



International Finance Part I

Trillions of dollars every day are being exchanged around the world in all of the financial markets.

-Kenneth Lay



Table: Exchange Rates: The Global Link

- The *exchange rate* is the price of one country's currency expressed in terms of another's.
- It is the domestic price of a foreign currency.

	US	Australia	UK	Canada	Japan	Euro	Mexico	China
1 US	1	1.29	0.65	1.24	118.62	0.88	14.89	6.25
1 Australia	0.78	1	0.51	0.97	92.24	0.68	11.58	4.86
1 UK	1.54	1.98	1	1.91	182.39	1.35	22.89	9.61
1 Canada	0.80	1.03	0.52	1	95.31	0.70	11.96	5.02
1 Japan	0.0084	0.011	0.0055	0.010	1	0.0074	0.13	0.053
1 Euro	1.14	1.47	0.74	1.42	135.31	1	16.98	7.13
1 Mexico	0.067	0.086	0.044	0.084	7.97	0.059	1	0.42
1 China	0.16	0.21	0.10	0.20	18.99	0.14	2.38	1



Forces Determining Exchange Rates

- Fundamental forces determine the demand and supply for currencies and can cause them to shift.
 - a country's income
 - changes in a country's prices
 - the interest rate in a country
 - a country's trade policy



Changes in a Country's Income

Income increases in the US.



Imports increase.



Demand for foreign currency to buy imports increases, which means the supply of the dollar increases.



The increase in supply of the dollar causes the price of the dollar to decrease.



Changes in a Country's Prices

Inflation in the US increases.



Imports increase because foreign goods are cheaper.



Demand for foreign currency to buy imports increases, which means the supply of dollars increases.



The increase in supply of dollars causes the price of dollars to decrease.



Changes in Interest Rates

Interest rates in the US increase.



Demand for US interest-bearing assets increases.



Demand for dollars to buy US assets increases.



The increase in the demand for dollars causes the price of dollars to increase.



Changes in Trade Policy

US trade restrictions on imports increase.



Demand for imports to the US decreases.



The demand for foreign currencies decreases, which means the supply of dollars decreases.



If foreign countries retaliate with restrictions on US exports, the demand for dollars decreases.



Exchange Rate Determination is Complicated

- Fundamentals can be overwhelmed by expectations of a change in exchange rates which become self-fulfilling.
- The resulting fluctuations serve no real purpose and cause problems for international trade and the country's economy.
- The government can change the value of its currency with monetary and fiscal policy.



Diagram: Expansionary Monetary Policy

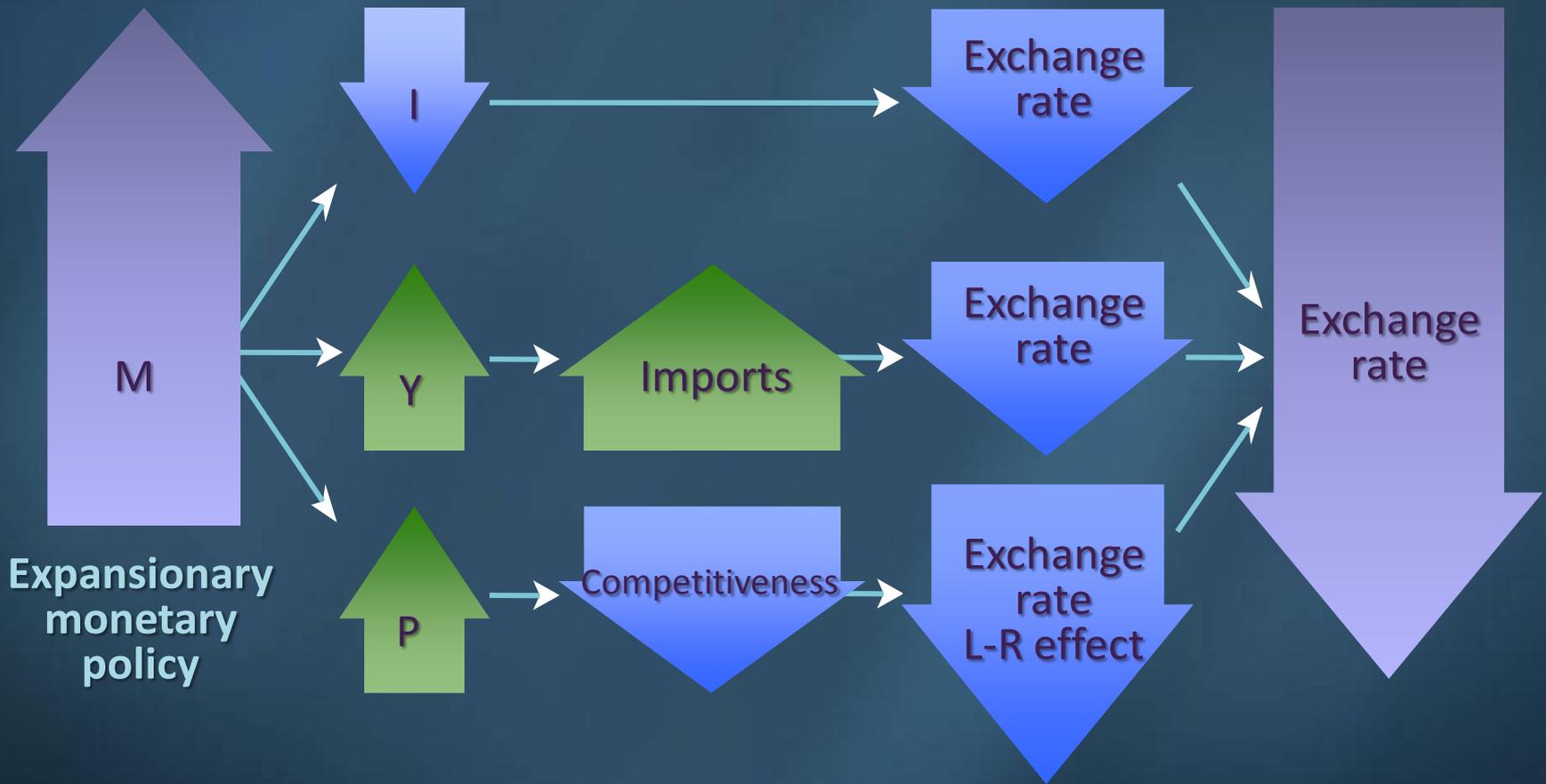




Diagram: Contractionary Monetary Policy

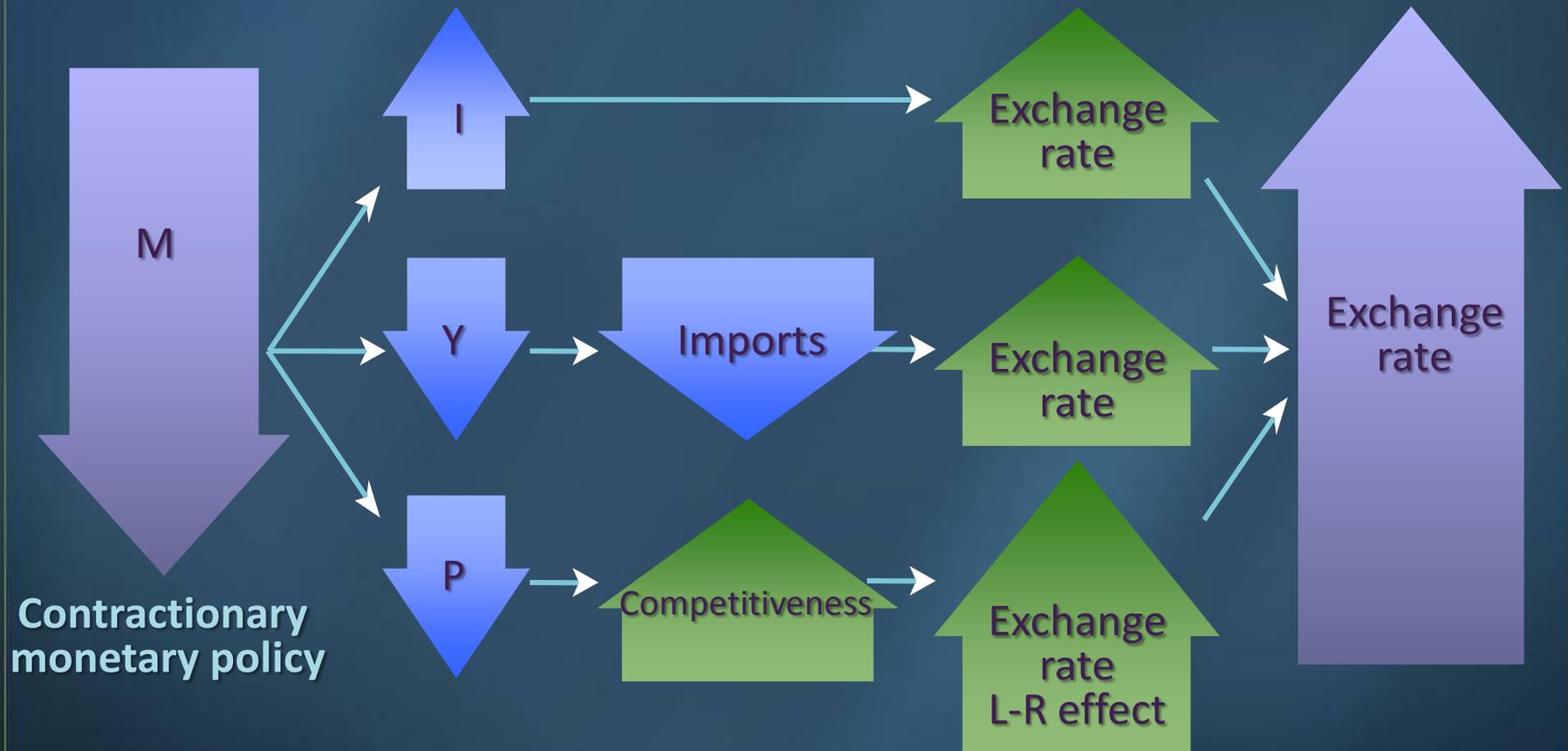




Diagram: Expansionary Fiscal Policy

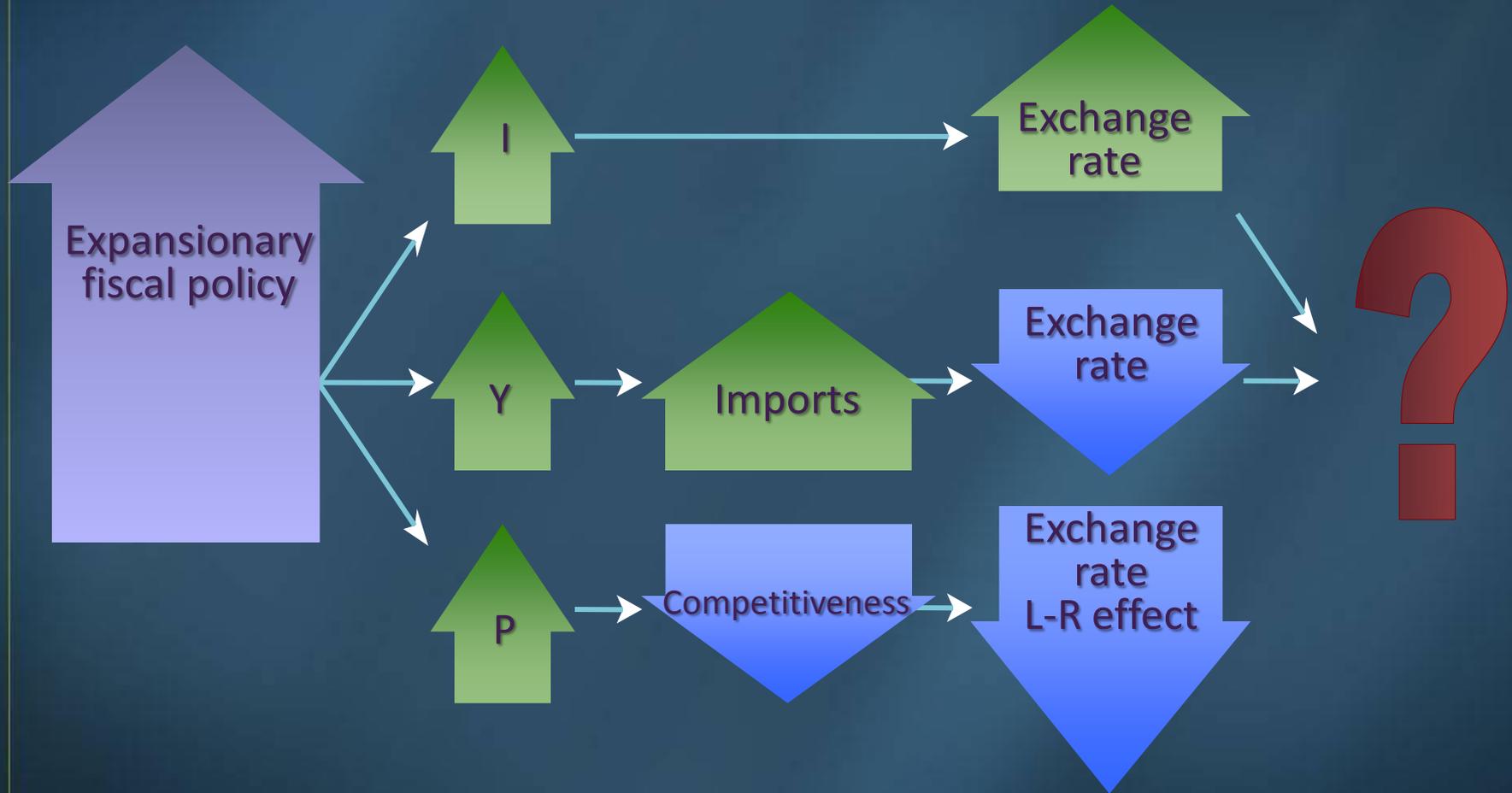
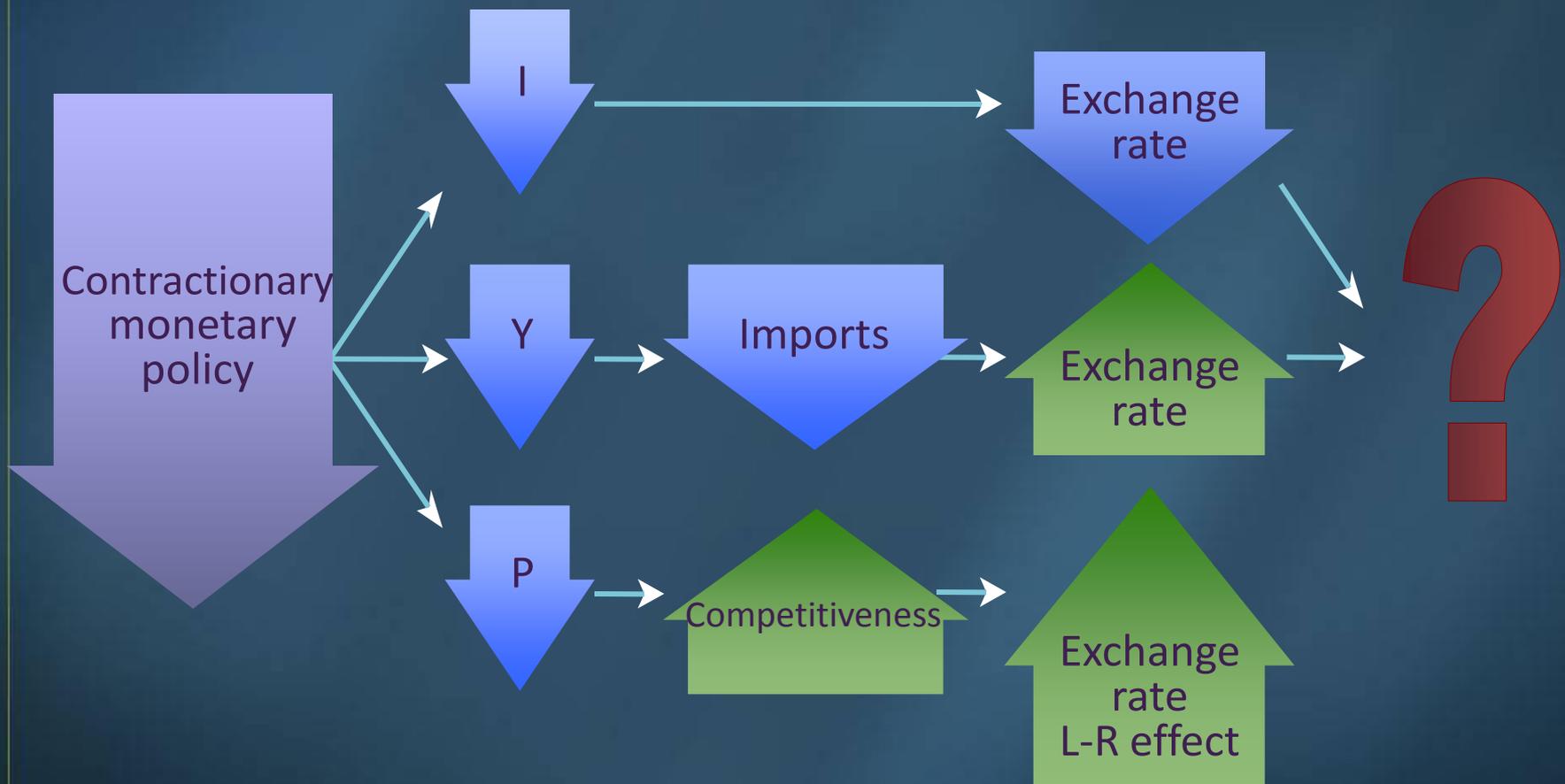




Diagram: Contractionary Fiscal Policy





Effects of Monetary and Fiscal Policy on Exchange Rates

- Expansionary monetary policy lowers exchange rates.
- Contractionary monetary policy increases exchange rates.
- The net effect of fiscal policy is ambiguous because the interest rate effect and the income effect work in opposite directions.



Foreign Exchange Markets

- Money is a commodity to be bought and sold like any other.
- An exchange rate is subject to the same influences that determine all market prices: demand and supply.



The Demand for Dollars

- The market demand for US dollars originates in:
 - foreign demand for American exports.
 - foreign demand for American investments.
 - speculation.



The Supply of Dollars

- The demand for foreign currency represents a supply of US dollars.
- The supply of dollars originates in:
 - American demand for imports.
 - American investments in foreign countries.
 - speculation.



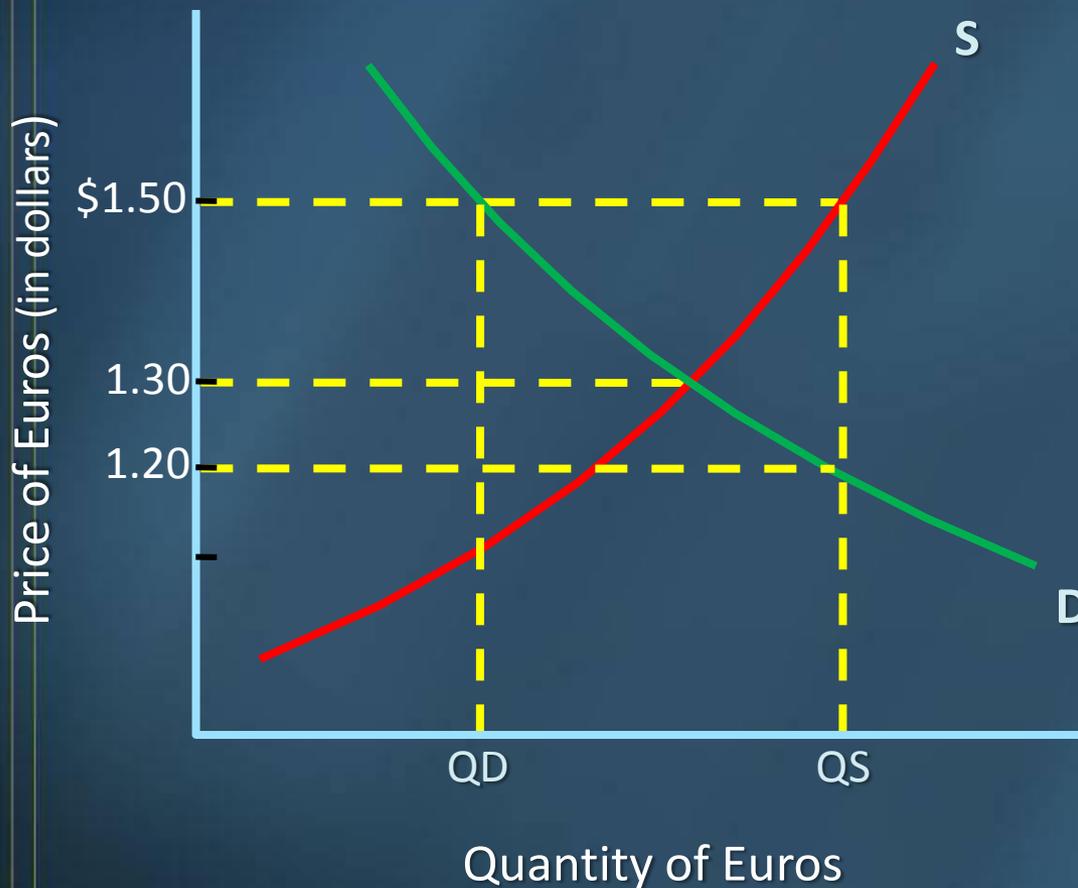
The Value of the Dollar

A higher dollar price for Euros will raise the dollar costs of European goods.

$$\begin{array}{l} \text{Dollar Price} \\ \text{of BMW} \end{array} = \begin{array}{l} \text{Euro Price} \\ \text{of BMW} \end{array} \times \begin{array}{l} \text{Dollar Price} \\ \text{of Euro} \end{array}$$



Chart: The Supply and Demand for Euros



- The equilibrium exchange rate is 1 euro = \$1.10 or \$1 = .77 Euros.
- If the exchange rate is too high (\$1.50) there is a surplus of Euros and Europe has a deficit in its balance of payments.
- If the exchange rate is too low (\$1.20) there is a shortage of Euros and Europe has a balance of payments surplus.



The Supply Curve

- The supply of dollars is upward-sloping.
- If the value of the dollar rises, Americans can buy more Euros.



The Demand Curve

- The demand for dollars arises from the foreign demand of US exports and investments.
- As dollars become cheaper, all American exports effectively fall in price.

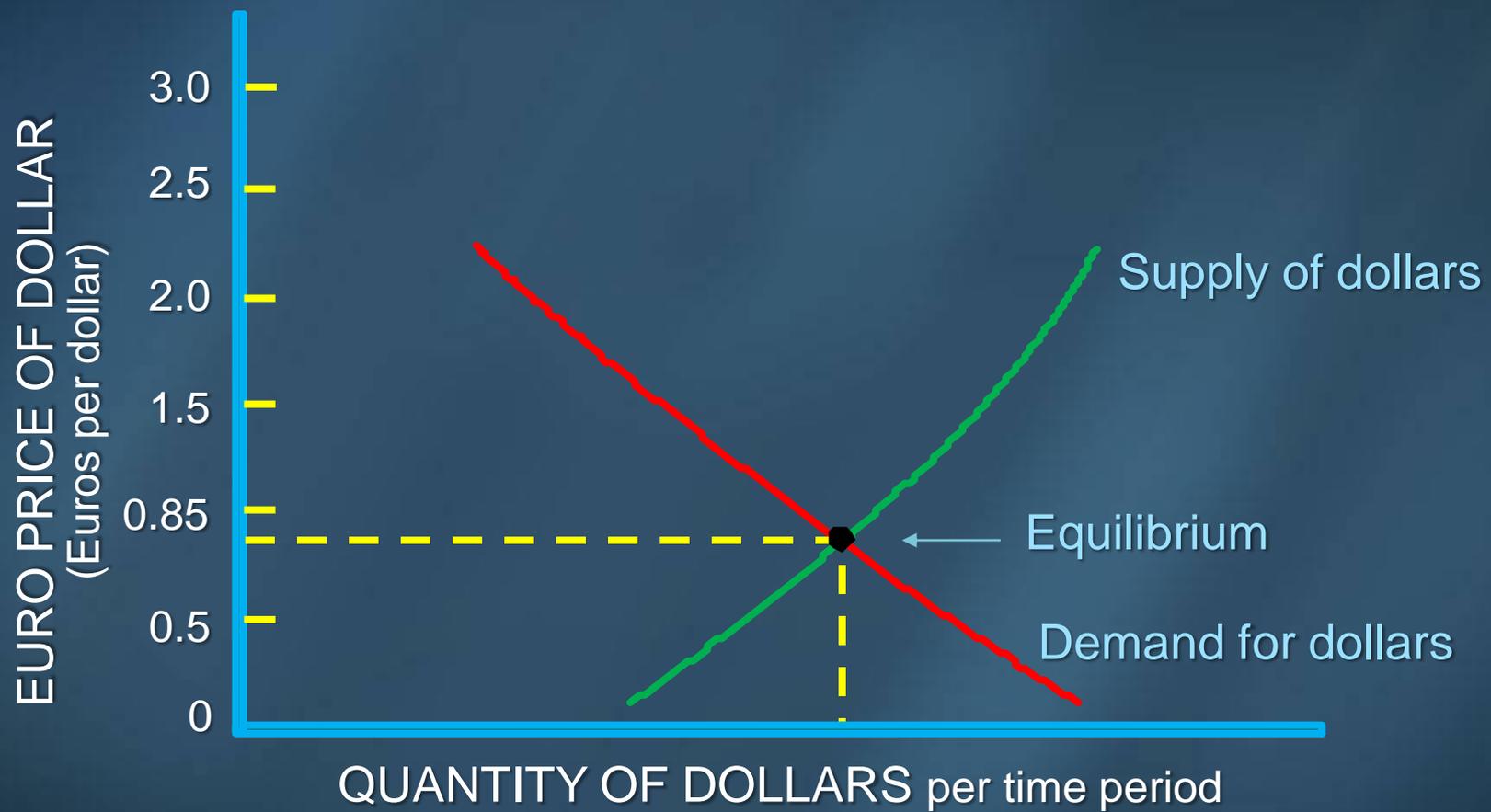


Equilibrium

- Given market demand and supply curves, we can predict the equilibrium price of the dollar like any other commodity.
- ***Equilibrium Price*** – the price at which the quantity of a good demanded in a given time period equals the quantity supplied



Chart: The Foreign Exchange Market





Foreign Exchange (Forex) Market

- The value of the dollar can also be expressed in terms of other currencies.
- The exchange rate is determined by demand and supply in the forex (foreign exchange) markets where traders buy and sell currencies.
- The forex markets are very busy with over \$1.5 trillion traded every day.



Table: Foreign Exchange Market

Country	US\$ per Unit US\$ price of foreign currency	Currency per US\$1 foreign price of US\$
Brazil (real)	0.35	2.83
Britain (pound)	1.54	0.65
Canada (dollar)	0.80	1.24
China (yuan)	0.16	6.25
Indonesia (rupiah)	0.000079	12,737.35
Japan (yen)	0.0084	118.61
Mexico (peso)	0.067	14.87
Russia (ruble)	0.016	62.43
EU (euro)	1.14	0.88



Example: The Balance of Payments

Current account

Balance of merchandise trade	-665
Balance on services	+ 48
Balance on goods and services	-617
Investment and transfers balance	- 49
Balance on current account	-666

Financial and capital account

Capital balance	+ 1
Balance on private financial account	+256
Balance on government financial account	+358
Balance on financial and capital account	+615
Statistical discrepancy	- 51

Total 0

The *balance of payments* is a summary of a country's international economic transactions in a given period of time.

It is an accounting statement of all international money flows in a given time period.



Trade Balance

The trade balance is the difference between exports and imports of goods and services.

$$\text{Trade Balance} = \text{Exports} - \text{Imports}$$



Trade Balance

- A trade deficit represents a net outflow of dollars to the rest of the world.
- *Trade Deficit* – the amount by which the value of imports exceeds the value of exports in a given time period



Current Account Balance

The current account balance is the most comprehensive summary of our trade relations.

$$\text{Current Account Balance} = \text{Trade Balance} + \text{Unilateral Transfer}$$



Example: The Current Account

Current Account

Merchandise		
Exports	+ 807	
Imports	-1,472	
Balance of merchandise trade	- 665	
Services		
Exports	+ 339	
Imports	- 291	
Balance on services	+ 48	
Balance on goods and services (Balance of trade)	- 617	
Net investment income	+ 24	
Net transfers	- 73	
Investment, transfer balance	- 49	
Balance on current account	- 666	

- The *current account* lists all short-term payments.
- The *balance of merchandise trade* is the difference between the import and export of goods.
- The *balance of trade* includes goods and services.
- Payments from past *investments and net transfers* are included in the current account.



Capital Account Balance

The capital account balance takes into consideration assets bought and sold across international borders.

$$\text{Capital Account Balance} = \text{Foreign Purchase of US Assets} - \text{US Purchases of Foreign Assets}$$



Capital Account Balance

The capital account surplus must equal the current account deficit.

$$\begin{array}{l} \text{Capital} \\ \text{Account} \\ \text{Balance} \end{array} = \begin{array}{l} \text{Foreign} \\ \text{Purchase of} \\ \text{US Assets} \end{array} - \begin{array}{l} \text{US Purchases} \\ \text{of Foreign} \\ \text{Assets} \end{array} = 0$$



Example: The Financial and Capital Account

Financial and Capital Account

Capital Balance	+	1
Private Financial Account		
Private Financial Inflows	+	1,078
Private Financial Outflows	-	822
Balance on Private Financial Account	+	256
Government Financial Account		
Foreign Government Financial Balance	+	355
US Government Financial Balance	+	3
Balance on Government Financial Account	+	358
Balance on Financial and Capital Account	+	615

- The *financial and capital account* measures payments for assets such as stocks, bonds and ownership of real estate.
- The *government financial account* reflects governments' buying and selling reserves.

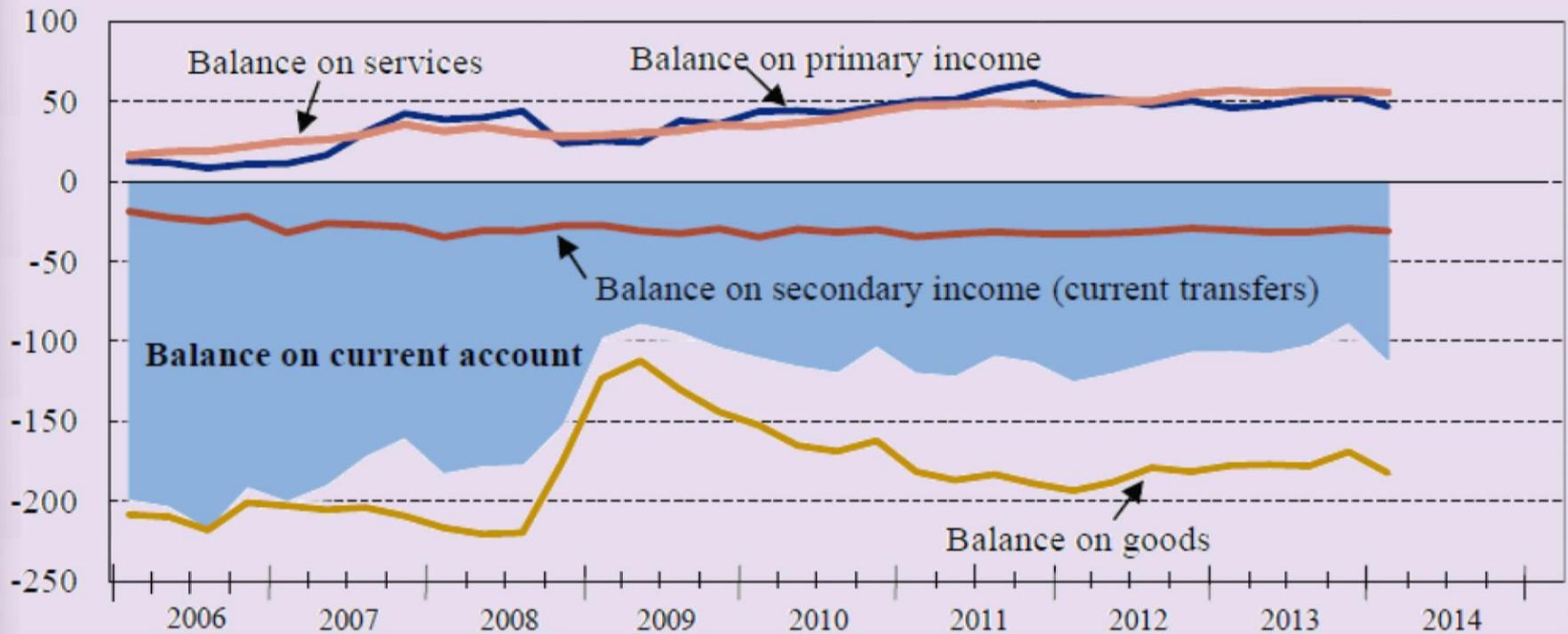


Table: US Balance of Payments

U.S. Current-Account Balance and Its Components

[Seasonally adjusted]

Billion \$





Continued in
International Finance Part II

