



# *Exchange Rates*

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*AS Economics*

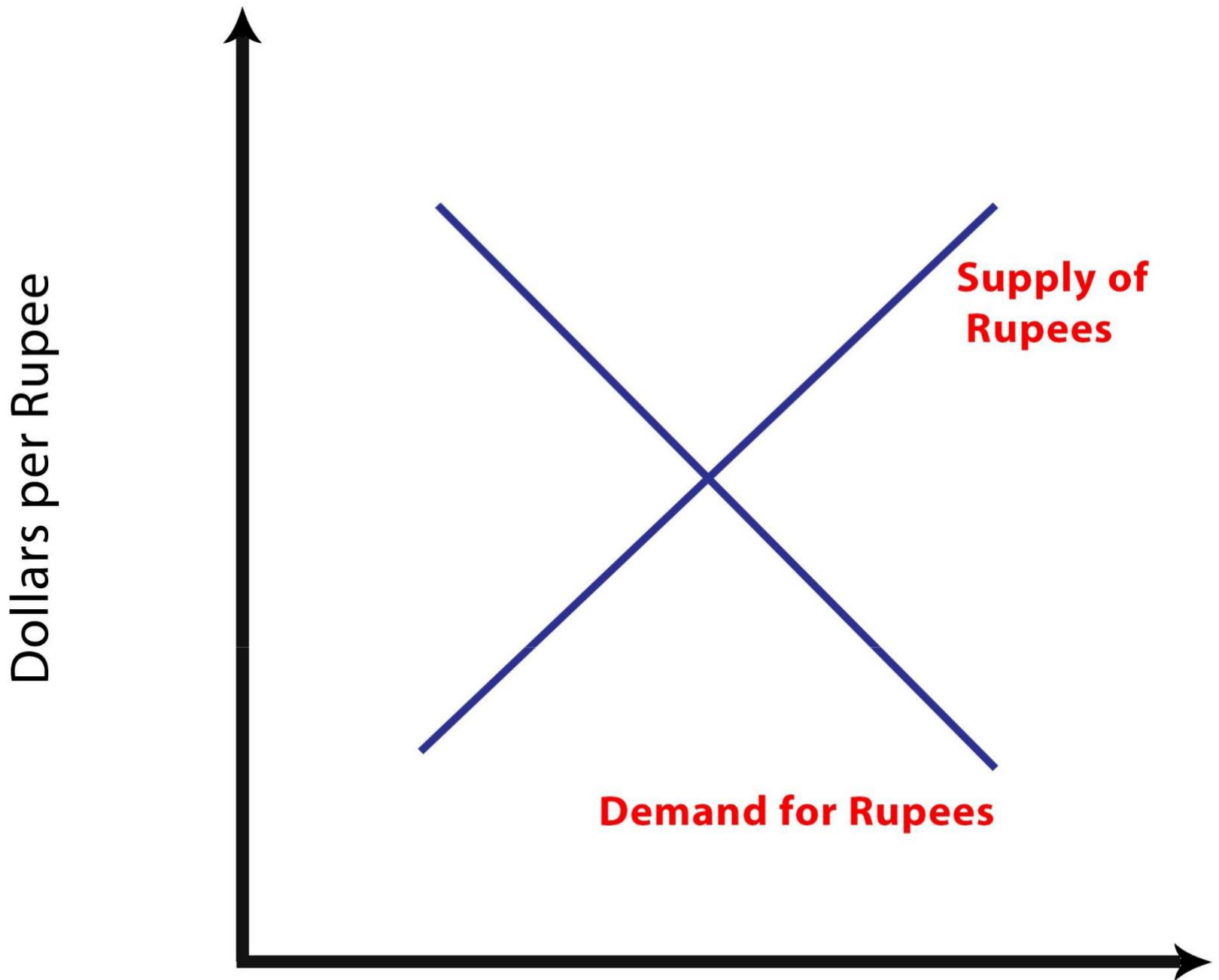
# Exchange Rate

- Exchange Rate is the price of one currency in terms of another currency.
- Just like any other commodity, exchange rates are determined by the **demand and supply** of respective currencies.

# Exchange Rate

- Higher the demand for any currency, for given level of supply, **higher will be its value** and vice versa.
- Higher the supply for any currency, for given level of demand, **lower will be value** and vice versa.

# Exchange Rate



# Demand for Rupees

- Demand for rupees on currency markets is determined by **foreigners** who otherwise do not hold rupees as their national currency.
- Foreigners **demanding** rupees will want this currency because they want to make certain economic transaction with **Pakistani economy**.

# Demand for Rupees

1. Tourists **coming** to Pakistan will exchange their currencies in rupees.
2. Similarly foreigners **investing** in Pakistan will convert their local currency in rupees.
3. Moreover foreigners **importing** Pakistani products will have to pay in rupees and therefore will convert their local currency in rupees.

# Supply of Rupees

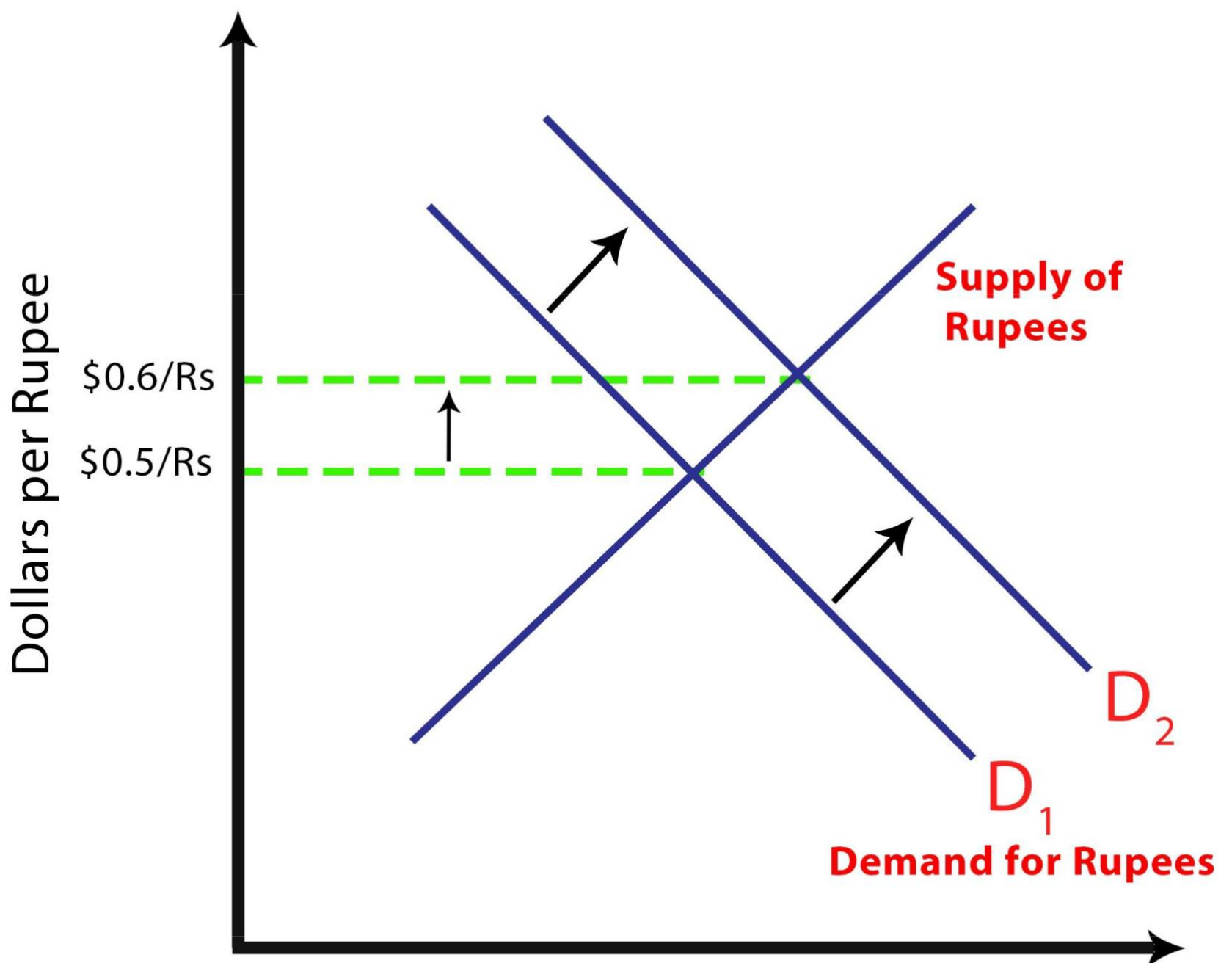
- Supply of rupees is determined by Pakistanis who hold rupees as their local currency.
- Pakistanis will have to **convert** rupees into foreign currencies to make economic transactions with foreign economies.

# Supply of Rupees

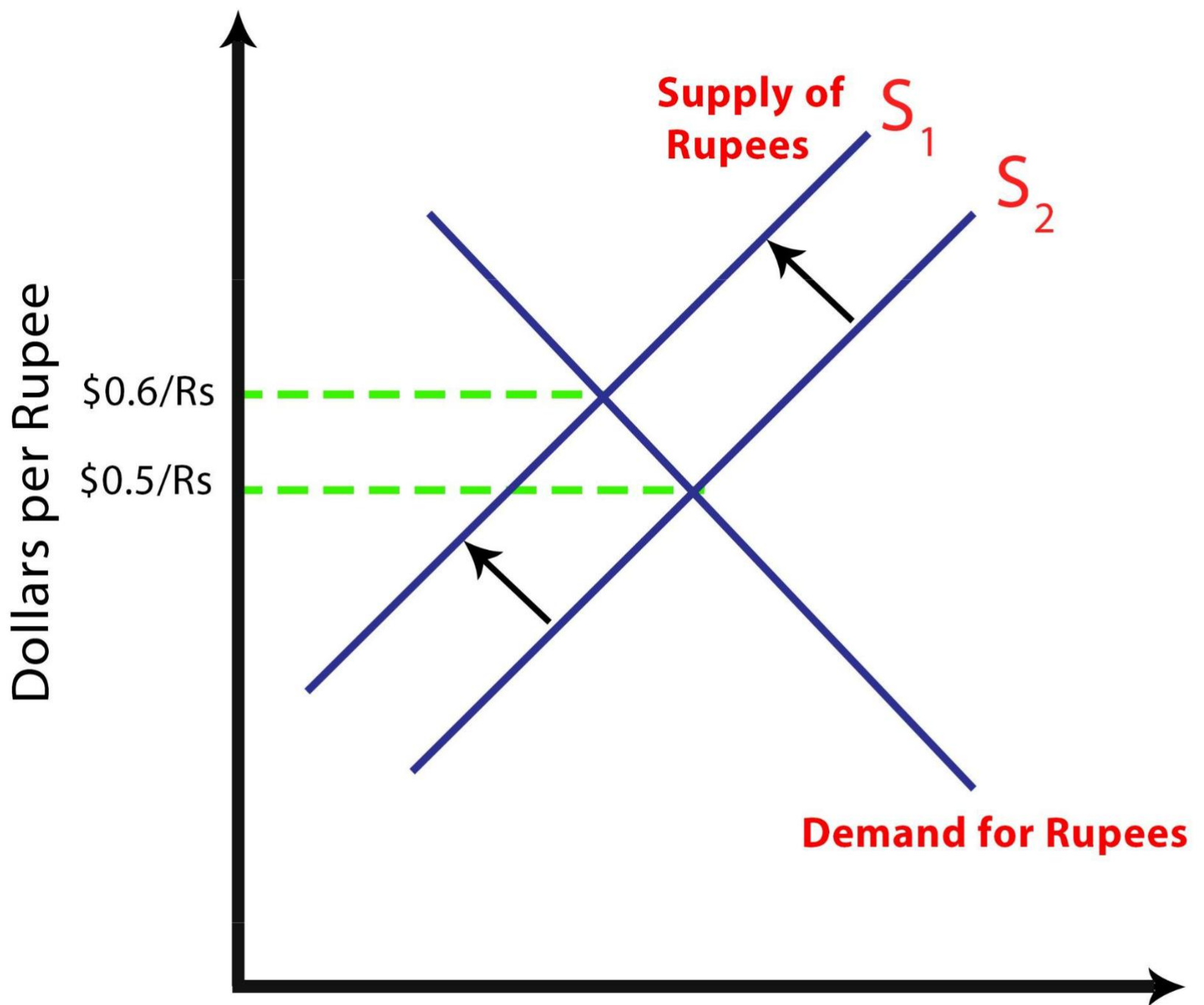
1. Supply of rupees will increase following Pakistanis visiting other countries.
2. Similarly Pakistanis will convert rupees into foreign currencies to make desired imports.
3. Moreover Pakistanis investing abroad will also need to exchange their rupees in foreign currencies.



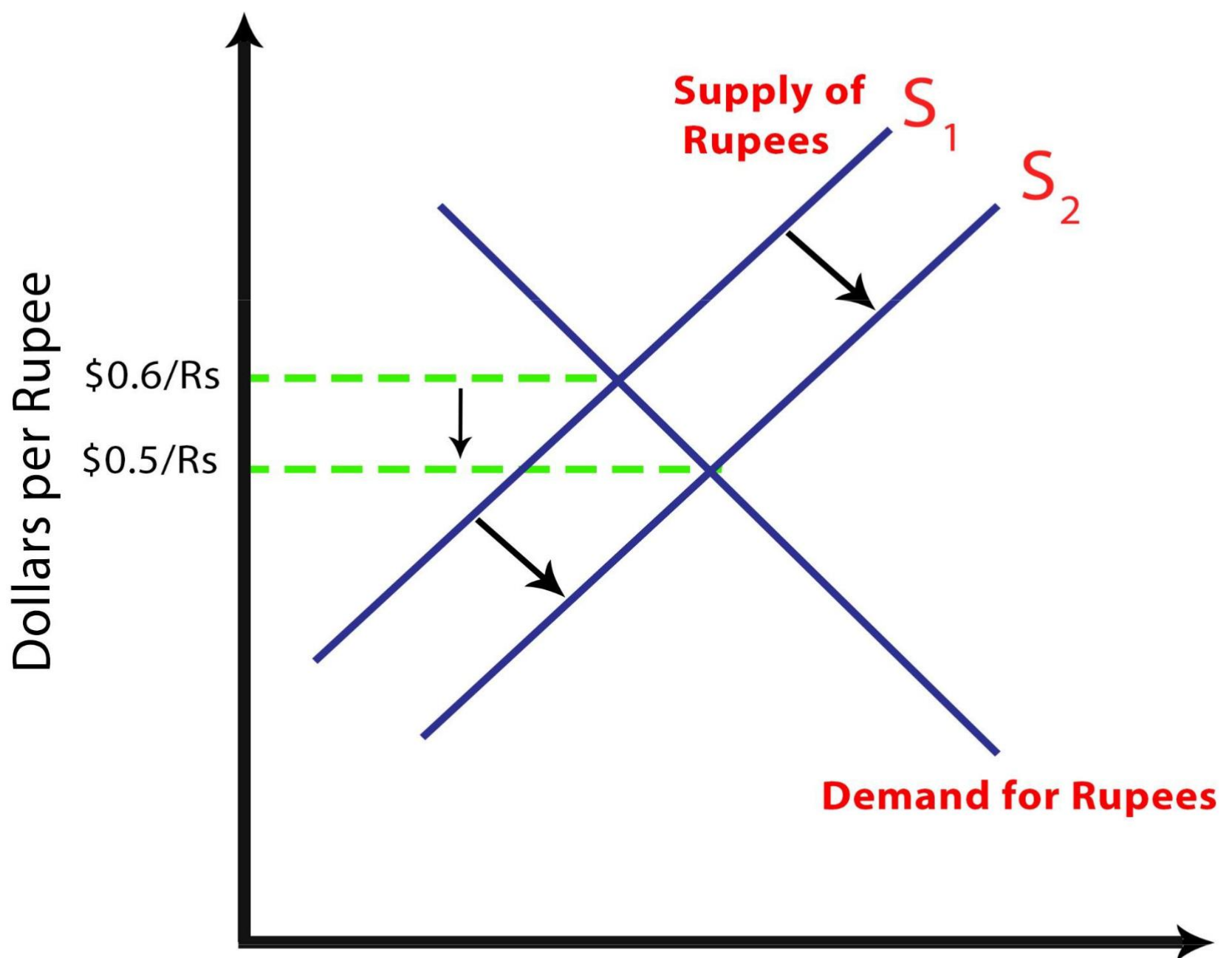
# Exchange Rate Appreciation Increase in Currency's Demand



# Exchange Rate Appreciation Decrease in Currency's Supply

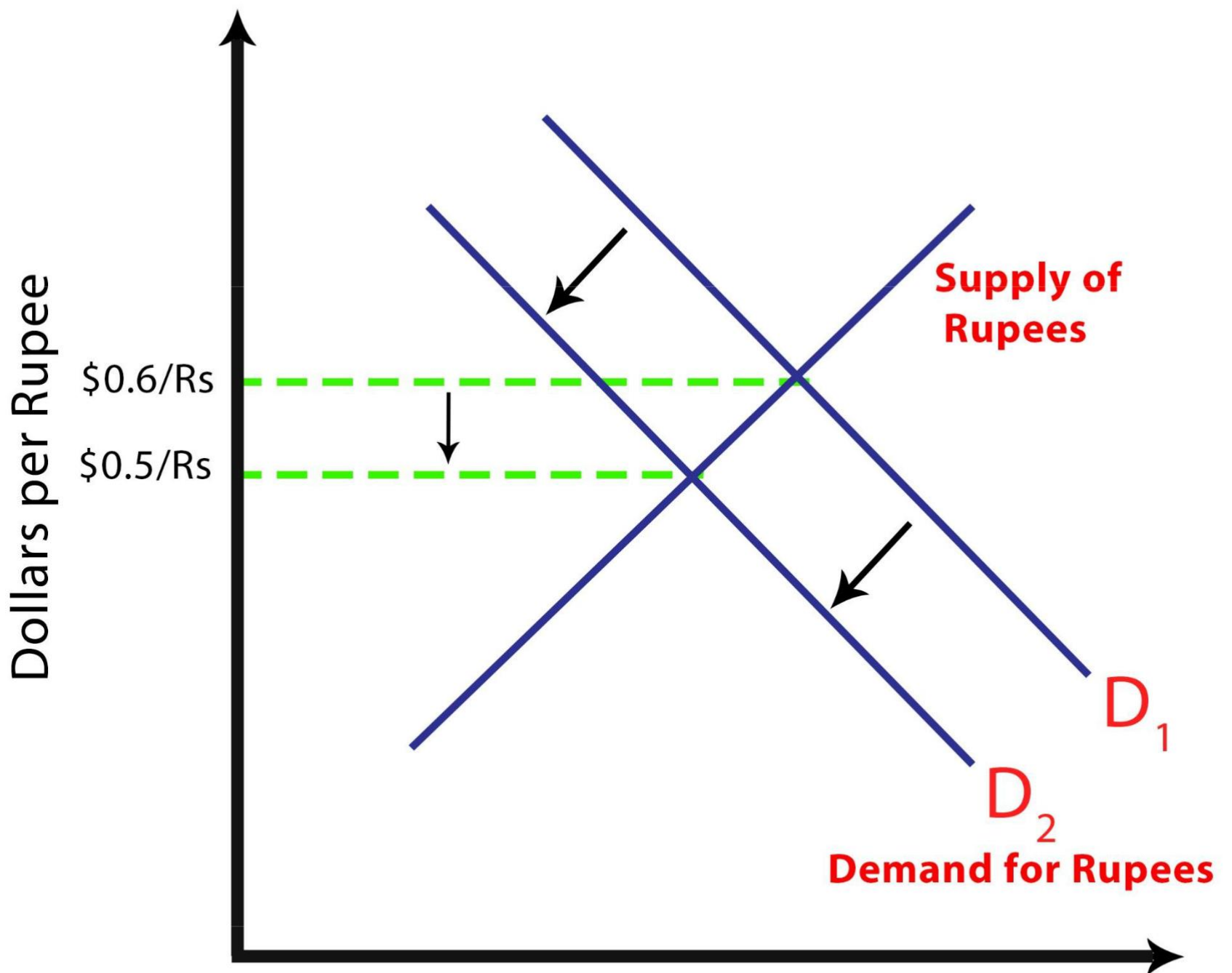


# Exchange Rate Depreciation Increase in Currency's Supply



# Exchange Rate

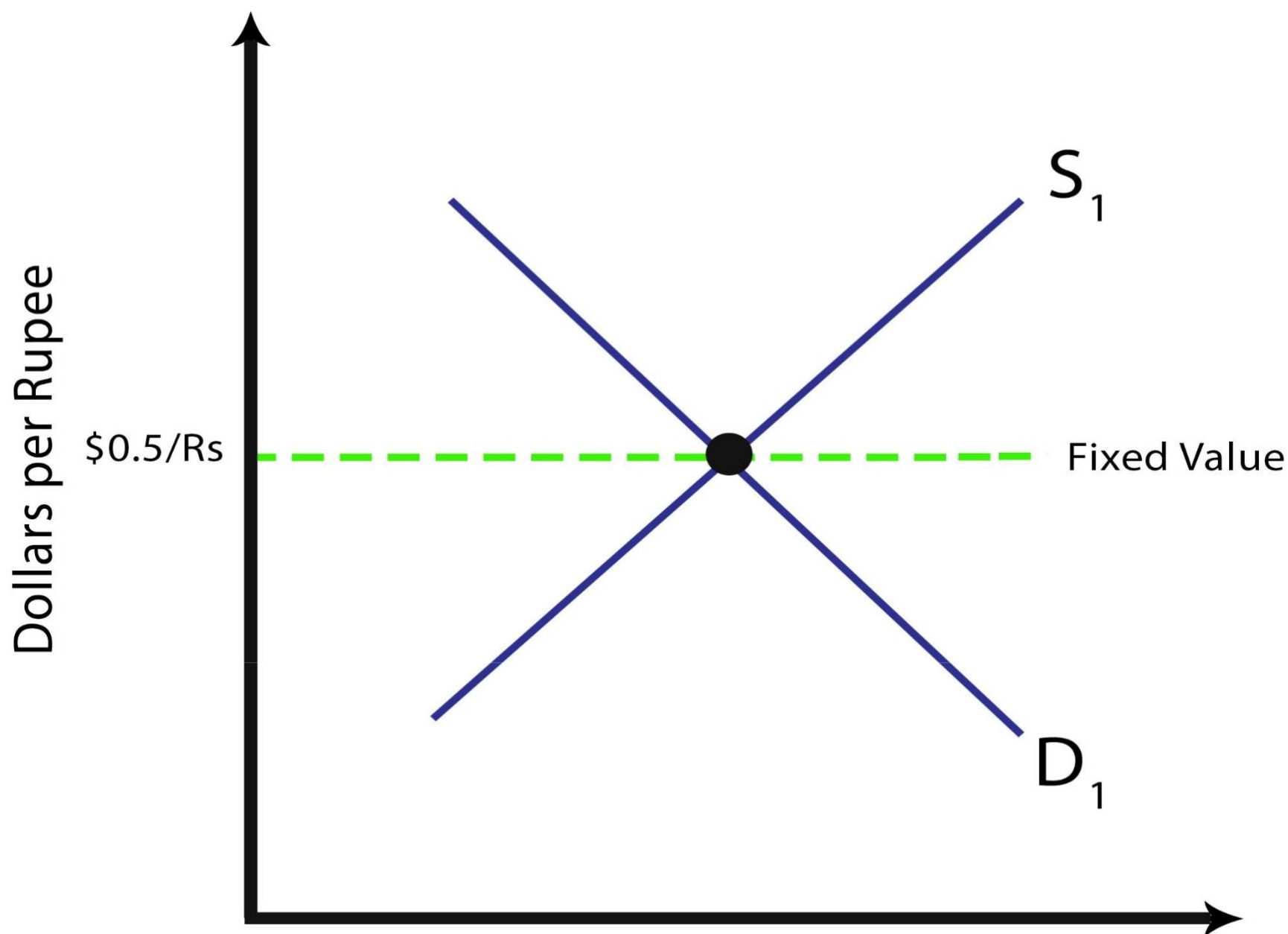
## Depreciation Decrease in Currency's Demand



# Fixed Exchange Rate

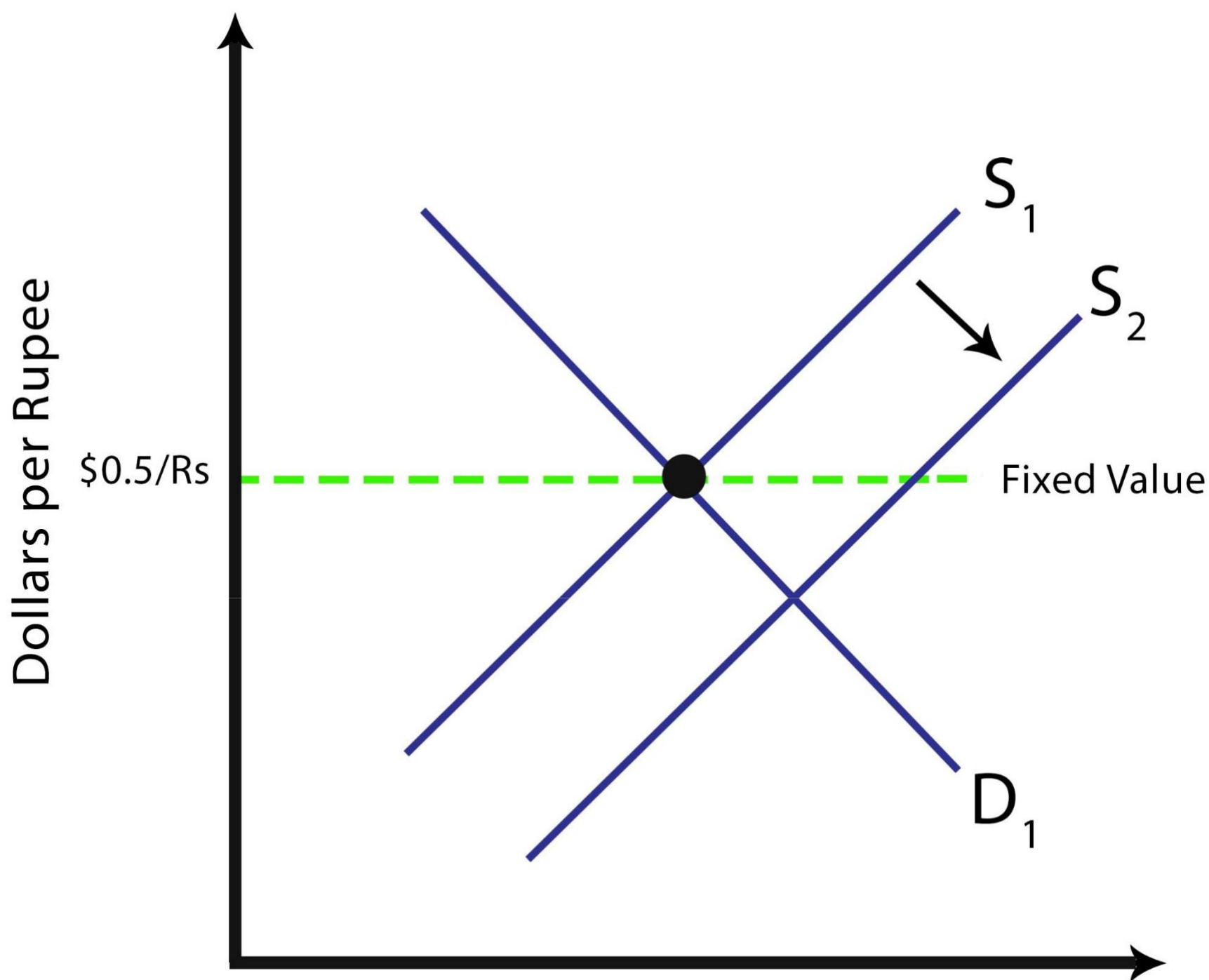
- Fixed Exchange Rate is when a country maintains a certain level of its exchange rate.
- For instance if Pakistan decides to fix its exchange rate at \$ 0.5 per rupee then every time the value of its exchange rate against dollars appreciates or depreciates from this, the country's central bank which in will use foreign currency reserves to bring it back to the desired level.

# Fixed Exchange Rate - Revaluation



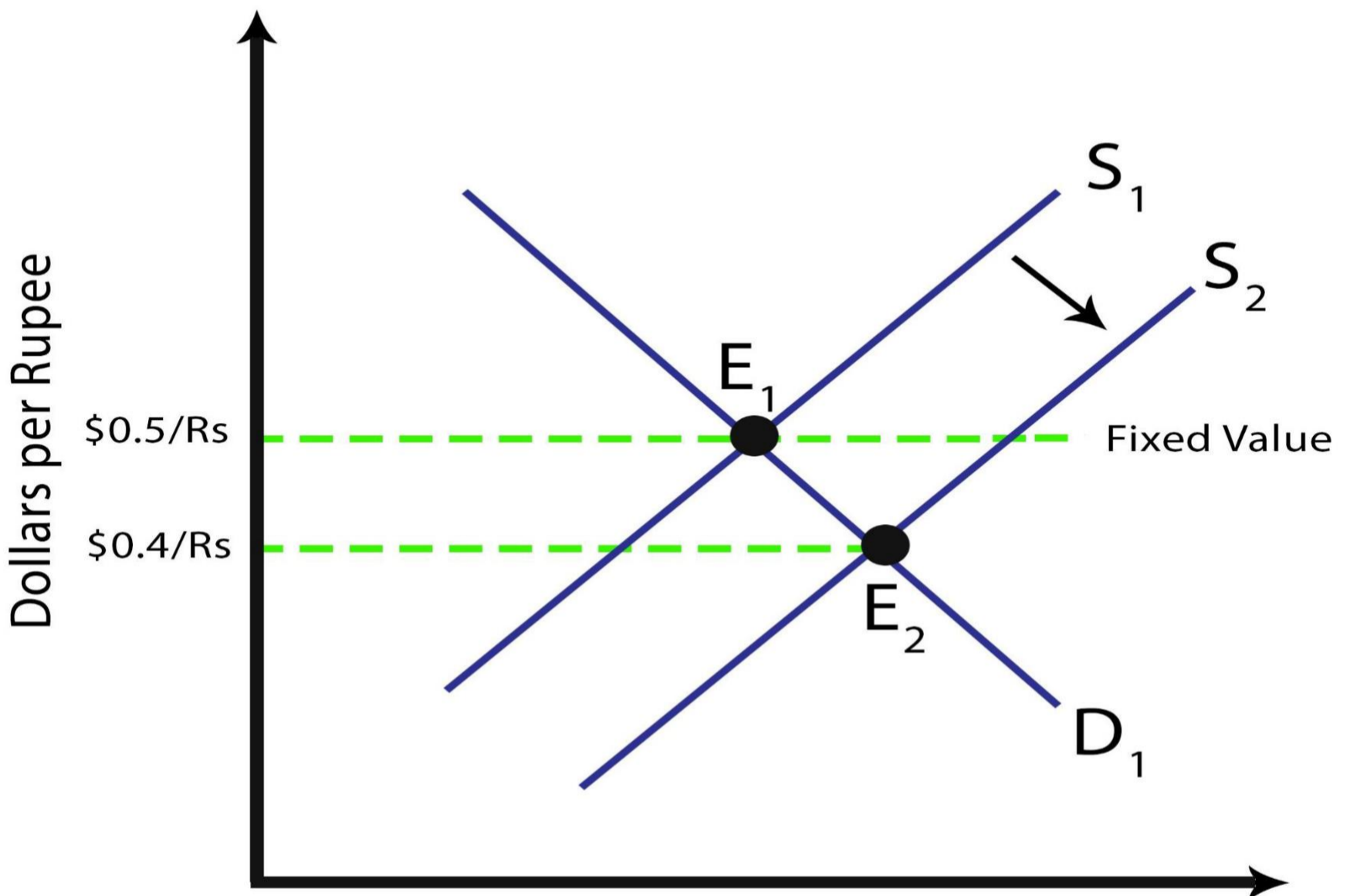
Lets assume that Pakistan wants to maintain its exchange rate at \$ 0.5 / Rs

# Fixed Exchange Rate - Revaluation



The supply of the currency increases which causes the exchange rate to **fall** below the desired level

# Fixed Exchange Rate

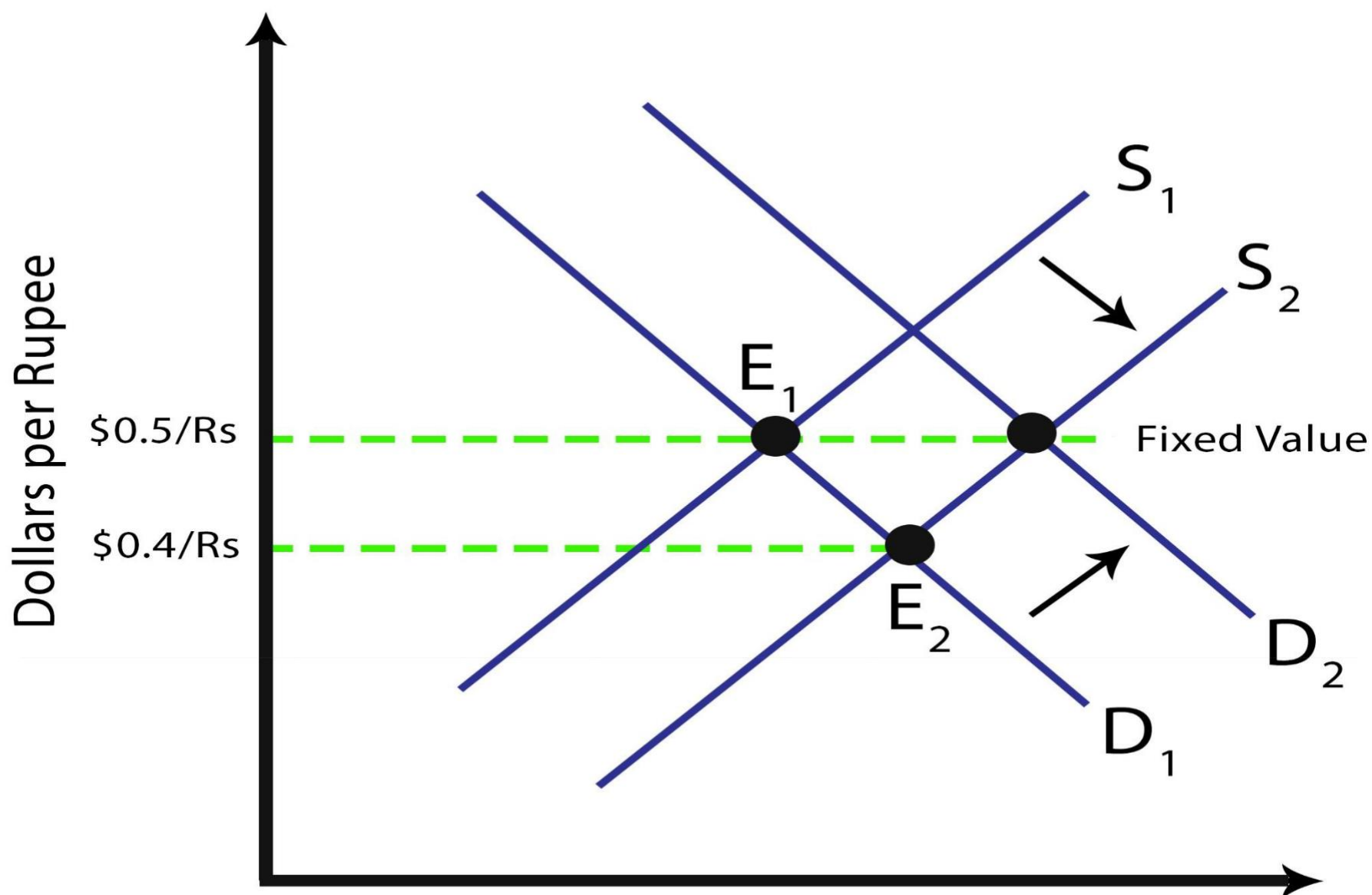


Lets assume that there is natural increase in the supply of rupees due to more Pakistanis taking **foreign vacations**.

As a result as can be seen from the graph the value of exchange rate has fallen to \$ 0.4 / Rs which is **lower than the desired level** of \$ 0.5 / Rs



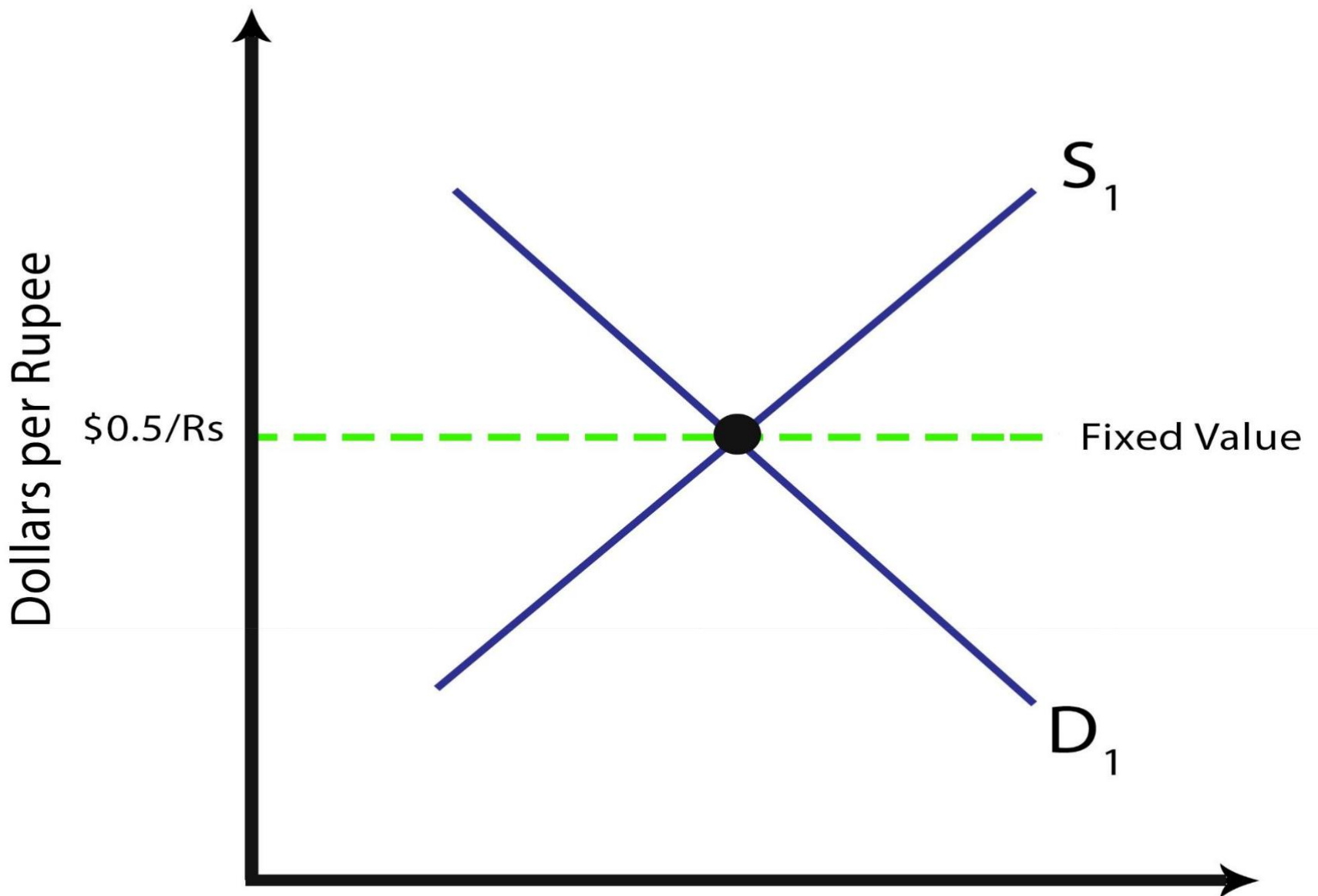
# Fixed Exchange Rate - Revaluation



To bring the exchange rate value back to  $\$0.5/\text{Rs}$  the central bank will **sell foreign** currency and demand rupees.

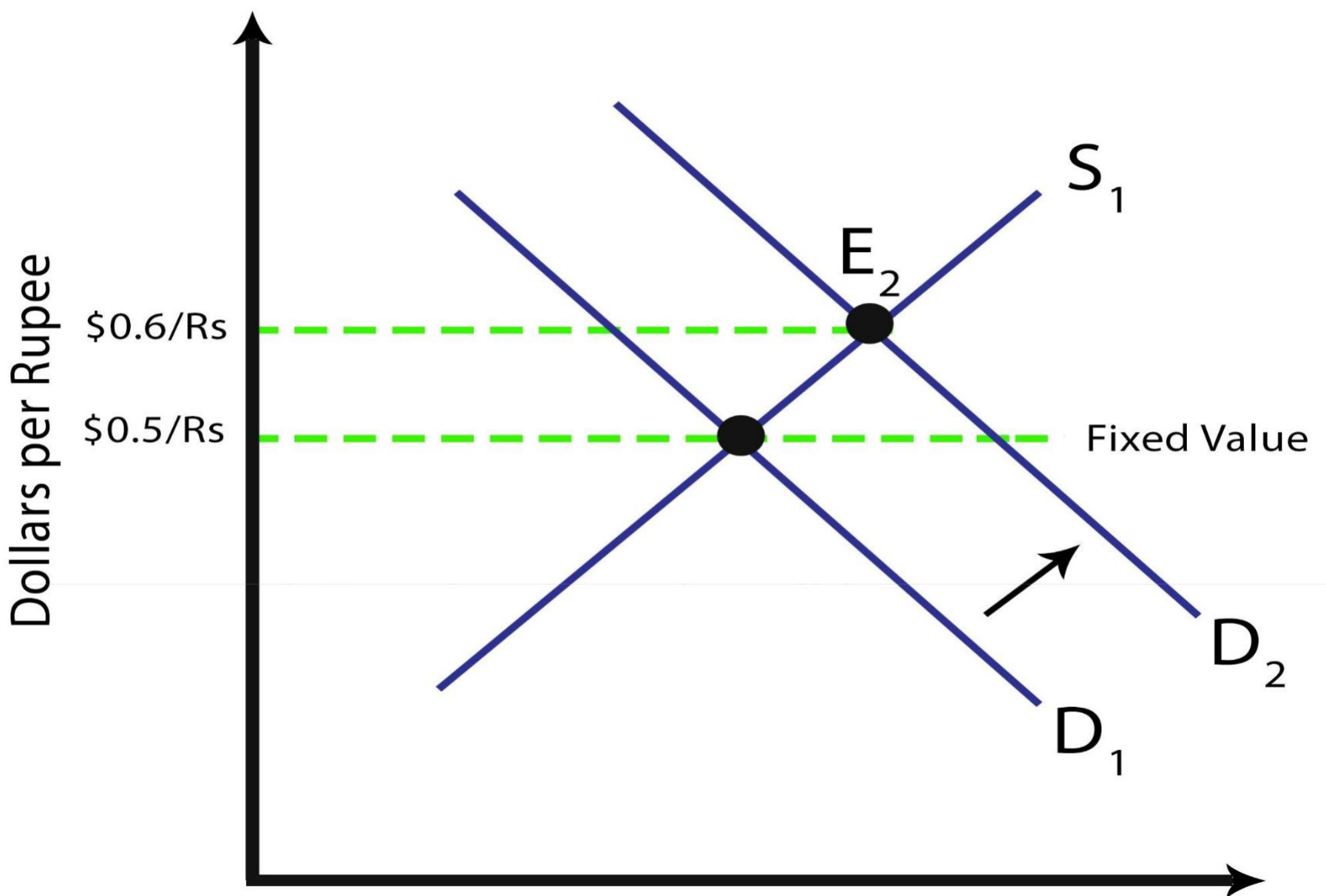
This artificial increase in demand for rupees will bring **back** the exchange rate to the desired level of  $\$0.5/\text{Rs}$ .

# Fixed Exchange Rate - Devaluation



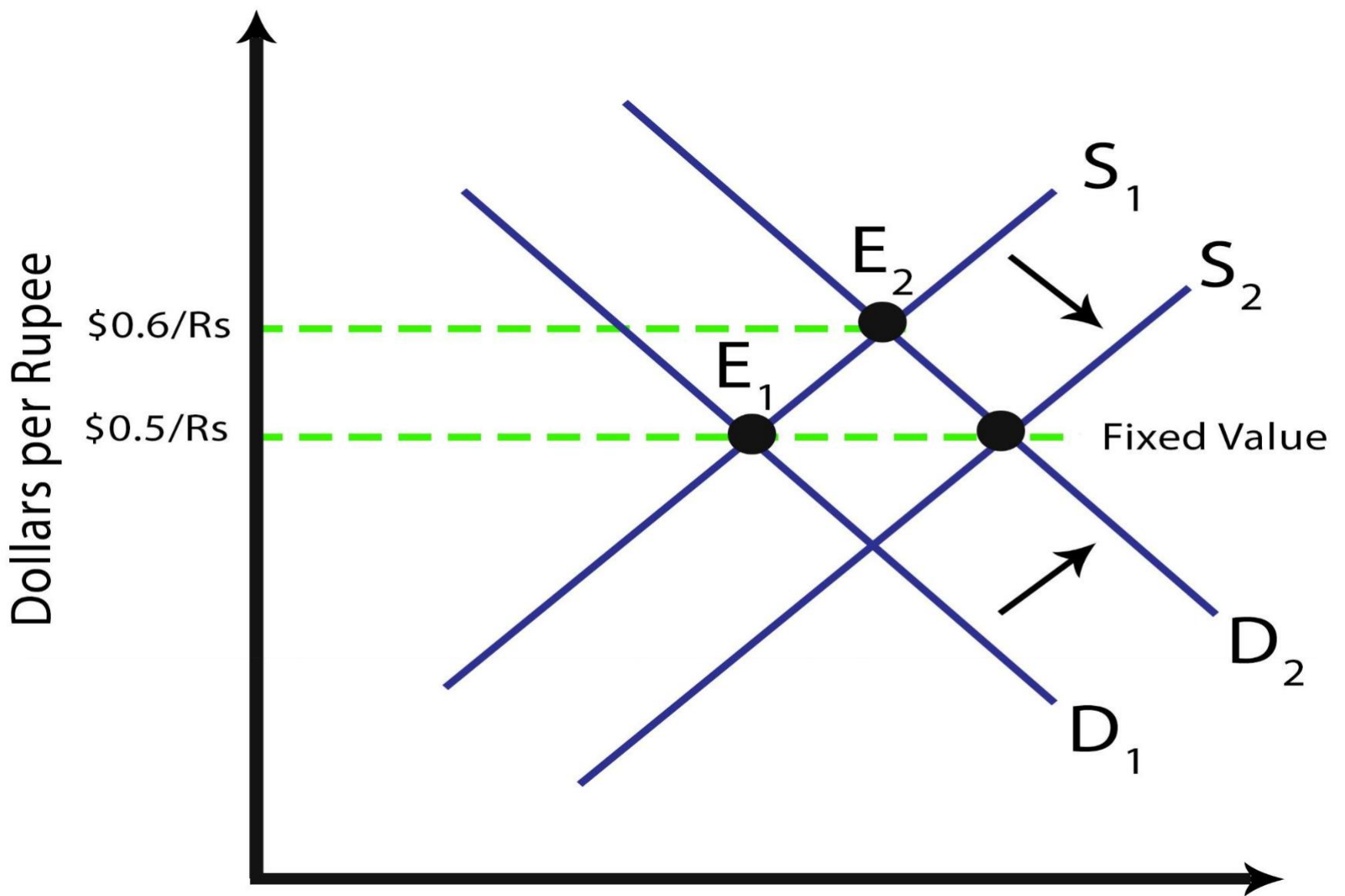
Lets assume that Pakistan  
wants to maintain its  
exchange rate at  $\$ 0.5 / Rs$

# Fixed Exchange Rate - Devaluation



Lets assume that there is natural increase in demand for rupees increases due to more foreign tourists coming to Pakistan. As the result the exchange rate value increases to  **$\$ 0.6 / \text{Rs}$** .

# Fixed Exchange Rate Devaluation



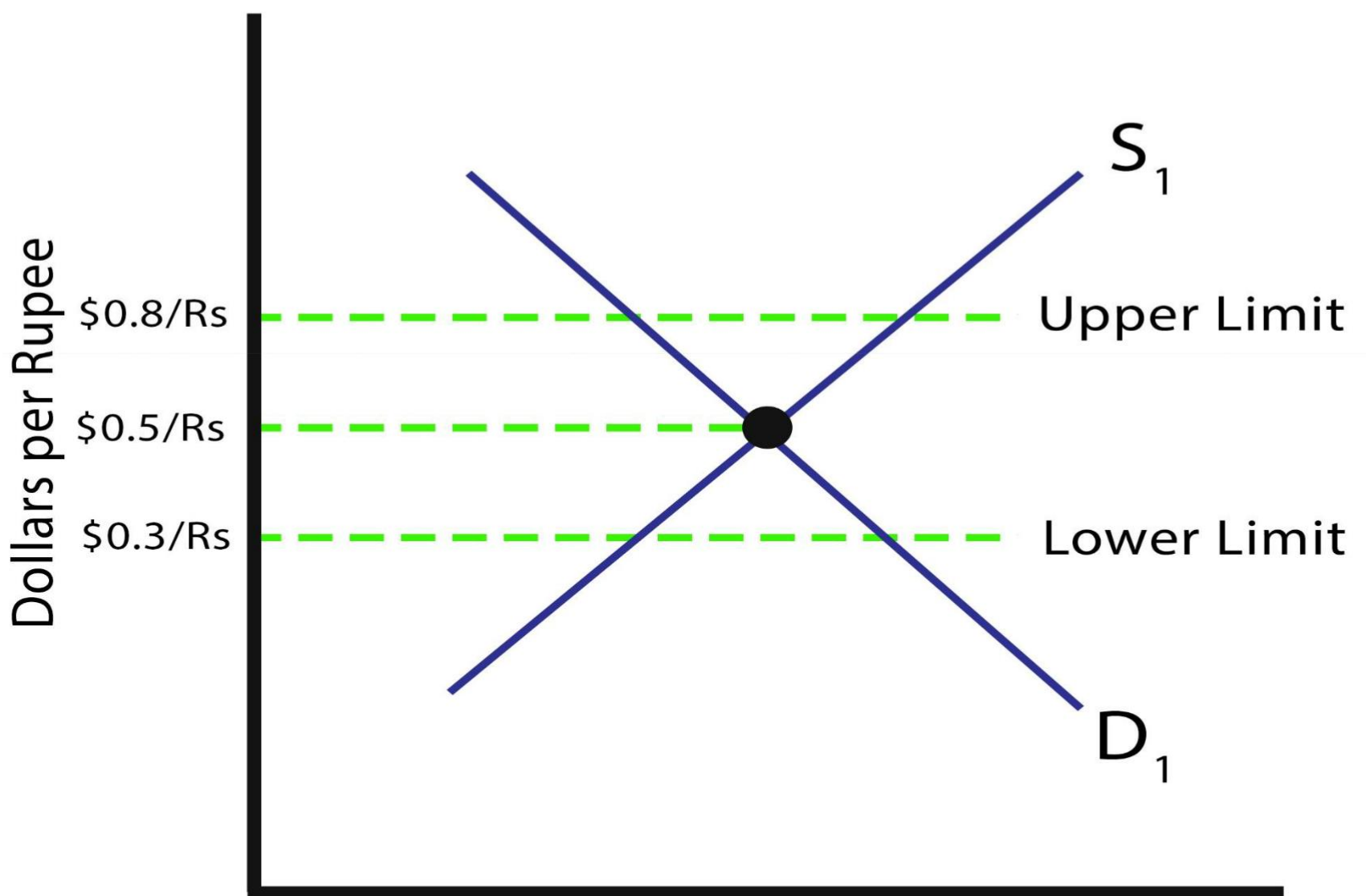
To bring the value back to the desired level of  $\$ 0.5 / \text{Rs}$  the central bank will **artificially increase** the supply of rupees by selling rupees and buying foreign currency.

This process is known as **Devaluation**

# Managed Exchange Rate

- Unlike Fixed Exchange Rate when country tries to achieve a certain value of exchange rate, in managed exchange rate it sets upper and lower limits and tries to maintain the exchange rate value between these limits.
- Unless the value does not move **outside** the limits the government does not intervene. And if it does the central bank brings it back the same way as it does in Fixed Exchange Rate system.

# Managed Exchange Rate



# Fixed Versus Managed Exchange Rate

- Fixed exchange rates put greater pressure on countries' foreign currency reserves than managed exchange rates. This is because **maintaining** a specific value is more difficult and requires greater quantities of foreign currency reserves.

Moreover state banks will need to more **frequently intervene** in currency markets while maintaining pegged (another name for fixed exchange rates) than while maintaining managed exchange rates.

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# Free Floating Exchange Rates and Automatic Stabilization Mechanism

- Unlike managed and pegged exchange rates that do not automatically adjust to changes in economies' circumstances, free floating exchange rate **fluctuate** to undergo desirable changes that positively impacts economies' functioning.
- For instance following persistent balance of payments deficits economies' exchange rates **depreciate** due to lower currency demand which in turn makes their exports more competitive hence increasing their demand in future periods.

# Free Floating Exchange Rates and Automatic Stabilization Mechanism

- Similarly following persistent surplus of economy's balance of payments its exchange rate appreciate making its products become less competitive which will most probably result in lower exports in future periods **automatically stabilizing** country's balance of payments.

- Moreover economies' *artificial depreciation* of their exchange rates might be considered as *protectionist strategy* which might trigger retaliation from other countries.

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# Nominal, Real and Trade Weighted Exchange Rate

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# Nominal Exchange Rates

- The usual exchange rates that we come across in our daily lives like newspapers, television, talk shows etc are known as **Nominal Exchange Rates**. These exchange rates simply express the rate at which one currency can be exchanged for another currency. For instance if \$ 1 = Rs 160, \$ 1 can be exchanged for Rs 160 and vice versa.
- Nominal exchange rates represent the price of one currency in terms of another.

# Nominal Exchange Rates

- A country can either let its nominal exchange rate to be determined solely by market forces of demand and supply of currency which is known as **Free Floating** or a country might manage its exchange rate value through frequent intervention in Forex market which is known as **Managed or Fixed / Pegged exchange rate**.

# Nominal Exchange Rates

- Free Floating, Fixed and Managed exchange rates are known as exchange rate systems or these can be defined as exchange rates strategies. A country chooses one of these strategies to manage its nominal exchange rate based on its specific economic objectives.

# Real and Trade Weighted Exchange Rate

- Real and Trade Weighted exchange rates are another way of interpreting a country's exchange rate, other than Nominal exchange rate, *to get more meaningful information needed for economic research / analysis.*



# Trade Weighted Exchange Rate

- Nominal exchange rates are bilateral rates for they express the value of one currency in terms of one other currency and so it does not say anything about how a country's currency is performing in relation to a basket – more than one – of other currencies.

# Trade Weighted Exchange Rate

- For instance if Pakistan's exchange rate against US dollars is  $\$1 = \text{Rs } 160$  then we do not have any information of how Pakistani Rupee is OVERALL performing against Pound Sterling, Japanese Yen and Chinese Yuan .
- This information can be useful if these countries are Pakistan's **major trading partners.**

# Trade Weighted Exchange Rate

- During certain time period it is highly likely that a country's currency is **depreciating** against some currencies but appreciating against other currencies.
- To determine the OVERALL change in a country's currency against a basket of other currencies, which are that country's major trading partners, we calculate Trade Weighted exchange rate.

# Calculation - Trade Weighted Exchange Rate

- Country's nominal exchange rate against basket of other currencies is used as **starting point for calculating its Trade-Weighted exchange rate.**

# Calculation - Trade Weighted Exchange Rate

- For instance if Pakistan trades with only US and UK and if **80 percent** of Pakistan's trade is with US then 80 percent weights will be assigned to changes in nominal exchange rate of Pakistani Rupee against Dollar

and the remaining **20 percent** weights will be assigned to our nominal exchange rate against Pound Sterling.

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# Calculation - Trade Weighted Exchange Rate

- For instance if rupee depreciates against dollar by 50 percent and it appreciates against sterling by 30 percent then change in country's Trade-Weighted exchange rate will be:

$$(0.8 * -50) + (0.2 * 30) = -34\%$$

- This shows that Pakistani Rupee overall depreciated by 34 percent against the currencies of its trading partners. This means that 1 unit of Pakistani currency buys fewer units of foreign currencies.

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# Trade Weighted Exchange Rate

- Trade Weighted exchange rate gives a quick idea of how a country's currency performed against a basket of other currencies.
- If Trade Weighted exchange rate **appreciates** it means that the given currency appreciated against the majority of other currencies and vice versa.

# Nominal versus Real Exchange Rate

- Whereas Nominal exchange rates show how many units of one currency will be needed to **exchange / buy certain units** of another currency on the foreign exchange market, Real exchange rate shows how many units of 2 currencies will be needed to buy same basket of goods in their respective countries.

# Nominal versus Real Exchange Rate

- For instance if Pakistan's exchange rate against US dollars is  $\$ 1 = \text{Rs } 150$  then this being nominal exchange rate only shows that we need Rs 150 to buy \$ 1 or to put it differently we will need Rs 150 to buy \$ 1.

- The Real exchange rate will show how many Rupees are needed to buy the same basket of goods in Pakistan that \$ 1 buys in US.

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# Real Exchange Rate

- So if prices in Pakistan are relatively low compared to US then our Real exchange rate with US will be higher than our Nominal exchange rate. For instance it will be  $\$ 1 = \text{Rs } 100$  or something less than Rs 150. This shows that less units of Rupees are needed to buy the same basket of goods in Pakistan as  $\$ 1$  buys in US.

# Real Exchange Rate

- Or the other hand, if relative prices are higher in Pakistan then our Real exchange rate will be  $\$ 1 = \text{Rs } 180$  or something higher than Rs 150 showing that more units of Rupees are needed to buy same basket of goods in Pakistan as \$ 1 buys in US.

# Real Exchange Rate

- Hence Real exchange rates give a better idea of purchasing power of 2 currencies in their respective countries which can be quite useful of an information in different types of analysis.