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4. The global economy / 4.5 Exchange rates

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Floating exchange rates

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Determination

An exchange rate is the value of a currency expressed in terms of another currency. For example, if you travel from the US to the Philippines, and you would like to exchange 100 US dollars for the equivalent in PHP (Philippine pesos), you would find out that 1 USD equals 51 PHP (at April 16, 2020). So 100 US dollars would give you 5100 PHP.

The table below shows various exchange rates in April 2020. For example, it indicates that 1 euro is worth 1.07 USD and 1 USD is equal to 116 Japanese yen.

Table 1. Exchange rates for various currencies, correct in April 2020 (Source: Investing.com UK).

Currency	Exchange rate
EUR/USD	1.07
USD/JPY	116
GBP/USD	1.23
USD/CHF	0.97
USD/CAD	1.40
AUD/USD	0.63
EUR/GBP	0.87

If you would like to exchange your 100 USD into Philippine pesos, you would not exchange directly on the Forex market. You would probably go to an official bank or an authorised money exchange house. Those institutions would charge a different rate from the ones found on the Forex market. The bank would sell to you at a higher rate and buy from you at a lower rate. That is how the bank makes money from the exchange.

A floating exchange rate (or flexible exchange rate) is a system where the value of the currency is determined by the forces of supply and demand for that currency on the foreign exchange market. The currency would be **allowed to float freely without any government interference**.

Figure 1 shows the market for pounds sterling (GBP). The y-axis measures the price of pounds sterling, expressed in USD. The x-axis measures the quantity of pounds sterling in the market.



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⚠ Be aware

Be aware that the quantity of pounds sterling in the x -axis of **Figure 1** is not the total quantity of currency in existence. Instead, think of the x -axis as the amount of currency brought to the foreign exchange (Forex) market on a daily basis.

The demand curve on the diagram represents all individuals/banks/companies who would be able and willing to buy pounds sterling in the foreign exchange market using USD. The supply curve represents anyone in possession of pounds sterling who would be able and willing to exchange them for USD. The intersection of the supply and demand represents the equilibrium point where the exchange rate is determined. In this case, 1 pound sterling equals 1.23USD.

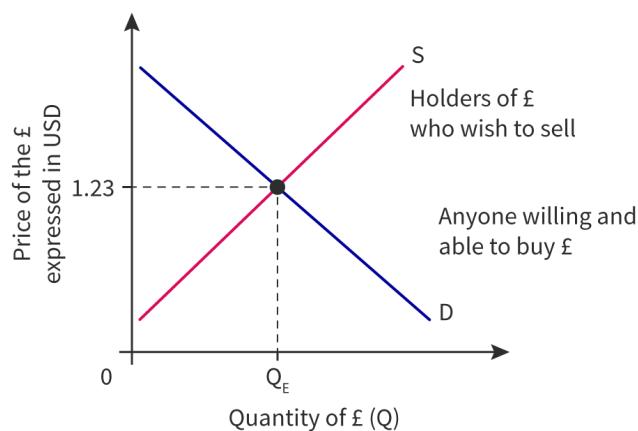


Figure 1. The market for pounds sterling expressed in USD.

More information for figure 1

The image depicts a graph showing the market for pounds sterling (GBP) expressed in USD. The X-axis represents the quantity of pounds sterling (Q), while the Y-axis represents the price of the pound sterling in USD. The graph features a downward-sloping demand curve labeled "D" representing individuals, banks, and companies who wish to buy pounds, and an upward-sloping supply curve labeled "S" indicating holders of pounds who wish to sell them. The intersection point of these curves signifies the market equilibrium where the exchange rate is determined, in this instance, at 1.23 USD for 1 pound sterling.

Student view

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Demand for currencies is determined by anyone who would like to buy the currency, and this includes many different people. Supply refers to anyone in possession of the currency who is willing and able to sell it, not just producers of the currency or the central bank.

When looking at the market for a currency, it is important to understand who is demanding the currency and who is supplying it on the foreign exchange market. The reference to the foreign exchange market is crucial because we are not referring to the overall demand for and supply of money in the economy.

Think about when you travel abroad and you go to the bank to change your money into a foreign currency. You are supplying your currency (this increases supply of your currency) and demanding the foreign currency (this increases demand for the foreign currency) within the foreign exchange market. You are doing this because you need the foreign currency in order to buy goods and services overseas and enjoy your holiday. However, there are many other reasons why various people enter the foreign exchange market and together, they will have an impact on the value of the currency.



Let us consider the market for the **pound sterling (GBP)**.

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The demand for the pound sterling (GBP) comes from:

- People overseas who want to buy British exports
- People overseas who want to invest in the UK. This can either be a long-term investment, known as foreign direct investment, or a short-term portfolio investment, known as hot money. Portfolio investment is also known as hot money because it is always on the move, chasing the best return by moving from country to country
- People visiting the UK from abroad
- Speculators in foreign exchange
- Central banks

The supply of the pound sterling (GBP) comes from:

- People in the UK who want to buy imports
- People in the UK who want to invest overseas (foreign direct investment or portfolio investment)
- People from the UK travelling abroad
- Speculators
- Central banks

If there is any change in the factors that influence the decisions of these people or institutions, then the demand and/or supply of GBP will change and its price against other currencies will alter.

Exam tip

When you are analysing a currency on an exchange rate diagram, you are looking at the price and quantity of that currency expressed in another currency. You can see that **Figure 1** refers to the price of pounds sterling expressed in USD. In your exam, you should always include these details on your y-axis, to avoid any confusion.

Always try to be realistic with your examples and labels. Reading economic articles and being aware of some exchange rate values can be very helpful while writing your essays.

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Depreciation and appreciation of a currency

In a **floating exchange rate system**, an increase in the value of a currency in terms of another is called appreciation. A decrease in the value of a currency in terms of another is called depreciation.

Important

Please note that in a fixed exchange rate system, a currency would have a revaluation (an increase in value) or a devaluation (a decrease in value), as you will learn later on.

The terms ‘appreciate’ and ‘depreciate’ must only be used while referring to a currency in a **floating exchange rate system**.

The exchange rate will change if there is any change in the demand for and/or the supply of the currency. The demand for and the supply of the currency depend on whether there are any changes to any factors that influence the decisions of the people in the foreign exchange market.

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In **Figure 2**, if the demand for GBP increases because American citizens are importing more goods from the UK, the demand curve for GBP will shift to the right. Therefore the value of GBP **will appreciate in terms of USD**. For example, at one point in time, 1GBP was equal to 1.55USD, and after appreciation 1 GBP equalled 1.70USD.

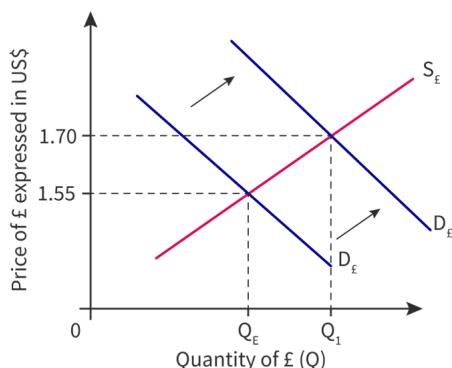


Figure 2. Appreciation caused by a demand increase.

[More information for figure 2](#)

The image is a graph illustrating the appreciation of GBP (British Pound) due to a demand increase. The horizontal axis represents the quantity of GBP, and the vertical axis represents the price of GBP expressed in USD. Two supply and demand curves are shown. The initial demand curve, labeled D_e , and the supply curve, labeled S_e , intersect at an equilibrium point labeled Q_e at a price of 1.55 USD per GBP. The demand curve shifts to the right, labeled D_{e1} , indicating an increase in demand. This creates a new equilibrium point, Q_I , at a higher price of 1.70 USD per GBP, showing the appreciation of the GBP as the demand increases.

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In **Figure 3**, if the supply of GBP decreases because British citizens are buying fewer imports from the US, the supply curve for GBP would shift to the left. Therefore the value of GBP **has appreciated in terms of USD**. For example, at one point in time, 1GBP was equal to 1.55USD, and after appreciation 1 GBP equalled 1.70USD.

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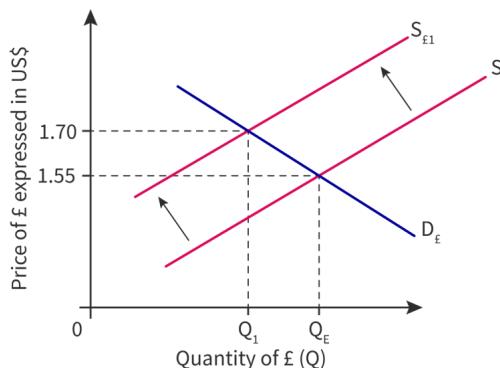


Figure 3. Appreciation caused by a supply decrease.

[More information for figure 3](#)

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In **Figure 4**, if the demand for GBP decreases because there were fewer American investors making investments in British banks after a reduction in British interest rates, the demand curve for GBP would shift to the left. Therefore the value of GBP **has depreciated in terms of USD**. For example, initially 1GBP was equal to 1.55USD, and later 1GBP equalled 1.40 USD.

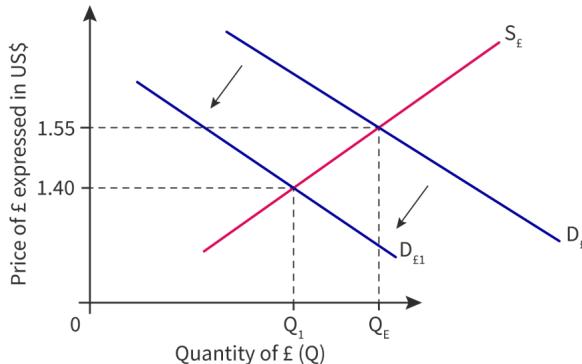


Figure 4. Depreciation caused by a demand decrease.

More information for figure 4

The graph illustrates the depreciation of the British pound (GBP) in terms of US dollars (USD) due to a decrease in demand. The X-axis represents the quantity of British pounds (Q), while the Y-axis shows the price of pounds expressed in US dollars, ranging from 0 to 1.55 USD per GBP. Initially, the demand curve is labeled D_E , intersecting the supply curve S_E at equilibrium quantity Q_E and price 1.55 USD per GBP. The graph shows a shift in the demand curve from D_E to D_{E1} , indicating a leftward shift. This shift results in a new equilibrium point at Q_1 and a lower price of 1.40 USD per GBP, showing that the value of GBP has decreased relative to USD.

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In **Figure 5**, if the supply of GBP increases because British speculators think that the dollar will appreciate more in the near future, the supply curve for GBP would shift to the right. Therefore the value of GBP **has depreciated in terms of USD**. For example, initially 1GBP was equal to 1.55USD, and later 1 GBP equalled 1.40USD.

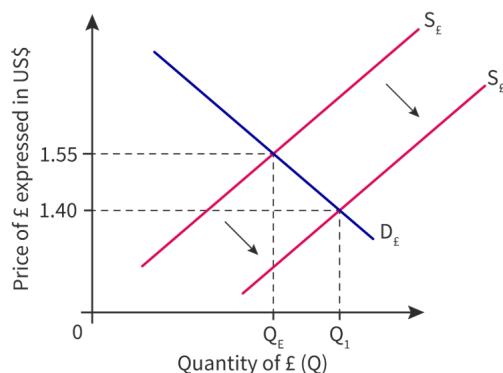


Figure 5. Depreciation caused by a supply increase.

More information for figure 5

The graph illustrates the relationship between the price and quantity of British pounds (GBP) in terms of U.S. dollars (USD). The X-axis represents the quantity of GBP, marked as Q, while the Y-axis shows the price of GBP expressed in USD. Two supply curves are depicted: the initial supply curve S_e and the increased supply curve S_{e1} , which is shifted to the right. The demand curve, labeled D_e , intersects both supply curves. Originally, the equilibrium point is at QE where the price is 1.55 USD per GBP. After the supply increase, the new equilibrium moves to $Q1$, where the price is 1.40 USD per GBP, indicating depreciation in the value of GBP relative to the USD.

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Activity

Real-life examples are essential for your essays and the Internal Assessment. You should keep up to date with the news so that you can offer realistic examples. You can find a currency exchange tracker from [cnbc.com](https://www.cnbc.com/currencies/) (https://www.cnbc.com/currencies/). Explore the ups and downs of the currencies of your choice and research the potential reasons for the fluctuations. You can do this on your own, or you can create a team where each member investigates different currencies and then shares their findings with the group.

Try looking at the monthly fluctuation of the euro in terms of the US dollar (EUR/USD), or the pound sterling in terms of the US dollar (GBP/USD), or the US dollar in terms of the Turkish lira (USD/TRY).

You could also type the currency codes into Google to see the historical data of the exchange rates for the last fifteen years, and then click on ‘top stories’ to read articles about the currency rate fluctuations. Example currency codes: (EUR/USD), (GBP/USD), (USD/TRY).

Here are some websites where you can find relevant information and articles about currency exchange.

www.currenciesdirect.com (https://www.currenciesdirect.com/en/news/currency-news)

[cnbc.com/currencies/](https://www.cnbc.com/currencies/) (https://www.cnbc.com/currencies/)

International Mindedness



While exploring different articles for real-life examples, try to select a diverse group of countries to discuss. The majority of students discuss events related to the USD and the pound sterling (GBP). You can show international mindedness by discussing issues related to other countries.

Calculating the price of a good in different currencies

The price of a good can be calculated in different currencies once you know the exchange rate. For example, if you know that the exchange rate of the USD (US dollar) to the BRL (Brazilian real) is USD 1 = BRL 4.2, you can calculate the price of the good in each currency.

Let us use the example from section 4.5.0, when you arrived at the airport in Rio de Janeiro. In this example, the original currency is the USD, and the secondary currency is the BRL.

Use the exchange rate USD 1 = BRL 4.2 to solve all three examples below.

Worked example 1:

- Imagine you would like to know the equivalent price of a USD 2 soft drink in BRL. Calculate the answer.

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Once you know the exchange rate (USD 1 = BRL 4.2), you need to **multiply** the original currency by the rate:

$$2 \times 4.2 = \text{BRL } 8.4$$

A USD 2 soft drink would be equivalent to BRL 8.4, at an exchange rate of USD 1 = BRL 4.2.

2. Imagine that you would like to know how much a USD 30 haircut in San Diego, California would cost in BRL. Calculate the answer.

Once you know the exchange rate (USD 1 = BRL 4.2) you should **multiply** the original currency by the rate:

$$30 \times 4.2 = \text{BRL } 126$$

A USD 30 haircut would be equivalent to BRL 126 at an exchange rate of USD 1 = BRL 4.2.

3. Imagine that you would like to know how much a BRL 15 souvenir at the Brazilian airport would cost in USD. Calculate the answer.

Once you know the exchange rate (USD 1 = BRL 4.2), if you would like to bring the conversion back to the original currency, you need to **divide** the secondary currency value by the rate:

$$15 / 4.2 = \text{USD } 3.57$$

A BRL 15 souvenir would be equivalent to USD 3.57 at an exchange rate of USD 1 = BRL 4.2.

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Section

Complete section with 3 questions

Feedback

Start questions

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assistance**Exam tip**

In order to show analytical and evaluative skills through your essays, and especially in paper 2, you should discuss the impact of exchange rate changes on different stakeholders.

The potential implications can be positive or negative, and the themes below could give you plenty of arguments to discuss the consequences.

Changes in the exchange rate would impact many areas of a country's economy. In this section you will learn about some of the consequences on different areas of the economy:

- The inflation rate
- Economic growth
- Unemployment
- The current account balance
- Living standards

Inflation rate

The impact of a change in the currency of a country will depend on the nature of its economy.

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On one hand, a country that relies on imports of essential raw materials, as India does with oil (it is the third-biggest importer of oil in the world according to the [World Factbook](https://www.cia.gov/library/publications/the-world-factbook/rankorder/2243rank.html) (<https://www.cia.gov/library/publications/the-world-factbook/rankorder/2243rank.html>))), will be negatively affected by currency depreciation, as resource prices will be relatively more expensive. This can lead to a common problem known as cost-push inflation, which is typical for any resource-dependent country that has to import oil.

Whether a producer will pass on the higher cost of imported raw materials to its consumers depends very much on the elasticity of demand for its product.

In **Figure 1** below, with the increase in the cost of production, due to the depreciation of the currency, the SRAS₁ would shift leftwards to SRAS₂. The price level would increase from PL₁ to PL₂ and the economy would produce below its full potential at Y_{rec}.

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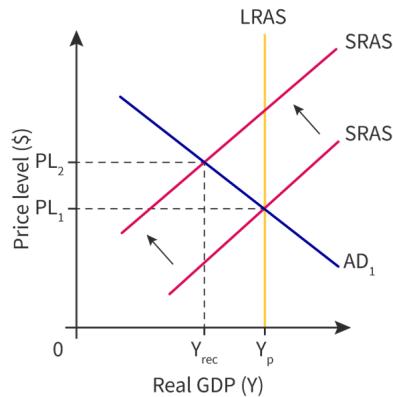


Figure 1. Cost-push inflation caused by currency depreciation.

More information for figure 1

The graph depicts the concept of cost-push inflation caused by currency depreciation. It features labeled axes with the X-axis representing Real GDP (Y) and the Y-axis representing Price level in dollars (\$). Key data points and shifts include:

- The vertical yellow line labeled LRAS (Long-Run Aggregate Supply)
- Two upward sloping curves labeled as SRAS₁ (Short-Run Aggregate Supply 1) shifting to the left to SRAS₂ (Short-Run Aggregate Supply 2), indicating a decrease in aggregate supply
- A downward sloping blue curve labeled AD₁ (Aggregate Demand)
- The initial price level PL₁ increases to a new price level PL₂, marked by horizontal dotted lines
- Real GDP shifts from a previously higher equilibrium point, Y_p, to a lower level at Y_{rec}, signifying reduced economic output

This graph illustrates how a depreciation in currency causes the short-run aggregate supply to decrease, leading to higher price levels (inflation) and reduced real GDP, highlighting a cost-push inflation scenario.

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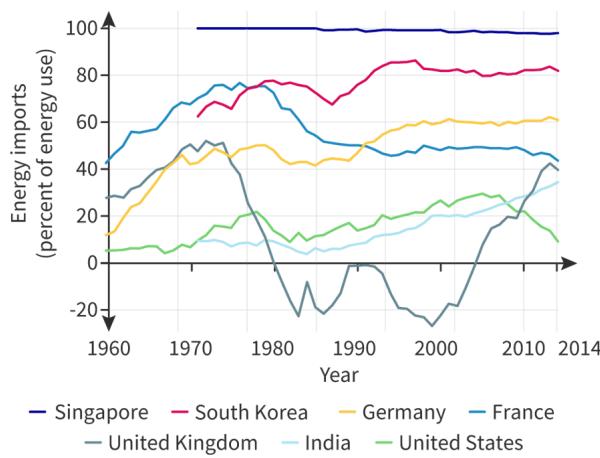


Figure 2. A selection of countries and the percentage of energy use that they import. (How important would it be for Singapore to monitor the exchange rate of its currency, the Singapore dollar?)

Source: "Our World In Data (<https://ourworldindata.org/grapher/energy-imports-energy-use?country=USA+DEU+FRA+GBR+IND+KOR+SGP>)"

More information for figure 2

The image is a line graph displaying the percentage of energy imports as part of the total energy use for several countries over the years 1960 to 2014. The Y-axis represents energy imports as a percentage of energy use, ranging from -20% to 100%. The X-axis displays the year, from 1960 to 2014. Different colored lines represent each country: Singapore (blue), South Korea (pink), Germany (yellow), France (light blue), United Kingdom (gray), India (light green), and United States (green).

Key observations include: - Singapore shows consistently high energy import percentages, remaining near 100% throughout the timeframe. - South Korea's energy imports increased sharply between 1970 and 1990, reaching over 90%, and then became relatively stable. - Germany's energy imports generally increased until around 2005, reaching about 70%, before stabilizing. - France's percentages exhibit variability, fluctuating widely between 20% and 60%. - The United Kingdom shows a significant decrease in energy imports after the 1970s, dipping below 0% before recovering in multiple spikes. - India's energy imports remained low until around 2000, after which there was a gradual increase. - The United States maintained lower import percentages compared to other countries, starting negative, then having gradual increases, with an upward trend post-2000.

Overall trends depict varying levels of dependency on energy imports by different countries across the decades.

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On the other hand, a depreciation may influence net exports ($X - M$) by increasing the demand for exports (because they have become cheaper for foreigners) and decreasing the demand for imports (because they have become more expensive for domestic consumers). As net exports are a determinant of aggregate demand, the depreciation of a currency may be the cause of demand-pull inflation in an economy.

If we consider the Keynesian model in **Figure 3**, we can see that, depending on where an economy finds itself, demand-pull inflation **may** occur if the economy is operating close to the full employment level. If the economy is sitting at Y_1 , the shift of AD_1 to AD_2 would **not** cause inflation. The inflationary pressure from PL_1 to PL_2 would occur if there was a shift of AD_2 to AD_3 .

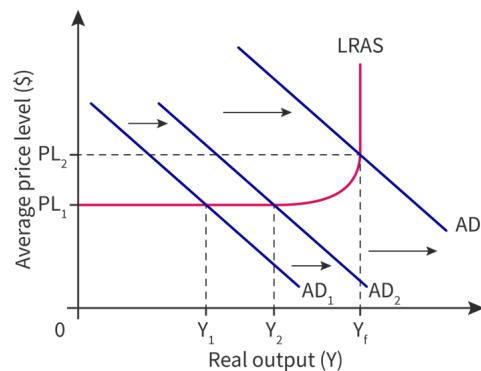


Figure 3. Demand-pull inflation caused by currency depreciation, if there is a move from AD_2 to AD_3 .

More information for figure 3

The graph illustrates the relationship between real output (Y) and average price level (\$) with three aggregate demand curves (AD_1 , AD_2 , AD_3) and a Long-Run Aggregate Supply curve (LRAS). The X-axis represents real output, marked with points Y_1 , Y_2 , and Y_f , indicating different levels of output. The Y-axis shows the average price level, marked at PL_1 and PL_2 .

AD1 starts at a lower level, AD2 is slightly higher, and AD3 is the highest, indicating shifts to the right. The shift from AD2 to AD3 suggests an increase in demand-pull inflation, leading to a higher price level from PL1 to PL2. The LRAS curve is vertical, indicating full employment output at Yf, where the economy cannot produce more without causing inflation.

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Economic growth

Changes in currency values have a significant impact on economic growth, especially if the currency is volatile or the country is overly reliant on trade. A depreciating currency is good for exports but it is not so good for imports, and vice versa. Therefore, in theory, aggregate demand should increase when the value of the currency falls. However, in practice this is not always what happens.

Let us consider Singapore. As seen in **Figure 2** above, it imports almost 100% of the energy that it consumes. If the Singapore dollar SGD depreciates, it will cost more to import energy, leading to cost-push inflation, which would impair economic growth.

A currency usually depreciates because holders of the currency want to sell, and the effect of the currency changing must be analysed in that context.

So, it is perfectly possible that a currency depreciation is a result of negative economic news from that country. If that is the case, then we can also argue that a currency depreciation provides some relief from whatever that bad news is. For example, since the UK voted to leave the EU in a referendum in June 2016, there has been a sharp drop in the value of the pound sterling (GBP) in terms of the euro (EUR).

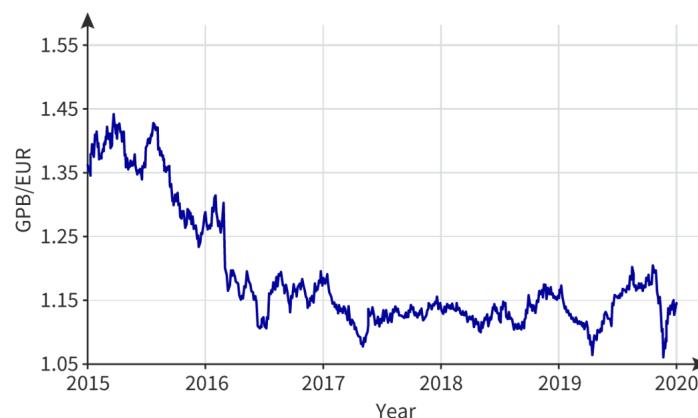


Figure 4. Historical exchange rate data for the pound sterling (GBP) in terms of the euro (EUR).

Source: [xe.com \(http://xe.com/\)](http://xe.com/)

More information for figure 4

The image is a line graph representing the historical exchange rate data for the pound sterling (GBP) in terms of the euro (EUR) from 2015 to 2020. The X-axis is labeled "Year" and spans from 2015 to 2020, while the Y-axis is labeled "GBP/EUR" with values ranging from 1.05 to 1.55. The graph shows a downward trend, particularly sharp after 2016, indicating a depreciation of the pound against the euro. From 2015 to mid-2016, the exchange rate is above 1.35. Following the Brexit referendum in June 2016, the rate drops steeply, reaching below 1.20 by late 2016. From 2017 onwards, the rate fluctuates mostly between 1.10 and 1.20 with some minor spikes and dips, showing relative stability compared to the post-referendum period.

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The fall in the value of the pound will help to make UK exports more price-competitive overseas, which may lessen the impact of the potential repercussions of the UK losing some of its business ties with Europe.

In addition, currency stability instils confidence in investors and producers who want to trade with other countries. As with inflation, rapidly changing exchange rates damage confidence and make planning for the future difficult.

Employment

If a **currency appreciates**, exports become more expensive, so the quantity demanded for exports may decrease, depending on their elasticity. This means that unemployment may increase in the exporting country. On one hand, jobs would be lost in the export industries because of the potential decrease in quantity demanded. On the other hand, there could be an increase in employment for domestic industries which could take advantage of cheaper prices for imported raw materials and components.

Alternatively, if a **currency depreciates**, prices of exports become less expensive, so the quantity demanded for exports may increase, depending on their elasticity. This means that unemployment may decrease in the exporting country. Jobs would be created in export industries because of the potential increased quantity demanded driven by the lower prices. At the same time, there could be an increase in employment in import substitution industries due to the higher prices of imports.

However, if a country is heavily dependent on imported raw materials, like South Korea and its energy imports (see **Figure 2** above), the cost of production would increase, and unemployment would rise due to a left shift of the SRAS curve. In **Figure 5** unemployment could be represented by the distance Y_p to Y_{rec} .

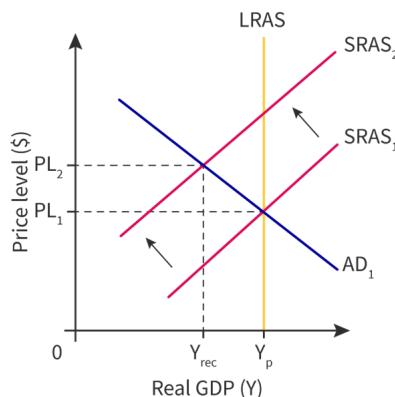


Figure 5. Higher unemployment due to higher cost of production.

More information for figure 5

The image is a graph depicting an economic model with two axes. The vertical axis is labeled "Price level (\$)", while the horizontal axis is labeled "Real GDP (Y)". The graph features several lines:

1. A downward sloping line labeled "AD1" representing Aggregate Demand, moving from the upper left to the lower right.
2. Two upward sloping lines labeled "SRAS1" and "SRAS2", representing Short Run Aggregate Supply, with SRAS2 positioned to the right of SRAS1.
3. A vertical line labeled "LRAS", representing Long Run Aggregate Supply, located to the right of the equilibrium intersection of AD1 and SRAS1.

Intersections occur at PL_1 and PL_2 on the Y-axis, representing different price levels, with a corresponding shift in real GDP from Y_{rec} (Recession) to Y_p (Potential GDP). The lines suggest a shift in supply and demand affecting price levels and GDP.

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The current position of the economy in relation to the full employment of resources is another important aspect of using the Keynesian model. For an economy operating at or close to full employment, the increase in AD from AD_4 to AD_5 could reduce the natural rate of unemployment in the short run. However, it would also create demand-pull inflation. Whereas, if the economy was operating at Y_1 level of output, the shift in AD from AD_1 to AD_2 would only reduce unemployment.

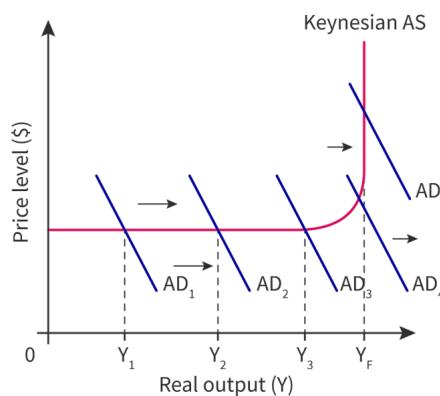


Figure 6. Reduction of unemployment in the Keynesian model.

More information for figure 6

The graph illustrates a Keynesian model with Price level (\$) on the Y-axis and Real output (Y) on the X-axis. The red curve represents the Keynesian Aggregate Supply (AS). The blue lines indicate different Aggregate Demand (AD) levels, labeled as AD_1 , AD_2 , AD_3 , AD_4 , and AD_5 . The X-axis features several output levels, including Y_1 , Y_2 , Y_3 , and Y_F , which indicate different states of output. The AD lines shift from left to right, displaying potential shifts in aggregate demand over time. The graph demonstrates the interaction between the AD and AS curves at various levels of output and price.

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Student view

The impact of a currency fluctuation would be heavily dependent on the composition of the industries in a country. The changes in currency values could harm some industries, while helping other industries. To understand the impact a currency fluctuation will have on an individual country, it is important to think about what that nation's productive focus is; for example, the balance between its import and export industries.

Current account balance

The current account refers to the part of the balance of payments that consists of the balance of trade, the income balance and current transfers between a country (or monetary union) and the rest of the world

Making connections

The current account will be dealt with in detail when you study [subtopic 4.6 \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30345/\)](#).

The exchange rate fluctuation would impact both the levels of imports and exports of a nation depending on meeting the Marshall—Lerner condition, also studied in subtopic 4.6 by HL students.



A net exporter's current account balance will be positively affected by a currency depreciation in the long run, but only if the demand for its exports and imports is relatively elastic.

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It also depends on the approach that exporters take to the depreciation of the currency. For example, exporters may decide to keep the export price the same by raising the domestic price, and therefore take higher profits. A net importer may also see their trade deficit improve somewhat. The relationship between the exchange rate and the balance of trade will be dealt with in detail in [subtopic 4. 6 \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30345/\)](#).

Living standards

The impact of fluctuations in currency exchange rates changes significantly depending on the perspective of the country. Let us consider the United States and Haiti.

In the **US**, if the dollar gains value in terms of other currencies, it will make imports cheaper. This will allow the average citizen to buy more fruit and vegetables from abroad, which will improve their living standards. Considering that the US is the richest country in the world, a considerable portion of its society would benefit from this.

However, if the dollar is strong, companies would be inclined to outsource jobs abroad. That would most likely mean fewer jobs for workers in the US. This would lower their living standards. Manufacturing jobs would be lost to developing nations when companies move their factories abroad to take advantage of lower costs of production.

With a strong dollar, foreign trips would become cheaper and the American citizens who could afford international travel would benefit from it. That would improve their living standards.



Student view



Figure 7. Haiti on the map.

Credit: Getty Images MarkRubens

More information for figure 7

The image is a map featuring Haiti, with a focus on its geographical location in the Caribbean. A small flag of Haiti is pinned on the map, marking the country's position. The map shows the surrounding regions, including the Dominican Republic to the east, and the islands in the Caribbean Sea. Cities like Port-au-Prince are labeled, providing context to the country's key locations. The map serves to illustrate Haiti's place within the Caribbean region, offering geographical context.

[Generated by AI]

Now let us explore the impact of currency fluctuation in **Haiti**. A strong Haitian gourde (HTG) would hurt the tourism industry. As Haiti is a developing nation, having fewer tourists would lower an important source of income for the citizens of the island.

Total exports would decrease because it would be relatively more expensive to buy items from Haiti. This would lower the living standards of all those involved with exporting industries.

However, a lower exchange rate for the Haitian gourde would allow remittances to be worth more in Haiti. Remittances sent to Haiti account for more than 30% of its GDP, so a weaker Haitian gourde would significantly improve the living standards of its citizens.

As **Figure 8** shows, there are many countries in the world which receive a considerable portion of their GDP from remittances. In fact, the global remittance flow is worth more than half a trillion dollars, and is worth more than the total FDI of the world.

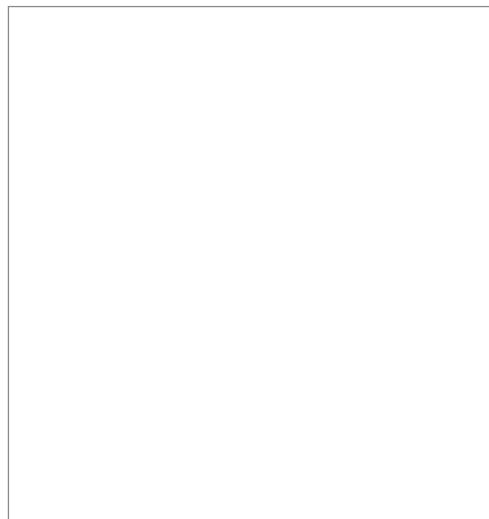


Figure 8. The ins and outs of remittance flows.

data: <https://wits.worldbank.org/CountryProfile/en/Country/WLD/Year/LTST/TradeFlow/EXPIMP/Partner/by-country>

(<https://wits.worldbank.org/CountryProfile/en/Country/WLD/Year/LTST/TradeFlow/EXPIMP/Partner/by-country>)

More information for figure 8



Student
view

The interactive depicts remittances from different countries. The map displays countries that receive the highest total remittance inflows in absolute dollar terms. Users can switch between the data for Top remittance recipients as a percentage of GDP or Top remittance recipients by amount.

When Top remittance recipients as a percentage of GDP is selected, the size of the yellow circles corresponds to the total remittance received by each country. India (\$82.2B) leads the list, followed by China (\$70.3B), Mexico (\$38.7B), and the Philippines (\$35.1B). Other significant recipients include Egypt, Nigeria, Pakistan, Bangladesh, Vietnam, and Ukraine. The countries with large migrant populations send money back home, often contributing significantly to household incomes and national economies. The larger circles represent higher remittance amounts, showing strong inflows in South and East Asia, Latin America, and parts of Africa.

When Top remittance recipients by amount is selected, the red circles illustrate the economic dependence on remittances, with smaller economies being highly reliant on these inflows for financial stability. Tonga (38.5%) has the highest percentage, followed by Haiti (34.3%), Tajikistan (29.7%), and Nepal (29.9%). Other notable countries include the Kyrgyz Republic, El Salvador, Honduras, Samoa, Comoros, and Egypt. The size of the red circles represents the proportion of GDP that comes from remittances.

Large economies like India and China receive the most money in absolute terms, while smaller economies such as Tonga and Nepal depend more on remittances as a share of their GDP. It contrasts total remittance inflows with economic dependence on these funds, offering insights into global labor migration and financial reliance on diaspora communities.



Overview

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The bottom line is that the impact of currency fluctuations on living standards is very variable. Your own living standards may improve or worsen depending on where you are in the economy and which country you live in.

① Exam tip

The consequences of changes in the exchange rate is a very rich topic with multiple combinations of implications. Therefore, you must choose a country and a perspective within the country to formulate clear and coherent arguments. You should investigate the economic scenarios of different countries and apply the theory to real-life examples.

Case study

Causes and consequences of exchange rate changes.

The Brazilian central bank has reached its record low.



Figure 9. Central Bank of Brazil building, Brazil.

Credits: Getty Images mtcurado



Student view

In section 4.5.2 ([/study/app/pp/sid-186-cid-754025/book/changes-in-demand-and-supply-for-a-currency-id-30672/](#)) you studied ten different factors that could change the value of a currency. In Brazil, the central bank decided to lower its interest rates to a record low of 3% in May of 2020. The Brazilian central bank has repeatedly reduced its interest rates since mid-2019. Look at the graph [here ↗](#) (<https://tradingeconomics.com/brazil/interest-rate>) to understand the impacts of a low interest rate on the value of 1 US dollar (USD) in terms of the Brazilian real (BRL).

As the interest rates are lowered, the attractiveness of Brazil in the eyes of foreign portfolio investors is reduced. This action from the Brazilian central bank may have made things even worse because all emerging markets are losing investors due to the COVID-19 pandemic.

- Draw a fully labelled diagram explaining this scenario.
- Read [this article ↗](#) (<https://en.mercopress.com/2020/05/07/brazil-lowers-interest-rates-to-a-record-low-3-with-suggestions-of-a-similar-cut-in-june>) and explain why Carlos Kawall, director at Asa Bank and a former Treasury Secretary, has said: 'We are seeing that the economy is going through a very profound crisis, and the right policy combination is a very low interest rate and a very low exchange rate.'
- What is the intended consequence of lowering interest rates?



- What is the intended consequence of depreciating the BRL in terms of the USD?

Theory of Knowledge

The foreign exchange market, commonly known as the Forex market, handles trillions of dollars worth of trades every day. As currencies are bought and sold, the values of these currencies appreciate or depreciate, creating profits or losses for traders. Currency speculators sell or buy up a currency, or group of currencies, to manipulate this exchange rate. This form of currency speculation or 'rigging' has seen the exchange rate of many currencies collapse, in 2020, the currencies of [Yemen](https://www.al-monitor.com/pulse/originals/2020/07/yemen-economy-freefall-currency-saudi-houthi-war.html) (<https://www.al-monitor.com/pulse/originals/2020/07/yemen-economy-freefall-currency-saudi-houthi-war.html>), Azerbaijan and the [UK](https://www.thearticle.com/the-fall-of-the-pound) (<https://www.thearticle.com/the-fall-of-the-pound>) were all subject to speculative attacks.

The effects of a speculative currency attack can be devastating. The Asian Crisis in 1997 created a series of speculative attacks across Asia. Indonesia suffered the most. The Indonesian stock market lost [76%](https://www.winton.com/longer-view/east-asian-crisis-1997) (<https://www.winton.com/longer-view/east-asian-crisis-1997>) of its value. The currency depreciated by [83.2%](https://en.wikipedia.org/wiki/1997_Asian_financial_crisis) (https://en.wikipedia.org/wiki/1997_Asian_financial_crisis), leading to a deep recession and GDP falling by almost [18%](https://www.macrotrends.net/countries/IDN/indonesia/gdp-growth-rate) (<https://www.macrotrends.net/countries/IDN/indonesia/gdp-growth-rate>). As the rupiah lost value, it created a frenzy of panic buying, crowds in Jakarta had cleaned out all shops and supermarkets to get rid of their melting rupiah and to stock up. In May 1998, the President was forced to resign, leading to civil unrest and the [Jakarta Riots](https://www.thejakartapost.com/academia/2018/05/25/looking-back-to-may-1998-20-years-forward.html) (<https://www.thejakartapost.com/academia/2018/05/25/looking-back-to-may-1998-20-years-forward.html>). Although the Jakarta Riots started as a political demonstration they quickly devolved into violence. Anger was directed towards the Chinese—Indonesians, and they were explicitly targeted. Businesses and shops were burned to ground. [Over 1,000 people were killed](https://www.scmp.com/lifestyle/arts-culture/article/3009984/may-1998-jakarta-riots-against-chinese-we-cannot-heal-what) (<https://www.scmp.com/lifestyle/arts-culture/article/3009984/may-1998-jakarta-riots-against-chinese-we-cannot-heal-what>) — most were burnt alive.

- Is it ethical for speculators to create economic devastation in another country in the pursuit of profit?
- Knowledge question: To what extent is ethics essential to keep a check on the economic behaviour of individuals?

Complete section with 3 questions

[Start questions](#)



[◀ Previous section](#) (/study/app/pp/sid-186-cid-754025/book/changes-in-demand-and-supply-for-a-currency-id-30672/)

[Next section](#) (/study/app/pp/sid-186-cid-754025/book/consequences-of-changes-in-the-exchange-rate-id-30673/)



Changes in demand and supply for a currency

Section

[Feedback](#)


Factors that affect exchange rates

There are many factors that can have an impact on exchange rates. In this section we will discuss some of them, including:

- Foreign demand for exports
- Domestic demand for imports
- Inward/outward foreign direct investment
- Inward/outward portfolio investment
- Remittances
- Speculation
- Relative inflation rates
- Relative interest rates
- Relative growth rates
- Central bank intervention

Trade (demand for imports and exports)

- **Foreign demand for exports** affects the levels of demand for a currency. Ghana is one of the leading producers of cocoa beans in the world. If the United States' demand for cocoa beans increases, that will increase the demand for the Ghanaian cedi (GHS). That could appreciate the value of the GHS in terms of the USD.

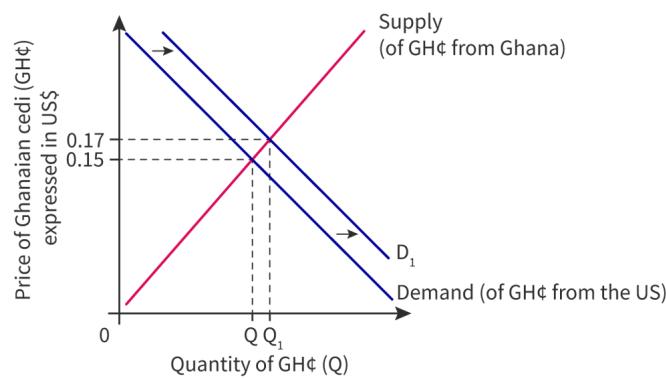


Figure 1. Appreciation of the GH₵ due to increased demand for cocoa beans.

[More information for figure 1](#)

The image is a graph showing supply and demand for the Ghanaian cedi expressed in US dollars. The X-axis represents the quantity of Ghanaian cedi (Q), with values from 0 to an unspecified upper limit, marked with two points: Q and Q₁. The Y-axis represents the price of the Ghanaian cedi in US dollars, with values marked at 0.15 and 0.17.



There are two lines demonstrating demand, labeled D and D₁, and one line representing supply.

The demand lines (D and D₁) are in blue, with D starting from the top left and moving towards the bottom right, showing a decrease in demand. The second demand line, D₁, is parallel and to the left of D, indicating a shift in demand.

The supply line is in red, starting from the bottom left and moving towards the top right, indicating an increase in supply.

The intersection of supply and demand lines suggests market equilibrium points, affecting both the price and quantity of the Ghanaian cedi.

[Generated by AI]

- **Domestic demand for imports** will change the levels of demand for a currency. Consider the previous example. The population of Ghana is enjoying greater income levels due to the increased global demand for cocoa beans. If the residents of Ghana now use their higher income to demand more pharmaceuticals from the United States, there will be an increase in the supply of GHS to exchange for USD. This will shift the supply of the Ghanaian cedi and depreciate the value of the GHS in terms of the USD.

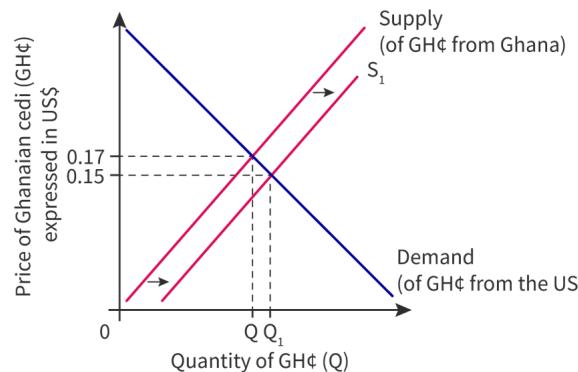


Figure 2. Depreciation of the GHS due to Ghana's increased demand for pharmaceuticals from the US.

More information for figure 2



The image is a graph representing the supply and demand for Ghanaian cedi (GH₵) in relation to US dollars. The X-axis is labeled 'Quantity of GH₵ (Q)' and spans from 0 to a higher quantity, marked as Q and Q₁. The Y-axis represents the 'Price of Ghanaian cedi (GH₵)' expressed in US dollars, with marked prices of 0.15 and 0.17. The graph includes intersecting lines: a blue line indicating demand and a red line showing supply. The dashed arrows show the shift from the initial supply curve to a new one, labeled S₁, indicating an increased supply. This interaction shows the depreciation of the GH₵ due to increased US demand for pharmaceuticals, as the supply line shifts rightward, indicating an increase in quantity and a decrease in price at the new equilibrium.

[Generated by AI]

Foreign direct investment (FDI)

- **Inward FDI** is represented by a foreign firm making the purchase of at least 10% of a company in the domestic economy. The US is the number one receiver of FDI in the world. An increase in investment from abroad would increase demand for the USD, putting upward pressure on its value; or, in other words, it would appreciate the USD.

- **Outward FDI** is represented by a domestic company making an investment in a foreign firm; for example, a US company making investments in China. The US company would have to supply USD to buy the Chinese renminbi yuan. This would put downward pressure on the value of the USD in terms of Chinese yuan; or, in other words, it would depreciate the USD.

Portfolio investment

Portfolio investment abroad consists of foreign ownership of stocks, bonds, mutual funds and other financial instruments. Unlike FDI, portfolio investment does not entail ownership of the businesses or ventures. Instead, it relates to the selling or purchasing of stocks, bonds and other financial instruments. The dynamic of inward/outward portfolio investment and how it affects the exchange rate behaves in the same way as we discussed above for FDI.

Inward portfolio investment is when an external or foreign entity invests in stocks, bonds and other financial instruments. This will appreciate the domestic currency as more of it will be demanded to purchase these financial instruments.

Outward portfolio investment is when investment capital flows out of the country from a local entity to a foreign one in the form of purchasing their stocks, bonds or other financial instruments. The increased supply of the local currency will depreciate its value.

Remittances

Remittance is the transfer of money, usually from foreign workers to their families back home. The US is the biggest sender of remittances in the world, with over USD 150 billion sent all over the world [in 2018 ↗](https://blogs.worldbank.org/peoplemove/data-release-remittances-low-and-middle-income-countries-track-reach-551-billion-2019) (<https://blogs.worldbank.org/peoplemove/data-release-remittances-low-and-middle-income-countries-track-reach-551-billion-2019>).

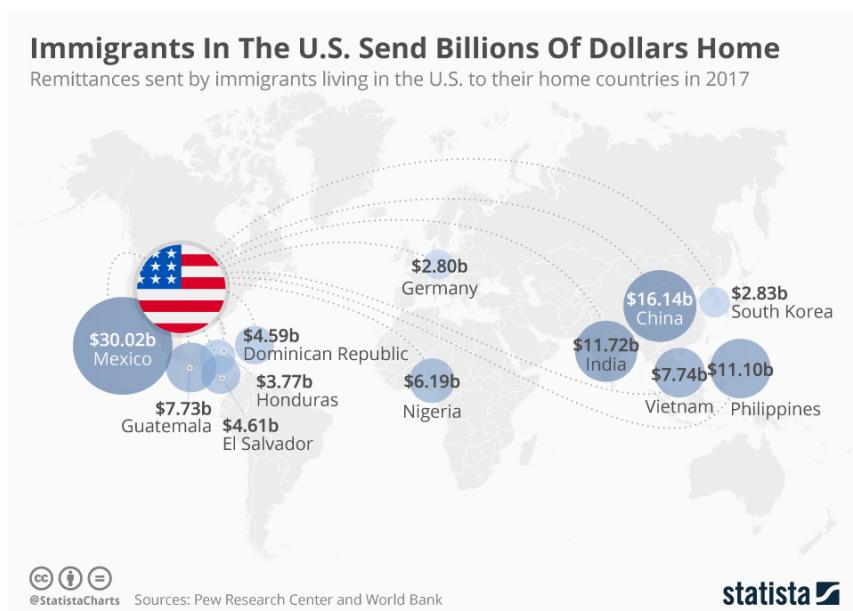


Figure 3. Remittances sent by immigrants living in the US.

Source: Pew Research Centre and World Bank

More information for figure 3

The image is an infographic illustrating the amount of money sent as remittances by immigrants in the United States to their home countries in 2017. It features a world map with various countries highlighted to indicate the remittance flow. Each country's name is accompanied by a circle and a monetary value, indicating the amount of money received. For example, Mexico received \$30.02 billion, China \$16.14 billion, and India \$11.72 billion. Other notable countries include the Philippines with \$11.10 billion, Vietnam with \$7.74 billion, and Guatemala with \$7.73 billion. Dotted lines connect the U.S. to these countries, emphasizing the flow of funds. Additional figures include El Salvador (\$4.61 billion), Dominican Republic (\$4.59 billion), Honduras (\$3.77 billion), Nigeria (\$6.19 billion), Germany (\$2.80 billion), and South Korea (\$2.83 billion).

[Generated by AI]

The inflow of remittances to the Philippines will increase demand for the Philippine peso (PHP), putting upward pressure on its value; or, in other words, it would appreciate the currency.

The outflow of remittances from the US increases the supply of USD, putting downward pressure on its value; or, in other words, it will depreciate the USD.

What do you think the impact of exchange rate changes will be on foreign workers and their families, when sending money back home?

Speculation

The buying and selling of foreign currency in the hope of making a profit from movements in its value is called speculation. It will directly affect the value of a currency.

If speculators believe that a currency will fall in value, they will sell the currency now with the hope of repurchasing it in the future, with the expectation of a lower price. This will lead to an increase in the supply of the currency, which will lead to a fall in its value.

In this way, speculators work towards a 'self-fulfilling prophecy' because as they sell the currency with the expectation that it will depreciate in the future, the simple act of selling their holdings now will directly depreciate the currency.

Student view

One of the most famous examples of speculators making a considerable amount of money was on 'Black Wednesday' in 1992. George Soros and other speculators in the foreign exchange market effectively broke the Bank of England and made billions of dollars' profit in one day. At the time, the GBP was part of the European Exchange Rate Mechanism ([see explanation \(<https://www.investopedia.com/terms/e/exchange-rate-mechanism.asp#:~:text=The%20exchange%20rate%20mechanisms%20came,deviating%20by%20more%20than%206%20and%20its%20value%20was%20fixed%20at%202.95%20DM>\)](https://www.investopedia.com/terms/e/exchange-rate-mechanism.asp#:~:text=The%20exchange%20rate%20mechanisms%20came,deviating%20by%20more%20than%206%20and%20its%20value%20was%20fixed%20at%202.95%20DM)

George Soros speculated that a fall in the value of the pound was inevitable and so he borrowed significant volumes of the pound and sold it at the fixed exchange rate of 2.95 DM. The sale of the pound by Soros and other speculators increased supply of the pound. The pound was already under pressure and the speculators' actions increased the pressure even further.

The Bank of England had tried to protect the currency by increasing interest rates and using its foreign exchange reserves to buy the currency. On the morning of 16 September 1992, the Bank of England was unable to withstand the pressure on the currency any more. The pound was withdrawn from the European Exchange Rate Mechanism and fell in value. Soros then bought the pound back at this lower rate, paid back the institutions he had borrowed from, and walked away with over a billion dollars in profit.

Relative inflation rates

Inflation affects the prices of imports and exports and therefore the demand for imports and exports, which in turn influences the exchange rate.

The concept of relative inflation is used to describe the level of inflation of one country in comparison to another country. Let us assume the inflation rate for Iran to be 22%/year and for Uzbekistan to be 15%/year (2019). Let us also assume that both countries have a stable international trade partnership with each other.

Assume that Uzbekistan's inflation rate has increased from 15%/year to 20%/year, and Iran's inflation rate has stayed unchanged (2020). Now, Iranian consumers would demand less Uzbekistani so'm (UZS) by buying less cotton and fertilisers from Uzbekistan. Iranians would find Uzbekistani exports less attractive because of their increase in prices due to inflation.

In addition, Uzbekistan's citizens would buy more imports from Iran, including tea and fruit, because they are now relatively cheaper. That would increase the supply of Uzbekistani so'm (UZS) to buy Iranian rial (IRR).

The effect of the increase in the relative inflation of Uzbekistan in comparison to Iran's would make the value of the Uzbekistani so'm (UZS) fall in terms of the Iranian rial (IRR), as seen in the diagram below.

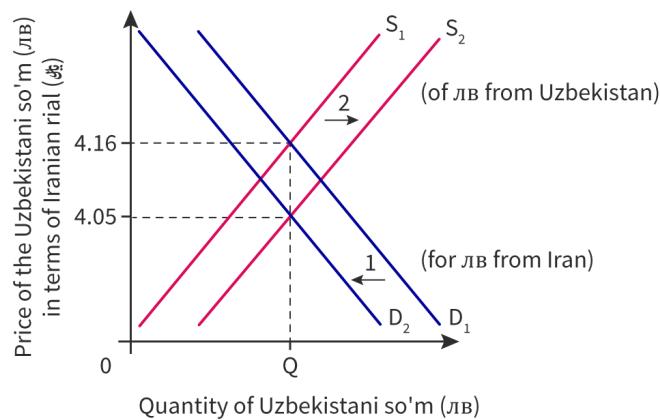


Figure 4. Depreciation of the Uzbekistani so'm (JNB) due to inflation.

More information for figure 4

The diagram shows supply and demand curves illustrating the depreciation of the Uzbekistani so'm (JNB) against the Iranian rial (IRR). The vertical axis represents the "Price of the Uzbekistani so'm (JNB) in terms of Iranian rial (IRR)" with two marked price levels: 4.16 and 4.05. The horizontal axis represents the "Quantity of Uzbekistani so'm (JNB)." Two supply curves, labeled S₁ and S₂, and two demand curves, labeled D₁ and D₂, intersect on the graph. Arrows indicate a movement from D₁ to D₂ (for JNB from Iran) and S₁ to S₂ (of JNB from Uzbekistan), showing shifts in supply and demand. The diagram highlights changes in equilibrium price and quantity due to inflation effects.

[Generated by AI]



A fall in relative inflation would have the opposite effect and the currency would appreciate in value. This is because the demand for the currency would increase as foreigners would want to buy more of the country's exports and the supply of the currency would decrease as people would want to buy fewer imports.

Purchasing power parity theory states that the exchange rate will tend towards a point where a given sum of money will buy the same amount of commodities whatever currency that amount is changed into. This theory suggests that relative prices are the only reason why exchange rates will change, which in reality is not the case.

In fact, many factors play a part in determining the value of a currency, such as confidence levels, the balance of trade, relative inflation, relative interest rates and even a country's debt.

Interest rates

An increase in relative interest rates could lead to an increase in the demand for the currency. This is because the country would become a more attractive place for short-term portfolio investment (hot money) and foreigners would need to demand the currency in order to invest their money in the country.

It could be possible to control inflation levels by increasing interest rates, because this would make it more expensive for firms and households to borrow money. A country might also have higher demand for its exports if it has lower relative inflation levels, because the average prices would become relatively lower. Both factors could appreciate the currency.

Relative inflation and relative interest rates are closely related, and both can influence exchange rates. It is very complex to attempt to control the value of a currency, but ultimately it will be affected enormously by how desirable foreigners perceive the currency to be.

Relative growth rate

The relationship between a country's growth rate and the value of its currency is not direct, but it can be strong. Economic growth can influence the exchange rate and vice versa.



On the one hand, a strong exchange rate can be a sign of a strong economy. Foreign investors would have higher levels of confidence, and that could be an incentive for inflows of FDI and portfolio investments. With greater demand for the currency, there would be upward pressure on its value.

On the other hand, highly valued currencies can make exports more expensive and imports cheaper. As net exports are a determinant of aggregate demand, a strong currency may cause lower levels of GDP.

Another consideration for high levels of GDP growth is the possibility of higher levels of inflation. Many countries attempt to control inflationary pressures through monetary policies such as raising interest rates. Increased interest rates are attractive to foreign investors, which puts upward pressure on the value of the currency.

Central bank intervention

Directly or indirectly, government activity affects the value of a currency. In particular, the government's policy towards intervention in the foreign exchange market is a key factor, as well as the central bank's attitude to building up reserves of foreign currency.

For example, China holds over USD 3 trillion and Japan over USD 1 trillion in their Forex currency reserves. If those countries want to lower the value of their currencies, they will buy foreign currencies with their own currencies, thus increasing the supply of their own currencies on the Forex market.

If they would like to increase the value of their own currencies, their central banks will buy their own currencies back with the currency reserves in euros (EUR) or dollars (USD) and, in this way, they would decrease the supply of their own currencies on the Forex market.

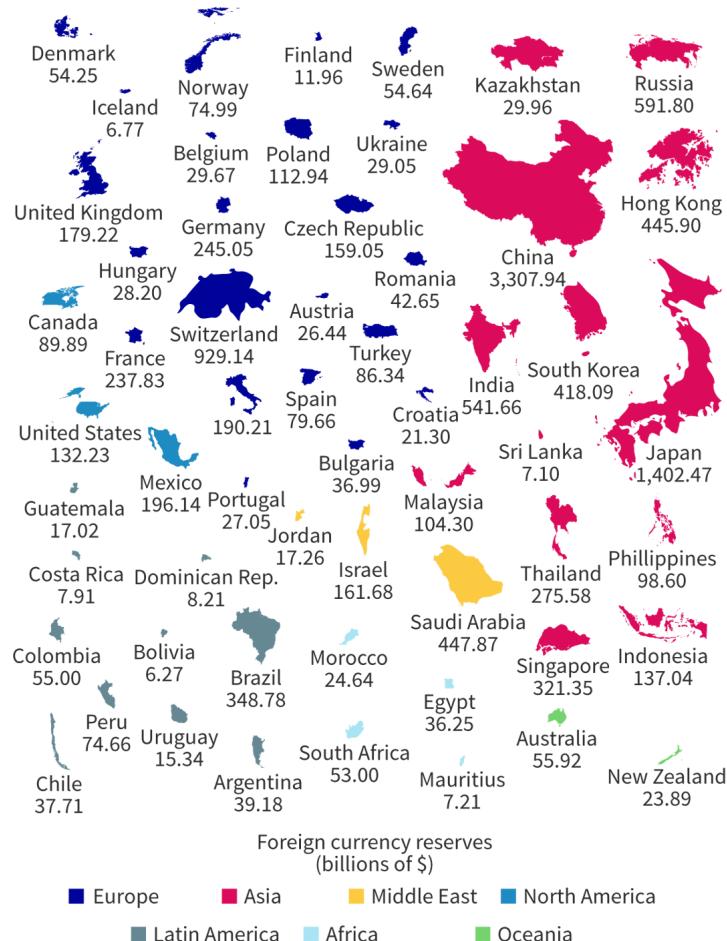


Figure 6. Countries with the most foreign currency reserves in the world.

Source: Wikipedia https://en.wikipedia.org/wiki/List_of_countries_by_foreign-exchange_reserves

More information for figure 6

A global map illustrating the foreign currency reserves of various countries, categorized by continent and labeled with numerical values in billions of dollars. Each country represented is filled with a specific color indicating its continent: Europe in dark blue, Asia in pink, the Middle East in yellow, North America in light blue, Latin America in blue-gray, Africa in light gray, and Oceania in light green.

- Europe: Switzerland (929.14), Germany (245.05), United Kingdom (179.22), France (237.83), Italy (190.21), and others with smaller reserves.
- Asia: China (3,307.94), Japan (1,402.47), India (541.66), Russia (591.80), Hong Kong (445.90), and others.
- Middle East: Saudi Arabia (447.87), Israel (161.68), and smaller numbers for Jordan and Egypt.
- North America: United States (132.23), Canada (89.89), and Mexico (196.14).
- Latin America: Brazil (348.78), Argentina (39.18), Colombia (55.00), and others.
- Africa: South Africa (53.00), Egypt (36.25), Morocco (24.64), and others.
- Oceania: Australia (55.92) and New Zealand (23.89).

The map helps visualize the distribution and magnitude of currency reserves across different continents, with numbers indicating the scale of reserves in billions of U.S. dollars.



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You can see the list of the top 10 countries by currency reserves [here ↗](https://www.visualcapitalist.com/countries-most-foreign-currency-reserves/) (<https://www.visualcapitalist.com/countries-most-foreign-currency-reserves/>).

Calculating changes in the value of a currency

Worked example:

While planning for your trip to Brazil, you decided to save USD 1500 for your expenditure while in Rio de Janeiro. Before leaving the house, you checked the exchange rate and USD 1 was equal to BRL 5.46. You left your country on 23 April.

When you landed in Rio on 24 April, you decided to exchange your dollars for reals. The exchange rate was USD 1 = BRL 5.74.

1. How much was USD 1500 worth in reals on 23 April?

You just need to need to multiply the number of USD by the rate in BRL (USD 1 = BRL 5.46).

$$1\ 500 \times 5.46 = \text{BRL } 8\ 190$$

Before travelling, you would have the equivalent of BRL 8 190 to spend in Rio.

2. How much was the appreciation of the dollar in percentage terms?

You would have to find the difference between the two rates and divide the difference by the initial rate and multiply by 100.

Student view

$$(5.74 - 5.46) / 5.46 \times 100 = 5.12\%$$

3. How much more would you have to spend on your trip in reals?

You would have to find the conversion for the new rate on 24 April and subtract the conversion of the original rate on 23 April.

$$(1\ 500 \times 5.74) - (1\ 500 \times 5.46) = \text{BRL } 420$$

Complete section with 3 questions

[Start questions](#)



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Fixed exchange rates

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Glossary



Reading
assistance

In 1944, international leaders met at the Bretton Woods Monetary Conference, held at the Mount Washington Hotel in New Hampshire, United States, to agree measures to secure a safe and stable economic future. The hyperinflation of the 1920s in Austria and Germany and the Great Depression of the 1930s were factors which contributed to the outbreak of the Second World War. It was felt that a new world order was needed to prevent this from ever happening again.

The conference agreed to introduce several international monetary bodies, including the International Monetary Fund and the World Bank, and to establish an international fixed exchange rate regime. Countries would fix their currencies to the US dollar, which itself would be pegged to the value of gold. Politicians and economists felt that this would create a safe environment for international trade between all nations. Increased trade and cooperation between nations was seen as an important step towards peace and prosperity in the future.



Figure 1. The 1944 Bretton Woods conference venue, where international leaders agreed to a global gold standard.

Source: "Mt. Washington Hotel (https://commons.wikimedia.org/wiki/File:Mt._Washington_Hotel.jpg)" by jbarta is licensed under the CC BY 2.0 (<https://creativecommons.org/licenses/by/2.0/deed.en>)

Fixed exchange rate regimes are an attempt by the central bank to stipulate the exact value of the exchange rate in terms of another currency. As the US dollar is the most traded currency in the world, it tends to be the one chosen by governments.

Devaluation and revaluation

In a fixed exchange rate system, the value of the currency is not allowed to change based on the open-market forces of supply and demand for that currency. Instead, the central bank of a country constantly monitors those forces and intervenes in the Forex by buying and selling currency reserves, as well as adjusting monetary policy in order to maintain the fixed value of the currency.

When a stronger currency is needed, a revaluation is engineered by the monetary institution, and when a weaker currency is needed, we refer to it as devaluation. A revaluation is equivalent to an appreciation in a floating exchange rate system, and a devaluation is the equivalent of a depreciation in a floating exchange rate system.

Maintaining fixed exchange rates

Between 1956 and 1997, Thailand operated a fixed exchange rate, in which they pegged the Thai baht (THB) to the US dollar, first at a rate of 1 USD to 20 THB, and then in 1973 at 1 USD to 25 THB. This allowed Thailand to have a strong currency and import cheap raw materials, creating a stable business environment for many decades.

From 1991 to 2002 Argentina also pegged its currency to the US dollar, at a ratio of 1 Argentine peso (ARS) to 1 USD. This was an attempt to reduce the hyperinflation that had dogged the country since the 1970s (inflation averaged 325% per year). Moreover, it benefited Argentina because its main exports were raw materials and commodities, which were enjoying relatively high prices at the time. Large reserves of foreign currency are needed to maintain the peg where the currency is controlled at a rate higher than market value. **Figure 2** shows why.

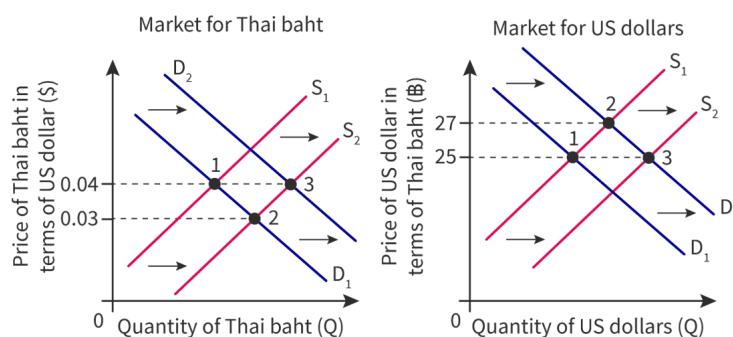


Figure 2. Markets for the Thai baht and US dollar

More information for figure 2

The image consists of two graphs side by side.

Student view

The left graph is labeled "Market for Thai baht" and shows the price of Thai baht in terms of US dollars on the vertical axis, ranging from \$0.03 to \$0.04, and the quantity of Thai baht on the horizontal axis. Two sets of lines represent supply (S) and demand (D). The initial demand curve (D_1) intersects the initial supply curve (S_1) at point 1, where the price is \$0.04. As the supply shifts to S_2 , the intersection moves to point 3 at a lower price of \$0.03, indicating increased supply and reduced price.

The right graph is labeled "Market for US dollars" with the price of US dollars in Thai baht ranging from 25 to 27 on the vertical axis, and the quantity of US dollars on the horizontal axis. The demand curve shifts from D_1 to D_2 , while the supply curve shifts from S_1 to S_2 . Initially, they intersect at point 1 at a price of 27 THB, but eventually move to point 3 at 25 THB, showing a shift in both supply and demand leading to a decreased price.

Both graphs illustrate economic concepts of supply and demand shifts affecting currency prices, in this case, showing how Thai businesses importing raw materials affect the currency exchange rate.

[Generated by AI]

As shown in **Figure 2**, as Thai businesses import relatively cheap raw materials, they sell the baht for US dollars, causing a shift in the supply of baht from S_1 to S_2 and a downward pressure on the currency from THB 1 = USD 0.04 to THB 1 = USD 0.03.

In order to keep the Thai currency strong, the Thai central bank will respond with a purchase of baht from the market in exchange for dollars. This shows as a shift in demand from D_1 to D_2 in the market for baht (left panel), and a shift in supply from S_1 to S_2 in the market for dollars (right panel).

As long as the Thai central bank maintains a large supply of dollars, it can easily fend off downward pressure on the currency. In addition to purchasing Thai baht with its reserves of foreign currency, the Thai central bank could also use interest rates to help regulate its currency.

An increase in interest rates would strengthen the currency, as it would lead to an increase in demand for Thai baht, as hot money flows into the country to take advantage of the high interest rates being paid.

✓ **Important**

Possibly the biggest limitation of a fixed exchange rate policy is the size of the foreign exchange reserves that a country has, especially in the case of maintaining a stronger than normal rate.

Complete section with 3 questions

[Start questions](#)

◀ Previous section [\(/study/app/pp/sid-186-cid-754025/book/consequences-of-changes-in-the-exchange-rate-id-30673/\)](#)

Next section ➤ [\(/study/app/](#)



Managed exchange rates

Section

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Notebook The managed float exchange rate system is a system in between the floating and the fixed exchange rate system. It allows the currency to fluctuate based on the forces of supply and demand in the market, but the fluctuation is confined within a set range with an upper and lower limit.



Glossary The main goal of a managed exchange rate is to avoid significant fluctuations in a short period of time. Just like in the fixed system, foreign currency reserves are essential for the central bank to be able to control the value of its own currency. Most currencies in the world are managed. This is the case because a managed float system can provide a sense of stability and trust among trading partners.



Nigeria and India have strong trade relations, especially with the oil exports from Nigeria. Let us examine the Nigerian currency, the naira (NGN), in terms of the Indian rupee (INR).

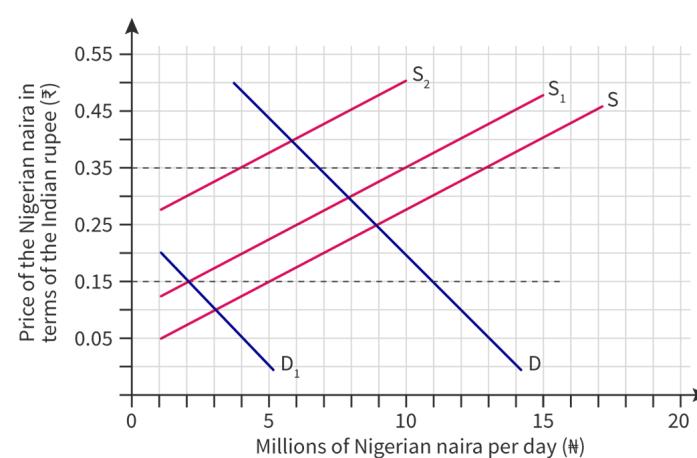


Figure 1. Market for the Nigerian naira (₦) in terms of the Indian rupee (₹)

[More information for figure 1](#)

The image is a graph depicting the market for the Nigerian naira in terms of the Indian rupee, with a focus on supply and demand dynamics. The X-axis represents 'Millions of Nigerian naira per day (₦)' ranging from 0 to 20. The Y-axis indicates 'Price of the Nigerian naira in terms of the Indian rupee (₹)', ranging from 0 to 0.55.

The graph includes multiple curves: a single demand curve labeled 'D' and multiple supply curves labeled 'S', 'S₁', and 'S₂'. The original supply and demand curves are intersected by new supplies. The demand curve 'D' is downward-sloping, representing a typical demand relationship, whereas the supply curves 'S', 'S₁', and 'S₂' slope upwards, indicating typical supply dynamics.

The intersection of the original supply 'S' and demand 'D' shows the equilibrium point, which shifts with the new supply lines ' S_1 ' and ' S_2 '. Shifts in the supply curves indicate changes in market conditions. The overall trend is to examine how shifts in supply affect the equilibrium price and quantity in the market.

[Generated by AI]

In this context, look at **Figure 1** and consider the supply S and demand D for the Nigerian naira (NGN) as the original curves for all scenarios below.

Scenario 1. How much would the central bank of Nigeria have to buy or sell of its own currency in order to bring the exchange rate back to the band if the demand curve was shifted from D to D_1 ?

The central bank of Nigeria would have to buy 3 million naira (NGN) to push the demand to the right, up to the equilibrium at the lower band with NGN 1 = INR 0.15.

Scenario 2. How much would the central bank of Nigeria have to buy or sell of its own currency in order to bring the exchange rate back to the band if the supply curve was shifted from S to S_2 (with the demand curve at D)?

The central bank of Nigeria would have to sell 3 million naira (NGN) to push the supply to the right, up to the equilibrium at the higher band with NGN 1 = INR 0.35.

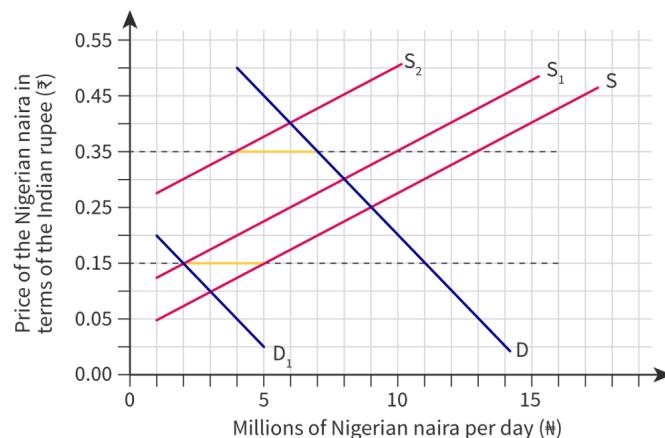


Figure 2. Market for the Nigerian naira (NGN) in terms of the Indian rupee (INR), showing how the currency would need to be manipulated.

Scenario 3. How much would the central bank of Nigeria have to buy or sell of its own currency in order to bring the exchange rate back to the band if the supply curve was shifted to S_1 and the demand curve was shifted to D_1 ?

The central bank of Nigeria would not have to intervene because the equilibrium would already be at the lower band with NGN 1 = INR 0.15.

Be aware

It is a common mistake for students to miscalculate the manipulation of currencies in a managed exchange rate system diagram with its upper and lower boundaries. Keep in mind that when the quantities of currencies in the market are changed, there will be shifts of the supply and demand curve, but not necessarily changes in the slope of the curves.

Referring to scenario 1 in the worked example above, you must focus on the intersection of the D_1 with the lower boundary to decide how much currency would have to be purchased. Pick up a ruler and place its edge on top of the D_1 curve. If you shift the demand to the right by two million naira, you will notice that the new equilibrium is still below the lower boundary. You need to shift it by three million naira to meet the boundary. See **Figure 2**.

Referring to scenario 2 in the worked example above, you must focus on the intersection of S_2 with the upper boundary to decide how much currency would have to be sold.

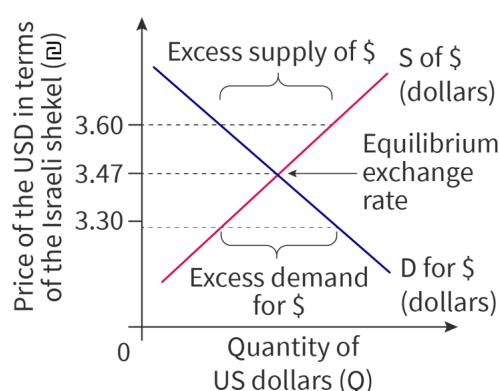
Pick up a ruler and place its edge on top of the S_2 curve. If you shift the supply curve to the right by one million naira, you will notice that the new equilibrium is still above the upper boundary. You need to shift it by three million naira to meet the boundary.

Overvalued and undervalued currencies

In order to know whether a currency is overvalued or undervalued you will need to understand the currency's equilibrium when the forces of supply and demand are free to operate. When a currency's value is above that equilibrium, the currency would be considered overvalued. When a currency's value is below that equilibrium, the currency would be considered undervalued.

In **Figure 3**, we can see the markets for both the US dollar (USD) and the Israeli shekel (ILS). On one side, the free market would set $USD 1 = ILS 3.47$ (first panel). If the US government, through its central bank, would like to increase the value of the US dollar, it could attempt to bring the value up to $USD 1 = ILS 3.60$. At this exchange rate, the USD would be considered overvalued in terms of the Israeli shekel (ILS).

On the other side, the free market would set $ILS 1 = USD 0.29$ (second panel). If the government of Israel, through its central bank, would like to decrease the value of the Israeli shekel, it could attempt to bring the value down to $ILS 1 = USD 0.27$. At this exchange rate, the Israeli shekel would be considered undervalued in terms of the USD.



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The image is a graph depicting the supply and demand of U.S. dollars (USD) in terms of the Israeli shekel (₪). The graph is a coordinate plane with the vertical axis representing the price of USD in terms of the Israeli shekel, ranging from 0.30 to 0.36 ₪. The horizontal axis represents the quantity of U.S. dollars (Q).

Two intersecting lines represent the supply and demand for dollars. The red line, labeled 'S of \$ (dollars)', is the supply curve sloping upwards. The blue line, labeled 'D for \$ (dollars)', is the demand curve sloping downwards. The point at which they intersect is marked as the 'Equilibrium exchange rate'.

Above the intersection, the area is labeled 'Excess supply of \$', and below it is 'Excess demand for \$'. These annotations indicate where the supply and demand do not meet at the equilibrium price, illustrating economic concepts of surplus and shortage.

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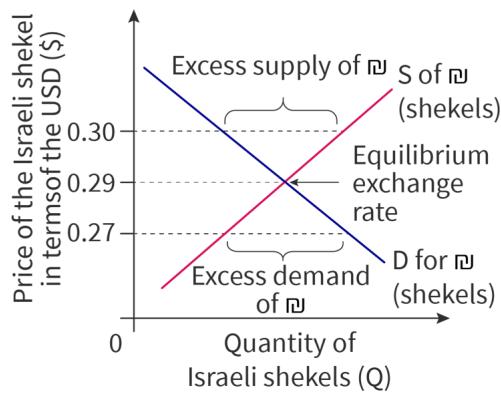


Figure 3. Markets for the US dollar (US\$) and the Israeli shekel (₪)

More information for figure 3

Student view

The graph depicts the market scenario for the Israeli shekel against the US dollar, with the X-axis representing the quantity of Israeli shekels (Q) and the Y-axis indicating the price of the Israeli shekel in terms of USD (\$). The Y-axis values range from 0.27 to 0.30. Two intersecting lines represent the supply and demand for shekels. The red line indicates the demand (D) for shekels, while the blue line shows the supply (S) of shekels. The point where the two lines intersect marks the equilibrium exchange rate. Above the equilibrium, there's an excess supply of shekels, and below it, there is excess demand for shekels, both labeled and bracketed to highlight their respective impact.

[Generated by AI]

To alter the market value of a currency, the central banks of both the US and Israel would utilise the same strategies used to keep a fixed exchange rate (review [section 4.5.4 \(/study/app/pp/sid-186-cid-754025/book/fixed-exchange-rates-id-30674/\)](#)). The difference in a managed float exchange rate system is that there would be a range that the government would accept for the fluctuation of its currency value.

Overvalued currencies would make imports cheaper, which means that it would cost less to import raw materials and capital goods. This would be an advantage, especially for developing nations who are trying to industrialise and modernise their economies.

However, an overvalued currency would also make exports more expensive. This would hurt export industries within a nation. It would also hurt domestic industries because of the increased competition, because the manipulated overvalued currency would make import prices drop, flooding the domestic market with imported goods.

Undervalued currencies would make exports cheaper, which means that the export industries within a nation would have an advantage against foreign competitors. This would likely result in economic growth, because imports would also be affected. With an undervalued currency, imports would become more expensive and domestic consumers would revert to domestically produced goods.

However, an undervalued currency is seen by other countries as an unfair trade practice. That may create hostilities and potentially even protectionist policies and barriers to trade as a form of retaliation. Try completing the activity box below to get a real-life perspective on this issue.



Figure 4. China versus USA currency war.

Credit: Getty Images DigiPub

Student view

Activity

Read this article (<https://www.nytimes.com/2019/08/06/business/economy/china-currency-manipulator.html>) from the New York Times ('The U.S. Labeled China a Currency Manipulator. Here's What It Means') to understand the tension that an undervalued currency may create. Also, try to identify the following concepts already explained here:

- Undervalued currency
- Advantages of a strong/weak currency
- Disadvantages of a strong/weak currency
- Tensions created by an undervalued currency
- Tools for currency manipulation
- The managed float exchange rate system fluctuation range
- Currency speculation

Choose a partner or form a group and divide the concepts among yourselves. Use different coloured markers to identify each concept within the text of the New York Times article.



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Have fun sharing your findings with your peers and exploring the real-life application of what you are studying here!

There is no one measure that tells us whether a currency is undervalued or not, but *The Economist* has been publishing [The Big Mac Index](https://www.economist.com/news/2020/01/15/the-big-mac-index) (<https://www.economist.com/news/2020/01/15/the-big-mac-index>) for over thirty years, which has given us an insight into the debate. The theory of purchasing power parity suggests that long-run exchange rates will tend towards a value where there is no advantage to buying a good overseas.

The Big Mac burger from McDonald's is used as an example of a product that should be exactly the same price anywhere in the world. So, for example, if a Big Mac costs 5 euros in Paris and USD 5 in New York, the exchange rate between the euro and the dollar will move towards parity so EUR 1 = USD 1. There is no benefit in an American changing USD 5 into euros to buy a Big Mac because there is now purchasing power parity.

The Economist's Big Mac Index looks at the cost of a Big Mac around the world and identifies whether the long-term exchange rates are currently out of line by comparing whether it is cheaper or more expensive to buy a Big Mac in another country. If the Big Mac in one country is cheaper, it suggests that the country's currency as a whole is undervalued and the expectation is that it will increase in the future.

As you can see in the data published by [The Economist](http://www.economist.com/content/big-mac-index) (<http://www.economist.com/content/big-mac-index>) in May 2020, the South African rand is the most undervalued currency in terms of the US dollar. The Chinese yuan is also considered to be undervalued by around 44.9% (May 2020).

Whether the countries whose currencies are considered to be undervalued are doing this deliberately is a controversial point. There is certainly an advantage to doing so because it keeps the countries' exports cheaper overseas and will hopefully encourage export-led growth. However, at the same time, it does keep import prices high and this can be a disadvantage to countries that need to import raw materials and other essential items from overseas, potentially fuelling inflation.

Complete section with 3 questions

Student view

Start questions

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Fixed versus floating exchange rate systems (HL)

Section

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Notebook



Glossary



Reading
assistance

Fixed or floating?

In this section you will study some of the pros and cons of both exchange rate systems. The Saudi riyal is an example of a currency under a fixed exchange rate system. Since 2003, the Saudi Arabian Monetary Agency (SAMA or the central bank of Saudi Arabia) has officially pegged its currency to the US dollar. Since the currency was fixed in 2003, the exchange rate has been set at 1 USD = 3.75 SAR, or 1 SAR = 0.26 USD. Explore the fluctuation of the SAR in terms of the USD on the chart in **Figure 1**.

Notice that the largest fluctuation in the past 22 years was slightly over 0.50% in September 2007. By December of that same year, SAMA had adjusted the currency to its pegged value.

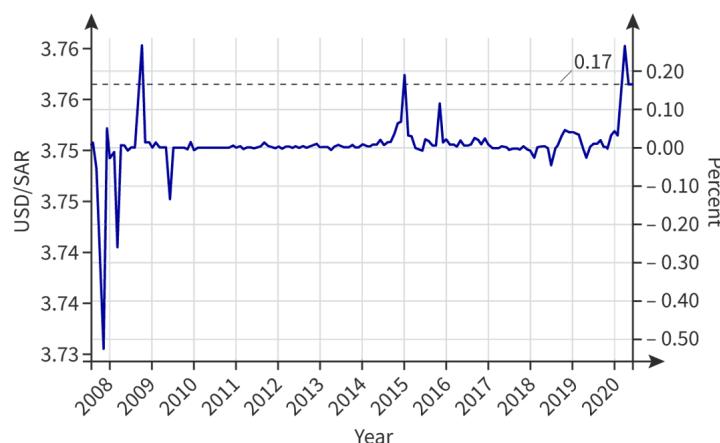


Figure 1. Historical chart of the USD in terms of the SAR.

Source: xe.com (<http://xe.com/>)

More information for figure 1

This line graph shows the exchange rate of the United States Dollar (USD) to the Saudi Arabian Riyal (SAR) from 2008 to 2020. The x-axis represents the years from 2008 to 2020, while the primary y-axis on the left represents the USD/SAR exchange rate, ranging from 3.73 to 3.76. There's a secondary y-axis on the right representing percentage change, ranging from -0.50% to 0.20%.

Key observations:

1. The graph starts with a sharp decline below 3.74 in 2008, followed by fluctuations around the 3.75 mark up until about 2014.
2. Significant spikes and drops occur, notably in 2009 and late 2015 where the rate briefly approaches 3.76 before stabilizing.
3. Another notable fluctuation occurs around 2019-2020, where a sharp increase is visible, peaking at 0.17% before stabilizing.
4. Overall, while there are multiple fluctuations, the general trend circumnavigates the pegged value close to 3.75 throughout the time period, reflecting adjustments made to maintain the currency peg.

This graphical depiction highlights that the largest fluctuation in the rate occurred around 2007-2008, aligning with the financial contexts described in the surrounding text, indicating central bank interventions to restore the pegged rate.



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- The euro and the US dollar are currencies that are in a floating exchange rate system. The euro was officially established in 1999 with 1 euro = 1.16 USD and since then, as you can see in **Figure 2** below, it depreciated by almost 30% of its starting value in terms of the USD at the end of the year 2000, and it appreciated to over 30% above its starting value in terms of the USD during the global financial crisis of 2008.

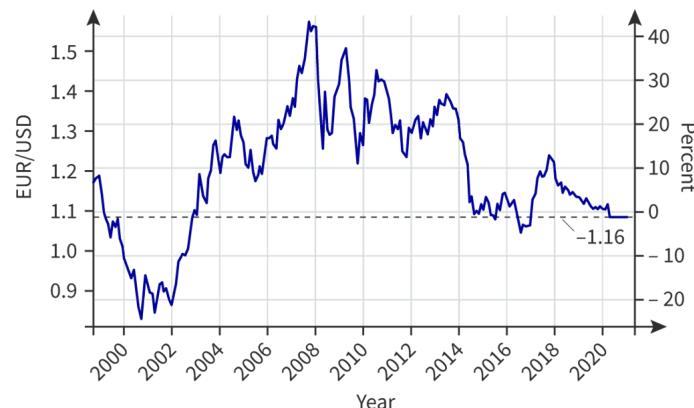


Figure 2. Historical chart of EUR in terms of USD.

Source: xe.com (<http://xe.com/>)

More information for figure 2

This line graph illustrates the historical exchange rate between the euro (EUR) and the US dollar (USD) from the year 2000 through 2020. On the X-axis, the graph is labeled by year, ranging from 2000 to 2020. The Y-axis is labeled with the exchange rate in terms of EUR/USD, starting from 0.9 to 1.5.

The graph starts in 2000, with the euro valued slightly above 1.1 USD. Over the next couple of years, the euro depreciates, reaching below 0.9 in 2002. From 2002 onwards, the euro appreciates, reaching a peak above 1.5 in 2008 during the global financial crisis. Following this peak, the graph shows fluctuations, with another significant spike occurring around 2014, nearing 1.4. Subsequently, the euro gradually depreciates again, with slight fluctuations, leveling around 1.1 in 2020.

Student view

The overall trend shows initial depreciation of the euro against the USD followed by a period of appreciation and then various fluctuations until 2020.

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Look at **Figure 3** below, the historical chart of the exchange rate of the euro in terms of the Saudi riyal, and compare it with the chart above in **Figure 2**. Do you notice any pattern? If so, how could you explain it?

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Figure 3. Historical chart of the EUR in terms of the SAR.

Source: xe.com (<http://xe.com/>)

More information for figure 3

The image is a line graph representing the historical exchange rate of the Euro (EUR) in terms of the Saudi Riyal (SAR) from the year 2006 to 2020. The X-axis represents the years, ranging from 2006 to 2020, while the Y-axis shows the exchange rate values labeled as EUR/SAR with a range from 4.00 to 5.75. The graph displays a blue line, indicating the fluctuation of exchange rates over the years.

Key observations from the graph: - The exchange rate starts at around 4.45 in 2006, showing a rise to a peak above 5.75 by 2009. - Following the peak, there is a visible decline till 2010, where the rate drops to nearly 4.40. - The rate again experiences significant fluctuations between 2010 and 2014, reaching another peak close to 5.60 and then declining sharply by 2015. - From 2015 to 2020, the exchange rate consistently trends downward, stabilizing slightly above 4.00 by 2020.

There is an annotation at the end of the graph near 2020 indicating the point "10.27," presumably focusing on a significant data point or change percentage. Overall, the graph indicates volatility in the exchange rate with characterized peaks and troughs over the span of 14 years.

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Student
view

Case study

Imports, exports and exchange rates

The Nobel prize winner of 1976, Milton Friedman, is considered one of the most influential economists of the second half of the 20th century. You can read more about him here in this [special report](https://www.economist.com/special-report/2006/11/23/a-heavyweight-champ-at-five-foot-two) (<https://www.economist.com/special-report/2006/11/23/a-heavyweight-champ-at-five-foot-two>) from The Economist.

**Figure 4.** Milton Friedman.

Credit: Getty Images Keystone / Stringer

In this [\(Milton Friedman — Imports, Exports & Exchange Rates\)](https://www.youtube.com/watch?v=c9STBcacDIM&feature=youtu.be) he gives a master class on imports, exports and exchange rates. Some of the discussion is highly relevant to the concepts you have already studied as comparative advantage [in section 4.1 \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30650/\)](#), and concepts that you will study next, such as the balance of payments in [section 4.6 \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30345/\)](#).

With a partner or in a small group, divide the following topics among yourselves and share your findings after you have watched Friedman's [talk](https://www.youtube.com/watch?v=c9STBcacDIM&feature=youtu.be).

- What do you think is Milton Friedman's preferred type of exchange rate system (floating/fixed/managed)? Justify your claim.
- Around 5'45", Milton Friedman says: '... no product we can produce more cheaply than green pieces of paper...' What does Milton Friedman mean with this quote?
- From minute 6'24" to 8'40" in the video, what is the exchange rate system that Friedman is describing? Use diagrams to explain your claim.
- Looking at the total current account balance for the United States in **Figure 5**, to what extent could you claim that Milton Friedman may have influenced the US balance of trade?

**Figure 5.** Total current account balance for the US.Source: "World Bank Data (<https://data.worldbank.org/indicator/BN.CAB.XOKA.CD?locations=US>)"

More information for figure 5

The graph depicts the total current account balance for the United States from 1970 to 2010. The X-axis represents the years from 1970 to 2010. The Y-axis represents the balance in billions of national currency, ranging from -240 to 40. The line begins relatively stable around 0 from 1970 to 1980, showing slight fluctuations. A significant dip occurs around the early 1990s, with the balance becoming increasingly negative, reaching a low around -190 billion in the early 2000s. After 2005, the balance begins to recover slightly. Overall, the graph highlights a trend of increasing deficit over the period.



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When Friedman gave this talk it was in the context of Japan. What are the similarities with the US-China trade relations of today?

Milton Friedman died in 2006 at the age of 94. What do you think he would say about the current trade practices of the United States and China?

Economic stability?

The main justification for a fixed exchange rate is usually to improve the stability of the economy. This was the main reason for the international gold standard and the Thai and Argentinian fixed exchange rates. However, there is a high risk of a speculative attack, if investors think that the central bank is about to run out of reserves.

In Thailand and Argentina, the downward pressure on the currency value as a result of speculation eventually led both of these governments to run out of the necessary reserves and they were forced to abandon the peg. This caused significant upheaval. In the case of the Thai baht it led to a severe recession known as the 1997 Asian financial crisis. In Argentina, the country was forced to default on its government debt in 2002.



Figure 6. The USD in terms of the Thai baht exchange rate from 1981 to 2007. (You can clearly see the fix up until the crash in 1997, when the Thai baht lost half its value.)

More information for figure 6

The graph depicts the Thai baht to USD exchange rate from 1981 to 2007. The X-axis represents the years, ranging from 1981 to 2007, and is labeled as "Year." The Y-axis represents the exchange rate in 'Thai baht per US dollar,' with values ranging from 0 to 60,000 baht. The line remains relatively stable from 1981 to 1997 at around 25,000 baht per dollar. In 1997, the line shows a sharp increase, indicating a substantial devaluation of the baht as it shoots upwards, peaking between 50,000 and 60,000 baht per dollar before fluctuating in the following years. This trend reflects the impact of the 1997 Asian financial crisis. The graph shows minor fluctuations after the peak, with gradual stabilization through the early 2000s, followed by a slight downward trend toward 2007.

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Ease of adjustment

One advantage of **floating currencies** is that they can be easily adjusted. This adjustment happens automatically because an excess value for imports would be reduced by a currency depreciation, and an excess value for exports would be reduced by a currency appreciation. Given that developing countries are susceptible to price fluctuations and supply

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shocks (because many developing countries are exporters of primary commodities), a sudden drop in the exchange rate (exports become cheaper) can help to increase the quantity demanded for those commodities.

However, this may not result in greater export revenues, because the price drop may not be followed by a proportionally larger gain in quantity demanded. To make this judgement confidently, you need to review the topics on price elasticity of demand ([/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-29882/](#)) (PED).

Making connections

For HL students, the relationship between exchange rates, PED and trade volumes will be discussed in detail in subtopic 4.6 ([/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30345/](#)).

On the other hand, **fixed currencies** are not easy to adjust to trade imbalances. An external shock, such as a spike in oil prices, can lead to a current account deficit (imports greater than exports). Countries would require large amounts of foreign currency reserves in order to counter the trade deficit, or they would have to apply contractionary policies and trade protectionism.

A steady exchange rate helps to manage inflation expectations, as long as confidence in the system remains. Fixed exchange rates did allow many countries to pursue economic growth within a stable climate of foreign investment. This was true for Thailand during its fixed exchange rate regime, and it remains true today for China. China has abandoned its strict exchange rate management and, instead, has opted for steady interventions to prevent the currency from appreciating too fast.

You can see in **Figure 7** that China has moved slowly from a strict fixed exchange rate system to a managed exchange rate.

- In 1988, the government opened currency exchange centres so companies could trade the yuan.
- In December 1989, the government devalued the yuan by almost 27% to help exporting industries.
- In January 1994, China devalued the yuan by almost 50% overnight to 8.72 to embrace the new term at the time. China was becoming a 'socialist market economy'.
- In April 1994, the government fixed the value of the yuan at 8.28 USD.
- In July 2005, China ended the dollar peg and announced that it would establish a managed floating exchange rate referencing a basket of currencies (main currencies: USD, euro, Korean won, Japanese yen and others).
- In July 2008, the central bank of China pegged the yuan to the dollar again at 6.83 because of the global financial crisis.
- In 2010, China released the peg to allow the yuan to fluctuate between the bands.
- In January 2014, the yuan reached its highest value (6.05 US dollars) since the establishment of the managed system.
- In 2020, the US frequently attacked China verbally regarding its undervalued yuan. The US government and internationally competitive industries believe that Chinese companies receive unfair advantage with an undervalued currency. That is why some would refer to a managed exchange rate system as a 'dirty float'.

 Student view

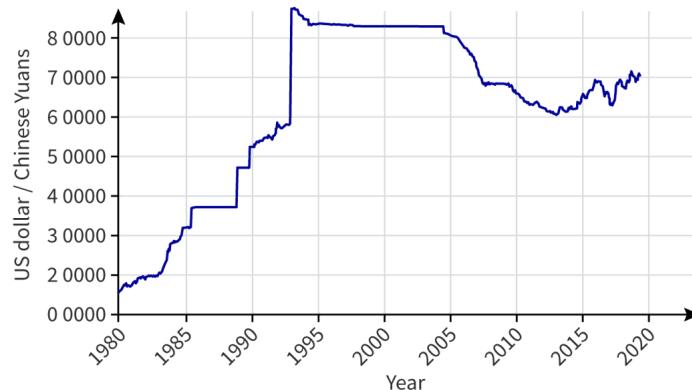


Figure 7. Historical chart of the USD in terms of the Chinese yuan. Transition of the Chinese yuan from a fixed to a managed exchange rate system.

Source: xe.com (<http://xe.com/>)

More information for figure 7

The graph displays the historical exchange rates of the US dollar in terms of Chinese yuan from 1980 to 2020. The X-axis represents the years, ranging from 1980 on the left to 2020 on the right. The Y-axis represents the exchange rate, indicating the number of Chinese yuan per US dollar, ranging from 0 to 8.

Initially, the rate starts at approximately 1.5 yuan per dollar in 1980. As the years progress, the rate increases significantly, especially around the early 1990s, peaking at around 8.6 yuan per dollar in the late 1990s. Post-2000, the rate experiences a series of fluctuations, notably declining sharply around 2006, stabilizing slightly above 6 yuan per dollar. Towards 2020, the trend shows moderate fluctuations, stabilizing around 7 yuan per dollar. The line graph shows these changes as a series of peaks and troughs, reflecting the transitions in China's exchange rate system from fixed to managed.

[Generated by AI]

The role of international currency reserves



It may be fairly easy to build up international currency reserves, but this depends on whether the currency is undervalued or overvalued and on the trade relationship between the countries.

Overvalued currencies, or those whose exchange rates are maintained higher than the market would desire, are difficult to defend in the event of a speculative attack, as the central bank may run out of the foreign reserves needed to keep the currency strong.

A country that trades little with the country that it hopes to peg its currency to will find it immensely difficult to build up reserves of that country's currency. For example, the US is not one of the main trading partners of Somalia. So if the Somalian government wanted to peg the Somalian shilling to the USD, it would not be able to accumulate US dollars because there is not enough trade between these two countries.

For floating exchange rates, there is no need for foreign currency reserves since there is no need to intervene in the market. The currency should adjust by itself based on the forces of supply and demand.



Flexibility for policy makers

Overview
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This is really a two-sided argument. A **fixed exchange rate** allows policy makers to focus on other aspects of the economy other than the exchange rate because they know it will remain constant.

However, this is only true as long as the peg is easy to maintain. If it is not, and a speculative attack begins, then the defence of the peg will command most of the government's attention and may cause severe economic problems if it needs to be abandoned. For example, if a currency is losing value and the government is running out of reserves, the government would need to consider the following options: changes in interest rates, trade protectionism, contractionary fiscal policy and borrowing from abroad. All of these options would constrain the ability of the government to run the economy.

A **floating exchange rate** has much more flexibility because the government does not have to react to any changes in the balance of payments. Any policy adopted by the government based on the country's priorities would automatically cause the currency to be adjusted by the forces of supply and demand.

However, those automatic adjustments may have unintended consequences. For example, imagine a country is attempting to grow its economy through expansionary monetary policies. The decrease in interest rates may increase internal consumption and investments, but it would also depreciate the currency based on the foreign investors who would remove their portfolio investments from the country. If the country has a trade deficit, this would help improve it. However, if the country already had a trade surplus, a depreciated currency would increase the trade surplus even further.

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✓
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