Learning Module 7: Capital Flows and the FX Market

LOS 7a: describe the foreign exchange market, including its functions and participants, distinguish between nominal and real exchange rates, and calculate and interpret the percentage change in a currency relative to another currency

The foreign exchange (FX) market is the world's largest market, with a daily turnover of approximately USD 6.6 trillion in 2019. It operates 24 hours daily, facilitating international trade and cross-border capital flows with participants from various backgrounds.

Functions of the Foreign Exchange Market

1. **Facilitating international trade**: The FX market enables the exchange of goods and services in foreign currencies, essential for companies and individuals engaged in cross-border transactions.
2. **Accounting for financial market transactions**: Financial market transactions are a big part of FX market turnover. When investors move money into or out of foreign assets, they often have to convert currencies, which means they might face exchange rate risk. For example, if a Canadian investor buys Apple stocks in US dollars, they risk losing money if the stock value and the US dollar weaken compared to the Canadian dollar.
3. **Providing flexibility for financial goals**: The FX market offers products such as spot transactions, FX swaps, options, and forward contracts, providing flexibility for diverse financial objectives, including speculation and risk hedging.

Basic Conventions

Currencies are often referred to by **standardized three-letter codes** (e.g., USD for US Dollar, EUR for Euro) agreed upon through the **International Organization for Standardization (ISO)**.

It is crucial to distinguish between individual currencies and exchange rates. One can possess an individual currency, say, USD 100. On the other hand, an exchange rate is the price of one

currency in terms of another.

The exchange rate can be seen as the number of units of one currency (price currency) that one unit of another currency (base currency) will buy. As such, the exchange rate can be viewed as the cost of one unit of the base currency in terms of the price currency. For example, EUR/USD refers to the exchange rate between the euro and the US dollar.

Note that the three-letter code can be used to signify an individual currency or an exchange rate. For instance, EUR in a professional FX market is the exchange rate between the euro and the US dollar (EUR can also signify an individual currency). As such, it is important to understand the context in which the three-letter codes are used.

For the sake of avoiding this confusion, the exchange quoting convention is given by "A/B," which implies the number of units of currency A that one unit of currency B will buy.

Nominal and Real Exchange Rates

Nominal exchange rates are the actual exchange rates in the market, expressed as the price of one currency in terms of another. It is expressed in the convention of "**A/B**," referring to the number of units of currency **A** that one unit of currency **B** will buy. For example, a USD/EUR exchange rate of 1.1650 means 1 euro will buy 1.1650 US dollars.

The purchasing power parity (PPP) theory suggests that nominal exchange rates adjust to equalize the prices of identical goods in different markets. However, due to factors such as trade barriers, transaction costs, and differences in goods and services, nominal exchange rates often deviate from PPP.

Real exchange rates are indexes constructed by economists and other market analysts to assess changes in the relative purchasing power of one currency compared with another. In other words, real exchange rates adjust nominal rates using price levels in each country to compare relative purchasing power.

The real exchange rate goes up when the nominal exchange rate (how much domestic currency you get for one unit of foreign currency) and the foreign price level increase. It goes down when the domestic price level increases.

As such, the higher the real exchange rate is, the lesser foreign goods, in real terms, an individual can buy, and the lower that individual's relative purchasing power will be compared with the foreign country.

Mathematically, the real exchange rate is the relative price levels in the domestic and foreign countries. The formula for the real exchange rate between domestic (d) and foreign (f) currencies is given by:

$$\text{Real exchange rate (d/f)} = \frac{S_{d/f} \times P_f}{P_d} = S_{d/f} \times (\frac{P_f}{P_d})$$

Where:

$S_{d/f}$ = The spot exchange rate (quoted in terms of the number of units of domestic currency per one unit of foreign currency).

P_f = The foreign price level quoted in terms of the foreign currency.

P_d= The domestic price level in terms of the domestic currency.

Example: Calculating Real Exchange Rate

An analyst is studying the effects of exchange rates on purchasing power. She comes across the following data:

- Nominal spot exchange rate (USD/EUR) = 1.15
- Eurozone Consumer Price Index (CPI_{eur}) = 110
- US Consumer Price Index (CPI_{US}) = 100

The real exchange rate for an American consumer wanting to buy goods made in the Eurozone is *closest to*:

Solution

We know that:

$$\text{Real exchange rate (d/f)} = S_{d/f} \times \left(\frac{P_f}{P_d}\right)$$

Therefore, for an American consumer, the real exchange rate is given by:

$$\begin{aligned}\text{Real exchange rate (USD/EUR)} &= S_{USD/EUR} \times \left(\frac{CPI_{EUR}}{CPI_{USD}}\right) \\ &= 1.15 \times \frac{110}{100} = 1.2650\end{aligned}$$

Change in Real Exchange Rate

The formula for the Change in the real exchange rate, which considers changes in both domestic and foreign price levels and the nominal spot exchange rate, is as follows:

$$\left(1 + \frac{\Delta S_{d/f}}{S_{d/f}}\right) \times \frac{\left(1 + \frac{\Delta P_f}{P_f}\right)}{\left(1 + \frac{\Delta P_d}{P_d}\right)} - 1$$

Where:

$S_{d/f}$ = Spot exchange rate (quoted in terms of the number of units of domestic currency per one unit of foreign currency).

$?S_{d/f}$= Change in spot exchange rate.

P_f = Foreign price level quoted in terms of the foreign currency.

$?P_f$= Change in foreign price levels.

P_d= Domestic price level in terms of the domestic currency.

$?P_d$= Change in the domestic price level.

Example: Change in Real Exchange Rate

Consider two countries: Canada and the United States of America, where the US is the domestic country. The nominal exchange rate is CAD/USD = 1.25. If the price level in the USA increases

by 4% and the price level in Canada increases by 2%, what is the new real exchange rate, assuming the nominal exchange rate remains unchanged?

Solution

Price level increase in the USA: 4%

Price level increase in Canada: 5%

Using the formula:

$$(1 + \frac{\Delta S_{d/f}}{S_{d/f}}) \times \frac{(1 + \frac{\Delta P_f}{P_f})}{(1 + \frac{\Delta P_d}{P_d})} - 1$$

Using the values from the example:

$\Delta S_{USD/CAD} = 0$

$S_{USD/CAD} = \frac{1}{1.25} = 0.8$

$\Delta P_{CAD} = 2\% = 0.02$

$P_{CAD} = 100\% = 1$

$\Delta P_{USD} = 4\% = 0.04$

$P_{USD} = 100\% = 1$

Plugging in the values:

$$= (1 + \frac{0}{0.8}) \times (\frac{1 + 0.02}{1 + 0.04}) - 1$$
$$= (1) \times (\frac{1.02}{1.04}) - 1$$
$$\approx 0.98077 - 1 = -0.01923$$

So, the Change in the real exchange rate is approximately -1.923%, which means the real exchange rate decreased by approximately 1.923%.

A decrease in the real exchange rate means that the value of the domestic currency (in this case, the USD) has decreased relative to the foreign currency (CAD) after adjusting for changes in price levels.

In this example, the price level in Canada (CAD) went up by 2%, while in the United States (USD), it increased by 4%. Although the nominal exchange rate remained the same, the varying inflation rates between the two countries caused the real exchange rate to decline, signifying a real depreciation of the USD against the CAD.

This real depreciation of the USD could be due to the higher inflation in the United States compared to Canada. When a country has a higher inflation rate relative to another country, the purchasing power of its currency decreases, which leads to a decrease in the real exchange rate. This is consistent with the Purchasing Power Parity (PPP) theory, which suggests that in the long term, exchange rates adjust to equalize the purchasing power of different currencies.

Market Participants

The foreign exchange (FX) market consists of various participants ranging from multi-billion-dollar investment funds to individuals. These participants can be broadly categorized into the buy and sell sides.

Buy Side Participants

- **Corporate accounts**: These comprise businesses of all sizes participating in FX transactions when they buy and sell goods and services across borders, engage in international mergers and acquisitions (M&A), invest in foreign assets, and borrow in foreign currencies.
- **Real money accounts**: These are investment funds managed by insurance firms, mutual funds, pension funds, endowments, ETFs, and other institutions. They typically have limitations on using leverage or financial derivatives.
- **Leveraged accounts**: This category includes hedge funds, proprietary trading firms,

CTAs, high-frequency algorithmic traders, and bank trading desks that actively manage FX risks to generate profits.

- **Retail accounts**: This category includes private individuals, smaller hedge funds, active traders, and households utilizing electronic trading platforms for currency conversion or speculative activities.
- **Governments**: These include government bodies requiring FX for transactions or to achieve public policy objectives, such as purchasing military equipment, maintaining foreign bases, and administering public pension plans and insurance schemes.
- **Central banks**: These entities intervene in FX markets to impact domestic currency values, manage foreign reserves, or address unstable and dysfunctional market situations.
- **Sovereign Wealth Funds (SWFs)**: These are government-owned entities primarily focusing on investment activities rather than public policy objectives and managing international capital inflows resulting from current account surpluses.

Sell-Side Participants

- **Large money center dealing banks**: These are the largest multinational banks, such as Deutsche Bank, Citigroup, UBS, and HSBC, which provide competitive price quotes across a broad range of FX products.
- **Second and third-tier banks**: These are regional or local banks lacking the economies of scale, global client base, or IT expertise required to offer competitive pricing across a wide range of currencies and FX products. They often outsource FX services to larger tier-one banks.

Note that the FX market is highly dynamic and complex, with participants having a mix of hedging and speculative motives. In the case of public sector participants, public policy motives may also be a factor. This dynamic and complex interaction of participants and trading objectives makes it difficult to precisely predict movements in FX rates or describe the FX market with

simple characterizations.

Market Composition

The global foreign exchange (FX) market encompasses spot transactions, forward transactions, and FX swaps. The Bank for International Settlements (BIS) conducts a triennial survey to analyze the size and distribution of global FX market flows.

Key Components of the FX Market

- **Spot transactions**: Involve the immediate exchange of currencies at the prevailing exchange rate.
- **Forward transactions**: Entail the exchange of currencies at a specified future date and a pre-agreed exchange rate.
- **FX swaps**: These are the combination of spot and forward transactions utilized for hedging purposes and securing foreign currency at more advantageous rates.

Exchange Rate Quotations

Exchange rates represent the value of one currency in terms of another and can be quoted in two ways: **direct** and **indirect**.

A direct quote involves the domestic currency as the **price currency** and the foreign currency as the **base currency**, while an indirect quote is the reverse.

For instance, if we quote the currency exchange rate as A/B, it implies that one unit of currency B buys a certain number of units of currency A. In this case, currency A is the price currency, and B is the base currency.

A direct currency quote considers domestic currency as the price currency and foreign currency as the base currency. For instance, a French investor will view EUR/USD as the direct euro-US

dollar exchange rate quoted in terms of the number of euros per dollar. Specifically, if EUR/USD = 1.2310, implies that 1 USD costs 1.2310 EUR.

In the case of the indirect quote, the domestic currency is the base currency, and the foreign currency is the price currency. For instance, the direct quote EUR/USD = 1.2310 has a corresponding indirect tax of 1/ EUR/USD = USD/EUR = 0.8123. It implies that 1EUR costs 0.8113 dollars.

The **professional FX market** does not use the terms 'direct' or 'indirect' due to the varying domestic and foreign currencies based on one's location.

Instead, a set of market conventions has been developed, where major currencies and their exchange rate quote conventions are standardized.

Note that there is always a mix of direct and indirect quotes in common market usage, and a market participant must get familiar with how the conventions are used.

Two-sided Price

The professional FX market operates on a two-sided price mechanism, which includes banks providing a "**bid**" (*buying price*) and an "**offe**r" (*selling price*) when a client asks for an exchange rate quote. As we already know, exchange rates involve two currencies, and the terms "base currency" and "price currency" clarify the transaction.

The two-sided price reflects buying or selling the base currency:

- It shows how much of the price currency the client would receive for one unit of the base currency (bid).
- It also indicates how much of the price currency the client needs to give to the bank to get one unit of the base currency (offer).

For instance, consider the bid/offer quote of CHF/EUR = 1.160-1.1622. In this case, the euro (EUR) is the base currency. A quote of 1.1620-1.1622 implies that the client will receive CHF1.1620 for selling EUR1 to the dealer and pay 1.1622 to buy EUR1.

Usually, banks profit by buying currencies at a lower price and selling at a higher price, while electronic FX systems efficiently connect global buyers and sellers, reducing **bid/offer spreads** due to competition.

The majority of primary spot exchange rates are often expressed to four decimal points. However, the yen is an exception among the main currencies, with its spot exchange rates usually given to just two decimal points. For instance, while a USD/EUR rate might be displayed as 1.1601, a JPY/EUR rate would show as 1311.88.

Example: Calculating Bid/Offer Quote

If the bid/offer quote from the trader were 25.6250–25.6300 INR/USD, then the bid/offer quote in USD/INR terms would be closest to:

1. 03901–0.03902.
2. 03902–0.03901.
3. 039015–0.039015.

Solution

The correct answer is **A**.

An INR/USD quote represents the amount of Indian rupees the trader is bidding (offering) to purchase (sell) USD1. The trader's bid to buy USD1 at INR25.6250 is similar to the trader handing over INR25.6250 to buy USD1. When you divide both terms by 25.6250, it means the trader is handing over (i.e., selling) INR1 to buy USD0.03902. This becomes the offer in USD/INR terms. The trader is willing to sell INR1 for a price of USD0.03902.

In USD/INR terms, the trader's bid for INR1 is 0.03901, determined by inverting the offer of 25.6300 in INR/USD terms (1/25.6300 = 0.03901). It's crucial to remember that in any bid/offer quote, irrespective of the base or price currencies chosen, the bid is always lesser than the offer.

Percentage Appreciation/Depreciation of Exchange Rates

When describing exchange rate changes as a percentage appreciation or depreciation, it's crucial to determine the price currency and the base currency.

For example, if KSH/USD =145, it implies that one unit of US dollar will buy 145 units of Kenyan shillings. Intuitively, if KSH/USD decreases, it implies that USD costs less or fewer KSH is needed to purchase the USD dollar. In this case, the decline in KSH/USD implies that KSH appreciates against the USD, or, in other words, the USD is depreciating against KSH.

Example: Appreciation and Depreciation of Exchange Rates

To calculate the percentage change, one must clearly understand the base and price currencies. Take the Chinese Yuan (CNY) and South African Rand (ZAR) example. Assume that the ZAR/CNY exchange rate increased from 1.6459 to 1.8356. Therefore, the percentage appreciation will be:

$$\frac{1.8356}{1.6459}1 = 11.5256\%$$

his represents an 11.5256 percent appreciation in the Chinese Yuan against the South African Rand. The ZAR/CNY exchange rate is expressed with the Chinese Yuan as the base currency and the South African Rand as the price currency. In other words, you now need more South African Rands to buy one Chinese Yuan.

The appreciation of the Chinese Yuan against the South African Rand can also be expressed as a depreciation of the South African Rand against the Chinese Yuan. However, in this case, the depreciation percentage will not be equal to the previous appreciation percentage of 11.5256%.

To invert a currency exchange rate, we have to divide 1 by the exchange rate. If

$$\text{ZAR/CNY} = 1.6459$$

Then,

$$\text{CNY/ZAR} = \frac{1}{1.6459} = 0.6076$$

To calculate the depreciation percentage of the South African Rand when the exchange rate

ZAR/CNY increased from 1.6459 to 1.8356, we need to invert the exchange rate from ZAR/CNY to CNY/ZAR, making the Chinese Yuan the price currency and the South African Rand the base currency. Here's how you do it:

$$\frac{\frac{1}{1.8356}}{\frac{1}{1.6459}} - 1 = 0.54480.6076 - 1 = -10.3358\%$$

Question

Which of the following *best describes* a 4% appreciation in the ZAR/CNY exchange rate?

A. This represents a 4 percent appreciation in the South African Rand (ZAR) compared to the Chinese Yuan.
B. This represents a 4 percent appreciation in the Chinese Yuan (CNY) compared to the South African Rand.
C. This represents a 4 percent depreciation in the Chinese Yuan (CNY) compared to the South African Rand.

Solution

The correct answer is **B**.

A 4% appreciation in the ZAR/CNY exchange rate represents an appreciation of the base currency against the price currency. In this case, the Chinese Yuan appreciates against the South African Rand. Therefore, the appreciation represents a 4 percent increase in the Chinese Yuan relative to the South African Rand.

LOS 7b: describe exchange rate regimes and explain the effects of exchange rates on countries’ international trade and capital flows

An exchange rate regime is the framework a country's central bank or government employs to determine its currency's relative value in the international market. This regime influences the country's trading relationships and capital flows.

The chosen regime is based on factors such as the country's relative economic stability, efficiency, and trading volatility. For example, countries experiencing higher volatility might adopt a different exchange rate regime compared to those with more stable economies.

The design and implementation of the exchange rate regime framework is essential as it can impact real economic activity, investment decisions, and the risk profile of foreign assets.

The "Ideal" Currency Regime and Its Challenges

The concept of an "ideal" currency regime involves three primary attributes.

1. Establishing **credibly fixed exchange rates** between currencies, thereby reducing uncertainties related to pricing in terms of goods, services, and financial assets.
2. Allowing **full convertibility of currencies** and facilitating unrestricted capital movement.
3. It envisions each country having the **autonomy to pursue independent monetary policies** in line with its domestic objectives, such as economic growth and inflation control.

Achieving all three conditions simultaneously is complex because they are inconsistent. If the exchange rate between currencies is credibly fixed and all currencies are convertible, then there would be a single global currency. In such a context, converting one national currency to another would be as simple as choosing between carrying coins or paper money in your pocket.

Under these conditions, attempts to control interest rates, asset prices, or inflation by manipulating the supply of one currency relative to another are ineffective. As a result, the

concept of an independent monetary policy is unworkable. In conclusion, there is no one-size-fits-all currency regime.

Currency Regime Impact on Independent Monetary Policies

The interplay between currency regimes and a country's ability to implement independent monetary policies is a central issue in open-economy macroeconomics. In a hypothetical scenario with perfectly mobile capital, attempting to decrease interest rates independently in one country could trigger an outflow of capital seeking higher returns elsewhere. This movement of capital would necessitate central banks to buy back domestic currency and sell foreign currency to maintain fixed exchange rates. Such actions could undermine the effectiveness of independent monetary policies.

Flexibility of Floating Exchange Rates

A floating exchange rate system provides greater flexibility in responding to economic changes. If a country decreases its domestic interest rates, the resulting depreciation of its currency can boost exports and decrease imports, thereby reinforcing the expansionary impact of the interest rate change. Similarly, raising interest rates can lead to currency appreciation, affecting trade dynamics. This flexibility allows countries to adjust to economic shifts more effectively.

Enhancing Central Bank Effectiveness through Exchange Rate Flexibility

Allowing exchange rates to fluctuate and imposing controls on convertibility can empower central banks to pursue macroeconomic objectives more effectively. Central banks can better address domestic economic challenges by having the freedom to adjust exchange rates and enact monetary policy measures. While greater exchange rate flexibility enhances a central bank's efficacy, it also brings potential drawbacks, which include:

- One significant concern is the increased exposure to exchange rate risk faced by businesses engaged in international trade or investment.
- Additionally, excessive exchange rate volatility can lead to misallocation of financial

capital, potentially impacting economic efficiency and stability.

Achieving the right balance between policy effectiveness and potential economic distortions is a key challenge in managing exchange rates and their impact on economies.

Historical Perspective on Currency Regimes

Throughout history, different currency exchange systems have existed alongside each other, with one usually emerging as the dominant system. This has significantly influenced how the world economy approaches the valuation and exchange of currencies.

The Classical Gold Standard and Price-Specie-Flow Mechanism

During the 19th and early 20th centuries until World War I, the "classical gold standard" prevailed. Major currencies like the US dollar and the British pound were tied to fixed gold quantities. Gold acted as the standard unit for pricing goods and assets through the "price-specie-flow mechanism." Trade surpluses led to increased gold reserves, expanding money supply and prices, while deficits caused gold outflows, decreasing prices and boosting exports. National currencies were backed by gold, maintaining supply limitations.

Bretton Woods System and Transition to Flexible Rates

After World War II, a new system called the Bretton Woods system was introduced in 1944. This system featured fixed exchange rates with occasional realignments. The United States, Japan, and many European industrial countries adhered to this framework. When exchange rate parities deviated significantly from supply-demand equilibrium, periodic realignments were executed to correct the imbalances. These realignments were integrated into standard monetary policy practices.

The system collapsed due to chronic inflation, transitioning to flexible exchange rates in 1973—this shift, influenced by economists like Milton Friedman, aimed to counter speculator disruptions. Flexible rates led to unforeseen exchange rate volatility, partly due to investment-

driven foreign exchange transactions.

However, the transition to flexible exchange rates brought unforeseen consequences, including heightened exchange rate volatility. This was attributed to investment-driven FX transactions, both for long-term investments and short-term speculation. These transactions played a more substantial role in determining spot exchange rates than previously acknowledged.

European Exchange Rate Mechanism (ERM) and Euro Creation

The European Economic Community introduced the European Exchange Rate Mechanism (ERM) to instill a degree of stability in exchange rates. Initially, currency values were expected to fluctuate within a narrow range known as "the snake."

However, the ERM's vulnerability became apparent in the early 1990s. Speculative attacks and macroeconomic disparities led to deviations from the ERM's framework, ultimately culminating in the UK's forced exit from the system.

Despite challenges, the euro emerged in the late 20th century for Western European countries, enhancing transparency and competition. This aimed to streamline pricing transparency, encourage market competition, and optimize resource allocation. However, it also led to trade-offs as member states surrendered independent exchange rate control for economic integration.

Continuing Exchange Rate Historical Evolution

The historical shifts in currency regimes have been driven by a complex interplay of economic, geopolitical, and policy factors. These transitions have shaped how countries value and exchange currencies, often reflecting a delicate balance between stability, policy objectives, and market forces.

Taxonomy of Currency Regimes

In the ongoing discussions about fixed and flexible exchange rates, many countries have adopted intermediary systems that sit between these two extremes.

Drivers for Intermediate Regimes

- In some cases, a lack of credibility in terms of sound monetary policy drives the adoption of intermediate regimes. Nations with a history of hyperinflation might resort to a form of fixed-rate regime due to credibility concerns in maintaining a stable currency under a floating regime.
- In other cases, political motivations influence currency regime choices. For instance, the creation of the euro aimed to foster political unity among European Community members with a history of conflicts.

As of April 2008, the IMF categorized exchange rate regimes into eight distinct categories, each representing a different approach to managing a nation's currency value. These categories encompass a spectrum of currency arrangements. They include:

1. Arrangement with No Separate Legal Tender

According to the IMF, countries with no legal tender can be seen in two ways. One is dollarization, where countries don't have their own currency and use foreign currencies. The other is when a country is part of a monetary union. Countries with no separate legal tender currency arrangement cannot carry out their own monetary policies.

Dollarization involves adopting another nation's currency as the medium of exchange, granting currency credibility but not creditworthiness. Note that a country can adopt any currency, but the obvious choice might be the US dollar since it is the main reserve currency. Examples of dollarized countries include East Timor, El Salvador, Ecuador, and Panama.

The European Economic and Monetary Union (EMU) exemplifies a monetary union where member countries share the euro. A monetary union alone does not guarantee creditworthiness, as evident from the 2010 EMU sovereign debt crisis.

Member countries cannot perform independent monetary policy. The monetary union determines the monetary policy through their representatives in the European Central Bank.

2. Currency Board System (CBS)

A CBS, or Currency Board System, is a monetary arrangement where the government commits to exchanging its domestic currency for a specified foreign currency at a fixed rate. It comes with restrictions to make sure the government can meet this commitment. In this system, the local currency is only issued when there's an equivalent amount of foreign currency held in reserves, making it fully backed by foreign assets.

The currency board system is seen in Hong Kong, where US dollar reserves back the entire Hong Kong dollar monetary base.

Similar to the gold standard, CBS links monetary base expansion and contraction to trade and capital flows, assuming flexible domestic prices and limited non-traded sectors.

3. Fixed Parity

A fixed parity system involves pegging the exchange rate to a single currency or a basket of currencies but without any legislative commitment to maintain it, allowing a country to adjust or abandon the parity if necessary.

The fixed parity regime system allows the central bank to perform traditional functions while maintaining a discretionary level of foreign exchange (FX) reserves. Private sector demand for the country's currency can affect the fixed parity, with excess demand leading to an increase in FX reserves and inflation and deficient demand leading to a depletion of FX reserves and deflation. A speculative attack can occur if market participants believe that FX reserves are insufficient to sustain the parity, draining the reserves and forcing an immediate devaluation. Hence, maintaining an adequate level of reserves is crucial for the credibility of a fixed exchange rate regime.

4. Active and Passive Crawling Pegs

Active crawl is when the exchange rates are pre-announced for the coming weeks with the changes taking place in small steps to manipulate the expectations of inflation.

On the other hand, passive crawl is when exchange rates are frequently adjusted (on a daily or weekly basis), usually against a single currency such as the US Dollar, to keep pace with the inflation rate.

5. Fixed Parity with Crawling Bands

A country may initially peg its currency to a foreign currency to stabilize inflation expectations. Over time, it can introduce more flexibility by gradually widening a pre-defined range around this fixed rate. This system provides an incremental way to transition away from a fixed currency rate, especially if the country is not yet equipped for full monetary flexibility due to a lack of credibility or financial infrastructure.

6. Target Zone Regimes

A target zone system maintains a set parity but comes with broader intervention bands, potentially extending up to ±2 percent around the established parity, compared to a basic fixed parity model. This expanded bandwidth allows the monetary authority increased flexibility for discretionary actions.

7. Managed Float

A managed float involves policy interventions to achieve internal or external targets, potentially creating instability in FX markets. Exchange rate targets may not be explicitly defined.

8. Independently Floating Rates

Independently floating rates leave exchange rates to market determination, allowing the central bank to pursue autonomous monetary policy goals while also acting as a lender of last resort.

Effects of Exchange Rates on Countries' International Trade

and Capital Flow

There are many effects of exchange rates on countries' international trade and capital flow. Most of them are listed below.

Changing Prices of Currencies

While shifts in supply and demand of products change the prices of those products, constant shifts in supply and demand for foreign currencies cause changes in the prices of currencies. Likewise, as prices of money change, demand for foreign currencies changes.

Increase in Demand for Imports

An increase in the demand for imported goods happens when products of a foreign nation sell at lower prices than domestic products. When domestic income rises, demand for imports rises. Moreover, in capital markets, when returns on a nation's investments are higher than the domestic interest rate, individuals choose to invest in other nations' securities.

Expensive Products

Many countries depend more on imports than domestically produced goods. This is because exchange rates play a significant role in the determination of the prices of imported products. If the domestic currency is weaker, consumers will have to pay higher prices in domestic currency for foreign goods.

They are Self-correcting over Time

When the supply of dollars in the international market grows, their values depreciate. As time goes by, imports become unattractive, and exports become more attractive. The converse is also true.

Development of a Trade Deficit

If the interest rates of other nations are higher than those of dollar nations, the demand for foreign countries automatically falls. However, a stronger dollar means decreased exports because they seem expensive to foreign consumers. This leads to a trade deficit.

Effect on Standard of Living

Differences in currency values affect our ability to buy imported goods and export domestic goods. A currency crisis affects the lives and well-being of the citizenry in significant ways. For example, take Argentina, a country that has defaulted on its debt five times in the last 200 years. Every time this happens, their currency gets devalued. As a result, Argentineans cannot import goods from other countries cheaply for a few years. This hurts Argentina's economic growth and its citizenry's standard of living.

Exchange Rates and the Trade Balance

A nation's trade balance and capital account are interrelated; a trade deficit/surplus must correspond to a capital account surplus/deficit. Factors affecting trade balance have an equal and opposite impact on the capital account and vice versa, highlighting their interdependence.

Consider the following fundamental equation from macroeconomics:

$$X - M = (S - I) + (T - G)$$

Where:

X= Exports.

M= Imports.

S= Private savings.

I= Investment.

T= Taxes net of transfers.

G= Government expenditure.

From the above equation, it's evident that a trade surplus (X > M) necessitates either a fiscal surplus (T > G), a surplus of private savings over investment (S > I), or both. Given that fiscal surplus can equate to government saving, it can be concisely stated that a trade surplus indicates a nation's savings surpasses what's needed for its infrastructure investments (I). This surplus in savings is then channeled towards accumulating financial claims from other countries.

On the flip side, a trade deficit signifies the country's savings fall short of its investment requirements (I), leading to a decrease in its financial holdings from other countries.

While this equation connects real expenditure and savings decisions with financial asset flows, it doesn't specify the type or currency of exchanged assets. Asset prices and exchange rates adjust to align with investors' preferences. Anticipated exchange rate changes drive capital flows, but adjustments primarily occur in financial markets due to their faster pace compared to goods prices.

Fixed exchange rate regimes involve central bank intervention to maintain pegs adjusting other asset prices. Floating exchange rates entail rapid exchange rate shifts that affect investor conviction. In the short to intermediate term, capital flows mainly drive exchange rate movements, with trade flows becoming increasingly influential over the long term.

Question

In which of the following currency arrangements does a nation adopt another nation's currency as its medium of exchange?

A. Fixed Parity.
B. Dollarization.
C. Fixed Parity with Crawling Bands.

Solution

The correct answer is **B**.

Dollarization is a currency arrangement in which a nation adopts another nation's currency as its medium of exchange.

A is incorrect. A fixed parity system involves pegging the exchange rate to a single currency or a basket of currencies but without any legislative commitment to maintain it, allowing a country to adjust or abandon the parity if necessary.

C is incorrect. A fixed parity with crawling bands is when a country that had initially pegged its currency to a foreign currency to stabilize inflation gradually widens a pre-defined range around the fixed rate to introduce more flexibility.

LOS 7c: describe common objectives of capital restrictions imposed by governments

Capital restrictions are the measures that governments or central banks take to control the flow of foreign money in and out of a country's economy.

Objectives of Capital Restrictions

Economic Stability and Growth

Governments impose capital restrictions to steer their economies towards desired trajectories. Such measures help achieve objectives related to employment and regional development. Government regulations on foreign investments allow them to control key sectors vital to their growth plans. They can direct necessary funds to these sectors or protect them from potentially damaging foreign influences.

Protecting Strategic Industries

Some industries hold significant importance not just economically but also strategically. Industries like defense, telecommunications, and sometimes even energy are crucial for national security and sovereignty. By limiting foreign ownership or investments in these sectors, governments can ensure that they remain predominantly under national control, thereby protecting them from foreign influences that might not align with national interests.

Preventing Capital Flight

During economic downturns or political instability, there's a heightened risk of capital flight – a massive and sudden outflow of capital from the country. Such outflows can exacerbate economic problems, causing currency devaluations and draining national reserves. Capital restrictions help manage and mitigate the risks associated with these sudden, large-scale outflows.

Monetary and Fiscal Policy Implementation

Achieving desired macroeconomic outcomes in an environment of uncontrolled capital mobility can be challenging. Standard monetary and fiscal tools might fall short of influencing the economy in the desired direction. By introducing capital controls, governments can better manage external pressures and achieve a balance between domestic and external policy objectives.

Revenue Generation and Government Financing

Historically, capital restrictions have been a tool for revenue generation, especially in times of war or significant national crises. By limiting capital outflows, governments can keep more capital within the domestic economy, making it easier to tax wealth and generate interest income. This not only aids in immediate revenue generation but also helps maintain low interest rates, reducing government borrowing costs.

Managing External Balance

External balance means balancing payments between a country and the world. Governments can control capital coming in and going out to maintain a healthy balance, preventing excessive external debt and long-term economic stability.

Yet, imposing these constraints poses certain challenges. They result in substantial administrative expenses and potential delays in critical policy changes and can create unfavorable market perceptions. The impact of these controls differs, and effective, vigorous enforcement is typically essential to achieve the intended results.

Question

Which of the following trade controls is *most likely* to cause the biggest economic gain for an importing country?

A. Tariffs.
B. Import quotas.
C. Export subsidies.

Solution

The correct answer is **A**.

A tariff is a tax imposed on imported goods and services. Tariffs provide immediate revenue for the government imposing them. Additionally, they can protect domestic industries by increasing the price of imported goods, which can make domestically produced goods more competitive in the market.
Compared to import quotas and export subsidies, tariffs offer direct fiscal benefits to the government and can also have the secondary benefit of boosting domestic production.

B is incorrect. An import quota is a limit a country sets on the quantity of a good that can be imported. While quotas can protect domestic industries by limiting foreign competition, they do not generate direct revenue for the government.

Quotas might lead to economic gain by fostering domestic industry, but this is more indirect and potentially less substantial than the revenue generated from tariffs. Additionally, they can lead to inefficiencies and a lack of competition, which might harm the economy in the long run.

C is incorrect. An export subsidy is a government policy to encourage the export of domestic goods. Export subsidies are generally used by countries to increase exports, not to regulate imports. They do not generate revenue for the importing country and

do not directly affect imports.