent treatments	Countries under program	Total past program years	Program years, trend	Years after program	Mills ratio 1	Mills ratio 5
h=0	-0.0736	-	-0.0062	-0.0102	0.0244**	0.0196	0.0608	0.0431
	(0.1141)		(0.0043)	(0.0259)	(0.0122)	(0.0136)	(0.0503)	(0.0415)
h=1	-0.2229*	0.2376**	-0.0037	0.0295	-0.0008	0.047***	0.0706	0.1399**
	(0.1251)	(0.1106)	(0.0041)	(0.0280)	(0.0170)	(0.0144)	(0.0505)	(0.0602)
h=2	-0.2907*	0.1136	-0.0028	0.0122	0.0223*	0.0459***	0.1711**	0.1216
	(0.1596)	(0.0832)	(0.0048)	(0.0231)	(0.0120)	(0.0166)	(0.0716)	(0.0835)
h=3	-0.2277	0.0899	-0.0012	0.0163	0.0264**	0.0448**	0.129	0.0362
	(0.1815)	(0.0818)	(0.0059)	(0.0264)	(0.0114)	(0.0216)	(0.0819)	(0.0787)
h=4	-0.2547	0.037	0.0001	0.008	0.0188*	0.0396*	0.1121	0.0518
	(0.1803)	(0.0770)	(0.0055)	(0.0291)	(0.0096)	(0.0213)	(0.0990)	(0.0891)
h=5	-0.1082	0.0595	-0.0007	0.0186	0.0127	0.0564***	0.0358	0.0315
	(0.1424)	(0.0658)	(0.0047)	(0.0246)	(0.0111)	(0.0187)	(0.1291)	(0.0761)
h=6	-0.0649	0.0093	-0.0092	0.0063	0.0046	0.0396**	0.0088	0.0119
	(0.1588)	(0.0729)	(0.0064)	(0.0264)	(0.0120)	(0.0160)	(0.1119)	(0.0896)
h=7	-0.0016	-0.0597	-0.012	0.012	-0.0008	0.0257*	-0.0495	-0.0189
	(0.1621)	(0.0649)	(0.0089)	(0.0299)	(0.0087)	(0.0149)	(0.0953)	(0.0920)
h=8	0.0661	0.0122	-0.0109	0.0163	0.0044	0.0358**	-0.0716	-0.1084*
	(0.1572)	(0.0628)	(0.0101)	(0.0242)	(0.0086)	(0.0150)	(0.1089)	(0.0648)
h=9	0.1598	-0.1225*	-0.0002	0.0496*	-0.0103	0.0353*	-0.0824	-0.1169**
	(0.1133)	(0.0641)	(0.0085)	(0.0293)	(0.0119)	(0.0193)	(0.0962)	(0.0544)
h=10	0.2623	-0.0484	-0.0132*	0.017	0.0054	0.0478	-0.0248	-0.163**
	(0.1651)	(0.0454)	(0.0079)	(0.0364)	(0.0108)	(0.0294)	(0.0823)	(0.0756)
h=11	0.0868	0.053	-0.0114	0.0554	0.0031	0.0728	0.1431	-0.0759
	(0.2446)	(0.0684)	(0.0078)	(0.0482)	(0.0078)	(0.0541)	(0.1249)	(0.1125)
h=12	0.2104*	-0.0111	-0.0126	0.0365	0.002	0.04	0.0271	-0.1244*
	(0.1236)	(0.0842)	(0.0094)	(0.0593)	(0.0088)	(0.0532)	(0.1106)	(0.0648)
h=13	0.1027	-0.0838	0.0092	0.1183	-0.0052	0.0997	0.0428	-0.0658
	(0.2062)	(0.1036)	(0.0328)	(0.1111)	(0.0142)	(0.0763)	(0.0919)	(0.1270)
h=14	0.019	0.0477	-0.023	0.0785	-0.0225	0.0718	0.1026	-0.0831
	(0.2163)	(0.0525)	(0.0252)	(0.7362)	(0.0210)	(0.7374)	(0.0633)	(0.1023)

Notes: All explanatory variables are lagged 1 year. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Included variables not shown in table: constant, democracy index, GDP per capita growth, ln(credit), government consumption, growth exchange rate, hyperinflation, life expectancy, ln(GDP per capita), ln(GDP per capita) squared, ln(inflation), ln(investment), ln(trade), Mills ratio 2, Mills ratio 3, Mills ratio 4, natural resource rents, population growth, time trend, urban population, value added of agriculture, vote in line with G7.