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Public Family Firms and Economic Inequality Across Societies

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Abstract

Research and public interest on economic inequality have grown over the last years. Family firms and the concentration of wealth and power in the hands of a few wealthy business families have been discussed as both a cause and a consequence of economic inequality. Yet, so far, we lack knowledge about the relationship between economic inequality and the share of family firms in an economy. Our study investigates how the share of family-controlled public firms correlates with various measures of income and wealth inequality. The results show that a higher share of public family-controlled firms leads to more income inequality in a country. This effect is particularly pronounced for the middle of the income distribution as opposed to the top quantiles. Redistribution only mitigates this effect to some extent, as the effect is significant for market income and disposable income. We also find that a higher share of family-controlled firms contributes to an increase in wealth inequality. Our results are of economic relevance as, for instance, a one standard deviation change in the share of family-controlled firms leads to an increase of around 1.4 percentage points in the Gini coefficients for market income, disposable income, and wealth.

JEL codes: C50, D63, E00, L23.

Keywords: Cross-country analysis, family firms, income inequality, wealth inequality.

1. Introduction

Family firms are a common firm type in many countries. This is true for private but to a lower extent also for public firms. Aminadav and Papaioannou (2020) show for 2012 that 16.2% of all public firms in the US are family-controlled (China: 17.3%, Germany: 26.2%, Italy: 36.1%, Japan: 4.2%).

A research stream has emerged that investigates how family firm prevalence is related to country-level economic outcomes. Fogel (2006), for example, investigates family control in 41 countries and shows that countries with inefficient bureaucracies, interventionist governments, and less functioning financial markets have a higher presence of oligarchic family control with negative effects on health care, education, infrastructure, as well as basic institutions. Morck et al. (2005) suggest that family firm owners and wealthy families use their power to influence politics in their interest leading to an inefficient resource allocation hindering economic growth. This argument is in line with earlier economic history research arguing for a relationship between industrial decline and family firm ownership (e.g., Chandler, 1994; Landes, 1969). In short, family control is associated with worse social and economic outcomes; a finding that is backed by Morck and Yeung (2004) who demonstrate that family control has a negative effect on economic growth.[1]

However, as there is hardly any data available on country shares of family control, research lacks a comprehensive investigation of the relationship between family control and income and wealth inequality overall so far. The only exception is Fogel (2006), who documents that higher family control of the 10 largest conglomerates is associated with higher income inequality. Despite this study, we know little about the relationship between family firms and economic inequality across societies. This is an important gap in the

[1] A related research stream investigates how country-level institutions affect family firm performance. In this regard, Berrone et al. (2020) find that informal institutions supporting the legitimacy of family firms have a positive influence on family firm performance. In a similar vein, Jaskiewicz et al. (2021) are able to show that cross-country differences regarding trust in family and trust in institutions influence the performance of family-managed firms.

literature as society and policy-makers increasingly care about economic inequality. In fact, reducing (economic) inequality is considered one of the biggest challenges that many societies face today.[2] Research about the relationship between family firms and economic inequality across societies helps to answer the question about the value of family firms for society and whether they should be supported through public policy or not. Through tax law, inheritance law, and other policy measures, policy-makers have the possibility to influence the prevalence, growth, and intergenerational survival of family firms (Ellul et al., 2010; Grossmann & Strulik, 2010). Knowing whether, when, and to what extent family firms influence economic inequality provides policy-makers with an evidence-based policy perspective.

The growing economic inequality in many societies has spurred a lot of interest in research and the public media. Research on the extent, causes, and consequences of economic inequality has grown strongly. Piketty and Saez (2014) show that the share of the top 10% of incomes has increased dramatically since the 1980s. Wealth-income ratios have risen from 200–300% in the 1970s to 400–600% in 2010 (Piketty & Zucman, 2014). Research on inequality has grown steadily over the last years and produced a large number of concepts and measures. A distinction is made, for example, between cross-country and within-country inequality (e.g., Bengtsson & Waldenström, 2018; O'Rourke, 2001). Another important distinction concerns wealth versus income inequality (e.g., Jones, 2015; Piketty & Zucman, 2014). Our study focuses on inequality across countries and over time and investigates how the share of family-controlled public firms correlates with various measures of income and wealth inequality.

Our results show that a higher share of family-controlled firms leads to more income inequality in a country. This effect is particularly pronounced for the middle of the income

[2] Reducing inequality within and among countries is also part of the United Nations Sustainable Development Goals.

distribution and not for the top quantiles. Redistribution only mitigates this effect to some extent, as the effect is significant for market income and disposable income. We also find that a higher share of family-controlled firms contributes to an increase in wealth inequality. Our findings are of economic relevance as, for instance, a one standard deviation change in the family control share leads to an increase of around 1.4 percentage points (pp) in the Gini coefficients for market income, disposable income, and wealth.

With these novel results, we contribute to two important and growing research streams. The first research stream concerns the causes and consequences of economic inequality, which have been investigated from different perspectives. More specifically, prior research demonstrates how capital policies (e.g., Dolado et al., 2021; Heckman & Krueger, 2005), productivity slowdowns (e.g., Arestis, 2021; Furman & Orszag, 2018), globalization (Bergh & Nilsson, 2010; Asteriou et al., 2014), population development (e.g., Firebaugh, 1999; Ram, 1984), and entrepreneurship (Halvarsson et al., 2018) relate to inequality levels. Our study shows that firm ownership and firm type also have an effect in this context. The second research stream is about the role of family firms in the economy. While prior research has documented the effects of family firms on economic growth, resource allocation, and productivity (e.g., Morck & Yeung, 2004; Barbera & Moores, 2013; Memili et al., 2015), we so far know little about how family firms relate to inequality. Our study helps to close this gap and finds that there is indeed a relationship between family firms and economic inequality. Furthermore, this relationship exists for both wealth and income inequality.

2. Data and empirical methodology

2.1 Dataset

Our dataset consists of three categories of variables: inequality measures as left-hand side variables, the family firm variable as key explanatory variable, and macroeconomic variables

as controls. Data for the share of family-controlled firms in a specific country is available for 2007 and 2012. Hence, we collect the remaining data accordingly. However, the Gini index for wealth is only available for 2010 (and 2012). Therefore, we interpolate the share of family-controlled firms to generate proxies for this year. Table A1 in the Appendix lists all variables along with their definitions and sources. Table A2 provides summary statistics of all variables in the specific years.

Inequality measures. The measures for inequality in a specific country contain three different variables for (i) the top shares of the national income distribution and (ii) Gini indexes. First, the top shares include the 1%, 10%, and 50% quantile of the pre-tax national income. Second, the Gini indexes rely on pre-tax income, post-tax income, and private wealth, respectively.

As the first group of inequality measures, we use the top income shares collected by the World Inequality Database (WID). This variable shows the national income share (pre-tax, pre-transfer) held by 1% (10%, 50%) of the highest incomes. In particular, the 1% and 10% versions are – in contrast to the Gini – insensitive to changes in the bottom half of the respective income distribution and provide a good approximation of the top income concentration.

Second, as the most common summary statistic for measuring income inequality, the Gini coefficient is relatively sensitive to changes in the middle of the income distribution. With the variable theoretically ranging from 0 to 100, the minimum value indicates equal distribution. Two of these indexes stem from the Standardized World Income Inequality Database (SWIID). The SWIID relies on many data sources (e.g., OECD, World Bank) and assures the comparability of income inequality data across countries and over time. The first Gini estimate is based on the market income (pre-tax, pre-transfer) of the households, whereas the second estimate uses disposable income data (post-tax, post-transfer). This

makes it possible to incorporate information about fiscal policy into our study, since tax data is difficult to obtain on a large scale. In our sample, this redistributional effect is reflected in the mean values, which are on average more than 10 points higher for the market income Gini than the disposable income Gini (see Table A2).

In addition, we use a Gini index for measuring wealth inequality. This requires information on the distribution of wealth within countries. Due to the lack of reliable data for many regions, Credit Suisse utilizes the differences between Lorenz curves for income and wealth in countries with a good coverage.[3] More specifically, they take advantage of the fact that the version for wealth runs everywhere below the curves for income. Consequently, for countries with missing wealth data, the corresponding wealth Gini is estimated by scaling down the Lorenz curves for income by the median ratio of income to wealth. Accordingly, with a mean value over 70, this measure is considerably higher than their income counterparts, and has also risen in recent years (Credit Suisse, 2021). This indicates that wealth is distributed more unequally than income.

Share of public family-controlled firms. Aminadav and Papaioannou (2020) provide a comprehensive description of corporate control for a large number of countries and calculate the share of public family-controlled firms for the years 2007 and 2012. The authors rely on numerous sources such as regulatory filings, company reports, and government publications. A specific firm is labelled as controlled if a shareholder (state, family, other) has more than 20% of the voting rights. In a second step, they identify those controlled firms that are family-controlled. When considering all countries, the overall share of family-controlled firms is almost at 20%, with a maximum of over 50% in Greece (2007). However, there are also a couple of entries without any family control in the dataset. The

[3] Credit Suisse relies on household balance sheets and surveys as primary sources.

data is available for the years 2007 and 2012. As previously mentioned, we construct variables for the year 2010 by linear interpolation to obtain a match with the data on wealth inequality.

Macroeconomic variables. To control for differences in the macroeconomic environment, we mainly focus on the economic and financial development of a country. Thereby, we concentrate on the standard determinants of inequality (e.g., Roine et al., 2009; Jaumotte et al., 2013; Furceri & Ostry, 2019) because a broader set of controls comes at the cost of missing observations in our dataset. We use the real GDP per capita, the capital stock per capita, population, and a human capital index, based on years of schooling and returns to education, as standard variables explaining economic growth in the long run. The data is taken from the Penn World Table. Next, we consider government expenditures (as share of the GDP) as a proxy of fiscal policy (in the absence of more granular data on taxes with a large country coverage) and trade openness, that is, the sum of imports and exports divided by the GDP. The remaining variables focus on the financial development of a country and are provided by the World Bank: bank deposits (as share of the GDP), stock market capitalization (as share of the GDP), and a variable expressing recent bank crises. The latter measures the share of years (over the past five years) during which a banking crisis occurred in the respective country.

2.2 Econometric methodology

To assess the effect of family firm control on income and wealth inequality, we use the following specification:

$$ineq_{i,t} = \alpha + \beta\, FC_{i,t} + \gamma' X_{i,t-1} + \delta_t + \varepsilon_{i,t} \quad (1)$$

The dependent variable $ineq_{i,t}$ represents one of the six indicators measuring inequality (top 50%, top 10%, and top 1% income as well as the Gini indexes based on market income, disposable income, and wealth). $FC_{i,t}$ represents the share of family-controlled public firms in country i and year t, and matrix $X_{i,t-1}$ denotes the set of macroeconomic and financial controls, which are lagged by one year to circumvent problems of reverse causality. α is the intercept, δ_t is a time-fixed effect and $\varepsilon_{i,t}$ an error term.[4] Our sample includes 78 countries and, depending on the specification, up to 142 observations.[5] Eq. (1) is estimated with least squares and standard errors are clustered at the country level to account for country-specific autocorrelation and heteroskedasticity.

In a second step, to also control for possible reverse causality between $ineq_{i,t}$ and $FC_{i,t}$, we conduct an instrumental variables (IV) estimation with $FC_{i,2007}$ as an instrument for $FC_{i,2012}$. The significant partial correlation of over 0.6 (when controlling for X_i) and first-stage F-statistics larger than 30 indicate that $FC_{i,2007}$ can serve as a reliable instrument. This approach of circumventing an endogeneity problem can, loosely speaking, be seen as using a lagged version, i.e., the fifth lag, of the explanatory variable. Consequently, the IV estimation leads to a collapse of the panel structure into a cross-sectional setting. This significantly reduces the number of observations since we can only use data for year 2012. In the absence of a panel structure, we use heteroskedasticity-robust standard errors for the IV estimation.

[4] We do not include country-fixed effects due to the small number of observations per country.
[5] The following countries are included: Argentina, Australia, Austria, Bahrain, Bangladesh, Belgium, Botswana, Brazil, Bulgaria, Canada, Chile, China, Colombia, Croatia, Cyprus, Czech Republic, Denmark, Egypt, Estonia, Finland, France, Germany, Ghana, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Israel, Italy, Ivory Coast, Japan, Jordan, Kazakhstan, Kenya, Korea, Kuwait, Latvia, Lithuania, Luxembourg, Malaysia, Malta, Mexico, Morocco, Namibia, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Portugal, Qatar, Romania, Russia, Saudi Arabia, Serbia, Singapore, Slovakia, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Thailand, Tunisia, Turkey, Uganda, Ukraine, United Arab Emirates, United States, Venezuela, and Zambia.

3. Empirical results

3.1 Baseline results

Table 1 sets out our results for the impact of family-controlled firms on the top income shares and the Gini indexes for market income, disposable income, and wealth.

[Table 1 about here]

We find a positive and significant effect of the share of family-controlled firms (FC) only in case of the top 50% income measure (Column 1 of Table 1). In case of the top 10% and top 1% measures (Columns 2 and 3), the coefficients for the FC are positive but insignificant. Turning to the Gini indexes, we find a positive effect for both income variables (Columns 4 and 5). Taken together, these findings imply that a higher share of family-controlled firms is associated with more income inequality and that this effect is not driven by the top 10% of the income distribution. We obtain a similar result for wealth inequality (Column 6) and can therefore conclude that a higher share of family-controlled firms leads to additional income and wealth inequality. Finally, the R^2 never falls short of 22% and reaches values of up to 63%. Hence, we are confident that our models capture a substantial degree of the cross-country heterogeneity in economic inequality.

Next, we put some perspective on the economic relevance of our results. We use the standard deviations of the family control variables to transform the one-unit changes in the FC (in percentage points, pp) from columns (4) to (6) of Table 1 into one-standard deviation (SD) changes.[6] Accordingly, a one-SD change in FC leads to an increase of (i) 1.43 pp in the market income Gini, (ii) 1.40 pp in the disposable income Gini, and (iii) 1.44 pp in the wealth

[6] The standard deviations for the different estimation samples are as follows. FC: 10.81 (top income share), 10.95 (Gini income), and 9.98 (Gini wealth).

Gini. Therefore, we conclude that the share of family-controlled firms is of economic relevance in their effect on income and wealth inequality.

In the next step, we explore the robustness of our results by means of an IV regression with the family control share of 2007 serving as an instrument for 2012.

[Table 2 about here]

Almost all estimates for the FC indicator are positive and approximately twice as large compared to the baseline results (top panel). The only exception is the wealth Gini where the value remains roughly the same. However, only the top 50% coefficient stays significant due to the larger standard errors in a smaller sample size and the consequences of using an IV approach. The picture remains the same when comparing these results to a least squares estimation for the year 2012 (bottom panel). In fact, the panel least squares results of Table 1 and the least squares results for the year 2012 (bottom panel of Table 2) may underestimate the relationship.

3.2 Further analyses

The sample we have used so far to study the effects of family-controlled firms on income and wealth inequality is heterogeneous, as it comprises countries in different stages of their economic development. To test for differences across countries, we split the sample into a group of high-income (advanced) economies and a group of developing economies using the (time-varying) country grouping of the World Bank. Table 3 depicts the results of these sub-sample regressions.

[Table 3 about here]

We find a couple of country group-specific patterns in our results. First, the R^2 and the explanatory power of the model is (much) larger for the group of advanced economies, indicating that these are more homogeneous than the developing countries. It is therefore unsurprising that the estimated standard errors are larger for the latter group. Second, FC plays a significant role, mostly in developing countries (except for wealth inequality). Third, the inequality-increasing effect of family ownership in developing countries is particularly prevalent in the top 10% of the income distribution and for wealth inequality. Finally, the overall results for the Gini indexes are replicated (with lower point estimates) for the group of advanced countries.

4. Conclusions

In this study, we investigate the relationship between the level of economic inequality in a country and the concentration of firm ownership. More specifically, we explore how the share of family-controlled public firms can explain various measures for economic inequality in a cross-country analysis. These measures include top income shares, two income Gini indicators, and the wealth Gini indicator.

In terms of a qualitative direction, our results are clear. On average, countries with a higher share of public family-controlled firms bear a larger degree of economic inequality. This is true for measuring inequality by top income shares and by Gini indexes. For the former, we find a somewhat stronger relationship for the middle of the income distribution (as opposed to the top quantiles). In other words, the share of family-controlled firms relatively less affects (extremely) high incomes.

Our results are in line with prior research on the wealth of individuals showing that the life-cycle model is unable to explain large parts of wealth accumulation (e.g., Abel, 1985; Gale & Scholz, 1994; Carney & Nason, 2018) and that intergenerational wealth transfers are an important factor (Kotlikoff & Summers, 1981). Our finding that primarily the middle of the income distribution and not the top quantiles are affected by the share of family-controlled firms can be explained through the enormous wealth created by start-up entrepreneurs in the digital economy. In a knowledge-based economy such as the US, superstar entrepreneurs such as Elon Musk (PayPal, SpaceX, Tesla), Larry Page (Google), Jeff Bezos (Amazon), Bill Gates (Microsoft), and Mark Zuckerberg (Facebook) dominate the list of the richest individuals. These highly successful entrepreneurs often have an upper-middle class background and are typically not born in a super wealthy family (Kaplan & Rauh, 2013). This way, our study is also in line with the findings from the literature on superstar entrepreneurs and inventors and their impact on inequality (Gabaix et al., 2016; Garicano & Rossi-Hansberg, 2006).

At first sight, our results documenting that family firm ownership increases income inequality appear contrary to prior firm-level research about the relationship between family firms and their employees. Here, a common finding is that family firms offer a more stable workplace than to non-family firms (e.g., Bjuggren, 2015; Block, 2010; Sraer & Thesmar, 2007). Accordingly, one would expect lower inequality in societies dominated by family firms. Yet, this increased job stability may in fact come with the cost of a reduced wage and a lower labor income as some prior firm-level studies suggest (e.g., Bassanini et al., 2013; ; Ellul et al., 2018).

Our study is among the first to explore the relationship between family firms and (economic) inequality. Despite having clear results, our study has some limitations opening up avenues for further research. First, our findings are based on only two time waves. More longitudinal data is needed to investigate long-term trends. Unfortunately, detailed data on

firm ownership is only available since a few years. With greater transparency about firm ownership as well as better and broader datasets, future research could investigate the long-run effects of family firm prevalence on inequality. Second, the question of causality is still unanswered. Does inequality lead to a higher share of family-controlled firms or vice versa? Truly exogenous events such as natural disasters or unexpected wars influencing inequality might help to find out about the direction of these relationships.

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Tables

Table 1. Family-controlled firms and economic inequality

	Top 50% Income	Top 10% Income	Top 1% Income	Gini Mkt Income	Gini Disp. Income	Gini Wealth
Family Control	0.068*	0.120	0.070	0.131*	0.128*	0.144**
	(0.034)	(0.081)	(0.044)	(0.072)	(0.070)	(0.062)
	[0.051]	[0.142]	[0.115]	[0.074]	[0.072]	[0.023]
Year 2012	1.019**	2.611***	0.389	0.834	2.042***	2.060*
	(0.437)	(0.904)	(0.623)	(0.648)	(0.703)	(1.160)
Lagged Real GDP pc	0.059*	0.139**	0.078**	0.145	0.183***	0.151***
	(0.035)	(0.065)	(0.031)	(0.094)	(0.052)	(0.054)
Lagged Population	−0.002	−0.004***	−0.001	−0.002	−0.001	0.001
	(0.001)	(0.002)	(0.001)	(0.003)	(0.001)	(0.003)
Lagged Capital Stock pc	−0.021*	−0.044*	−0.030***	−0.041*	−0.066***	−0.037**
	(0.013)	(0.025)	(0.009)	(0.023)	(0.017)	(0.015)
Lagged Human Capital	−2.904***	−7.451***	−1.363	−3.615*	−8.118***	0.027
	(0.927)	(1.898)	(0.999)	(1.969)	(1.871)	(1.784)
Lagged Gov. Expenditures	−0.246*	−0.444*	−0.335**	0.666***	−0.029	0.014
	(0.129)	(0.266)	(0.141)	(0.247)	(0.246)	(0.237)
Lagged Trade	−0.011**	−0.021*	−0.016**	−0.009	−0.014	−0.010
	(0.005)	(0.012)	(0.006)	(0.009)	(0.011)	(0.014)
Lagged Bank Deposits	−0.003	−0.009	−0.003	0.004	−0.009	−0.038***
	(0.009)	(0.020)	(0.012)	(0.012)	(0.014)	(0.013)
Lagged Stock Market Cap.	0.015	0.045**	0.024***	0.018*	0.030***	0.038***
	(0.011)	(0.020)	(0.009)	(0.010)	(0.010)	(0.007)
Lagged Crisis Years	−0.013	−0.038	−0.009	0.019	0.007	0.034
	(0.013)	(0.024)	(0.012)	(0.016)	(0.014)	(0.026)
Constant	96.027***	70.760***	25.500***	44.339***	60.835***	69.590***
	(3.247)	(6.179)	(2.756)	(4.963)	(5.327)	(4.439)
Observations	142	142	142	138	138	137
R^2	0.533	0.567	0.452	0.220	0.631	0.264

Notes: Table shows the results for Eq. (1) and different left-hand side variables. Standard errors (in parentheses) are clustered at the country level. p-values for the key explanatory variable are in brackets. * p < 0.1, ** p < 0.05, *** p < 0.01.

Table 2. Family-controlled firms and economic inequality: Robustness tests

IV for 2012	**Top 50% Income**	**Top 10% Income**	**Top 1% Income**	**Gini Mkt Income**	**Gini Disp. Income**	**Gini Wealth**
Family Control	0.134*	0.264	0.140	0.269	0.255	0.137
	(0.076)	(0.176)	(0.092)	(0.162)	(0.174)	(0.119)
	[0.086]	[0.141]	[0.132]	[0.103]	[0.148]	[0.253]
Observations	65	65	65	63	63	66
R^2	0.577	0.603	0.502	0.205	0.645	0.309
F-Statistics (First Stage)	31.56	31.56	31.56	30.93	30.93	31.94

OLS for 2012	**Top 50% Income**	**Top 10% Income**	**Top 1% Income**	**Gini Mkt Income**	**Gini Disp. Income**	**Gini Wealth**
Family Control	0.073*	0.097	0.070	0.114	0.130*	0.125
	(0.041)	(0.095)	(0.064)	(0.092)	(0.072)	(0.082)
	[0.080]	[0.310]	[0.278]	[0.219]	[0.078]	[0.133]
Observations	65	65	65	63	63	66
R^2	0.549	0.582	0.475	0.209	0.616	0.279

Notes: Top panel shows IV estimates for a modified version of Eq. (1) and different left-hand side variables where the family control share of 2007 serves as instrument for 2012. Bottom panel shows the corresponding OLS estimates for Eq. (1) and the year 2012. Robust standard errors are in parentheses. p-values are in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Models include a constant and lagged macroeconomic controls (not shown). All omitted results are available on request.

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Table 3. Family-controlled firms and inequality in advanced and developing countries

Top 50% Income Pre-Tax	**All**	**Advanced**	**Developing**
Family Control	0.068*	0.036	0.102*
	(0.034)	(0.049)	(0.057)
	[0.051]	[0.468]	[0.081]
R^2	0.533	0.615	0.356
Top 10% Income Pre-Tax	**All**	**Advanced**	**Developing**
Family Control	0.120	0.043	0.227
	(0.081)	(0.112)	(0.144)
	[0.142]	[0.700]	[0.123]
R^2	0.567	0.631	0.398
Top 1% Income Pre-Tax	**All**	**Advanced**	**Developing**
Family Control	0.070	0.012	0.150
	(0.044)	(0.046)	(0.093)
	[0.115]	[0.791]	[0.114]
R^2	0.452	0.552	0.221
Gini Market Income	**All**	**Advanced**	**Developing**
Family Control	0.131*	0.082	0.176
	(0.072)	(0.061)	(0.142)
	[0.074]	[0.185]	[0.223]
R^2	0.220	0.276	0.419
Gini Disposable Income	**All**	**Advanced**	**Developing**
Family Control	0.128*	0.083	0.184
	(0.070)	(0.053)	(0.145)
	[0.072]	[0.124]	[0.212]
R^2	0.631	0.738	0.488
Gini Wealth	**All**	**Advanced**	**Developing**
Family Control	0.144**	0.116*	0.351**
	(0.062)	(0.065)	(0.149)
	[0.023]	[0.080]	[0.025]
R^2	0.264	0.372	0.349

Notes: Table shows the results for Eq. (1) and different left-hand side variables. Standard errors (in parentheses) are clustered at the country level. p-values for are in brackets. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Models include a constant, lagged macroeconomic controls, and a year-fixed effect for 2012. Column All replicates the findings from Table 1. All omitted results are available on request.

Appendix

Table A1. Variables and definitions

Variable	Description	Data source
Dependent variables		
Top 50% Income Pre-Tax	Top 50% share of national income (pre-tax)	World Inequality Database (2021)
Top 10% Income Pre-Tax	Top 10% share of national income (pre-tax)	World Inequality Database (2021)
Top 1% Income Pre-Tax	Top 1% share of national income (pre-tax)	World Inequality Database (2021)
Gini Market Income	Estimate of Gini index of inequality in equivalized (square root scale) household market (pre-tax, pre-transfer) income	Solt (2020)
Gini Disposable Income	Estimate of Gini index of inequality in equivalized (square root scale) household disposable (post-tax, post-transfer) income	Solt (2020)
Gini Wealth	Estimate of Gini index of inequality in wealth derived from income and wealth distributions	Credit Suisse (2010, 2012)
Independent variable		
Family Control (in %)	Share of public family-controlled firms in a country	Aminadav & Papaioannou (2020)
Control variables		
Real GDP pc (in 1000 USD)	Real GDP at constant 2017 national prices (in thousands 2017 US$) per capita	Penn World Table (2021), Own Calculations
Population (in Millions)	Population (in millions)	Penn World Table (2021)
Capital Stock pc (in 1000 USD)	Capital stock at current PPPs (in thousands 2017 US$) per capita	Penn World Table (2021), Own Calculations
Human Capital	Human capital index, based on years of schooling and returns to education	Penn World Table (2021)
Gov. Exp. (% of GDP)	General government final consumption expenditure	World Bank Data (2021)
Trade (% of GDP)	Exports and imports to GDP (%)	World Bank Data (2021)
Bank Deposits (% of GDP)	Bank deposits to GDP (%)	World Bank Data (2021)
Stock Market Cap. (% of GDP)	Stock market capitalization to GDP (%)	World Bank Data (2021)
Crisis Years (in %)	Banking crisis in % of last five years (0%, 20%, 40%, 60%, 80%, 100%)	World Bank Data (2021), Own Calculations

Table A2. Descriptive statistics

	Year = 2007		Year = 2010		Year = 2012	
	Mean	**SD**	**Mean**	**SD**	**Mean**	**SD**
Dependent variables						
Top 50% Income Pre-Tax	83.32	4.67			83.51	4.88
Top 10% Income Pre-Tax	42.66	9.78			42.97	10.44
Top 1% Income Pre-Tax	15.37	5.55			14.80	5.65
Gini Market Income	46.62	6.93			47.35	7.24
Gini Disposable Income	35.84	9.23			37.21	9.56
Gini Wealth			70.69	8.35	73.14	7.39
Independent variable						
Family Control	18.87	11.45	18.59	9.73	17.65	10.12
Control variables						
Lagged Real GDP pc	31.50	23.35	31.50	21.60	28.77	22.59
Lagged Population	73.14	213.26	79.99	227.34	75.80	215.09
Lagged Capital Stock pc	151.21	112.89	161.02	112.95	145.63	115.34
Lagged Human Capital	2.85	0.51	2.89	0.51	2.85	0.54
Lagged Gov. Exp.	16.44	4.42	18.00	4.69	16.58	4.86
Lagged Trade	99.91	71.71	93.84	69.87	102.67	74.19
Lagged Bank Deposits	66.47	56.30	79.23	64.52	68.76	55.70
Lagged Stock Market Cap.	82.16	95.20	67.94	107.78	63.86	119.20
Lagged Crisis Years	0.36	3.01	16.02	24.14	23.67	38.53