EXPLORING RESILIENCE OF THE LEAST DEVELOPED COUNTRIES IN THE FACE OF THE GLOBAL FINANCIAL AND ECONOMIC CRISIS

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Presented at

EADI/DSA Conference
Rethinking Development in an Age of Scarcity and Uncertainty
New Values, Voices and Alliances for Increased Resilience
York, UK

P 29-II: FIXED: Designing New Development Strategies for LDCs in 2011-2020
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INTRODUCTION

- Sharp decline in global economic activity due to the economic and financial crisis in 2008.
- Annualized rate of decline in GDP
  - 14.4% in Germany, 15.2% in Japan, 7.4% in the UK, 9.8% in the Euro area and 21.5% for Mexico (IMF, 2009).
- The impact on LDCs were relatively less severe.
  - GDP growth rate declined from 7.0% in 2008 to 4.6% in 2009.
  - Real GDP growth in LDCs in 2009: 2.7% (2.1% without Bangladesh).
  - Export decreased by 27.9% from 2008 to 2009.

<table>
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<th>LDC Data</th>
<th>GDP Growth (%)</th>
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This paper attempts to model the impact by treating the crisis as a shock.

- An event that the LDCs had no influence on.

It is argued that the crisis had a less severe impact on the LDCs due to:

- Strong macroeconomic fundamentals
- Lack of integrated financial sectors
- Prompt countercyclical measures by the LDC governments

Test the hypothesis of the LDCs having strong Macroeconomic fundamentals in the wake of the crisis.

Use Vector Autoregressive Models (VAR) and Impulse Response Functions (IRF) to:

- Explore the strength of macroeconomic fundamentals of LDCs
- Forecast the possible impacts of a double-dip recession
Literature Review

- Aggregate growth rates dropped from 7.0 per cent in 2008 to 4.6 percent in 2009 but increased to 5.1% in 2010 (ODI, 2010).

- African LDCs goods export growth rate decreased from 7.6% in 2008 to 3.7% in 2009, then increased to 4.3% in 2010 (World Bank, 2009).

- According to WTO (2010) between 2008 and 2009, LDCs’ merchandise exports fell by 26% while world trade decreased by 14% (World Bank, 2010)
  - LDC exports to major partners plummeted by 34% in 2009 (ITC, 2010).

- FDI inflows to LDCs, these inflows fell by 13% : from their peak of $32 billion in 2008 to less than $28 billion in 2009.

- In 2009, government revenues as a share of GDP fell in about half of the 29 LDC countries for which data were available (IMF, 2010).
In Zambia, the proportion of non-performing loans in total assets increased from 7 per cent to 13 per cent over the first three quarters of 2009.

In 2009 FDI inflows declined by more than 35 per cent compared with 2008 in the Central African Republic, the Democratic Republic of the Congo, Guinea, Timor-Leste, Mali, Mauritania, Sierra Leone and Yemen (34% decline in Bangladesh).

As a result of the crisis, by 2010 the number of the poor in African LDCs will be higher by an additional 6.1 million, and in Asian LDCs by 1.2 million,

In Cambodia, manufacturing sector growth had contracted from plus 8 per cent to minus 2.75 per cent.

The total income loss to the LDCs due to balance of payments shocks is estimated to be about $71.5 billion dollars in 2009 (IMF, 2010).
Eichengreen et al. (1995) suggested that capital controls, government deficits, inflation, GDP growth, employment, current account balances were important determinants of currency crises in the industrial countries.

Frankel and Rose (1996) suggested that external factors such as terms of trade and monetary policy by large economies may cause currency crashes and capital flight.

Deb (2005) suggested that macroeconomic fundamentals and economic crises are not interrelated.

Park and Lee (2001) suggested that depreciating real exchange rates, expansionary fiscal and monetary policy along with global growth is required for recovery.

Krueger and Lindah (2001) suggested that crises often causes substantial declines in investment in education and health.
Effect of the Crisis

- The crisis had a greater impact on the African LDCs, down from 7.6% growth in 2008 to 3.7% in 2009.
Effect of the Crisis (cont.)

Commodity prices declined and international demand weakened.

Growth in aggregate exports from the LDCs suffered a major drop in 2009 following years of upward trend.
Effect of the Crisis (cont.)

LDC Goods Export Growth

LDC Service Export Growth

Crude petroleum,
average of Dubai/Brent/Texas
equally weighted ($/barrel)

All Food Index
Monthly data (base = 2000)

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Effect of the Crisis (cont.)

- The Asian LDCs performed relatively well compared to the African LDCs in terms of both goods and services exports.
  - African LDCs, are highly dependent on production and exports of primary commodities.

**Asian LDC Goods Export Growth**

**African LDC Goods Export Growth**

**Asian LDC Services Export Growth**

**African LDC Services Export Growth**

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**Methodology**

- Study the impact of exogenous shock by using:

\[
T\% = a_1 + a_2 Y\% + a_3 YT\% + a_4 TT\% + a_5 XR\% + a_6 CR + u_1
\]

\[
Y\% = b_1 + b_2 T\% + b_3 FDI\% + b_4 SV\% + b_5 CR + u_2
\]

- Where percent (%) denotes the rate of change and the $u$’s represent error terms or omitted determinants (Frankel and Romer, 1999) and CR is a dummy variable representing the crisis.

- We also estimate a VAR model which accounts for non-stationarity and serial correlation in the data.
  - In effect we study the relationship of external demand and terms of trade shocks on GDP growth and export growth in LDCs in 1980-2010.
An impulse response function traces out the response of a variable of interest to an exogenous shock (Sims, 1980).

Trace out the impact of the crisis, which is the exogenous shock, by using a simple dummy variable approach using an autoregressive model of GDP growth rates augmented by crisis dummies.

This would allow us to observe the response functions of loss in GDP growth of the LDCs from External Demand (ED) and Terms of Trade (TOT) shocks.

ED and TOT has been chosen because most developing and low income countries were primarily hit by either of these effects.
In effect we study the relationship of external demand and terms of trade shocks on GDP growth and export growth in LDCs in 1980-2010.

The following variables were used:

- Terms of Trade Growth (TOT): growth of terms of trade for goods
- External Demand Growth: (ED): trade partner real GDP growth
- Lagged GDP growth
- Country Specific Fixed Effects

Both Akaike information criterion (AIC) and Bayesian information criterion (BIC) suggest that the optimum number of lags ED shock is 3 while the optimum for TOT shock is 2.

- Implying that ED shocks would be persistent up to three years while TOT shocks would be persistent for up to two years
**Exploring the Strength of the Macroeconomic Fundamentals**

**External Demand Shock**

- Economic crisis has had a negatively significant impact on the aggregate GDP growth of LDCs (5% of significance).
  - Downward sloping IRFs suggest weak macroeconomic fundamentals even before the crisis.
- Using VAR followed by impulse response functions on a panel regression on 44 LDCs, we find that the impact of the external demand shock (due to the 2008 crisis) on GDP growth rate is negative and persistent for up to five years (Figure I).
- IRF for ED shock on export demand suggests that it may take up to five years for the export growth rate from LDCs to return to the pre-crisis trends.

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EXPLORING THE STRENGTH OF THE MACROECONOMIC FUNDAMENTALS (CONT.)

Terms of Trade Shock

- Impact on GDP growth rate is negative but is not as persistent as that of ED shock.
  - IRF suggests that it might take up to three years for the loss in GDP to return to the pre-crisis trend
- The impact of the crisis on aggregate exports growth is also negatively significant, albeit at the 10 percent level.
  - Lack of country level data for exports

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FORECASTING THE POSSIBLE IMPACT OF A DOUBLE-DIP RECESSION

- VAR model with random shocks in order to forecast the impact of a possible 'double-dip recession.

- We assume that the shock would start affecting in June 2011 and only forecast for an external demand shock on the GDP of LDCs.

- IRF suggests that it would require almost seven years for the LDCs to return to the pre-crisis trend if there were to be an external demand shock in June 2011.
  - Case of double-jeopardy as the benchmarks 2011 are lower than 2008/2009.
  - Five years to return to pre-2008 trend and seven years to return to pre-2011 trend (which is lowered due to the previous crisis.)
CONCLUDING REMARKS

- The paper essentially examines the hypothesis of strong macroeconomic fundamentals in LDCs.
- Uses rigorous econometric techniques to explore the impact of 2008 crisis and traces out the possible impacts of a possible double-dip recession.
- First to use impulse response functions to study the impact on LDCs.
- The notion of LDCs having strong macroeconomic fundamentals in the wake of the crisis in 2008 may not be valid.
- Impulse response functions also suggest that the recovery period of a double-dip recession will be larger than that for the 2008 crisis.
- Lack of financial sector integration could have been a factor for relatively less severe effects.
  - However, most LDCs have volatile stock markets with weak data observations which makes it difficult to study the impact of the crisis on the financial sectors.
CONCLUDING REMARKS

- Declining government revenues means that LDCs are in need of considerable financial support.
  - Creating contingency/trust funds to mitigate the impacts of future external shocks.

- Implementation of pledges on duty free and quota free market access by the advanced economies for LDC export.

- Government investment for future years could be brought forward as a countercyclical measure.
  - Real spending on education, health and social safety nets should be maintained.

- Results also suggest that countries with volatile exchange rate regimes are more vulnerable to external shocks, thus it may be also prudent to build up international reserves and flexible exchange rate regimes.