Economic Crises, Macroeconomic Fundamentals and Stock Pricing in Nigeria: Lessons for African Countries

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Market Dips

- Market overvaluation associated with price movements that are not linked to the rest of the economy
- Following the market can be difficult
  - Dot-com bubble among several others
  - Wiped out $5 trillion in market value of technology companies
- And causes of bubbles (and bursts) continue to elude analysts. No widely accepted theory yet…
  - Can come even without conventional uncertainty, speculation or bounded rationality (e.g. Froot and Obstfeld's 'intrinsic bubbles').
- But they affect the economy nonetheless – cause resource misallocation; destroy wealth; reduce investment, consumption and growth; cause credit crunch; reduce confidence; ruin lives; etc
  - So the search for answers continue

NSE

- Gradual growth in the NSE till 2004; sharp growth afterwards
- NSE was investors' toast; acclaimed one of the World's fastest growing markets
- Market capitalization peaked at N12.6 trillion as at the first week of March, 2008
- Things changed in the second week of March 2008 – breaking 48 year record depreciating to N6.957tn by year end
- ASPI which peaked at 66,371 March 5, 2008 fell below 20,000 at the beginning of this year
- NSE's crash preceded other economies' recession – US started August and some other economies followed in October
- NSE – Strategic; yet little studied

Why this Study?

- **Cause of the crash…still more opinion than empirics**
  - Market overvaluation and self correction for some; temporary correction for some others
  - So, not known what really is driving the market…
  - Weak critical assessment as yet
  - Not known what roles fundamentals play
  - Policy positions may not adequately mirror causes of problem
  - Paper presents some evidence on drivers of the market and links of the market with the rest of economy
  - …and what they mean for the rest of Africa

Review of Related Literature

- Stock deviations under discrete-time-finite horizon setting
  - Koller et al (2005) – significant deviations from intrinsic value rare
    - 3 conditions – Irrational investor behavior, systematic behavior across different investors, and arbitrage
    - Markets revert to econ fundamentals rapidly
  - Allen and Gorton (1993) differ – b/c of agency problems
- Broad macro variables impact on the market
  - Analysts and investors watch these

Stock Mkts and Econ Growth

- Bidirectional relationship
  - Capital from the market needed for econ growth (Soyode, 1990)
  - Is a leading indicator of economic health
  - Enhances operations of domestic financial system
  - Savings mobilization and liquidity creation, foreign inflows, and risk diversification – may increase savings rate
  - Provides a boost to domestic savings and increases quantity and the quality of investment
  - Lowers costs of raising capital for new firms
  - Reduces costs of information

But again, they can deviate

- Cochrane (1994) – uses conventional VAR identification
  - Substantial variation due to transitory shocks – consumption/GDP ratio and dividend/price ratio
  - Gonzalo, et al. (2007) – Cochrane's results depend on weak exogeneity of variables with respect to the cointegration vector.
  - So Cochrane's transitory shocks may not altogether be transitory.
  - Find that that shocks could also be permanent – permanent components of stock/GDP deviations much larger than Cochrane's estimates

Stock Mkts and Other Indicators

- Many studies – mixed findings
- Das (2005) – common cycles for interest rates and stock prices in many countries; except India
- Haastrecht and Pelsser (2009); allow for general correlation between drivers of stock volatility, inflation index, domestic and foreign interest and exchange rates.
- Derive explicit option pricing formulas for various securities
- Test numerical quality of approximation

Firm Fundamentals and Stock Mkts

- **Tripathi (2008)**
  - Worked on India
  - Examined rship btw 4 firm fundamentals and returns using monthly data of 455 companies
  - Findings
    - Mkt capitalization and price earnings ratio have statistically significant negative relationship with equity returns
    - But book equity to market equity ratio and debt equity ratio have statistically significant positive relationship with equity returns
    - Fama-French 3-factor model explains cross sectional variations in equity returns better than the single factor CAPM

Research Approach

- Use both primary and secondary data
- Error correction model of ASPI

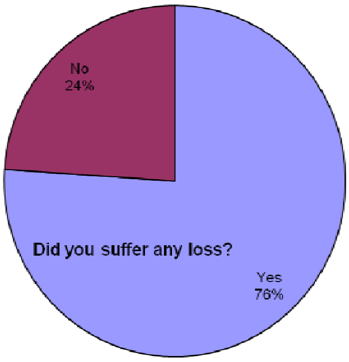
$$ASPI = C + \alpha Y \pm \beta INF \pm \chi PLR + \delta PF + \phi REM + \eta OECD + \gamma SMK - ECF + \mu$$

- Survey 71 players in the market – operators, stock-broking houses, the Nigerian stock exchange, bankers, investors, managers of quoted firms and other stakeholders
  - Instrument structured to capture firm level and broad management issues – including balance sheet, profitability and dividend policies among others
  - Analyze using censored logit

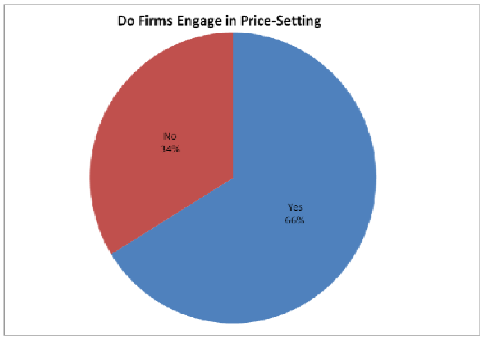
Findings…

	Coefficient	t-Stat
Remittances	**0.130**	**2.19**
Nominal Exchange Rate	**0.161**	**2.04**
Inflation	**0.020**	**1.62**
Real Exchange Rate	**-0.368**	**-3.77**
ECF	**-7.19E-05**	**-3.51**

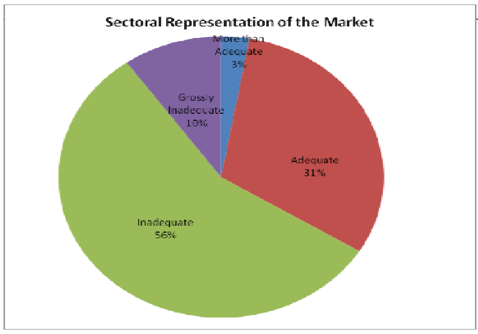
- 3 variables seem to matter
  - Remittances, NER and RER
  - Other variables' impact not confirmed – MLR, SMK, and Y – right signs but insignificant
- Drivers are mainly monetary variables
- Mkt grew despite, rather than because of rest of economy
- Price fall may not be unrelated to disconnect



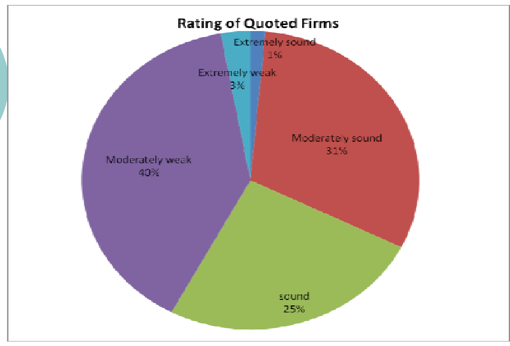
Do firms engage in price-setting?



Sectoral Coverage of the NSE



Rating of Quoted Firms



Survey Estimates

	Coefficient	z-Stat
SAFGUAD	0.226	2.13
MACROINS	0.081	1.22
MGNFAC	0.116	2.09
NSEREQ	0.173	3.07
NEWGOVT	-0.0499	-0.97

Implications for African Capital Markets

- Nigeria; leading market; had upheavals
- Other African markets not spared
- Issues:
  - Regulatory capacity: tendency of mkt devt to outpace regulatory capacity
    - Cutting edge research and training
    - Collaboration can help
    - Information sharing critical
- But not just regulation - near-fully liberalized K-account did not help matters – strategic liberalization needed

Markets sti
rudimenta
– little
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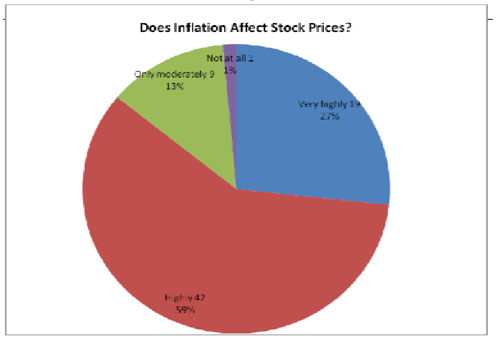
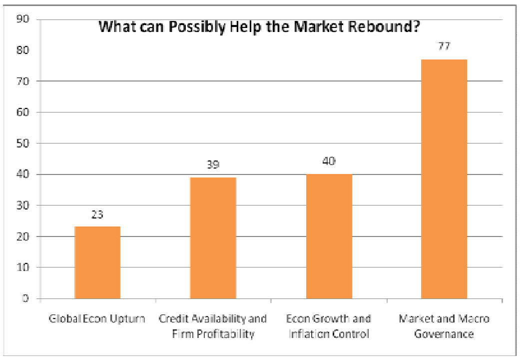
Inflation – Not Altogether irrelevant!





Thank You

Comments, Suggestions, Questions…