Learning Module 4: Monetary Policy

LOS 4a: describe the roles and objectives of central banks

Objectives of Central Banks

The main objective of a central bank is to maintain price stability. Depending on the country, central banks might have other objectives, such as controlling inflation, unemployment, interest rates, or exchange rates. However, all these objectives align with the primary objective of ensuring financial stability.

Roles of Central Banks

Central banks are crucial in today's economies, performing various vital functions for maintaining economic stability and promoting growth. The following are the different roles of central banks, explained based on the provided information:

Monopoly Supplier of the Currency

Central banks are the exclusive institutions authorized by law to supply domestic currency, replacing the earlier system where money was exchanged for precious commodities like gold by many private banks.

Money in all major economies today is known as fiat money, which implies that it is not convertible into any other commodity. Moreover, it is deemed as legal tender, which means it must be accepted for goods, services, and debt repayment.

Central banks play a vital role as the suppliers and protectors of the value of fiat currencies, thereby maintaining confidence in the currency and preventing its arbitrary expansion.

Banker to the Government and the Bankers' Bank

Central banks serve as the principal bankers to the government and other banks, ensuring they

have the necessary liquidity to operate smoothly. This role is particularly crucial during crises when banks may face liquidity challenges. Being able to print money places central banks in a unique position to supply funds to banks in crisis, thereby preventing bank runs and maintaining stability in the financial system.

Lender of Last Resort

Central banks act as the ultimate source of funds for banks facing a liquidity crisis. The knowledge that the central bank stands ready to provide the required liquidity and the trust in government bank deposit insurance helps prevent bank runs. However, as observed in recent financial crises, this central bank's role alone may not always be sufficient to avert a bank run.

Regulator and Supervisor of the Payments System

Central banks often oversee, regulate, and establish standards for a country's payment system to ensure its robustness and standardization. This role includes overseeing the payments system, introducing new processes, and coordinating payment systems internationally with other central banks.

Supervisor of the Banking System

Many central banks supervise the banking system or at least the banks they license to accept deposits. This role may vary from country to country, with some central banks sharing this responsibility with another authority.

Manager of Foreign Currency and Gold Reserves

Even though the gold standard was abandoned in the early twentieth century, central banks still hold substantial quantities of gold and foreign currency reserves. Decisions by central banks to sell significant portions of their gold reserves could potentially affect gold prices.

Conductor of Monetary Policy

This is arguably the most important role of central banks. Central banks are perfectly situated to formulate and execute monetary policy by being the exclusive issuer of the national currency.

Question

Credit control refers to actions undertaken by central banks to:

A. Control inflation.
B. Control imports and exports.
C. Control the money creation of the government.

Solution

The correct answer is A.

The central bank controls the credit creation process by commercial banks to control inflationary and deflationary pressures on the economy.

LOS 4b: describe tools used to implement monetary policy tools and the monetary transmission mechanism, and explain the relationships between monetary policy and economic growth, inflation, interest, and exchange rates

Central banks implement the monetary policy using a number of instruments. These affect the aggregate demand through the supply of money, cost of money, and credit availability. The three main tools central banks use to implement monetary policies are open market operations, the central bank's policy rate, and reserve requirements.

Open Market Operations

Open market operations refer to cases where a central bank buys and sells government bonds from and to commercial banks or designated market markers. For instance, when the central bank sells government bonds, the commercial bank's reserves are decreased, and, therefore, they cannot be in a position to lend more to corporations and households. This leads to a decline in broad money growth through the money multiplier effect.

On the other hand, when recessionary forces get going in an economy, the central bank purchases government bonds, increasing the commercial banks' reserves. Commercial banks then tend to lend more to households and corporations, who, in turn, invest more. In this way, broad money growth expands through the money multiplier mechanism.

Clearly, the central bank uses open market operations to set appropriate levels of commercial bank reserves or interest rates for the reserves.

The Central Bank's Policy Rate

The policy rate, often referred to by various names depending on the central bank, is a primary tool that central banks use to convey their monetary policy intentions. Its main purpose is to influence both short-term and long-term interest rates, affecting real economic activity. Generally, the policy rate is the interest rate at which the central bank lends money to commercial banks.

A common mechanism for this is through repurchase agreements (repos), whose maturity ranges from overnight to two weeks. For instance, if the central bank wishes to increase money supply in the economy, it buys government bonds with an agreement to resell them in the future, effectively lending money to banks.

In essence, a repurchase agreement is a form of a loan to commercial banks, and the central bank (lender) earns a repo rate.

When a central bank raises its policy rate, commercial banks typically raise their base rates in response. The base rate of a commercial bank is a benchmark for its lending rates to various customers. Banks adjust their rates based on the central bank's rate to avoid lending at rates lower than what the central bank charges them.

As such, when the policy rate rises, it becomes costlier for commercial banks to borrow. This typically leads them to decrease their lending activities, reducing the money supply.

On the other hand, a reduction in the policy rate makes borrowing cheaper for commercial banks. This often prompts them to increase their lending, consequently boosting the money supply.

Note that the central bank can compel commercial banks to take loans from it at a specific rate. This is made possible through its open market operations, which can deliberately induce a money deficit. Consequently, banks are nudged into selling bonds back to the central bank under the repurchase agreement. The repo rate is set in a way that ensures the central bank receives the standard refinancing rate from these deals.

In essence, by adjusting the policy rate, central banks can control the amount of money circulating in the market. A higher policy rate makes borrowing from the central bank costlier, potentially leading to reduced lending and slowed money growth in the broader economy.

Reserve Requirements

The law requires commercial banks to keep a certain percentage of their total deposits in the central bank as a reserve. When prices rise, the central bank raises the reserve ratios, and, therefore, commercial banks are left with less money to lend to the business community.

Consequently, the volume of output, employment, and investment are adversely affected. Eventually, prices will fall.

The opposite is also true. Note that the higher the reserve requirement, the less money commercial banks can create. Hence, if the central bank wants to reduce the money creation power of commercial banks, it could easily increase the commercial bank's reserve requirements.

Setting reserve requirements as a monetary policy is not commonly used in developed market economies. Varying reserve requirements are disruptive to the banks because a sudden increase can halt a bank's lending if it lacks sufficient reserves.

However, central banks in emerging economies still use reserve requirements to manage lending.

The Monetary Transmission Mechanism

The monetary transmission mechanism is the process where a central bank's interest rate is transmitted through the economy and ultimately affects the rate of increase of prices (inflation).

Consider a situation where a central bank increases its official interest rate. The implementation of the policy may be reflected on four connected channels: bank lending rates, asset prices, agents' expectations or confidence and exchange rates.

Bank Lending Rates

When the central bank increases its official rate, commercial banks usually respond by increasing their base and interbank rates. This, in turn, amplifies the borrowing costs for both individuals and corporations across various time horizons. With heightened interest rates, there is a general trend among businesses and consumers to limit their borrowing activities.

Asset Prices

Higher short-term interest rates can lead to an increased discount rate for estimating future

cash flows. Consequently, assets like bonds and the projected value of capital initiatives might witness a dip in their prices.

Agents' Expectations/ Confidence

Market players might interpret elevated interest rates as a precursor to slower economic progress, diminished profits, and a contraction in asset-financing borrowings. The anticipation and interpretation of future interest rate trends can have a significant influence on economic decisions. If the market perceives the central bank's move as the beginning of a series of rate hikes, this could lead to reduced consumption, borrowing, and a slump in asset prices.

Exchange rates

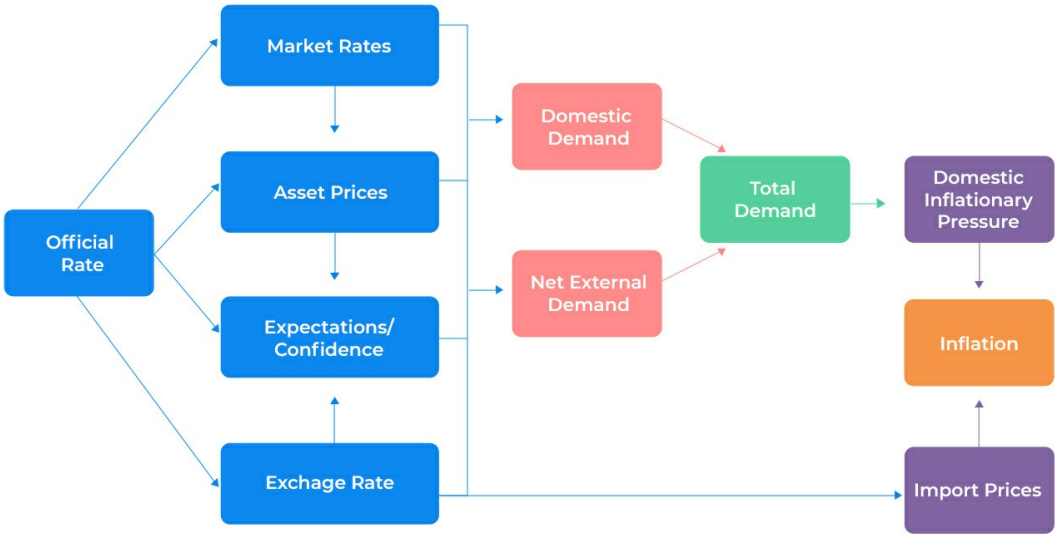
Increase in interest rates might make a country's exchange rate to appreciate. This appreciation can make domestically produced goods expensive for international buyers, potentially reducing exporters' earnings. This could further dampen the demand for local exports.

Overally, an increase in the central bank's policy rate may lead to a decrease in both domestic demand and net external demand (export consumption less import consumption), which can be decreased by an increase in the central bank's policy rate.

A weaker total demand would tend to push domestic inflation rates downward, as would a stronger currency, which would drive down the cost of imports. When these elements are considered collectively, the overall measure of inflation may start to experience negative pressure.

A monetary transmission can be represented in the following diagram:

The Monetary Transmission Mechanism



Question

Which of the following elements is least likely to be a component of the monetary transmission mechanism?

A. Setting an inflation rate target.
B. Implementing a transfer payment program.
C. Adjusting the central bank's official interest rate.

Solution

The correct choice is B.

Transfer payments are related to fiscal policy, not monetary policy.

A is not correct. Establishing an inflation rate target is an aspect of the monetary transmission mechanism, typically occurring later in the process.

C is not correct. Modifying the central bank's official interest rate is usually the initial step in the monetary transmission mechanism.

LOS 4c: describe qualities of effective central banks; contrast their use of inflation, interest rate, and exchange rate targeting in expansionary or contractionary monetary policy; and describe the limitations of monetary policy

The central bank of any nation worldwide is responsible for managing the country's monetary policy. They also often have the responsibility of maintaining price stability and inflation.

Central banks need to have the significant qualities highlighted below to be more effective in their responsibilities.

Transparency

It is ideal for a central bank to be transparent in its decision-making. They do this by producing reports and airing their views on economic indicators used to develop the monetary policy.

For instance, central banks produce inflation reports that provide insights into the various indicators they monitor when determining their monthly interest rate adjustments. When making their assessments, they typically address these topics in the given sequence:

- Overview of broad money trends and credit conditions.
- The state of financial markets.
- Changes in the real economy, such as employment dynamics and
- Trends in pricing.

Transparency helps central banks gain reputation and credibility, which, in turn, facilitates their ability to shape inflation expectations and more effectively achieve their inflation target.

Independence

While governments can set inflation targets and instruct central banks on interest rates, there's a risk. Politicians aiming for reelection might keep interest rates artificially low, potentially leading to inflation surges. Hence, the prevailing sentiment is that monetary decisions should be

made by an entity distant from political agendas, positioning central banks as exclusive currency providers.

Yet, there are degrees of independence. Government officials often select central bank leaders. For instance, the US president appoints the US Federal Reserve Board's chair. As such, achieving total detachment from political sway might be idealistic but challenging.

Different central banks have varying degrees of independence. Some have both operational and target independence, meaning they decide interest rates, define and set the inflation rate, and choose the timeframe to meet the target. The ECB is a prime example. In contrast, others, like those in New Zealand, Sweden, and the UK, are bound by government-set inflation standards and targets, granting them only operational autonomy.

Credibility

A central bank is a national institution granted the prerogative to control the printing and supply of money and credit. Central banks play important roles in the economy since they are the sole suppliers of currency to the government, bankers to commercial banks, lenders of last resort, supervisors of payment systems, and implementers of monetary policy.

For a central bank's measures to resonate and be effective, the public's trust is paramount. In an era where inflation-targeting is crucial, the credibility of a central bank isn't just about the policies they enact but about the public's unwavering confidence in those policies. Especially during volatile times, a central bank's credibility ensures stability and instills faith in the financial future.

Inflation and Exchange Rate Targeting

Inflation Rate Targeting

The inception of this now widely accepted inflation-targeting approach can be traced back to New Zealand. In 1988, Roger Douglas, the New Zealand Finance Minister of the time, put forth a transformative economic policy. The country aimed to curtail inflation, which stood at

approximately 6%, bringing it within a more controlled range of 0 to 2%.

This inflationary target could be a benchmark. When this is the case, other policies are implemented to ensure that the inflation rate within the economy does not grow beyond the targeted inflation rate within a given period of time.

Regardless of who sets the target, either the central bank or the government, the specific target level and the timeframe within which it should be achieved are vital elements in every inflation-targeting approach. For instance, in the UK, the Bank of England's target is CPI inflation within ±1.0 percentage point of 2%.

While inflation-targeting strategies might differ slightly across different economies, their effectiveness is widely believed to hinge on three qualities of a central bank: independence, credibility, and transparency.

The inflation target cannot be set at 0% because it might lead to deflation, which is negative inflation. Moreover, inflation targeters do not aim at the current inflation but usually inflation two years ahead for two main reasons:

i. The monthly headline inflation rate, targeted by central banks in many economies, represents the yearly increase in the cost of a basket of goods and services. Essentially, it reflects past price changes.
ii. Changes in interest rates today will require time to fully impact the real economy due to the gradual process of the monetary transmission mechanism.

While the specifics of inflation-targeting mandates differ across nations, they generally include a clear inflation target within set boundaries and require transparency from the central bank in its goals and actions. Typically, these guidelines are established in laws that set formal duties for the central bank.

Exceptions in Inflation Targeting

The two central banks that do not adopt inflation-rate targeting are the Bank of Japan and the US Federal Reserve System.

Japan's central bank, the BoJ, does not target an explicit measure of inflation because Japan has been battling deflation for nearly two decades. Despite measures taken, including printing money, inflation has remained weak. Inflation targeting is primarily seen as a method to combat and control inflation, making it seemingly irrelevant in an economy consistently facing deflation.

Interestingly, the US Federal Reserve does not set an explicit inflation target because a strict focus on inflation might clash with the Federal Reserve Act's mandate: “promote effectively the goals of maximum employment, stable prices, and moderate long-term interest rates.”

Some suggest that targeting inflation could jeopardize the objective of “maximum employment.” However, in practical terms, the Fed views core inflation around or slightly under 2% (as measured by the personal consumption expenditure or PCE deflator) as synonymous with “stable prices.” Consequently, financial markets closely monitor this US inflation metric to predict the Fed's interest rate decisions.

Exchange Rate Targeting

Many emerging economies prioritize targeting their currency's exchange rate rather than focusing on domestic inflation. They establish a fixed or range-bound value for their currency relative to a major global currency and stabilize it by trading in the forex market. By linking its currency to a stable, low-inflation economy, a country can essentially “borrow” the inflation stability of the more established economy.

Consider a scenario where a developing nation wishes to peg its currency to the US dollar. Assuming similar inflation rates and consistent relative price levels, the currency should remain near its targeted value if there are no unforeseen economic disruptions, effectively inheriting the foreign nation's inflation scenario.

However, if the developing country's economy accelerates and its inflation surpasses that of the US, its currency might devalue against the dollar. To maintain the targeted exchange rate, the country's central bank would buy its currency and sell foreign reserves, leading to decreased money supply and raised interest rates.

Conversely, if its inflation rate drops compared to the US, the central bank would do the

opposite, increasing the money supply and dropping interest rates.

In real-world scenarios, a developing country's central bank intervenes regularly to maintain the stability of its currency value. However, an essential takeaway from this example is that when a monetary authority aims for a specific exchange rate, the domestic economic conditions, including interest rates and the money supply, must adjust to support this goal. As a result, these domestic economic indicators might experience greater fluctuations and volatility.

Despite potential pitfalls, several currencies are still pegged, especially to the US dollar. Such currencies with pegged currencies include Saudi Arabia, Bahamas, and Lebanon.

Some currencies have a “managed exchange rate policy,” fluctuating within a set range managed by the monetary authority.

In some cases, countries even adopt the US dollar as their official currency, completely replacing their native currency, a situation called dollarization. Such countries include Panama, Ecuador, and East Timor.

Contractionary and Expansionary Monetary Policies.

Recall that central banks control liquidity in the economy by adjusting their benchmark interest rates. As such, contractionary aims to reduce the money supply's growth rate and potentially curb the economy's growth. As such, if they anticipate rising inflation due to increased economic activity, they might increase interest rates, reducing available funds in the market.
On the other hand, when the economy slows and both inflation and monetary trends appear weak, central banks can boost liquidity by reducing their target interest rate. This is known as an “expansionary” monetary policy.

Neutral Rate of Interest

The terms “high” and “low” for policy rates are relative. Their point of reference is often the “neutral rate of interest,” a rate that neither stimulates nor restrains economic growth. If the policy rates exceed the neutral rate, the monetary policy is seen as contractionary. If they are below the neutral rate, it's viewed as expansionary. Ideally, over an economic cycle, the neutral

rate should be equal to the average policy rate.

The neutral rate of interest consists of:

- The real trend rate of growth of the underlying economy,
- Long-run expected inflation.

The real trend rate of growth is considered as the sustainable economic growth rate that results in stable inflation over time. If, for instance, an economy's credible inflation target is 2% annually and its sustainable long-term growth is believed to be 1.5% annually, then the neutral rate can be calculated as:

$$\text{Neutral rate} = 1.5\%(\text{Trend Growth}) + 2\%(\text{Inflation Target}) = 3.5\%.$$

Thus, a policy rate exceeding 3.5% would be considered contractionary, while one below this rate would be seen as expansionary.

Sources of Shocks to Inflation Rate

The shock to inflation rates can be classified as demand and supply shocks.

Demand shock occurs when inflation is rising beyond its target or simply in a way that threatens price stability due to an increase in the confidence of consumers and business leaders, which in turn has led to increases in consumption and investment growth rates. In this case, it might be appropriate to tighten monetary policy to bring the inflationary pressures generated by these domestic demand pressures under control.

On the other hand, supply shock occurs when an inflation spike is due to external factors, like a significant jump in oil prices. In this situation, already-burdened consumers dealing with high fuel costs might reduce spending, potentially causing a decrease in profits and a rise in unemployment.

Therefore, it is crucial for the monetary authority to accurately pinpoint the cause of inflationary changes before deciding to either tighten or loosen monetary policy.

Limitations of Monetary Policy

Monetary policy is used in the stabilization of prices and inflation control. However, monetary policy has quite a number of shortcomings and, as such, usually does not reach expectations. These shortcomings are discussed below.

Problems in the Monetary Transmission Mechanism

Monetary policy actions are conveyed to the economy through channels like bank lending rates, asset prices, and expectations. Sometimes, the intended effects might not permeate the economy as expected.

For instance, raising interest rates might not always result in the desired economic slowdown if long-term rates fall due to market expectations. Bond market vigilantes play a role in affecting yields based on their perception of monetary policy's efficacy.

Extreme cases like a liquidity trap, where money injections no longer influence interest rates, can render monetary policy ineffective, especially during deflation.

Interest Rate Adjustment in a Deflationary Environment and Quantitative Easing as a Response

Deflation, a continuous fall in prices, is challenging for standard monetary policy. During deflation, slashing interest rates near or below zero might not be effective, leading to a liquidity trap. This can result in reduced consumer spending, further deflation, and rising real debt, as witnessed in Japan post the 1990s property bubble collapse.

If standard policy tools fail, alternatives like quantitative easing (QE) can be utilized. QE involves large-scale asset purchases to inject money into the economy. Though it aims to stimulate lending and boost economic activity, its success is not guaranteed.

Central banks can buy a variety of assets under a QE program if permitted by the government. However, buying risky assets can be dangerous. Acquiring bad assets that incur losses might lead to a severe confidence crisis in the central bank's primary product: fiat money.

Monetary Policy in Developing Countries

Emerging economies often encounter notable challenges in the effective implementation of monetary policy, particularly in achieving price stability. These challenges encompass:

- a lack of a well-established government bond market and a mature interbank market, essential for carrying out monetary policy.
- a history of struggles with inflation control, which undermines the credibility of their monetary policy objectives.
- an unwillingness by governments to give true independence to their central banks.
- Rapid changes in financial methodologies frequently alter the meaning of money supply.
- a constantly evolving economy, complicating the determination of the neutral interest rate and the stable connection between the money supply and the real economy.

Question #1

While politicians and central banks may share certain economic goals, which objective is politicians *least likely* to prioritize?

A. Promoting economic growth.
B. Boosting employment rates.
C. Addressing inflationary concerns.

Solution

The correct answer is **C.**

Addressing inflationary concerns is primarily the domain of central banks. Politicians, in contrast, often prioritize boosting employment rates and promoting economic growth.

Question #2

If a central bank raises its policy rate, how might this action alleviate inflationary pressures?

A. By dampening consumer demand.
B. By affecting the foreign exchange value of the domestic currency.
C. By elevating asset prices leading to increased household wealth.

Solution

The correct answer is **A.**

When policy rates rise, borrowing becomes costlier, leading to decreased consumer demand, which subsequently reduces inflationary pressures.

B is incorrect. A hike in the interest rate typically strengthens the domestic currency, making imports cheaper and potentially decreasing inflationary pressures.

C is incorrect. Higher policy rates often depress asset prices since banks have reduced lending to businesses and consumers, leading to decreased investment and consumption.

Question #3

Which of the following is *least likely* considered a limitation of monetary policy?

A. Encountering a liquidity trap.
B. Achieving price stability.
C. Responding to bond market vigilantes.

Solution

The correct answer is B.

Achieving price stability is one of the core objectives of monetary policy, not a limitation. Both A and C, liquidity trap and bond market vigilantes, respectively, pose challenges to the efficacy of monetary policy.

LOS 4d: explain the interaction of monetary and fiscal policy

Monetary and fiscal policies are tools used to influence the broader economy. However, the effectiveness of monetary policy on aggregate demand can vary based on the fiscal policy in place and vice versa.

Even though both policies can influence aggregate demand, they work differently and affect its composition in varying ways. They cannot simply replace one another.

Recall that the central bank applies monetary policy to change the cost, demand, and availability of credit. It controls credit through open market operations, bank rates, selective methods of credit control, and variable cash reserve ratio.

On the other hand, Fiscal policy focuses on the government in relation to taxation, borrowing, and expenditure. These three elements mostly influence aggregate spending.

The Relationship Between Monetary and Fiscal Policy

Consider the following assumptions, assuming wages and prices remain fixed:

Easy fiscal policy/tight monetary policy

With reduced taxes or increased government spending, aggregate output will rise. However, with reduced money supply counteracting the fiscal boost, interest rates increase, diminishing private sector demand. As a result, there's a rise in output and interest rates, with government spending becoming a more significant part of the national income.

Tight fiscal policy/easy monetary policy

With fiscal reductions paired with an accommodating monetary stance leading to decreased interest rates, the private sector gets a boost and grows a share of GDP, while the public sector diminishes.

Easy monetary policy/easy fiscal policy

When both fiscal and monetary stances are accommodating, the combined effect is highly stimulative. This results in a spike in aggregate demand, potentially reduced interest rates, and expansion of both private and public sectors.

Tight monetary policy/tight fiscal policy

Interest rates potentially increase, suppressing private demand. Simultaneously, elevated taxes and reduced government expenditure result in decreased aggregate demand from both the public and private sectors.

Factors Influencing the Interaction of Monetary and Fiscal Policies

- **Promotion of Potential Output Growth:** Governments aim to stabilize aggregate demand near full employment and grow potential output. Encouraging private investment can be achieved via accommodative monetary policy (low interest rates) and tight fiscal policy to ensure resources for a growing private sector.
- **Infrastructure and Workforce Quality:** Sometimes, the absence of quality infrastructure or a trained workforce can hinder growth. The government may prioritize spending in these sectors. If not balanced by increased taxes, this can lead to an expansionary fiscal stance. Paired with a loose monetary policy, it may induce inflation.
- **Political Context:** Policy decisions are influenced by politics. A weak government might increase spending to appease specific vested interests. To counteract potential inflation, restrictive monetary policy (higher interest rates, limited credit) might be employed.
- **Data Limitations:** Both policies are hampered by imprecise current economic data due to revisions and time lags. However, fiscal policy, compared to monetary policy, has

additional challenges. It's slower to implement and politically easier to expand than a contract.

- **Monetary and Fiscal Policy Interplay:** The relationship between these policies influences decisions. For instance, if tax cuts don't impact spending because of anticipated future taxes, policymakers might lean towards monetary tools.
- **Empirical Considerations:** The IMF's study highlighted the interaction between monetary and fiscal policies. They explored global fiscal loosening scenarios and how monetary policy responded. Key findings include:
    - **Without monetary accommodation:** Government spending has a significantly larger effect on GDP than social transfers. Targeted transfers to the poorest have a greater effect than non-targeted ones.
    - **With monetary accommodation:** Fiscal multipliers are generally larger. The impact of government expenditure and social transfers on GDP grows substantially, except for labor tax cuts.

Question

Which one of the following will *most likely* have important effect on aggregate demand?

A. Government expenditures.

B. Increased transfer benefits.

C. A reduction of personal income tax at all income levels.

Solution

The correct answer is A.

Direct spending by the government has a greater impact on GDP than taxes and transfer benefits.