

EE432 Monetary Theory and Policy



Final Exam Recap III
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Chapter 20

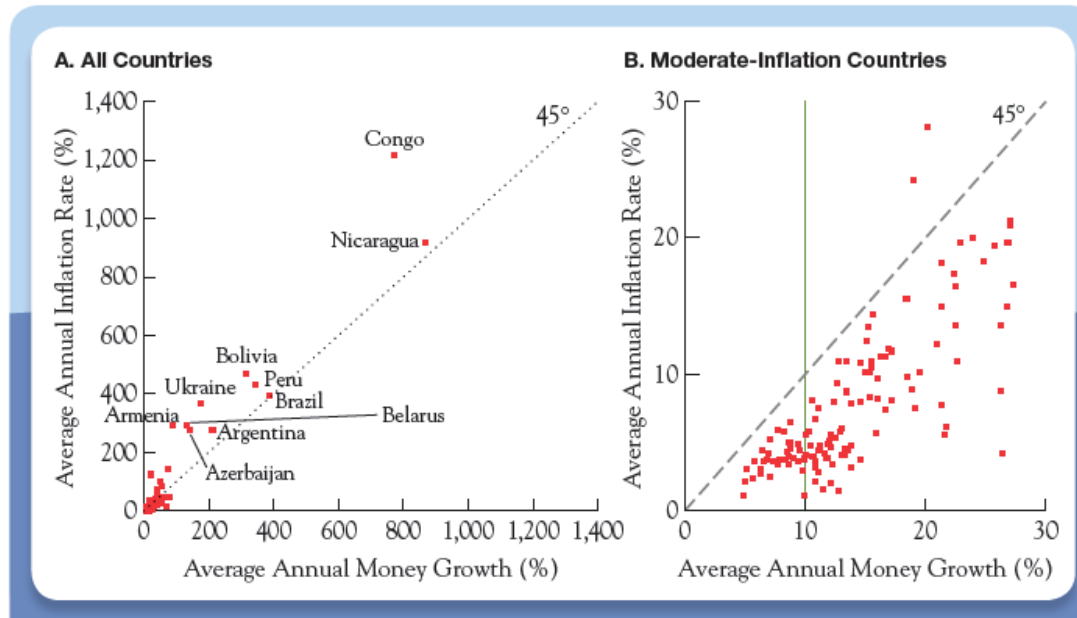


Money Growth and Money Demand

Why We Care about Monetary Aggregates

Figure 20.1

Inflation Rates and Money Growth

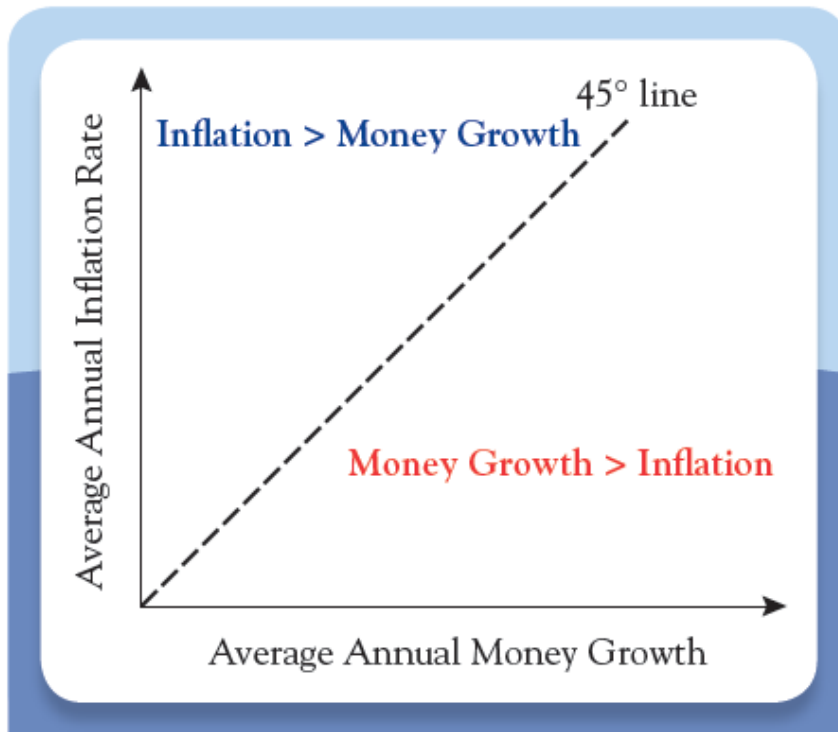


Every country with ***high inflation*** has ***high money growth***. To avoid sustained episodes of high inflation, a **central bank** must be ***concerned*** with **persistent rapid money growth**.

Why We Care about Monetary Aggregates

Figure 20.2

Money Growth and Inflation



In general, **countries with very high inflation** tend to *lie above the line* and *countries with moderate to low inflation* tend to *fall below it*.

Why We Care about Monetary Aggregates

- When the **currency** that *people are holding* loses value very rapidly, they will ***spend as quickly as possible*** - the same effect on inflation *as an increase in money growth*.
- By **limiting** the ***rate*** at which they ***purchase securities***, policymakers can **control** the ***rate of M2 grow***.
- It is *impossible* to have ***high, sustained inflation*** without ***monetary accommodation***.

The Quantity Theory and the Velocity of Money

- Thinking about the **value or purchasing power** in terms of the ***goods*** needed to get *money to pay* - the ***impact of inflation***.
- Given steady demand, an ***increase*** in the **supply of money** drives the **price of money down**, *requiring more money - inflation*.
- If the central bank **continuously floods** the economy **with large amounts of money**, ***inflation will reach very high levels***.

Velocity and the Equation of Exchange

- The *number of dollars used* is the **quantity of money** in the economy: **M**
- The *number of times each dollar is used* is called the **velocity of money: V**
- **MV** represents the *value of transactions*.

Velocity and the Equation of Exchange

- Everyone **purchases** *counted in nominal GDP* requires the **use of money**.

$$(\text{Quantity of Money}) \times (\text{Velocity of money}) = \text{Nominal GDP}$$

- ***M*** is the **quantity of money**, ***V*** is the **velocity** and **nominal GDP** can be:
 - The ***price level, P*** times the ***quantity of real output, Y***.

Velocity and the Equation of Exchange

- We can ***rewrite*** the previous equation as:

$$MV = PY$$

- This is called the **equation of exchange**, and tells us that the ***quantity of money multiplied by its velocity equals the level of nominal GDP***.

Velocity and the Equation of Exchange

- We can ***rewrite*** the equation to allow *for the percentage change in each factor*.

$$MV = PY$$

$$\% \Delta M + \% \Delta V = \% \Delta P + \% \Delta Y$$

- ***Money growth plus velocity growth equals inflation plus real growth.***

The Quantity Theory of Money

- Suppose that there are *no important changes* occur in **payment methods** or the *cost of holding money*.
 - If the **interest rate is fixed** and there is *no financial innovation*, then velocity will be constant.
- Also assumed that real output is *determined* solely *by* **economic resources** and **production technology**, so it too is fixed in the short run.

The Quantity Theory of Money

- *Irving Fisher* concluded that money growth translates directly into inflation, an assertion that is termed the **quantity theory of money**.
- We can *reinterpret* the *quantity theory of money* to describe the equilibrium between *money demand* and *money supply*.
 - Money demanded (M^d) equals the total value of transactions *divided* by the velocity of money (V).

The Quantity Theory of Money

- For the economy as a whole, **the demand for money equals nominal GDP *divided* by velocity**:

$$M^d = \frac{1}{V} PY$$

- The **supply of money (M^s)** is *determined* by the ***central bank*** and the ***behavior of the banking system***.
- Assuming ***velocity*** and ***real output*** are **constant**, we can conclude that ***money growth equals inflation***.

The Quantity Theory of Money

The **quantity theory of money** *accounts for* some important characteristics:

1. It *tells us* why **high inflation** and **high money growth** go together.
2. It explains the tendency for ***moderate- and low-inflation countries*** to fall below the 45-degree line.

The Quantity Theory of Money

- **Money growth** tends to be *higher* than **inflation** in those countries because they are *experiencing real growth*.
- If velocity is constant, then **money growth** equals the *sum* of **inflation** and **real growth**.
- At a *given level of money growth*, the **higher** the level of **real growth**, the *lower* the level of *inflation*.
- In **countries that are growing**, **inflation** will be *lower than money growth*, causing their economies to fall below the 45-degree line.

The Facts about Velocity

- If the **velocity of money** is *constant*, it means the **trend in real growth** is *determined by* the **structure of the economy** and the **rate of technological process**.
 - This means countries **could control inflation** *directly by limiting money growth*.
- This logic led *Milton Friedman* to conclude that **central banks** should *simply set money growth* at a **constant rate**.
 - **M1 and M2** *should grow* at a rate equal to the *rate of real growth* plus the *desired level of inflation*.

The Facts about Velocity

- To make the rule viable, he **suggested changes in regulations** that would:
 - Limit banks' discretion in ***creating money***, and
 - ***Tighten the relationship between the monetary aggregates and the monetary base, reducing fluctuations in the money multiplier.***
- ***For example, an increase in the reserve requirement or restrictions on the number and types of loans banks could make.***

The Facts about Velocity

- But Friedman's recommendation that the **central bank** should **keep money growth constant** would ***stabilize inflation only if velocity were constant.***
- In countries with ***high levels of inflation, changes in velocity can probably be ignored.***
- But in countries where **inflation rate is below 10% per year**, **changes in velocity** could have a **significant impact** on the ***relationship*** between **money growth** and **inflation**.

The Facts about Velocity

- Historical data seem consistent with Fisher's conclusion: *in the **long run**, the velocity of money is stable, so that controlling inflation means **controlling the growth of the money aggregates**.*

The Facts about Velocity

- Central bankers are ***concerned about inflation over months and quarters, not years.***
- The **monetary aggregates**, even broad ones, ***can be useful guides to short-term policy only*** to the extent that they **signal changes in inflation during the periods monetary policymakers *care about*.**

The Facts about Velocity

- Notice the **increase in velocity** in the *late 1970s and early 1980s*.
- This was a period of both **high nominal interest rates** and **significant financial innovations**.
- Together these *reduced the amount of money individuals held* for a given level of transactions, *raising the velocity of money*.

The Facts about Velocity

- These data clearly suggest that **fluctuations** in the *velocity of money* are *tied to* **changes in people's desire to hold money**.
- Policymakers *must understand* the **demand for money**.

The Transactions Demand for Money

- The **quantity of money** people *hold for transactions purposes* depends on their
 - Nominal **income**,
 - The **cost of holding money**
 - The availability of **substitutes**
- The **higher people's nominal income**, the *more they will spend, needing more money.*

The Transactions Demand for Money

- Deciding *how much money to hold* depends on the costs and benefits.
- **Benefits:** *Holding money* allows people *to make payments*.
- The cost is based on **opportunity cost**.
 - The *interest* that people lose in not buying an interest-bearing bond is the *opportunity cost of holding money*.

The Transactions Demand for Money

- For a *given cost of switching*, as the **nominal interest rate rises**, people *reduce their checking account balance*, **shifting *funds*** into **higher-yield investments**.
- The **higher** the **nominal interest rate**, the **higher** the **opportunity cost of holding money**, the ***less money*** individuals ***will hold*** for ***transactions***, and the **higher** the **velocity of money**.

The Transactions Demand for Money

- At **high** levels of **inflation**, *money is losing value very quickly.*
- People respond to the **high cost of holding money** by *keeping it as little as possible.*
 - They therefore ***purchase durable goods*** that have *zero real return - **better than negative return on currency.***
- This **relationship** explains why **inflation tends to exceed money growth** in *high-inflation countries*

The Transactions Demand for Money

- The anxious spending *drives up* the **velocity of money**.
- Because *high inflation* brings an *increase in velocity*, ***inflation*** must be higher than ***money growth*** in those countries.

The Transactions Demand for Money

- The **transactions demand for money** is *affected* by **technology**.
- **Financial innovation** allows people to *limit the amount of money they hold*.
- This **lowers** the **money holdings** at a given level of income.
 - This increases the **velocity** of your money.

The Transactions Demand for Money

- We all **hold money** to *insure* ourselves *against* **unexpected expenses**.
- We call this the **precautionary demand for money**
- The *higher* the level of *uncertainty* about the future, the **higher the demand for money** and the *lower the velocity of money* will be.

The Portfolio Demand for Money

- As a *store of value*, money provides *diversification* when **held along with** a wide variety of **other assets**.
- The **demand for bonds** *depends on* several factors including:
 - **Wealth**
 - The **return** *relative to alternative investments*
 - **Expected future interest rates** on *bonds*
 - **Risk** *relative to alternative investments*
 - **Liquidity** *relative to alternative investments*

The Portfolio Demand for Money

- As **wealth rises**, the *quantity of all these investments*, including money, **rises** with it.
- A **decline** in **bond yields** will **increase** the portfolio **demand for money**.
- When **interest rates rise**, **bond prices drop** and bondholders *suffer a capital loss*.
 - **bonds will become less attractive than money**.
- When **interest rates are expected to rise**, **money demand goes up**.

The Portfolio Demand for Money

- If a **sudden decrease in the liquidity of stocks, bonds, or other assets** occurred, we would expect to see an **increase *in the* demand for money**.

Chapter 23



Modern Monetary Policy and the Challenges Facing Central Bankers

The Traditional Channels: Interest Rates and Exchange Rates

- **Easing of monetary policy** - a decrease in the target nominal interest rate, which **lowers the real interest rate** - leads to a **depreciation of the dollar**.
- The ***less valuable dollar***:
 - **Drives up the cost of imported goods** and services, reducing imports from abroad, and
 - **Makes export goods** and services **cheaper**, so foreigners will buy more of them.

The Traditional Channels: Interest Rates and Exchange Rates

- The **interest-rate channel** is not very *powerful*.
- Data suggest that the **investment** component of total spending is not sensitive to interest rates.
- While a *small change in the interest rate* does change the cost of external financing, it does not have much **effect on investment decisions**.

The Traditional Channels: Interest Rates and Exchange Rates

- The impact of *short-term* interest rates on *household decisions* is modest.
- The problem is that *people's decisions to purchase cars or houses* depend on *longer-term interest rates* rather than the *short-run target rate*.
- *Household consumption decisions* will only change to the extent that the **target interest rate affects long-term interest rates**.

The Traditional Channels: Interest Rates and Exchange Rates

- The **policy-controlled interest rate** is just one of many factors that *shift the demand and supply* for the dollar on ***foreign exchange markets***.
- The **traditional channels of *monetary policy transmission*** are not very powerful.
- Yet, evidence shows that **monetary policy** is effective.
- **Something else** must be ***amplifying*** the impact of **monetary policy changes** on ***real economic activity***.

Bank-Lending and Balance-Sheet Channels

- **Banks** are *essential* to the *operation of a modern industrial economy*.
- **Banks** are also the channel through which *monetary policy is transmitted* to the economy.
- To understand monetary policy changes completely, we *look at* the **impact of policy changes on banks and bank lending**.

Banks and Bank Lending

- ***Borrowers*** do not have access to capital market financing - ***must go through banks.***
- When ***banks stop lending***, borrowers simply can not obtain financing.
- By ***altering*** the supply of funds ***to the banking system***, policymakers ***can affect*** banks' ability and willingness to lend.
 - The **bank-lending channel** of ***monetary policy transmission.***

Banks and Bank Lending

- An open market purchase has a *direct impact* on the **supply of loans**.
- **Financial regulators** can *also* influence **bank-lending practices**.
- **Changes in financial regulations**, will have an *impact* on the *amount of bank lending*.
- **Credit conditions** typically *tighten* in *recessions* and ease in booms.

Firms' Balance Sheets and Household Net Worth

- The **balance-sheet channel** of *monetary policy transmission* works because *monetary policy* has the direct influence on the net worth of potential borrowers.
 - An *easing of monetary policy* **improves firms' and households' balance sheets**, *increasing their net worth* and *reducing their credit risk premium*.
 - **Increases in net worth** *reduce the problems of moral hazard and adverse selection*.
 - This *lowers information costs of lending* and **allows borrowers to obtain financing more easily**.

Firms' Balance Sheets and Household Net Worth

How does *monetary policy expansion* improve borrowers' *net worth*?

1. *Expansionary policy drives up asset prices*, increasing the value of firms and the wealth of households.
2. *Lower interest rates reduce the burden of repayment* of current loans of borrowers.

Firms' Balance Sheets and Household Net Worth

- At **lower interest rates**, a person with *a variable rate loan* **enjoys** **lower interest payments**.
 - The *percentage of person's income* that is *devoted to loan payments* will be **lower**.
 - *As interest rates fall, the supply of loans increases.*
- **Information services** are central to ***banks' role*** in the *financial system*.
 - They help to *address the problems* of **adverse selection** and **moral hazard**.

Firms' Balance Sheets and Household Net Worth

- **Inferior information** leads to an *increase in adverse selection*.
- This then:
 - *Reduces bank lending,*
 - *Lowers investment, and ultimately*
 - *Depresses the quality of aggregate output demanded.*

Firms' Balance Sheets and Household Net Worth

- The **channels of monetary policy transmission** depend on the ***structure of the financial system***.
- *If banks are **unimportant sources of funds** for firms and individuals, **the bank-lending channel** is not tremendously important.*
- Though ***technology** has made the processing of increasing amount of **information** easier and cheaper*, it seems unlikely to solve the problems of **adverse selection** and **moral hazard**.

Asset-Price Channels: Wealth and Investment

- When the **interest rate *moves, so do* stock prices.**
 - This *relationship* is referred to the **asset-price channel** of monetary policy transmission.
- The **lower the interest rate**, the *higher the present value* is and the **higher the stock price.**

Asset-Price Channels:

Wealth and Investment

- When *policymakers* reduce their interest-rate target, it drives the **mortgage rate down**.
 - *Higher demand* for *residential housing*, driving up the *prices of existing homes*.
- **Stock and property prices** affect both *individual consumption* and *business investment*.
 - *Higher stock* and *real estate prices* mean an *increase in wealth*.
 - *An increase in wealth* means *higher consumption*.

Asset-Price Channels: Wealth and Investment

- As **stock prices *rise***, firms find it ***easier to raise funds*** by issuing new shares.
- As financing become ***less expensive***, **more investments *become profitable***.

Financial Crisis and the Transmission of Monetary Policy

- The *crisis of 2007-2009* intensified fundamental problems of **asymmetric information** that *affect* the **provision of credit** in a modern economy.
- The *widespread losses* at intermediaries and the *heightened uncertainty about the damage suffered by specific intermediaries* reduced confidence.

Financial Crisis and the Transmission of Monetary Policy

- Funding **liquidity dried up**.
- *Households' and nonfinancial firms' net worth fell* substantially, **reducing** their **ability to borrow**, so they **cut spending**.
- The result of all this was a **destabilizing feedback loop** between **worsening economic prospects** and the **deterioration of financial conditions** that **influence spending**.

Financial Crisis and the Transmission of Monetary Policy

- When the **policy transmission mechanism** is **obstructed**, **central banks cannot** assume that a ***cut in their target policy rate*** will ***ease the financial conditions*** that influence the economy.
- **Central banks** must always take into account the **workings of the monetary policy transmission mechanism** in order to ***achieve*** their goals of ***economic and price stability***.

The Challenges Modern Monetary Policymakers Face

The Challenges Modern Monetary Policymakers Face

- **Stock prices and property values** have a *tendency* to go through **boom and bust cycles**.
- Policymakers' *options* are limited
- The *nominal interest rate* cannot *fall below* the *effective lower bound*.

Booms and Busts in Property and Equity Prices

- **Bubbles** are damaging because the wealth effects they create *cause consumption to surge* and *then contract* just as rapidly.
 - Bubbles are identified after the fact by a **sharp rise** then a **sharp decline** in *prices*.
- The **collapse of the Internet bubble** in the **1990s** had a relatively minor impact because intermediaries faced *limited credit exposure* and *remained well capitalized*.
- While the *loss of capital* in the financial system *in 2007-2009* could have *led to catastrophe* without extraordinary government actions.

Booms and Busts in Property and Equity Prices

- Proponents of a *policy of “leaning against bubbles”* say that ***stabilizing inflation and real growth*** means **raising interest rates to discourage bubbles** from developing.
- ***Opponents of this interventionist*** view claim that **bubbles are too difficult to identify when they are developing**.
 - Central banks should ***wait until the bubble bursts*** and ***only then react aggressively to limit the fallout*** on the economy by cleaning up the mess.

Booms and Busts in Property and Equity Prices

- Today, the ***proper policy toolkit*** for *addressing bubbles* is not *interest rates* but the **macroprudential regulatory** approach
- According to this view, **bubbles** are a ***major threat***.
 - The best result would be to ***adjust regulatory rules*** to ***inhibit intermediaries*** from *extending* such ***risky credit*** in economic booms.

Booms and Busts in Property and Equity Prices

- This approach *still depends on* the **foresight and judgment of regulators** to limit the *buildup of an asset price bubble*.
- Using **interest rates to combat *asset price bubbles*** now is *more likely* to be viewed as a *backup* approach for *extreme circumstances*.

Deflation and the Effective Lower Interest-Rate Bound

- **Nominal interest rates can not be *deeply negative*.**
 - There is an ***effective lower bound (ELB)*** that is **below zero** due to transactions costs
 - Investors can ***always hold cash***, so ***bonds must have yields*** above the ELB to attract bondholders.
- Such risk which policymakers have ***no scope to lower rates further***, has concerned central banks since Japan's experience in the 1990s.

Deflation and the Effective Lower Interest-Rate Bound

- Think about the *consequences of a shock that depresses aggregate expenditure*.
 - The **dynamic aggregate demand curve** shifts to the *left*.
 - Real output *falls below* potential - a *recessionary output gap* putting ***downward pressure*** on inflation.
 - **Monetary policymakers** would normally react by ***cutting interest rates***.
 - This would *increase spending*, ***raise*** real output, and ***eliminate*** the **output gap**.

Deflation and the Effective Lower Interest-Rate Bound

- What if, when the shock occurs, **inflation is zero** and the **policy interest rate** that central bankers control is **at the ELB**?
 - The **decline in aggregate demand** still *drives real output below potential output*.
 - There is *downward pressure on inflation*.
 - But when **inflation falls**, it drops **below zero** so that, on average, *prices are falling*.
- This result is **deflation**.

Deflation and the Effective Lower Interest-Rate Bound

- When there is a **recessionary output gap**, **current inflation** is *below expected inflation* and **expected inflation falls**, which drives deflation down even more.
- Because the **nominal interest rate** is at the **ELB**, policymakers cannot counter the **worsening deflation** by **lowering** it.
 - The **real interest rate rises**, *reducing spending*, shifting the **AD curve** to the **left**.
 - This **expands** the **recessionary output gap**.
- The result is **deflationary spiral** in which *deflation grows worse and worse*.

Deflation and the Effective Lower Interest-Rate Bound

- **Deflation** makes it *more difficult* for businesses to *obtain financing for new projects*.
 - Without investment there is *no growth*.
- **Deflation**, therefore, **increases** the *real value* of a **firm's liabilities** without affecting the real value of its assets.

Deflation and the Effective Lower Interest-Rate Bound

Policymakers can minimize the chances of this sort of catastrophe:

1. They can ***set*** their **inflation objective** with the ***perils of deflation in mind***
2. They can ***act boldly*** when there is ***even an indication of deflation***
3. They can ***utilize*** unconventional policy tools

Deflation and the Effective Lower Interest-Rate Bound

- ***Reducing*** the interest rate ***significantly*** and ***rapidly*** when faced with the ***possibility of hitting the ELB*** is “acting preemptively”
- Central bankers can use ***unconventional policy tools*** that *include*:
 - Forward guidance
 - Quantitative easing
 - Targeted asset purchases

Deflation and the Effective Lower Interest-Rate Bound

- Central bankers are *very reluctant to use unconventional policy tools*
 - Continued uncertainty about *how and why they work* and *how to apply them effectively*
 - *Policy exit* may be difficult

Chapter 19



Exchange-Rate Policy and the Central Bank

Linking Exchange-Rate Policy with Domestic Monetary Policy

- Exchange-rate policy is *integral* to any monetary policy regime.
- When capital flows *freely across* a country's *borders*, a fixed exchange rate means giving up domestic monetary policy.

Linking Exchange-Rate Policy with Domestic Monetary Policy

There are two ways to see the **connection** between *exchange rates* and *monetary policy*.

1. Think about the *market for goods* and **purchasing power parity**.
2. *Short-run movements in exchange rates* are tied to the **supply and demand** in the *currency markets*.

Inflation and the Long-Run Implications of Purchasing Power Parity

- *Ignoring transportation costs, the law of one price says that **identical goods** should **sell for the same price** regardless of where they are sold.*
- The concept of **purchasing power parity (PPP)** *extends the logic of the law of one price to a basket of goods and services.*

Inflation and the Long-Run Implications of Purchasing Power Parity

- As long as goods can *move freely across international boundaries*, **one unit of domestic currency should buy the same basket of goods** anywhere in the world.
- When **prices change** *in one country* but not in another, the **exchange rate will adjust** to reflect the change.
- In the *long run*, **changes in the exchange rate** are tied to **differences in inflation**.
- *The central bank must choose either a fixed exchange rate or an independent inflation policy.*

Interest Rates and the Short-Run Implications of Capital Market Arbitrage

- In the **short run**,
 - A country's **exchange rate** is *determined* by **supply and demand**.
- When the bonds have *different yields*, the **prices** will be *bid up or down* until the returns are equal.

Capital Controls and the Policymaker's Choice

- **Impossible Trinity:** a country cannot complete 3 conditions
 - Free capital flows
 - Sovereign monetary policy
 - Fixed exchange rate
- Policymakers must ***choose two of these three*** options.
- *If* a country is willing to participate in **international capital markets**, it *can*:
 - Liberalize capital mobility
 - Conduct **independent monetary policy**
 - But, it could not keep its ***exchange rate fixed***

Capital Controls and the Policymaker's Choice

- Internationally **integrated capital markets** *ensure* that **capital** goes to its *most efficient* uses.
- **Disturbances** in one country's financial market *can be quickly transmitted* to other countries.
- For emerging-market countries, **greater openness** of capital markets *poses greater risks*.

Capital Controls and the Policymaker's Choice

- Countries with ***open capital markets*** are **vulnerable** to ***sudden changes*** in *investor sentiment*.
- Investors may **decide to sell a *country's bonds***.
 - The **value of the domestic currency** is ***driven down***.
 - **Bond prices** are ***driven down***.
 - **Interest rates** are ***driven up***.
- The *result* is **similar to a *bank run***.
 - *All investors leave* at once, **triggering a financial collapse**.

The Central Bank's Balance Sheet

- As the Fed works to **maintain a fixed dollar-euro exchange rate**, its *balance sheet shifts*.
- **Buying euros or selling dollars *increases* the supply of reserves** to the banking system.
- These ***interventions*** have an impact on **interest rates** and the **quantity of money** in the economy.
- **Controlling the exchange rate means giving up control of the size of reserves** so that the ***market determines the interest rate***.

The Central Bank's Balance Sheet

- In *September 2000*, the world's largest central banks **intervened** to ***bolster*** the **value of the euro**.
- The **Fed** ***purchased €1.5 billion*** in exchange for \$1.34 billion.
 - They did this **by purchasing bonds *issued by euro-area governments***.

The Central Bank's Balance Sheet

Figure 19.1

Change in the Federal Reserve's Balance Sheet Immediately following a Purchase of Euros

Assets		Liabilities	
Euro reserves (German government bonds)	+ \$1.34 billion	Commercial bank reserves	+ \$1.34 billion

- The Fed ***increased*** its **euro-denominated foreign exchange assets** by \$1.34 billion.
- On the liabilities side, **commercial bank reserves** have increase by the same amount.

The Central Bank's Balance Sheet

- This transaction is identical to a ***purchase of U.S. Treasury bonds.***
- A foreign exchange intervention has the same impact on reserves as a ***domestic open market operation.***
- The **Fed** did **supply dollars** to the market through its intervention, but *more importantly*, the **interest rate has fallen.**

The Central Bank's Balance Sheet

- When Fed intervened to buy euros, it did not **change *interest-rate targets***.
- We assumed that when the Fed bought euros, it **increased *commercial bank reserves***, which would **reduce the interest rate** in the *absence of any other action*.
- This is an example of an **unsterilized foreign exchange intervention**

Sterilized Intervention

- In fact, **central banks** in large countries **do not operate that way.**
- They engage in **sterilized foreign exchange interventions:**
 - A change in foreign exchange reserves alters the *asset side* of the *central bank's balance sheet* but the **domestic monetary base remains unaffected.**

Sterilized Intervention

A sterilized intervention is a *combination* of two transactions:

1. There is the **purchase or sale of foreign currency reserves**, which *changes the central bank's liabilities*.
2. Then, an **immediate open market operation**, of *exactly the same size*, designed to **offset** the impact of the first transaction on the *monetary base*.

Sterilized Intervention

- For example, the **Fed's purchase of a German government bond**, is **offset** by the sale of a **U.S. Treasury bond**.
 - These two actions **leave the level of reserves unchanged**.
- This intervention is **sterilized** with respect to its ***effect on the monetary base***, or the ***size of the central bank's balance sheet***.
- An intervention is **sterilized** since it does **not** change the ***monetary base***.

Sterilized Intervention

- The **FOMC** had not changed the **target federal funds rate**.
- The *foreign exchange desk* had **purchased bonds issued by a euro-area government, paying for them with reserves**, and the *open market desk* had **sold U.S. Treasury bonds to reverse the potential impact**.

Figure 19.3

Change in the Federal Reserve's Balance Sheet following a *Sterilized Purchase of Euro-Denominated Bonds*

Assets		Liabilities
Euro reserves (German government bonds)	+\$1.34 billion	Commercial bank reserves unchanged
Securities (U.S. Treasury bonds)	-\$1.34 billion	

The Costs, Benefits, and Risks of Fixed Exchange Rates

- **Fixed exchange rates** not only *simplify operations* for *international trade businesses*, they also *reduce the risk* that investors face when they *hold foreign stocks and bonds*.
- *In countries* that are prone to bouts of *high inflation*, a **fixed exchange rate** may be the only way to *establish* a **credible low-inflation policy**.

Assessing the Costs and Benefits

- One serious **drawback** to a **fixed exchange rate** is that it ***could not operate*** independent monetary **policy**.
 - You **must adopt** the ***other country's interest-rate policy***.
- A ***fixed exchange rate policy*** makes the most sense when the *two countries involved have similar macroeconomic fluctuations*.
 - Otherwise, the ***country with the flexible exchange rate*** that is in **control of monetary policy** might be ***raising interest rates*** at the same time **another country** in going into a recession.

Assessing the Costs and Benefits

Policymakers should consider several additional matters.

1. When a country **fixes its exchange rate**, the central bank is ***offering*** to **buy and sell its own currency** at a **fixed rate**.
 - Monetary policymakers will **need ample currency reserves**.
2. *Fixing the exchange rate* means **reducing** the domestic economy's natural **ability to respond to macroeconomic shocks**.

The Danger of Speculative Attacks

- **Fixed exchange rates** are *fragile and likely to* to a type of crisis called a **speculative attack**.
- Suppose for some reason, *financial market participants* come to ***believe*** that the ***government will need to devalue*** its currency in the near future.
 - ***Investors*** are ***likely to attack the currency now*** and ***force*** an **immediate devaluation**.

The Danger of Speculative Attacks

Causes of a speculative attack:

1. Fiscal policy:

- If investors begin to think that at current levels, ***government spending must ultimately increase inflation***, they will ***not believe*** that ***officials can maintain the exchange rate*** at its fixed level.

2. Financial instability:

- If a country's banking system is **insufficiently capitalized**, a central bank may face pressure to ***relax monetary policy*** to avoid financial crisis.
- If investors **doubt** that the **central bank will keep interest rates high** enough for a ***sufficient time*** to defend the currency peg, an ***attack may follow***.

Assessing the Costs and Benefits

3. Spontaneously:

- If enough currency **speculators** simply ***decide*** that a ***central bank cannot maintain its exchange rate***, they will **attack**.
 - **Spontaneous speculative attacks** are like **bank runs**; they can be ***contagious***.

Many observers suspect that in today's world, **no** ***central bank has the resources to withstand such an attack*** in the **absence of capital controls**