

Finance and Income Inequality Revisited

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Our Contributions

1. We simultaneously include FD, FL and BC in our empirical analysis of the relationship between finance and income inequality
 - Previous studies include at best two of these simultaneously
2. We use different indicators of financial liberalization
 - Like others, we use the FL data of Abiad et al. (2010, IMF)
 - We construct an alternative based on the economic freedom index of the Fraser Institute (Gwartney et al., 2015)
3. We examine whether the impact of FL is conditioned by
 1. the level of financial development and
 2. economic and political institutional quality

Data Sample

- Our sample covers data for the years 1971 until 2010 allowing for up to 7 different 5-year average periods
- In total 123 different countries are covered
- The panel is highly unbalanced

Data:

Dependent Variable

- Gini coefficient based on households' income from Solt's (2009) Standardized World Income Inequality Database
 - Index that represents household income *before* taxes, as this shows inequality exclusive of fiscal policy
 - SWIID most comprehensive database and allows comparison across countries, because it standardizes income
 - Gini coefficient is less than perfect for measuring income inequality, but data availability dictates the choice
 - We construct averages of the Gini coefficients across 5 years
 - Macroeconomic data are noisy, especially for income inequality data
 - Annual SWIID data are imputed for years for which no information was available in the underlying databases
 - Some explanatory variables are only available for 5-year intervals

Data:

Financial Development (FD)

- Private credit divided by GDP
 - Better than M2 over GDP, which does not measure channeling of society's savings to private sector projects
 - Beck et al. (2007, J. of Ec.Gr.)
 - The impact of FD runs via the banking sector, rather than capital market capitalization
 - Gimet and Lagoarde-Segot (2011, JBF)
 - Using stock market capitalization as percentage of GDP reduces the sample by almost half while the results go in the same direction
- Data measured at the end of the preceding 5-year period

Data:

Financial Liberalisation (FL)

1. Data of Abiad et al. (2010, IMF)

- Contains 7 sub-indices on banking regulatory practices measured on a scale from 0 to 3 (fully repressed to fully liberalized)
- We drop the sub-index on banking supervision
- Remaining 6:
 - credit controls and reserve requirements
 - interest rate controls
 - banking-sector entry
 - capital-account transactions
 - privatization of banks
 - liberalization of securities markets

Data:

Financial Liberalisation (FL)

1. Data of Abiad et al. (2010, IMF)
2. Data from the Fraser Institute on economic freedom
 - Has broader coverage of financial sector & includes recent years
 - We use four sub-indices
 - freedom to own foreign currency bank accounts
 - black market exchange rate
 - controls of the movement of capital
 - extent to which there are credit and interest rate controls
 - extent to which the banking industry is privately owned
 - extent to which credit is supplied to the government sector
 - extent to which interest rate controls interfere with the credit market
 - Data measured at the end of the preceding 5-year period

Data:

Banking Crisis (BC)

- Data from Laeven and Valencia (2013, IMF)
 - Crises are identified based on several criteria:
 - signs of financial distress in the banking system.
 - “significant banking policy intervention measures” of which they identify six (such as a deposit freeze or nationalizations).
 - At least three of these measures need to have been implemented for a crisis to be classified as systemic
 - three other criteria:
 - share of nonperforming loans exceed 20%, bank closures make up at least 20% of banking assets and fiscal restructuring costs exceed 5% GDP
- Crisis dummy is one if a banking crisis started somewhere during the preceding five-year period

Main Model Specification

- Our unbalanced dynamic panel model equation:

$$\begin{aligned} Ineq_{i,t} = & a_i + b_1 FD_{i,t-1} + b_2 FL_{i,t-1} + b_3 BC_{i,t-1} \\ & + b_4 interactions + b_5 X_{i,t-1} + u_{i,t} \end{aligned}$$

- a_i denote the country-fixed effects
- u denotes the error term
- X is a vector of additional control variables
- *interactions* include the interaction terms we focus on
 - We allow the impact of FL on $Ineq$ to be conditional on
 - the level of financial sector development (FD)
 - the quality of political and/or economic institutions

Data:

Institutional Interaction Variables

- ICRG Database
 - Quality of political institutions (PI):
 - Democratic accountability
 - Quality of economic institutions (EI):
 - Sum of (appropriately re-weighted versions of) bureaucratic quality, corruption and law and order

Basic Regressions

VARIABLES	(1)	(2)	(3)	(4)
Start of a Systemic Banking Crisis during t-7 and t-3	0.876** (2.022)			1.049** (2.439)
Domestic credit to private sector (% of GDP)		0.0652*** (5.089)		0.0518*** (4.278)
Financial lib.: Abiad et al. index (corrected)			0.256*** (4.153)	0.155*** (3.120)
Observations	426	426	426	426
R-squared	0.011	0.173	0.111	0.217
Number of cntid	89	89	89	89
Hausman test (p-value)	0.886	0.0955	0.484	0.397

VARIABLES	(1)	(2)	(3)	(4)
Start of a Systemic Banking Crisis during t-7 and t-3	1.225*** (2.776)			1.453*** (3.210)
Domestic credit to private sector (% of GDP)		0.0603*** (4.654)		0.0538*** (4.462)
Financial lib.: Avg. of EFW-areas 3D, 4C, 4D and 5A			0.426** (2.451)	0.244 (1.650)
Observations	518	518	518	518
R-squared	0.017	0.126	0.044	0.157
Number of cntid	121	121	121	121
Hausman test (p-value)	0.818	0.00972	0.388	0.0704

- All finance-related variables are significant:
 - Higher FD, FL and BC “Granger causes” higher inequality
 - Results are independent of measures of FL used
- Country-fixed effect often do not appear needed

Regression Results Allowing for Conditionality

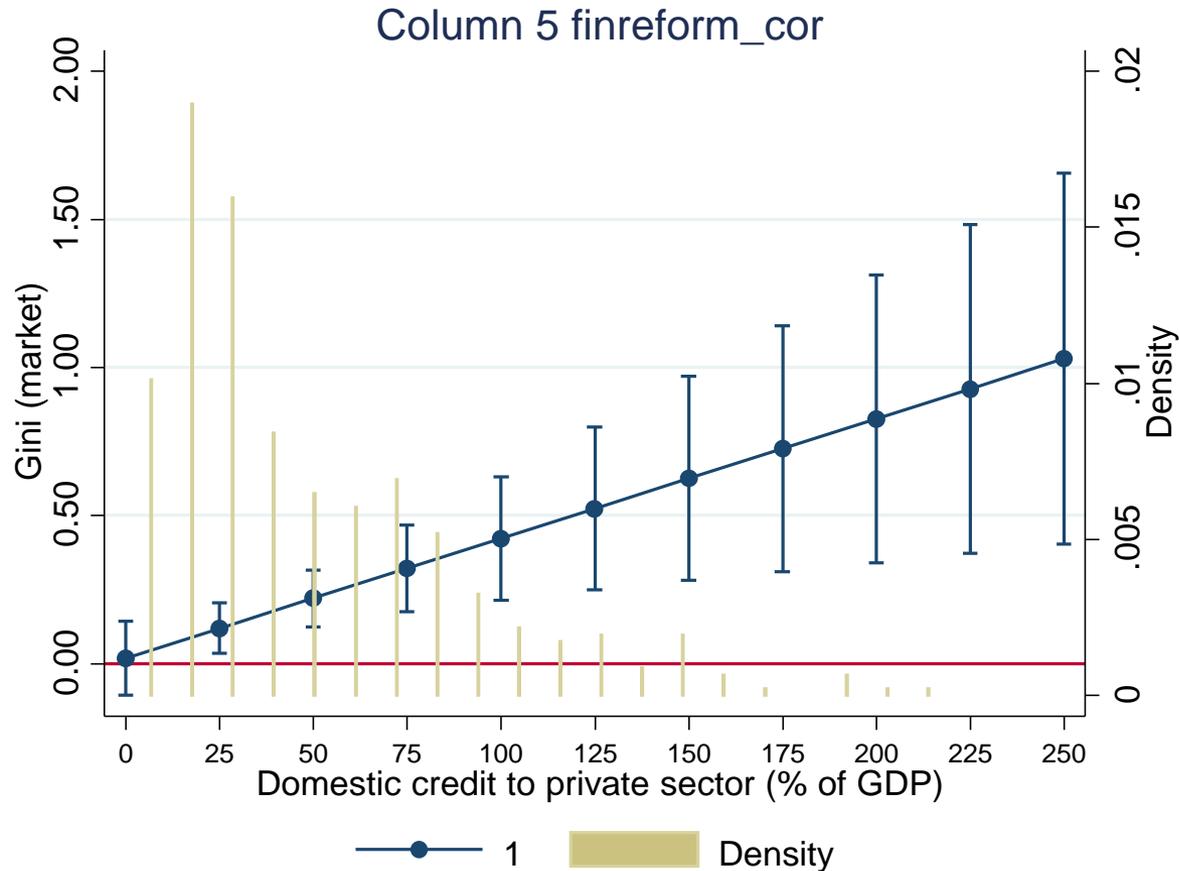
(Abiad et al. data for FL)

VARIABLES	(5) +interaction	(6) +democ	(7) +democ	(8) +democ	(9) +ec.glob-flows
Start of a Systemic Banking Crisis during t-7 and t-3	0.976** (2.387)	1.026*** (2.800)	0.940*** (2.661)	0.903*** (2.725)	0.895** (2.515)
Domestic credit to private sector (% of GDP)	-0.0168 (-0.507)	0.0349*** (3.405)	0.0297*** (3.002)	0.0464 (1.065)	0.0247*** (2.695)
Financial lib.: Abiad et al. index (corrected)	0.0186 (0.245)	0.202*** (3.771)	-0.146 (-1.197)	-0.178 (-1.230)	-0.198 (-1.643)
c.domcredgdp#c.finreform_cor	0.00404** (2.325)				
ICRG: Democratic Accountability		-0.638** (-2.430)	-1.641*** (-3.452)	-1.557*** (-3.677)	-1.605*** (-3.619)
c.democ#c.finreform_cor			0.0895*** (2.920)	0.0957*** (2.653)	0.0857*** (2.863)
c.domcredgdp#c.democ				-0.00325 (-0.429)	
Economic Globalization: Actual Flows					0.0628*** (2.644)
Observations	426	345	345	345	338
R-squared	0.242	0.194	0.219	0.221	0.261
Number of cntid	89	86	86	86	85
Hausman test (p-value)	0.0779	0.0480	0.000151	0.000287	7.27e-05
F-test on finreform_cor (p-value)	0.00115		0.000105	6.11e-05	0.00153
F-test on democ (p-value)			0.00378	0.00457	0.00218
F-test on domcredgdp (p-value)	5.11e-06			0.0116	

- Quality of economic institutions do not appear to matter (not shown)
- Quality of political institutions do
- Interaction term FDxFL matters
- Interaction term FLxPI is sign.
- However, FDxPI is not significant
- Only Ec.Glob. is significant as add. control

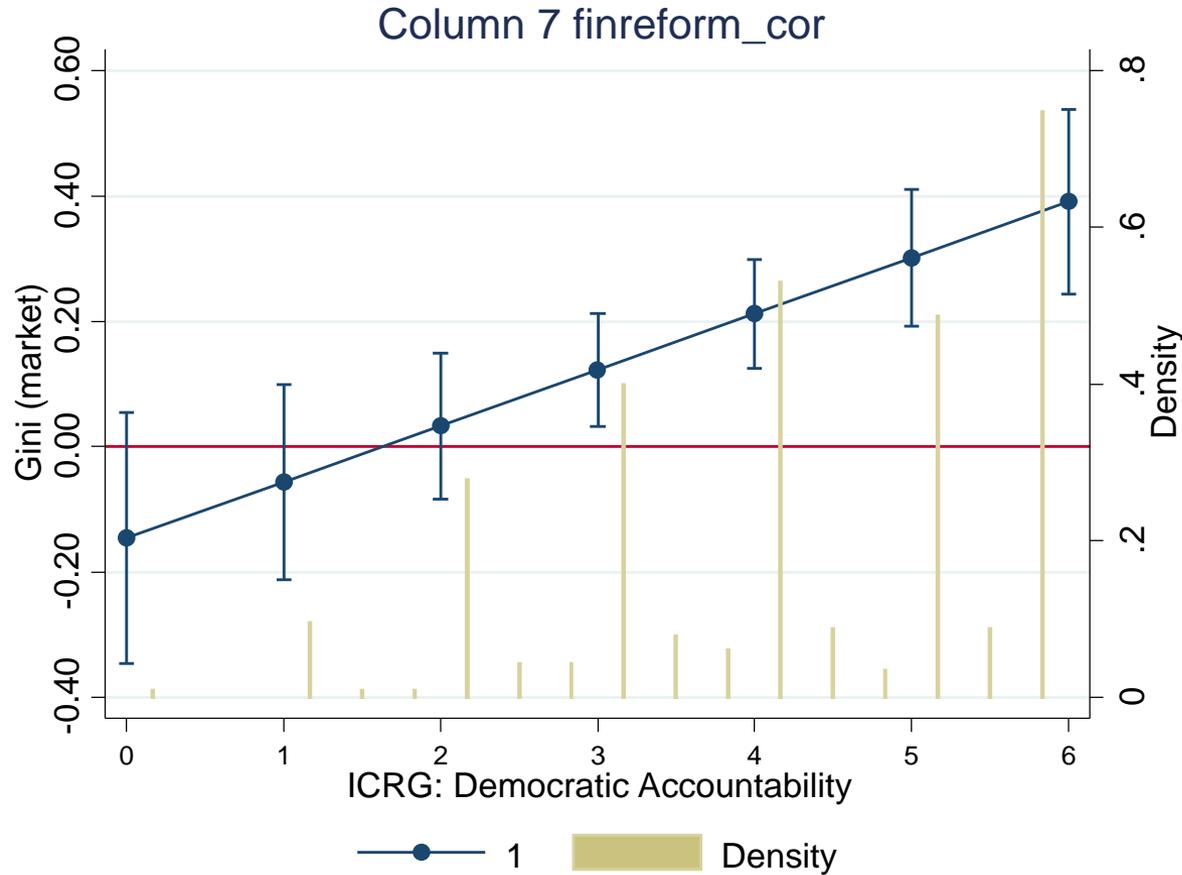
Effect of FL on Inequality Conditional on FD

(Abiad et al. data for FL)



Effect of FL on Inequality Conditional on PI

(Abiad et al. data for FL)



Conclusions

- Financial development, financial liberalization and banking crises increase income inequality
 - Positive impact of financial liberalization on the Gini coefficient is higher if financial development is higher
- Better political institutions reduce income inequality
- However, the positive impact of financial liberalization on income inequality is higher in countries with a higher quality of political institutions
- Results do not suggest that the impact of finance on income inequality is conditioned by the quality of economic institutions.