

Economic cry.

7.3 Responding to Price Shocks, pp. 165-167

The response to a price shock raises some more difficult issues than does the response to a demand shock. Even under the best of circumstances—no lags or uncertainty in the conduct of policy—such a shock will inevitably affect either the price level or real GNP.

Suppose, for example, that there is a price shock of the type illustrated in Figure 7-6. As we discussed above, with no policy response, such a price shock tends to reduce real GNP and raise the price level. This is shown in the left-hand panel of Figure 7-6.

Now, suppose that the monetary authorities increase the money supply in response to the price shock. As shown in Figure 7-6, this shifts the aggregate demand curve outward and tends to mitigate the downward fluctuation in real GNP. However, the increase in the money supply will exacerbate

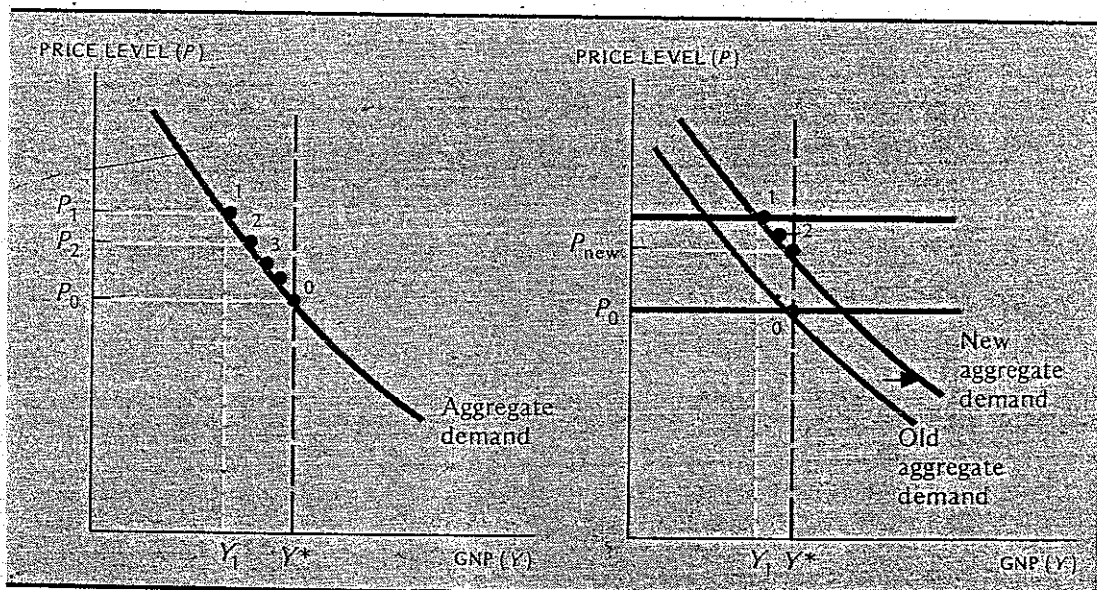


Figure 7-6. MONETARY RESPONSE TO A PRICE SHOCK.

On the left, monetary policy does not respond to the price shock. The shock raises the price level from P_0 to P_1 . Output falls from Y^* to Y_1 . Then the price-adjustment process starts. In the next year the price level drops to P_2 . Eventually prices fall back to normal on the price shock. The money supply is increased and the aggregate demand curve moves outward. At the new intersection of the price line (point 1), there is less downward pressure on the price level because output at Y_1 is closer to potential than in the panel on the left. Assuming that the new aggregate demand curve is maintained, eventually the price level falls to the level marked P_{new} .

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the fluctuation in the price level. If output does not fall much below potential there will be little downward pressure on the price level. The price level will stay high for a longer time and never return to normal if the money supply is not reduced again. As shown in the right-hand panel of Figure 7-6, the price line will remain at a higher level if the aggregate demand curve remains at its new higher position. In the sense that there is less downward pressure on the price level so that it never returns to normal, there is thus less price stability with the policy that tries to offset the fluctuation in real GNP. In other words, with a supply shock there is a trade-off between the stability of real GNP and the stability of the price level. \otimes Figure 7-6 (p. 165)

Policies that increase the money supply in response to positive price shocks are called **accommodative policies**. A policy that holds the money supply constant is called **nonaccommodative**. Figure 7-7 summarizes, for the two policies, the behavior of GNP and the price level after a price shock. The plots show the results of the calculations of GNP and the price level from Figure 7-6. Clearly the accommodative policy is better in terms of the performance of GNP, but is worse in terms of the performance of the price level.

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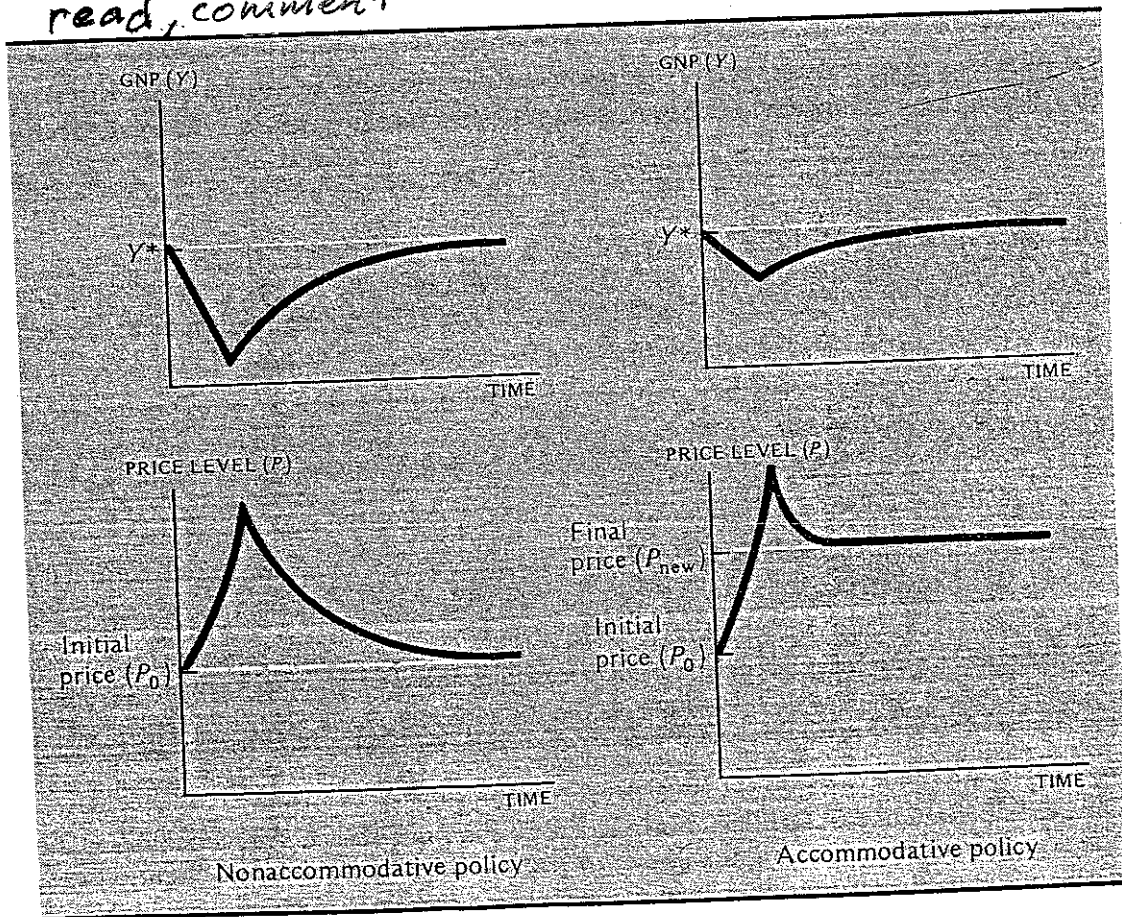


Figure 7-7. THE RESPONSE OF THE PRICE LEVEL AND GNP TO PRICE SHOCKS FOR ACCOMMODATIVE AND NONACCOMMODATIVE POLICIES.
 These charts summarize the calculations from Figure 7-6. The nonaccommodative policy is shown on the left and the accommodative policy is shown on the right. Output is more stable with the accommodative policy, but the price level is less stable.

(5 sec. pause)

Summary Box -

Policy Response to Price Shocks, p. 167

1. In the absence of a policy response (that is, with a nonaccommodative monetary policy), a positive price shock causes a rise in the price level and a sustained period of economic slack.
2. Price shocks create a serious problem for policy. If policy tries to limit the decline in GNP from a positive price shock, it will make the price level less stable. If it tries to head off the inflation, it will deepen the recession.

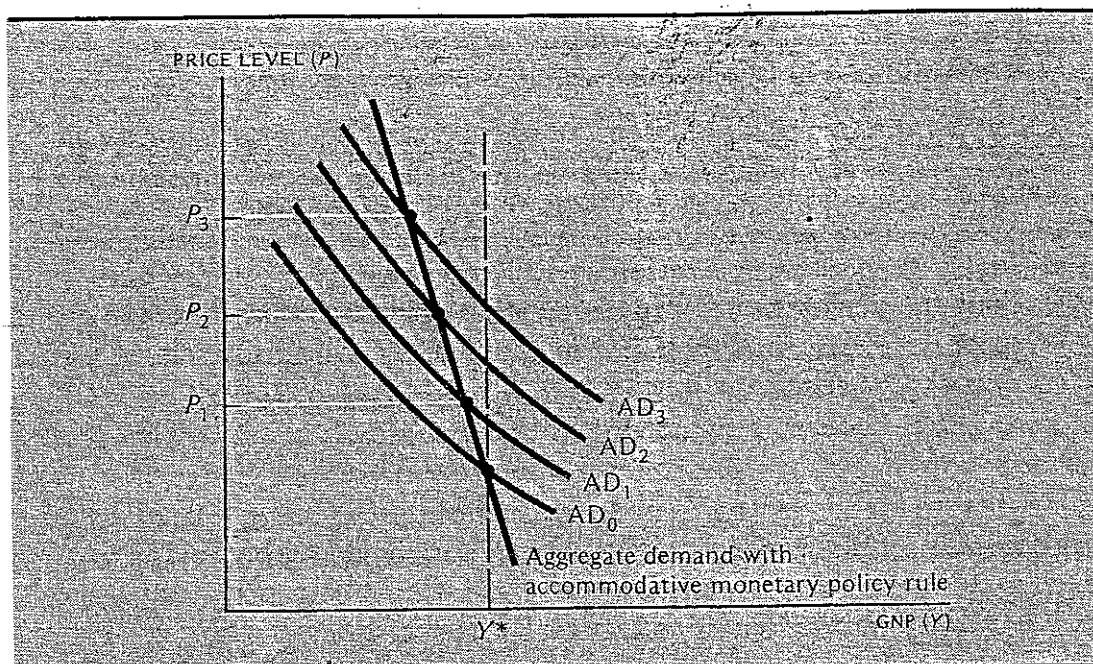
7.4 Macroeconomic Policy as a Rule, pp. 167-170
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Our discussion of the appropriate response of monetary policy to price shocks naturally gives rise to the question of whether the money supply is an exogenous variable, as we have been assuming all along. If the money supply responds to the price level, then it no longer can be exogenous for it is determined in the model.

Treating policy variables as exogenous has long been a tradition in macroeconomics. But more recently an alternative view, that they should be treated as endogenous, is becoming more attractive. Endogenous policy is determined according to some behavioral relationship, or what is frequently called a **policy rule**. The most frequently discussed policy rule in macroeconomics is the fixed growth rate rule for the money supply that Milton Friedman and other monetarists have advocated. A fixed growth rate rule is simply to keep the growth rate of the money supply constant. But this is a very special rule in that it involves no response of the money supply to economic events. A more general rule would call for some response.

Even if policy makers do not determine policy according to a mechanical formula, they do respond to economic events much like the firms and consumers in the economy. Their behavior and its impact on the economy are therefore probably more accurately described by a systematic behavioral relationship. If so, we can think of the behavioral relationship as a policy rule.

We saw in Section 7.3 that an accommodative monetary policy was one that reacted to a positive price shock with an increase in the money supply. We showed the effect of this type of policy on the fluctuations of real GNP and the price level, by treating the money supply as exogenous. If the Fed regularly, or systematically, reacted to price disturbances in this way, then we would say that the Fed was following an accommodative policy rule. The money supply would not be an exogenous variable. It would join the list of endogenous variables to be determined in the basic macroeconomic model. As with the other endogenous variables, a behavioral relationship would de-



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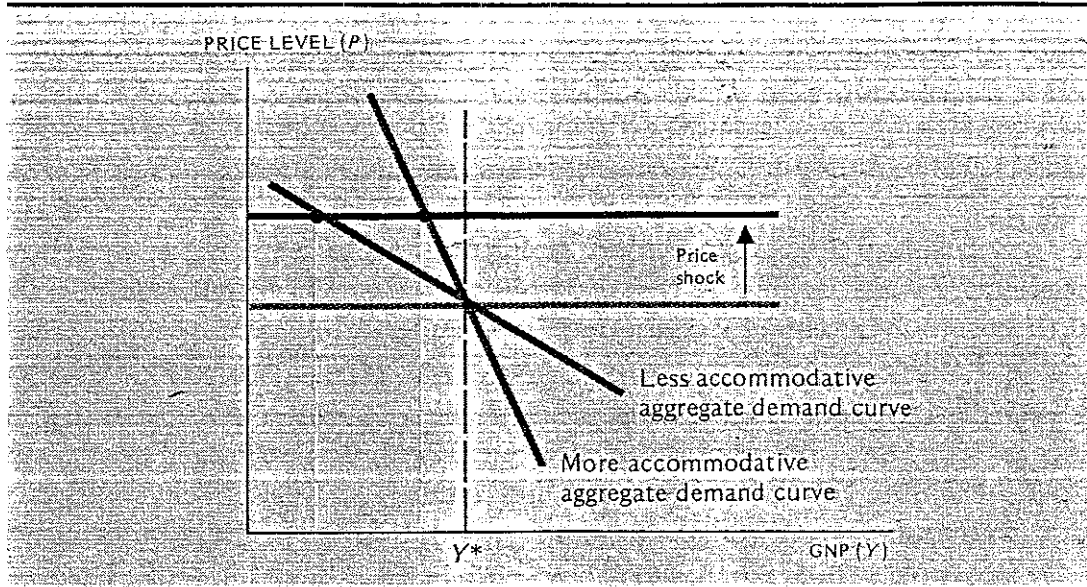
Figure 7-8. THE AGGREGATE DEMAND SCHEDULE WITH AN ACCOMMODATIVE POLICY RULE.

If the price shock is small, so that the price level is P_1 , the Fed sets the money supply so that the AD schedule is AD_1 . For larger shocks that raise the price level to P_2 or P_3 , the Fed raises the money stock more, so that the corresponding AD schedule is AD_2 or AD_3 . The set of intersections traces out a steeper aggregate demand schedule. This schedule includes the monetary response.

scribe how the monetary authorities determined the money supply. In fact, the policy rule is that behavioral relationship.

The derivation of the policy rule and its effects on the economy can be shown graphically. In Figure 7-8 we show how the monetary authorities react to price shocks. There are several different price lines drawn. Each line represents a price shock of different magnitude. For each price shock, we show how the Fed reacts by shifting the aggregate demand schedule outward. This accommodative reaction leads to intersections of the aggregate demand curve and the price line at higher levels of real GNP than would otherwise occur, shown by the dark line. This line represents the combined effect of the accommodative policy and the price shocks. Note that it is downward sloping—like an aggregate demand curve—but it is steeper than the aggregate demand curve without the influence of policy. In effect, the policy of responding *as a rule* to price shocks leads to a steeper aggregate demand curve. An accommodative monetary policy rule twists the aggregate demand curve clockwise, making it steeper. The more accommodative the policy, the steeper the aggregate demand curve. \otimes

In Figure 7-9 we have drawn two aggregate demand curves that represent alternatives to the policy rule shown in Figure 7-8. One of the sched- \times



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Figure 7-9. AGGREGATE DEMAND SCHEDULES WITH ALTERNATIVE MONETARY POLICY RULES.

More accommodative policy makes the aggregate demand schedule steeper. As a result, the downward shift in output after a price shock is smaller the more accommodative the policy.

ules is simply the aggregate demand schedule with a fixed money supply. Note that when there is a price shock the more accommodative rules translate into a smaller decline in real GNP. However, this also leads to less downward pressure on prices, and thereby less price stability. What is crucial is the slope of the aggregate demand schedule. The more accommodative policies result in more real GNP stability and less price stability. Less accommodative policies tend to increase price stability at the cost of less real GNP stability. ⊗

(pause)

WHY FOCUS ON POLICY RULES?, p. 169

Aside from the desire to model the economy and the effect of policy as accurately as possible, there are two important reasons why policy analysis in recent years has concentrated on rules rather than on exogenous changes in the policy instruments. These reasons will come up naturally in our later discussions of policy rules, but are worth mentioning briefly now. One reason is the recognition that expectations of policy can influence how policy affects the economy. If people anticipate a certain policy, then they will act differently than if that policy were unanticipated. By stipulating policy as a rule, policy makers are implicitly stating how policy will react to future contingencies. That the money supply will increase if there is a positive price shock is an example of such a rule.

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