

# ECO 406

# Developmental Macroeconomics

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## Lecture 11

## Neutralizing Dutch Disease and Exchange Rate Policy

# Developing Countries' Economic Growth and Catching Up

- **Neutralizing** the tendency to cyclical and chronic currency **overvaluation** is necessary for developing countries to **grow** and **catch up**
- Currency **overvaluation** has two main causes:
  - A **structural** cause associated with the **value** of the exchange rate (**Dutch disease**)
  - A **policy** cause related to the **price** of the exchange rate (excessive capital **inflows** and use of the exchange rate to anchor **inflation**)
- We will discuss now the **neutralization** of **Dutch disease** and the **policies** required to avoid currency **overvaluation**

# The Three Stages of Economic Development

- A country goes through three *stages* in its transit towards economic *development*
- ***First stage: Primitive accumulation***
  - Precedes the country's *industrial* revolution
  - Exploitation of *natural resources* is a *blessing*
  - No industrial sector yet and thus no *Dutch disease*
  - ***Export taxes*** as a form of government *revenue* required for development
  - ***Export tax*** too low to create an environment for *industrialization*
  - ***Wages*** remain low and thus *elite* appropriates most of the *Ricardian rents*

# The Three Stages of Economic Development (cont'd)

## ■ *Second stage: Industrial revolution*

- Condition for ***development*** implies certain levels of education, infrastructure, bureaucracy, middle class, nationalist elite, etc.
- ***Dutch disease*** becomes now an obstacle to ***industrialization*** and needs to be neutralized
- Country produces low per capita value-added ***manufactured goods*** for domestic market
- Transfer of labour from agricultural/mining sector to manufacturing sector implies ***productivity gains***
- ***Neutralization of Dutch disease*** becomes crucial now to allow growth of ***“infant industry”***

# The Three Stages of Economic Development (cont'd)

## ■ *Third stage: Export of manufactured goods*

- Countries need to continue **neutralizing** their **Dutch disease** through firm management of the exchange rate
- Only countries that continued **neutralizing** their **Dutch disease** advanced to this stage (East Asian countries, Mexico, Brazil, etc.)
- Following the **Washington consensus**, many developing countries started to **liberalize** their current and capital accounts in the 1980s and 1990s
  - They gradually **deindustrialized** (e.g., Mexico, Brazil)
- Other countries (e.g., Argentina) continued neutralizing **Dutch disease** and experienced rapid **growth** in the 2000s

# Dutch Disease and the Equilibrium Exchange Rate

- There are two equilibrium *exchange rates* when a country is facing *Dutch disease*
    - The *current account* equilibrium exchange rate ( $e_{cc}$ )
    - The *industrial* equilibrium exchange rate ( $e_{ind}$ )
  - The *industrial* equilibrium exchange rate is the *competitive* equilibrium
    - It guarantees a reasonable *profit* rate to *efficient* firms in the *non-commodity* tradable sector
- In the absence of *Dutch disease*, there is a *unique* exchange rate *equilibrium*
    - $e_{cc} = e_{ind}$

# Neutralizing the Dutch Disease

- Consider a small developing countries experiencing **Dutch disease**
  - The country is a **price-taker** in the international market ( $P^f$ )
- **Dutch disease** could be **neutralized** through an **export tax** on the commodity benefitting from Ricardian rents
  - The tax must **correspond** to the **severity** of the disease
  - The tax must **adjust** with the **international price** of the commodity
- The **export tax** increases the exporter's **costs** of production
  - The **supply curve** relating the quantity to the **exchange rate** (i.e., not the **price**) shifts up
  - If the tax is equal to the **severity** of the disease, the **Dutch disease** is fully neutralized

# Neutralizing the Dutch Disease (cont'd)

- The **export tax** causes the **depreciation** of the domestic **currency**

- We need to distinguish the **market** exchange rate from the **value** of the exchange rate
- While the former is determined by **demand** and **supply**, the latter is determined by the **cost** of production

- Both  $e_{cc}$  and  $e_{ind}$  are equilibriums in **value** terms, and thus they are determined by **costs** of production

- The **export tax** increases the **cost** of production

- The **tax** increases the **value** of the exchange around which the **market** exchange rate fluctuates

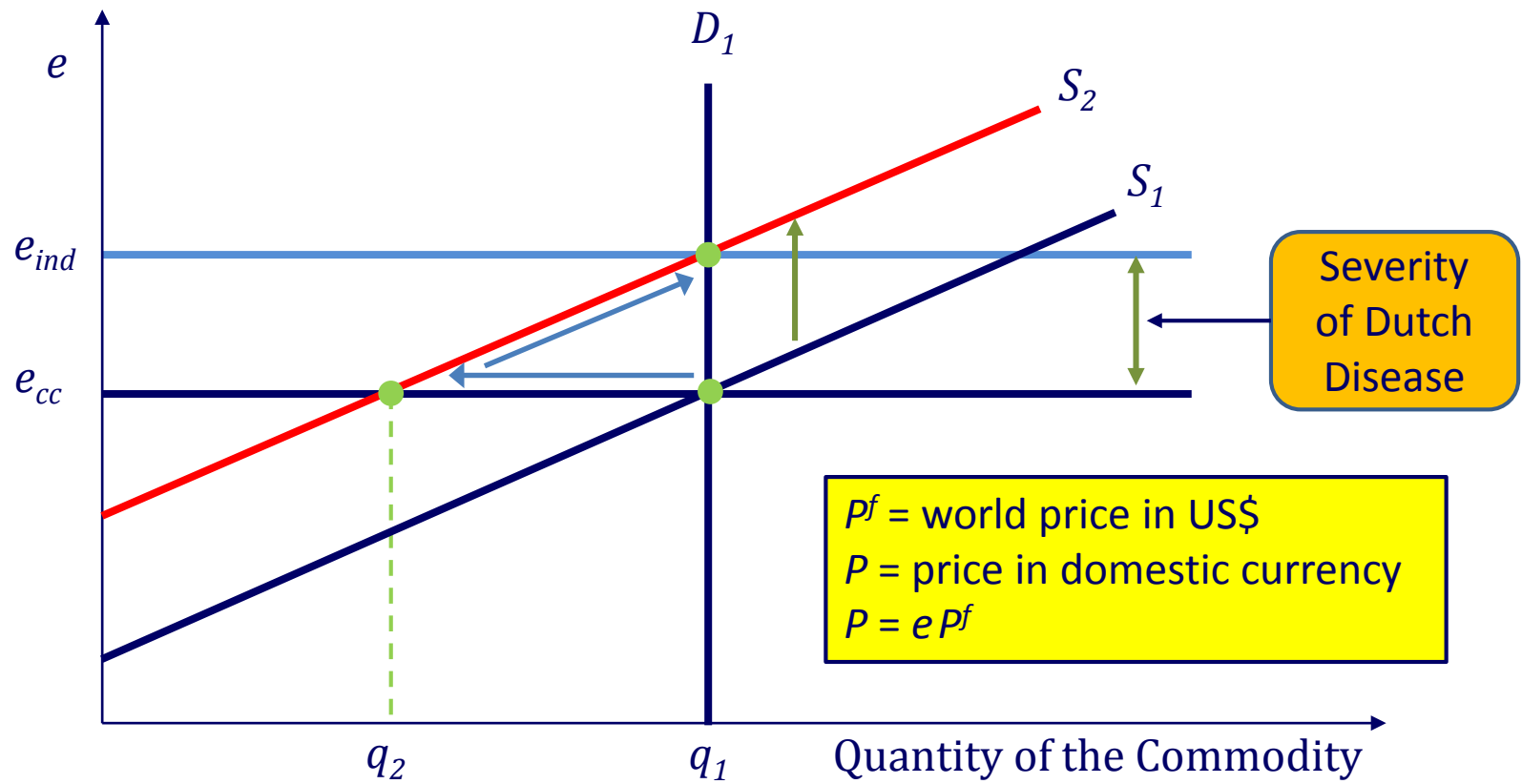
- The **value** of the exchange rate is the long-term determinant of the **supply** curve of the good



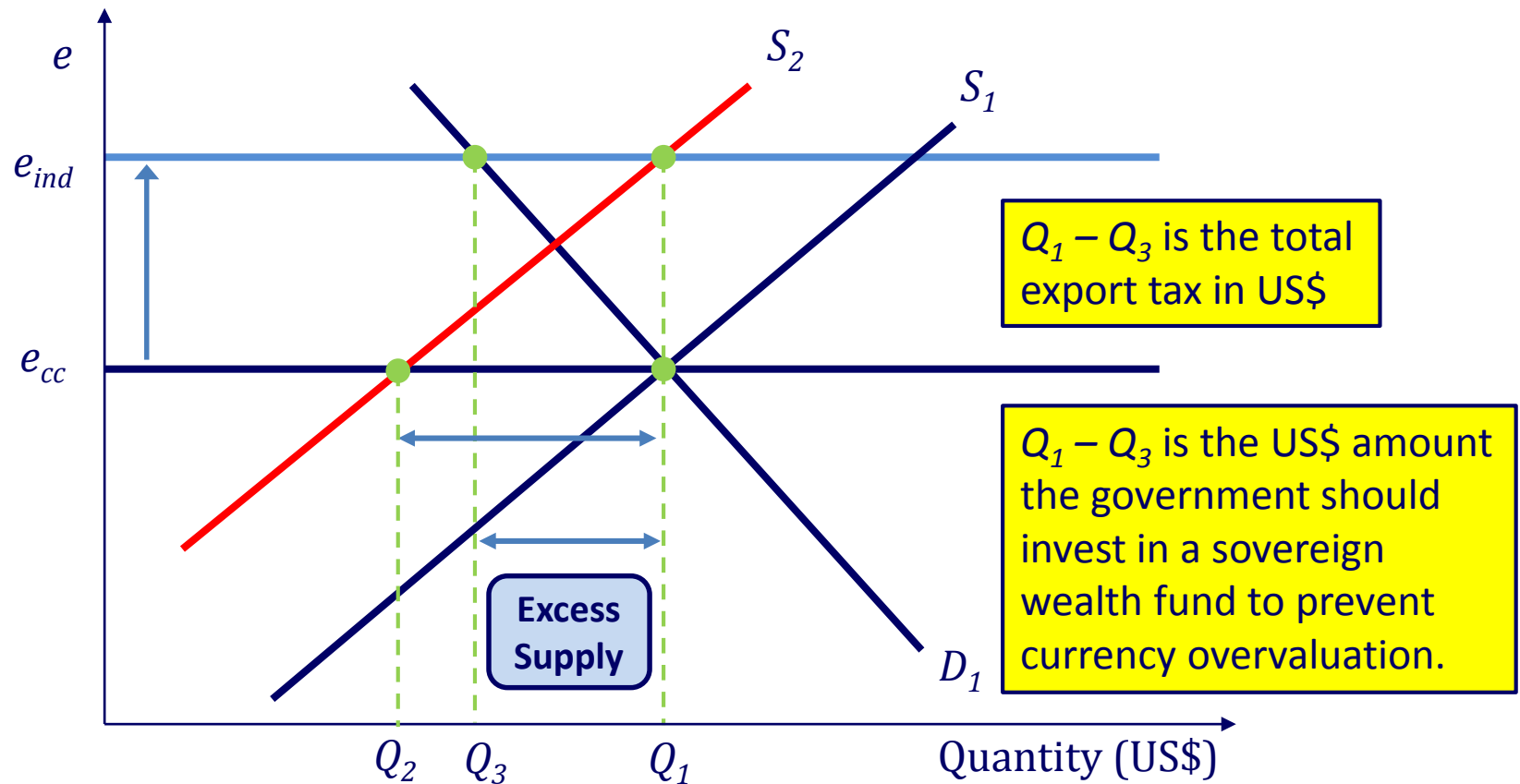
# Neutralizing the Dutch Disease (cont'd)

- If the **export tax** is equal to the **severity** of **Dutch disease**, the **equilibrium** exchange rate will increase from  $e_{cc}$  to  $e_{ind}$ 
  - With **Dutch disease**, the **equilibrium** exchange rate is  $e_{cc}$
  - When **Dutch disease** is neutralized, the **equilibrium** exchange rate is  $e_{ind}$
- The **exchange rate** appreciates because of the increase in the **value** of the exchange rate
- **The export tax** causes the supply curve to shift up and thus the quantity supplied at  $e_{cc}$  decreases
  - The **supply** of foreign currency falls and the exchange rate **appreciates**
  - The **appreciation** of  $e$  eliminates the **excess demand** by increasing/decreasing the quantity supplied/demanded

# Neutralization of the Dutch Disease by Means of an Export Tax



# The Appreciation of the Exchange Rate



# Sovereign Wealth Funds

- The ***neutralization*** of the ***Dutch disease*** is completed by the creation of a ***sovereign wealth fund*** with the revenues derived from the ***export tax***
  - This prevents the ***re-appreciation*** of the domestic currency
  - Norway has imposed an ***export tax*** and has created a ***sovereign wealth fund***
    - It has fully ***neutralized*** the ***Dutch disease***
- But what neutralizes the ***Dutch disease*** is the ***export tax*** and not the ***sovereign wealth fund***
  - The ***sovereign wealth funds*** has the same effect as controlling for ***capital inflows***

# Who Pays for the Neutralization?

- Although **exporters** formally pay the **tax**, they will not end up bearing its **cost**
    - The **value** of the **currency** falls by the amount of the tax and **exporters** continue earning the same **profit**
  - But until the **depreciation** of the currency occurs, the **profits** of the **exporters** are reduced
    - Thus **exporters** will oppose the imposition of such a **tax**
  - **Labour** also bears some costs because real **wages** fall for some time
    - But **wages** will eventually rise above the original level
- Therefore, it is the country's **population** that ends up paying the tax through higher **prices** for **tradable** goods

# What Will the Government Do with the Tax Revenues?

- Given the exporters' opposition to the **tax**, the **government** might need to speed up the process:
  - Impose **capital controls** to reduce capital inflows
  - Buy **foreign currency** in the exchange market
- The **government** can do several things with the **tax revenues**
  - Set a sovereign **wealth fund**
  - Spend revenues on necessary **public investment** or **social services**
  - Maintain low **taxes**
  - Set up **stabilization fund** to guarantee commodity prices
  - Allow revenues to be capture by **corrupt** politicians

# Second-Best Form of Neutralizing Dutch Disease

- System of *multiple exchange rates*
  - Usually one for imports of *necessities* and another for imports of *luxury* goods and *exports*
- Imposing high **tariffs** on *manufacturing* goods
  - Based on theories of *infant-industry* protection and deterioration of *terms of trade*
  - Only partial *neutralization*: stimulates *import* substitution but not *exports* of manufactured goods
- A combination of import *tariffs* and export *subsidies*
  - When the country already exports *manufacturing* goods
- Accumulating foreign currency *reserves*

# Effects of Neutralization of Dutch Disease

- There will be a **current account surplus** and its size will depend on severity of Dutch disease
- It will stimulate **investment** and **growth** (and thus domestic **savings**)
- Real **wages** will initially fall but will grow further as a result of higher investment and economic growth
- The government will have a (small) **budget surplus**
- If a **sovereign wealth fund** is set:
  - There will be a rather large government **budget surplus**
  - There will be no need for **sterilization** policies



# Exchange Rate Policies

- **Neutralizing** Dutch disease is not sufficient
  - Policies associated with immediate **consumption** or exchange rate **populism** must be rejected
  - There must be a **managed** exchange rate regime
- To manage the exchange rate, the central bank might need to purchase **foreign currency** and impose capital **controls**
- Governments should abandon **perverse policies** affecting the **exchange rate** such as:
  - **Growth** with **foreign** savings
  - High interest rates to fight **inflation**
  - Using the exchange rate as anchor to **inflation**
  - Exchange rate **populism**