UNCTAD

Multi-Year Expert Meeting on Commodities and Development 2013

Recent developments and new challenges in commodity markets, and policy options for commodity-based inclusive growth and sustainable development

Room XXVI
Palais des Nations
Geneva, Switzerland

The role of financial innovations in developing countries: towards inclusive growth and sustainable development

by

Jean-Louis Arcand
Director, Centre for Finance and Development
Professor, Department of International Economics
Head, PhD in Development Economics Programme
The Graduate Institute - Geneva

20 MARCH 2013

The role of financial innovations in developing countries: Towards inclusive growth and sustainable development

Jean-Louis Arcand

Director, Centre for Finance and Development
Professor, Department of International Economics
Head, PhD in Development Economics Programme
The Graduate Institute | Geneva

www.graduateinstitute.ch/cfd
www.graduateinstitute.ch/economics/faculty/arcand

Geneva, March 2013

A traditional topic, at least with respect to the first two components

- Bagehot (1873), Schumpeter (1911), Goldsmith (1969)
- Financial intermediation improves efficiency (not volume) of investment
  - Theory: Jovanovich (1990), Bencivenga and Smith (1991)
- Financial development simply a by-product of economic development
  - Robinson (1952): "where enterprise leads, finance follows"
- More recent empirical work:
  - King and Levine (1993): financial depth
  - Levine and Zervos (1998): stock market liquidity (not size of the stock market)
- What is needed at the macro level is to differentiate in terms of the importance of commodities for the countries in the sample

Trying to establish causality

- The problem: measures of financial development on the RHS of the growth regression are almost certainly endogenous
- Less of a problem for commodity-dependence: simple interaction term
- Need to think carefully about the identification strategy
  - Two solutions proposed
    - 1. Traditional IV or GMM
    - Levine, Loayza, and Beck (2000): instrument their cross sectional regressions with legal origin (La Porta et al., 1998)
    - Beck, Levine, and Loayza (2000): use standard GMM
  - 2. An important technical innovation
    - Uses sectoral (and not country-level) data + DID identification strategy
    - Rajan and Zingales (1998): industrial sectors that are more dependent on finance grow relatively more in countries with a larger financial sector

Non-monotonicity in the relationship?

- Precursors
  - Minsky (1974), Kindleberger (1978): possibility that financial sector may ultimately reach a size where there are negative marginal social returns (but emphasis is on volatility aspects)
  - Tobin (1984): the best and the brightest...
- More recent sceptics
  - Rajan (2005): presence of a large and complicated financial system has increased the probability of a "catastrophic meltdown"
  - Gennaioli, Shleifer, and Vishny (2010): with neglected tail risk financial innovation can increase financial fragility even in the absence of leverage
- No link made heretofore to commodities

Conditionality in the relationship?

- Large literature
  - Demetriades and Hussein (1996): time series for 16 countries: no causal relationship going from finance to growth
  - Demetriades and Law (2006): financial depth does not affect growth when institutions are poor
  - Rousseau and Wachtel (2002): finance has no effect on growth in countries with double-digit inflation
  - De Gregorio and Guidotti (1995): financial depth is positively correlated with output growth in high income countries over 1960-1985, but correlation becomes negative for 1970-85
  - Capelle-Blancard and Labonne (2011): relative number of employees or credit volume/employees has no impact on growth in the OECD
  - Rousseau and Wachtel (2011): financial depth and credit to the private sector has no statistically significant impact on GDP growth over 1965-2004
- Most relevant sub-literature: Arestis and Demetriades (1997) and Arestis et al. (2001): institutional factors affect the relationship

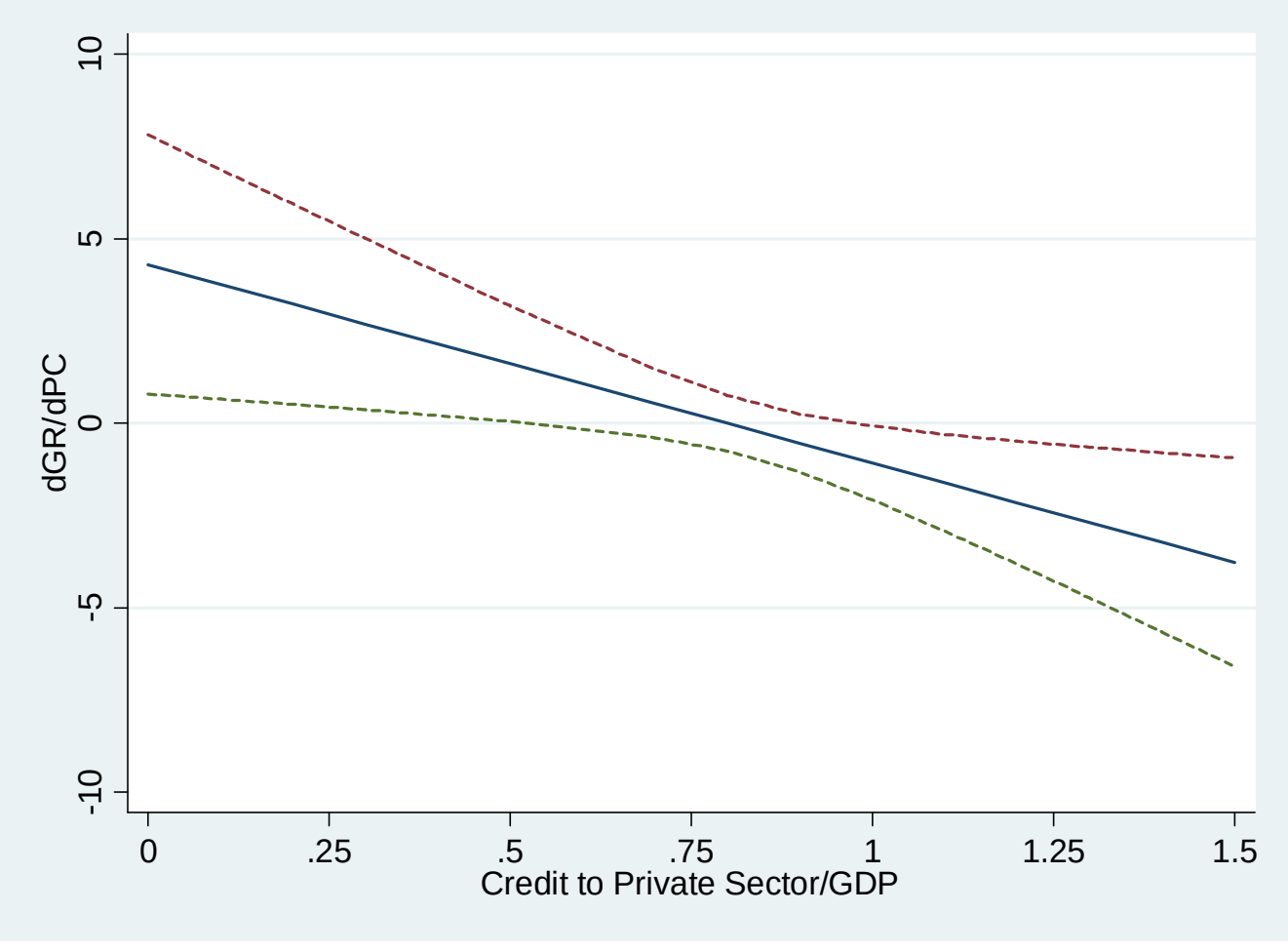
Empirical approach

Six different combinations of types of data and estimators

- Country data: cross section
  - 1. Linear cross-section with quadratic term
  - 2. Semiparametric cross-section
- Country data: panel
  - 3. Panel system GMM with quadratic term
  - 4. Panel semiparametric
  - 5. Panel system GMM with interactions in quadratic term
- Industry-level data
  - 6. Rajan-Zingales DID approach with quadratic term
- Results are remarkably stable across types of data or econometric methodology....
- ...even when we try hard, we can't kill the result

The marginal impact of credit to the private sector

Figure:



Cross-sectional semiparameric results

Figure: Semiparametric estimation compared with quadratic parametric fit

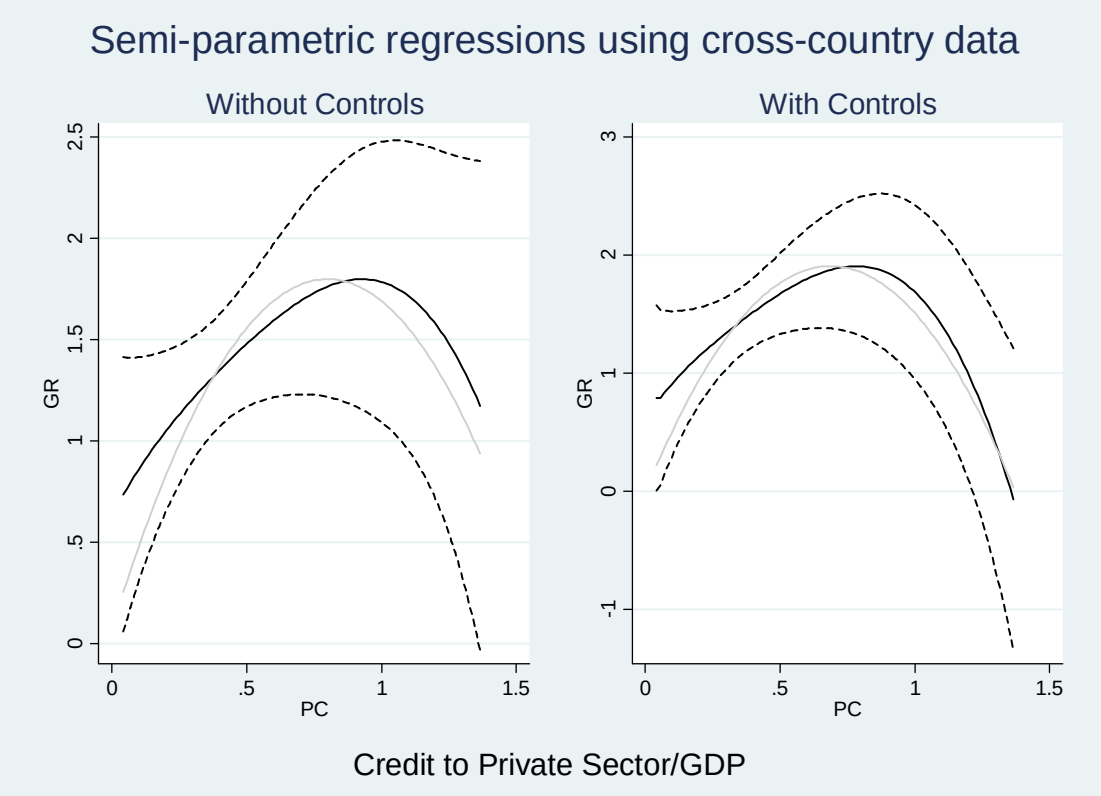


Figure: **Credit to the Private Sector**. Evolution of credit to the private sector over GDP (PC) for the sample of countries included in the cross-sectional regressions. The left panel plots the mean and median values of PC. The right panel plots the share of observations for which PC>90% (solid line) and PC>120% (dashed line).

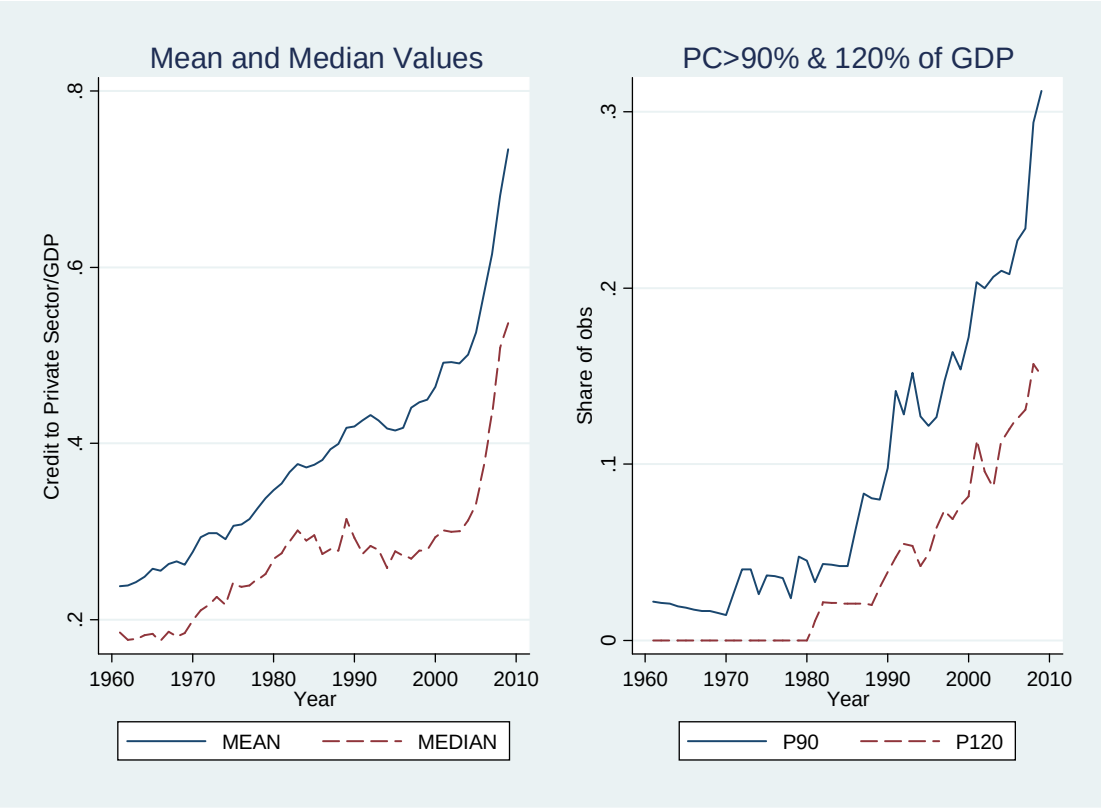


Figure: **Marginal Effect Using Panel Data.**

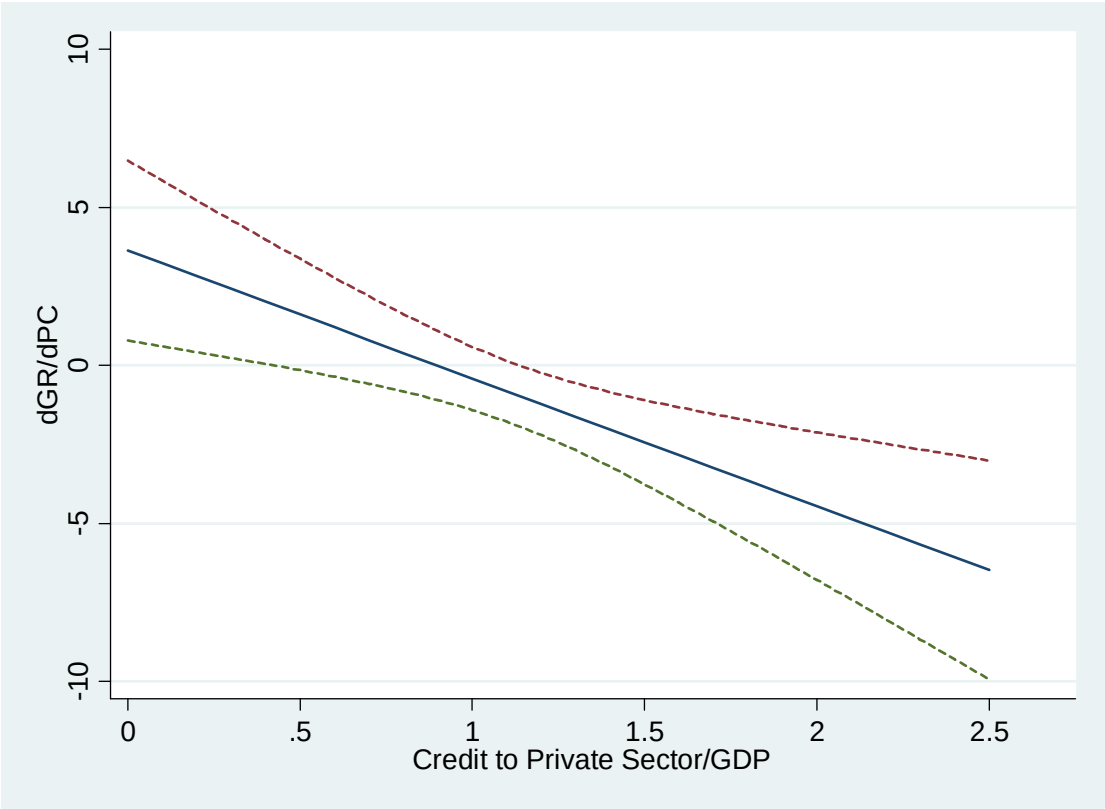
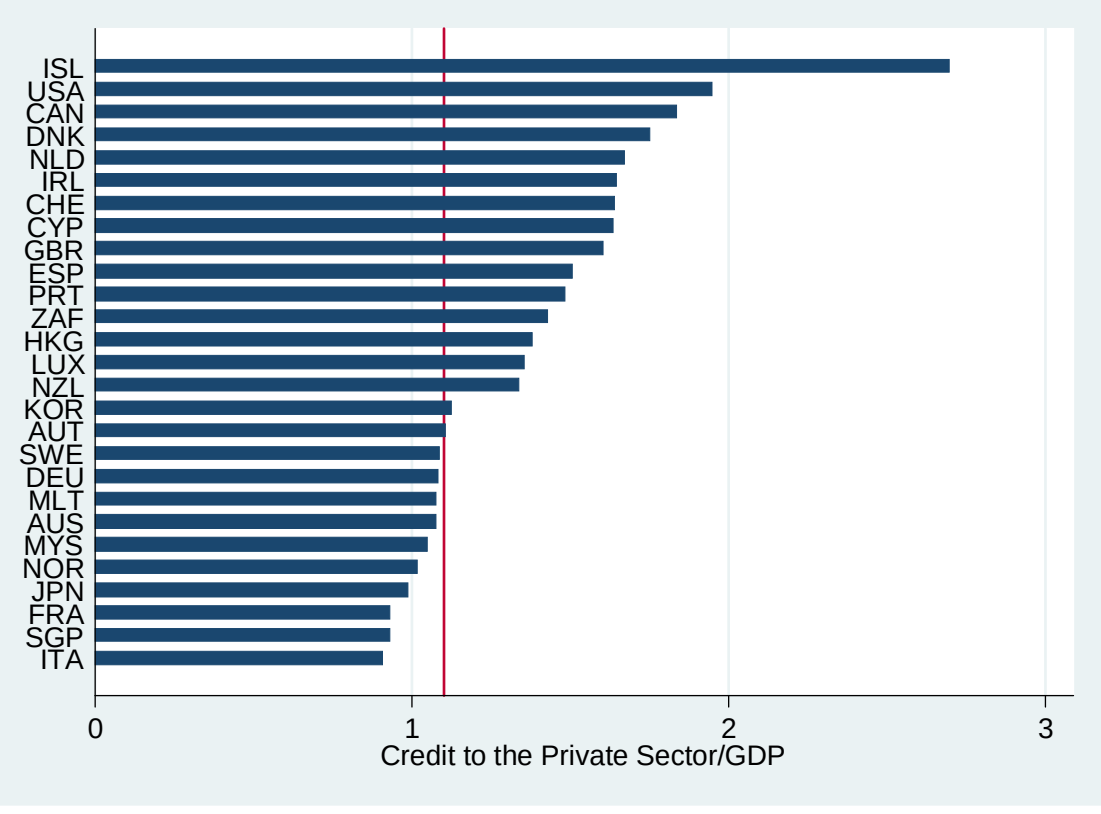
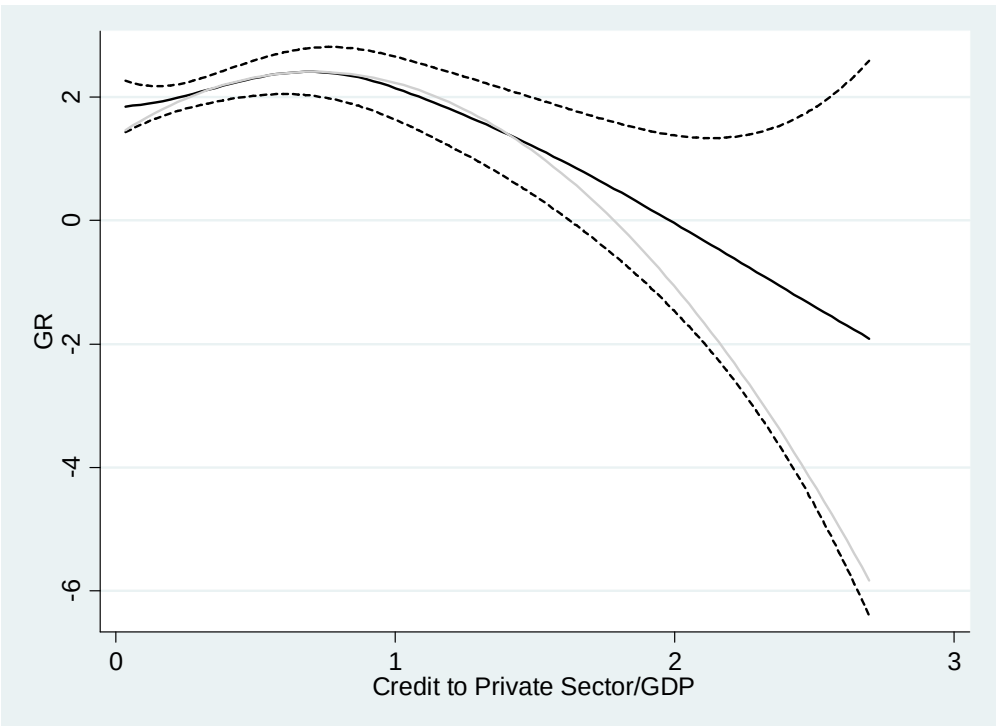


Figure: **Countries with Large Financial Sectors (2006)**. This figure plots the 2006 level of credit to the private sector over GDP (PC) for all countries that in 2006 had values of PC>90%. The vertical line is at PC=110%.



Panel semiparametric results

Figure: **Semi-Parametric Regressions using Panel Data**. Solid black line plots semiparametric relationship between PC and GR. Dotted lines are 95% confidence intervals and solid light grey line plots the parametric quadratic fit.



Conclusions
Empirical findings

- In countries with very large financial sectors there is no positive correlation between financial depth and economic growth
- There is a positive and robust correlation between financial depth and economic growth in countries with small and intermediate financial sectors
- There is a threshold (estimated to be at around 80-100% of GDP) above which finance starts having a negative effect on economic growth
- Results are robust to using different types of data and estimators
- **No** empirical evidence of difference of inverted U-shaped relationship between finance and growth, between commodity-rich and commodity-poor countries

Conclusions

Implications and research priorities

- This is only a first pass at the cross-country level...
- An interesting research agenda for the future
- More macro-level evidence is needed to disentangle effects of:
  - Institutions
  - Geography
  - Resource / commodity abundance
  - and their interactions
- Micro-level evidence is especially lacking
- Difficulty of finding convincing identification strategies