

Macroeconomic Challenges: Linking Extractive Industries to the Wider Economy



CENTRAL BANK OF
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Background and Issues

Motivation of presentation: to gain a richer understanding of how extractive industries affect economies and draw out policy implications.

I. Stylized facts on sample of countries with/without large extractive industries.

II. Links with the domestic economy.

III. Dealing with Intergenerational Equity.

IV. Macroeconomic Challenges.

V. Experience of Trinidad and Tobago over 2 booms.

VI. Some Lessons.

I. Consider 2 sets of countries: with/without dominant extractive industries



Extractive

Non-extractive



A mix of countries in terms of size, population and geography

Group I. Countries dependent on Extractive Industries

	Energy sector (% GDP)	Population (millions)	GDP Per Capita (US\$)	Size (Area in Km ²)
Trinidad & Tobago	43.7	1.3	18,000	5,128
Saudi Arabia	45.0	29.0	25,085	2,149,690
Nigeria	28.0	164.8	1,631	923,768

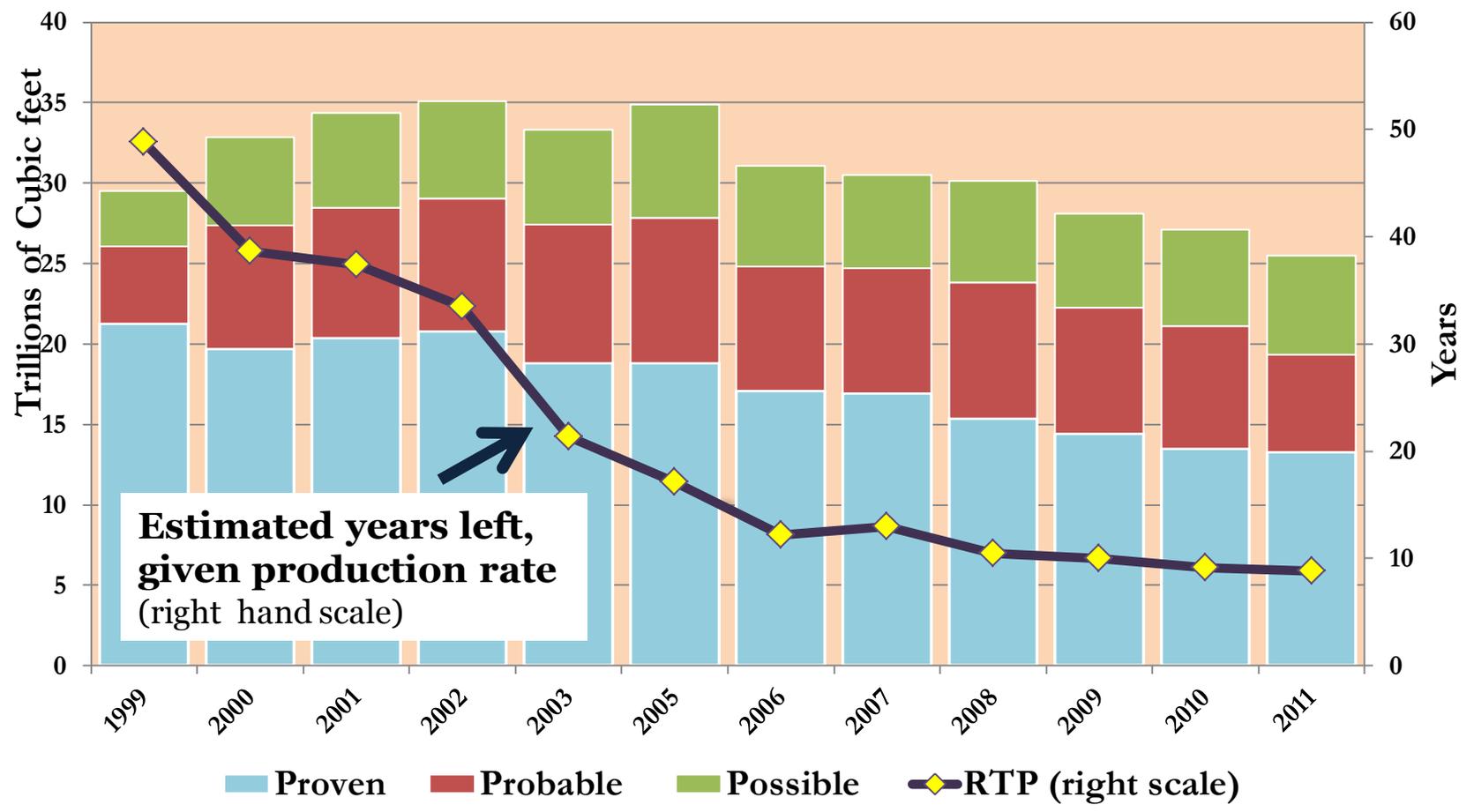
Group II. Countries non-dependent on Extractive Industries

Barbados		0.3	16,152	431
Costa Rica		4.6	9,673	51,100
Egypt		80.4	3,112	1,002,450

Data for 2012

A key issue is the finite nature of the extracted product

Trinidad & Tobago: Natural Gas Reserves estimates



Sources: Ryder-Scott reports (various years)

Critical aspects of extractive–industry dependence

“... there’s only three things that’s for sure...

**taxes,
death,
and trouble...”**



Marvin Gaye, Trouble Man Album, 1972

II. Taxes: main link between enclave and economy

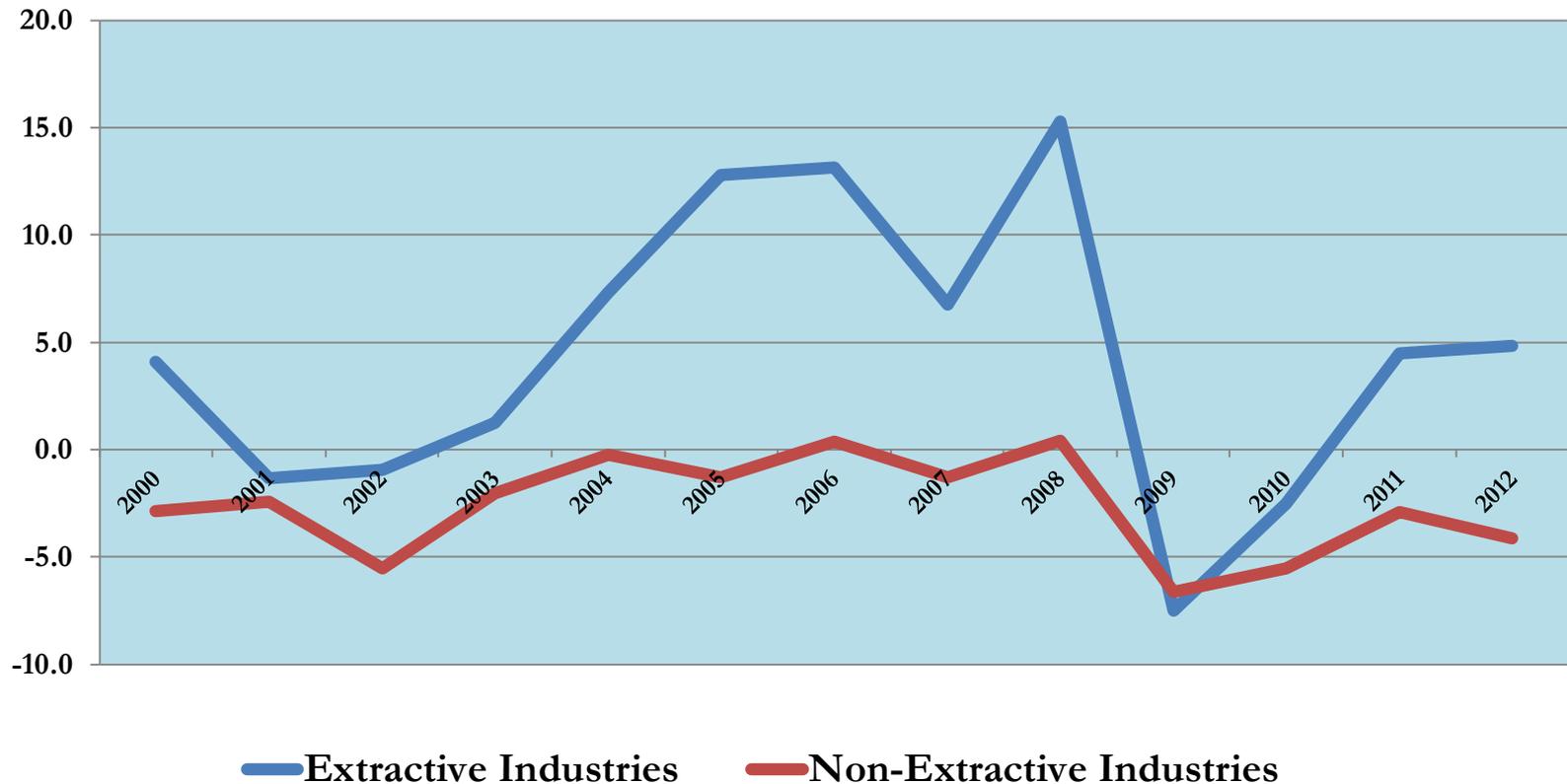
- For the most part, large extractive industries involve major capital intensive operations with multinational companies and the products are exported.
- Oil, natural gas, copper, bauxite are typical; other products such as diamonds in Sierra Leone may involve smaller-scale companies/operations.
- Much of the early “booming sector economics” literature (Corden etc.) focused on resource movement and spending effects (independent of taxes).
- In practice, the direct resource movement and spending effects from the extractive industries may be relatively limited as they operate as enclaves.
- Their strong links to the rest of the economy are generally via:
 - taxes paid to the Governments (which may be in foreign currency);
 - foreign exchange conversions on the local market.

Taxes on the enclave reduce reliance on other sources

- Taxes provide an opportunity for governments to benefit from the operations of the extractive industry companies.
- In several countries, including Trinidad & Tobago, this tax take could dwarf revenue from other (non-energy) sources.
- Substantial government energy revenue could drive a wedge between the taxes paid by the non-energy contributors and the government.
- This has interesting political economy dimensions if there is no longer a close link between (non-energy) tax contributions and government revenue (tax payers may feel disconnected to government revenue /spending policies).
- “Energy’ taxes could potentially offer countries a better standard of living, and the ability to pursue projects that otherwise would be difficult to finance.

Countries with extractive industries had much stronger fiscal positions

Fiscal Balances (Per cent of GDP)



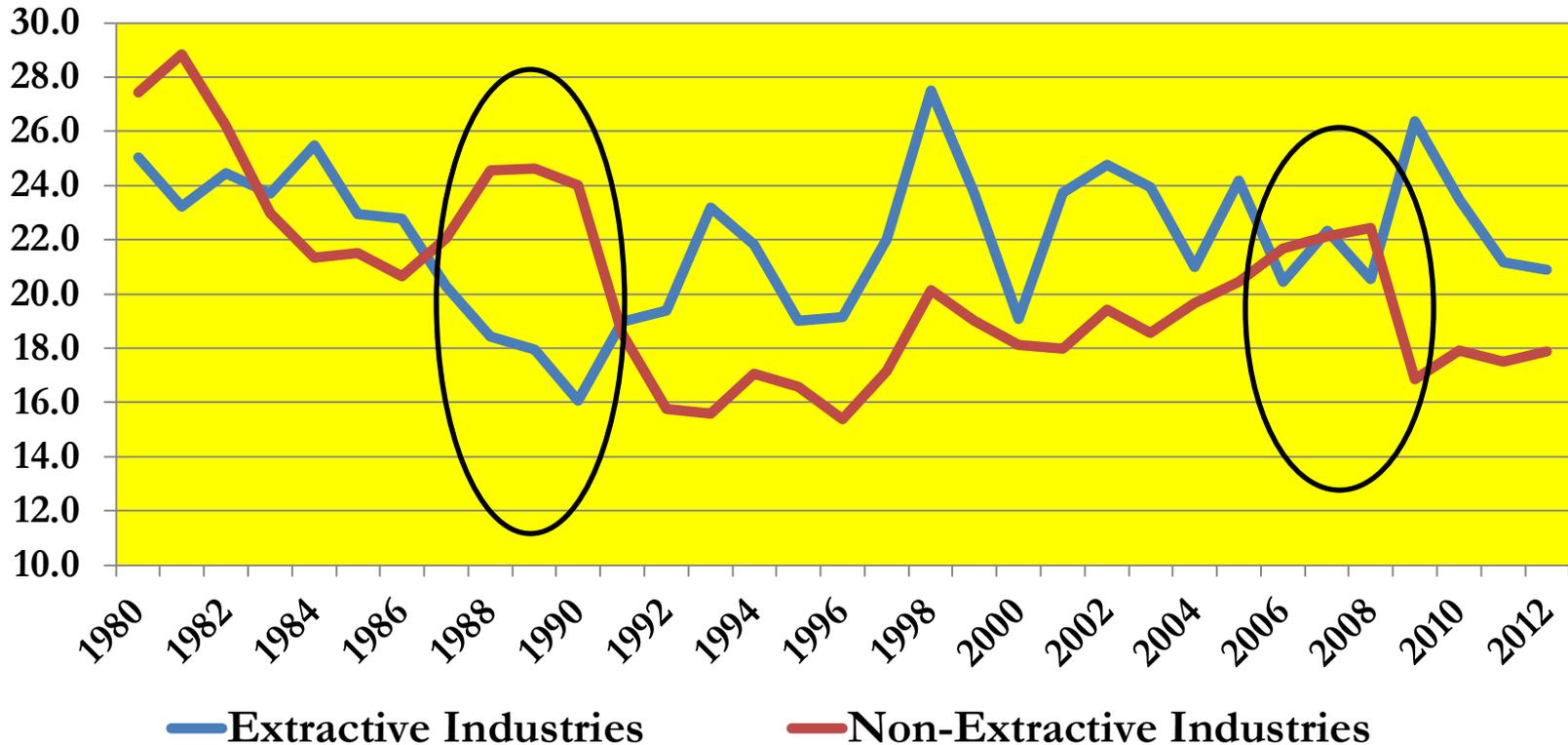
...but a sharper fiscal deterioration in the recent recession

III. Death: an issue of intergenerational equity

- By its nature, natural resource extraction involves decisions relevant to several time periods.
- Given that the resources are finite, a choice must be made on the rate of exploitation. Faster extraction rate leaves less for the future.
- Decisions must also be made on how quickly to use the generated wealth: (Immediate) Consumption versus Investment/Savings.
- Behind this is the philosophical issue of who owns the country's natural endowment (we, our children, our grandchildren?).
- Overall, countries with large extractive industries may also have the opportunity to invest and save more.

Countries with extractive industries generally invested more

Investment (% GDP)



...but their investments were more sensitive to the fortunes of

Several countries have established sovereign wealth funds to lock in savings

Selected Sovereign Wealth Funds, June 2013

Country	SWF Name	Assets (US\$B)	Inception	Origin
Saudi Arabia	SAMA Foreign Holdings	532.8	n.a.	Oil
Nigeria	Nigerian Sovereign Investment Authority	1.0	2011	Oil
Trinidad & Tobago	Heritage & Stabilization Fund	4.7	2000	Oil
Norway	Government Pension Fund-Global	737.2	1990	Oil
China	China Investment Corporation	482	2007	Non-commodity
Chile	Social & Economic Stabilization Fund	15	2007	Copper

Source: SWF Institute

At June 2013, assets in SWFs totalled US\$5,473 billion (58% of which was oil and gas related).

III. Trouble: self-induced and/or exogenous

Self-induced variety is often related to the so called “Dutch disease” literature:

- Basic model includes booming, non-booming tradeables and nontradeables sectors.
- Resource movement and expenditure effects encourage a movement of activity towards nontradeables and away from non-booming tradeables.
- If the boom is suddenly reversed, the economy could face problems as it is difficult to reverse spending patterns etc.

Rent-seeking behaviour can also be a major by-product:

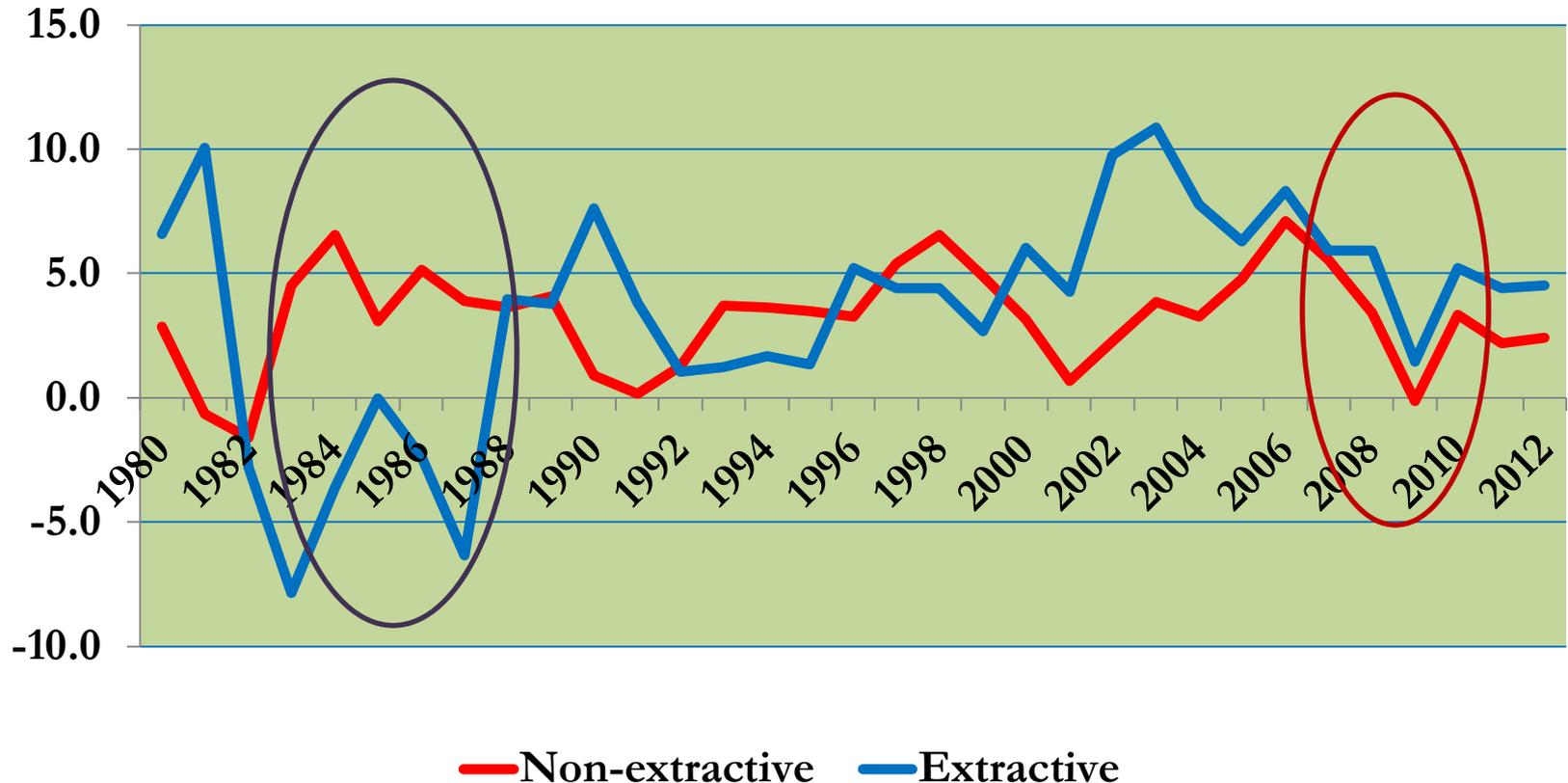
- Political economy literature highlights role of interest groups created to take advantage of the wealth.
- Behaviour of interest groups (“voracity effect”) could lead to reduced savings etc.

Trouble can also be unrelated to dominant sector

- Every economy faces exogenous shocks:
 - some shocks are specific to the country (e.g. earthquake);
 - others that affect a region or the world (e.g. Eurozone debt problem, global financial crisis).
- A dominant extractive sector can allow building of buffers to deal with shocks (Sovereign Wealth Funds, high credit ratings, fiscal space, low debt, high reserves).
- If there is too much complacency about the good fortune, the economies could actually find themselves very unprepared for troubled times.

Countries with extractive industries generally have higher, but more volatile, growth

GDP Growth rates



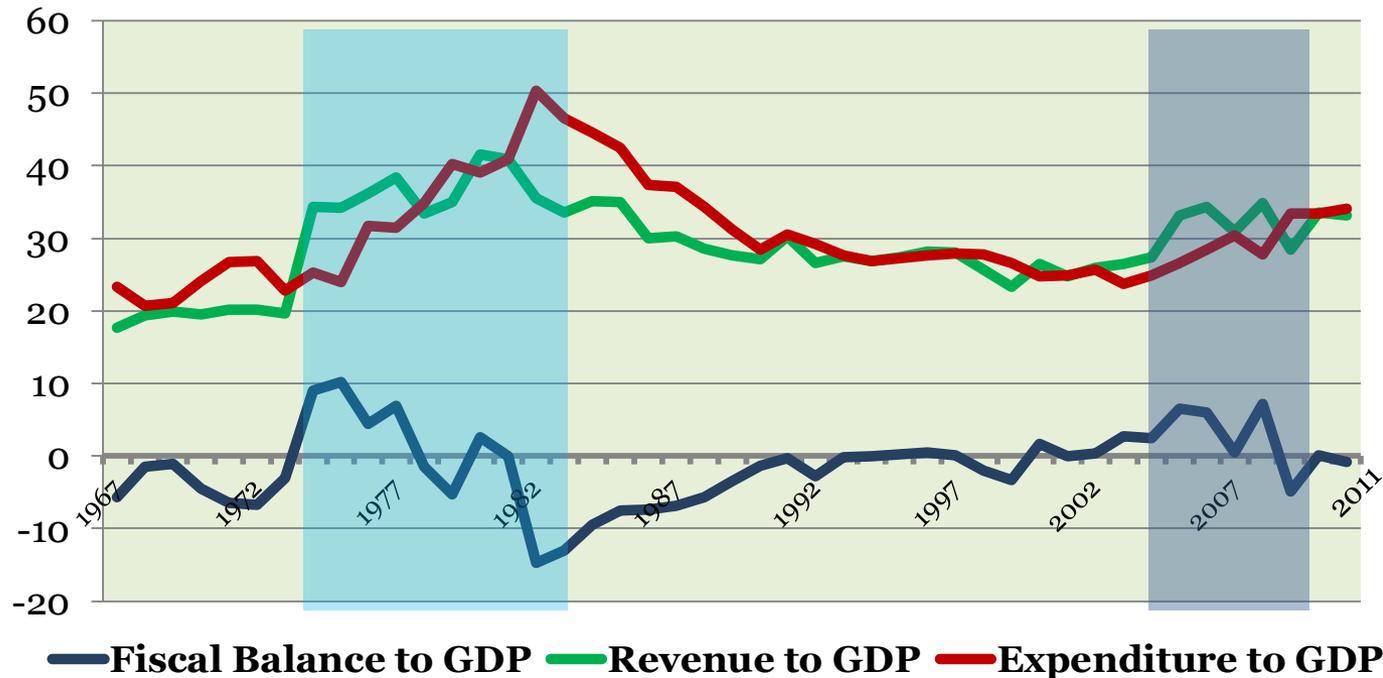
...they were able to sustain slightly higher growth during recent recession than other countries

IV. Experience of Trinidad & Tobago over 2 booms

- The energy-exporter had two major booms over last 5 decades.
- The first was oil price based (1973-82); the second involved international energy prices as well as a surge in natural gas output (2002-2008).
- In an earlier study “*Dutch Disease in Trinidad & Tobago: Then and Now*” we looked at some aspects of the 2 booms. Let us recap:
 - Was fiscal policy counter or procyclical?
 - How did fiscal policy compare over both booms?
 - How did relative prices move?
 - How did relative wages and labour react?
 - How did the structure of the economy change?

a. Fiscal policy remained countercyclical over both booms

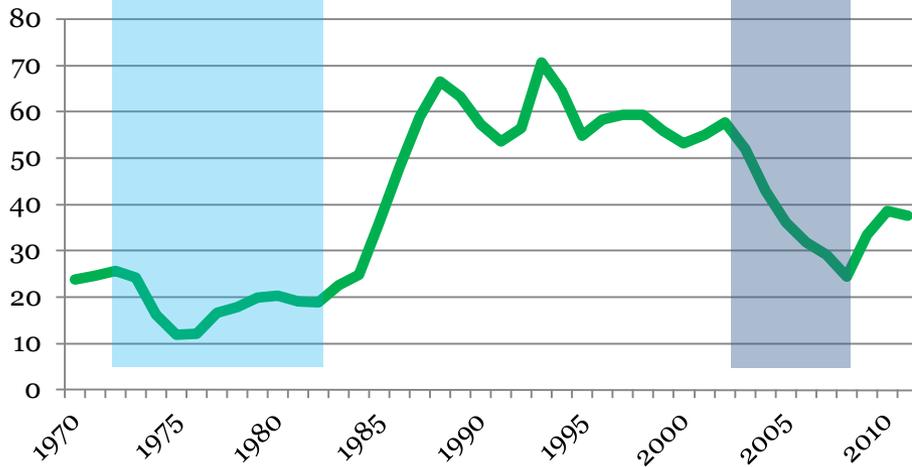
Trinidad & Tobago: Fiscal Operations/GDP (%)



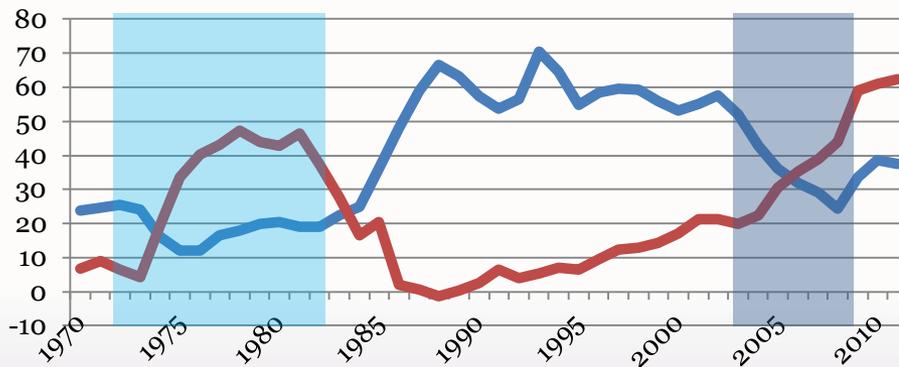
- In both cases, revenue jumped immediately
- The increase in expenditure occurred with a lag
- For the most part surpluses were built up during boom episodes.

b. Fiscal policy apparently adjusted faster after boom II

Debt to GDP (%)

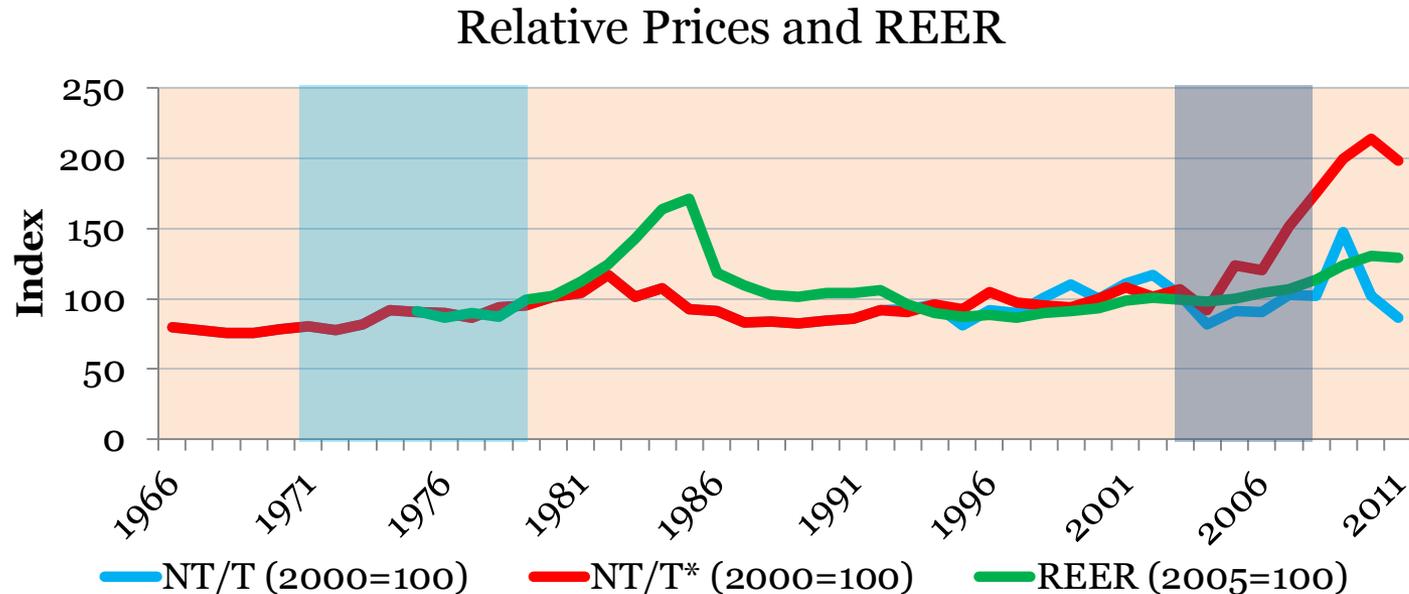


— **Public Sector Debt to GDP**
— **Gross Official Reserves (inc. HFS) % of GDP**



- There was a sharper decline in debt during the second boom episode.
- This suggests measures were taken to avoid some volatility experienced in the wake of boom I.
- The approach to building buffers was reflected in the path of public debt, international reserves and the setting up of a Sovereign Wealth Fund.

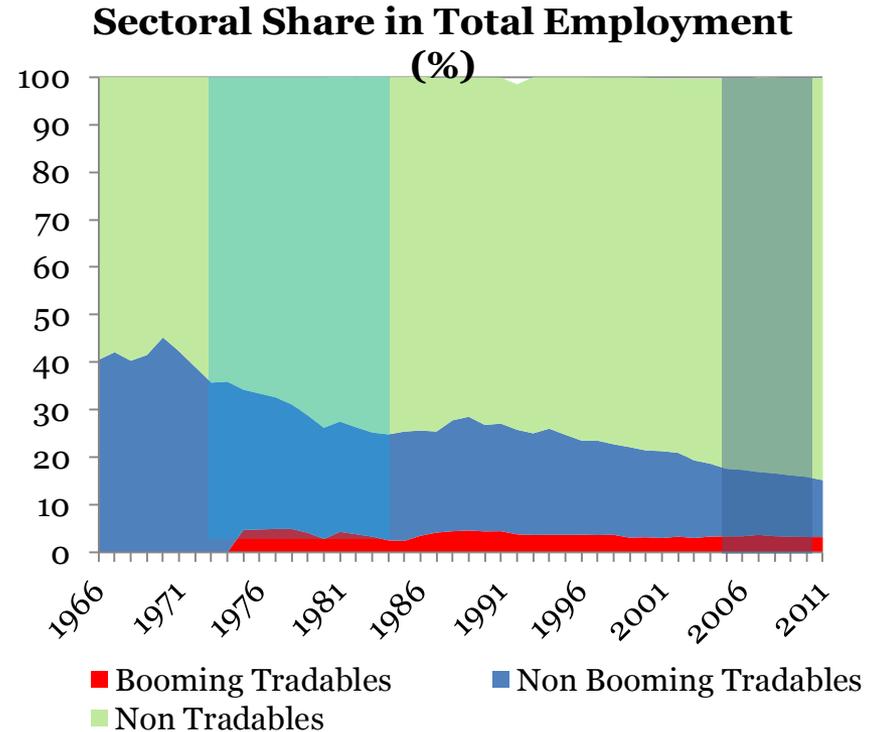
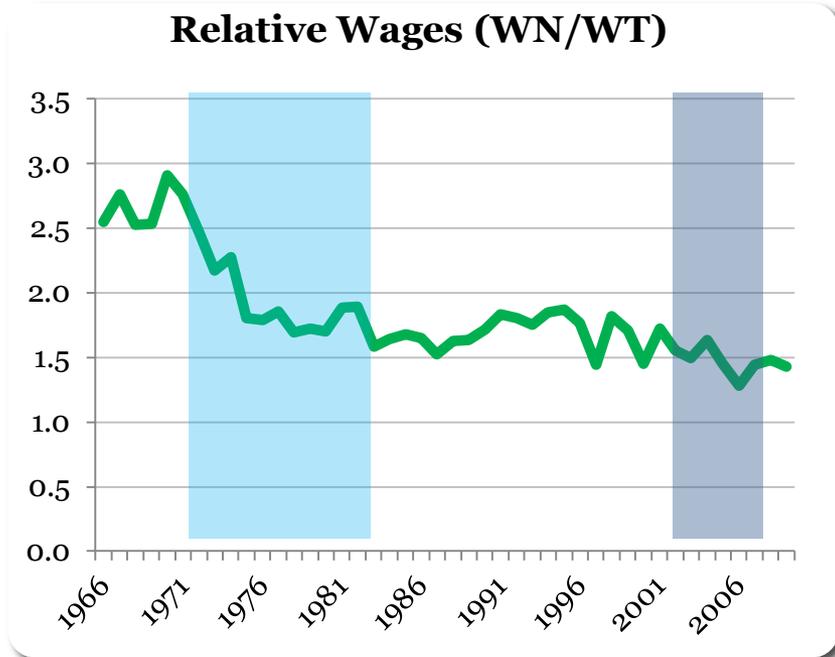
c. Relative price changes favored nontradeables



T*- excludes petrochemicals

- Without petrochemicals, prices of nontradeables versus non-energy tradeables rose more sharply in boom II than in boom I: 24% compared to 21%.
- Real effective exchange rate appreciation was less in boom II partly because of the flexible exchange rate regime.

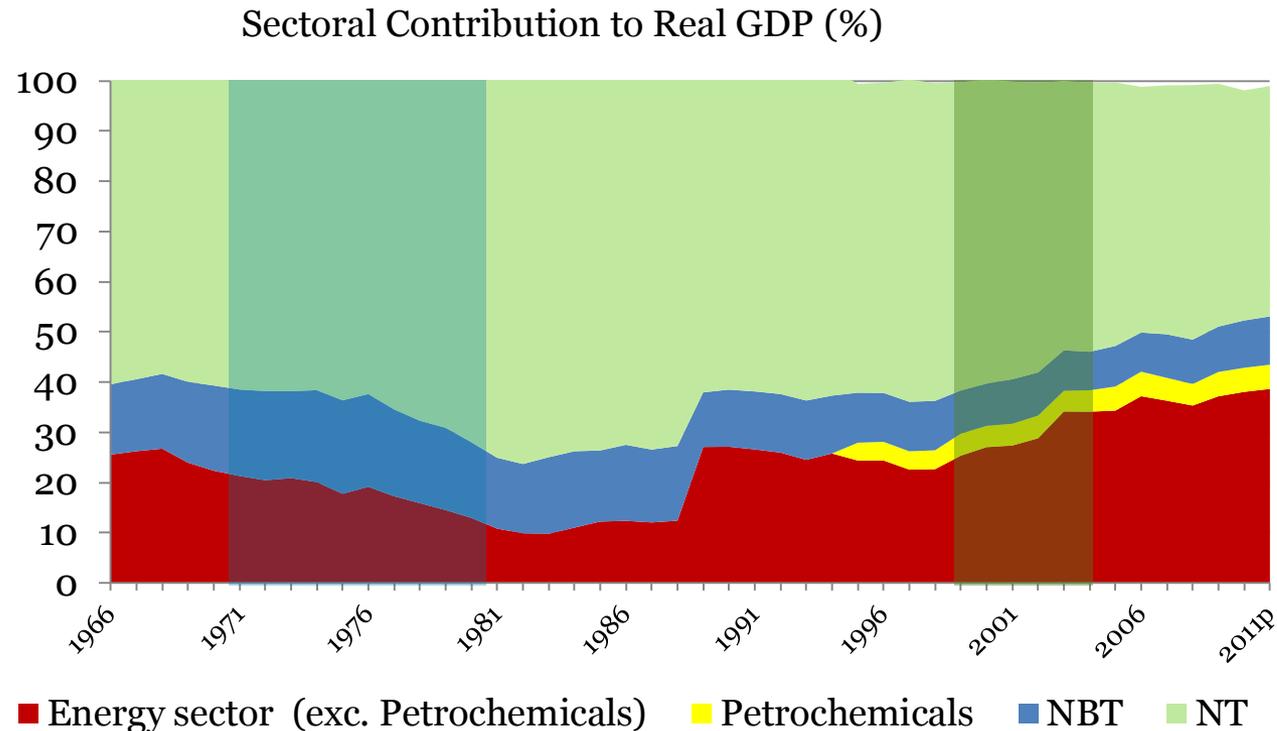
d. Somewhat unexpectedly, outside of the energy sector average wage differentials moved in favor of tradeables



This was perhaps due to an increase in low wage service activities which brought down the average..

..while labour moved towards nontradeable sectors.

e. Tradeable productive activities did not cede ground to nontradeables in boom II



- In boom I, ‘tradeables’ (NBT) comprised mainly agriculture and manufacturing.
- In boom II, not only did this ‘traditional’ tradeables sector not lose much ground but there were new tradeables added—mainly petrochemicals, iron and steel, etc.

V. Lessons: So, where does all this leave us?

- The discussion so far has highlighted the two sides of the extractive industries coin:
 - The possible opportunities that can be gained from such industries, including higher investment, savings, growth and enhanced ability to withstand shocks.
 - On the other hand, the potential pressures for some tradeable activities to contract, along with incentives for non productive rent-seeking and complacency.
- Three of the main policy lessons that we can take away, which could help to better link extractive industries to sound macroeconomic performance, are:

1. Improve analysis of economic developments

- Bring statistics up to date and to international standards.
- Distinguish between temporary as against permanent shocks.
- Broaden the interpretation of growth and welfare—more non-energy indicators and focus on welfare statistics (poverty, income distribution, demographics etc.).
- Fiscal indicators should more clearly include structural dimensions, non-energy balances.
- Include buffers into vulnerability analyses (HSF assets in net debt/international reserves available to authorities) while taking into account liquidity aspects and other claims.

2. Link net taxes closer to non-oil economy

- On energy side, improve transparency, including via adherence to Extractive Industries Transparency Initiative (EITI) principles.
- Non-energy taxes should have high elasticity to avoid frequent discretionary tax changes.
- (Non-energy) subsidy payments should also be designed to be sustainable as well as targeted.
- Consider adoption of “fiscal rules” (automatic adjustments to revenue/expenditure, savings etc.) to maintain a long term perspective for fiscal policy.

3. Deal frontally with intergenerational equity

- Continue to build buffers for the inevitable “rainy days.”
- Use the opportunity afforded by the resource windfall to build institutions, while avoiding complacency.
- On current spending, avoid waste and be aware of possible long-term commitments that can be difficult to reverse.
- Concentrate on “high return” investments to benefit future generations; similarly, judiciously incur new debt to avoid undue burden on future generations.
- Adopt a comprehensive and consistent approach to diversification, explicitly taking into account other policies that may work against this objective.



Thank you for your attention