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Macroeconomic Market Incentive Plans:
History and Theoretical Rationale

by

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The desire to move the economy toward high employment without inflation has led economists to search for new tools beyond the traditional instruments of monetary and fiscal policy. While monetary and fiscal policy can control aggregate demand, additional instruments may be required if aggregate nominal demand management is not enough to solve macroeconomic problems. Some of these proposed tools affect macroeconomic outcomes by changing microeconomic incentives. One such instrument is the macroeconomic market incentive plan (MAP, or Market Anti-Inflation Plan), introduced by Lerner and Colander (1980).

Since these proposals change microeconomic incentives, they have both microeconomic and macroeconomic implications. While the relationship between microeconomic behavior and macroeconomic outcomes has been on the research agenda for more than two decades, wide disagreement continues. This has made it difficult to reach firm conclusions regarding the viability of proposals like MAP, but it also means that questions raised by the study of MAP have important implications for macroeconomic theory.

I. History

MAP is neither the first nor the latest tool that has been proposed to supplement monetary and fiscal policy. Historically, the most common policy is a form of wage and price control. Unfortunately, the experience with such

controls has been spotty. The most recent experience in the United States with direct controls occurred during Nixon's presidency. These controls produced shortages in some sectors of the economy, and inflation "bounced back" forcefully after the controls were lifted.

Problems with wage and price controls have encouraged the search for alternatives. In the early 1970's Wallich and Weintraub (1971) proposed a tax-based incomes policy (TIP). Their basic idea was to increase tax rates on corporate profits whenever increases in a firm's average wages exceeded an announced guideline. With TIP, firms are discouraged but not prohibited from raising wages. If a business wishes to expand rapidly, it can raise wages to attract new workers but must also pay the higher taxes.

Many variations on TIP are possible. For example, other taxes may be adjusted, or price rather than wage changes could be taxed. Still, all TIP proposals have the same general objective of discouraging inflation while providing firms with more flexibility to adjust relative prices than under wage and price controls. The result should be that shortages are less likely under TIP than under wage and price controls. This increases the likelihood that a TIP program can be sustained over a longer period of time and reduces the immediate threat of a "bounce back" of inflation.

The Carter administration considered a TIP program, but no formal proposal was ever made. A 1978 Brookings Conference (Okun and Perry 1978) considered the administrative and political problems of a variety of TIP proposals. Recently TIP programs have been used in Eastern Europe and the Soviet Union to limit wage increases during the reforms. In the Soviet Union TIP has not been very effective in controlling the wage bill since the law has not been enforced and enterprises operate under soft budget constraints (A Study of the Soviet Economy,

Vol 2, p. 183). In Poland, with a tax rate of 500%, few, if any, wage increases have occurred. The policy more closely resembles wage and price controls than a flexible policy of wage adjustment.

Recently, an alternative "Share Economy" approach has been proposed by Weitzman (1984, 1985). Share Economy workers would receive part of their income as profit shares rather than fixed wage payments. This lowers the marginal cost of hiring additional workers and provides an incentive for firms to expand employment. Weitzman argues that the unemployment problem can be solved in this way. This gives policy-makers more freedom to control inflation by adjusting aggregate demand.

Although there are no real world examples of explicit attempts to establish a Share Economy, the British government has established tax breaks that encourage profit sharing arrangements. Weitzman has also studied how closely his scheme resembles bonus payments in Japan and whether the stability of the Japanese economy is due to these arrangements.

Of these proposals MAP is closest to TIP. Instead of taxing wage or price increases, MAP establishes a tradable permit system. Under one version of MAP, a firm could not raise its price unless it purchased a permit. This permit could be purchased from another firm which creates price increase credits by lowering the price of its output. Since a firm could raise its price only if another firm lowers its price by the same amount, the overall price level will remain constant.

MAP and TIP are both anti-inflation policies which allow relative prices to adjust. MAP makes it more costly for a firm to raise prices, and there is an added incentive to lower prices. For the firm facing a downward-sloping demand curve, MAP has the same effect as rotating the demand curve around the existing

quantity point so the curve appears flatter. In this way MAP creates a bias towards lower price levels.

II. Theoretical Analysis of MAP

The imposition of MAP can be viewed as a redefinition of the property right to adjust prices. Without MAP the right to adjust prices lies with price setters and is circumscribed by the competitiveness of the market. With MAP firms still must contend with the market, but they must also purchase tradable permits. In a number of respects these property rights issues parallel those that arise in pollution control. For both pollution control and inflation control, taxes and tradable permits have been recommended as alternative means of controlling externalities due to high transactions costs. The property rights perspective is different from the standard approach to macroeconomic questions and raises fundamental questions that go beyond the analysis of MAP itself.'

The theoretical justification for intervention by government to control pollution is the existence of an externality. In the absence of government action, the cost of negotiating among the parties creating the pollution and the parties affected by the pollution is too great for trade to occur. Either pollution taxes or pollution permits can be used to reduce the amount of pollution. Taxes reduce the amount but do not determine the quantity; permits determine the quantity and let the price be determined in the market. Like pollution taxes, TIP can discourage firms from raising prices, but cannot directly control the level of inflation. If tax rates are too low, inflation may proceed at high rates. If the tax is too high, as in Poland, no price changes will occur. TIP will function as wage and price controls and shortages can arise. Like marketable pollution permits, MAP can control the level of

inflation. The price of MAP credits is a charge for raising the price.

Externality arguments similar to those involving pollution have been used to justify MAP. Coordination failures due to macroeconomic externalities have been analyzed (Cooper and John, 1988) and linked to MAP programs (Colander, Koford and Miller, 1989). Still, many questions have not been fully explored. Because MAP is a system which changes the price setting incentives of individual firms, understanding the impact of MAP requires a model which explains the relationship between the microeconomic behavior of firms and their macroeconomic economic consequences. Furthermore, an important aspect of MAP is that it should give firms the freedom to adjust relative prices so that shortages do not arise as they do under wage and price controls. Representative agent models are inadequate for answering this type of question.¹

Formal analysis of macroeconomic externalities is recent - Cooper and John's being an early contribution. As Coase (1960) argued, however, externalities are related to transactions costs, and transactions costs have been studied much longer in macroeconomics than externalities per se. Transactions costs have been used to justify the existence of money, and even though explicit reference is not always made to transactions costs, arguments relying on search costs, contract adjustment costs or related imperfections in markets incorporate a form of transactions costs into their models. In the absence of a unifying theory of how these transactions costs relate to each other, we are left with many models (e.g., for wage setting behavior) and must search for ways to choose among them (Blinder, 1991).

Transactions costs are part of the resource costs of operating the market economy just as the organizational costs of a large hierarchy are costs in a centrally planned system. Resources devoted to these framework functions under

either form of economic organization are resources not available for the production of goods and services.³ A model broader than the no-transaction-costs general-equilibrium model would analyze these trade-offs. Altering institutional arrangements in a number of ways such as restructuring the legal system or the financial payments system might lead to more efficient market arrangements.⁴ So inflation reduction is only one way that resources used to support framework functions might be released to the production sector of the economy.

Frameworks within which markets operate may not be properly chosen. It is not clear that markets can always be used to properly allocate the resources necessary to perform these functions. Still, this is what MAP proposes to do. Pollution permits put a price on the opportunity cost not accounted for in the production process. MAP does the same by putting a price on the additional resource costs due to an inflationary environment. Whether the tradable permits are used to constrain pollution or inflation, the government determines the "quantity". In neither case is this likely to be the optimal amount. In both cases, however, some kind of intervention may be justified; otherwise individual decisions will be made on the basis of private costs in a situation where private costs and social costs differ.

The theoretical justification for MAP is that there is a macroeconomic externality, and MAP can mitigate the consequences of the externality. More work needs to be done to define the nature of this externality before a clear picture will evolve. This requires a deeper understanding of transaction costs and a model that integrates such costs into microeconomic and macroeconomic models.

III. Costs of a MAP Program

MAP creates additional costs for both government and firms. To evaluate MAP these costs should be compared to the costs of utilizing alternative policy instruments.

As with any market, new markets in MAP credits are not costless. First, if MAP permits are to be traded, units must be measured with some accuracy. Similar problems arise in markets for pollution permits. Secondly, there must be enforcement. If a firm sells a permit, what is to prevent this firm from raising its price as much as it desires unless there is monitoring of the firm's activities? Whether the permits are issued in a market for pollution or a market for price increases, these costs are significant. Yet last summer trading began in a market for pollution rights.

Government expense is not the only cost of administering a MAP program. Firms must bear the cost of participation in a market for MAP credits rather than simply adjust prices. On the other hand, if MAP successfully prevents price inflation, transactions costs would be lower. Money reduces transactions most when the price level is known and stable. As a unit of account, money makes it easier for economic agents to determine relative values. As a store of value, money enables agents to carry purchasing power forward from one period to the next. In an inflationary environment, money performs neither of these functions well. Inflation raises the cost of transactions, and distorts economic decisions. Without an accurate unit of account it is difficult to measure the aggregate losses from misallocation of resources due to misjudgments of relative prices.

Even if MAP can stop inflation, it is not the only means of doing so. What should be shown is a direct link between the change in price adjustment property

rights under MAP and the externalities caused by the increased transactions costs arising in an inflationary environment.⁵ The difficulty is that our understanding of the relationship between transaction costs and production costs is still primitive. This makes it difficult to formally model the relationship between MAP and the increase in transactions costs caused by inflation.

A more appropriate question than optimality is whether the MAP system is a move in the right direction. Transaction costs due to inflation must be reduced by more than the costs of operating MAP itself, and the misallocation of resources must be less under MAP. It is generally conceded that wage and price controls distort relative prices and cause misallocation of resources. To the extent that MAP distorts relative price movements, misallocation could also occur.' Against this must be weighed the misallocation which occurs under inflation. When the price level is rising, relative prices become distorted. Different mechanisms are used to adjust prices in different parts of the economy. At any point in time some prices are rising more rapidly than others. Relative prices reflect not only the pull of supply and demand, but also how these price setting mechanisms adjust for inflation. Allocation decisions made on the basis of these prices are distorted.' At high levels of inflation the price setting mechanisms themselves change to cope with the high-inflation environment. This further adds to the costs that MAP is designed to offset.

Traditionally, methods other than MAP have been used to control inflation. Contractionary monetary and fiscal policy have succeeded in reducing inflation in the United States, but the costs have been high. To be effective, MAP must be coordinated with monetary and fiscal policy. The price of MAP credits is a signal of demand pressure in the economy. If this pressure becomes too great the price of MAP credits will go to 100% of the increase in price, and MAP will

become a rigid price control. Thus, a cost effective MAP program will complement rather than replace other stabilization instruments.

IV. Conclusion

Theoretical analysis of MAP highlights macroeconomic questions that have broad relevance. Since MAP is designed to fight macroeconomic inflation by changing the incentives of individual price setters, the relationship between microeconomic behavior and macroeconomic outcomes must be squarely faced. If MAP redefines property rights in order to manage the problems created by a macroeconomic externality, this externality must be clearly defined. This macroeconomic externality must be related to transactions costs in the economy. Then it must be shown how these transactions costs change when inflation rises. For MAP to be well understood, economists must learn more about the effects of aggregate demand pressure on microeconomic price setting behavior and transactions costs, and how in turn these changes affect the macroeconomy.

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1. It is close to the "New Keynesian" approach described by Stiglitz (1991). Stiglitz focuses on how market failure can cause business cycles. Here our focus is how alternative policy tools can be used to fight inflation.
2. See Stiglitz (1991) for an argument for why representative agent models are inadequate to explore a wider set of questions as well.
3. How these functions are counted in our measures of aggregate output depends on the circumstances. If inflation makes it more difficult for a consumer to determine which price is lowest, the added search costs are not included in GNP. But if a firm hires an additional buyer, these costs are added to GNP.
4. Williamson (1985) discusses how institutional changes can affect transactions costs within and between firms.
5. This is equivalent to the argument that pollution arises because a resource is underpriced. A tradable pollution permit system creates an appropriate charge for this resource.
6. As noted above, MAP reduces firms' market power by making their apparent demand curve flatter. Thus, MAP should reduce relative price distortion that is due to imperfect competition.
7. It has been argued that income distributions are distorted by inflation. While relative incomes should change when supply and demand shifts, distributional shifts caused by inflation are considered arbitrary. If inflation causes arbitrary distributional shifts, it must also cause relative price distortion.