The role of the State in the economic diversification of Trinidad and Tobago

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The imperative of economic diversification
Outline

- Context
- Resource Abundance – Curse or Blessing
- Export Diversification Indices and Trinidad and Tobago
- Case Study: Trinidad and Tobago – Impacts of lack of diversification
- Conclusions and Policy Recommendations
Context

- Trinidad and Tobago has a history of successful exploitation of hydrocarbon resources

- Energy sector has been the engine for economic growth

- Energy prices marked by large amplitude fluctuations in prices

- Industrialization policies naturally focused on energy sector to the detriment of non-energy sectors

- Declining crude oil production, softening natural gas prices reinforce the imperative for economic diversification
Resource Abundance – Curse or Blessing

- Internationally priced commodities experience the fluctuations of markets

- Resources used as basis for economic development
  - Vent for surplus theory
  - Staple theory

- Resource abundance – “paradox of plenty”
  - Decreased macro-economic performance (empirical observation)
  - LDC typically experience imbalances in factors of production
    - Surplus labour
    - Capital investment shortage
  - Quality of institutions play a significant role
    - Australia, Norway, Indonesia excellent examples of avoidance
Resource Curse – Terms of Trade Shocks

- Terms of trade shocks
  - Specialization in commodity exports

- Long term commodity prices follow downward trend relative to manufactured goods
  - Consistent with Prebisch-Singer hypothesis

![Graph showing terms of trade between primary goods and manufactured goods from 1900 to 2003.](image)
Resource Curse – Enclave Effect

- Mineral industries typically operate in “enclaves”
  - Disassociated from the economy
  - Few forward and backward linkages
  - Technology spill-over is minimal
  - Employment in primary sector limited
Resource Curse – Dutch Disease

- Positive external trade shock

- Labor movements towards booming sector

- Resource movement effect and Spending effect

- Characterized via:
  - Appreciation of the real effective exchange rate
  - Increase in the output of the non-traded goods sector
  - Deterioration of the manufacturing sector
Dutch Disease – Trinidad and Tobago

Trinidad and Tobago Crude Oil and Natural Gas Production, 1970-2009

Real Effective Exchange Rate vs. Real Oil Prices, 1991-2008

\[ y = 0.111x + 76.533 \]

\[ R^2 = 0.5276 \]
Dutch Disease – Trinidad and Tobago

![Graph showing the Share of Manufacturing Exports and REER over time.](image-url)
Export Diversification

- Spread production to different sectors whilst maintaining productivity

- Caveat – avoid diversification within a narrow sector
  - Natural gas sub-sector used to drive downstream industries
  - Narrow concentration in the energy sector

- Export diversification can be measured with export concentration indices
  - Herfindahl-Hirschman Index
  - Hall-Tideman Index
Export Concentration Indices

- Herfindahl-Hirschman Index (HTI)
  - Common measure of export concentration
  - Summing the square of the export shares of all categories
  - Larger categories could bias the index

\[
\text{HHI} = \sum s_i^2 ; i = 1, 2, ..., n
\]

Low Concentration

High Concentration
Export Concentration Indices

- Hall-Tideman Index (HTI)

- Common measure of export concentration
- Includes the number of export categories
- Export share of each category is weighted by its ranking in descending order
  - Largest share has ranking of 1

\[
HTI = \left( 2 \sum_{i} s_i^{-1} \right) - 1; \quad i = 1, 2, \ldots, n
\]

Low Concentration  \quad 1

High Concentration
Export Diversification Indices
Trinidad and Tobago, 1970-2009

Trinidad and Tobago Export Diversification Indices
HHI, HTI 1968-2010

High concentration during first oil boom

Upward trend in indices correlates with increased productivity in energy sector especially natural gas sub-sector
Role of the State
Case Study: Trinidad and Tobago

- **1970-1989**
  - High oil prices and first oil boom period
  - State role: “Active participant”
    - Assumed unlimited capacity for economic intervention
    - Failed in its developmental role

- **Import substitution based industrialization**
  - Era of nationalism
  - Increased self-sufficiency by reduced dependency on foreign companies
  - Keynesian model of economic growth
  - Poor fiscal policies
    - Expensive capital projects
    - Extensive subsidies
    - Increased public debt
Role of the State
Case Study: Trinidad and Tobago

• **1989 - Present**
  - 1980’s featured collapse in oil price, currently strong energy market
  - State role: “Facilitative”
    - Structural reforms mandated by exogenous lending agencies
    - Consequence: Change in State function to 15
    - Market mechanisms capable of self correction
  - Resource based industrialization
    - Extension of value chain of indigenous resources
    - Rather than export in crude form, downstream processing into value added products
    - Narrow diversification within energy sector

• State’s involvement in the energy sector should be one of minimalism
  - Allows for enabling regulatory environment
  - 2nd resource boom combined increased production and strong energy markets
  - Fiscal incentives (encourage exploration and investment)
  - Infrastructural incentives – port facilities, industrial estates
Conclusion & Policy Recommendation

- Trinidad and Tobago suffers from Dutch Disease between 1991-2008
  - Appreciation of real effective exchange rate
  - Deterioration of manufacturing shares

- Export concentration indices indicate Trinidad and Tobago continually becoming more specialized during the 2000’s
  - Increased output from energy sector

- The State should adopt more consistently a minimalist role to allow for an enabling regulatory environment and one where the market allocates resources more efficiently

- Significant policy decisions need to be made around diversification outside of energy sector
  - Increase level of genuine savings – Stabilization Funds
  - Revenue sterilization
  - Micro-financing and localized economic development
  - Development of manufacturing sector
<table>
<thead>
<tr>
<th>Country</th>
<th>Characteristics of Stabilization Fund</th>
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<tbody>
<tr>
<td>Norway</td>
<td>Revenue accumulate in fund with an overall budget surplus</td>
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<td></td>
<td>Upswing – tighten fiscal stance (to dampen inflation, appreciation of REER)</td>
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<td>Downswing – prudent withdrawal</td>
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<td>Chile</td>
<td>Saving – positive gap between estimated and actual price</td>
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<tr>
<td></td>
<td>Spending – negative gap between estimated and actual price BUT only if resources in fund</td>
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<tr>
<td>State of Alaska</td>
<td>Constitutional obligation at least 25% royalties, leases etc. goes into fund</td>
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<td></td>
<td>Transfers into fund independent of oil price</td>
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<td></td>
<td>Principal of fund is permanent investment but flexibility in spending of the interest</td>
</tr>
<tr>
<td>Trinidad &amp; Tobago</td>
<td>Deposits – quarterly petroleum revenues &gt; estimated by 10%</td>
</tr>
</tbody>
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Revenue Sterilization

- Exhibited poor fiscal policies following resource boom in the 1970’s

- Stricter macro-economic policies
  - Avoid reckless spend on capital intensive projects
    - Can we reduce the subsidy?
  - Accumulate budget surpluses

- Need to dampen inflationary pressures and appreciation of real effective exchange rate
Micro-financing and localized economic development

- Focus on development of human capital
  - Application of the Hartwick Rule – investment of rents from natural resources into reproducible capital
- Cluster development
  - Revival of agricultural sector
  - Development of linkages
  - Opportunities for research and development
  - Infrastructural improvements
  - Increased efficiencies and competitiveness
  - Value added
Development of manufacturing industry

- Enact policies to promote diversification
  - Persistence of sectors with a comparative advantage

- Enact policies to aid competitiveness of manufacturing sector

- Fiscal policies to minimize appreciation of exchange rate critical to ensure external competitiveness of sector

- Intangibles present in the manufacturing sector such as “learning by doing” can spur on greater innovation aiding in economic growth