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Curse or Opportunity?

A Model of Industrial Development for Natural Resource-Rich Countries and the Case of Indonesia

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Setting a Question

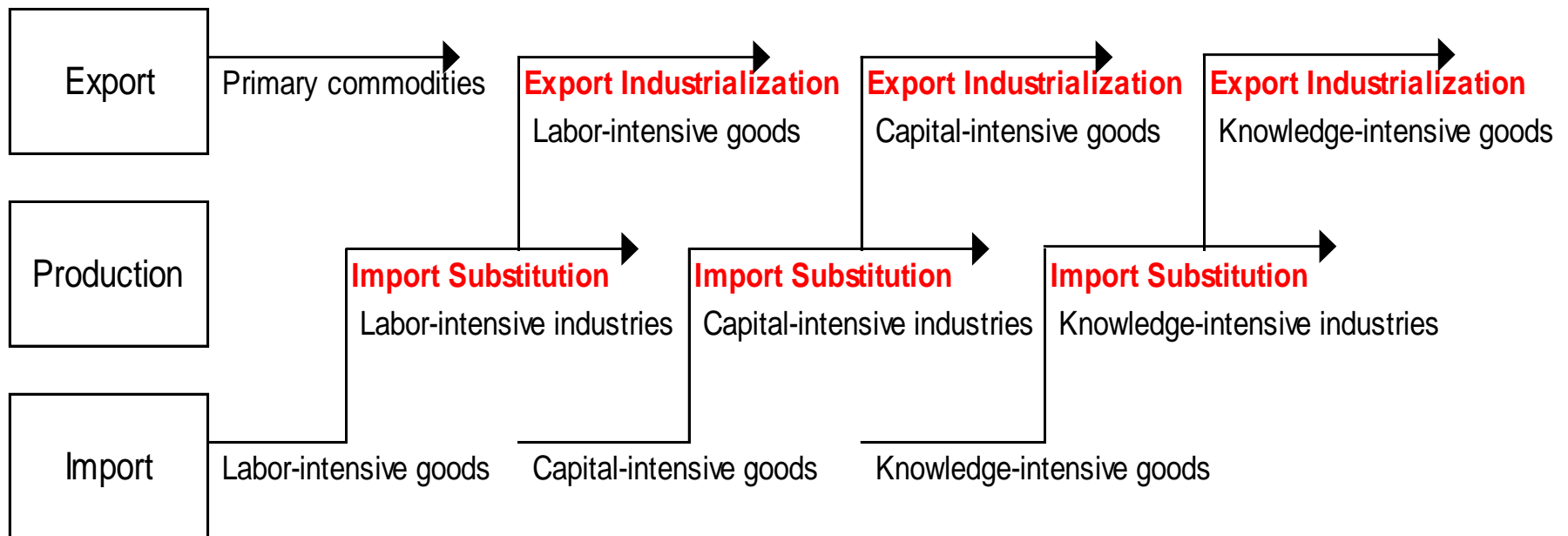
- Model of industrialization ← Poor natural resources
- “Curse” & “Disease” ← Rich natural resources

- Uniqueness of Indonesia (Southeast Asia)
 - Member of regional networks of industrialization (GVC)
and concurrently
 - World-leading producer/exporter of natural resources (AGVC)

- Can Indonesia create a new success story?
- What is a key to success?

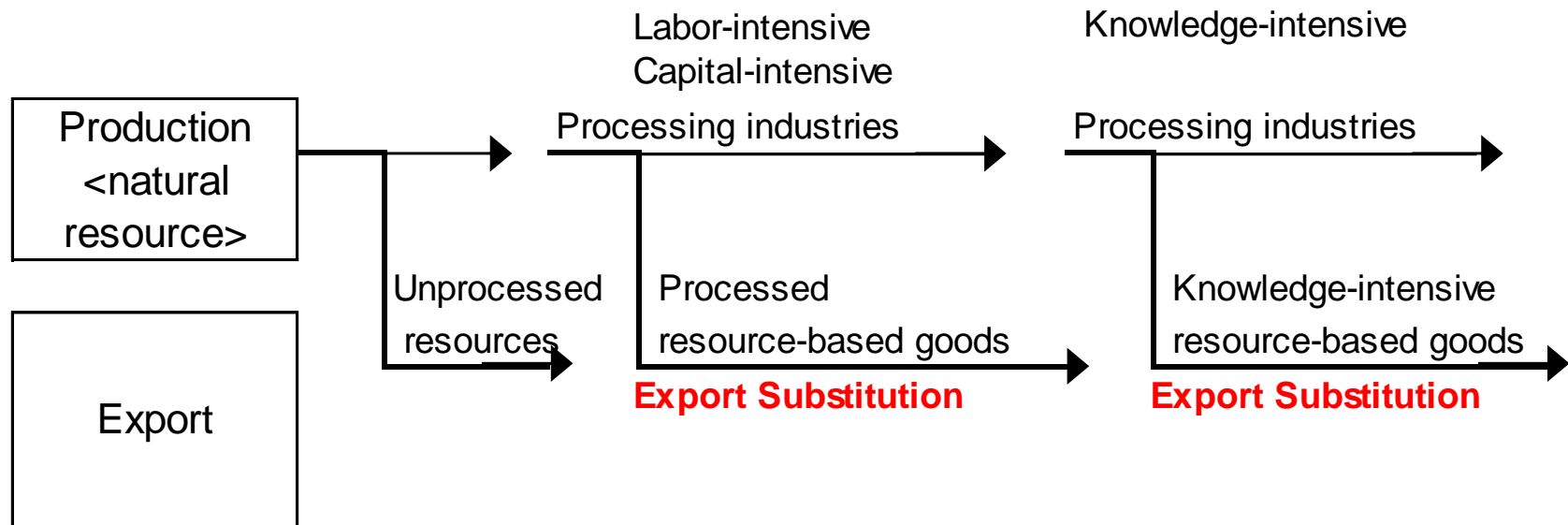
1. Setting a Question
2. Model of Industrial Development
 1. Conventional Model
 2. Model for Natural Resource-Rich Countries
3. Empirical Evidence from Indonesia
 1. Back-and-Forth Industrial Development
 2. Two Waves of Industrialization
 3. Two Natural Resource Booms
4. Conclusion

The Conventional Model of Staged Development



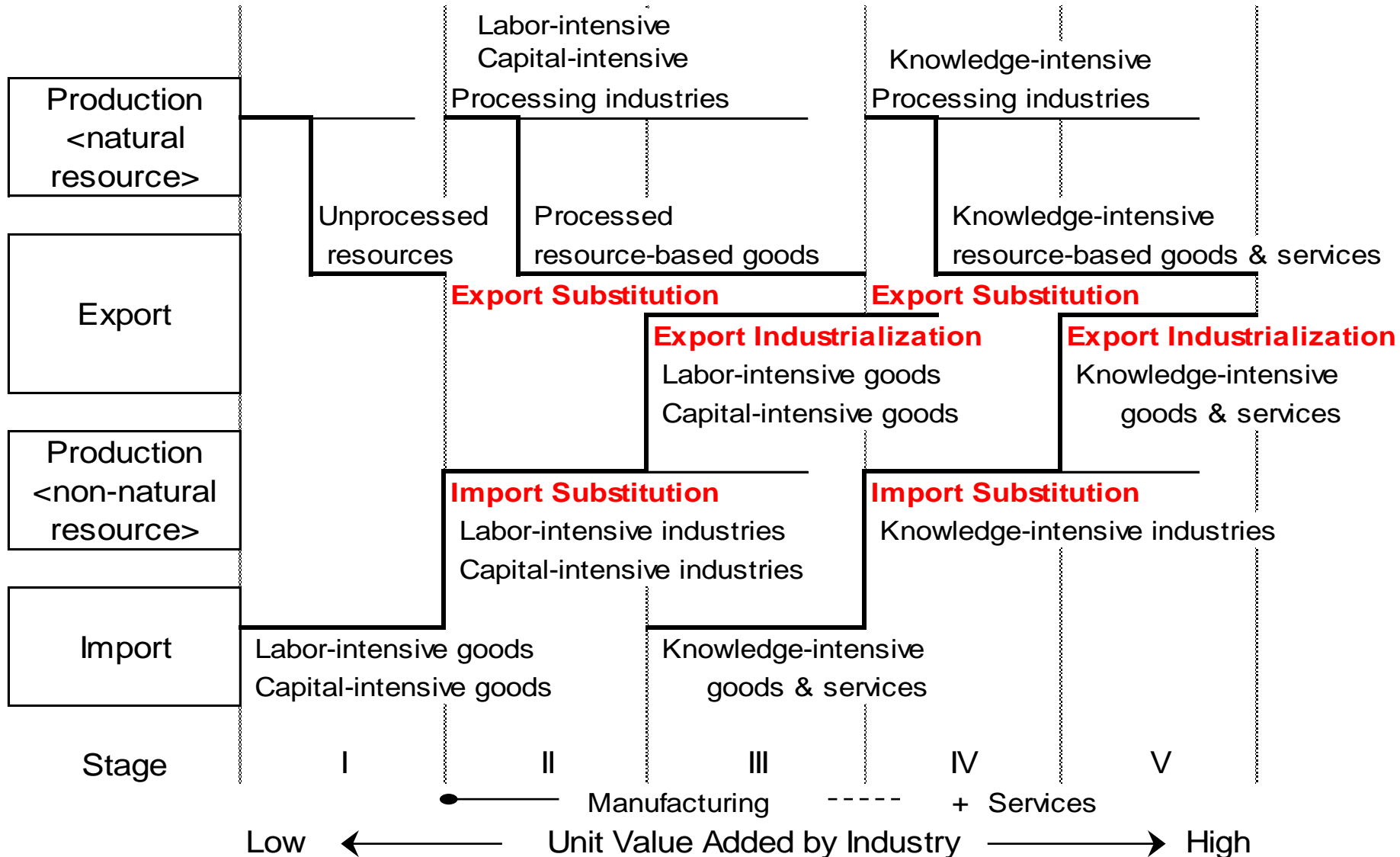
Source: Suehiro (2008:130, Firuge 6-1), arranged by the author.

...plus... Natural Resource-based Industrial Development

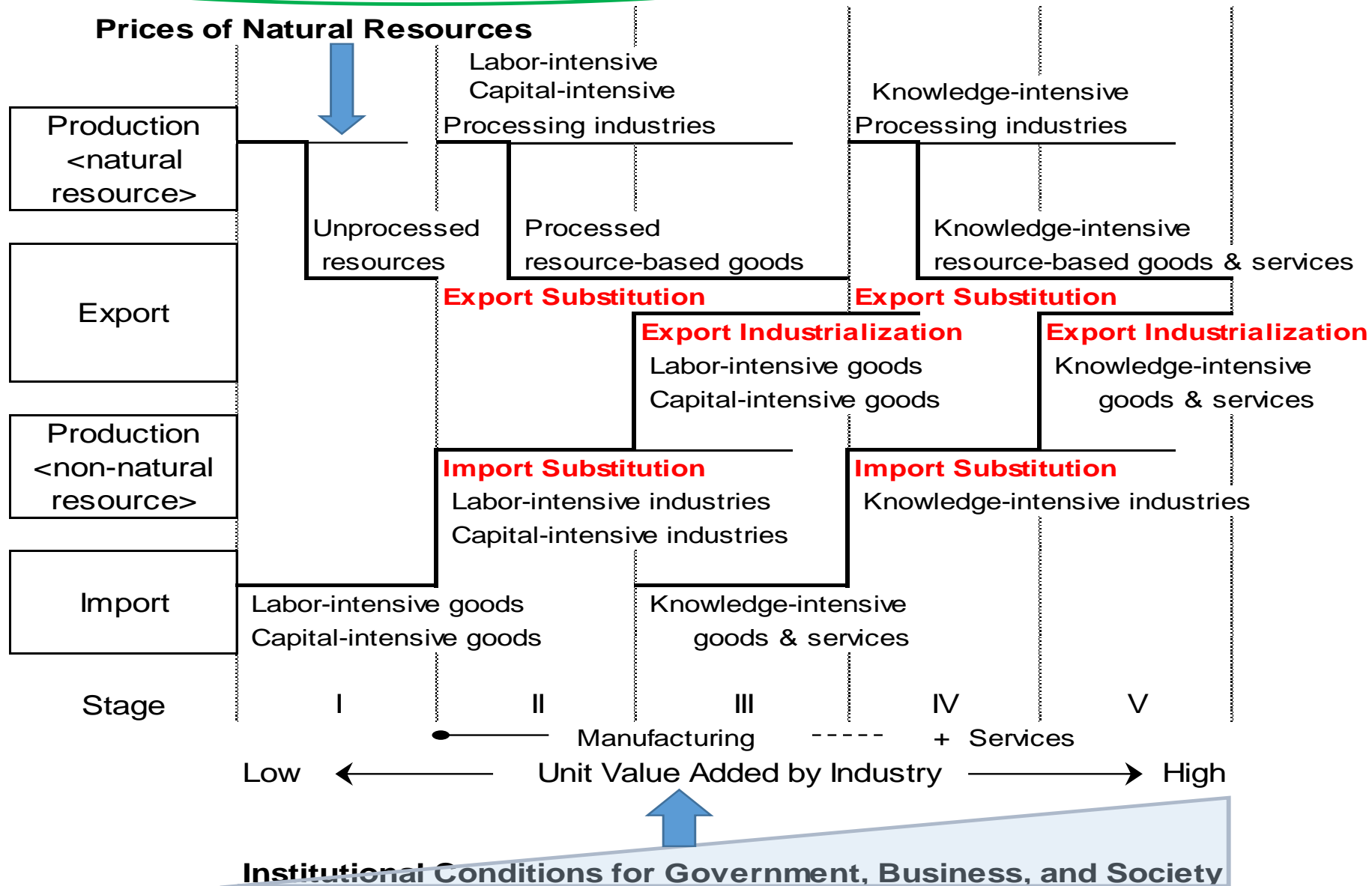


- Natural resource-based industries can develop into knowledge-intensive industries

A Model of Industrial Development for Natural Resource-Rich Countries



Endowment of Land, Water, and Natural Resources



Two determining factors of industrial development

1. Prices of natural resources (terms of trade)
2. Institutions = rules and systems to promote investment for industrial development at the level of government, business, and society

Price surge (backward force)

- ① quantitative expansion of resource production
② regress of non-resource industries

If there are institutions, (forward force)

resource revenue can be diverted into

- ③ investment to resource processing, and
④ non-resource industries.

Indonesia: Back & Forth Industrial Development

Year	Leading export items	Degree and kinds of processing	Events
1830	Coffee ↓	Low processed	30 Cultivation System Population growth
1880			
	Sugar (refined white cane sugar)	Processed resource-based, labor & capital-intensive	
1930	↓	Low processed	29 Depression 45 Independence
	Natural rubber		
1970	↓	Low processed	58 Nationalization 66 Authoritarian developmentalism
	Crude petroleum		
1980	↓	Processed resource-based/ labor-intensive/ capital-intensive	98 End of develop- mental regime
	Manufactured goods (Plywood , textiles, electrical appliances)		
2000	↓	Low processed	04 Democracy 09 Democratic developmentalism
	Coal, Crude palm oil (CPO)		
2012	↓	Processed resource-based/ labor-intensive/ capital-intensive	
	Manufactured goods (Motor vehicle, plywood, footwear, fatty acid and alcohol)		

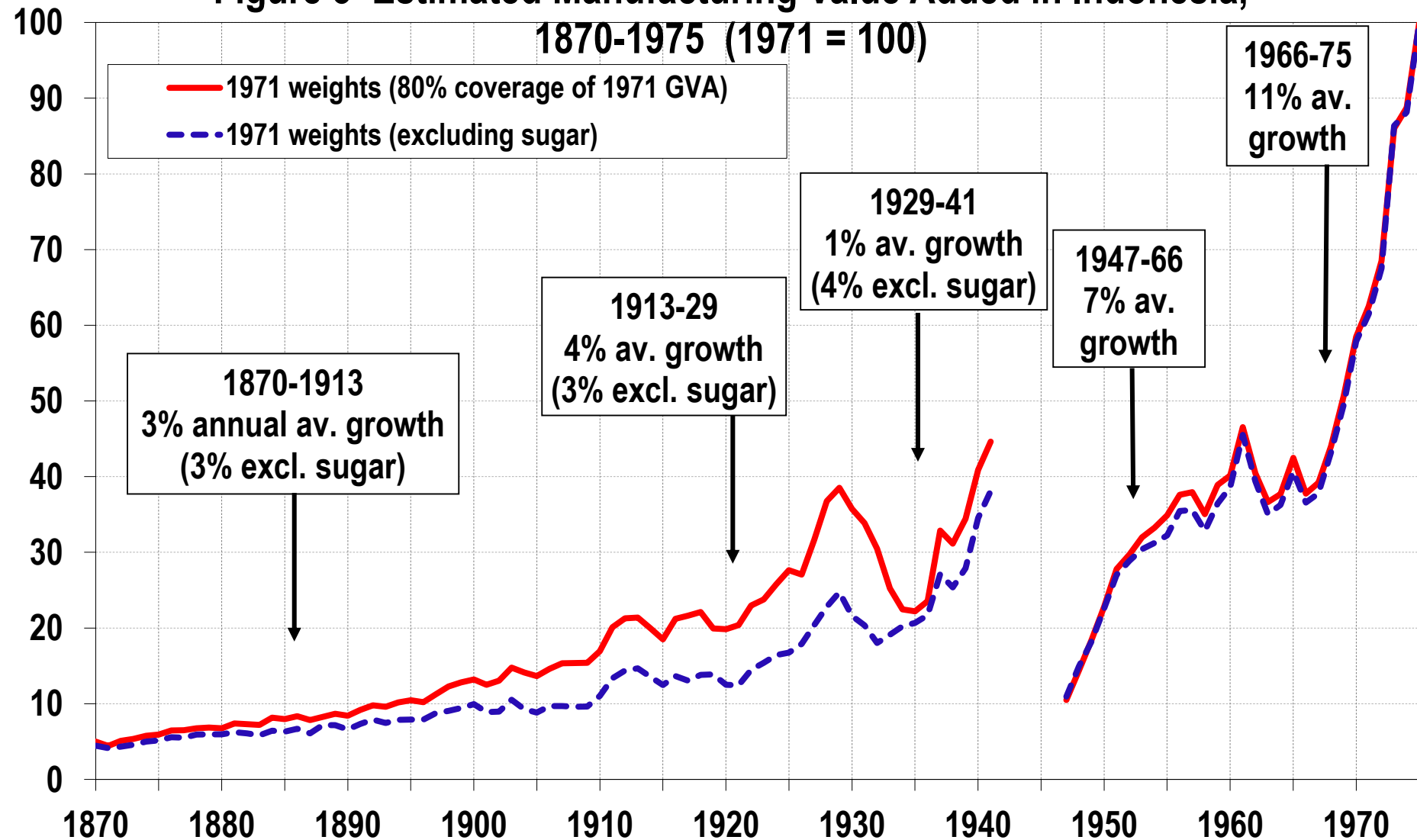
Note: Export items in red are within the world's largest three.

Source: Kano (2008) Dick et al (2002) before 2000; after 2000 by the author.

The First Wave: Sugar Industry in the Netherlands Indies

Figure 3 Estimated Manufacturing Value Added in Indonesia,

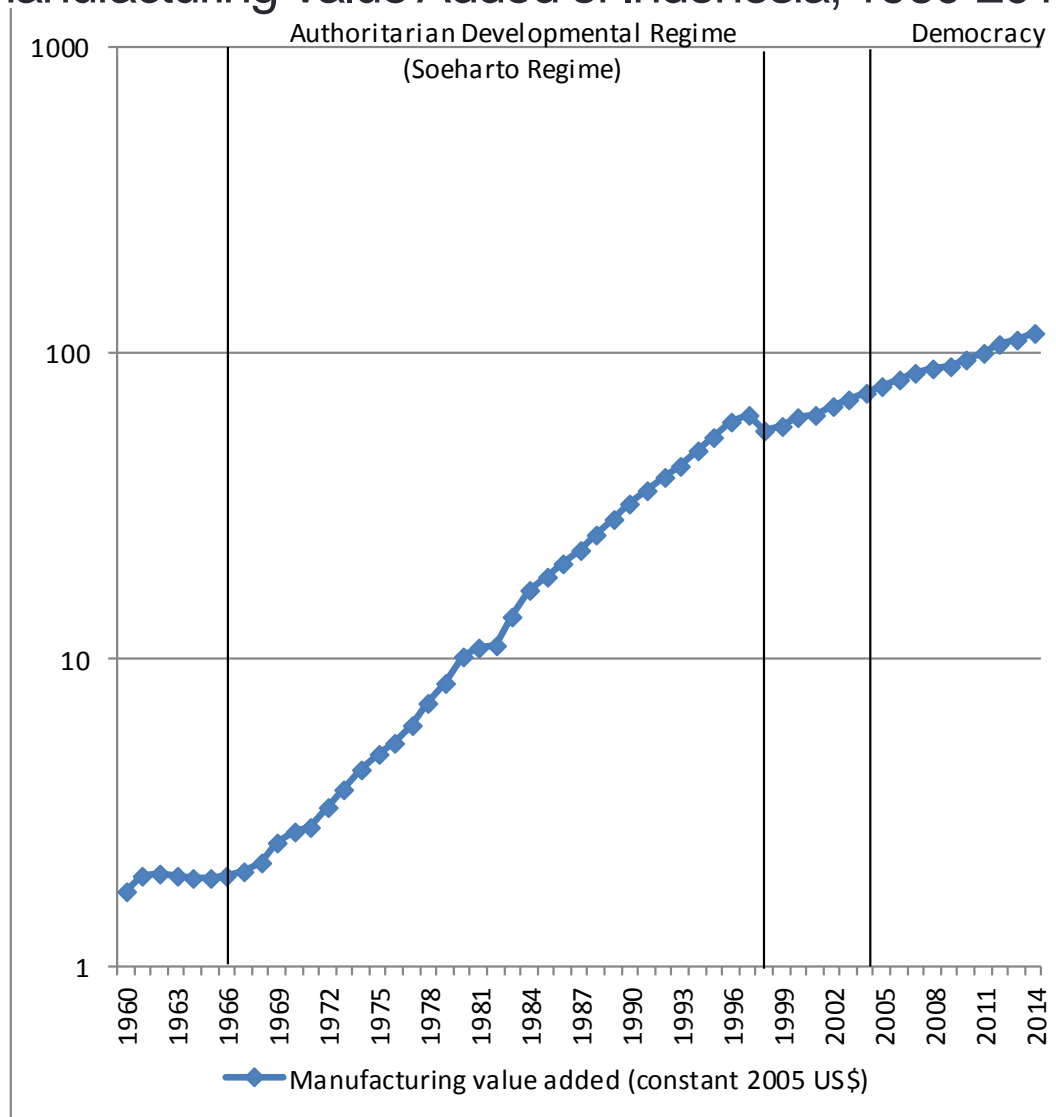
1870-1975 (1971 = 100)



Source: Estimation by Pierre van der Eng.

The Second Wave: Full-Set Industrialization under the Developmental Regime

Manufacturing Value Added of Indonesia, 1960-2014



Source: World Bank, *World Development Indicators*.

Institutions Supported Industrial Development

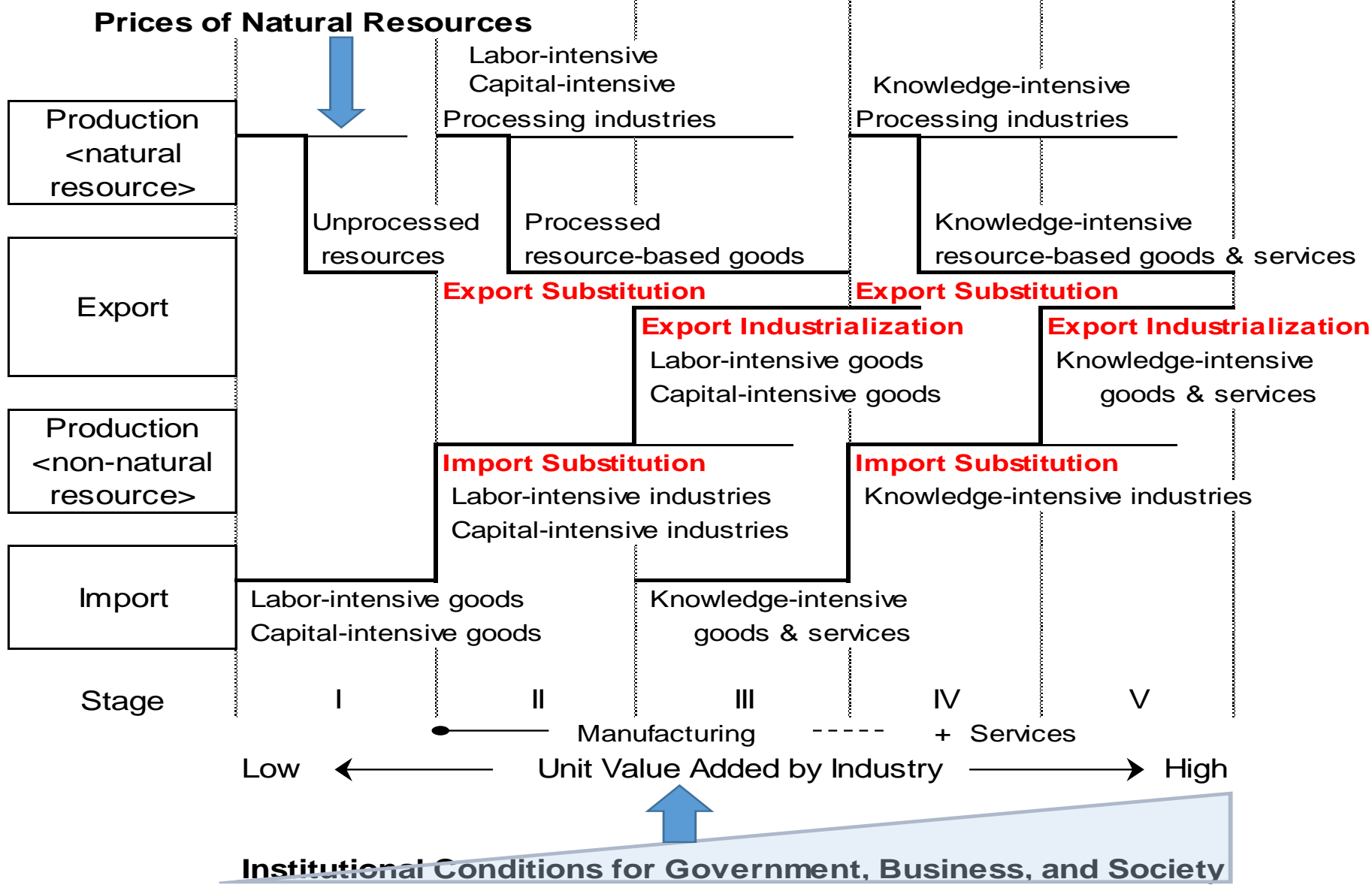
〈Sugar Industry in the Netherlands Indies〉 (Kano 2004)

- Irrigation → water-intensive cultivation method
 - Business association's laboratory → new species
 - Land Law → long-term lease contract → integration from cultivation to refinery under the same ownership
- **proceeded to Stage II**

〈Full-set Industrialization in the developmental regime〉

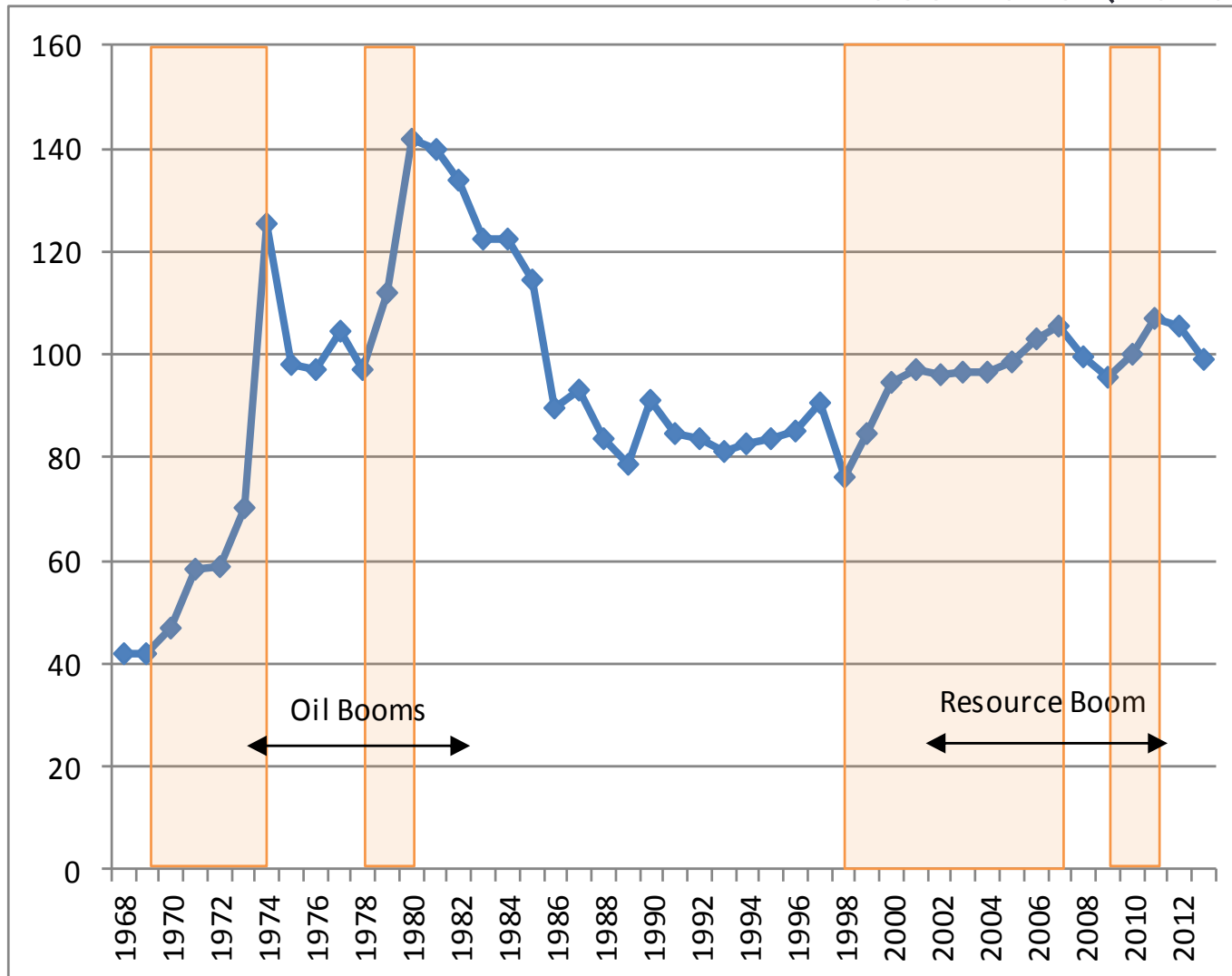
- institutions for *Pembangunan* (1966-68) + import substitution policies (68-) + export substitution policies (79-) → **proceeded to State II**
- Reforms in tax, banking, custom clearance + deregulation + Rupiah devaluation + export promotion policies (83-88) → **proceeded to Stage III**

Endowment of Land, Water, and Natural Resources



Two Natural Resource Booms

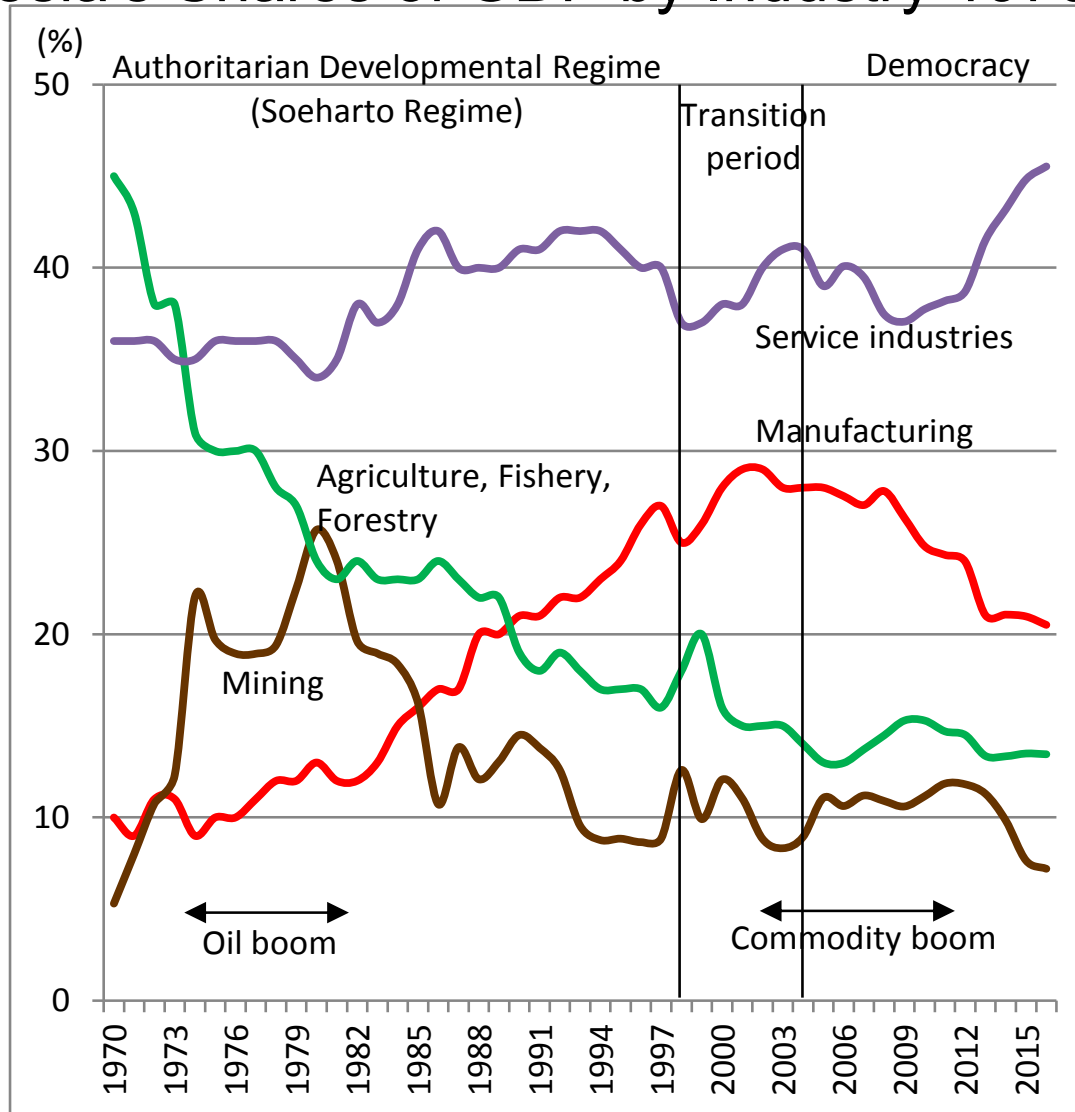
Index of Terms of Trade in Indonesia 1968-2013 (2010=100)



Source: Prepared from *Trade Index Numbers for Terms of Trade by BEC*, IDE (www.ide.go.jp/English/Data/Trade/index.html).

Manufacturing Shares of GDP: Kept rising in the oil boom, but declining in the 2000s commodity boom

Indonesia's Shares of GDP by Industry 1970-2016



Institutions in the Two Booms Differed

〈Oil boom 1974-82〉

- Oil revenue = National treasury → fiscal investment + SOEs investment + state bank loans → invest into capital-intensive import substitution + resource processing industries

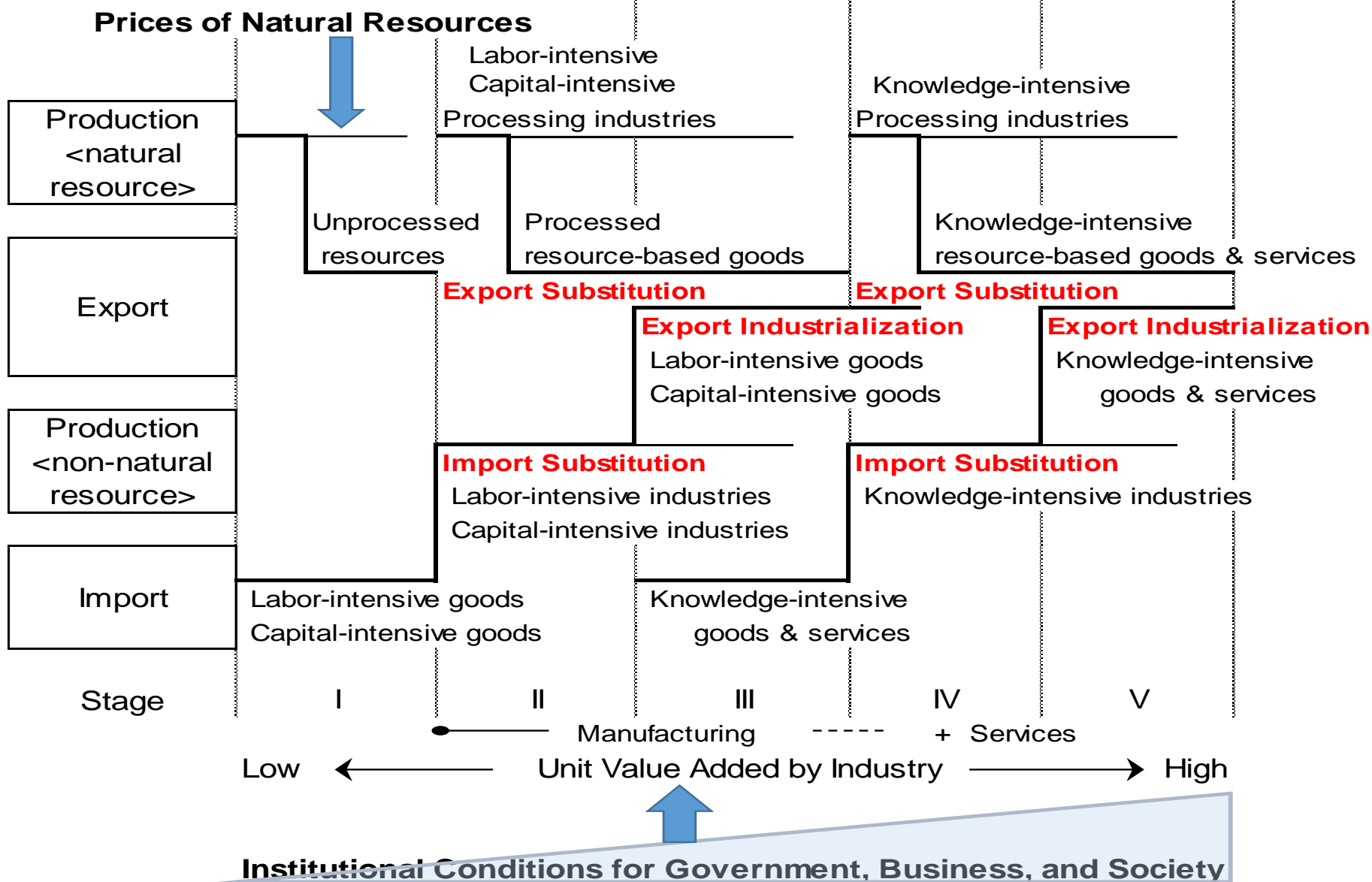
→ **maintained Stage II**

〈Commodity boom 2002-11〉

- No state-led developmental institutions (98-04)
- Resource revenue = Private capitalists → invest into the boom sectors and service industries
- Regional FTA + emerging China → influx of manufactured imports

→ **regressed from Stage III to Stage I** (resource industries) and **to Stage I or II** (non-resource industries)

Endowment of Land, Water, and Natural Resources



The Model and Indonesia's Experiences Show...

- **Institutions matter.** A price surge in natural resources works to pull industries back, but the effect can be managed by institutional arrangements for promoting investment in industrial development.
- After the 2000s commodity boom was over, Indonesia seems to be strengthening institutions for promoting investment. If the institutional arrangements function, Indonesia can ride the third wave of industrial development.

Creating a New Success Story?

- The model suggests the path toward **natural resource-based knowledge-intensive industries**. Digital technology makes it easier to increase productivity of raw material production and to connect it with processing, manufacturing, branding, marketing, and R&D along the value chains.
- Indonesia has a great opportunity to **create and utilize synergy** between endogenous resource-based industrial development and exogenous non-resource industrial development.

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