Monetary Policy and Transmission Mechanism Lags

Monetary policy operates with lags or, in other words, the maximum impact of alterations in the basic interest rate on the economy is not immediate. This is one aspect with regard to which macroeconomists have come to a consensus, together with the fact that it has important implications for monetary policy implementation.

Monetary policy affects the price trajectory through various channels. The major channels are output/activity, the exchange rate, credit, the asset market in general and expectations. The processing time of each channel varies. The intensity of the monetary policy impact may also vary according to a series of institutional conditioning factors. For example, in economies in which credit represents an insignificant share of GDP, the credit channel is less important. Analogously, when, as a result of the existence of earmarked credit, the share of overall credit sensitive to changes in the basic interest rates is limited, the effectiveness of this transmission channel will also be restricted.

The output channel is the most traditional channel and the one that operates with the largest lag. Interest rate variations alter the pace of economic expansion, mainly through aggregate demand and, in this way, impact the readiness of agents to increase or reduce prices. This channel also impacts wage bargaining, thus generating repercussions, albeit indirectly, on business costs. When structural models are utilized, one normally notes that the output gap (measured as the difference between actual and potential output) initially reacts with a lag of one quarter in relation to interest rate changes. In its turn, the response of inflation to the output gap occurs one or two quarters later. Therefore, when using structural models, one notes that the first reaction of inflation to the product gap occurs only two or three quarters after the change in interest rates.
The maximum impact on inflation occurs only in the following quarters. This means that current inflation mainly reflects monetary policy decisions taken nine months ago.

The exchange-rate channel tends to operate with a lesser lag. Changes in domestic interest rates affect earnings on domestic securities compared to external securities, generating interest rate movements aimed at equalizing relative earnings (adjusted by the risk premium). Viewed from a different angle, changes in the relative earnings of assets generate alterations in net capital flows, thus impacting the exchange rate. The prices of imported goods, expressed in national currency, are directly impacted by the exchange rate. In a similar manner, commodity prices are also affected by the exchange rate. The exchange-rate channel tends to operate more rapidly than the output channel, since it directly affects business costs (in the case of imports) and, in the case of commodities, the prices expressed in national currency. Consequently, exchange-rate changes tend to affect inflation in the current quarter or following quarter. However, this lag will depend more on the perceptions of agents as regards the persistence of the exchange-rate variation. For example, if an exchange-rate increase or reduction is considered temporary, agents will have a lesser incentive to transfer the alteration to prices. This can generate a “wait and see” behavior attitude, thus giving rise to a larger lag in the mechanism. There is also evidence that the speed of the exchange transmission depends on the position of the economy within the economic cycle. This means that an exchange depreciation that occurs at a moment of strong demand tends to generate a more rapid impact on prices than would occur in periods of more moderate economic activity.

The credit channel is defined in the literature as related to the balance sheet impact and bank loan channel. Changes in interest rates would impact the decisions of agents not only through the cost of credit and the opportunity cost, but also through their impact on the asset situation of the companies involved and on the willingness of financial agents to grant credit. In the case of Brazil, the strong increase in credit volume compared to GDP has enhanced the importance of this channel. However, it is

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1/ This does not mean that the evolution of the exchange rate depends exclusively on differences of return. In the Brazilian case, for example, there is ample evidence that the behavior of the risk premium and trade flows plays a more important role in behavior of the exchange rate.
still quite small when compared to other countries. In a similar manner, the interest rate effect on financial assets (stocks, for example) has a lesser impact on the Brazilian economy than in other economies, due to a lesser degree of stock market development.

The expectations channel is related to all of the other channels. It refers to the fact that the expectations of agents regarding the future evolution of inflation (and, therefore, the future evolution of product, exchange rate, and monetary and fiscal policies themselves) impact the current behavior of prices. On setting prices, companies generally take the prospective environment into consideration. For example, if companies believe that future inflation will be 20%, their price changes will take this fact into consideration. Something quite similar occurs in wage negotiations. Since wage contracts in general are valid for at least one year, prospective inflation will certainly be a part of the calculation made by agents. The importance of expectations will depend on how relevant is the evaluation of the future scenario to agents in their decisions, as well as on the greater or lesser presence of institutional mechanisms with backward-looking clauses. The lag, with which this mechanism operates, in turn, depends on the degree of price rigidity. In other words, it depends on the frequency with which prices are altered.

Precise measurements of lags are quite difficult, since models are only approximations of reality and estimates involve a reasonable degree of imprecision. However, empirical evidence for a group of countries normally indicates a lag of three to five quarters between the moment of an interest rate alteration and the total impact of that alteration on inflation reaching 50%. For example, the Bank of England estimates that one can observe the maximum impact of a basic interest rate change on economic activity only after approximately one year – the lag of the impact on inflation would be much longer, approximately two years. The Swedish Riksbank assumes that an alteration in basic interest rates generates its strongest impact on inflation after one or two years. The European Central Bank, in turn, estimated that the impact of changes in the policy interest rate on GDP reaches its maximum level in two or three years, and that the impact on inflation has an even greater lag. The notion of a long transmission mechanism lag is also valid for developing economies. For instance, the Central Bank of Colombia estimates that the transmission of
policy decisions to the economy occurs with a lag between 12 and 24 months. In Chile, estimates indicate a period of 24 months.

The presence of lags in the transmission mechanism has important implications for monetary policy implementation. In these conditions, monetary policy must be forward-looking or, in other words, central banks must act in such a way that inflation forecasts remain around the inflation target several quarters ahead. Recent developments in the economy must be evaluated not only from the point of view of their impact on current inflation, but more importantly in light of their future repercussions and effects.

Should the monetary authorities fail to consider existent lags, there will be at least two important consequences. The first of them is that they will be unaware of possible future repercussions of inflation, despite the existence of leading indicators or elements that point in this direction. For example, pressures on the rate of capacity utilization or signs of overheating in the labor market tend to be followed by future increases in inflation. If the central bank ignores these movements and reacts only when future inflation becomes a reality, as a result of transmission mechanism lags, the institution will be unable to cope effectively with the inflation rise. In the inflation targeting regime, the result may be the no fulfillment of the target.

The second consequence is the generation of unnecessary instability in the economy by reacting only to current inflation. This occurs mainly when current inflation movements are temporary in nature. One example could be a reduction in food prices due to exceptionally good harvest conditions, thus reducing current inflation. If the central bank does not view this as a passing phenomenon – understanding, therefore, that future inflation will not benefit from this factor – and adopts a more lenient monetary policy, such a decision could have a very important impact on inflation when those positive, albeit temporary, effects on inflation have run their course. The result will be generation of inflationary pressures in the future. At that moment, the central bank will react once again, generating a new cycle. The result will be fluctuations in inflation and output that could have been avoided had the monetary authority taken a forward-looking approach. Evidently, this type of stop-and-go monetary policy generates unnecessary instability in the economy.
A similar situation occurs during cycles in which more flexible or more rigid monetary policies are adopted. When the outlook for inflation shows improvement, monetary authorities begin reducing interest rates. At a certain point in this process, the effects on inflation are only partially felt as a result of existenting lags, thus allowing one to infer that the cycle should be continued without giving consideration to effects that will only occur in the future. If this perception is used for purposes of monetary policy implementation, future inflation may well overshoot the targeted level, generating a need for a new cycle of more rigid monetary policy and consequently greater instability in the economy.

In summary, the presence of significant temporal lags in the transmission mechanism demands that monetary policy be turned to the future and that central banks prioritize preventive strategies and not merely reactive strategies.