The Case for Price Stability with a Flexible Exchange Rate in the New Neoclassical Synthesis

Marvin Goodfriend

The New Neoclassical Synthesis is a natural starting point for the consideration of welfare-maximizing monetary arrangements in the international context. Alternatively known as the New Keynesian model, this consensus model of monetary policy deserves our attention because it embodies cumulative advances in theory and policy informed by decades of monetary experience from around the world. The consensus model with its prescription for price stability serves today as the foundation for thinking about monetary policy at central banks and universities worldwide.[1]

The purpose of the article is to review the fundamental principles of monetary policy in terms of the New Synthesis. The first section describes briefly the structure of the baseline NNS model. The second section presents the case for price stability in the NNS model. The third section extends the discussion to the open economy and presents the NNS case for a flexible exchange rate. The fourth section tells why monetary policy is fragile that simultaneously attempts to fix the foreign exchange rate and pursue interest rate policy to sustain price stability.

Marvin Goodfriend is Professor of Economics at Carnegie Mellon University's Tepper School of Business.

[1]Goodfriend (2007) explains how the world achieved a working consensus on the core principles of monetary policy in the last quarter of the 20th century.

The New Neoclassical Synthesis

The convergence of thinking embodied in the modern consensus model of monetary policy is reflected in the fact that it goes by two names—the New Neoclassical Synthesis and the New Keynesian model. The NNS framework inherits intertemporal optimization, rational expectations, and a real business cycle (RBC) core from the classical side, and monopolistic competition, nominal price rigidities, and a prominent role for monetary stabilization policy from the Keynesian side. Both classical and Keynesian contributions are compatible in the NNS framework because of its microeconomic foundations.

The baseline NNS model is built up from household intertemporal utility maximization and firm profit maximization.[2] In the NNS model, representative households maximize utility by choosing lifetime consumption, and how much work effort to supply each period to firms which produce the consumption goods.

Monopolistically competitive firms produce differentiated consumption goods, exercise market power, and maximize profits by pricing their differentiated products at a markup over marginal production costs. Firms are owned by households, which earn both wage and profit income. Households have access to a credit market where they can borrow or lend. Households take product prices, the real wage in the labor market, and the real interest rate in the credit market as given in making their choices. Firms take wages as given when choosing how much work effort to hire in the labor market.

A firm incurs decision costs to determine the relative price that maximizes its profits. Pricing decisions must be overseen by management. Pressing problems compete for scarce management time. Hence, pricing gets management's attention on a stochastic basis depending on its perceived urgency relative to other pressing concerns.

The NNS model puts the markup at the core of the pricing decision. According to the model, a firm considers changing its nominal product price only when demand or cost conditions are expected to move its actual markup significantly and persistently away from its flexible-price profit-maximizing markup. For instance, a firm would raise its nominal product price if higher nominal wage growth or

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[2]Goodfriend (2004) contains an exposition of the baseline NNS model and its implications for monetary policy.

lower productivity growth threatened to compress its actual markup relative to its flexible-price profit-maximizing markup. On the other hand, a firm would consider lowering its nominal product price if lower nominal wage growth or higher productivity growth threatened to elevate its actual markup relative to its flexible-price profit-maximizing markup.

The Case for Price Stability

The case for price stability in the NNS model is as follows.[3] An environment in which the price level is stable must be one in which actual markups equal flexible-price profit maximizing markups. Otherwise, firms would not be content to keep their product prices constant. The fundamental NNS insight is that price level stability makes the economy behave *as if* firms adjusted their product prices flexibly and continuously to sustain their flexible-price profit-maximizing markups. Hence, NNS logic tells us that price stability rids the economy of monetary frictions due to price stickiness of the kind long ago identified by Keynes and other economists as a source of employment fluctuations due to fluctuations in aggregate demand.

But there is more. According to the NNS framework, price stability therefore makes the economy conform to potential output, defined as the fluctuating level of aggregate output determined by supply factors such as productivity shocks in the real business cycle core of the economy. Moreover, price stability maximizes household welfare in the NNS framework because price stability eliminates fluctuations in actual relative to flexible-price markups that would otherwise occur due to sticky prices.

The case for price stability carries over also to a targeted trend rate of inflation. An environment in which inflation is credibly targeted by a central bank is one in which firms raise product prices at the trend rate of inflation because they expect the central bank to sustain an environment in which nominal wage growth in conjunction with productivity growth raise nominal marginal cost at the targeted rate of inflation. Then firms can be confident that raising prices at the targeted trend rate of inflation will keep actual markups stabilized at flexible-price profit-maximizing markups.

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[3]Goodfriend (2004) explains in more detail why inflation targeting is a welfare-maximizing monetary policy in the baseline NNS model.

The NNS framework makes clear why monetary policy must put a priority on anchoring inflation expectations. Failing to act against elevated inflation expectations encourages firms to move actual prices up with expected price increases. The only way that monetary policy can block an "inflation scare" from being passed through to actual inflation is by tightening monetary policy sufficiently. A policy tightening must create a deficiency of aggregate demand to weaken labor markets, depress wage growth relative to inflation, and elevate markups to create a countervailing deflationary force.

In other words, failing to anchor inflation expectations exposes a central bank to circumstances that force it deliberately to create a recession in order to stabilize inflation. Numerous recessions in the United States and elsewhere occurred prior to the secular stabilization of inflation in the 1980s because central banks were insufficiently preemptive of rising inflation and inflation expectations. The pattern of rising inflation followed by a monetary tightening and a recession was repeated so often that it is known as "go-stop monetary policy." The tendency toward go-stop policy has greatly diminished since the mid-1980s, and the volatility of both inflation and output are so much reduced that the period has come to be known as the "Great Moderation."

The Case for a Flexible Exchange Rate

The question of exchange rate regime in the NNS is best approached by asking how inflation should be targeted in an economy with both a monopolistically competitive sticky-price sector and a flexible-price sector. For instance, food and energy prices are highly flexible. So the question arises whether an inflation target should include both sticky and flexible prices.

NNS reasoning is clear on this: monetary policy should target the measure of inflation that makes the economy behave as much like a flexible-price economy—that is, as much like the flexible-price monopolistically competitive RBC core of an NNS economy—as possible. It follows that a central bank should target an objective for low core inflation, an index that includes only sticky prices of monopolistically competitive firms. Targeting core inflation allows the economy to adjust to fluctuations in relative prices for such goods as food and fuel while core inflation and employment in the monopolistically competitive sector are stabilized.

To target headline inflation, on the other hand, a central bank would counteract an increase in flexible prices by tightening monetary policy to contract employment in the monopolistically competitive sector. Doing so would elevate markups and induce sticky-price firms to cut their prices in order to offset the effect of higher flexible prices on headline inflation. According to NNS logic, that would be inefficient because such policy would produce fluctuations in the NNS economy relative to its flexible-price monopolistically competitive RBC core. Moreover, a core inflation objective would be more stable and serve better as a nominal anchor for monetary policy.

The above reasoning carries over to an open economy that imports a share of consumption goods at a foreign currency price and exports output at a foreign currency price given in world markets. In an open economy, NNS logic suggests that monetary policy should target a core index of domestic currency denominated prices of goods and services produced for domestic use by monopolistically competitive firms. Export and import prices should be free to adjust relative to targeted core prices. Import prices could be included in the targeted core index to the extent that domestic value added in imports associated with assembly, transportation, and marketing is a significant part of cost. Otherwise, export and import prices should be free to adjust with foreign exchange rate movements and foreign price movements relative to targeted core prices.

In addition to the logic above, the case for a flexible exchange rate gets support from the fact that the exchange rate must float freely to clear the foreign exchange market to enable interest rate policy to freely target domestic core inflation. From the perspective of the NNS framework, a flexible exchange rate is beneficial because it frees interest rate policy to stabilize domestic inflation. According to the NNS, monetary policy makes its greatest contribution to macroeconomic stability by stabilizing domestic inflation. The NNS case for a flexible exchange rate is strong whether or not exchange rate flexibility turns out to be helpful in restoring trade balance.[4]

The Fragility of Independent Interest Rate Policy with a Fixed Exchange Rate

A country that wishes to secure interest rate policy independence

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[4]Goodfriend (2008) develops the case for a flexible exchange rate in a two-country extension of the baseline NNS model in Goodfriend (2004).

with a fixed exchange rate has two options: (1) it can impose controls on the international mobility of capital, or (2) it can satisfy the net demand for foreign exchange at the fixed exchange rate with sterilized foreign exchange intervention. Each option is inherently fragile.

Capital controls retain their effectiveness over time only as long as the international interest differential is small enough that the profit from moving funds internationally does not overwhelm respect for controls or corrupt their enforcement. Capital controls are likely to be effective over time only if the "no interest arbitrage condition" is approximately satisfied. Countries that encourage exports and foreign direct investment find it particularly difficult to impose capital controls effectively because speculative capital flows are disguised relatively easily as legal commercial transactions.

Interest rate regulations can supplement capital controls to create additional scope for independent monetary policy. A ceiling can be imposed on bank deposit rates and a floor on bank loan rates so that regulators can raise loan rates to stabilize domestic inflation and keep deposit rates low so as not to attract capital from abroad. However, interest rate regulations that artificially raise the markup of loan rates over deposit rates create a profit opportunity for those willing or able to evade the regulations. And competition among bankers will degrade the regulations—by lowering effective loan rates with (hidden) rebates or by raising effective deposit rates by bundling explicit interest payments with other transactions. Moreover, to the extent that regulators succeed making interest rate regulations effective in the formal banking sector, banking will tend to move to the informal sector. Thus, both capital controls and interest rate regulations are fragile means of delivering independent interest rate policy with a fixed exchange rate.

The second option for protecting independent interest rate policy with a fixed exchange rate works without capital controls and instead accommodates the resulting capital flows, but sterilizes the effect of these flows on the money supply. There are a number of ways in which this option is fragile. In the first place, the fiscal cost of sterilization depends on the circumstances. For instance, sterilization can be costly when domestic interest rates are higher than foreign interest rates and a central bank must sterilize capital inflows (that would otherwise create domestic inflation) by buying foreign exchange with (1) funds acquired by selling domestic securities from its balance sheet or with

(2) funds acquired by creating and selling debt securities of the central bank itself. In such circumstances the cost of sterilization encourages international speculators to attack the exchange rate peg.

The country has some choices. The central bank can sterilize less of the capital inflow and instead allow some inflationary growth of the money supply. The country could revalue its exchange rate, which might create expectations of a further revaluation and precipitate a speculative attack on the exchange rate peg. Or the authorities could raise reserve requirements, which pay little or no interest to banks. By raising reserve requirements the central bank could prevent the capital inflow from increasing the money supply at lower net interest cost to itself. But doing so would reduce the fiscal cost of sterilization to the central bank at the expense of commercial banks that would be forced to hold low-interest reserves instead of higher-interest loans. All three options are fragile.

On the other hand, if a country is faced with capital outflows that threaten to devalue the exchange rate, the country's capacity to prevent this outcome with sterilized foreign exchange intervention is constrained by the stock of international reserves on hand. Again, the policy regime would be fragile in these circumstances.

Conceivably, circumstances could be such as to allow a long period of sterilization to deliver exchange rate stability together with independent interest rate policy appropriate for domestic stabilization. Nevertheless, the viability of such a regime would always depend on fortuitous circumstances beyond the county's control. The regime would be fragile inherently because it could never be fully credible.[5]

References

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[5]Goodfriend (2008) contains an analysis of credibility crises in a flexible exchange rate regime and in a fixed exchange rate regime in a two-country baseline NNS model.

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