

Puzzles in financial development and economic growth.

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Puzzles in Financial Development and Economic Growth

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Motivation – People's Well-being (1)



An American born	2000 AD	1850 AD
Life expectation	77 Years	40 Years
Reach age 1 after birth	99.4%	85%
Education	Above high school	Stay in school - only 3 years
Work life starts at the age	20 Years	9 years

Flag Source: <http://borgenproject.org/Pictures.html>

Source : Baier et al (2003)



Motivation – People's Well-being (2)



“Growth can spare people en masse from poverty and drudgery.”

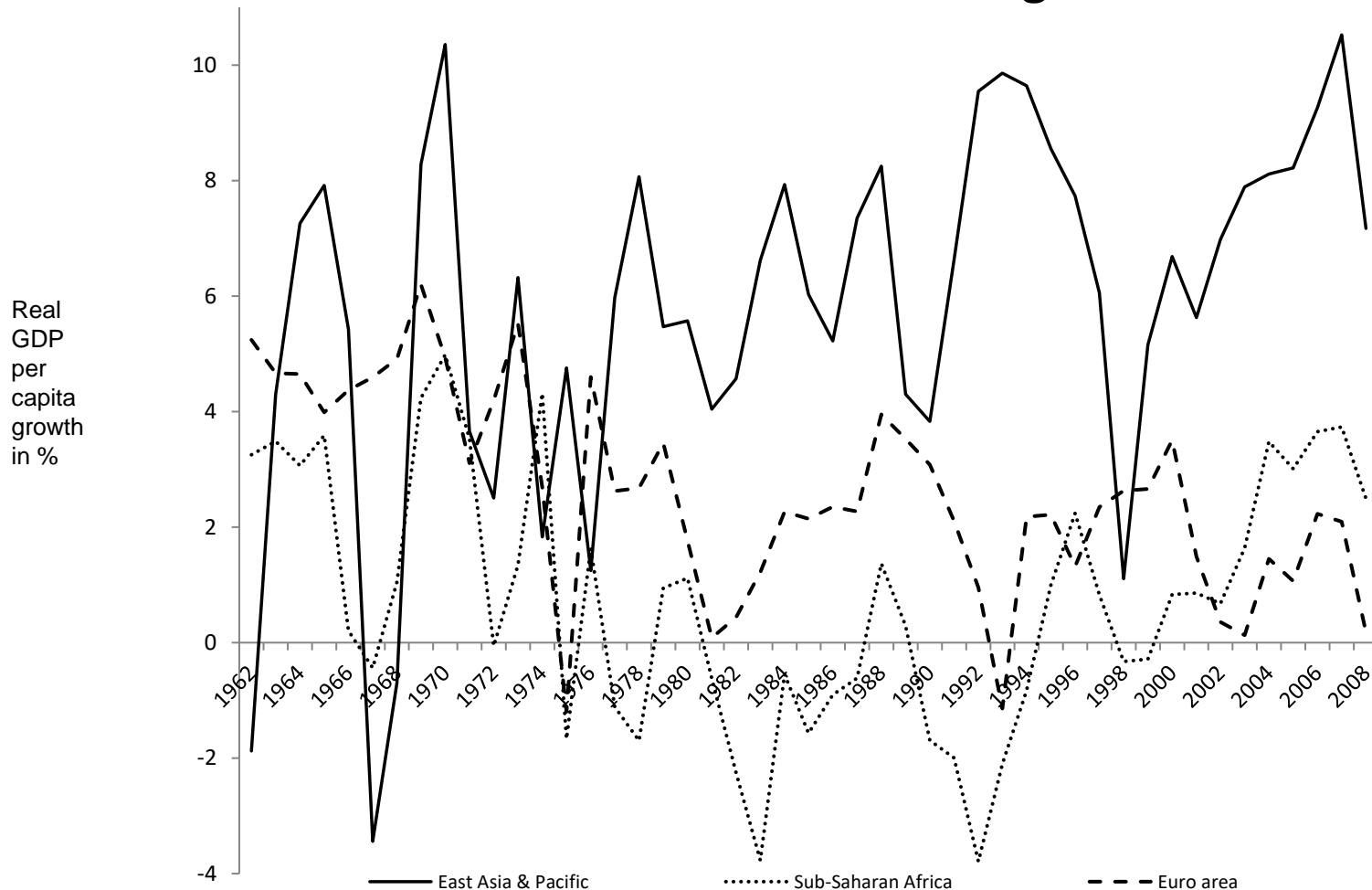
-Nobel Laureate, Michael Spence (2008)

Source: <http://borgenproject.org/Pictures.html>



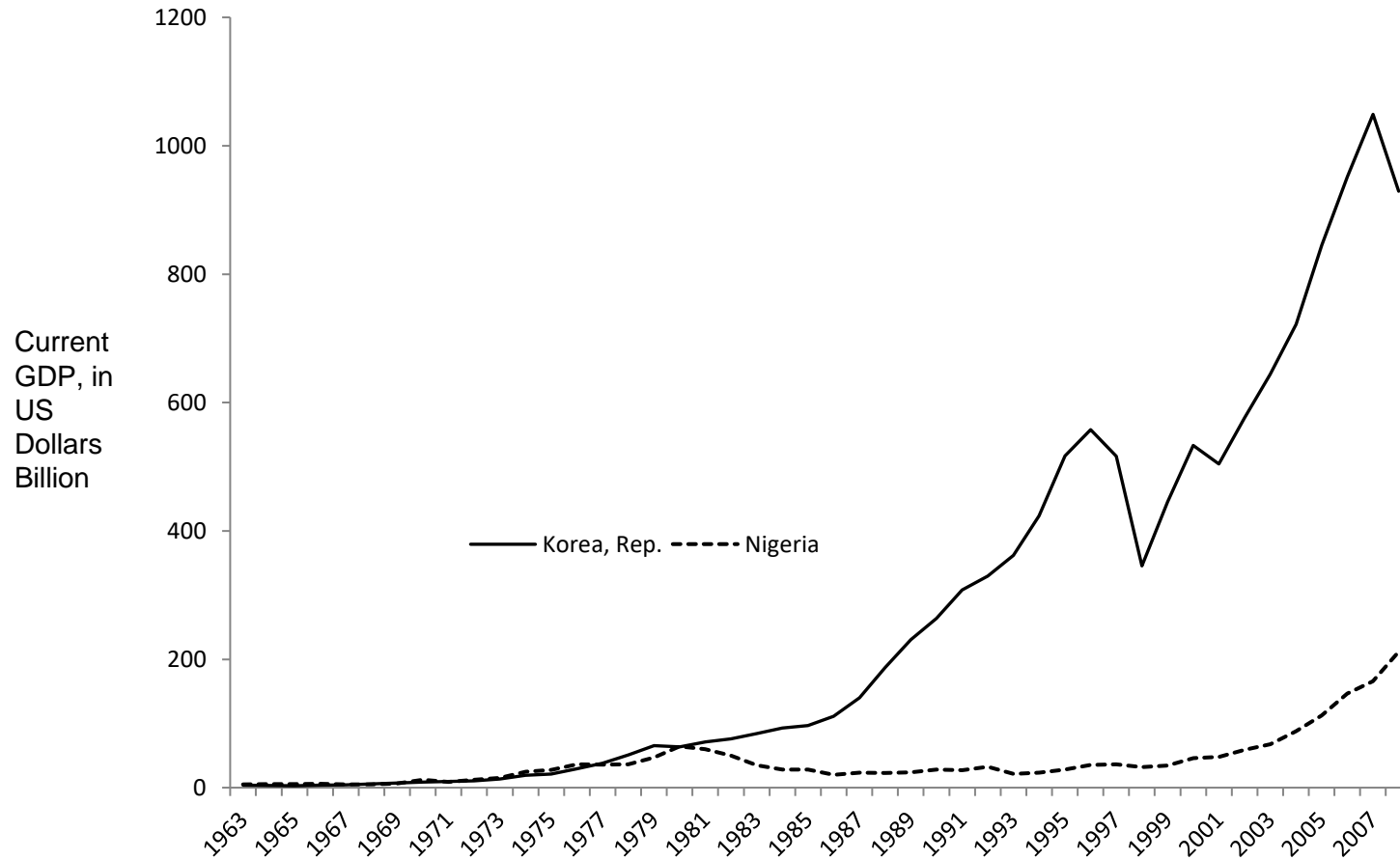
Motivation – Growth varies (1)

Growth variation across regions





Motivation – Growth varies (2)





Motivation – The Miracles



Economic miracles in 13 countries*:

- 7% p.a. or higher growth
- 25 years (or longer)

No silver bullets but one of the common ingredients :

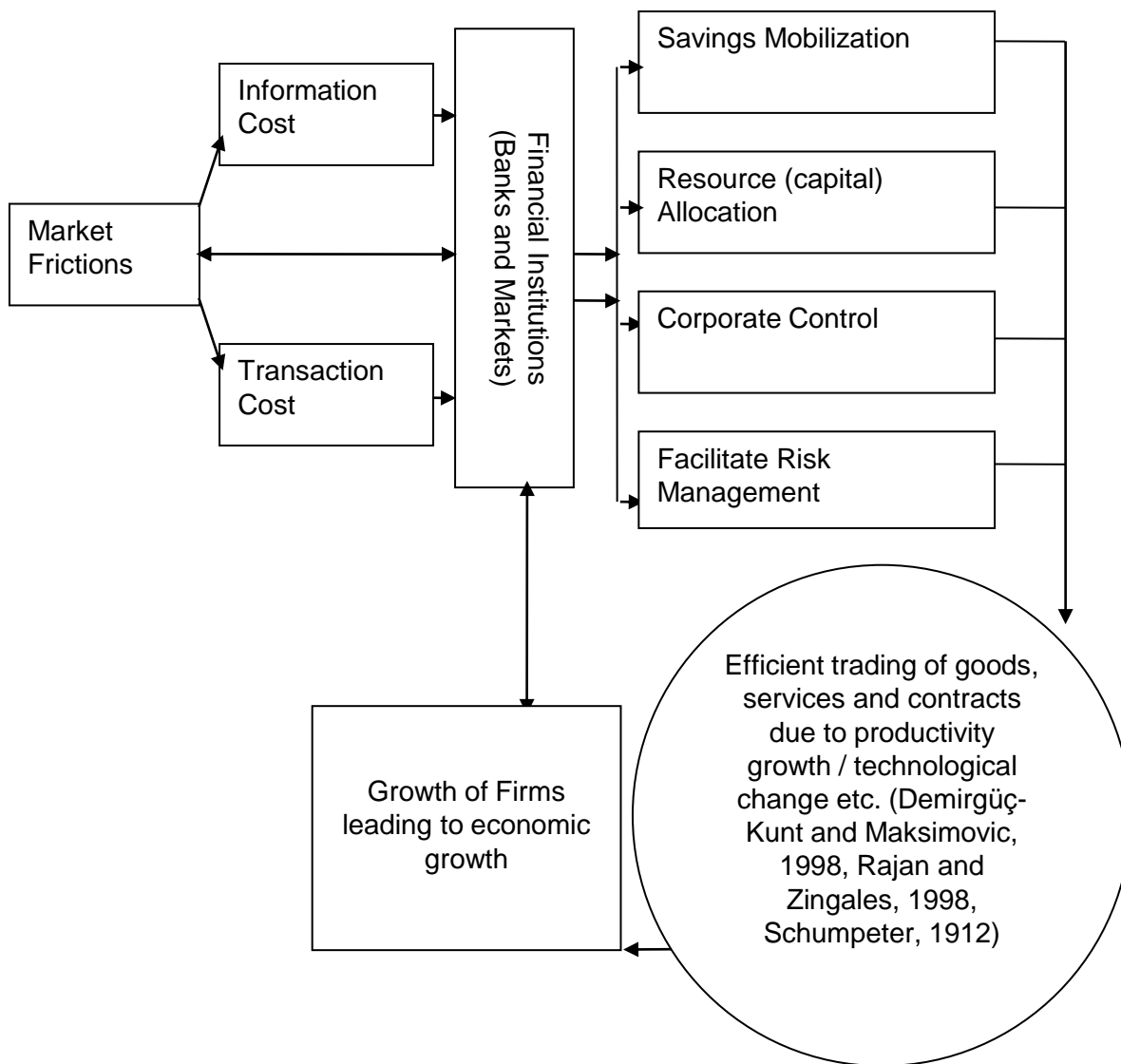
- High rates of Savings and Investments

*List of countries:

Botswana, Brazil, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, Malta, Oman, Singapore, Taiwan, China, and Thailand



Finance and Growth – Theoretical Link





Finance and Growth – The Literature (1)



“developments in finance enabled the industrial revolution”

- Walter Bagehot (1873)



“where enterprise leads finance follows”

- Joan Robinson (1952)



Finance and Growth – The Literature (2)

Mixed reactions and ambiguities in finance and growth relationship (see for example, De Gregorio and Guidotti 1995, Xu 2000, Deidda and Fattouh 2002)

Detail survey in Driffill 2003, Fitzgerald, 2006, Trew 2006



Finance and Growth – The Literature (3)



“although conclusions must be stated **hesitantly** and with **ample qualifications**, the preponderance of theoretical reasoning and empirical evidence suggests a **positive first-order relationship between financial development and economic growth.**”

-Ross Levine (1997, p. 688 and 2005)



Finance and Growth – The Puzzles

1st Puzzle : Finding that banks have a positive effect upon economic growth in the long run but a negative one in the short run. (Beck and Levine 2004, Loayza and Rancière, 2006)

2nd Puzzle : Positive effect of stock markets upon economic growth irrespective of time horizons. (Atje and Jovanovic, 1993, Shen and Lee, 2006, Saci et al. 2009.



Finance and Growth :Possible sample Biasness

Papers on finance and growth relationship involving banks and stock market and nature of their sample:

Papers	Sample Period	Sample Size (Years)	Sample Size (Countries)	No. of LDCs in Sample
Atje and Zovanovic(1993)	1960-1985	26	40	Non
Demirgüç-Kunt and Levine (1996)	1986-1993	8	41	Non
Levine and Zervos(1998)	1976-1993	18	47	1 (Bangladesh)
Zhu et al. (2004)	1976-1993	18	47	1 (Bangladesh)
Beck and Levine(2004)	1976-1998	23	40	1 (Bangladesh)
Rioja and Valev (2004)	1976- 1995	20	40	Not provided
Shen and Lee(2006)	1976-2001	26	48	Non
Li (2006)	1978-1997	20	33	Non
Saci et al.(2009)	1988-2001	14	30	1 (Bangladesh)



Banks and Exchange in LDCs

31 without a stock exchange

3 without a central bank

Banks established 28 years before central bank

Exchange (where they exist) established after five decades
of commercial banks and nearly three decades after
central banks



Estimation - Variables

Variables	Definition
GROWTH	Real GDP per capita growth rate
PRIVATE CREDIT	Ratio of private sector credit issued by bank and non bank financial institutions to GDP
CAPITALISATION	Ratio of market price of share multiplied by number of shares divided by GDP
VALUE TRADED	Ratio of product of number of shares traded and the market price of such shares to GDP
TURNOVER	Ratio of value of the trading of shares on domestic exchanges divided by total value of listed shares
GOVERNMENT CONSUMPTION	Ratio of general government consumption expenditure to GDP
CAPITAL FORMATION	Ratio of gross capital formation to GDP
TRADE OPENNESS	Trade as percentage of GDP
INFLATION	Change in consumer price index
EDUCATION	Total secondary enrolment, regardless of age, to the population of the age group that officially corresponds to that level of education
INITIAL INCOME	The current GDP per capita in US Dollars of the start year cummulatively increased by the US inflation rate
BLACK MARKET PREMIUM	The difference rate between black market exchange rate and the official rate
LEGAL ORIGIN DUMMIES	"1" for true and "0" for false where 1 implies countries following legal system of a particular country
BANK CREDIT ALL SECTOR	Ratio of credit issued by bank and non bank financial institutions (to all sector except central government) to GDP



Estimation - Sample Data

Sample period: 1970 – 2006

Countries: 92 developing and developed and 28 LDCs

Possibly the Largest sample in the literature on finance and growth involving banks and exchange.

(Note: This work argues that the sources have mistakenly mentioned “data not available” for bank or stock market related variables for those periods when the institutions in the countries did not exist.)



Estimation Techniques

Testing for stationarity in Panel: LLC, 2002

Estimation Techniques in application

POLS – Fixed Effect Individual and Time

TSLS – Endogeneity problem

GMM – Dynamic Panel Two step GMM



The Results

1st Puzzle:

Short run: Negative relationship with banks development (support to literature)

Long run: Negative relationship with banks development (does not support literature)

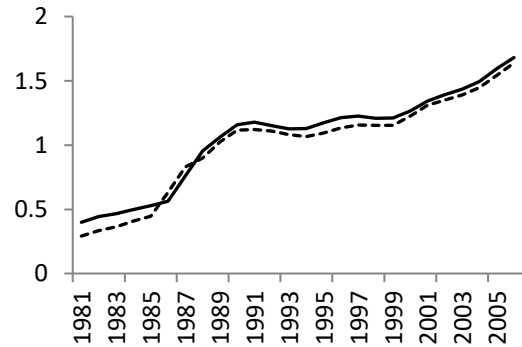
2nd Puzzle:

Sign depends on variables chosen, the method of estimation and the possible role of self-selection bias



Private credit Vs. Credit all sector (1)

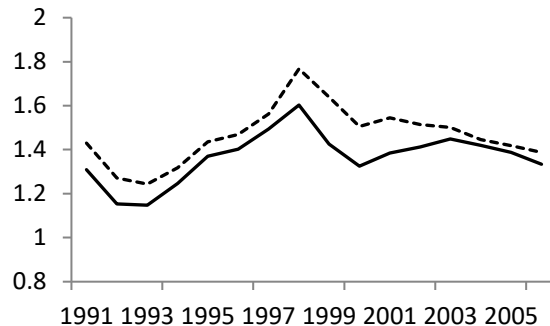
U.K.



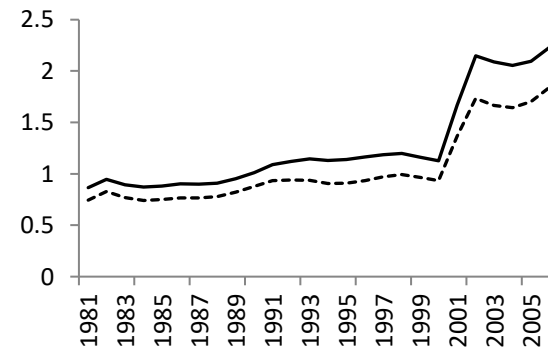
Finland



Hong Kong



Canada

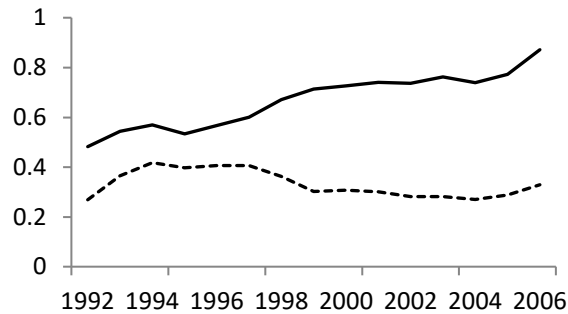


Note: Dashed line PRIVATE CREDIT and solid line BANK CREDIT ALL SECTOR

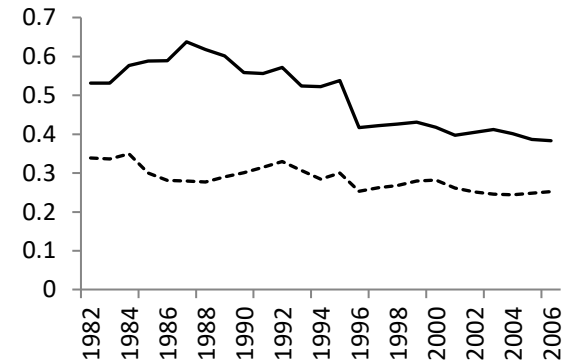


Private credit Vs. Credit all sector (2)

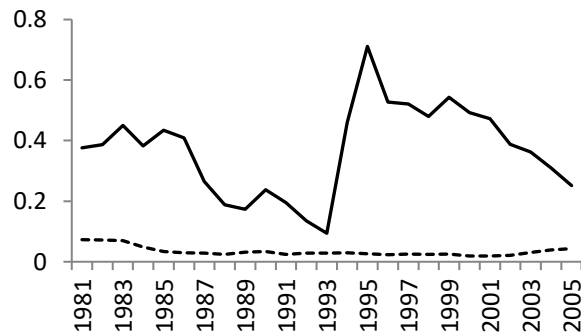
Brazil



Kenya



Sierra Leone



Zambia



Note: Dashed line PRIVATE CREDIT and solid line BANK CREDIT ALL SECTOR



The Results with inefficient variable

1st Puzzle:

Short run: Negative relationship with banks development (support to literature)

Long run: Positive relationship with banks development (support to literature)



Conclusion

Atje and Jovanovic (1993) surprise quote (*we should establish exchanges for growth which is not happening*) repeated

The Puzzles: The results are different for banks and stock markets and again different over long and short runs

The results support relationship in the long run only with inefficient variable (Credit All Sector).

Puzzles are in need of further research



Thank you

All works cited above have been fully acknowledged in the paper. List of references will be made available upon request.

Thank You!