Central bank independence: monetary policies in selected jurisdictions (I)

Felix, Ayadi and Marianne, Ojo

Texas Southern University, Covenant University

30 March 2013

Central Bank Independence: Monetary Policies in Selected Jurisdictions (I)

The Dynamics Of Central Bank Independence In A Developing Economy

O. Felix Ayadi

Texas Southern University

Temptation!

- An age-old human problem
  - Allow high-inflation to develop in an economy
- An "easy" monetary policy can stimulate the economy to grow faster and lower unemployment rate in the short-run
  - Improved tax revenue for government
  - Public debt situation is made good

Introduction

- Central bank independence **(CBI)** is often cited as prescription to assure price stability in an economy
- Cross-country empirical studies especially in industrial economies suggest a negative relationship between CBI and inflation
- Hayo and Hefeker (2002)
  - CBI is neither necessary nor sufficient for reaching monetary stability

High CBI and Low Inflation?

- Eijffinger & Haan (1996): 3 theories:
  - Public-choice theory
    - Buchanam & Wagner (1977)
  - Sargent-Wallace (1981) theory
  - Time-inconsistency problem of monetary policy
    - Kydland & Prescott (1977)
    - Calvo (1978)
    - Barro & Gordon (1983)

Cukierman et al. (1992) & Berger et al. (2001)

- Summary of empirical studies
- Among industrial countries, legal CBI index is negatively correlated with inflation but TOR (turnover of central bank governors) has no correlation with inflation
- Among developing countries, legal CBI index is not correlated with inflation but TOR is significantly related to inflation

Panagiotidis et al. (2006) --- Greece

- 1951-99: data before Greece joined EMU
- Time series data on Legal CBI and TOR
- Legal CBI is systematically and inversely related to the rate of inflation
- TOR did not exhibit a significant relationship with inflation

Otero & Ramirez (2006) -- Colombia

- Constitutional Reform in 1991
- Central bank independence guaranteed
- **Creation of an independent central bank changed some parameters of the model**
- Disequilibrium in goods and monetary markets have smaller effect on inflation after central bank independence was granted

In the Beginning

- WACB (West African Currency Board) was set up by the British colonial government to administer pound sterling within British West Africa
- Central Bank of Nigeria (CBN) charged with responsibility for developing money and capital markets
- CBN used direct controls such as:
  - Credit guidelines
  - Moral suasion

Major Banking Laws

- CBN Act 1958 & Amendments
- Banking Decree 1969 & Amendments
  - Define legal framework within which CBN operates
  - Main functions include
    - Issue legal tender currency
    - Maintain external reserves & international value of naira
    - Promote monetary stability and sound financial structure

SAP and Macroeconomy

- CBN Decree #24 & BOFI Decree #25: 1991
  - Provisions announced in 1988
  - More comprehensive than any previous laws
  - Considerable power given to CBN
  - CBN to consult with gov't before critical decisions are taken
  - CBN proposals are a component of annual budget speeches
  - Ojo (2000) notes: in practice CBN had no power

CBN (Amendment) Decree #3, 1997 BOFI (Amendment) Decree #4, 1997

- Removed all CBN’s limited discretion in the conduct of its monetary policy under the 1991 laws
- CBN brought under the Minister of Finance
- CBN’s Board of Governors to have an external person (politician) as Chair

CBN (Amendment) Decree #37, 1998
BOFI (Amendment) Decree #38, 1998

- New Decrees repealed all 1997 Decrees
- CBN has Permanent Secretary in Ministry of Finance on Board
- CBN's Board of Governors now Governor as Chair
- Fine-tune the process of government borrowing from the CBN
- FSRCC set up to coordinate supervision

New CBN Law & Monetary Policy

- Much more meaningful autonomy
- Some discretion to implement its monetary policy without government interference
- Some reasonable freedom for bank to select policy instrument
- Primary objectives are:
  - Maintain monetary stability
  - A sound financial structure

Political Autonomy for CBN?

- Conflict resolution between the bank the government can be resolved at the Board of Directors level
  - Perm. Sec of Ministry of Finance serves on the Board
- Appointment (removal) of Governor and Board members is done by the President

Economic Autonomy for CBN?

- A clear limit on lending to government
- Authority to determine exchange rate
- Required to issue periodic report on its operations to the President/legislators
- Financially independent

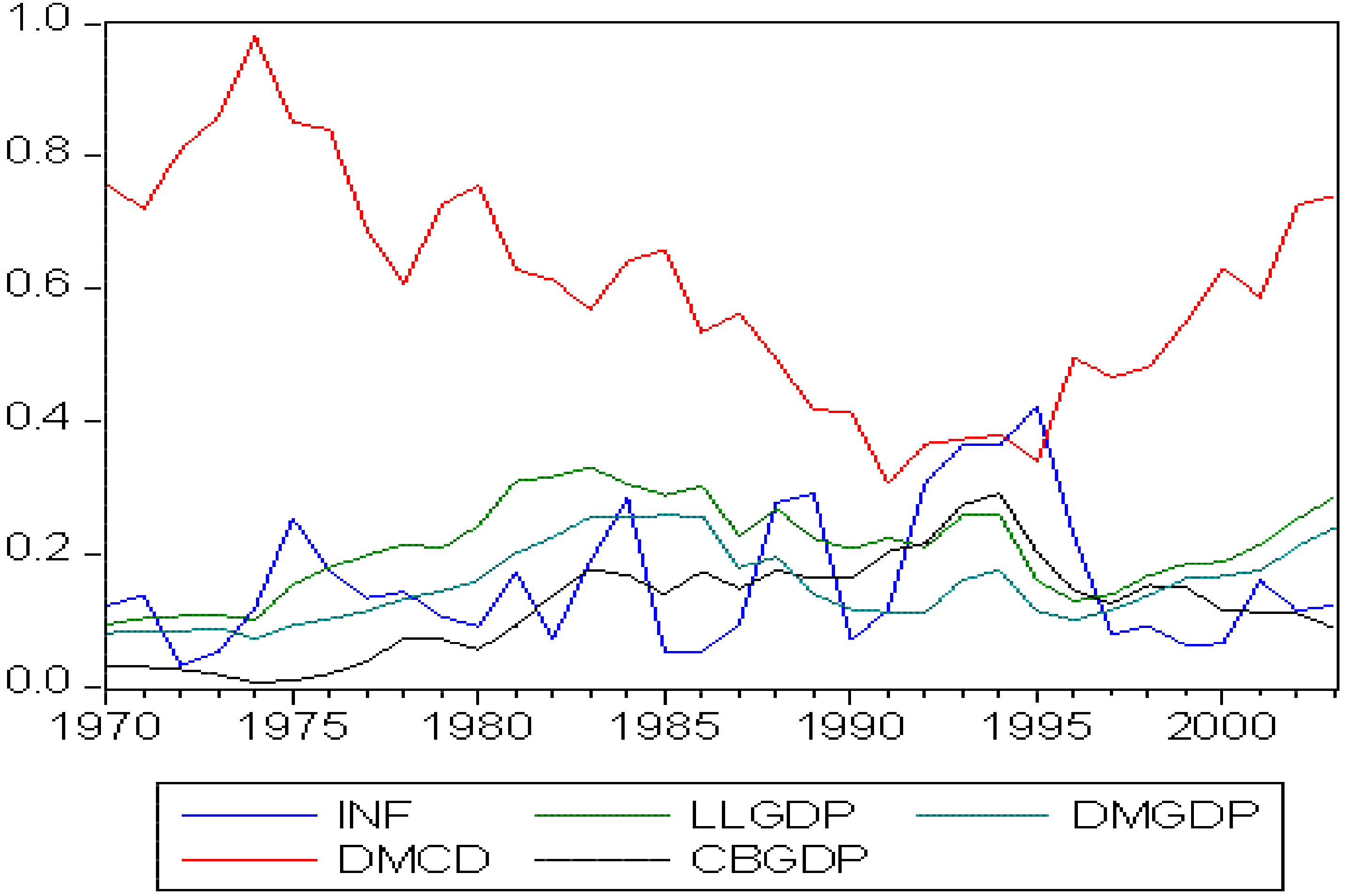
Research Question

- Is there a relationship between level of financial development and management of inflation in the Nigerian economy?
  - The usual CBI indices do not really mean much in Nigeria. Legal CBI index was 0.37 for 1989-2000
  - Original mission of CBN was to develop the financial system
  - CBN employed direct controls rather than the traditional monetary policy instruments

Annual Data: 1970-2003

- Beck et al. (2000): Measures of fin. dev’t
- DMCD: Ratio of deposit money banks assets to central bank assets
- LLGDP: Ratio of liquid liabilities to GDP
- CBGDP: Ratio of central bank assets to GDP
- DMGDP: Ratio of deposit money banks assets to GDP
- INF: Inflation index [$\pi/(1 + \pi)$]

Graphical Representation Of Time Series



Data Descriptive Statistics

	INF	DMCD	LLGDP	CBGDP	DMGDP
Mean	0.159	0.605	0.210	0.120	0.153
Standard Deviation	0.104	0.169	0.069	0.075	0.058
Skewness	0.963	0.106	-0.076	0.220	0.483
Kurtosis	2.898	2.267	2.032	2.472	2.062
Jarque-Bera Statistic	5.269	0.824	1.361	0.668	2.568

Data Correlation Matrix

	INF	DMCD	LLGDP	CBGDP	DMGDP
INF	1.000	-0.455	0.143	0.518	-0.027
DMCD		1.000	-0.306	-0.892	-0.155
LLGDP			1.000	0.516	0.903
CBGDP				1.000	0.417
DMGDP					1.000

Unit Root Test Results

	INF	DMCD	LLGDP	CBGDP	DMGDP
SERIES IN LEVELS					
ADF Statistic	-3.140	-1.415	-1.775	-1.446	-1.261
KPSS Statistic	0.171	0.382***	0.196	0.460***	0.194
FIRST DIFFERENCE OF SERIES					
ADF Statistic	-5.910*	-6.114*	-4.979*	-4.185*	-4.500*
KPSS Statistic	0.5000**	0.229	0.153	0.261	0.115

Johansen Bivariate Cointegration Test Results

λ_i	H_0	H_1	λ-max statistic	H_0	H_1	λ-trace statistic
(a) INFLATION AND DMCD						
0.507	$r = 0$	$r = 1$	22.647**	$r = 0$	$r = 1$	24.209**
0.048	$r \leq 1$	$r = 2$	1.562	$r \leq 1$	$r = 2$	1.562
(b) INFLATION AND LLGDP						
0.359	$r = 0$	$r = 1$	14.225	$r = 0$	$r = 1$	17.952**
0.110	$r \leq 1$	$r = 2$	3.727	$r \leq 1$	$r = 2$	3.727
(c) INFLATION AND CBGDP						
0.380	$r = 0$	$r = 1$	15.303**	$r = 0$	$r = 1$	18.351**
0.091	$r \leq 1$	$r = 2$	3.048	$r \leq 1$	$r = 2$	3.048
(d) INFLATION AND DMGDP						
0.325	$r = 0$	$r = 1$	12.566	$r = 0$	$r = 1$	15.082
0.076	$r \leq 1$	$r = 2$	2.516	$r \leq 1$	$r = 2$	2.516

Summary of Results (1)

- Based on ADF unit-root test, all the time series data are integrated of order 1
- The Johansen cointegration results show:
  - INF and DMCD are cointegrated
  - INF and LLGDP are cointegrated
  - INF and CBGDP are cointegrated
  - INF and DMGDP are not cointegrated

Summary of Results (2)

- Inflation is negatively correlated with DMCD and DMGDP
- Inflation is positively correlated with LLGDP and CBGDP

Conclusion

- There is a long-run relationship between the level of financial development and inflation
- The level of financial development is more appropriate than the existing indices of central bank independence
- It is not logical to assume that all developing countries are homogenous in terms of the role and influence of central banks on price stability