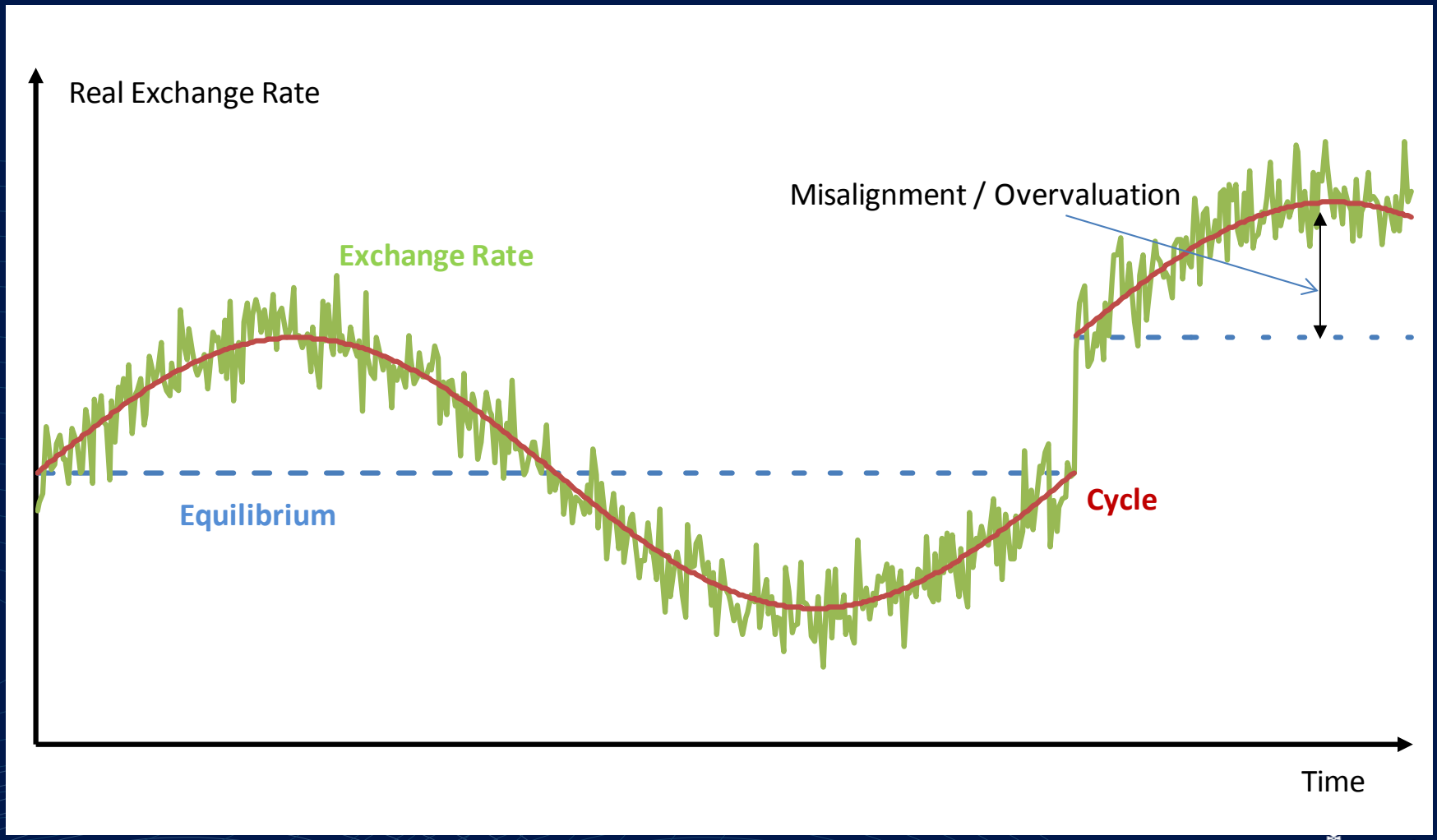
Exchange Rate Valuation and its Impact on the Real Economy

Enzo Cassino and David Oxley

THE TREASURY
Kaitohutohu Kaupapa Rawa

We try to understand the relationship between New Zealand's exchange rate and the wider economy...

...and review the theoretical and empirical evidence.

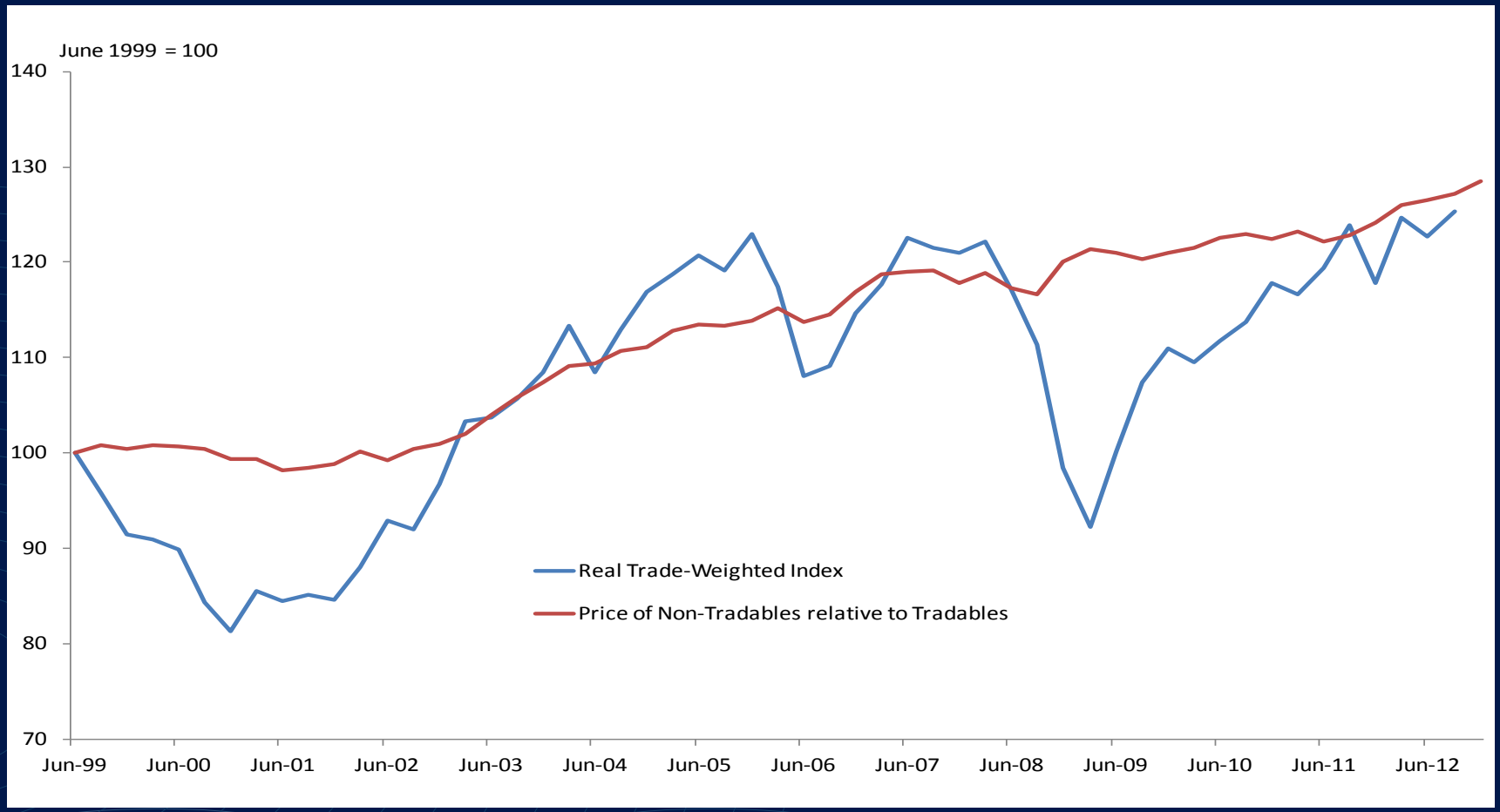

Real Exchange Rate
Misalignment / Overvaluation
Exchange Rate
Equilibrium
Cycle
Time

What do we mean by ‘fundamentals’ ?

- We interpret fundamentals as shocks impacting the equilibrium exchange rate (eg export prices, productivity etc)
- Different definitions of ‘fundamentals’ in different exchange rate models
- Exchange rate is an asset price - may depend on actual and ***expected*** fundamentals

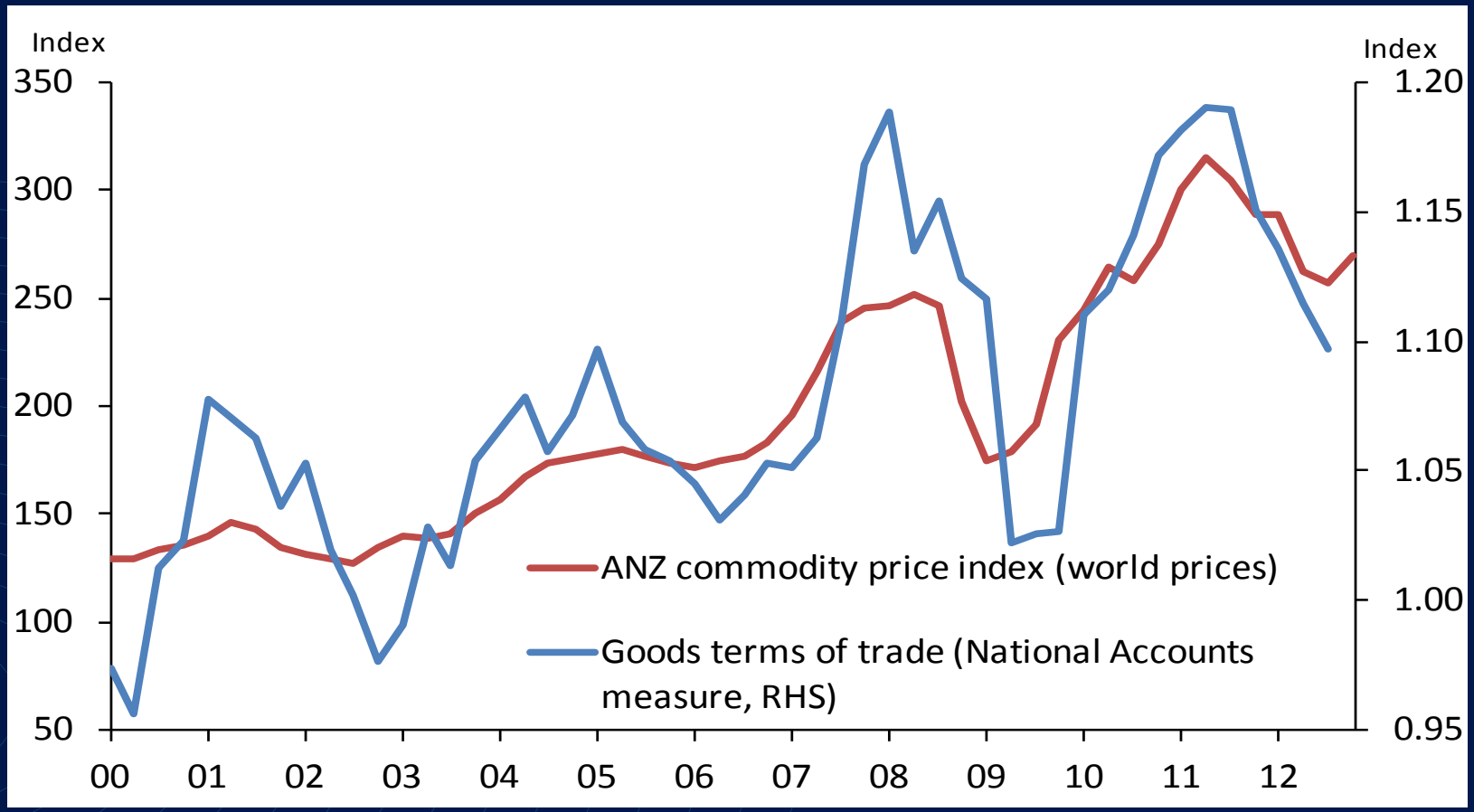
THE TREASURY
Kaitohutohu Kaupapa Rawa

Real Exchange Rates



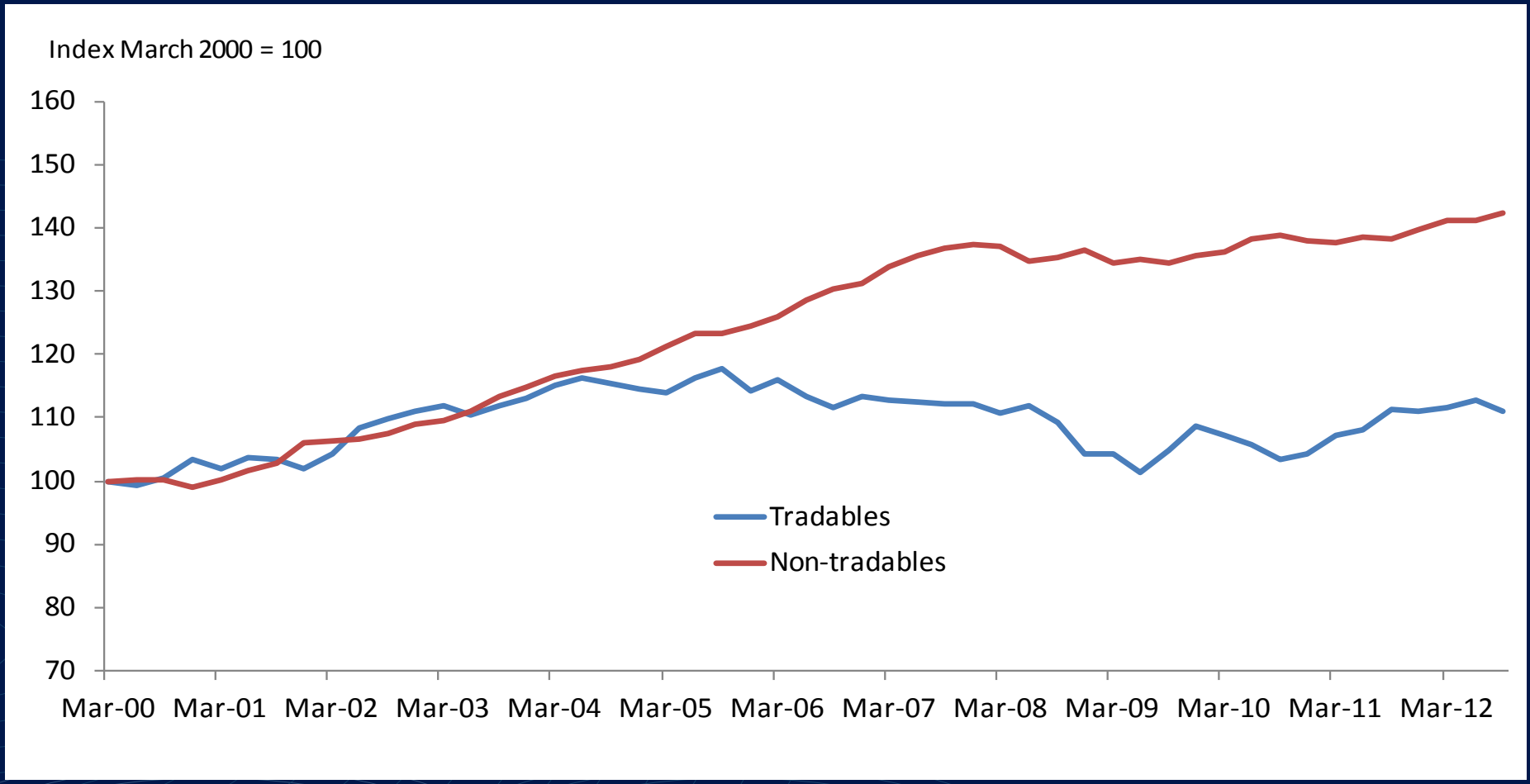
THE TREASURY
Kaitohutohu Kaupapa Rawa

Commodity Prices and Terms of Trade



THE TREASURY
Kaitohutohu Kaupapa Rawa

Tradable and Non-Tradable GDP

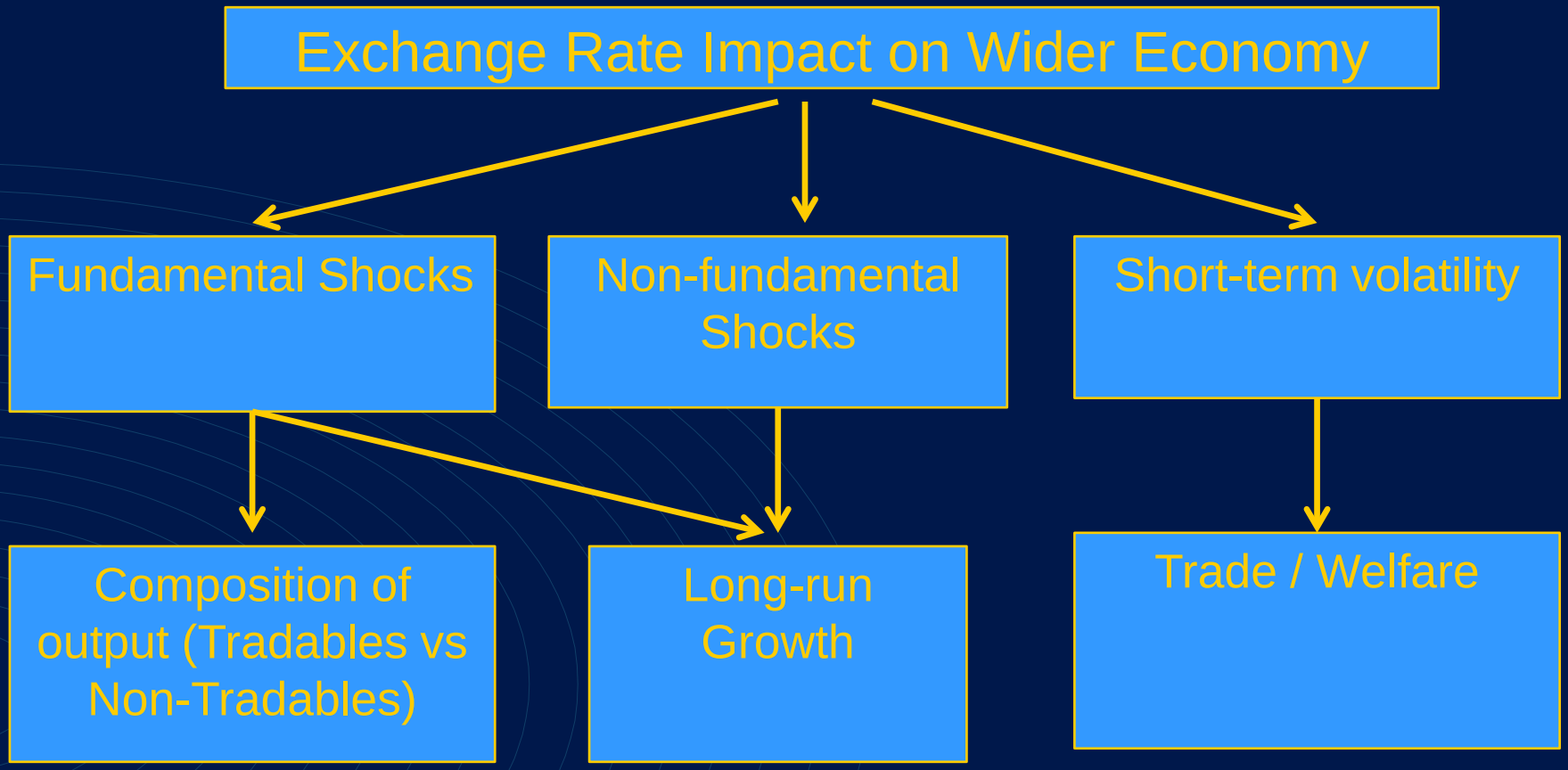


THE TREASURY
Kaitohutohu Kaupapa Rawa

Some Possible Explanations

- A shock to fundamentals has impacted the equilibrium real exchange rate, shifting resources from tradables to non-tradables
- A non-fundamental shock has pushed the exchange rate above equilibrium, cutting tradables activity and increasing non-tradables activity
- Exchange rate volatility has had negative impact on activity in the tradables sector
- The stories are not mutually exclusive

The Exchange Rate and the Wider Economy



THE TREASURY
Kaitohutohu Kaupapa Rawa

Fundamental shocks and output composition

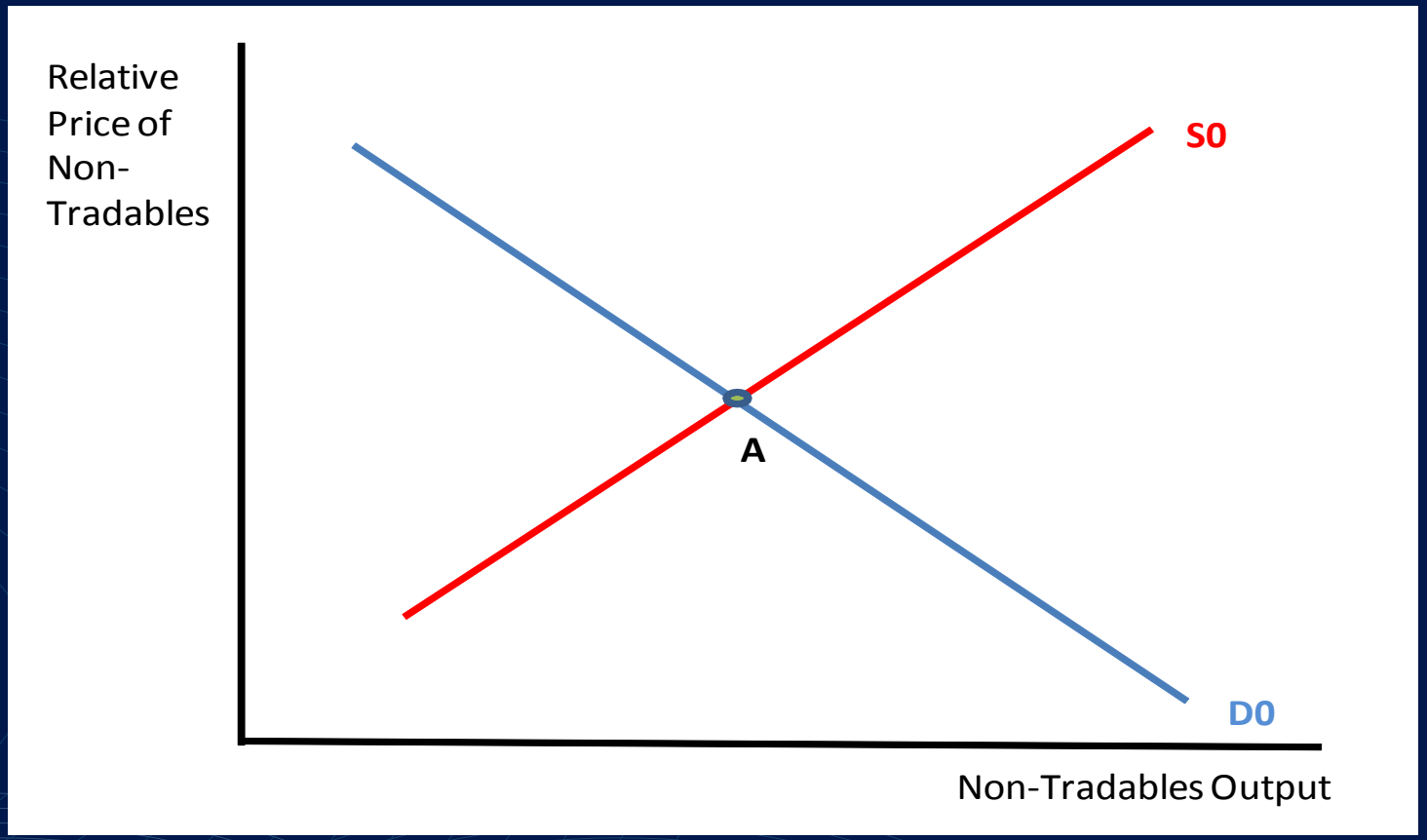
- The Dependent Economy / Salter-Swan / ‘Australian’ Model
- Real exchange rate (P_{NT} / P_T) adjusts after shock so supply equals demand for tradables and non-tradables
- Model can be extended by splitting tradables into ‘booming’ sector and ‘lagging’ sector
- Used to study resource commodity booms (especially in Australia)

Fundamental shocks and output composition

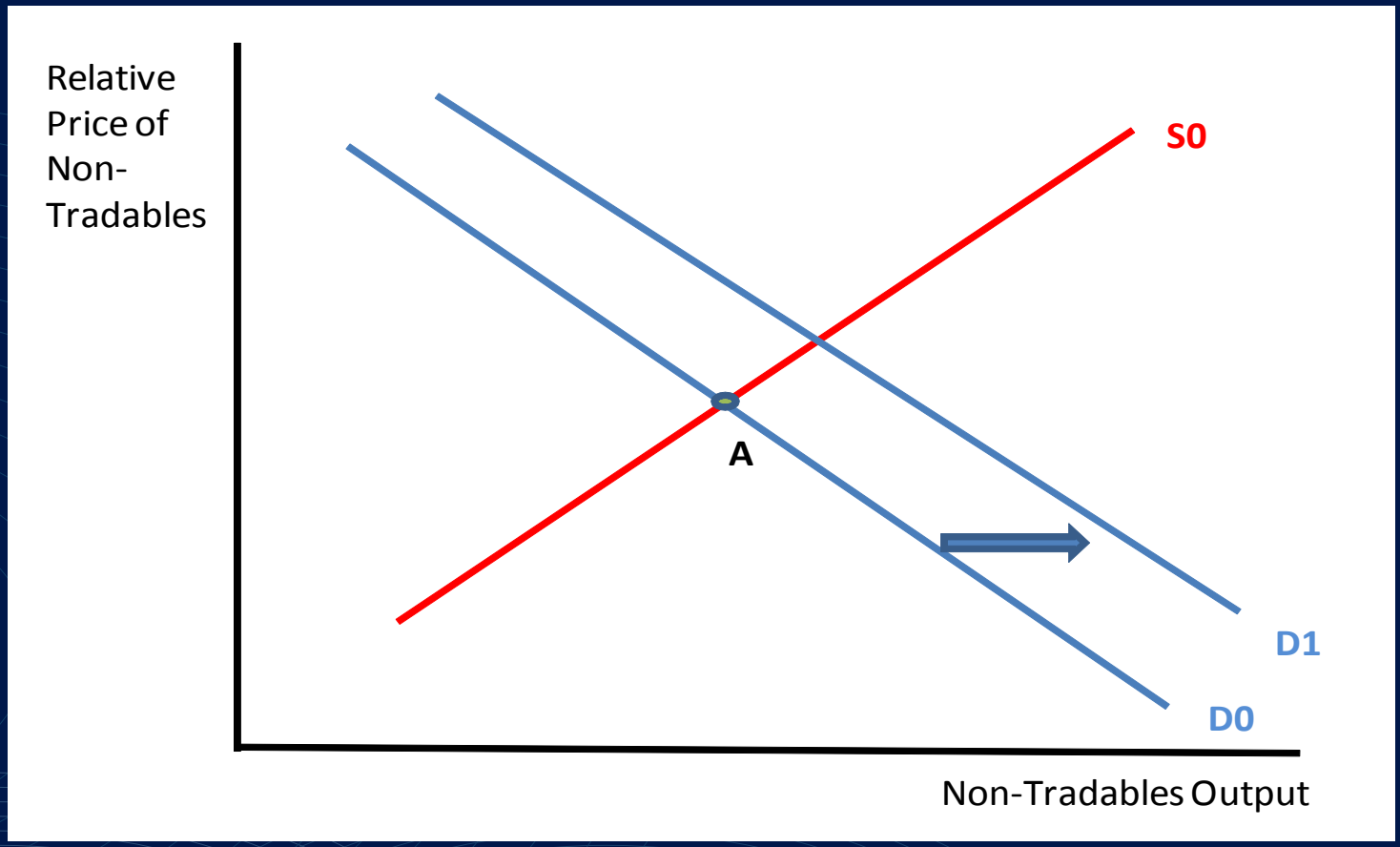
- The impact of the resources boom works through two channels –
  - **Spending Effect** (some extra income spent on non-tradables)
  - **Resource Movement Effect** (booming sector pushes up wages in all sectors)
- Net effect: Real exchange rate is higher, non-tradables output uncertain
- Policy response: Allow smooth shift of resources between sectors

THE TREASURY
Kaitohutohu Kaupapa Rawa

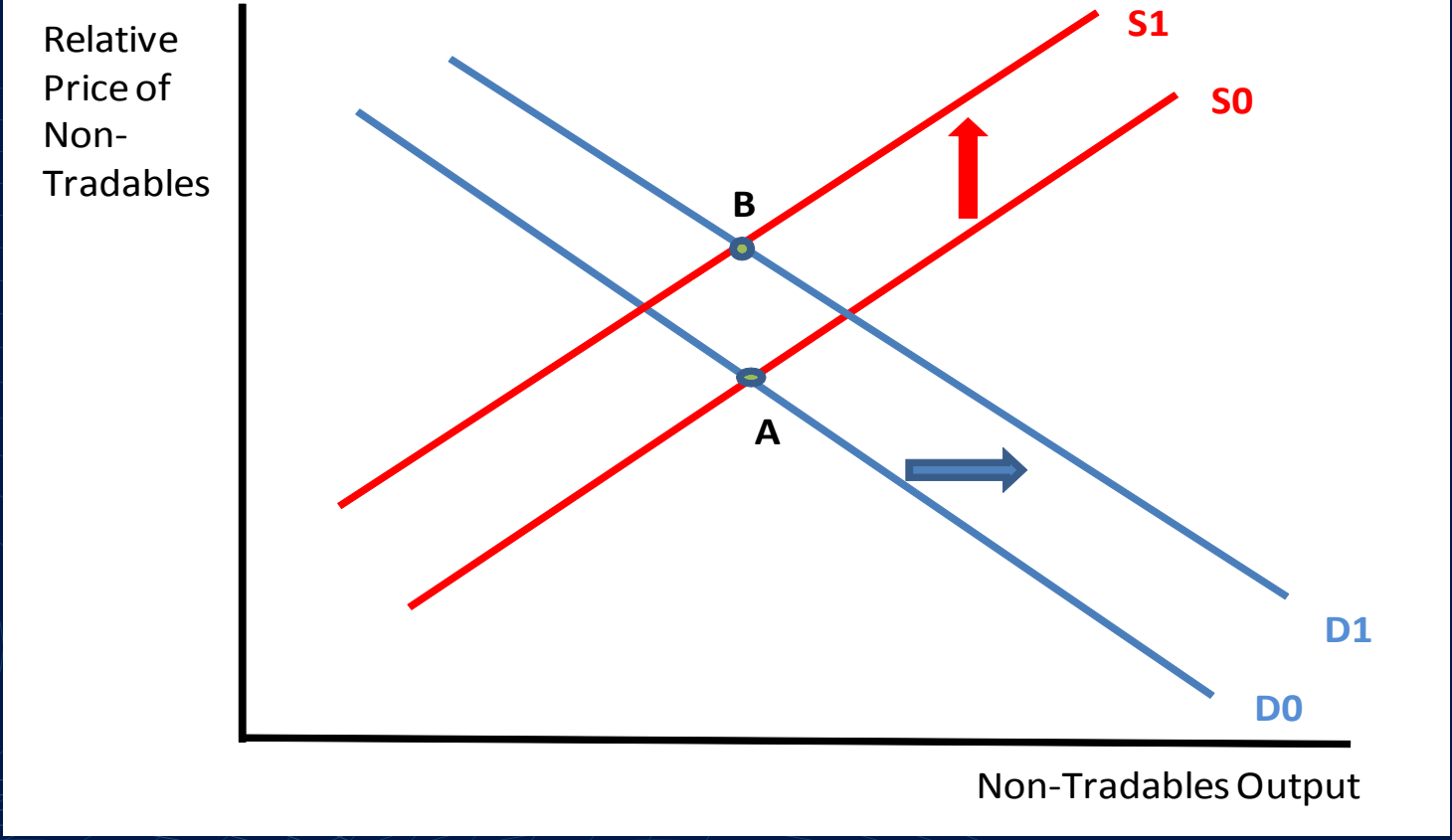
Resource Boom effects on Exchange Rate and Non-Tradable Output



Resource Boom effects on Exchange Rate and Non-Tradable Output

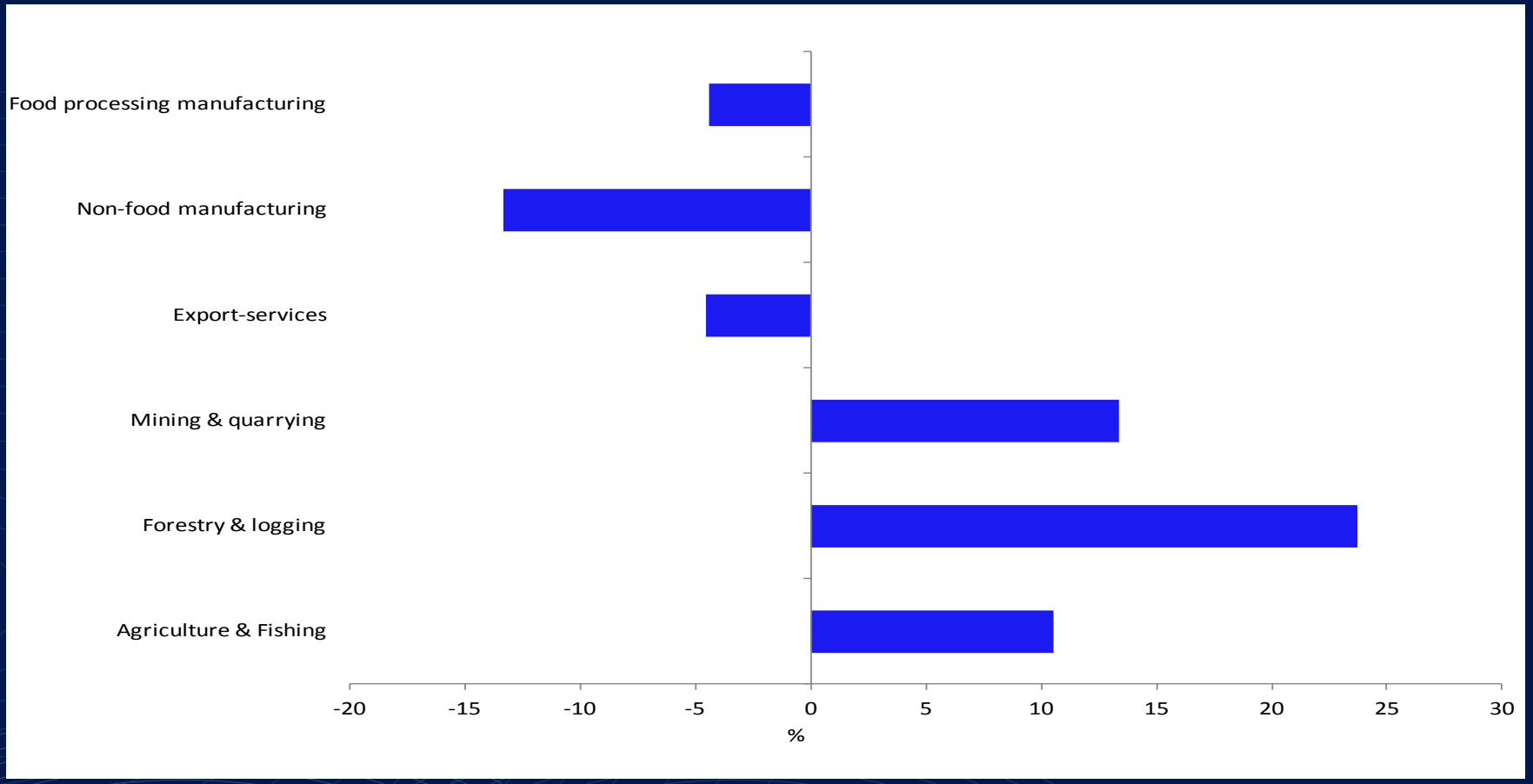


Resource Boom effects on Exchange Rate and Non-Tradable Output



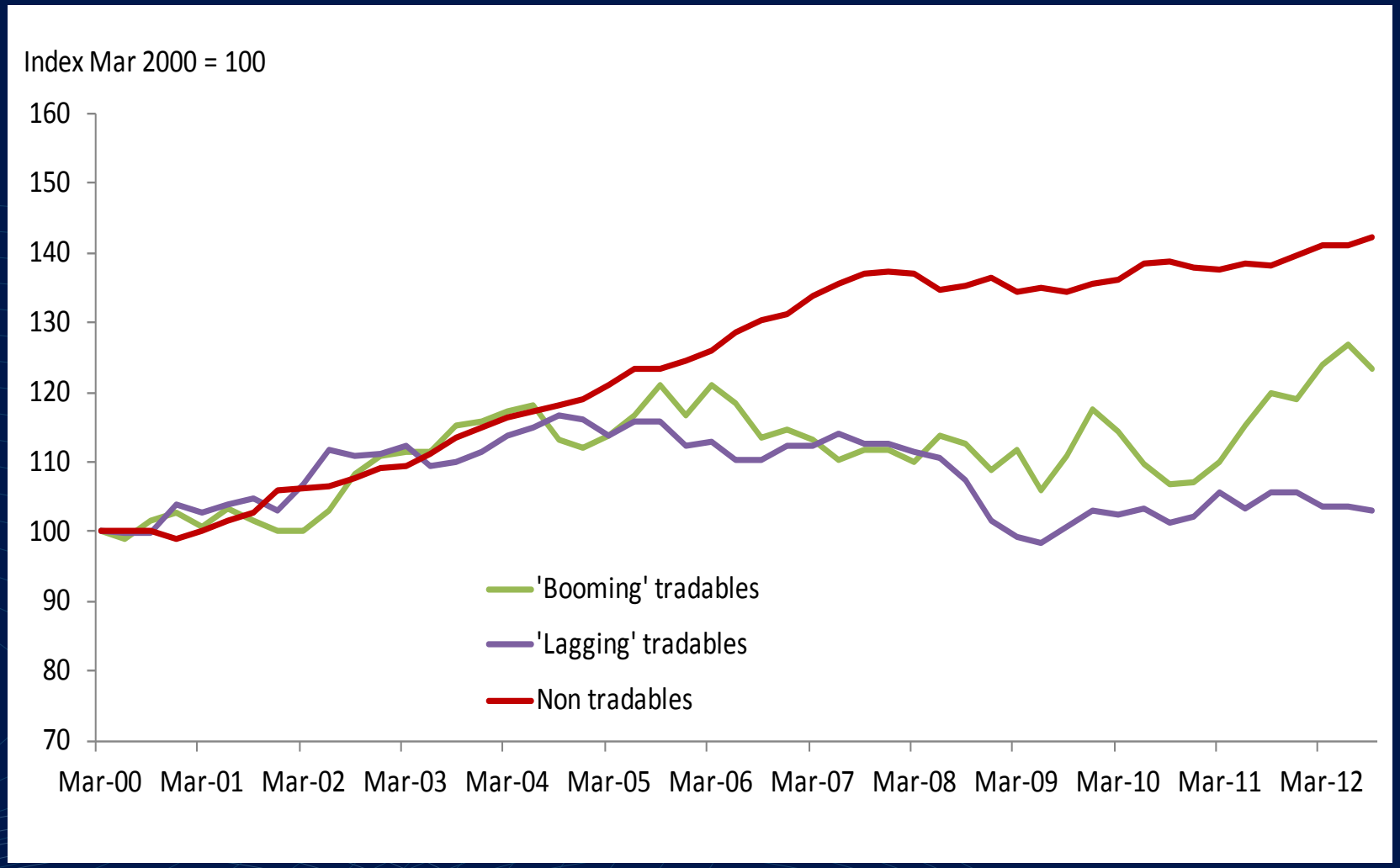
THE TREASURY
Kaitohutohu Kaupapa Rawa

Tradable Industries Output Growth (2004Q1-2012Q3)



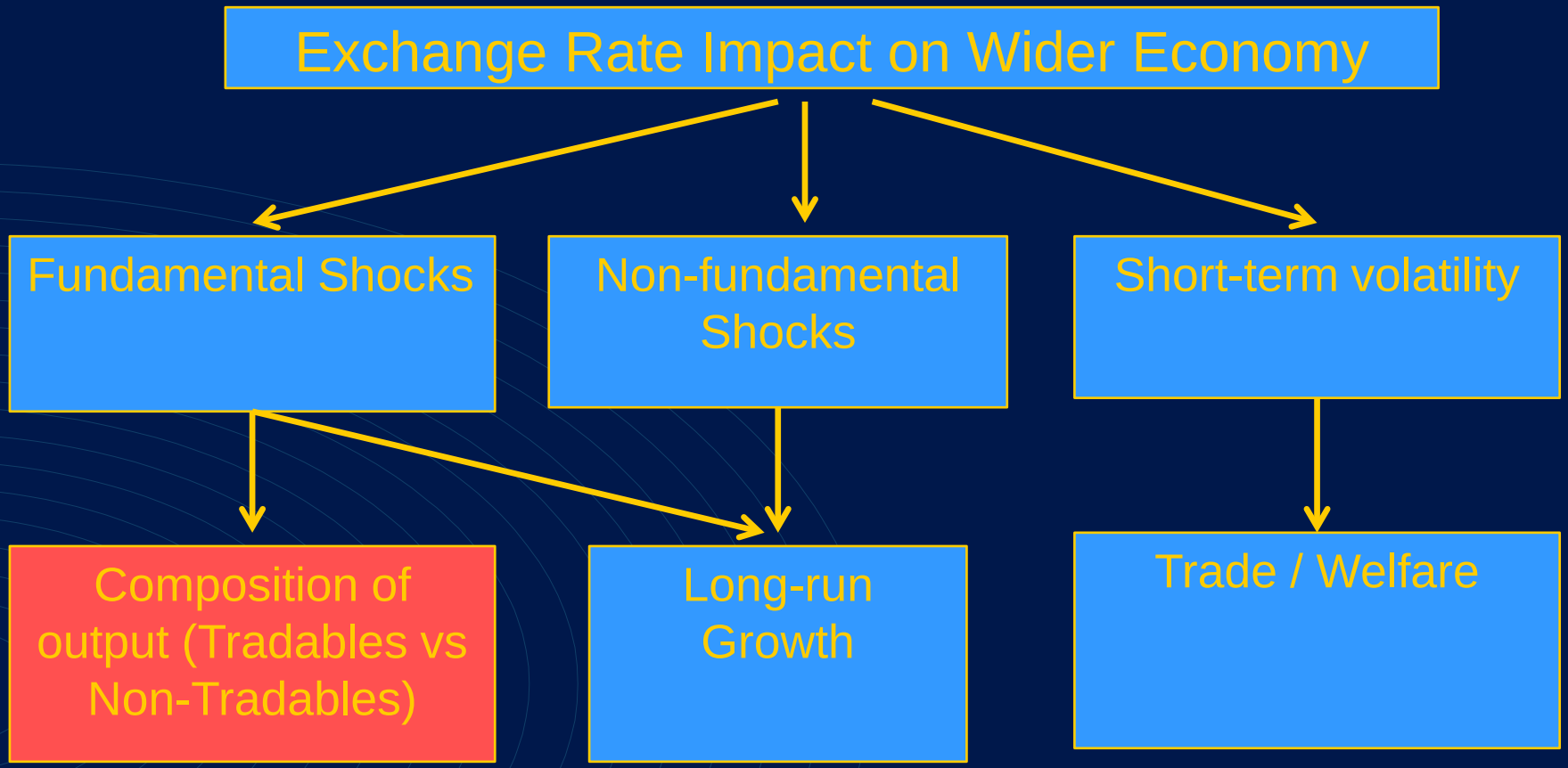
THE TREASURY
Kaitohutohu Kaupapa Rawa

Decomposing Tradables GDP



THE TREASURY
Kaitohutohu Kaupapa Rawa

The Exchange Rate and the Wider Economy



THE TREASURY
Kaitohutohu Kaupapa Rawa

Exchange Rate and Growth

- Impact on growth could be from ‘Dutch Disease’ effects of fundamental shock or from over-valuation (non-fundamental shock)

- ‘Endogenous’ growth models have a link between exchange rate and long-run growth
  - ‘Learning by Doing’
  - Knowledge spillovers across firms
  - Assumed to be larger in tradables sector

Exchange Rate and Growth – The Evidence

- Exchange Rate Overvaluation – negative effect on growth

- Dutch Disease and Growth – very little work done

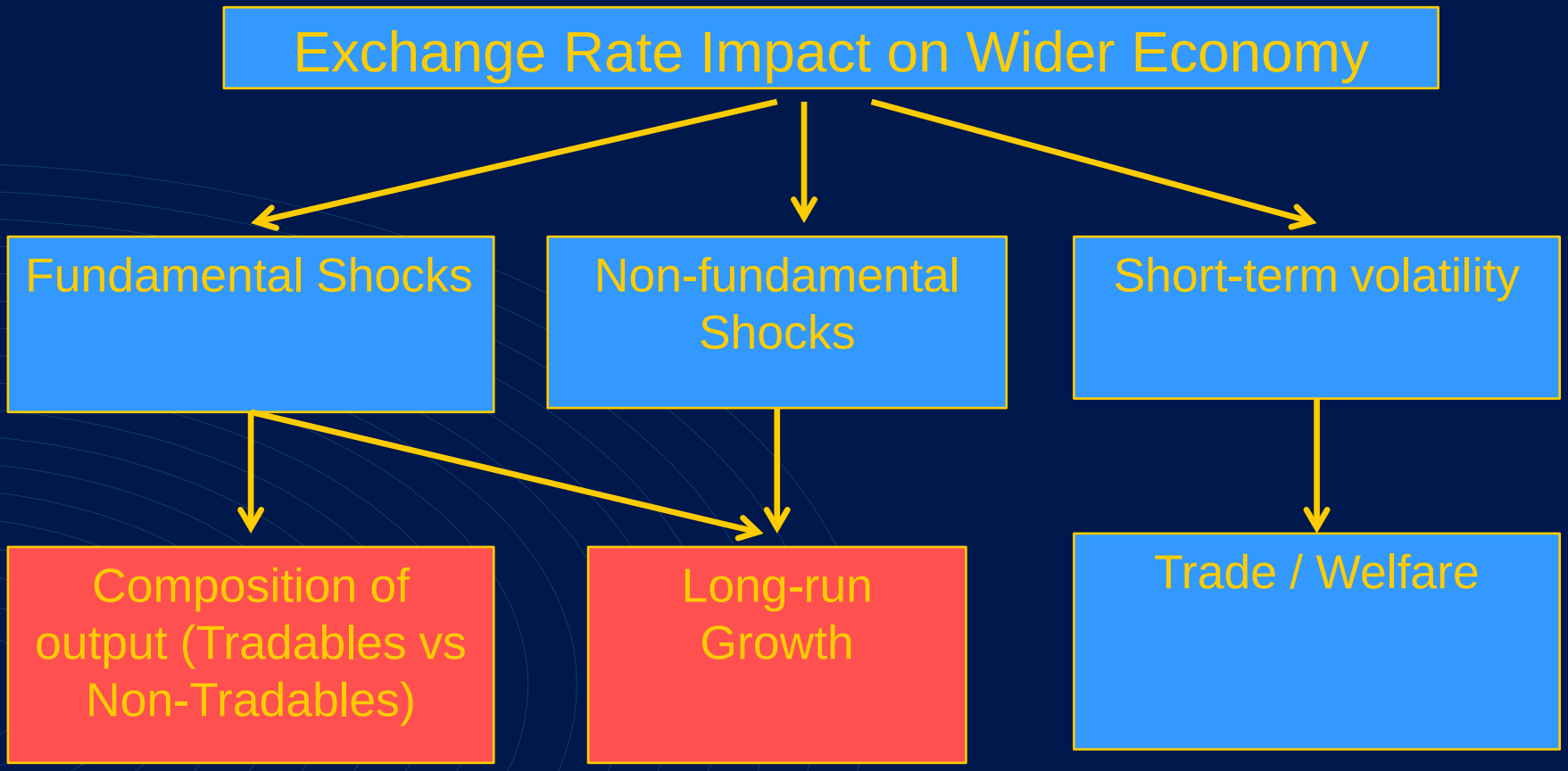
- Learning by Doing / Knowledge Spillovers:
  - International evidence very mixed
  - Large, persistent differences in productivity within industries
  - NZ evidence: Higher productivity in exporting firms, but from capital deepening, not from learning by doing

- Policy: If sectoral costs of high exchange rate outweigh benefits, offset upward pressure (eg tighter fiscal stance)

Estimates of NZ Dollar Misalignment

Institution	Measure	Over/Undervalued?
IMF	REER	In range of +10-20%
Cline & Williamson (Peterson Institute)	vs. USD	+15-20% (approx.)
BNZ	vs. GBP	+18% (approx.)
	vs. USD	+20% (approx.)
	vs. EUR	+15% (approx.)
	vs. AUD	+4% (approx.)
	vs. JPY	-11% (approx.)
RBNZ	TWI	In range of +1-10%

The Exchange Rate and the Wider Economy



THE TREASURY
Kaltohutohu Kaupapa Rawa

Short-term Exchange Rate Volatility

- Trade – Theoretical impact depends on ability to hedge risk and other factors

- Welfare – Theoretical impact depends on firms' pricing behaviour and other assumptions

- The Evidence:
  - Little evidence of negative trade effect from volatility for most developed economies
  - But NZ evidence suggests negative impact on number of exporting firms and exports per firm (Are sunk costs larger?)

Some Conclusions...

- Relationship between exchange rate and real economy depends on the nature of shocks hitting the economy / exchange rate
- Appropriate policy response depends on what is driving exchange rate and trading off costs and benefits (hard to measure)
- Knowledge spillovers may be stronger in tradable industries, but solid evidence is hard to find
- NZ dollar may be above equilibrium, but fundamental shocks may also have played a role in appreciation in recent years
- NZ firms more sensitive to exchange rate volatility than overseas

...but also more questions

- If fundamental shocks played a role in Tradable / Non-Tradable split, what does that mean for rebalancing?
- If tradable / non-tradable split partly due to higher commodity prices, how will this affect NZ's potential growth?
- Should we try to identify industries where spillovers are strongest, or focus on addressing other issues?
- Do New Zealand firms have sufficient access to financial instruments to hedge exchange rate risk?

THE TREASURY
Kaltohutohu Kaupapa Rawa