7. Conventional policy instruments

The previous chapter, in pointing out the macrodynamic properties of an economy like that of the United States, has suggested that it is possible for a society to exercise some choice, through its political system, as to the rate at which the economy will expand. But is that choice unbounded? This is the question which this chapter starts off by exploring. The concept of a potential growth rate is introduced, with the factors which may determine that potential growth rate – the availability of manpower and the rate of technological change – then analyzed. The conclusion reached is that while the potential growth rate may well exist as an asymptotic limit which the economy can only approach, this is not the reason why the rate of economic expansion is usually held in check by the political authorities. Their reluctance to use the control they have to achieve a higher secular growth rate is due instead to the difficulty of getting the economy off the dead center established by the existing secular growth rate. Indeed, any change in the aggregate growth rate – if it is to lead to a new secular rate of expansion and not just represent another cyclical movement – will require a carefully orchestrated series of adjustments, not only on the part of government but in the other sectors of the economy as well. The adjustments required in the oligopolistic sector, involving a shift of its savings curve without leaving the megacorps in that sector short of the investment funds they need, are particularly difficult to achieve; and the inadvertent result, more often than not, is a wage-price inflationary spiral. Here the conventional policy instruments available to the government, whether fiscal or monetary, only serve to exacerbate the problem. The principal theme of this chapter, therefore, is the limited usefulness of the conventional policy instruments in trying to manage an economy with a significant oligopolistic sector.

The chapter has four main sections. The first deals with the potential growth rate and its determinants. The second section explains the adjustments required if any new rate of economic expansion established through government policy is to become a sustainable one, particularly the adjustments required in the oligopolistic sector's savings curve. The third section takes up, in turn, monetary and fiscal policy, pointing out the counter-productive effect they are likely to have when applied
to the oligopolistic sector. Finally, the fourth section reviews the economic history of the 1960s as it bears on these points.

The limits on expansion

There are usually two answers given to the question of why those with the political responsibility for the economy's performance do not use the power they have to achieve more rapid economic expansion. The first is an assertion that a higher growth rate is possible only if the society is prepared to sacrifice some other objective. This presumes that there is an inherent conflict between at least two of society's goals, with any success in achieving one necessarily being at the expense of the other. The discussion which follows will indicate that there is some truth to this argument. The conflict, however, is not the one generally presumed to exist between a higher aggregate growth rate and price stability. If such a Phillipsian dilemma exists, it has to do instead with the second reason usually advanced as to why a higher aggregate growth rate is neither possible nor desirable. This is the argument that, beyond a certain point, further economic expansion is not possible because the resources the economy must obtain from without, as distinct from those produced from within, will simply not be forthcoming. In other words, the rate at which the economy can potentially expand may be limited by the availability of externally supplied inputs. If this is true, then the availability of those externally supplied inputs will determine what is the maximally achievable growth rate for the economy, this maximally achievable growth rate being what is meant by the 'potential' growth rate. What precisely the limiting factor is upon which the potential growth rate is based is the subject matter of this section. First the availability of manpower and the employment effects to which an increase in the secular growth rate gives rise will be explored. Then the limits set by technological progress, both in subduing nature and in harnessing human energies, will be taken into account.

Manpower factors. Ever since Keynes identified the potential growth rate with the 'full employment' level of income, manpower has been seen as the limiting factor in economic expansion. In the static terminology of The General Theory, it is 'full employment' which, moreover, serves as the benchmark for evaluating public policy. While full employment might not have been an inappropriate target viewed from the depths of the 1930s Depression, the ambiguity of the phrase, now that massive unemployment has been virtually eliminated, is an increasingly serious matter. In dynamic analysis, the definitional difficulties have been skirted
by introducing the concept of a ‘natural’ growth rate, equal to the growth rate of the labor force itself (Harrod, 1948, p. 87; Hahn and Matthews, 1964, pp. 5-6). With the demand for labor assumed to increase at the same rate as output, this ‘natural’ growth rate can be compared with the aggregate growth rate, $\dot{G}$, to see whether, as a result of any discrepancy, there will be increasing unemployment or, alternatively, an increasing shortage of workers. In this way, while manpower is still viewed as the limiting factor in economic expansion, there is no need to define precisely what is meant by ‘full employment’. Whatever it may mean, it is possible to determine whether the economy is moving further away from or closer to that goal, and that may be all that it is necessary to know.

Even so, there are difficulties in substituting the ‘natural’ growth rate for ‘full employment’, and they have to do with the implicit treatment of the labor force as an undifferentiated mass. In refining the concept of a ‘natural’ growth rate, it is necessary to draw on elements from the theory of human resource development (Ginzberg, 1976; Eichner, 1973c; in this connection see Brody, 1966). This theory points to the existence of a major, societal system, separate and distinct from the economic system. The system is the anthropogenic system, and it produces not physical commodities but rather human skills, or competences. Just as the output of the economic system can be pictured as a basket of goods, so the output of the anthropogenic system can be described as a vector of skills, indicating the number of persons emerging both from school and on-the-job training with each of the myriad competences required for the functioning of a modern society. Of course, if these skills are to be consolidated and further developed, then the individuals who have acquired them must be able to find employment within the economic system. There is thus an interaction between the supply of and demand for manpower. But just as it is an oversimplification to regard the output of the anthropogenic system, or supply of manpower, as a homogeneous mass, so too it is an oversimplification to view the demand for manpower in the same undifferentiated terms. In considering the potential for meeting this demand, the simple growth rate of population, even that of the working-age segment, is too crude a guide. It may suffice for the non-oligopolistic, or more traditional, part of the economy where the technology demands little more than willing and trustworthy hands. In the oligopolistic sector, however, the specialized and variegated skill requirements of the production process must be taken into account, for untrained and inexperienced labor cannot be used in conjunction with sophisticated equipment - not if the ongoing efficiency of the megacorp is to be maintained. For these reasons, it is the growth rate of the society’s skill vector, reflecting the diverse
output of the *anthropogenic system*, rather than any 'natural' growth rate of the population, which, if anything, sets the manpower limits on the rate of economic expansion.

To the extent, then, that manpower is the limiting factor of economic expansion, it is the rate of growth of society's skill vector which constitutes the potential growth rate for the economy as a whole. It is questionable, however, whether manpower is the limiting factor in economic expansion which economists since the publication of *The General Theory* have assumed it to be. In arguing this point, the remainder of this section will take up (a) the differential ability of the oligopolistic sector to obtain manpower, (b) the strain thereby placed on the non-oligopolistic sector in meeting its manpower needs, (c) the considerable elasticity which nonetheless exists insofar as the supply of manpower is concerned, and (d) the mistaken notion that it is rising wage rates in both the oligopolistic and non-oligopolistic sectors, stemming from labor or manpower 'shortages', which is the root cause of inflationary pressures throughout the economy. In dealing with these matters, the paragraphs that follow will cover all the ways in which manpower factors influence the secular growth rate. With that issue out of the way, it will then be possible to take up the question of what, if not the availability of manpower, does determine the potential growth rate.

It should first be noted that the oligopolistic sector is likely to experience little difficulty in expanding the size of its laboring manpower force. This reflects the ability of the oligopolistic sector, because of more generous rates of compensation and the greater security of employment which it affords, continually to attract workers from the non-oligopolistic sector (Kuhn, 1959; Reynolds, 1960, pp. 199-200). The long-term movement of workers from the one sector to the other is simply part of the normal pattern of economic development. It is in this way that the laboring manpower force within the oligopolistic sector is steadily expanded, providing larger numbers of persons with relatively well paying, secure jobs. Any increase in the secular growth rate will merely hasten the process.

While it may be true that the expansion of the oligopolistic sector is not likely to be curtailed for lack of workers, the concomitant effect on the non-oligopolistic sector cannot be ignored. If it is the non-oligopolistic sector from which workers are at least in part being attracted, then it is in that sector that any manpower pinch is likely to be felt. Indeed, with workers being drained off by the oligopolistic sector, it would seem that the rest of the economy would have difficulty maintaining production at its current level, let alone responding to any rise in demand. But this ignores some of the most important features of the developmental process.
To stem the drain on manpower resources, wage rates in the non-oligopolistic sector can be expected to rise as the growth rate of the oligopolistic sector itself increases. Some industries within the non-oligopolistic sector, those which are technologically backward and/or supply goods and services which are only marginally desirable, will, of course, be unable to protect themselves in this manner. Any increase in wage rates, necessitating as it will an increase in prices, will simply speed up their demise. For these industries, the loss of workers and the concomitant decline in output - at least in relative terms - cannot be avoided. But for the other industries within the non-oligopolistic sector it is merely a matter of adjusting wage rates upward. By drawing upon the workers released from the declining industries as well as by tapping any surplus manpower available in the countryside, they should even be able to expand their labor force as needed.

Although wage rates in the non-oligopolistic sector will thus rise, they will at most only approach those prevailing in the oligopolistic sector. This is in part because any narrowing of the gap between wage rates in the two sectors will weaken the very factor tending to pull up wage rates in the non-oligopolistic sector. But it is also because wage rates in the oligopolistic sector will themselves rise - not because additional workers cannot be obtained at prevailing wage rates but rather because the trade unions will insist, as the secular growth rate increases, that their members obtain a 'fair' share of any ensuing increment in the social surplus.

These several effects on the non-oligopolistic sector can hardly be viewed as untoward social developments. The higher wage rates, whether occurring indirectly as a result of the upward pull exerted by the oligopolistic sector or directly as a result of persons finding employment outside the non-oligopolistic sector, will lead to increased household income. The more rapid demise of certain industries, on the other hand, simply means that a class of marginally desirable goods and services will be cast beyond the pale of what is economically feasible sooner than would otherwise be the case. What needs to be viewed with concern are not these consequences of the higher secular growth rate but rather the possibility that the ultimate source of manpower reserves for both the oligopolistic and non-oligopolistic sectors, the underutilized human resources in the countryside, will eventually run out, creating an absolute barrier to a further rise in the secular growth rate in real terms.

While it may be comforting to note the stimulative effect on technological progress that any manpower shortage is likely to have, the more salient point is that there is a substantial labor reserve throughout the countryside of the world, and that given the size of this pool of underutilized human resources, it will be quite some time before it is
eliminated entirely. Even after all the disguised unemployment has been sopped up in the United States and in the other technologically advanced nations, a substantial labor reserve will continue to exist over much of the globe for at least decades to come. This is because social institutions in the less developed countries of the world cannot be expected to change to the extent necessary to create a single modern sector any more quickly. Thus, whether production is transferred to less developed parts of the world or persons from those areas are brought to the technologically advanced nations to supplement the labor force, the oligopolistic sector will continue to have, at least within the foreseeable future, a virtually unlimited pool of surplus manpower upon which to draw.³

To be sure, it takes some time for a rural peasant to become acculturated to an urban, industrial setting, and usually the transition can only be accomplished intergenerationally. Still, at any given point in time, there will be large numbers of persons proceeding through each of the several stages. At most, therefore, should the long-run rate of economic expansion within the more advanced nations of the world be increased, it may require a certain interval of time before the movement of persons from the countryside into industrial types of employment, both at home and abroad, can be adjusted accordingly.

This suggested limitation on any acceleration of the secular growth rate, stemming from manpower constraints at the lower end of the skill vector, has a counterpart at the upper end. If the secular growth rate is increased too rapidly, the result may be to swamp the ability of high-level business executives to expand the size of their organizations. The megacorp, as already pointed out, has a much greater elasticity in this respect than the neo-classical proprietorship. Even so, there is a limit to the rate at which new operating divisions, and even new production facilities, can be set up, staffed and brought to peak efficiency. Indeed, the rate at which new organizations or parts thereof can be created is probably the most significant constraint which exists on the supply side in the intermediate run. However, like the ability of rural peasants to make the transition to an urban, industrial setting, it merely determines how quickly the secular growth rate can be increased. It does not set the limit on how rapidly the economy can grow secularly. In other words, the manpower constraints, whatever they may be, affect only the first derivative with respect to time and not the secular growth rate itself.

The import of the above argument is that the rate of growth of a society's skill vector, rather than being a razor's edge delineating too high a rate of economic expansion from too low a rate, is actually an asymptotic limit. The secular growth rate may approach the growth
rate of the skill vector, but it cannot exceed it. The reason is that an increase in the secular growth rate, because of the response it is likely to elicit in time from the anthropogenic system, will lead to an increase in the rate of growth of that skill vector. As a corollary, it can be stated that an increase in the secular growth rate is unlikely to exhaust manpower resources, putting a brake on further expansion. It will simply mean a change in the rate of growth of employment. Indeed, there is no such thing as 'full' employment. There are only higher rates of growth of employment, and still higher rates of growth of employment, with the potential growth rate, insofar as it depends on the availability of manpower resources, being always somewhat greater. Finally, while prices may rise as the secular growth rate increases, the explanation will have little, if anything, to do with the rate of growth of employment or any putative labor 'shortage'. This is because, insofar as the oligopolistic and non-oligopolistic sectors are concerned, there is a break in the causal link between the rate of growth of employment and wage rates in the one case and between wage and the price level in the other.

Any change in the rate of growth of employment will, by itself, have no effect on wage rates within the oligopolistic sector. This is because wage rates within the oligopolistic sector, as explained in chapter 5, depend entirely on the national incremental wage pattern. While it is true that a change in the secular growth rate is likely to lead to a change in the national incremental wage pattern, one should keep in mind that the operative mechanism is not the effect of the growth rate on employment but rather the dependence of the national incremental wage pattern on reported net earnings, or savings, within the oligopolistic sector, and especially the bellwether industry - these reported net earnings depending, in turn, as matters now stand, on the secular growth rate. The distinction is a crucial one, because it opens up the possibility that the national incremental wage pattern can be manipulated in such a way that a rise in price levels is avoided. In other words, an increase in the rate of growth of employment, at least within the oligopolistic sector, need not be inflationary.

Wage rates outside the oligopolistic sector, particularly in those industries which trade unions have been unable to organize, will admittedly be affected by the rate of growth of aggregate employment. As pointed out above, the firms in those industries will be forced to offer higher wage rates if they are to attract, or even retain, a sufficient labor force in the face of the increased drain on manpower resources being exerted by the oligopolistic sector. The higher the rate of growth of employment throughout the economy, the greater the increase in wage rates will have to be. Still, upward pressure on wage rates will diminish as wage
rates within the unorganized industries approximate those prevailing in the oligopolistic sector. Even more to the point, the higher wage rates are likely to be an insignificant factor in any concurrent rise of the price level within the non-oligopolistic sector. This is because prices in polyglotistic and monoplistically competitive industries are influenced more by demand conditions than by labor costs. The upward drift of wage rates within the non-oligopolistic sector is, in fact, significant only because it places a higher floor under prices in that sector when and if the secular growth rate subsequently declines.

In summary, then, it is not the supply of manpower as reflected in the skill vector of society which is the limiting factor in economic expansion - despite the inference usually drawn from the fact of rising wage rates. Indeed, an increase in the secular growth rate should always be possible without a shortage of manpower developing to make that higher growth rate unsustainable. But if it is not the supply of manpower which is the limiting factor in economic expansion, then what is? In answering this question, it is necessary to take up somewhat more explicitly the role played by technological progress.

Technological progress and the potential growth rate. If a higher secular growth rate is to lead to an improvement in the economic position of the representative household as measured by real per capita disposable income, and not simply to make it possible to sustain a larger working population, then it must be accomplished by an increase in output per worker. The mere expansion of output is not enough. Unless there is also an increase in what each worker is able to produce, there will be no additional resources available for distribution to the representative household. The household sector can, of course, be made better off if resources are diverted to it from some other sector. But except for the case in which those resources have previously been less than optimally allocated, the gains of the household sector will almost certainly prove to be short-lived or illusory - as, for example, when wage gains in excess of improvements in productivity are offset by higher prices, leaving disposable income in real terms unchanged. Thus the prerequisite for an improvement in the economic position of the representative household is a secular increase in output per worker, hopefully throughout the economy as a whole but at least within the oligopolistic sector.

But this is only one side of the coin. The increase in output per worker, indicating as it does greater productive power on the part of the labor force, also extends whatever is the limit placed on the rate of economic expansion by the supply of manpower. As a further step in defining what is meant by the potential growth rate, one can therefore say that it will not be less than the rate of growth of the society's
skill vector, compounded by the secular increase in output per worker.

What emerges from the data as a secular increase in output per worker is, however, only the contrived result of controlling for increments in the labor force when the gain in aggregate output is measured. Behind this statistic lies the far more fundamental fact of technological progress. Indeed, it is the rate of technological progress, reflected in rising output per worker, which transforms economic growth from the mere ability to support a growing population at a certain fixed level into the capacity to provide that same population with an increasingly better standard of living.

Of all economic phenomena, the rate of technological progress is probably the least well understood. This undoubtedly accounts for the tendency in economic model-building to treat it as being entirely exogenous – a windfall from social processes outside the economic system. To the extent that technological progress depends ultimately, as explained above (p. 181-2), on the growth of scientific knowledge, there is perhaps some justification for this approach – even though the ability of a society to support some of its members while they pursue their idle curiosity is not entirely independent of the margin above subsistence which that society is capable of generating nor of the pattern in which the surplus itself is distributed. The rate of technological progress is, however, even more directly related to the secular growth rate. As already indicated, the sort of improvement in production methods reflected in higher output per worker is to a large extent capital embodied. That is, the laboring manpower force, whatever its skill composition, is able to produce more only because of the improved equipment with which it works. This means that the higher the secular growth rate, and thus the more rapidly the capital stock is being replaced and augmented by better types of plant and equipment, the greater will be the rate of technological progress. Indeed, this is the point of the technical progress function postulated by Kaldor (Kaldor and Mirlees, 1962; see also Kregel, 1971, ch. 9).

The possibilities for exploiting the best production techniques presently known by the more rapid replacement of the capital stock are, of course, not unlimited. This is why the technical progress function, beyond a certain point, bows downward. Still, the possibilities are almost certain to be greater than what might be inferred from the actual observed rate of technological progress. This is especially true as the time horizon is extended beyond the intermediate run. All the factors which are likely to serve as the most immediate constraints on the rate of technological progress – the still not fully depreciated older capital stock, the learning curve associated with the introduction of new technology, the need to adjust the size and skill composition of the laboring manpower force to match the new plant and equipment – can be expected to wane with
the passage of time. What this implies is that, with technological progress, as with the growth of the skill vector, it is more the speed at which the rate can be adjusted than the rate itself which is limited. Since it is the two together - the rate of growth of the skill vector and, through its effect of output per worker, the rate of technological progress - which determine the potential growth rate, it follows that the latter will itself be somewhat open-ended, an increase in the secular growth rate leading to an increase in the potential growth rate. Indeed, this is the reason for using the term 'potential' to describe the upper limit on the rate at which the economy can expand. What can only be surmised, because of how little is actually known about technological change and the meager experience there has been with high secular growth rates, is whether the increase in the potential growth rate will match, and thus keep pace with, the increase in the secular growth rate (J. Robinson, 1956, ch. 9, especially the last paragraph).

Perhaps a word should be entered here about a third factor which might seem to limit the sustainable secular growth rate. This is the availability of natural resources, including the most basic of all such resources, energy (cf. Georgescu-Roegen, 1971, ch. 10; Forrester, 1971; Lapp, 1973). In a certain sense, this has been the problem of man from his earliest beginnings. Indeed, what is meant by technological progress is simply the ability of man, by employing better techniques, sometimes derived from a scientific understanding of physical phenomena but more frequently not, to wring a better standard of living from his natural environment. Thus the question as to the availability of natural resources is actually the question of whether the rate of technological progress experienced in the past can even be maintained, let alone increased, in the face of the fixed mineral resources found on earth and the fixed quantity of energy coming from the sun. The failure to deal with this question is not meant to depreciate its importance. It is rather to recognize the complexity of the issues involved; a complexity which precludes adequate treatment of the question in this treatise (cf. Nordhaus, 1973).

The sources of inflation

The import of the above argument is that there is no reason to posit a maximally attainable secular growth rate which, if exceeded, will lead to inflation because of the supply constraints encountered. Yet it is an undeniable fact, readily observable from the American experience, that an increase in the growth rate is often followed by a rise in the aggregate price level, thereby forcing the government to take measures restricting the expansion of the economy. To understand the source of this inflationary pressure - pressure which is likely to make the higher secular growth rate unsustainable, at least politically - it is necessary
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to understand two antecedent points: (1) why, if the higher secular growth rate is to be maintained, the oligopolistic sector's savings curve will almost certainly have to be shifted, and (2) why it is difficult to do this in such a way that a wage-price inflationary spiral is not touched off. The discussion begins with the first of these two points.

The need to shift the savings curve. A higher warranted, or secular, growth rate for the economy as a whole is possible, as explained in chapter 6, only if the savings or investment demand curve for some sector other than the oligopolistic one shifts in the appropriate manner. For a combination of reasons - the fact that its investment demand function depends primarily on endogenous factors while its savings function contains no parameter that can be manipulated so as to stimulate aggregate demand - the oligopolistic sector is unlikely to provide the initial thrust needed to place the economy on a higher growth path. As already indicated, the oligopolistic sector serves primarily to reinforce whatever secular growth rate already prevails. Thus, to move the economy on to a higher growth path, the investment demand or savings curve for some other sector must shift.

Moreover, the curve must shift so as to produce a deficit, or excess of discretionary expenditures over discretionary income, within that sector. Dynamically, this means that the rate of growth of discretionary expenditures, I, within the sector must exceed the rate of growth of discretionary income, S, for some minimal period of time. Unless some sector is prepared to take on this role, thereby adding to its debt burden, the economy cannot escape from the built-in forces tending to push it back toward the secular growth rate. Any sector can, of course, be the one to go into deficit. But it is the government which, most realistically, is likely to do so in order to provide a forward thrust to the rate of economic expansion. It is, on the one hand, the sector which can most readily accept a zero rate of return on expenditures financed through borrowing and, on the other hand, the sector most likely to receive the support of the central bank for whatever funds it wishes to borrow. Perhaps most important of all, it is the only sector with an overall perspective and a political mandate. For these reasons it is the sector which, in the situation about to be analyzed, will be assumed to initiate the change in the secular growth rate. Still, if any other sector should, for the moment, have good grounds for going into debt further, and can arrange for the existing set of financial institutions to finance that deficit, it too can play the role of nudging the economy off the dead center established by the secular growth rate.

Let it be assumed, therefore, as shown in figure 22, that the economy is expanding at a rate equal to the secular rate, $G_x$. As long as the
Figure 22. (a) Oligopolistic sector. (b) Government sector. (c) Economy as a whole.
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The economy maintains that rate of expansion, the rate of growth of discretionary expenditures within the oligopolistic sector, \( I_\Omega \) will, given the initial macodynamic balance assumed in the diagram, be equal to the rate of growth of discretionary income, \( S_\Omega \), and there will be no forces arising from within the oligopolistic sector to disturb that balance. The same will be true of the government sector, with \( I_\Omega \) there being equal to \( S_\Omega \).

But then let it be supposed that the government decides to step up its rate of expenditures so as to push the economy on to a higher growth path. This will be reflected in an upward shift of the investment curve for the government sector, from \( I_\Omega \) to \( I_\Omega' \). The higher rate of growth of government expenditures - the result of the autonomous shift upward of the investment curve for that sector - will mean a similar higher rate of growth of discretionary expenditures for the economy as a whole. The upward shift of the latter curve will be somewhat less, however, because government spending accounts for only a part of total discretionary expenditures. Where this new aggregate investment curve, \( I' \), intersects the aggregate savings curve, \( S \), will determine the new aggregate growth rate, \( G_1 \), toward which the economy will tend to converge, assuming no further shift in any of the sectoral savings and investment curves. One should note that, at that higher growth rate, there is a growing deficit in the government sector - with the rate of growth of expenditures exceeding the rate of growth of tax revenues - that is offset in part by the growing surplus in the oligopolistic sector and in part by a growing surplus in the other three sectors. These imbalances at the sectoral level, despite the balance which exists in the aggregate, are the reason why the situation depicted in figure 22 is not likely to persist for long without, in fact, some further shift in one of the sectoral savings and investment curves.

The higher growth rate, \( G_1 \), which has thus been achieved can be maintained only if the sector in deficit - the government in this case - is willing to continue adding to its debt. Indeed, with discretionary expenditures growing at a more rapid rate than discretionary income - at a rate equal to \( I_\Omega' \) rather than \( S_\Omega' \) - the sector must be willing to accept a mounting deficit, one that is increasing at a rate disproportionate to its own level of activity. If the government tries to reduce this growing debt burden by lowering its rate of growth of discretionary expenditures, the effect will be to cause a downward shift in not only its own investment curve but also that for the economy as a whole. The growth of the deficit, it is true, will be slowed under these circumstances but it will not be ended. Moreover, the aggregate growth rate, \( G_1 \), will be reduced as well. It is only if the investment curves are allowed to fall all the way back to their original positions, \( I_\Omega \) and
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I respectively, that the deficit will be eliminated altogether. But in that event the hope of getting the economy out of the rut established by the secular growth rate will be frustrated. A mounting deficit in the sector initiating the stepped-up rate of expansion would seem, therefore, essential to maintaining the higher aggregate growth rate thereby achieved. That even the government will be willing to accept a disproportionate increase in its debts burden as a permanent condition seems doubtful, however, and it is for this reason that the situation depicted in figure 22 is not likely to persist for long. Fortunately, there is another way to maintain the higher aggregate growth rate.

The upward shift of the investment curve in the government sector depicted in figure 22 will produce, not only a deficit in that sector but, in addition, surpluses in at least one other sector. This will certainly be true of the oligopolistic sector. The high levels of aggregate demand will lead to high rates of capacity utilization and a disproportionate increase in cash flow. If the oligopolistic sector were to respond to this mounting surplus by stepping up its own rate of discretionary spending, the problem of how to maintain the higher aggregate growth rate without the government or some other sector having to incur a mounting deficit would be solved. The downward shift of \( I_o \) would be matched by the upward shift of \( I_o \) with \( I \) remaining unchanged. The oligopolistic sector, however, cannot be counted on to respond in so convenient a fashion – at least not immediately. True, the higher aggregate growth rate, \( G_2 \), will lead to a higher rate of growth of discretionary expenditures, \( I_o \), within the sector as the corporations involved revise their capital spending upward as a hedge against a possibly higher secular growth of sales. But this is merely the endogenous response of investment within the sector – a movement along the investment curve rather than a shift of the curve itself. And it is the latter, a shift in \( I_o \), which is required.

In time, if the government succeeds in maintaining the higher aggregate growth rate, the necessary upward shift of \( I_o \) may well occur – at least in part. As corporations become convinced that the higher growth rate is the new secular rate with its attendant effect on the growth of their own sales, they are likely to revise their capital spending plans accordingly. The train of causation thus runs from expectations to a higher value for the shift variable in the investment curve for the oligopolistic sector. What this means is that, with growing confidence that the higher aggregate growth rate will be maintained, the corporations in the oligopolistic sector will gradually move toward a higher rate of growth of discretionary expenditures irrespective of other factors. This upward shift in \( I_o \) will reduce the need for the government or whatever other sector has initiated the higher rate of economic expansion to continue
adding to its debt. Of course, and this is a key point, the timing is most important. If the government or the other sector acts precipitously to put an end to its mounting deficit, the economy will be brought back down to the previously prevailing secular growth rate, \( \bar{G} \).

Moreover, even if the investment curve for the oligopolistic sector does eventually shift upward as the megacorps within the sector become convinced that a higher secular growth rate has been established, it cannot be expected to rise sufficiently so that it then intersects the savings curve for the oligopolistic sector at the new secular growth rate, \( \bar{G} \). This is because the rate of growth of discretionary expenditures within the oligopolistic sector will, at most, only increase proportionately to match the higher aggregate growth rate while the rate of growth of discretionary income will, because of the upwardly bowing savings curve, increase disproportionately. Yet it is precisely that condition - \( \bar{I} \) being equal to \( \bar{S} \) at the new secular growth rate \( \bar{G} \), as shown in figure 23 - which must be met if the oligopolistic sector is no longer to exert a contractionary influence on the growth rate, generating a higher rate of growth of savings relative to investment that must be offset, if the higher growth rate is to be maintained, by a deficit in some other sector such as the government. Indeed, unless the rate of growth of discretionary expenditures for each of the five sectors can be brought into line with the rate of growth of discretionary expenditures within the same sector, \( \bar{G} \) is unlikely to be maintained for long. It is for this reason that, if the government’s efforts to place the economy on a higher warranted, or secular, growth-rate are to be successful, there must also be a shift in the savings curve for the oligopolistic sector. Yet this is anything but an easy matter to arrange, as will now be pointed out.

**Shifting the oligopolistic sector’s savings curve.** As previously noted, the savings function for the oligopolistic sector depends, not only on the divergence of the current growth rate from the secular but on three other sets of variables as well, in addition to the shift variable encompassing lagged effects and future expectations. The sets of variables are: (a) the average price level within the oligopolistic sector, \( \bar{P}_o \), (b) the difference between the national incremental wage pattern, \( W_o \), and the secular growth rate of output per worker in the oligopolistic sector, \( \bar{Z}_o \), and (c) the corporate income tax rate, \( t_c \), (and, in the industries to which one applies, the ad valorem tax rate, \( t_v \)). A change in any one of these three sets of parameters will cause a shift in the savings curve for the oligopolistic sector.\(^{10}\)

By now it should be clear as to why the necessary shift in the savings
Figure 23. (a) Oligopolistic sector. (b) Government sector. (c) Economy as a whole.
curve $S_o$, is unlikely to occur through a reduction in the price level for the oligopolistic sector. As already pointed out (pp. 98-9), the megacorps in oligopolistic industries have little reason, acting on their own, to lower their prices. Similarly, the possibility of shifting the savings curve by raising the corporate income tax rate can all but be excluded. As will shortly be brought out, the effect that higher corporate taxes will have on the rate of growth of savings throughout the economy as a whole is somewhat problematical, given the interrelationship between $P_0$ and $t_y$ on the one hand and, on the other, the fact that $t_y$ is also a parameter of the savings function for the government sector. This, then, leaves only the national incremental wage pattern, $W_p$, as the parameter which can be manipulated in order to shift the savings curve for the oligopolistic sector.

The average corporate levy, it will be recalled, depends on the difference between the price level and average variable and fixed costs. Thus if the average corporate levy, the source of savings within the oligopolistic sector, cannot be reduced by lowering price levels (or, for that matter, tax rates), the same result can be achieved by raising the rates of compensation reflected in average variable and fixed costs. These rates of compensation will, in turn, depend on the national incremental wage pattern, $W_p$, in the various ways suggested in chapter 5 (pp. 162-72).

The macrodynamic framework set forth in this and the preceding chapter helps make clear why, with technological progress, a national incremental wage pattern greater than zero is essential. The effect of technological progress - the increasing returns over time as one might refer to it - is to shift the savings curve for the economy as a whole upward to the left at a rate equal to the secular growth of output per worker, with the additional savings, or marginal social surplus, emerging both as increased net income within the business sector and, since business tax rates are geared to business income, as increased government revenues. Were wage rates and the compensation of households in general (ignoring entrepreneurial income) to remain unchanged, this upward drift of the aggregate savings curve would lead to a corresponding decline in the warranted growth rate. It is only the national incremental wage pattern and the resulting rise in household income which enables a certain growth rate, $G_a$, to be maintained over time. The fact that the rate of technological progress is itself a function of the aggregate growth rate, the increasing returns depending as they do at least in part on the rate of growth of investment, does not alter the situation. Whatever the relationship between the aggregate growth rate and technological progress, it is still possible, by means of the national incremental wage pattern, to convert the higher output per worker into higher real income.
for the household sector, thereby enabling the economic expansion to continue undiminished.

Not just any national incremental wage pattern will do, however. There is, in fact, but one value for \( W_p \) which, given the other determinants of the macrodynamic system, will be consistent with a particular warranted growth rate at existing price levels. Of course, if one is willing to allow price levels to rise, the choice becomes somewhat more open; but this not only concedes a certain rate of inflation, it also leads to other problems soon to be elaborated on. While there is just one value for \( W_p \) which will enable the warranted growth rate to be maintained - holding other factors, including price levels, constant - there is little to assure that this one wage pattern is the one which will in fact be established. For one thing, the national incremental wage pattern is merely constrained by economic variables, it is not controlled by them. This means that there is no endogenous dynamic which can be counted upon to produce the 'right' value for \( W_p \). Within the limits set by economic factors, it all depends on the socio-political forces which shape the national incremental wage pattern. But even if, by some chance, the 'right' value were to be chosen so that the expansion could continue unabated without any attendant rise in price levels, the whole delicate balance would be destroyed as soon as any exogenous disturbance produced a change in the aggregate growth rate.

This, then, is the most significant point of all: any change in the aggregate growth rate will have a redistributive effect, creating strong pressure for a change in the national incremental wage pattern, with little to assure that the new value for \( W_p \) will be the 'right' one under the circumstances. The new wage pattern may be too low - in which case there will be an excess of savings within the oligopolistic sector acting, in the manner already pointed out, as a brake on the further expansion of the economy. Or it may be too high - in which case the dynamic sequence known as a wage-price spiral will be initiated. In other words, given the present mechanism for determining the national incremental wage pattern, any change in the warranted growth rate is likely to place the economic system on an erratic growth path. Why too low a wage pattern will serve as a drag on the growth rate should be clear from what has already been said. What still remains to be explained is why too high a wage pattern will touch off a wage-price spiral. To illuminate this point, the effects of an increase in the aggregate growth rate will be traced out.

An increase in the aggregate growth rate, as reflected in higher levels of aggregate demand, will cause megacorps to operate on the average in excess of their standard ratio. It is this higher rate of capacity utilization
that will enable the rate of growth of savings to exceed the rate of growth of investment within the oligopolistic sector, the divergence between the two flows being manifest through a disproportionate increase in reported net earnings. To the trade union in the bellwether industry, the disproportionate increase in reported net earnings will be a signal that the division of income has changed to the disadvantage of the workers whom it represents. This feeling that its rank-and-file members have fallen behind in the apportionment of the social surplus will be strengthened by what is likely to be a concurrent rise in the price level outside the oligopolistic sector - for reasons shortly to be made explicit - with the resulting increase in the cost of living signifying a decline in the real value of the wage rates previously negotiated. As pointed out in chapter 5, the trade union in the bellwether industry can be expected to try to counteract this relative decline in the position of its members by insisting upon and then obtaining a higher national incremental wage pattern at the next contract round.

The higher wage pattern, by increasing the compensation received by the megacorp’s principal constituencies, will have the effect of shifting the savings curve for the oligopolistic sector outward to the right. As wages, salaries and dividends all increase by a larger percentage, leading to a higher rate of growth of average variable and fixed costs, the residual income accruing to individual megacorps will necessarily be reduced. This outward shift of the oligopolistic sector’s savings curve will, it should be noted, tend to eliminate the excess of savings over investment which, in the face of some other sector’s unwillingness to continue incurring debt at the same rate, would otherwise make the higher warranted growth rate unsustainable. But it is also possible that the savings curve will shift outward too far, leaving some megacorp-price leaders with insufficient internal funds to finance their desired rate of growth of investment. In that case, a rise in the price level within the oligopolistic sector can be expected to follow. The question is how likely this possibility is.

There are several reasons why, following the establishment of a higher national incremental wage pattern, the megacorp-price leaders in some industries may feel they have been left with too small an average corporate levy. For one thing, the parameters of the pricing decision within the bellwether industry may be atypical of those prevailing throughout the oligopolistic sector. The bellwether industry’s cost structure may be unrepresentative, reflecting proportionately lower labor, material or dividend costs, or those costs may respond less directly to a change in the national incremental wage pattern. For any of these reasons, the rise in average variable and fixed costs following acceptance of the national pattern may be greater in some significant portion of industries
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than that experienced in the bellwether industry itself, this greater rise in average variable and fixed costs necessarily being at the expense of the average corporate levy. Similarly, the bellwether industry’s demand for or supply of investment funds may also be unrepresentative. On the demand side, the bellwether industry may be experiencing a lower rate of growth. Or it may just have fewer investment opportunities open to it, managerial attitudes meanwhile limiting the possibility of diversification. On the supply side, it may be operating at a higher rate of capacity utilization, this enabling it to generate a larger volume of internal funds. Whatever the underlying cause, other industries may find that, given their own demand for and supply of investment funds, they simply require a higher average corporate levy.

This first source of difficulty, that conditions in the bellwether industry may be atypical of those prevailing throughout the oligopolistic sector, can be attributed to the specific mechanism by which the national incremental wage pattern is established in the United States — and in particular to the national pattern’s dependence on circumstances within a single industry. A second source of difficulty, that the megalcorp and trade union responsible for establishing the key bargain may differ on the extent to which they view the change in the warranted growth rate as being secular rather than cyclical, would arise even if the bellwether industry were entirely representative of the oligopolistic sector.

The virtual impossibility of distinguishing an increase in the secular growth rate from an unusually large rise in cyclical demand has already been dwelt on at some length. The evidence for both is the same — a rate of capacity utilization which, over a given interval, has exceeded the standard operating ratio, together with a disproportionate increase in reported net earnings. Only the passage of time will reveal whether the new trend will continue or, alternatively, give way to the contractionary phase of the normal business cycle. Difficult as it may be to answer, however, the question of whether the increase in the aggregate growth rate is secular or cyclical is absolutely critical for both the megalcorp and trade union. If the increase is, in fact, secular, both the rates of compensation paid the megalcorp’s two principal constituencies and the funds retained by the firm itself can be expected to increase by a percentage equal to the higher growth rate without price levels having to be raised. This is because, in this case, the disproportionate increase in reported net earnings will reflect the growth of the social surplus. But if the increase in the aggregate growth rate is merely cyclical, any rise in the rates of compensation paid the laboring manpower force and the equity debt holders will be at the expense of the average corporate levy. This is because, in this case, the disproportionate increase in reported net earnings will reflect only a temporary redistribution of income.
To the extent, then, that megacorps believe that the higher operating ratios they are currently experiencing portend an actual rise in the secular growth rate, they are less likely to feel compelled to raise their prices following acceptance of the national incremental wage pattern. While the increase in the secular growth rate will require a higher rate of growth of investment, both to match the rate of growth of industry sales and to provide sufficient reserve capacity, the concurrent increase in the rate of growth of the realized corporate levy may, even in the face of the higher wage pattern, be adequate for whatever internal funds are required. It all depends, of course, on whether, after making allowance for the rise in average variable and fixed costs, megacorps feel that the current rate at which internal funds are being generated will be sufficient, given the marginal efficiency of investment, even without a rise in price levels. That is, it depends on whether, as analyzed in chapter 3, the investment demand curve, \( D_I \), for most megacorp-price leaders intersects the supply curve for additional investment funds, \( S_I \), where \( n = 0 \), even after the higher costs implicit in the national incremental wage pattern have been absorbed. On the other hand, to the extent that megacorps believe that the higher operating ratios will shortly be followed by lower ones as part of the normal cyclical pattern of demand, a rise in the oligopolistic sector’s price level is all but certain. For while trade unions are likely to view the disproportionate increase in reported net earnings as justifying a more rapid growth of wages, megacorps are likely to view it as simply a temporary windfall, one which will be offset by the disproportionate decline in reported net earnings during the next phase of the current planning period.

What is interesting about the latter expectation on the part of megacorps is that it is likely to be largely self-fulfilling. If megacorps decide to raise their prices following acceptance of the national incremental wage pattern because they feel that a subsequent decline in aggregate demand will leave them with insufficient internally generated investment funds, this very fact, together with the rise in the non-oligopolistic sector’s price level resulting from the higher warranted growth rate, is likely to induce the government to take steps to curtail aggregate demand. Before pursuing this point any further, however, it is necessary to pause and analyze government contracyclical policy in light of the micro and macro models previously developed.

Government contracyclical policy

Efforts by the government to control the aggregate growth rate are limited, at least at the present time in the United States, to monetary and fiscal policy. The former involves changes in the money supply
and interest rates; the latter, a shift in the government’s own savings or investment demand curve through a change in either tax rates or discretionary expenditures. Each of these alternatives will be discussed in turn, with special emphasis on the implications for the oligopolistic sector.

Monetary policy. The efficacy of monetary policy will depend on the effect which a change in either interest rates or the money supply is likely to have on the willingness of decision-making units within the oligopolistic, non-oligopolistic, government and household sectors to incur further debt. The willingness to incur further debt will, in turn, govern the extent to which the rate of growth of investment in any of those sectors can exceed the rate of growth of savings. The discussion of this point will begin with the oligopolistic sector.

A number of reasons have already been suggested as to why investment demand in the oligopolistic sector will, in fact, tend to be interest inelastic. First, it had been pointed out that the expansion of plant and equipment, to the extent that this is indispensable to maintaining a megacorp’s existing market shares, is likely under most circumstances to be undertaken regardless of what the prevailing interest rate happens to be. Put another way, the return from such investment, it can be assumed, will almost certainly exceed the cost of borrowing external funds, given the historical limits on interest rates. The same is true of any investment to increase barriers to entry, create a more favorable public image or differentiate the product more sharply which is similarly vital to the preservation of the megacorp’s market position. Second, it has been pointed out that the megacorp is able to finance most of its investment by means of the corporate levy, to that extent being able to bypass the capital funds market entirely. This ability to generate internal funds is the very source of the megacorp’s economic strength, for it means that the megacorp is one step removed from the direct control of market forces.

Third, even though some small portion of the megacorp’s total investment plans may still be subject to the marginal calculation of returns and costs, it has been pointed out that the decision to resort to outside financing is based on what has been termed the permanent interest rate, and not the actual interest rate currently prevailing in the capital funds market. This permanent interest rate, it will be recalled, is the minimal cost of borrowing external funds over the business cycle; and as such it will depend not only on secular changes in long-term interest rates (insofar as new fixed interest debt is concerned), but also on the state of expectations reflected in stock market conditions (insofar as new equity debt is concerned).

It can thus be seen why the action of the Federal Reserve Board
in altering the reserves of member banks is likely to have little or no effect on investment in the oligopolistic sector, at least via interest rates. The resulting change in short-term interest rates must first lead to a corresponding change in long-term interest rates, or, more specifically, to a change in the cost to the megacorp of fixed-interest debt financing.\textsuperscript{14} This is a process dependent both on time and on the effectiveness of arbitrage in the money markets.\textsuperscript{15} Meanwhile, the change in long-term interest rates may be outweighed by a change in the expectations of those active in the stock market.\textsuperscript{16} Even if this is not the case, the change in long-term interest rates will have to persist for a sufficiently long period of time to affect the permanent interest rate as perceived, and reacted to, by the megacorp.\textsuperscript{17} In that event, however, it is not the cyclical timing but rather the actual amount of investment in the long run that will be affected. For all these reasons, as shown by the empirical evidence, investment by the megacorp will tend to be interest inelastic over the planning period; and monetary policy, insofar as it influences the oligopolistic sector of the economy via interest rates, is likely to be, at best, ineffectual as a short-run policy tool.\textsuperscript{18}

Monetary policy, however, can also affect the level of investment through the sheer availability of funds. While the interest inelasticity of investment has been recognized for some time, many economists would nonetheless argue that the Federal Reserve Board, by regulating the overall flow of bank credit, can still influence the level of aggregate investment. If business firms are unable to obtain loans, at any interest rate, because commercial banks are short on reserves, they will have no choice, it is said, but to cut back on those expenditures which involve the least fixed commitment, that is, on their investment expenditures. In other words, the contention is that monetary policy can operate with success via the transactions demand for money.\textsuperscript{19}

While the ability of the megacorp to finance investment largely out of the corporate levy might at first seem to refute this line of argument, the point cannot be dismissed so lightly. The fact is that the megacorp, in the course of carrying on its day-to-day activities, may be heavily dependent on short-term commercial credit (Anderson, 1964, ch.2; Christian and Mazek, 1964; Bosworth, 1971). Of course, as a large, important customer, the megacorp can expect its credit needs to receive first priority from banks. Still, if the Federal Reserve Board persists with a tight money policy long and hard enough, even a megacorp will feel the pressure. Unable to obtain all the short-term credit it needs, the megacorp will be forced to divert funds from investment in order to satisfy its more immediate obligations. Though the rate of capital formation may in the long run be unaffected, the cyclical pattern of investment will nonetheless be altered.\textsuperscript{20} It should be noted, however,
that the ability of the Federal Reserve Board to stimulate investment in the short run via the transactions demand for money is not likely to be as great as the ability to curtail investment. As long as the megacorp is able to obtain all the short-term credit it requires, a further easing of monetary policy is unlikely to result in increased investment — except insofar as the megacorp may be encouraged to borrow short-term funds to make up a temporary deficit in the corporate levy and/or avoid having to borrow long-term funds when market conditions are unfavorable. Thus monetary policy is not fully reversible in its effect on the oligopolistic sector.

Moreover, while it cannot be denied that the Federal Reserve System may ultimately succeed in curtailing megacorp investment through a tight money policy, the consequences of its regulating aggregate demand in this manner should at the same time be kept clearly in mind. Because the typical megacorp has both an internal source of long-term investment funds and a more favored access to short-term credit, the brunt of monetary policy tends to fall on other sectors of the economy. Of course, the regulated industries, because resort to a corporate levy is for the most part denied them, will be more directly affected, both by a change in interest rates and by a change in the availability of funds, than the rest of the oligopolistic sector (see above, p. 115). Still, the major impact of any shift in monetary policy will be felt in the non-oligopolistic sector. This is because the non-classical proprietorships which predominate in that sector not only are likely to lack sufficient market power to exact much in the way of a corporate levy, they also have the least favored access of all business firms to the financial intermediaries which supply long-term credit.

Outside the business sector, it is households which will be most directly affected by a change in monetary policy. Although the purchase of other consumer durables may continue to be financed, by the megacorps which supply them if not by financial intermediaries themselves, residential dwellings are a different matter. Their purchase requires particularly long-term financing which the builders of homes, being dependent themselves on loans from financial intermediaries, cannot provide. Within the government sector, too, monetary policy will have a differential impact. State and local governments, faced in many cases with legal limitations on the amounts they are allowed to borrow, cannot call upon the Federal Reserve System to guarantee a market for their securities; and this makes the level of their capital expenditures somewhat the hostage of monetary policy (C. Phelps, 1963; see also Ando et al., 1965; Evans and Klein, 1967; Suits, 1962).

Reliance upon monetary policy as a countercyclical tool thus serves to distort the pattern of inter-sectoral growth — in particular favoring
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The expansion of the oligopolistic sector at the expense of other sectors. Even if the distortion is temporary, with the long-run pattern of growth eventually reasserting itself, the effect will in any case be to accentuate the cyclical instability of demand arising within those other sectors.

Still another consequence of relying too heavily upon monetary instruments to control aggregate demand must be pointed out. Since it is only by threatening the megacorp's short-term liquidity position that the Federal Reserve System can expect to force the firms within the oligopolistic sector to cut back on their investment plans, successful implementation of the policy runs the considerable risk of creating panic in the money markets, a result which is the very abnegation of the Federal Reserve System's primary responsibility. If the monetary authorities succeed in so limiting the availability of credit that even a megacorp cannot obtain all the short-term funds it requires, the holders of near-money - megacorps especially - may be compelled to dispose of their liquid assets, such as government bonds, certificates of deposit and corporate securities in general, for cash. Alarmed by the resulting decline in value, the other holders of these types of assets may join in the rush to sell, thereby endangering the liquidity of the capital funds market and eroding confidence in the monetary system as a whole.23 Even if the monetary authorities do not allow the situation to reach these crisis proportions - and the tight money policy will to that extent, of course, be less effective - they are nonetheless engaged in a dangerous game, that of trying to cut off the flow of funds to business firms to a degree sufficient to curtail 'excessive' capital expenditures without causing paralysis. It is somewhat like trying to restrain an unruly individual by placing one's fingers around his neck and slowly tightening the grip. One runs the risk of cutting off the circulation altogether, leaving the individual unconscious if not actually lifeless.

This is not to argue that monetary policy is unimportant or unnecessary (cf. Ball, 1965; Davidson, 1967, 1972; Minsky, 1975). It is merely to point out, on the basis of the microeconomic theory developed earlier, that a primary reliance upon monetary policy as a contracyclical tool not only may discriminate among different sectors of the economy, it may even contribute to the amplitude of cyclical fluctuations. For this reason monetary policy is likely to prove most useful when it is made subordinate to, and thus serves to reinforce, fiscal policy. But even the efficacy of fiscal policy needs to be reconsidered in light of the micro and macro theory developed earlier.

Fiscal policy. Some of the consequences arising from a change in fiscal policy have already been touched on. As pointed out, the addition of new programs or the more liberal financing of old ones, representing
as it does a discrete or discontinuous increase in government expenditures, will cause an upward shift of the government sector’s investment demand curve. With the rate of growth of government expenditures, \( I_g \), thus exceeding the rate of growth of tax revenue, \( S_g \), the warranted growth rate for the economy as a whole will necessarily rise, at least for the moment.

It would seem that the same effect would follow from a downward shift of the savings curve for the government sector. There are two points to keep in mind, however. The first is that while a change in the rate of growth of government spending will cause a shift in the government sector’s investment demand curve without there necessarily being a change in the slope of that curve, a change in tax rates - the only way the government sector’s savings curve can be manipulated - will primarily lead to a change in the slope of that curve. This means that the effect of any change in tax rates will not be independent of the current rate of economic expansion. The second point is that, whatever the shift that can be produced in the government sector’s savings curve through a change in tax rates, the effect on the warranted growth rate will, at best, be partially countermanded. This follows from a unique characteristic of the tax as well as some of the other parameters of the various savings curves. They are parameters of two savings functions simultaneously so that the most immediate effect of any change in tax rates is to redistribute income between the affected sectors. Whatever decline in the rate of growth of discretionary income occurs in the government sector as a result of reducing a tax rate will be offset by an increase in the rate of growth of discretionary income in the benefiting sector; and vice versa.

The effect of a tax reduction on the aggregate growth rate will therefore depend on the extent to which a higher rate of growth of discretionary income within the benefited sector will lead to a higher rate of growth of discretionary expenditures in that same sector. Even within the household sector, where the correspondence between an increment in discretionary income and an increment in discretionary expenditures is perhaps greatest, there is certain to be some slippage between the two, especially if the increment in discretionary income appears to be merely transitory. In the oligopolistic sector, based on the evidence as to the determinants of investment demand, the slippage will be all the greater - if not total.24 It is only with these two qualifications strongly in mind that one can regard the downward shift of the government’s savings curve as the correlative of an upward shift of the same sector’s investment demand curve.

The dynamic just described also works in reverse. If, following a downward shift in the government sector’s investment demand curve
(and/or, to a lesser extent, following an upward shift in its savings curve), the rate of growth of taxes should exceed the rate of growth of expenditures, the warranted growth rate for the economy as a whole will necessarily fall. This is because, with the government running a surplus, it will be withdrawing more claims from the income stream than it is injecting into it, the government's surplus thus having the effect of reducing the level of aggregate demand. In this case, the megacorps within the oligopolistic sector will find themselves operating below their standard ratios, the resulting excess of investment over savings serving to offset the surplus in the government sector.

From what has already been said, then, there would seem to be little question of the government's ability, acting through fiscal policy, to control the level of aggregate demand and, by this means, to determine the warranted growth rate for the oligopolistic subsector. Still, an important limitation of fiscal policy must be noted, even aside from the lesser stimulative effect of tax reductions. It has to do with the government's power to tax the megacorp directly. It should be pointed out that more than just the ability to influence the level of aggregate demand is at issue here. If the government could impose a levy of its own limiting the net after-tax revenue flows of megacorps, it would then be able to force a shift in the oligopolistic sector's savings function independently of what might be happening to the price level within the oligopolistic sector and/or the national incremental wage pattern. This would, in turn, provide the government with a more direct form of control over the oligopolistic sector. The question, then, is how much power does the government have to tax the megacorp directly?

Up to this point, no provision has been made for taxes in the oligopolistic pricing formula. This omission must now be corrected. The megacorp, in setting its price, will need to take into account both types of taxes which affect it directly. With regard to an ad valorem tax, the revenue received by the megacorp, given an industry price \( P \), will be the industry price less a percentage equal to the tax rate. That is,

\[
P - P(t_e) = AR
\]  

(7.1)

where \( AR \) = average revenue received by the megacorp.

If the average revenue received by the megacorp is to cover the megacorp's costs and still generate the desired amount of investment funds, the industry price must be set so that

\[
P - P(t_e) = AVC + \frac{FC + CL}{SOR \cdot ERC}
\]  

(7.2)

Shifting terms, this equation becomes
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\[ P = \frac{1}{1 - t_e} \left( AVC + \frac{FC + CL}{SOR \cdot ERC} \right) \]  
(7.3)

From the above equation it is possible to derive the marginal tax-price adjuster, that is, the percentage by which the industry price will have to be changed following a revision of the ad valorem tax rate if the megacorps in that industry are to continue earning the same after-tax revenue. The formula for this marginal tax-price adjuster, \( T_e \), is as follows:

\[ T_e = \frac{1}{1 - t_e} - \frac{1}{1 - t_{e_0}} \left/ \frac{1}{1 - t_{e_0}} \right. \]
(7.4)

where \( t_{e_0} \) = the previous ad valorem tax rate
and \( t_{e_1} \) = the new ad valorem tax rate.\(^{25}\)

When an ad valorem tax is being levied on the industry for the first time, the formula reduces to:

\[ T_e = \frac{1}{1 - t_e} - 1 \]
(7.5)

since \( t_{e_0} \) will then be equal to 0.

With a corporate income tax rather than an ad valorem tax in effect, the oligopolistic price formula becomes slightly more complicated. If the megacorp is to cover its costs and still generate a sufficient amount of internal funds for investment, the industry price must be set so that

\[ P = \frac{1}{1 - Net(t_e)} \left( AVC + \frac{FC + CL}{SOR \cdot ERC} \right) \]
(7.6)

As reflected by the formula, a corporate income tax has less of an impact on the price level than an ad valorem tax by a percentage equal to Net - the ratio of net income to the price that would be necessary in the absence of any tax. The marginal tax-price adjuster in this case, \( T_y \), is as follows:

\[ T_y = \frac{1}{1 - Net(T_y)} - \frac{1}{1 - Net(t_{y_0})} \left/ \frac{1}{1 - Net(t_{y_0})} \right. \]
(7.7)

In its most general form, then, the price equation for an oligopolistic industry may be written as follows:

\[ P = \frac{1}{1 - t_e} \left[ \frac{1}{1 - Net(t_y)} \left( AVC + \frac{FC + CL}{SOR \cdot ERC} \right) \right] \]
(7.8)

with \( t_e \) or \( t_y \) equal to 0 if no ad valorem or corporate income tax is currently being levied. With the assistance of this revised price equation and, even more important, of the tax-price adjusters derived from
it, it is possible to determine what the incidence of a tax on the megacorp is likely to be — that is, whether it will be passed along to customers in the form of a higher industry price or, alternatively, be absorbed by the megacorp itself through a reduction in the average corporate levy. In other words, it is possible to indicate the extent to which a tax on the megacorp is likely to be shifted onto others.

**Incidence of the corporate income tax.** If the incidence of the tax were to fall entirely on the megacorp’s customers through higher prices, the tax would be little different from a personal income tax — except insofar as it were more or less regressive and the savings function for the oligopolistic sector would be left unaffected. If, however, the incidence were to fall entirely on the megacorp through a reduction in the realized corporate levy, this would be an entirely different matter. For in that case the savings function for the oligopolistic sector would necessarily shift. In the final analysis, then, the efficacy of a fiscal policy based on taxing the megacorp will depend on the ability of the affected oligopolistic industries to raise their price by a percentage, equal to the tax-price adjusters, $T_x$ and $T_y$. This, in turn, will depend on the costs to each of the megacorp-price leaders, acting as surrogates for their industries, of raising prices by that percentage. While these costs have already been analyzed for a price increase designed simply to augment the corporate levy and for a price increase designed to offset a rise in costs stemming from acceptance of the national incremental wage pattern, they will be somewhat different for a price increase designed to neutralize the effect of an increase in excise or corporate income taxes.

The costs of any price increase, it will be recalled, are those due to the substitution effect, the entry factor and the fear of meaningful government intervention. The first of these costs will be incurred following a tax-neutralizing price increase only to the extent that the tax has been levied against particular industries, industries which produce goods and services that are not competitive with one another. Of course, to the extent that this is the case, the tax will be less effective as an instrument of aggregate economic policy — though it may be all the more effective as a means of exercising social control over particular industries. The type of tax which least meets this condition for the substitution effect to be operative is the corporate income tax. Since all megacorp-price leaders will be similarly affected by any change in this tax and since all can be expected to try to increase their prices in response within one or two pricing periods, any substitution effect will be largely nullified. Only insofar as the industries which produce competing goods and services have different tax-price adjusters,
that is, only insofar as they are governed by different values for Net, will the ensuing percentage increases in price be different. These disparities in $h$, however, are not likely to be very great, and as a result the substitution effect is not likely to be significant.29 In short, the cost of a price increase due to the substitution effect will be negligible for any tax on the megacorp, such as the corporate income tax, which is broadly based; while for any tax such as an ad valorem excise tax on a single product which is not broadly based it will have little aggregate impact.

As for the entry factor, no tax, whatever its form, is likely to make a difference. This reflects the fact that, with the exception of a sharply graduated corporate income tax, the impost will affect all firms equally, potential new ones as well as existing megacorps. It will therefore be no easier, after the tax has been levied or increased, for an outsider to overcome the barriers that have been erected against the entry of new firms. Of course, it is true that insofar as the existing megacorps are unable to shift the tax forward onto consumers, they may no longer be able to obtain all the investment funds they need through the corporate levy at below the market rate of interest. But this simply means that they will then be forced to compete for funds with any potential new entrant in the capital-funds market; and in this competition, because of their established position, the existing megacorps will still be at a considerable advantage.30 In short, the cost of a tax-neutralizing price increase due to the entry factor, will, like the cost due to the substitution effect in the case of a broadly based tax, be negligible.

This leaves only the fear of meaningful government intervention as a possible factor preventing megacorps from raising their price to neutralize the effect of a change in megacorp taxes. It is difficult to see, however, how this fear can serve as a significant restraint. Under present political and legal conditions, it is difficult enough for the government to bring sufficient pressure to bear to prevent a price increase designed clearly to augment the corporate levy (see above, pp. 77–80). How then can it be expected to bring sufficient pressure to bear to prevent a price increase designed simply to maintain the corporate levy? Of course, this is a situation which may change over time, and the virtual absence of any increase in the corporate income tax since the end of World War II, except under the unusual circumstances surrounding the Korean War build-up of American armed forces, suggests caution before making too definitive a statement. Still, it seems reasonable to conclude that, in this case, the fear of meaningful government intervention can be largely dismissed.

In summary, then, the cost of internally raised funds, $R$, will be negligible and the possibility of meaningful government intervention, $\beta$, less than the minimum acceptable probability of such intervention,
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$X_z$, as long as the percentage increase in price, $n$, which ensues following an increase in the general taxes levied against megacorps does not exceed $T_y$ or just simply $T$, the tax-price adjuster for any broadly based impost. In other words, the supply curve of investment funds is the same, under these circumstances, as the horizontal axis of the investment demand-supply graph up to the point where $n = T$ (see figure 24). Put still another way, the $R$ and $S_f$ curves (see figures 12-14, chapter 3) will, as a result of the increase in the tax rate, shift outward to the left and right respectively by an amount equal to $T$. Thus there

![Figure 24](https://via.placeholder.com/150)
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is every reason to expect the burden of any broadly based tax on
megacorps to be shifted forward onto consumers in the form of higher
prices. 31

The obverse of this, however, does not follow. When and if the burden
of the tax is lightened, those same customers are hardly likely to notice.
This is because a reduction in or the elimination of any broadly based
tax on megacorps will not necessarily lead to a decrease in prices with
the oligopolistic sector. Just as the substitution effect, the entry factor
and the fear of meaningful government intervention are all negligible
factors in dissuading the megacorp from raising its prices following an
increase in tax rates, so too they are negligible factors in forcing the
megacorp to lower its prices following a reduction in tax rates. This
makes a higher tax on megacorps doubly ineffectual as an anti-inflationary
measure. If imposed to curtail aggregate demand as a means of halting
the rise in price levels, it is likely to have the opposite effect. The
higher the taxes imposed on megacorps, the higher the oligopolistic
sector's price level is likely to be. Yet a decline in those same taxes
will accomplish little toward reducing the oligopolistic sector's price
level. The most that can be expected is that it will make unnecessary
an increase in prices that might otherwise occur.

The government's power to force a shift in the oligopolistic sector's
savings curve is therefore quite limited. The underlying explanation for
this is the market power which megacorps acting collectively through
the mechanism of price leadership have - a market power which enables
them to control the price levels in their industries and thus offset any
action by the government to reduce the average corporate levy through
a change in tax rates. What this means is that, aside from the general
weakness of a tax-based fiscal policy - that the shift of the savings
curve in the government sector will necessarily be matched by a shift
of the savings curve in some other sector, and in the opposite direction,
so that the aggregate savings curve is virtually unaffected - there is
an even more specific untoward consequence when such a policy is
directed at megacorps. Any increase in the putative tax burden on
megacorps is likely to be shifted to the household sector in the form
of higher prices, this intersectoral redistributional effect exacerbating
the struggle over relative income shares that underlies the wage-price
inflationary spiral. For the wage-price spiral, as already implied, is
simply the result of different groups in society using what economic
and other power they may have to avoid the decline in real and/or
relative income which threatens them when a change in the aggregate
growth rate occurs.

The shortcomings of fiscal policy go even beyond these points, however.
Not only is the government unable to shift the savings curve for the
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oligopolistic sector in the way it might wish through a change in tax rates, it is also unable to influence the price level within that sector indirectly through its admitted ability to control the level of aggregate demand. This is the second important limitation of fiscal policy - perhaps even more serious than the first. To understand it one must examine the supply curves for each of the two component parts of the business sector.

The business sector's supply curves. Just as it would be a mistake to specify but a single savings and investment demand function for the entire business sector, so too it would be erroneous to specify but a single supply curve. Indeed, in indicating the relationship between aggregate output and the price level, it is essential to distinguish the oligopolistic sector from the non-oligopolistic sector.

In the case of the latter, any upward shift in demand which requires an increase in output will necessarily give rise to a corresponding increase in the price level - assuming, of course, no change in any of the relevant parameters. This positive relationship between output and price at the aggregate level follows from the shape of the supply curve in those polyplastic and monopolistically competitive industries which comprise the non-oligopolistic sector. The shape is determined by two factors: (a) the elasticity of the marginal cost curves of the individual firms which, when aggregated, constitute the industry supply curve and (b) the rate at which firms enter or leave the industry as price varies. If the firms in the industry are subject to variable marginal costs - a condition which will be met if they are single-plant firms with U-shaped cost curves - and if any change in industry demand is not entirely supplied by marginal firms moving into or out of the industry, the industry supply curve will necessarily be positively sloped, as depicted in figure 25. In other words, any upward shift in demand will, perforce, be accompanied by an increase in price.

What must be stressed is that this positive relationship will hold even if the firms in the industry are currently operating with 'excess' capacity, that is, even if they are producing to the left of the minimum cost point on their average total cost curves. Indeed, the positive relationship will hold as long as marginal costs are positively related to output. Of course, the more pronounced the movement from operating below the cyclical norm of production to above the cyclical norm, the greater will be the relative increase in price. Put another way, the industry supply curve is likely to become increasingly steeper, that is, more inelastic, as demand shifts upward; and this is so for two reasons. (1) At levels of output below the cyclical norm, some of the firms in the industry may be temporarily shut down because the industry price is
insufficient to cover their average variable costs. An upward shift in demand from such a low point, then, is likely to result in some of these firms re-entering the industry by simply resuming operations. As the upward shift in demand persists and the supply of these temporarily shut-down firms is exhausted, the rate of re-entry will necessarily slow down. (2) As the upward shift in demand continues past the level of output that constitutes the cyclical norm, the firms in the industry will find it increasingly more difficult, due to the generally high levels of demand for all goods and services, to obtain at existing price levels the variable inputs supplied by other polypolistic and monopolistically competitive industries. This means that in addition to the increase in marginal costs which ensues from the more intensive use of the fixed inputs, the firms in the industry will experience a further increase in marginal costs as a result of the consequent bidding up of variable input prices - including wage rates. The latter, as already pointed out, are likely to rise because of the upward pull of wage rates within the oligopolistic sector.

In the case of the oligopolistic sector, the situation will be quite different. An upward shift in demand may be accompanied by an increase in price - but it need not be. This is because the members of an oligopolistic industry will, under normal circumstances, have a certain amount of reserve capacity with which to supply the increased demand; and because, moreover, they will be able to bring this reserve capacity into operation at what, in the eyes of the managerial group, is viewed as constant marginal cost.

Again, the conclusion is implicit in the shape of the industry supply curve, derived in this case, too, by aggregating the supply curve of all the individual firms, or megacorps, in the industry. However, since

Figure 25
marginal costs cannot be equated with marginal revenue, at least in the short run, an individual megacorp's supply curve is not the same as its marginal cost curve. Rather, since the megacorp's pricing decisions are based on anticipations over the current planning period, a time horizon which largely obliterates any short-run marginal considerations, its supply curve is the same as the curve summing up its average variable and fixed costs plus the average corporate levy over the intermediate run. (See figure 6 shown here again.) This curve may be termed the average total anticipated outlays curve. Moreover, due to the difficulty of coordinating pricing decisions in an oligopolistic industry, a difficulty that leads to changes being made in the industry price only at discrete intervals, the supply curve is that one point on the average total anticipated outlays curve which represents the expected level of output during the current planning period. This one point corresponds to the average total anticipated outlays at the standard operating ratio.

The megacorp, then, is prepared to supply, up to a certain point, any quantity of goods or services that may be demanded at a price just sufficient to cover its average total anticipated outlays over the current planning period. The point which marks the upper limit on the amount of goods which the megacorp is willing to supply at this fixed price is the point at which the marginal cost curve intersects the price (or average revenue) curve, for if the megacorp produces beyond that point it will suffer a decline in total revenue. Still, rather than try to

![Figure 6](image-url)
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raise its price unilaterally when the marginal cost begins to exceed marginal revenue, the megacorp will delay filling orders and in this way avoid unprofitable operations. In effect, it will simply refuse to produce beyond the intersection point. Ordinarily, however, as already pointed out, a megacorp will have previously acquired sufficient reserve capacity to assure against its being put in such an embarrassing position.

Thus the megacorp’s supply curve is coextensive with its average revenue curve – up to the point where that curve intersects the marginal cost curve. The industry’s supply curve, again using per cent of engineered capacity as the relevant variable, is simply the weighted average of these individual supply curves; and like them it will be infinitely elastic up to a certain point, this point being the weighted average of the maximum quantities which a firm in the industry is willing to produce at the fixed industry price. What this means is that the industry’s current supply price will be independent of, that is, unaffected by, short-run fluctuations in demand. The supply curve will shift up and down – though more likely up than down – only in response to the factors discussed above in chapters 3 and 5, that is, in response to a change in the demand for and supply of investment funds or to a change in average variable and fixed costs (ignoring once again the influence of taxes). These are factors not easily manipulated in the short run – at least under present institutional arrangements – for they reflect the secular growth rate as perceived by megacorps, $G_t$, and/or the national incremental wage pattern, $W_p$.

The supply curve for the oligopolistic sector as a whole will therefore be perfectly elastic – at least in the short run. This is in contrast to the supply curve for the non-oligopolistic sector, which is positively sloped throughout. From this difference in the respective supply curves of the oligopolistic and non-oligopolistic sectors, two important points follow. The first is that it is only within the non-oligopolistic sector that a higher growth rate will necessarily lead to a higher price level, and thus contribute to the inflationary pressure. The underlying explanation for this propensity of the non-oligopolistic sector is not, as already pointed out, the inability to obtain additional labor inputs but rather, the absence of the reserve capacity found within the oligopolistic sector – a reserve capacity which enables the megacorp, unlike the neo-classical proprietorship, to expand output up to a certain point simply by starting up some previously idle plant or plant segment. Whereas therefore any increase in the growth rate is certain to be accompanied by a rise in the price level within the non-oligopolistic sector, in the case of the oligopolistic sector it need not. The very fact, however, that the price level within the oligopolistic sector is for the most part unaffected by short-run changes in aggregate demand means that the government will
find it extremely difficult to control the inflation likely to arise in that sector whenever the current rate of growth of investment and the current wage pattern, taken together, imply a greater claim upon the megacorporate leader's revenue than is likely to be realized at the current anticipated rate of growth. This is the second important point, and it helps to explain why an advanced economy such as that of the United States is likely to experience, not the Golden Age upon which some economists base their analysis but rather, the bastard Golden Age described by Joan Robinson (1962a, pp. 51-9). More specifically, it provides the final element necessary for understanding the dynamics of the inflationary process manifest in the wage-price spiral.

The dynamics of the wage-price spiral

To many it will appear than an unnecessarily long and circuitous route has been followed in trying to answer the question posed at the beginning of this treatise: What has been the cause of the persistent inflation experienced since the end of World War II? The excursion has been necessary, however, in order to demonstrate two important propositions about the recent inflationary experience. They are:

1. That the rise in price levels has not been due to any 'excess' growth of demand or, what is essentially the same thing, to pressure against the supply constraints on the rate of economic expansion;

2. That rather it has been due to the difficulty of adjusting the several variables which together determine the aggregate savings rate so that, following a change in the secular growth path, the economy on its new course will pass safely between the Scylla of a cyclical decline and the Charybdis of a wage-price spiral.

If both those hazards are to be avoided, then the variables such as \( \bar{P}_0 \), \( W \), and \( T \), which determine the aggregate savings rate must be adjusted so as to achieve simultaneously the following: (a) avoid an excessive growth of savings relative to investment that will curtail the rate of economic expansion and cause a cyclical movement around the secular growth path; and (b) distribute the concurrent gains in real income in a manner that is acceptable to megacorps, trade unions, the government, or any other organized group in society with the power to press successfully for a larger nominal share of the incremental social surplus. It is when the latter condition is not satisfied, presaging a struggle over the relative distribution of real income, that a wage-price spiral is likely to be initiated.

The model developed above, predicated on the division of the business sector into oligopolistic and non-oligopolistic subsectors, helps to explain why a shortage neither of manpower nor of productive capacity is likely
to curtail the secular growth rate. According to the model, the oligopolistic sector on the one hand faces a perfectly elastic supply curve for manpower, meaning that megacorps are able to obtain whatever additional workers they need at whatever are the prevailing rates of remuneration. This perfectly elastic supply curve reflects the differential in wages paid members of the laboring manpower force in the oligopolistic sector relative to what they could earn in other types of employment. The oligopolistic sector on the other hand can be expected to expand its productive capacity sufficiently in advance of demand so as to always have a certain amount of reserve capacity. This ‘cushion’ reflects the desire of individual megacorps to protect themselves against a possible loss of relative market position, either to rivals within the same industry able to supply customers they themselves are forced to turn away or to new firms attracted into the industry by the shortfall in supply.

The model posits a quite different situation in the non-oligopolistic sector. On the one hand the firms in that sector are seen as being able to obtain additional manpower only by drawing more heavily upon the surplus labor to be found in the countryside and, more immediately, among the urban unemployed. Faced with the need both to stem the outflow of workers into the oligopolistic sector and to attract more workers themselves when the rate of economic expansion exceeds the secular average, these firms will be forced to narrow the differential in wages between the oligopolistic and non-oligopolistic sectors. This implies a positively sloped rather than a perfectly elastic supply curve for manpower. On the other hand the firms in the sector are seen as being unlikely to expand their capacity in anticipation of growing demand. This is because, being family-based proprietorships, they are incapable of operating more than one or two plants. Instead, capacity is increased through the entry of new firms into the various industries which comprise the sector, the firms being attracted when the increased demand, pressing against a fixed amount of plant and equipment, leads to rising marginal costs and widening profit margins.

In the non-oligopolistic sector, then, momentary supply bottlenecks, due to the difficulty of obtaining manpower and/or a lack of capacity, may arise. This does not mean, however, that the overall rate of economic expansion will be significantly affected. The non-oligopolistic subsector is, after all, only a part of the business sector. Indeed, it is the less important part, constituting the periphery rather than the essential core of a modern, technologically advanced economy (cf. Averitt, 1968). With the exception of agriculture and textiles, the industries in the sector are either satellites of other, oligopolistic industries or else produce less essential types of goods. Even more significant in the present context, the non-oligopolistic subsector is characterized by less capital intensive
methods of production and is marked by lower rates of growth. Whatever bottlenecks may arise therein, they are likely only to slow down the overall rate of economic expansion.

This is borne out by the empirical evidence for the United States from the post World War II period, especially the 1960s. While satisfactory manpower data have become available only recently, there is no reason to believe that megacorps have, at any time during the twenty-five years between 1946 and 1971, been forced to cut back on production because they could not obtain the workers they needed. Indeed, the job vacancy rate for all of manufacturing between April and October 1969, a period during which the economy was at a cyclical peak, averaged only 1.4 per cent, and this was at a time when the unemployment rate was 3.5 per cent (Monthly Labor Review, March 1970). There is, to be sure, scattered evidence of smaller firms being unable at times to obtain all the workers they have needed at wage rates they were willing and able to pay. But it is doubtful that this has ever led to more than a local slowdown in the delivery of goods or services. It has certainly not had much discernible effect outside the non-oligopolistic subsector.

Nor is there any reason to believe that megacorps in the United States have, at any time during the post World War II period, been forced to cut back on production for lack of capacity. Indeed, the evidence already pointed out indicates that megacorps have almost always had at least 10 per cent unutilized, or reserve, capacity, and never less than 5 per cent (see note 29 to chapter 2). Since the available data pertain almost entirely to large firms, it is not possible to say with certainty what the situation has been in the non-oligopolistic subsector. But again, there is nothing to suggest that bottlenecks in that subsector - in this case, stemming from lack of capacity - have to any significant degree restricted the overall rate of economic expansion. Thus, whether it is manpower or productive capacity which is seen as the effective constraint, there is little or no direct evidence of the pressure against supply that would be observable were the post World War II inflationary experience in the United States to be explicable in terms of 'excess' demand.36

The model developed above provides an alternative explanation of inflation, however. It suggests that a delicate balance is required to assure both the secular growth rate is maintained and that the national income is distributed in a manner that is acceptable to the groups in society - megacorps, trade unions and the government - with the power to command a larger nominal share. The experience of the United States during the 1960s reveals just how delicate that balance is and what happens when it is upset.
The experience of the 1960s. The American economy was only beginning to recover from its third recession in eight years—the last two at least brought on by the efforts to control inflation through conventional fiscal and monetary instruments—when the Kennedy Administration took office in 1961.37 The new President’s economic advisors devised a strategy intended not only to achieve the higher secular growth rate promised during the campaign but also to prevent any accompanying rise in price levels. The strategy called, on the one hand, for fiscal and monetary measures to stimulate the economy. Although political considerations made it inexpedient to push in Congress for an increase in the budget prepared by the outgoing Administration, the Berlin crisis in the summer of 1961 finally opened the way for an increase in Federal spending without an offsetting rise in taxes (Heller, 1966, pp. 30-5; Tobin, 1974, pp. 21-4). Led in part, but only in part, by defense outlays, Federal expenditures were to grow in real terms during the first eighteen months of the Kennedy Administration at equivalent annual rates of more than 11 per cent. The growth of total government expenditures \( I_G \) in the model set forth above was slightly over 8 per cent.38 Meanwhile, the less restrictive monetary policy which the Federal Reserve Board was persuaded to adopt led to a recovery and subsequent boom of residential construction.39

But the strategy devised by the New Frontier economists had a second aspect to it. This more novel feature of the Kennedy Administration’s economic policy called for the Executive Branch to intervene in advance so as to influence, if not actually determine, the national incremental wage pattern \( W_p \) in the above model. Thus it was that the Council of Economic Advisors in their 1962 report set forth ‘guideposts’ which called for wage increases to be limited to the secular growth of output per worker \( \frac{Z_i}{Z_i} \) in the above model. According to the Council, this would not only permit wages and profits to keep pace with one another as they both rose over time, it would also hold unit labor costs constant, thereby avoiding any upward pressure on prices from the cost side. (Economic Report of the President, 1962, pp. 185-9; Sheahan, 1967, ch. 2). Implicit in the policy, though not openly stated, was acceptance of the argument that the inflation of the 1950s had been due, at least in part, to cost-push factors.40

The guideposts, described in only the most general terms in the January report of the Council, soon became more specific as a result of the ‘key’ negotiations conducted in the steel industry later that spring. The Steelworkers’ union, bowing to pressure from officials of the Kennedy Administration, settled in April for a contract which raised labor costs within the industry by less than the 3 per cent by which output per
worker throughout the economy was estimated to have increased between 1947 and 1960. When the steel companies nonetheless shortly thereafter posted price increases of $10 a ton or 3.5 per cent, the President was faced with a choice of either intervening forcefully and directly to secure a rollback in steel prices or allowing the guideposts to become a shambles. Kennedy, of course, opted for the former course and when, under the extraordinary pressure placed on them by threats of antitrust prosecution and canceled defense contracts, the steel companies finally buckled under, the guideposts were a firmly established policy (Sheahan, 1967, ch. 4; McConnell, 1963). Not surprisingly, in view of what has been said previously, prices within the oligopolistic sector were to remain remarkably stable over the remaining three years of the then current wage round, despite the high growth rate experienced by the economy as a whole.41

Although that growth rate, in real terms, was to average 5.0 per cent from the second quarter of 1962 through the second quarter of 1965 (5.7 per cent from the second quarter of 1961 on), there were signs toward the end of 1962 that the recovery from the earlier recession had spent itself and that indeed the economy was about to embark on another downward movement. More alarming to officials within the Kennedy Administration that even the decline in the growth of real GNP was the failure of the unemployment rate to fall below 5.5 per cent, since it was the unemployment rate which was most widely regarded as the measure of how close to its potential the economy was operating. The rate of growth of employment (outside of agriculture), because it excludes the effect of rising demand in attracting more persons into the labor force, is undoubtedly a better measure of the economy's ability to provide jobs, but even this figure, after stabilizing during the first three quarters of 1962 at the secular average for the 1960s of about 2.5 per cent, had again dipped toward the end of the year to only slightly over 1 per cent.

The diagnosis of the problem by officials within the Kennedy Administration was similar to what has previously been described as the greater elasticity of the savings curves in the oligopolistic and government sectors relative to that of the investment curves in those two sectors. The name given to the problem, at least insofar as the government sector is concerned, by Kennedy's chief economic advisor, Walter Heller, was 'fiscal drag' and the solution which he and his colleagues on the Council of Economic Advisors succeeded in persuading the President to recommend in his 1963 economic message to Congress was a reduction in taxes, both personal and corporate.42 It was to be more than a year, however, before this proposal was enacted into law, and then a further year was to pass before the second part of the two-stage tax reduction was to take effect. In the meantime, not only had Johnson succeeded
Kennedy as President - indeed, it was largely because of Johnson's greater skill in dealing with Congress than the tax bill was finally passed - but also the economy was once again growing at a rate approximately equal to the 5.7 per cent average for the 1961-5 period. The avoidance of anything more serious than a slight dip in the growth rate during the winter of 1962-3 was due largely to the slack taken up first by consumer durable expenditures, together with residential construction (household investment, $I_H$, in the above model), and then, as it became increasingly clear that the normal cyclical pattern of economic activity had been altered, by business fixed investment, particularly in the oligopolistic sector ($I_O$ in the model).43

As the fourth quarter of 1964 approached, the strategy devised by the New Frontier economists seemed to be working much better than any of them would have dared to hope in 1961. A higher secular growth rate and the virtual end of the trade cycle, political and otherwise, had both been achieved - and this without any significant rise in price levels. While the fourth quarter of 1964 would show some signs of a weakening in demand, similar to what had occurred two years earlier, the second round of the tax cut, due to take effect on 1 January, seemed certain to nudge, or 'fine tune', the economy back on its secular growth path. Nonetheless, despite the bright prospects which the future seemed to hold, 1965 was to mark the beginning of the series of events that would produce the inflation of the late 1960s.

The first of these was the establishment of a new national incremental wage pattern, $W_o$, under circumstances that would increase organized labor's suspicions that the Presidential guideposts were being unfairly applied. The Council of Economic Advisors had, in its 1964 annual report, calculated the secular growth rate of output per worker, $Z_o$, at 3.2 per cent based on a five-year moving average, and this figure had then been put forward as the recommended limit on increases in labor compensation (Economic Report of the President, 1964, pp. 114-15). When, just prior to the new contract talks in the steel industry in the spring of 1965, the five-year moving average was recalculated, it turned out to be 3.6 per cent. The Council, fearing that the unusually prolonged expansion of the economy was a distorting factor, insisted that 3.2 per cent was still the appropriate estimate of $Z_o$ (Economic Report of the President, 1966, p. 92; see also Sheahan, 1967, pp. 21-4, 47-8). This seemingly arbitrary shift in the basis for determining the wage standard, coming on the heels of the refusal by the automobile industry to lower its prices when, under the guideposts, it should have, left organized labor somewhat disenchanted with the wage and price stabilization program (Sheahan, 1967, pp. 46-7). The fact that wages were rising more rapidly in the sectors not covered by the major AFL - CIO unions
did not increase the labor leaders' confidence in the guideposts.\textsuperscript{44}

Even so - and despite the fact that its leadership had only recently been overturned, in part because the former president was thought to have taken too soft a bargaining position in the previous negotiations - the Steelworkers finally agreed in September, following quite forceful Presidential intervention in the deadlocked talks, to a contract which, it was estimated, would increase labor costs over each of the three years of the contract by no more than 3.2 per cent. Some of the settlements in other industries, including that by the Steelworkers' union itself in the aluminum industry, were more closely in line with the estimated 4.9 per cent increase which the Automobile Workers had obtained the year before following the refusal of the auto companies to lower their prices, but the majority of settlements that followed fell within the 3.2 per cent figure. As the Council declared in its 1966 report: 'The generally satisfactory record of 1965 wage contracts has important implications for wage trends . . . Because of the relatively light calendar of expiring contracts, the basic pattern of wages for most key industries has already been set for 1966.' (See also Sheahan, 1967, ch. 5.) The success in moderating wage demands had been achieved, however, at the expense of undermining confidence by organized labor in the mechanism most directly responsible for the moderation. And as prices began to rise in 1965, despite the guideposts, that confidence was even further eroded.

Contrary to the popular impression, the inflation of the late 1960s did not just begin with the decision of the Johnson Administration in the summer of 1965 to intervene in Vietnam with large-scale military forces. Prices within the oligopolistic sector had begun to rise even earlier, starting around the first quarter of the year - though at the somewhat moderate rate of less than 1 per cent per annum (see fig. 26). The end of the price stability which had prevailed during the preceding four years was due in large part to the need which megacorps felt to increase their average corporate levy, a need deriving from the higher secular growth rates which had been achieved and the resulting pressure to expand plant capacity more rapidly. Indeed, beginning in the second quarter of 1963, investment in new plant and equipment had been increasing at equivalent annual rates of approximately 14 per cent, and while the rate of growth of corporate cash flow net of dividends had by and large kept pace, in the fourth quarter of 1964 it declined significantly even as the expansion of capacity continued undiminished.\textsuperscript{45}

The decision to intervene in Vietnam did, it is true, exacerbate the problem of inflation, but not, as is sometimes assumed, by creating a general condition of excess demand and not by causing any shortage of workers. While providing more fiscal stimulus than had been counted on for 1965, the build-up of US forces in Southeast Asia was, by the
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end of the year, being offset by cutbacks in other areas, including, though by no means limited to, Federal spending. Indeed, as a result of both the temporary freeze placed by the Johnson Administration on non-defense expenditures and the collapse of residential construction caused by the Federal Reserve's tight money policy, the economy went into a 'mini-recession' during the first quarter of 1967, with the real growth rate actually turning out to be negative (Economic Report of the President, 1966, p. 78). In other words, it was during 1965 and 1966 that the Vietnam build-up was to have its greatest impact on the level of aggregate demand. And while employment outside of agriculture had grown at equivalent annual rates of 3.4 per cent during this period, well above the average for the 1960s, the unemployment rate still stood at 3.7 per cent in January 1967. The Federal Reserve Board index of capacity utilization, though holding at the unusually high level of 88.9 per cent, had meanwhile passed its peak during the preceding summer. Even more important, in terms of understanding the inflation of the late 1960s, the wholesale price index was only 5.1 per cent higher than it had been at the beginning of 1965 (reflecting an annual growth rate of 2.5 per cent) - and only 3.8 per cent higher (an annual growth rate of 1.9 per cent) if the prices of commodities are ignored. Except for the fact that prices were no longer stable, the situation was superficially similar to what it had been following the Berlin build-up in 1961-2, with the economy expanding during 1966 at an equivalent annual rate of 5 per cent.

The Vietnam build-up was nonetheless to contribute to the inflation of the late 1960s in two important ways. The first was its effect on prices in the non-oligopolistic sector. Clearly, certain inelasticities on the supply side, especially in the case of food items such as beef, played a role. But, as already pointed out, the price level in the non-oligopolistic sector, unlike that of the oligopolistic sector, is quite sensitive to demand conditions. Thus the Vietnam build-up, coming on the heels of the stimulus to household spending provided by the second installment of the tax cut in 1965, pushed the economy up well above its secular growth path. While prices in the oligopolistic sector were only minimally affected, those in the non-oligopolistic sector rose quite sharply, advancing at equivalent annual rates of 5.3 per cent between the beginning of 1965 and the end of the third quarter of 1966. This upward surge, especially of food prices, together with similar increases in the price of services, led to a significant decline in consumer purchasing power at a time when the machinists' union was negotiating what would turn out to be a 'key' contract with the airlines (Economic Report of the President, 1967, pp. 86-94; Sheahan, 1967, pp. 57-60).

The second effect of the Vietnam build-up was to divert an increasing portion of total resources into the government sector. Indeed, this was
to be the most serious consequence of the decision taken in the summer of 1965. When the domestic programs that were part of President Johnson's other 'war' began to have a significant budgetary impact beginning in 1967, the continuing high levels of spending for the Vietnam war meant that the government was forced to press against the other sectors of the economy for available resources. With its power to engage in deficit spending, the Federal government was, of course, unlikely to come up short. But the oligopolistic sector, with the power over prices which the corporate levy reflects, was no less able to make good its claim on the national product. Indeed, with the high growth rates already realized and in prospect, the oligopolistic sector had somehow to hold on its previous share of resources if the expansion of capacity within the sector was to keep pace with the growth of demand. This left only the household sector to bear the burden of the shift in economic priorities which the war in Vietnam, on top of the war against poverty at home, implied. The fact was that, with both the secular growth rate and the expansion of the public sector which the Johnson Administration’s policies portended, the previous rate of growth of real income within the household sector could not be maintained - even if output per worker, instead of declining as it did in 1967, had continued growing at the same rate.

Thus, as the time approached for new contract talks in the automobile industry in the fall of 1967, even the now suspect 3.2 per cent figure no longer represented a non-inflationary national incremental wage pattern. And trade union leaders like the United Auto Workers' Walter Reuther, in the face of the substantial rise in consumer prices which, during the preceding two years, had more than halved the gains in real compensation for employees, were not about to settle for just 3.2 per cent. Although the situation demanded a lower national incremental wage pattern, \( \Delta W_p \), if a further inflationary push was to be avoided, the guideposts established by the Council of Economic Advisors had lost all credibility. Indeed, the best advice which the Council could offer was that organized labor should not try to recoup all the losses of real income which its members had suffered during the preceding two years (Economic Report of the President, 1967, pp. 127-34). When, despite this warning, the United Auto Workers, following the pattern which had been set in the airline industry the year before by the machinists' union, succeeded in obtaining a contract which pushed up labor costs by an estimated 4.9 per cent, the wage-price inflationary spiral was fully under way. And while the insistence on higher wages by individual unions could, to some extent, improve the relative position of their members, it could not make the household sector as a whole better off. Whatever increase in compensation was obtained by any one group of workers trying to
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recover lost ground, the gains were subsequently reduced in value by the steady rise in prices. With high levels of demand again being realized, prices within the non-oligopolistic sector were to increase by 4.8 per cent in 1968. The mere 1.9 per cent rise in prices within the oligopolistic sector somewhat moderated the trend, but still the consumer price index would advance by 4.2 per cent during the year (see figure 26). The representative household thus found it impossible to translate its gains in nominal income into gains in real income.

Moreover, this wage-price inflationary spiral, once set in motion, was impossible to bring to a halt either by lowering the aggregate growth rate, as the Johnson Administration tried to do toward the end of 1968,
or by engineering a full-blown recession, as the incoming Nixon Administration succeeded in doing during 1969-70. The point is that the difference between the secular growth of output per worker, \( \dot{Z}_J \), and the national incremental wage pattern, \( \dot{W}_P \), determines what the change in unit labor costs will be within the oligopolistic sector, and this change in unit labor costs, together with whatever change in the average corporate levy is dictated by the secular growth rate, \( \dot{G}_J \), in turn determines whether there will be a change in the price level within the oligopolistic sector, \( \dot{P}_O \). Thus, while the price level within the non-oligopolistic sector can be directly influenced by fiscal and monetary policy, the price level within the oligopolistic sector cannot. \( \dot{P}_O \) depends not only on the secular rate of economic expansion, as set by government policy, but also on the national incremental wage pattern established through collective bargaining between the trade unions and megacorps in the bellwether industry. Efforts to control the price level in the oligopolistic sector by reducing the rate of economic expansion will not only be ineffectual, they may even, because of the effect on output per worker and the realized corporate levy, actually boost the rate of inflation. This is the lesson of the 1960s – and indeed of the entire post World War II period.