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

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Conference on Revenue Management in Hydrocarbon Economies

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 re-inforce the imperative for economic diversification

Resource Abundance – Curse or Blessing

- Internationally priced commodities experience the fluctuations of markets

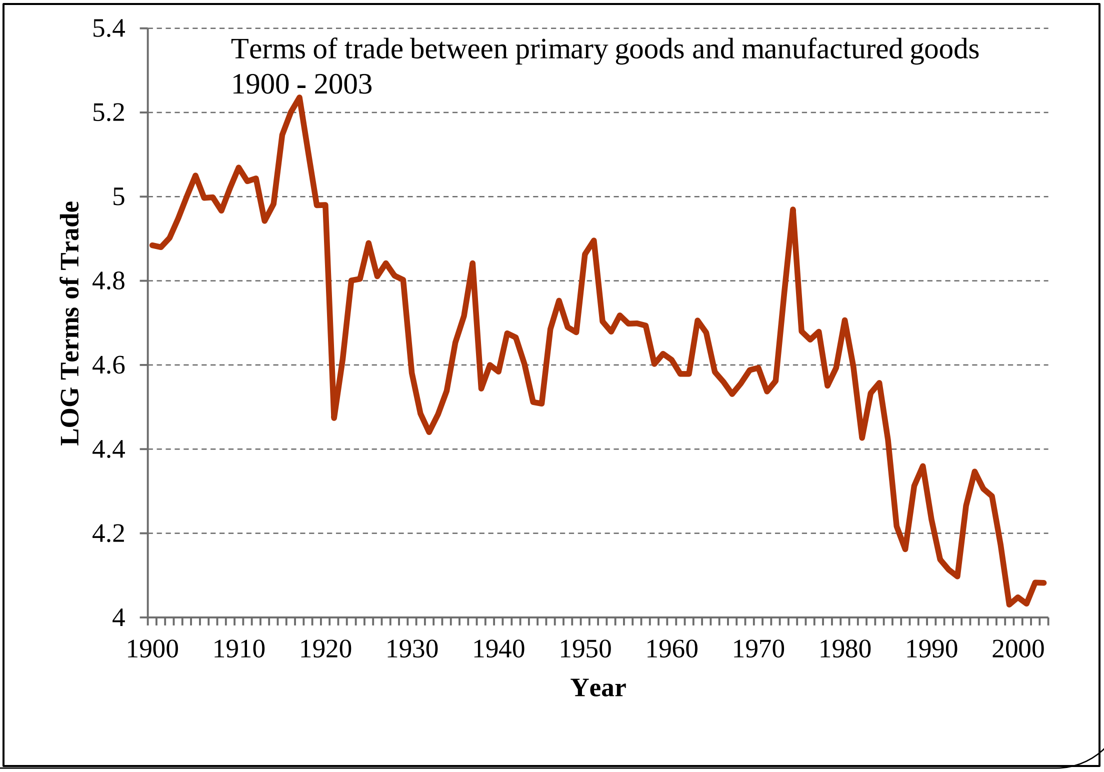
- Resources used as basis for economic development
  - Vent for surplus theory
  - Staple theory

- 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



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

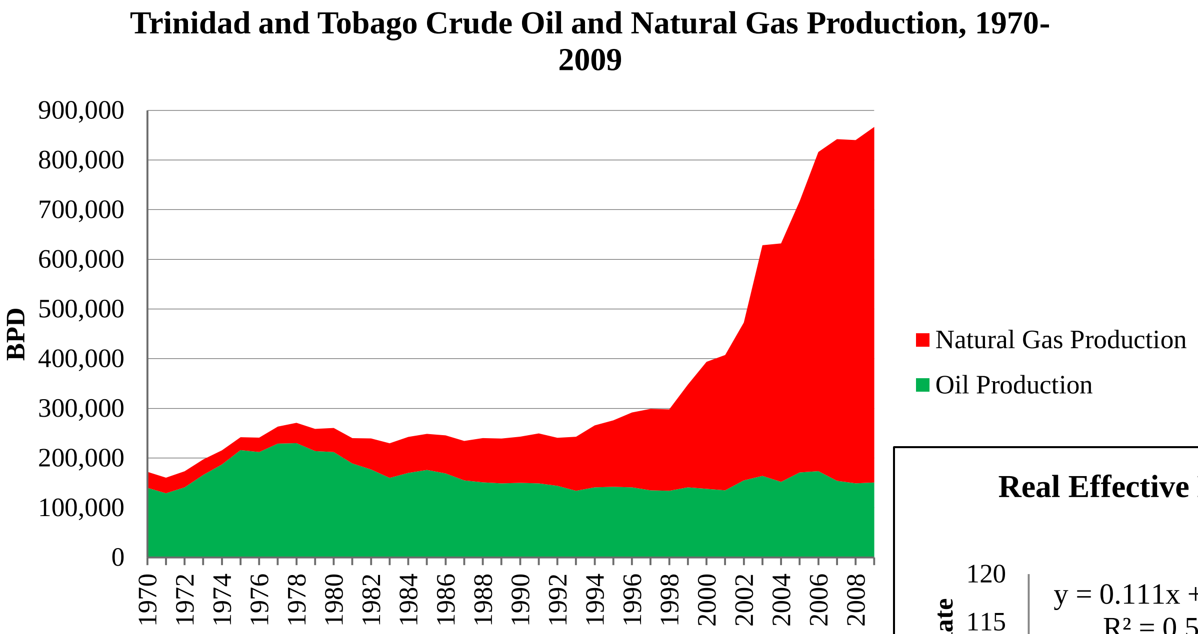
- Positive external trade shock

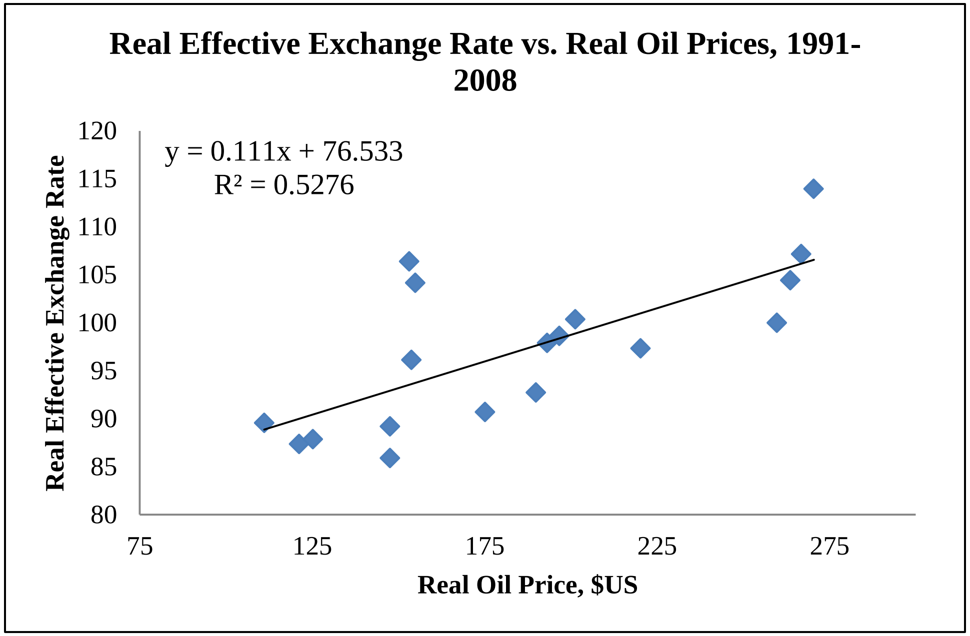
- Labor movements towards booming sector

- Resource movement effect and Spending effect

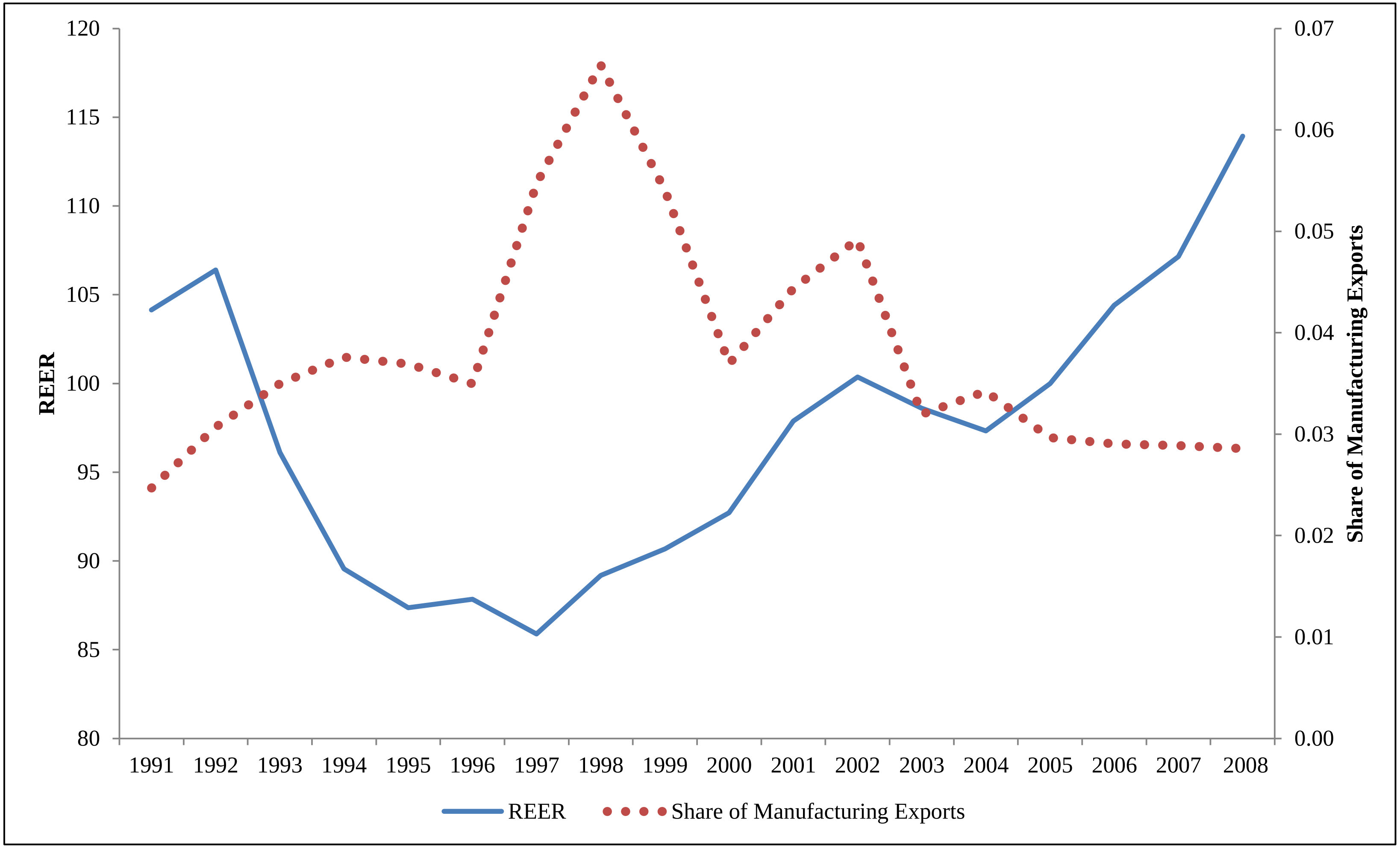
- Characterized via:
  - Appreciation of the real effective exchange rate
  - Increase in the output of the non-traded goods sector
  - Deterioration of the manufacturing sector

Dutch Disease – Trinidad and Tobago





Dutch Disease – Trinidad and Tobago



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

$$\mathbf{HHI} = \Sigma s_i^{\,2}\,;\ i = 1, 2, \ldots, n$$

0 1

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

$$\mathbf{HTI = (2\,\Sigma_i s_i^{\,-1}) - 1;\ i = 1, 2, \ldots, n}$$

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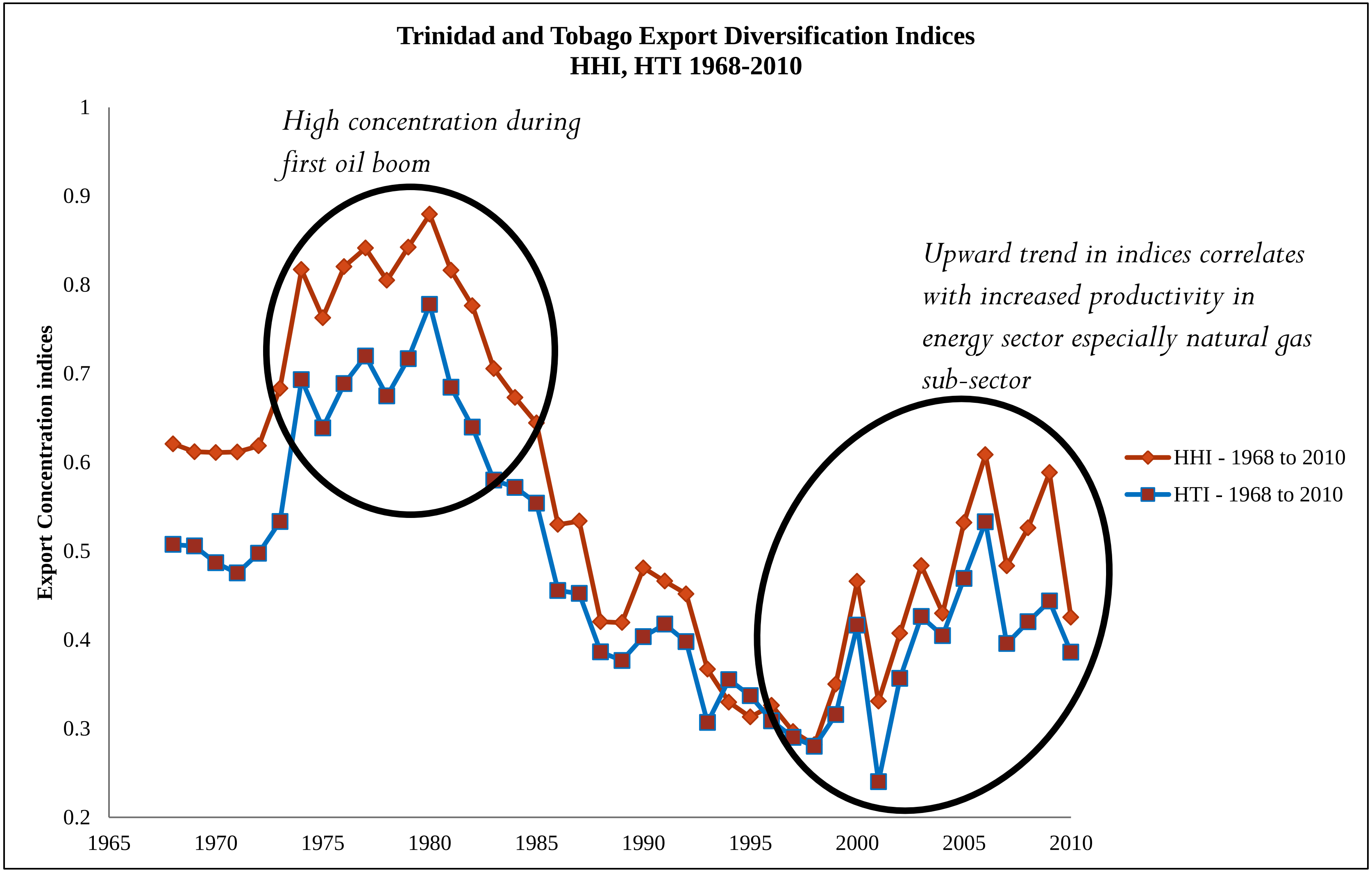
Low Concentration — High Concentration

Export Diversification Indices Trinidad and Tobago, 1970-2009



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 1515
    - 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
  - 2^{nd} 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

Country	Characteristics of Stabilization Fund
Norway	Revenue accumulate in fund with an overall budget surplus Upswing – tighten fiscal stance (to dampen inflation, appreciation of REER) Downswing – prudent withdrawal
Chile	Saving – positive gap between estimated and actual price Spending – negative gap between estimated and actual price BUT only if resources in fund
State of Alaska	Constitutional obligation at least 25% royalties, leases etc. goes into fund Transfers into fund independent of oil price Principal of fund is permanent investment but flexibility in spending of the interest
Trinidad & Tobago	Deposits – quarterly petroleum revenues > estimated by 10%

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