A Package of Policies to Permanently Increase Output Without Inflation

by

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Chapter 4

A PACKAGE OF POLICIES TO PERMANENTLY INCREASE OUTPUT WITHOUT INFLATION

4.1 The Macroeconomic Externality Problem.

The examination of MAP and equivalent TIPs has shown that these incentive anti-inflation policies will not only stop inflation, but also increase output, both in the short run and in the long run.[1] It is desirable that an anti-inflation policy also increases output, but MAP's and TIP's effects on output have been examined merely to assure that stopping inflation would not reduce output or be a drag on productivity.

But can we act more directly against high long-term levels of unemployment and low levels of output? And can we use the underlying principles used to design MAP to design appropriate incentives to reduce other sources of macroeconomic harm? This chapter attempts to apply these principles, first by identifying specific macroeconomic externalities, and second by examining policies that might internalize them.

At the beginning of the Reagan administration, the supply-siders claimed that they could produce increased output along with reduced inflation. But they failed to produce the good results they claimed. Since then, new classicals have denied

[1] See Koford and Miller (1984), Colander and Koford (1983), Pissarides (1984).

that high unemployment or aggregate instability is a real problem (Lucas 1986?), while new Keynesians have not yet developed a model that shows clearly the macroeconomic problem or how to reduce unemployment.' MAP and TIP do increase output, but they are a rather indirect means of increasing output: they have their own direct justification as a solution to the inflation problem, and they might be misapplied if they were used as major "supply-increasing policies."

The manner in which MAP and TIP increase output while stopping inflation can give some insight into the internalization of macroeconomic externalities. When one policy cures two ills, it is worth examining how it works with some interest. MAP and TIP increase supply by reducing externalities in the economy, specifically by reducing firms' market power. Increased supply comes about because for a firm with market power an incentive to reduce price is also an incentive to increase quantity. It follows that an incentive to increase quantity also tends to reduce price. (In fact, as MAP is actually implemented, it looks very much like an incentive to increase inputs and outputs.)[3]

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[2]Some "growth hawks" have recently developed a theory of how the economy could grow more rapidly over the long term, with more investments in human capital, R&D, and infrastructure. This theory has no short run solutions, however. See MIT Commission Report, Scientific American.

[3]Miller, Koford and Schneider (1984) make that point: it is a point that deserves further theoretical investigation. It is examined also in Koford, Miller and Colander (1989). There is one clear distinction between MAP and such an incentive: MAP creates a rule assuring a stable price level: it is the effect of government monetary policy that causes the value of MAP credits to be positive, and so causes the incentive to increase the use of

Figure 4-1: Increased Output under the MAP Incentive

This underlying symmetry between incentive anti-inflation plans and incentive supply-increasing policies can be shown graphically. Figure 4-1 illustrates that MAP has both an anti-inflation incentive and an output-increasing incentive. The figure shows a typical firm's Marginal Cost (MC) and Demand (D) curves, and the derived Marginal Revenue (MR) curve. The firm's profit-maximizing price and output are at P_0 and q_0. Now, the MAP system sets up a structure requiring a firm that increases its price to purchase the right to do so. If we take the firm's allowed price to be P_0, then firms with a price higher than P_0 must pay for that right, while firms with a price lower than P_0 can sell the right to others. Effectively, that means that the firm's Average Revenue (AR) is different from its price. (Absent MAP, a firm's average revenue is of course the same as its price). Beginning with a particular level of output, we associate it with a particular price on the demand curve. Then for that price, there will be either a receipt or outlay for the MAP credits: it will be a receipt that increases AR for prices below P_0, and an outlay that reduces AR for prices above P_0. The difference between D and AR is proportional to the difference

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inputs and sale of outputs.

between D and P_0.[4] The firm will maximize profits according to its new average revenue function AR, using the marginal revenue function derived from that AR function MR (MAP).

We may consider the MAP incentive to increase output as the result of this difference between D, the firm's demand curve, and AR, the firm's average revenue under MAP. As MAP shifts a firm's average revenue function from D to AR, it creates an incentive to expand output. This can be seen by considering the relative locations of the MR and MR (MAP) functions. AR has a flatter slope than D, and it is above D for outputs associated with prices less than P,; taking D and AR as approximately linear, MR (MAP) is greater than MR for all outputs greater than $q_{i0}/2$. As Figure 4-1 shows, the new MR (MAP) function equals MC at a greater output than the old MR function. This shows in a simple way that firms will increase output when they face a MAP incentive.

The MAP incentive can also be considered as a subsidy to output: the firm's marginal revenue is higher under MAP for the relevant range of output, with the difference due to the MAP credit revenues. (The MAP credits can also be shown as a reduction in the firm's marginal cost.) It should also be clear that a value-added TIP would have exactly the same results.

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[4] For an approximately linear demand function, D is rotated counterclockwise to obtain AR, with the rotation proportional to the MAP credit price.

Figure 4-l also shows the difficulty that an inflation incentive policy like MAP has in increasing output. A perfect supply-increasing policy would provide just enough of an incentive to increase output to q,. But policy makers know only the original price and quantity, p_o q,, which is insufficient information to determine the correct incentive. MAP reduces the degree of monopoly as it shifts the firm's average revenue -- at the extreme, bringing price down to equal marginal cost. But it brings price to marginal cost at the quantity where p_o equals marginal cost, which is an excessive level of output. The optimal price and quantity, p_e and q,, are unknown, and so cannot be used as the basis for a MAP policy to obtain the optimal level of output?

To adopt an appropriate "supply-increasing" policy, we must first determine what causes reduced supply. That is, we must identify the market failure or externality responsible for the reduced output. Then policies may be found that would act directly to reduce that externality.

Some economists claim that the only externalities of any importance are those created by government. Policies singled out are those that reduce labor's incentive to work, firms' incentives to invest, and firms' and workers' incentives to use an efficient labor market: policies that reduce firms' and workers' ability to enter new industries and leave old declining

[5]This is a particularly large problem for former socialist countries, where past prices were highly distorted.

industries are also singled out. The main disincentives to work are high taxes on workers and firms, and unemployment compensation.[6] Labor markets are made less efficient by unions, which operate under rules established by law to support their existence, by restrictions on the right to hire and fire (rules banning race and sex discrimination), by the Social Security system and by the minimum wage. Thus these critics consider that most of the "welfare state" and anti-discrimination rules adopted since the 1930s are externalities responsible for reduced supply. These critics surely are partly correct: as a negative side-effect of their positive goals, these policies do reduce labor-market efficiency in most cases.' But there may be offsetting policies that allow us to keep most of the welfare-state policies, while greatly reducing their efficiency costs.

Such choices may be considered to make a tradeoff between income support to some group that deserves support and an efficiency loss due to the support.* Then a comparison can be made among different policies that provide similar income support to find the one with the lowest efficiency losses.

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[6] In much of Europe, there are basically permanent *'social security" payments to able-bodied workers who cannot find jobs; these are a particularly strong disincentive to work that might explain Europe's high unemployment rates.

[7] These policies have also been adopted by such highly successful economies as the Japanese, French and German economies, leaving a minor mystery of how these economies are able to succeed despite the governmental handicaps.

'Atkinson and Stiglitz (198?) describe numerous policies in these terms.

Most macroeconomists believe that the private sector also contains important externalities. Keynesians have emphasized the failure of some prices to adjust, which causes multiplier effects. As one sector of the economy gets out of equilibrium, it causes spillover effects on the other sectors, which are then thrown out of equilibrium as well. Keynes emphasized the failure of interest rates to adjust; Keynesians have concentrated on the failure of wage rates to adjust; and institutionalists have emphasized the failure of industrial prices to adjust. New Keynesians have emphasized the failure of markets to clear, and the spillover effects associated with non-clearing markets.

4.2 Types of Macroeconomic Externalities

Macroeconomic externalities can be classified into two distinct types, according to the nature of the market failure. Unemployment is a temporary state, so that an externality based upon going into, or out of, unemployment, is a dynamic externality. It is based on the forces and incentives that cause people to change from work to unemployment and back. Unemployment compensation, as currently paid in the U.S., is thus a dynamic externality. Models of a dynamic externality must emphasize the forces causing movement into and out of that state.

Income taxation, on the other hand affects the more permanent state of earning income, and so is a static externality. While it discourages productive effort, it does not necessarily encourage unemployment. Models of static externality

can be based on standard static equilibrium, with static "wedges" between actual and optimal incentives.

Dynamic externalities seem to be associated with a stochastic process or a search process, or a problem of gaining information about a novel and changing environment. In contrast, static harms seem to be caused by the standard static market imperfections of traditional price theory.

While both sorts of externality can reduce economic well-being, they show up in quite different ways. Unemployment is considered bad, and it is a clear measured phenomenon that everyone knows about. Encouraging unemployment will increase a number that is considered a bad. Yet the actual harm from increased unemployment may be quite small: one must compare the potential benefits from people's search for new and better jobs during unemployment.[9] On the other side of the coin, the harms from excessive avoidance of income taxes -- working in less productive untaxed occupations, too much leisure on the job -- are subtle, and often escape notice. For people who engage in these activities, they are often a source of pride. Often they are seen as a reward for cleverness or "beating the system" and so people defend them politically and morally, despite their

[9] That is, unemployment is the result of an optimizing process, and so the harm from deviations from the optimum is a matter of second-order losses.

roots in inefficiency."

Dynamic externalities can be divided into two categories as well. Some depend upon a stable process that is at equilibrium, such as the equilibrium level of search in a labor market. Others depend upon the disequilibrium (dynamic equilibrium path) nature of the process, such as the fluctuation in commodities markets due to speculative activities (Ackley 1983).

What externalities are important, and what might be done about them? To answer these questions, it would be best to have a model of how the economy works, one with both micro and macro elements. Unfortunately, there are currently (1991) a variety of models that lead to fairly inconsistent conclusions. For static theories, economist have models that describe specific parts of the economy well, particularly in public finance. Computable general equilibrium models give a rather complete static form that permits solving accurately for the results of taxes and subsidies in both individual sectors and the economy as a whole.

For dynamic theories, the situation is different. There are numerous sectoral models and a few whole-economy models (e.g. Cooper and John 1989) but these different models are not well integrated into a complete model of the economy. Rather, they

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[10]This is particularly true in former socialist countries, and in highly taxed countries such as Sweden. Yet the same is seen in the U.S. In 1983 Senator Kasten led a long and dramatic fight to open a loophole that would allow wealthy people to illegally evade income tax on interest income. He succeeded. (Piefer 1989) pp 556,591.

explicitly model parts of the economy, while their usefulness in describing the macroeconomy basically depends upon their being integrated into a complete model. Both the sectoral and whole-economy models remain basically untested empirically, so a proper integration of the various contradictory theories is not really possible." These theories are quite different from the old Keynesian and monetarist views, which still have their proponents. Contrary to the earlier theories, New Keynesian models invariably have a clear microeconomic foundation with some source in individual optimizing. Thus, it is meaningful to discuss optimizing and deviations from an aggregate efficient outcome in these models.

The many New Keynesian models of specific sectors appear to be mutually consistent, but this question remains open. It may be that different sectors require different models, since a real economy is extremely complex. Each may have some truth in its limited sphere. The next section describes several of these partial views, and examines the externalities that each implies. Policies can then be found that might address the externalities that each model finds important.

4.3 Five Externality Problems

I shall discuss five separate externality problems:

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[11] These statements are not true of the New Classical models. These models have been developed as complete systems, and they have been explicitly and comprehensively tested empirically. However, the empirical evidence rather strongly contradicts them.

1) Static Tax and Spending Wedges

The best-known 1980s diagnosis of the US economy's ills was the "supply-side" view. Most economists, even unrepentant Keynesians, accept the basic supply-side point.[12] The basic supply-side argument is that taxes and subsidies create a wedge between the private and social returns from productive activities. As people follow the maximum private return, they reduce society's welfare due to this wedge. When taxes and subsidies are high, this effect can be devastating to an economy, leading to massive evasion of taxes, black markets, and extreme misuse of resources. Thus, policies that reduce these tax-subsidy wedges will reduce inefficiency and increase output.

In our fundamental terms, these claimed inefficiencies are static and basically partial-equilibrium externalities. Thus, standard microeconomic tools can be used to evaluate them, and to jpropose policy solutions.

The personal income tax and the major payroll taxes are the major sources of large static wedges in the U.S., followed by the corporate income tax. It follows that reform of these taxes and reduction in total taxation are the largest supply-side policy available. The wedge can reach around 50% for middle-income taxpayers, including the personal income tax of 31%, payroll taxes of 16%, and state income taxes of perhaps 8%. (The wedge exceeded 100% for some wealthy Swedes in the 1970s). The most

[12] However, many economists think that some supply siders have taken completely untenable positions.

clearly desirable policy is a uniform income or consumption tax. This would still make a considerable difference, although the 1986 revision of the U.S. tax law carried the U.S. a long way toward a uniform tax (Symposium on Tax Reform, Journal of Economic Perspectives, Summer 1987).[13]

But many incentive problems of a uniform tax remain. Reducing the U.S. corporate profits tax's high marginal rates, and moving the tax closer to true economic profits, is another significant step. Reforming the treatment of capital gains and of interest income to eliminate taxation purely due to the effect of inflation appears to be the most important single way these taxes could be improved.

But the most important and most controversial need is to reduce overall taxation (and spending). To do this, citizens need to be able to compare the costs and benefits of government spending programs, and the political system must be organized so that it will choose the optimal combination, paying attention to both economic efficiency and political interests. Why might this not be true now? Certainly economists have studied the benefits and costs of all of the significant government spending policies. The information is available that numerous (most?) government

[13] According to the articles in the symposium, a significant disadvantage of the 1986 act is that it moved away from a consumption tax toward an income tax (Aaron, p. 9). Yet overall, the income tax was moved toward a considerably more efficient system, with a broader base and fewer loopholes, and lower rates (Pechman pp. 11, 18) Musgrave (pp. 59-71) describes the additional changes in the personal and corporate income tax that would increase economic efficiency.

programs are larger and more expensive than the would optimally be. What is the externality? The fundamental externality problem appears to be political.

Specifically, it can be argued, following Olson (1965, 1982) and Buchanan and Tullock (1962) that there is a tendency for special interests to get their way over the general public.[14] This is arguably an example of the public goods problem, with lower spending being a public good. The argument relies on the notion that while the benefits from government spending are specific benefits to particular people--typically special-interest projects--the costs in terms of higher taxes are uniformly spread across the public. If this situation is empirically valid, it is a legitimate macroeconomic externality causing excessive government spending (and taxation). There is little doubt that the margin of additional government spending is special-interest spending, even though in principle government spending should be for "the public good." It is less clear whether taxation is on a uniform basis across the public, or whether there are sufficient "special interest" tax concessions that make the overall level of taxation into a matter of individual benefits. Given the fairly uniform nature of the current tax law, the tax system seems properly described by this model.

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[14]Buchanan and Tullock (1962) model this externality in terms of special-interest coalitions favoring particular proposals. "Distribution" or "pork-barrel" politics has just this property.

Accepting the externality, what policies are available to internalize it? The most direct policy solution is to provide a political system that would compare the social costs and benefits and evaluate them properly. This is a large and essentially political task: the political externality will be tackled as the last of the major externalities to be considered. But some general comments about the political externality in spending can be made. First, it is likely that the real problem of excessive spending comes from an overall ideological **mindset** that favors government spending, a **mindset** shared by the public, elites, and politicians. Given this overall view that government action should be seen as the solution to society's problems, **it's** not surprising that there will be excessive spending if the view isn't accurate. The 1980s have seen a world-wide trend toward the view that there is too much government, and toward a gradual cutting of government's size. So, maybe the political process really is working as it should.

Second, public political debate has to be broad and superficial, since it must be of some interest to the informed public. Only specialists will pay attention to the details of special-interest legislation. So it is inherent that there will be too little general public attention to the special-interest claims, and there will naturally be a bias in favor of such spending. The farmers producing sugar will know all about the policies to subsidize them, and will favor them strongly: the general public will not know anything about the costs imposed on

them. The port of Mobile will know all about the benefits of having Navy ships home-ported there, but the public as a whole will not even know of the policy, much less its costs.

Rather than develop a way to optimally internalize the political externality, a more imeediate solution is to provide either a direct, optimal solution, or an offsetting externality. For the overall level of taxation, a direct, optimal solution does not seem to be available. There is no clear "optimal level of government spending." However, a direct connection between taxation and spending does seem optimal. Either a simple balanced budget rule, like Milton Friedman's proposed constitutional amendment, or a more sophisticated rule such as Laurence Seidman's full-employment balanced budget rule, would seem highly attractive. These rules allow for deficit spending if it is supported by a high (2/3) majority, and that higher majority implies a reverse externality against deficit spending.[15]

But the real need is an externality against spending. Buchanan and Tullock (1962) favor a high majority for passing spending bills, as a way to increase the weight of those who

[15] Admittedly, the externality being addressed by these policies is deficit spending, not excessive spending per se. The rationale for including this rule is that deficit spending allows for excessive spending without taking account of the costs of that spending. The "flypaper effect" is also important: when a spending program is begun, perhaps due to deficit spending, it develops its own constituents and is difficult to stop. If a program must fight against other worthy programs for survival, it is much more difficult to start.

prefer less spending. Alternatively, the President could be given an item veto on budget line items. Either of these proposals would require a constitutional amendment; the discussion of this issue would reinforce opposition to excessive spending. If one grants that there is excessive spending and taxation due to a political externality, then these proposals are desirable and reasonable. These policies restrain, not prohibit, high spending and taxes - creating a reverse incentive to internalize the current excessive level of federal spending.[16]

There are many socially harmful wedges on the spending and regulatory side of the federal budget. These are generally much smaller than the tax wedges, but in the aggregate they are important. Farm policies, subsidies for water, housing, transportation and many other projects, the subsidies in the Social Security system, veterans' hospitals, and many others, create incentives to waste scarce resources. Cutting overall taxation and spending is at least an indirect means of getting the incentives closer to balance. This is the problem of distributive coalitions, described in Olson (1965, 1982). The

[16]There have been numerous tax revolts in U.S. states, in Europe in New Zealand and in Australia. In each case, either a government has been elected that promises to carry out retractment, or a restrictive rule like California's Proposition 13 or Massachusetts' 2½ has been passed. While the Gramm-Rudman law has an effect somewhat like these restrictions, there doesn't seem to be any way to impose such a rule on the U.S. Congress short of a constitutional amendment. And such a rule on the level of spending or of specific taxes seems extremely inflexible.

core problem is special interest groups that develop, pass a policy that favors them, and then come to rely upon government aid. Legislators then come to rely on these interest groups for support, and bureaucracies are established to cater to them. This "iron triangle" problem is easy to describe, but effective policies to break down such triangles across the board have not been found, despite considerable effort. Instead, in practice, antispending politicians and economists launch a series of individual campaigns against particularly egregious interest groups, and "good government" groups try to reduce the interest group's ability to buy legislators. The essential point about these policies is that the externality is clearly political. Everyone recognizes the economic harm, but the distribution of political power permits the policies to continue.

Would it be possible to adopt a first-best policy towards such spending (and regulatory) decisions, instead of these partial, almost "band-aid" solutions? A "demand-revealing" voting mechanism, which makes it impossible for voters to impose externalities, would be an optimal policy (Mueller 1989, Tideman and Tullock 1976). Such a rule would make it the best strategy for all voters to state truthfully the benefits and costs of any policy to them, allowing the government to add up costs and benefits and put into effect only policies with benefits exceeding costs.

A basically similar rule could be used for voting in legislatures, although I suspect that the fundamental problem is

the connection between citizen preferences and elected representatives. Legislatures do a fairly good job of passing laws and budgets that are responsive to the pressures citizens and interest groups place on them (Weingast and Marshall 1988). In the long run, a demand-revealing voting mechanism would be the best procedure in principle but, so far, such mechanisms have not been tried enough to be workable. Steps towards such a mechanism, such as national referenda on taxation and spending, or on specific projects, would be desirable as they connect voters' decisions more closely with actual government actions. So would fairer, but complex, voting systems like the single transferable ballot.[17] These issues are described further below in the discussion of the fifth, political, externality.

2) Dynamic but stable externalities: The Labor Market

The second major externality to be considered is that of a dynamic process that contains externalities. The major example

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[17]Taagepera and Shugart (1989) develop an excellent practical theory of electoral systems. Their book gives many insights into making changes in electoral systems to make them more responsive to citizen preferences and better at encouraging citizens to think about their choices.

One question they do not deal with is the design of referenda on issues. Such public referenda are a step toward a demand-revealing mechanism. In principle, in a system like California's proposition system, the efficient outcome would be chosen. In that system, multiple contradictory propositions are allowed, and the proposition winning the highest positive vote becomes law. In a competition between more and less efficient proposals and with the ability to make side payments, some form of the highest value proposal should be able to defeat any lower value proposal unanimously.

is the labor market. Here it is the private sector that causes most of the large market failure, although government policies help. Labor markets are rife with externalities, because they are not even close to supply-and-demand auction markets.[18] Workers do not face a continuously clearing auction market, where supply equals demand. Rather they must go out and search for potential jobs. Similarly, firms must search for workers. Too much search and unemployment may occur, if, as some economists have argued, some jobs are much better than others[19] This might be caused by union wages, or because some firms motivate employees with above-normal wages. Or it could be an equilibrium pattern in search markets. When there are some very good jobs, workers search excessively for them, as in a game of musical chairs. Even though the search is not very socially productive -- a person qualified for the position is easily found -- workers search hard, and wait for a possible good job to open up. That creates an externality: in effect, each searching worker is trying to take the good opportunity from the others. If they could all agree to search less, they would all be better off.[20]

Firms go through the same search process. They know that some workers are better than others, for a given job, and so they

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[18]See "Organizations and Economics" Symposium, Journal of Economic Perspectives, Spring 1991, for a good review.

[19]See Katz, Stiglitz, Pissarides (1990), for a discussion of such models.

[20]See Pissarides, ---- JMCB 1988, (1990, Ch. 7 and 8).

try to identify the best worker, hiring that worker before some of the other firm does so. Each firm, by being "selective" tries to impose costs on other firms who will end up with the less qualified workers.

This process creates excessive search unemployment. (Some other externalities tend toward too little unemployment: see Pissarides 1988). There is another problem, too. With everyone trying to find the best opportunity, it is hard for the people in the market to know what a reasonable wage might be.[21] People could potentially make considerable errors in choosing their reservation wages, although in long-run equilibrium they should be fairly accurate. However, when conditions change, the market adjusts to those conditions only by fits and starts -- often leaving many workers unemployed for long periods when conditions worsen." Firms act independently and their separate decisions to lay off workers tend to reinforce other firms' decisions, causing a vicious circle. So the labor market is unstable, causing large swings in employment and output that are not required by any underlying conditions.

The problem of high unemployment in subgroups of the population, particularly the young and the less-skilled, seems

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[21]This is the signal-jamming problem. Everyone is trying to provide the same, desirable, signal. But everyone's signal degrades everyone else's signal.

[22]This is because firms were at a profit-maximum, so errors in their optimization cause only small, "second-order" losses (Akerlof 198_).

probably to be a case of the larger search model. Such people may have unrealistic expectations about their chance of obtaining a job that lead them to have high reservation wages. They may also not realize the benefit of a good work record in obtaining better jobs in the future. Without much successful job search, they may have an intrinsically poor idea of how to set reservation wages. All of this suggests that information about the labor market is a public good. This is the case in that (1) employers and workers could make mutually advantageous trades, if they had accurate information: (2) the information is available only from the aggregate of firms and workers, and it is more or less equally valuable to all workers and firms; (3) no one has the incentive to obtain and transmit this information. Given that workers seem to be overly optimistic about their prospects, there is a market externality problem caused by the failure to provide this public good.[23]

What policies might reduce the harm from these market failures? Creating a more efficient labor market seems one solution. Since the problem is the lack of a public good of an efficient market, a large organization that could provide that

[23] A closely related public good is organizing a local labor market so that workers can easily find and get to jobs. Construction workers have long had union hiring halls that organize such information and have a central meeting place. Less-skilled workers could use such a facility. In addition, many firms organize shared transportation to work for workers who face high costs of transportation. These are also a public good for the workers and possibly for groups of firms.

public good seems reasonable.[24] For example, the federal and state governments and private firms could create a series of clearing-houses of job information -- ones that would give workers much clearer information as to what jobs were available, and give firms information as to what workers were available and their qualities. An effective market would provide both workers and firms with a better idea of the opportunities available -- what the market supplies and demands were, and what the overall distribution of opportunities was. That might greatly reduce excessive search and "waiting" based upon erroneous premises about the market. Perhaps an agency jointly controlled by firms, workers, and state government might be appropriate - one that created a good incentive for firms and workers to register their demands and offers. Sweden has been the leader in developing

[24] Economists will naturally think of the labor market for economists, which is centrally organized and seems quite efficient. At the same time, it is basically voluntary and quite flexible: most of its elements are determined by the independent decisions of employers and workers, taking into account others' decisions and the general nature of the market.

such active job clearing-houses.[25]

An alternative approach is to create increased demand pressure in the market: to suck workers into jobs. There is good evidence that such demand pressure brings previously discouraged workers into the labor market, and so seems to act in the same direction as an optimal policy (See Case and Katz 1991, Osterman 1991). On the other hand, it is important to avoid excessive demand pressure: yet due to search externalities (and monopolization externalities, discussed below) it is clear that there is excessive search unemployment without a policy to increase demand pressure.

The MAP and TIP policies can increase the equilibrium level of demand pressure: since they keep the price level constant, they let the government run an expansionary aggregate demand policy, within limits. Therefore, unemployment can be reduced somewhat by stimulating demand. In this way, the labor market can be brought to the optimal level of unemployment, if that level can be determined.

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[25]Why has the U.S. government's employment service been such a failure? One fundamental reason is that it does not need to respond to the needs of either firms or workers. A consortium of firms, unions and the government with contributions from each would seem more likely to devise an efficient way to match workers and firms.

The second reason is that government agencies face bureaucratic restrictions that force them to be "fair" to all. Yet sometimes workers (and firms) need to be told that they are out of line or unreasonable, and sometimes they need to be coached on strategies that cannot be communicated in a bureaucratic way.

These two elements argue for a fundamentally private organization with government support and an effort by firms and government to assure that is is universal in its coverage.

Weitzman (1984) proposed a novel form of labor contract that may reduce labor market externalities. These contracts share the firm's net revenues between the firm and the workers. The firm's behavior is rather similar to that of a worker-owned firm, with the major exception that the firm is still controlled by management. A result that is important for our analysis is that in bad times, workers automatically receive lower wages, rather than being laid off and having to look for some other job. A more controversial claim is that such firms have a strong incentive to hire additional workers, since additional workers divide up the workers' aggregate share.[26] In Weitzman's share economy, therefore, there is less incentive for layoffs, and so quite likely less search unemployment.[27]

The government-established unemployment compensation system is a significant source of externalities that increase unemployment for both workers and employers. When workers receive unemployment compensation, they are effectively receiving a subsidy for being unemployed, which reduces their incentive to return to work. Since the purpose of unemployment compensation is to keep workers from facing hardship when laid off, not to

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[26] A share economy with search unemployment is more stable in response to some shocks, but less stable in responding to others. Overall, it should be more stable in responding to demand shocks, as Weitzman claims. Whether it reduces equilibrium search unemployment is doubtful (Koford and Miller 1991). It seems likely that in a share economy with search unemployment due to disequilibrium adjustment to demand shocks, there would be less unemployment than in a wage economy.

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subsidize unemployment, a system that provided loans rather than income to workers would be more efficient. It would reduce hardship without reducing incentives and would eliminate the externality.

Employers supposedly pay for the costs of the unemployment compensation system according to the costs incurred by the workers they have laid off. That would provide proper incentives on an average-cost basis. But in practice, firms with the worst layoff records pay only a fraction of the costs of the employees they lay off, and the difference is made up by those with the best records (Feldstein 197-). Requiring complete experience rating (and so making costs related to layoffs) would reduce firms' incentives to lay off employees, and so would reduce turnover and unemployment. One way to obtain valid experience rating would be to require that part of the costs of unemployment insurance be either paid directly by the firm, or be covered by private co-insurance by independent insurance firms. Even if only 10% or 20% of the cost were privately incurred, that would provide the critical element of <u>information</u> as to the true expected costs of paying unemployment insurance claims. If employees received mostly loans when they were laid off, the cost of unemployment compensation would be greatly reduced, reducing the unemployment compensation tax wedge. Some of the savings might be applied to the public goods of retraining, job search in other regions, and to temporary compensation to workers who must settle for permanently lower wages. The search unemployment

externality means that it makes sense for the unemployment compensation system to "tax" firms and workers for their behavior, so that the system should make a net profit.

Another approach to the problem of keeping the unemployed out of poverty while not subsidizing unemployment is to provide unemployment compensation in exchange for some form of effort. Colander (1985) argues for a system of workshops in which the unemployed can do "work" that takes effort but may not be productive. I favor giving the unemployed the alternative of training or studying; that is strenuous too, and could raise workers' productivity. Since one worker's higher productivity raises others productivity, this helps close an externality in which workers under-invest in their own skills.

3) The third externality is a dynamic or stochastic disequilibrium: it occurs in markets where these is considerable search, and the market is often in disequilibrium. The important cases are asset markets, where short-run decisions tend to dominate long-run values of assets, and the result is market instability."

Economic theory implies that long-run factors should determine prices for long-run assets, like stocks, bonds, oil, and metals. This is the standard conclusion that the spot prices for these assets should represent present values. Yet it appears

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[28] I am indebted to Hyman Minsky for conversations on these issues, although he is not impressed with this approach.

that short-run factors actually dominate these markets.[29] Somehow, the near-term events can affect the long-term prices, while the far-off events have little influence over the near-term prices. The long term factors tend to be quite stable, so if markets worked as economic theory says they should, then these prices should be quite stable. Yet in practice, the prices fluctuate more than economic theory implies, and -- more important for our coucern -- they wander far from their equilibrium values. Thus, there can be waves of optimism and pessimism driven by this instability in the market.

This form of disequilibrium quite definitely occurs in the financial markets. The evidence is strong that these markets - stock and bonds primarily, but also commodity futures, foreign exchange futures, and options in the underlying rights - are highly unstable. The prices fluctuate far more than makes sense, in terms of changes in the value of the underlying assets.[30] The same may be true of some commodity prices that have the same nature as stock prices - energy prices, metal prices, and grain prices (Ackley 1983). There seem to be two externalities in these markets that cause the problems. The first is like the

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[29] For example, virtually all of the movement in these prices seems to represent short-run factors, according the the approach followed by Shiller. Long-term values change only modestly from day to day, it would seem, but actual spot prices change constantly and rather erratically.

[30] The controversy stirred up by this work seems to have been decided in favor of the excess volatility view. See Shiller (1984), and Stiglitz (197).

greater-fool theory of stock market prices: the markets are constructed so that the lucky, smart, and quick can get rich off those who are less lucky, smart and quick. The person who obtains correct information ahead of the next person can take advantage of that information to the disadvantage of the others in the market, even if there is no social gain from obtaining the information -- say, if the information would be released soon anyway. The result is that these markets are based more on being quicker than and outwitting others than on economic fundamentals. And such markets tend to be unstable, as the effort not to be left behind pushes the prices up and down in spurts.[31,32]

When stock and bond prices, commodities prices, and foreign exchange prices fluctuate excessively, they increase instability for the rest of the economy, where agents must make decisions based on these prices. It seems that some booms and depressions are driven largely by these fluctuations, although skeptics can point to some stock market booms and collapses that did not have any obvious macroeconomic repercussions. The Great Depression seems to have been caused by such fluctuations, for example. What policies might increase the stability of these prices, and encourage more emphasis on the long run?

Economic theory implies that complete markets will be

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[31] Keynes 1936, Hirshleifer 1976, DeLong, Summers et. al. 1990 are important papers along these lines, which has a long informal history among financial practitioners.

[32] This is not the same as Minsky's financial instability theory, but it has similar conceptual roots.

stable: the solution would be to encourage options, contracts for future delivery, negative options, and negative futures. That, in principle, should allow all information, current and far-off, to influence prices appropriately. If firms were encouraged to make long-run projections of returns, showing how they added up to their estimated present value, that might increase the markets' ability to act on long-term stock prospects.[33] These moves might reduce the problem. For instance, if next-quarter's profits affect stocks unduly, creation of an instrument, based on the stock's value one year off, allows one to pay attention only to farther-off information. But it seems unlikely that these added markets would be enough. The commodity futures markets have considerable information available, and in principle there is no reason why they should not respond adequately to long-run concerns. Yet there is considerable evidence that they do not.[34] Therefore, while encouraging long-run markets seems desirable and appropriate, it seems insufficient in practice.

A tentative theory seems necessary to try to rationalize this difference between theory and reality. One explanation might be that reality is just very complex in the far future, so that theories of that reality are quite difficult to develop. In that case, the assertion that values of stocks, say, should be

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[33] Firms have recently been encouraged by the SEC to make such projections, and many do so.

[34] For example, --------. It is not clear that this claim can be strongly supported, or for that matter, strongly opposed. [Check standard finance sources]

stable because bond prices (and overall profits in a capitalist economy) are stable misses the notion that there are many unknown possibilities that continually develop. This is a sort of large-scale "peso problem." Possibly then while historical data show fairly steady underlying values, people know that "anything can happen" and see novel problems developing regularly. So, their views of the long-run are quite unstable. Also, they have largely short-run factors to evaluate, as evidence about the long run factors.

A fundamental, but partial, solution to the problem of long-run instability is to stabilize elements of the macroeconomy that will in turn stabilize long-term contracts. One difference between the modern economy and the economy of the nineteenth century is the lack of really long-term contracts that exist today. The forty year bonds and the consols of that era have disappeared. The major reason seems to be inflation, which has made their true value a bet on the long-run inflation rate.[35] Thus, a policy that guaranteed the long-term price level might be a stabilizing factor. A policy that provided a more stable long-run gworth path would also be highly desirable in these terms, although it would have much more important rationales, as discussed below. In contrast, it seems unlikely that there are macroeconomic policies available that could provide a

[35] A secondary rate may be that the bonds of the nineteenth century really were too long-term, and that changes in technology and even the existence of nations are too uncertain for such contracts.

substantially more stable long-run growth path.

MAP helps deal with the instability problem by establishing a long-term stable price that is guaranteed by a constitutional mechanism. (This assumes that the MAP system is permanent, and is understood to be permanent). MAP should therefore establish that the price level will remain stable for the long-term. If this policy is backed up by appropriate monetary policy, then people will be more able to plan for the long term and make long-term contracts. Contracts in nominal terms will be meaningful for a longer period of time when prices are stable. MAP requires that the monetary authorities carry out policies consistent with price-level stability. So it is indirectly a way of establishing price-level credibility, somewhat like the gold standard in a previous era. After some experience with a stable price level, and the confidence that the price level will remain confident, one could expect an increase in long-run contracts and increased credibility in long-term decisions.

Another proposed solution seems theoretically legitimate but less sound in practice: to create large commodity stocks maintained by government to reduce price fluctuations. (Some countries have even tried to reduce fluctuations in stock market prices by government price support programs!) Now there may be insufficient incentive for the private sector to maintain reserves, though that argument has not yet been clearly made. If reserves are insufficient, some incentive - a subsidy, perhaps? - to maintain reserves would seem to be the appropriate method to

reduce the externality. The proposed solution of government-controlled grain reserves following an efficient rule might be theoretically valid, but it seems to be a very large-scale intervention in the economy compared to the rather modest benefits, according to Newbery and Stiglitz (1981).[36]

4) The fourth externality is closely related to the third: it is the amplification of disequilibrium throughout the economy. If a shock creates disequilibrium in some sector of the economy, an optimal response would cause the shock to be quickly damped, with the economy moving to its optimal new prices and quantities. But modern capitalist economies have a tendency for shocks to amplify, to build up large disequilibria, before the disequilibria are eventually taken account of and dampened in other sectors. To be sure, capitalist economies have very strong stabilizing properties in the long run, but these properties seem much less powerful in the short run, aside from the effect of governmental built-in stabilizers. In large part, that is why we have business cycles, which are a very unpleasant fact of life.[37]

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[36] Newbery and Stiglitz (1981) provide a comprehensive discussion of optimal commodity stabilization schemes. The political problems of operating such schemes seem very difficult, given the efforts of political interest groups to manipulate prices (Olson 1965, 1982). They are the fundamental barrier to efficient schemes of this sort.

[37] The Keynesian empirical models of the macroeconomy, such as DRI's and the Wharton model, involve strong intersector elements that are a major element in the amplification of shocks. See Evans (1969). That is why multisector models were considered so important for the Keynesian approach to macroeconomic modeling.

Formal neoclassical models of intersectoral transmission of shocks are developed in Cooper and John (1988), where they are called "coordination failures" that lead to multiple equilibria in a relatively static context. Lillien (198_) has been the main new classical proponent of the view that intersectoral linkages were the main source of macroeconomic instability.[38] Cooper and Haltiwanger (19__) have examined intersectoral transmission of shocks empirically in a New Keynesian model of multiple equilibria.

The externality involved here is not the intersectoral transmission of shocks, since that occurs in an efficient economy, but rather that some of the price or output consequences of a change in one industry are not taken account of in the prices set in markets. This is true of most markets, since while prices tend to be spot prices, most industries have resources that have made long-term committments. The problem becomes more serious when the industries do not have flexible supply-demand prices, but rather sticky prices.[39]

An attractive potential solution to the amplification problem would be to reduce the size of shocks, but while the proposals in the preceding sections help do that, they cannot

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[38] Lillien's view is that these fluctuations are efficient.

[39] While there are many good efficiency arguments for the existence of sticky prices (Alchian and Allen 198-, Stiglitz 1987), it is less clear that such prices are efficient when their responses to shocks are included. A basic question is whether shocks are cyclical and the markets are ergodic, or whether the shocks are novel and the markets tend to shift permanently.

eliminate the possibility of such large shocks as OPEC oil shocks, Middle Eastern wars, or major changes in exchange rates. A policy that should clearly reduce amplification is MAP, as its "price level constitution" can assure aggregate price-level stability.[40] People know that whatever shocks occur, there will be no inflation or deflation. That encourages long-term planning and contracting, including such arrangements across markets. Long-term plans and contracts reduce externalities, and so both within-market and across-market externalities should be reduced.

As noted above, the price-level constitution also requires a monetary constitution. The monetary authority would be required to provide a money supply consistent with full employment at stable prices. In the case of a choice between the goals, long-run price-level stability would be preferred. To assure price-level stability, the money supply must grow at a stable rate, in accordance with the growth of the real economy and changes in monetary technology.[41] Since the monetary authority is also supposed to maintain full employment, it should dampen any shocks

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[40] Leijonhufvud (1981) argues for a price-level constitution.

[41] Active aggregate demand policy is assumed to be the responsibility of the monetary authority, since fiscal policy has not proved to be successful beyond automatic stabilizers. A stable monetary policy targeted fundamentally on the price level and as an intermediate target on a measure of the money supply should prevent the monetary authority from causing business cycles by, for example, targeting interest rates, as it has done in the past. Changes in aggregate credit may be as important as aggregate money supply, but policies to influence credit have not been important in the U.S. (UK policies to control installment borrowing seem quite inappropriate interferences with the market).

from the real or international economies.

MAP will make it easier than at present to assure stable growth, because MAP creates a "constitutional" stability for elements of the macro-economy. Sstable growth in turn makes it easier to assure price-level stability. Providing a long-term suarantee of monetary policy by law gives more security than the current non-binding statements by Fed chairman and the secret meetings of the Open Market Committee (and equivalents in other countries). MAP also gives the monetary authority an excellent public signal, the price of MAP credits, should the authority diverge from the optimal path. If the MAP credit price were to increase, that is evidence of excessive demand, and the monetary authority has then received a clear signal that it must change policy, before anyone has to suffer inflation or deflation. Even better, there will surely be futures and options markets in MAP credits, so if people expect excessive demand in the future, the futures and options market will show it.[42] The monetary authority can then take remedial action before the excessive demand even shows itself. Under this monetary constitution, the monetary authority is in a goldfish bowl. The monetary authority might also be required to make long-term projections of how it will provide additional money, which would be released to the

[42]This market could be erratic and speculative, like many futures markets. But if experience with the gold standard and British consols is relevant, such markets can be stabilized if the monetary authorities pursue a consistent and stable long-term policy.

public.[43] Its projections would then be carried out unless it made revised projections and released them to the public. Like other public agencies, it would hold hearings, explain its monetary analysis, and be subject to the courts for willful failure to follow its legal charges or projections.[44]

There is no expectation that the aggregate economy will be fully stabilized at full employment even with MAP. The policies described in the earlier sections should bring the economy closer to full employment on average, but not at all times. It is hard to be confident whether policies to assure that output was at full-employment levels at all times are appropriate - whether the benefits would be sufficient to outweigh the substantial administrative costs. A MAP-like mechanism that would accomplish this is outlined in Koford, Miller and Colander (1989). It sets aggregate output levels; then a market among firms allows them to determine which will produce what share of the total.

Before recommending a quantity-based MAP, it is important to examine the "real" sources of shocks. These are different from

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[43] Private firms, the Social Security system, and even the Department of Defense are supposed to make long-term projections based on current plans.

[44] This proposal seems totally contrary to the tradition of central banking, which involves secrecy and discretion. However, while that tradition has many useful values, it may not be so necessary in the modern world. The appropriate rules for central banks may be better known now, and their actions certainly require less secrecy than during the gold standard or pegged rate eras. Accurate information from the central bank may now lead to social coordination on a desirable equilibrium outcome.

the shocks considered above, that did not stem from real sources. While instabilities caused by these shocks might be reduced, real policies are needed to reduce real shocks. Most are intrinsic to flexible economies.

The international economy is the largest source of real shocks in most modern economies. Flexible exchange rates have not provided countries with the insulation from the world economy that monetarists expected.[45] And it is hard to think that expansion of futures markets in foreign exchange will increase stability very much. Those markets have grown enormously for 30 years and still remain quite erratic. The problem could be that governments continually undertake destabilizing actions, and speculators try to outguess them. Since government actions are hard to forecast, speculators are likely to forecast a wide range of possible future courses of action. As speculators try to outguess each other, they amplify the instability, causing the wide swings and excess volatility seen in the foreign exchange market. Two related solutions seem possible, though they may be visionary. The first solution is for all of the major developed countries to adopt similar price-level constitutions. The developed countries might all adopt some version of MAP with its built-in price-level guarantee. The second solution is to establish a common monetary standard, with a single monetary authority that will assure price-level stability for the entire

[45] As in Sohmen (1971); a review of the successes and failures of flexible exchange rates is _____.

developed world. MAP would be extremely helpful in putting such a system into practice; in the early days of such a common system different countries would have different inflationary tendencies, but the MAP credit market would equalize those pressures across countries. As the European Community moves to adopt a common monetary rule with a single monetary authority, it could use such a policy to reduce the difference in inflationary tendencies.

A third and weaker alternative is that many countries might have increased economic stability due to some combination of the various stabilization policies. Something like this has occurred in the European Community, where basically moral suasion and the influence of the European Monetary System have increased the stability and consistency of the different national economies.

Shocks that spread from one industry to another without affecting aggregate demand (Lillien 198–) are an additional problem. Such shocks begin, according to Lillien, because of changes in tastes and technology: the computer industry grows, and the copper industry declines or even collapses. Now, the use of a MAP system reduces the amount of output adjustment that firms make in response to shocks. But the basic reason that shocks in one sector cause amplified shocks in other sectors is price rigidity or stickiness throughout the economy. The sources of that rigidity are in dispute, and no simple answer seems

likely.[46] But it is evident that price and wage rigidity exist, and cannot just be willed away. Economists continually wonder why contracts usually do not allow for price-adjustments in accordance with changes in costs or demands. Perhaps MAP will encourage such contracts. Since MAP makes it clear that contracts in nominal terms are also in real terms, MAP allows firms to write contracts more easily that adjust for real price changes. It is also possible that many countries legal systems do not permit contracts in which the price is contingent on other prices.[47] It is not clear, despite much research, why such contracts do not commonly occur.

Wage contracts that allow adjustments in response to shocks are necessary if changes in employment due to such shocks are to be reduced to efficient levels. Wage rates are commonly adjusted in proportion to the inflation rate, and firms with profit-sharing schemes are providing the right basic sort of wage flexibility. When a firm's profits rise, the reason must be due to changes in costs or demand, and so the competitive wage should also rise. When profits fall, so should the competitive wage

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[46] See Stiglitz (1986) for a review of wage rigidity theories. Akerlof and Yellen (1984) describe several different rigidity theories. See the readings in Akerlof and Yellen (1989).

[47] In the U.S., the gold clauses in contracts were voided by law in the 1930s, and demand deposits in the U.S. cannot be denominated in gold today. Contracts in many countries have been "adjusted" by abolishing inflation adjustments, or adding government-established adjustments. So, in an inflationary environment, it is not possible to write an enforceable contract because governments typically abrogate or modify such contracts.

rate. Weitzman and former Senator Russell Long (through his support of ESOPs) are both right in pushing for greater profit-sharing, as a way of adding flexibility to firms' wage policies.

One important policy currently in existence needs to be considered fully: a stabilizing, or balance-wheel government fiscal policy. While such a system was not designed to be fully optimal it seems to be highly successful. In recessions, taxes fall and government expenditures rise. The process appears to stabilize modern economies, in contrast to the lack of such a balance-wheel policy before the New Deal. An approach like Seidman's full-employment balanced budget rule seems attractive, except for this element--that governments should run significant deficits in recessions and surpluses in booms. The real question is whether it is possible to determine how large these should be, if the objective is to internalize the externalities of macroeconomic instability.[48]

5) The fifth externality is monopolization, which may be considered as a source of excessive unemployment and a source of excessive local fluctuations in the economy. Monopolization

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[48] This is a difficult question that requires considerable work. It is hard even to say what such instabilities are, and how much of them are externalities: an explicitly dynamic microeconomic framework is needed to solve for them, and the work has not yet been done. The model would indicate the sticky prices or quantities in the economy, and then examine the typical shocks that would occur to the economy and follow their effect on the environment, it is not possible to write an enforceable contract because governments typically abrogate or modify such contracts.

is essentially a source of our second form of externality: dynamic but stable externalities. Firms have incentives to create new monopolies, driving up prices in their industry and forcing adjustments by everyone else in the economy. Now, innovation has properties very similar to monopolization, and the development of useful innovations is the main source of economic growth (following Schumpeter). Nevertheless, when an innovator creates a new product, and so has a short-run monopoly over its production, the innovator can create substantial external harm on others.[49] In principle, the entire gains from the innovation could come from creating external harm to others, thus creating a "pseudo-innovation".[50]

The fashion industry is a mild example of harmful externalities, as styles change regularly but no one claims that the quality or usefulness of the clothes increases. Instead, innovation consists of finding new styles that make the old styles outmoded or old-fashioned, imposing a negative externality upon the other firms and upon owners of the old clothes.[51] Something similar may occur in some academic fields, where fad follows fad, but real progress seems elusive.

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[49] Colander (1976, 1983) investigates models of this process. See also Koford (1986).

[50] Hirshleifer (1971, 1976) develops models in which innovations can reduce welfare, in a manner analogous to the argument here.

[51] Hemenway (1977) has an amusing model of this process. Veblen and Leibenstein (195) are classic citations.

Monopolization may be an important factor in the economy because negative externalities are very common in innovation. For example, audio tape decks and video tape recorders have been popular largely because of their ability to appropriate copyrighted material without paying for it. The introduction of digital audio tape would have provided a way to make perfect copies of recordings. Its economic viability lay solely in the ability to make copies without paying for them, so it was a perfect example of the innovation whose sole function is as a negative externality. Automobiles and trucks provide a means to impose upon government the cost of streets and highways, from each owner's point of view. One wonders if automobiles and trucks would have come to dominate urban transportation if their users had to pay the full cost of their operation, including highways, city streets, and parking spaces, and the costs of delay and congestion.[52] Much of the revolution in medicine and biotechnology comes from exploitation of insurance rules that allow the costs of treatment to be imposed upon others.

A simply stated, but difficult to apply solution, is to establish more precise property rights, and to defend property rights more effectively.[53] Then the incentive to do well by taking from others will be reduced, and perhaps the incentive to

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[52] A factor in the decline of the Los Angeles interurban railway system was that the transit trains became stuck in automobile traffic at intersections, causing delays.

[53] See Eggertsson (1990) for references on property rights theory.

do well by increasing social value will be increased.

Interestingly, MAP and TIP incorporate a different solution by sharing gains and losses from innovation, which corrects for some instability created by monopolization. That occurs because some of the external costs are those of quickly adjusting to a new, unexpected situation that makes one worse off, and other external costs are those of entering the newly monopolized industry to try to capture some of the monopoly rents. These costs are reduced if the benefits of adjusting are reduced by making the profit gradient less steep.[54]

6) The previous types of externalities were based on economic rather than political problems and solutions, but it often turned out that the economic solutions were needed to correct for political failures. The U.S. political system is rife with externalities and market failures that prevent timely consideration of issues, and allow the overall public interest to be ignored. (Other democratic systems are hardly perfect either). Making democratic government less a source of externalities is thus as important as all of the other policies.

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[54] See Colander (1984) and Koford (1985). This point has not yet been fully worked out, at least by us. For example, the full dynamic path of prices should be modeled, and we have not done that.

It is also worth noting that any profits tax has this consequence.

Related analysis of monopolization is found in the literature on externalities in games of innovation and R&D, and patent races. See _____ in the Handbook of Industrial Organization.

Majority rule allows a majority can impose external costs upon a minority; when one majority is beaten by another, which in turn is beaten by another, everyone is imposing externalities upon others, and finding that others are imposing externalities upon them. To block tyrannical majorities, the system has processes of delay, in the form of checks and balances, that make passage of any policy costly and difficult. Nevertheless, special interests have ways of passing their favored legislation (Olson 1965). Over time these special-interest laws accumulate and gradually cause the economy to decline (Olson 1982).

A system without externalities can be devised; it simply would prevent the imposition of externalities upon the losing side. This would also make it easier to put policies with high value to the public into effect. Such democratic procedures, the "demand-revealing processes," have been known theoretically for two decades.[55] It is time to consider putting them into effect. More effective constitutional rules will help solve the previous four problems by allowing the government to find and adopt better policies.

A path to such rules can be found through the use of public referenda on many issues. Such referenda could use versions of demand-revealing. (It is important to see if there are simple, approximately incentive-compatible mechanisms that could be

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[55]See Tideman and Tullock (1977), Mueller (1989). Hayek's (1960) proposals for an effective "constitution of liberty" are less formally sophisticated, but perhaps *more* complete and with an element of wisdom.

introduced to current referenda.) Additional issues, currently considered only by the central government, could be subject to ratification by a referendum. And voting in legislatures could also be changed to a "point voting" system that was based on demand-revealing or similar systems such as Mueller's voting by veto.

The other route to efficient government is through a constitution limiting government action. Just as one solution to the externality problem is to assure a particular outcome such as stable prices, one solution to the political externality problem is to assure a particular outcome. A variety of forms of rent-seeking can be prohibited by constitutional rule--as, for instance, internal tariffs are prohibited in the U.S. Hayek (1960) describes such a constitutional society. A basic element of such constitutional rules is to prohibit government interventions into some areas of the economy. Thus, it would be necessary to separate out proper government functions from ones not appropriately carried out by government. Further progress could be made, however, by dividing local and national concerns by a clear federal structure. Then Tiebout competition would improve the efficiency of the local government decisions.

Democracy has always been seen as highly imperfect, only superior to the alternative. Yet democracy is a social creation, and the variety of democratic systems suggests that innovation is as possible here as in the form of corporate incentive structures. In addition, there are now "optimal" mechanisms and

outcomes that can be compared with the actual institutions. It seems appropriate to innovate in this area; and it is clear that such innovations would reduce the political pressure to cause economic harm.

4.4 Conclusion

This chapter has shown that there is currently available a set of policies that can almost surely guarantee full employment with stable prices. It is fairly clear that the policies described are consistent and form a kind of self-reinforcing **"package."** Methods to assure stable prices are fairly well known in academic circles: the individual policies that can assure full employment with high output, are also known to specialists.

It is fortunate that they make up an integrated package, although economists have not recognized that the solutions to some of the macroeconomic externalities are still only speculative or tentative. But the combination of these policies provides a whole greater than the sum of the parts. By using the fundamental procedures of internalizing externalities, particularly by creating new markets in rights when those are missing, the **"second-best"** problem is avoided. We can move in the direction of first-best solutions on many fronts at once. And it seems that the policies proposed here represent a comprehensive bundle of solutions to our previously most intractable macroeconomic problems.

Figure 1

Increased Output under the MAP Incentive