Using Commodity Dependence Indicators as Guidance for Development Interventions

by

Andrey Kuleshov
The Common Fund for Commodities

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Outline

• Who is commodity dependent
• Commodity dependence as symptom
• Measuring commodity dependence
• The way forward
Is commodity dependence an issue?

• Historical: US, Nordic, Malaysia growth took off from natural endowments
• Current: Australia, Canada
• Commodity developers: Brazil, Argentina and Thailand
• Commodity-bound: we all know them
CDDC or not CDDC?

• Share of exports above benchmark (e.g. Gibbon, 2006)
• CTOT explanation for differences (Cavalcantia et al. 2012)

Is it effective to target commodities?

• Few if any commodities (e.g. cocoa) are still dominated by exports from countries falling into the CDDC group (Burger, 2009)
• Development problems better explained by domestic political and institutional variables? (Acemoglu et al 2004, Robinson et al, 2006)
Practical approach

**EU-ACP**: Commodity dependent if observe:

- concentration of economic activity in one or more agricultural commodities; and
- disproportionate share of population dependent on those sectors.

**Assumption**: targeting commodity dependence in this context an effective way of allocating development resources

**EU**: “…the term ‘CDDC’ is used for convenience [and] … should not be taken to suggest that a specific definition exists, or indeed should exist”
At the high level of productivity an exceptional commodity endowment is required to be competitive.

The higher the productivity, the more difficult for commodity sector to retain a dominant place.
Commodity persistence

- High share of commodities → Structural vulnerabilities
- Costs
  - Cannot build up capital

Reliance on commodities

- Low commodity endowment
- Cannot build up capital
Reliance on commodities and vulnerability

- Reliance on commodities to participate in global trade – rational economic choice if low stock of capital
- Reliance on commodities brings a range of vulnerabilities:
  - Distorted investment
  - Macroeconomic instabilities
  - Governance difficulties
  - Institutional problems
  - etc
- Gains from commodity production and trade offset by costs due to vulnerabilities. Cannot build capital base, stuck with low productivity.

Persistent high share of commodities
Commodity dependence

• Commodity dependence is condition where a country is unable to convert its natural endowment into sustained economic development

• Commodity dependence is the **outcome and symptom** of failures in addressing economic vulnerabilities associated with commodity production and trade

  If commodity dependence is a symptom, what are the underlying issues?
Identify common determinants of growth 
given high share of commodities

Analysis by Lee Robinson, leerobinsonuk@yahoo.co.uk

- Panel study, 184 countries, 34 variables, average 1995 to 2009
- Principal component analysis of countries at different levels of commodity exports: >50%, >60%, >70% etc
- Test if raising cutoff level changes first 4 PCs; found little change above 70%
- Interpret 4 PCs at >70% and combine into index
Commodity Vulnerability index

• Component 1: Institutional Strength (-)
  • Resilience factors are very strong, finance system is healthy, growth is sustained and poverty is low

• Component 2: Industrialised Fuel Exporting (-)
  • Poverty levels are low, growth and diversification patterns are occurring in manufacturing sectors and business sectors are strong, high fiscal reliance on commodities

• Component 3: Concentration of economic activity (+)
  • Growth, though high and sustained, is narrow and occurring alongside vulnerabilities. More likely to be short lived growth accelerations

• Component 4: Point Resource Growth, Vulnerability (+)
  • Low manufacturing exports, value added and vulnerabilities not offset by any resilience factors.
% share vs CV index

- Positively correlated
- CV registers differences at lower % share
Comparing the relationships

Manufacturing Exports (% of Exports)
\[ y = -18.374x + 21.687 \]
\[ R^2 = 0.1002 \]
\[ y = -85.399x + 85.721 \]
\[ R^2 = 0.8887 \]

Fuel Exports (proportion of total Exports)
\[ y = -0.903x + 0.3748 \]
\[ R^2 = 0.0011 \]
\[ y = 1.8385x - 1.2702 \]
\[ R^2 = 0.1687 \]

UN’s Human Development Index
\[ y = -0.957x + 1.1102 \]
\[ R^2 = 0.471 \]
\[ y = -0.8532x + 1.328 \]
\[ R^2 = 0.1537 \]

Control of Corruption (index)
\[ y = -5.015x + 4.7922 \]
\[ R^2 = 0.5772 \]
\[ y = -4.2322x + 5.7263 \]
\[ R^2 = 0.1688 \]
## Top 20 CV index

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Composite index of commodity dependence</th>
<th>Rank by commodity exports</th>
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<td>1</td>
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Visualizing the differences
Conclusions

• Simple measures of commodity dependence as % share uninformative for practical purposes
• Vulnerabilities create a feedback which eats up gains from commodity production and trade
• A few vectors explain large part of differences in performance of countries with high share of commodities
• Can construct an index using these vectors to capture country’s capacity to overcome commodity related vulnerabilities

Thank you!

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