

FINANCIAL DEVELOPMENT, INCOME INEQUALITY AND POVERTY: A CONTRIBUTION IN THE DEBATE ON THEIR RELATIONSHIPS

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AGENDA

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RESULTS

CONCLUSIONS

Inconclusive results in this topic so far.

- There exist two main theories and different papers have found support for both of them.
- These two theories have different implications for the relationship between financial development (FD) and income inequality and poverty.
- We contribute in this debate by using a comprehensive and updated dataset, by measuring different effects on income inequality and poverty from the banking credit and from the aggregate financial system, and also by performing these analyses in groups of countries with different levels of income.

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First theory: Several papers state a linear and negative relationship.

- This shape of the relationship would imply that FD always decrease income inequality.
- The works of Banerjee and Newman (1993) and Galor and Zeira (1993) represent the basis of this argument.
- In this group of research we find Clarke, Xu & Zou (2003), Beck, Demirguc-Kunt & Levine (2004), Rehman, Khan & Ahmad (2008), Delis, Hasan & Kazakis (2010), Kappel (2010), Bae, Han & Sohn (2014) and Akhter, Liu & Daly (2010).

Second theory: Other papers have found an inverted U-shaped relationship.

- The theoretical basis is given by Greenwood & Jovanovic (1990).
- In this group we find the works of Canavire-Bacarreza & Rioja (2009), Nikoloski (2010) and Kim & Lin (2011).
- According to this stance, there would exist a first phase in which FD increases inequality, and later, after achieving a certain threshold, FD would decrease it.

Different indicators have been used, though combined analyses are scarce.

- Some of those papers have used different indicators of FD and others have run analysis for groups of countries by levels of income, among other exercises.
- There are only a couple of works in which the combination of both of those aspects have been analyzed.
- We use two different indicators of FD, which enables us to analyze the effect from banking credit and from the aggregate financial system and we also perform our analyses for groups of countries by levels of income.

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As a data source we use The World Bank database.

- As dependent variables we use the World Bank estimate for the GINI Index (GINI) for income inequality, or the income share held by the lowest 20 percent of the population (INCLOW20) for poverty.
- As financial development variables we use money and quasi money (M2) as percentage of GDP (M2GDP) and the domestic credit to private sector by banks (DCBANKS), also as percentage of GDP.

We obtain our control variables from the same source:

- GDP per capita (GDPPER) and its square (GDPPER²) to control for Kuznets effects.
- Change in consumer prices (INFLA) to control for the effect of inflation.
- General government final consumption expenditure as a percentage of the GDP (GOBCON) to control for the effect of government consumption.
- Exports and imports of goods and services as a share of the GDP (XMGDP) to control for trade openness.

Just as several papers, we use non-overlapping 5-year periods.

- We take averages in order to control business cycle fluctuations and also to deal with the fact that inequality and poverty data are not available for every year.
- By doing so, we construct a dataset that includes 130 countries over the 1990 to 2014 period.

Our baseline specification:

$$\ln Y_{it} = \beta_0 + \beta_1 \ln FIN_{it} + \beta_2 \ln^2 FIN_{it} + \beta_3 \ln GDP_{it} + \beta_4 \ln^2 GDP_{it} + \beta_5 INFLA_{it} + \beta_6 GOBCON_{it} + \beta_7 XMGDP_{it} + \varepsilon_{it}$$

- In using this specification we alternate our two dependent variables and our two indicators of FD. We run these analyzes for our total sample and for three groups of countries by levels of income.
- In order to obtain results supporting a linear and negative relationship between FD and income inequality, we expect $\beta_1 < 0$ and $\beta_2 = 0$, whereas to achieve results coinciding with the theory proposing an inverted U-shaped relationship, we would expect $\beta_1 > 0$ and $\beta_2 < 0$.

Endogeneity considerations:

- We run our estimations by means of OLS, 2SLS and GMM and we test endogeneity.
- We use dummies of legal origin as instrumental variables, according to the *Law and Finance Theory* (Beck, Demirgüç-Kunt & Levine (2002)).
- Our FD variables turn out to be endogenous in most of our regressions; consequently, in the majority of the cases we rely on the results from the estimations performed by means of 2SLS and GMM to state our conclusions.

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Total Sample: Evidence of non-linear relationships.

- We find significant results showing that both of our FD indicators describe an inverted U-shaped pattern with respect to income inequality and a U-shaped relationship regarding the income of the poorest.
- This implies that both the banking credit in particular and the financial system in general have a first phase in which they increase income inequality, and after achieving a certain level, they start to decrease it. The opposite effect is found regarding the income of the poorest.

Total Sample: Some evidence for control variables.

- Evidence of Kuznets effect: With respect to income inequality, linear terms with mostly positive and significant coefficients, and negative and also significant coefficients for quadratic ones.
- Very weak and unexpected effect of Government consumption (decreasing the income of the poorest); some significant and weak results for Inflation increasing inequality and decreasing the income of the poorest.
- Some evidence of Trade Openness decreasing income inequality and increasing the income of the poorest.

Dissimilar results for variables of interest in groups of countries:

- High-level income countries: The M2 to GDP ratio describe a U-shaped relationship with respect to income inequality and a U-shaped relationship in regards to the income of the poorest. No significant effect found when using banking credit as FD indicator.
- Middle-level income countries: Significant results showing non-linear relationships when using both FD estimators, for both dependent variables.
- Low-level income countries: No significant results found for any combination.

Assorted results for control variables across groups of countries:

- Some evidence of Kuznets effect.
- Almost worthless results for Inflation, though more significant effect in richest economies.
- For high and low-income economies Government Consumption decreases inequality and raises the income of the poorest, while in middle-income economies it increases inequality and decreases the income of the poorest.
- Trade Openness in general, except for high level of income countries, diminishes inequality and raises the income of the poorest.

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We have aimed to contribute to this open debate.

- We have added value by using a comprehensive and updated dataset, by separately analyzing the effects from banking credit and from the aggregate financial development, and by applying our analysis to groups of countries by levels of income.
- From this combined analysis -narrowly developed in the literature- we have achieved significant results.

Both FD indicators have non-linear relationships with our dependent variables.

- For the total sample, our findings support the idea that increases in both of our FD indicators will cause the income inequality to increase and the income of the poorest to decrease in a first stage; however, having achieved a certain point, greater financial development would have the opposite effect.

Different results found for groups of countries by levels of income.

- We have found that those conclusions hold for middle-income countries, partially for the richest ones, and do not hold for low-level income economies.
- Specifically, for high-level income countries we have confirmed our results when using the M2 to GDP ratio as indicator of FD; however, when we have used our indicator of banking credit it has not been possible to state conclusions.

Different implications, depending on the level of income:

- Poor countries would not be better off, in terms of their inequality and income of the poorest, by developing their financial and banking credit systems.
- Middle- income countries would actually benefit from developing both systems.
- High-level income economies would need to develop their financial systems as a whole, and not just their banking credit in particular, if they want to reduce income inequality and increase the income of the poorest.

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