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THE ECONOMIC ENVIRONMENT FOR REGULATION IN THE 1980s

BARRY P. BOSWORTH*

In recent years substantial criticism has been directed at government regulatory activities across a broad range of areas because they are perceived as contributing to the worsening economic position of the United States. While the effects of regulation on the economy constitute the primary subject of this volume, it is also true that general economic conditions help shape the environment of opinion in which new regulations are prepared and old ones revised or eliminated. This paper identifies several factors that are likely to affect the economy in the decade to come, and discusses their implications for environmental regulation.

After a decade of strong expansion in the 1960s, economic growth came to be taken for granted; attention was increasingly directed toward managing an affluent society. Emphasis in public policy shifted to such matters as improving the distribution of income, and protecting consumers, workers and the environment from the external costs of an industrial society. These issues, while important in their own right, obtained a high degree of public support because of the perception that the general goal of economic growth could be achieved on a sustained basis. In addition, the potential competition with other claims on the nation's economic resources was minimized because the focus of the discussion was directed toward how to spend the growth dividend of future years.¹

The pendulum began to swing back toward a greater emphasis on prices and output during the 1970s. Worsening difficulties with inflation and stagnant or falling real incomes increased public concern with the state of the economy and motivated an intensive search for villains. As in any period of dissatisfaction, the activities of government, including fiscal, regulatory, and administrative activities, provide a highly visible focal point for such discontent.

As we enter the 1980s, the issues of inflation, employment, and economic growth have reemerged as the central concerns of eco-

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1. In some cases the proponents of these programs denied the existence of a conflict with other resource claims. It was argued that these demands would generate their own supply and further the expansion of the nation's material wealth.

conomic policy. Inflation is in excess of 10 percent on a sustained basis, unemployment is above the critical levels that triggered the expansionary policies of the early 1960s, productivity growth has fallen to about a third of its historical trend, industrial capacity is inadequate to employ the expanded work force of the 1970s, and the economy is extremely vulnerable to disruptions in world energy and food markets. All of this suggests that the 1980s will be dominated by severe constraints in every area and increased social and economic conflict. In sum, the coming decade will not be conducive to the expansion of programs limiting the external costs of industrial growth.

There is a growing professional consensus and public understanding that the economic problems we face in the 1980s are serious. However, there is no similar consensus with respect to the policy actions that should be taken in response. In part, this lack of consensus reflects the fact that policies best suited to deal with each problem in isolation conflict with those required in other areas. There is fairly widespread agreement, for example, that a sustained period of demand restraint is a necessary ingredient of an effective anti-inflation policy. Yet, such restraint and slow growth is not conducive to the increased capital formation necessary to increase productivity growth and expand industrial capacity. Disputes also arise because different policies impose burdens and sacrifice on different groups.

The general theme of this paper—that the 1980s must be seen as a decade of severe constraints on economic gains and policies—can be highlighted by focusing on three issues: inflation, productivity growth, and the competitive position of major U.S. industries. The first two are of concern for environmental regulation because they suggest a heightened degree of competition for scarce resources. The third is important because those industries subject to the most severe competitive problems in world markets are often affected significantly by government regulations. In the search for measures by which government can assist in the “revitalization” of these industries, it is only natural that a reduction of regulation will be high on their agenda—even if regulatory costs are not a significant cause of their problems.

INFLATION

Current inflation can be most aptly described as a combination of two factors. First, there exists a self-perpetuating underlying cycle of wage and price inflation that is only loosely related to overall demand conditions; it is more reflective of past inflation and expectations of future inflation. Second, our current inflation is affected by a series

of shocks or disturbances that exacerbate the underlying rate, raising it to a higher plateau.

The high underlying rate of inflation occurs because each individual perceives his own actions as a defensive response to the inflationary actions of others. Wage demands are fueled, not by a perception of labor shortages, but by a desire to match past price increases and the wages of others and by expectations that the process will continue. On the price side, most business firms justify their price increases as a simple pass-through of higher costs. That is, everyone participates in perpetuating inflation, but no one sees himself as the cause. While most persons realize that they are not gaining from this repetitive cycle, no one dares to exercise restraint because there is no assurance that others will do the same. Indeed, it is a variant of the now-familiar "prisoner's dilemma" in which we are all prisoners of inflation.²

In the past decade, the United States has also experienced an unusual number of shocks that have exacerbated price inflation and raised it to new heights. This has happened because the increased integration of the world economy leaves the United States far more vulnerable to crop failures, sharp increases in petroleum prices, or other disruptions in international markets. Large price increases in these markets can have an immediate dramatic impact on the inflation rate, but the effects become longer lasting when everyone else escalates their wage and price increases in an effort to catch up. The result is an upward ratcheting of the underlying rate and a carryover of inflation into future years.

The underlying momentum of industrial wage and price increases has, for several years, averaged 7 to 8 percent annually.³ But in 1978-79, sharp price increases for food, housing, and energy drove the overall inflation rate to an annual rate of 13 percent.⁴ In early 1980, sharply higher interest rates temporarily raised the rate of increase of the consumer price index as high as 18 percent on an annual basis.⁵ While the worst of these shocks may be behind us, the effort to catch up with this last burst of price increases is leading to a steady escalation of domestic wage and price increases and an upward ratcheting of inflationary momentum. Thus, the United States enters the 1980s

2. The term "prisoner's dilemma" derived from the problem faced by two prisoners, who are interrogated separately. If one accuses the other, he may go free, unless he himself is accused. Thus, acting individually, they will choose a strategy inferior to that which would emerge if they acted together to deny any wrongdoing.

3. Bosworth, *Economic Policy*, in *SETTING NATIONAL PRIORITIES: AGENDA FOR THE 1980s*, at 43 (J. Pechman ed. 1981).

4. *ECONOMIC REPORT OF THE PRESIDENT* (1981).

5. *Id.*

with a built-in and self-sustaining inflation rate of about 10 percent and a continuing vulnerability to further shocks that could drive inflation far higher.

The tasks for economic policy, therefore, are twofold: breaking the momentum of the underlying wage-price cycle, and finding a means of avoiding or dampening the influence of potential future shocks that threaten to accelerate the process. The resulting dilemma is that the effort to break the momentum of the wage-price cycle with the traditional tools of fiscal and monetary restraint can be successful only at the cost of high levels of unemployment for a sustained period. At the same time, little or nothing has been done to reduce the vulnerability of the economy to the types of inflationary shocks that proved costly in the 1970s.

Inflation has often been described as a purely monetary phenomenon. In fact, there is substantial truth to the argument that if the growth of the money supply (adjusted for secular trends in velocity) does not exceed the growth in physical output, inflation cannot continue for long. At the same time, the supply of money is controlled by government. Thus, from one perspective, inflation can be viewed as a political rather than an economic problem.

The term "monetary restraint," however, should be understood as a euphemism for a process by which a refusal to increase the money supply in the face of inflation raises interest rates, reduces demand, and lowers output and employment. Increased competition for jobs and sales forces restraint in wages and prices. In effect, control over the money supply is the means by which a society forces a reconciliation of the demand for more with the constraint of that which is available. By controlling the pool of the unemployed, government can control inflation.

The difficulties for anti-inflation policy emerge from the application of this model to the real world. In many markets, prices and wages appear to be highly insensitive to variations in demand. Instead, the major effect of a reduction in demand is a reduction in production and employment, without the expected larger effect on prices and wages. Thus, the refusal of the monetary authorities to accommodate inflation requires the explicit acceptance of increased unemployment and lost output. This same problem is equally evident with respect to inflationary shocks. In theory, a rise in food or energy prices should change relative prices but not the average price level. Increased expenditures on products whose prices have risen implies reduced demands for other products and should make for offsetting declines in other prices. Yet, reduced demand for products such as

automobiles in response to higher energy prices is likely to result in offsetting reductions in production rather than prices. In the face of this conflict, monetary authorities have normally opted for a compromise of partial accommodation with some rise in inflation and some increase in unemployment—a situation which has satisfied no one.

Much of the recent discussion of anti-inflation policy has emphasized a gradualist approach, whereby a high but not extreme level of unemployment and slow growth is tolerated over a period of several years. Even the most optimistic estimates, however, suggest that such a policy would require nearly a decade of very slow growth in aggregate demand to have an appreciable effect on the inflation rate. There are doubts that the political process could stand the strain, and the gradualist approach may set in motion strong pressures by individual interest groups to achieve changes in the rules and institutions (e.g., trade protection and minimum price and wage laws) to protect themselves against the consequences of such a policy—thus intensifying the basic problem. Such a policy is also highly vulnerable to disruptive shocks, similar to those of the 1970s, that would negate any of the gains.

The alternative of extreme fiscal and monetary restraint offers the opportunity for greater immediate gains against inflation, but the pressures for a reversal of the policies in the face of sharply higher unemployment would be strong. In effect, this is the program being pursued in Great Britain, where the government has followed a policy of severe restraint combined with repeated emphasis that it will not back down in its refusal to accommodate continued inflation. While the outcome of that policy remains in doubt, the risks of the policy—both political and economic—are substantial since it polarizes public views. While economists in the United States continue to debate the precise magnitude of the unemployment costs, public opinion about demand restraint is likely to reflect individuals' perceptions of whether or not they will lose their own jobs.

On the other hand, there are substantial problems with anti-inflation policies that do not emphasize demand restraint. The failure to contain inflation in 1979–80 has done much to destroy the credibility of voluntary restraint programs. There is scant belief that restraint in one's own wage and price demands will be matched by similar efforts by others, while the difficulties of 1973–74 have convinced many economists and policymakers that wage and price controls are ineffective. Whether voluntary or mandatory, such programs are particularly difficult to operate in a world of sharply changing relative

prices when a single rule cannot apply to all markets; they are ineffective in the face of shortages; and they attract the strong opposition of those interest groups who feel that they would be disadvantaged.

Finally, the insensitivity of some wages and prices to competitive pressures has led some economists to advocate the uses of tax-based incentive policies (TIPs) to encourage adherence to a wage-price guideline.⁶ On a sustained basis, any such program would require both a penalty for excessive increases as well as a credit for compliance if the tax credit is not to erode tax revenues. However, defining and monitoring compliance under a TIP program raises problems of wage and price measurement that are equal to those of a full-blown controls program. The administrative problems of measuring compliance may be less bothersome for a temporary program. Yet, a tax incentive program of a size sufficient to have a dramatic short-run effect would severely strain budgeting resources. As such, it would compete with other proposals to use future tax cuts to promote capital formation.

In light of the difficulties with other approaches, it is likely that demand restraint will continue to be the focal point for anti-inflation policies. This seems particularly evident in the increased emphasis in recent years on the need for restricting monetary growth rates. Within this framework, it is extremely unlikely that monetary policy will accommodate any significant recovery of economic activity as long as inflation continues to run in the neighborhood of 10 percent. While efforts may be made to adopt a more stimulative fiscal policy through tax cuts, the principal result is likely to be higher interest rates, rather than increased growth.

This effect has an important implication for environmental and other regulation in the years to come. If unemployment and forgone real output are being tolerated to fight inflation, government or other policies that serve to increase prices will be viewed suspiciously. Since regulatory policies have this effect,⁷ they will come under careful review and may be opposed by those who are suffering in the name of demand restraint. In other words, those who are under- or unemployed because of demand restraint may see the relaxation of regulation as a "better" way to fight inflation.

This will be true even when regulation is well founded and forces firms to bear costs they have heretofore imposed on others. Similarly, attempts to remove subsidies to energy users or others benefitting from suboptimally low prices may be opposed on grounds of infla-

6. CURING CHRONIC INFLATION (A. Okun & G. Perry eds. 1978).

7. See Portney's paper in this volume.

tion. Thus, even policies which pass rigorous cost-benefit tests will have tough sledding in an anti-inflationary period.

Note that the "catch-up" phenomenon discussed above will amplify any direct effect of regulation on prices. When the higher costs associated with regulation are passed on in higher prices, wage earners will try to maintain purchasing power by demanding higher wages. They will do this even though they are already being "compensated" for higher prices by the improvements in environmental quality resulting from the regulation. In effect, by demanding higher wages to offset regulation-induced price increases, workers are requesting double compensation. When their wage demands are rewarded, it serves to perpetuate and increase the underlying inflation rate.

It is difficult to determine the precise size of "the catch-up" relative to an initial increase in price caused by regulation or some other change in policy. On average, however, the existing empirical models suggest that the effect is to double the impact on the price level within a two-year period.⁸ Thus, an initial set of government actions that raise the price level by 1 percent will ultimately lead to a 2 percent rise in prices. If the monetary authorities refuse to accommodate these price pressures by increasing the money supply, the same models suggest that unemployment would need to rise by about 1 percent. Individual regulatory and other administrative actions of government tend to have a small effect on the price level, but the cumulative impact of such measures can be substantial.

REAL INCOMES AND PRODUCTIVITY GROWTH

Much of the increased public concern with inflation in recent years has been the result of a dramatic surge in price inflation that has not been matched by an acceleration of wage increases. Yet, inflation alone does not explain the failure of average wage gains to match the increase in the price level. Other factors are of major importance. In particular, the decline in real wages highlights a problem that has attracted less attention than inflation—the sharp slowdown in productivity growth. The following data illustrate the effect of diminished productivity growth.

Real Wage Trends

The slowing of real wage growth for workers in the nonfarm business sector of the economy is evident in the data of Table 1. Despite an increase in the rate of growth of nominal wages from 4.5 percent

8. Author's unpublished estimate derived from simulations of the FRB-MIT-PENN econometric model.

TABLE 1
TRENDS IN NOMINAL AND REAL WAGE RATES
 (annual percentage rates of change, adjusted for inflation)

	Annual percentage change		
	1959-69	1969-79	1978-79
Nominal wage rate	4.5	7.3	7.8
Consumer prices (CPI)	2.3	7.1	11.3
Real-wage rate	2.1	0.2	-3.1
Contribution to real wages of change in:			
Productivity	2.2	1.1	-2.2
Wage share	0.5	0.4	1.8
Employer taxes	-0.1	-0.2	-0.2
Nonwage benefits	-0.1	-0.5	-0.3
Prices paid-vs.-received	-0.2	-0.6	-2.3
Addenda:			
Influence of alternative measure of consumer prices			
CPI minus consumer expenditure deflator	0.0	0.7	2.2

Source: Author's calculations and unpublished data on compensation and productivity from the Bureau of Labor Statistics, U.S. Department of Labor, and the Bureau of Economic Analysis, U.S. Department of Commerce.

annually in the 1960s to 7.3 percent in the 1970s, real wage rate growth slowed from 2.1 percent to 0.2 percent per year during that period. Real wage rates actually declined by 3.1 percent in 1979. The sources of this slowdown can be identified for the private nonfarm sector of the economy and are illustrated in the table.

The bulk of the slowdown is a direct result of the sharp falloff in the growth of labor productivity. In the 1960s, the growth of labor productivity matched the growth in real wage rates—2.2 percent annually. Productivity growth began to diminish in the late 1960s, fell off to an annual average increase of 1.1 percent in the 1970s, and actually declined by 2.2 percent in 1979.⁹ Thus, the slower growth of

9. Productivity improvement is central to any economy-wide expansion of real incomes. Without it, the gains of any individual or group must come at the expense of others. It also plays a crucial role in combating inflation by providing an offset to higher nominal wages and moderating the rise in unit labor costs. The causes of the productivity decline, particularly the role of environmental regulation, are discussed in Haveman's paper in this volume. Our interest here is more in its implications for real income growth and the shaping of future economic policies.

labor productivity accounted for over one half of the 1.9 percentage points of slowdown in annual real wage growth during the past decade.

On the other hand, within the private nonfarm sector, workers have gained from an increase in their share of total income. This gain comes at the expense of business (profits, interest, rent, and depreciation) and government (sales, excise, and property taxes). The change in income shares boosted the rate of growth of real wages by 0.4 percentage points annually in the 1970s compared with a 0.5 percentage point average for the prior decade. This change in the distribution of factor income is directly contrary to the commonly held view that price increases in excess of those for wages must have implied a larger profit share. Such a calculation, however, is very sensitive to business cycle fluctuations. Firms do not adjust employment fully to short-run variations in output, and these transitory changes in productivity and unit labor costs are absorbed in profit margins rather than being passed forward into prices. Thus, there is a tendency for changes in labor productivity and labor's share to offset one another over short periods. This cyclical pattern is evident in the data for 1978-79, when the impact of the productivity decline on real wages was partially offset by a sharp rise in the labor share.

Third, the rate of growth of real wages has been held down because an increasing proportion of total employment costs has been allocated to social insurance taxes and private fringe benefit programs such as pensions and medical insurance. These employer payments have increased from 8 percent of total compensation in 1959 to 16 percent in 1979. In the 1960s, the expansion of these two programs reduced the annual growth of wage rates by 0.2 percentage points. In the 1970s the differential expanded to 0.7 percentage points. While the expansion of employer payments for fringe benefits does reduce reported real-wage gains, it is quite different from the previous factors in its implication for economic welfare. Shifting the payment of health insurance from the individual to his employer, for example, lowers reported earnings but not the benefits to the worker.

Finally, the real income of workers may decline because of a loss in their "terms of trade," that is, the prices of goods they buy may rise more rapidly than the prices of the goods that they produce. Such an erosion of real incomes has occurred throughout the past two decades as prices for food, energy, and housing—important items in the consumer's budget—have risen more rapidly than the average price of the industrial products produced by American workers. Between 1978 and 1979, in particular, the more than 11 percent rise in the consumer price index (CPI) was far in excess of the 9 percent rise

in the nonfarm price deflator—a 2.3 percentage point loss of real income from this effect alone.

Any conclusion about this terms-of-trade effect, however, is very dependent upon the price indexes used in the comparison. The consumer price index used to compute the increase in the cost of living is a fixed-weight index that does not allow for changes in the mix of consumer purchases from one period to the next. Thus, it overestimates the impact of higher prices on real incomes since consumers will avoid some of the higher prices by shifting the composition of their purchases. Of more importance, the CPI's conceptual treatment of some expenditure items overstates the loss of real income. The home purchase component of the index, for example, focuses on the purchase costs for new home buyers rather than the maintenance costs of existing owners. Thus, the surge of home purchase prices has a large impact on the consumer price index even though most of the real income effect is a distributional change between new and previous home owners. In addition, the financing cost component of the index moves with cyclical changes in new mortgage financing rates, even though most existing owners have fixed interest mortgages.

These conceptual issues are highlighted in the addenda to the table, which compares the effect of using the consumer price index as opposed to another index—the consumption deflator of the national income accounts—to measure real wage gains. The two indexes of consumer prices increased in parallel during the 1960s, yielding identical estimates of real wage gains; but the annual growth of real incomes in the 1970s averages 0.7 percentage points higher if the expenditures deflator is used in place of the CPI, and the difference is 2.2 percent in 1977–79. Surprisingly, therefore, a conclusion about the effect of changes in relative prices, or the terms of trade, is very dependent upon the price index chosen for such a comparison. If the consumer price index is the basis for computing consumer living costs, the terms of trade effect reduced real wage growth by 0.6 percentage points in the 1970s; but the alternative, the consumption deflator of the national income accounts, implies little or no change in terms of trade. The selection of an appropriate price index is important because many individuals receive automatic increases in their income on the basis of changes in the CPI. If the index exaggerates the inflation rate, these persons are overcompensated and the inflation problem is exacerbated.

In summary, the data of Table 1 clearly indicate that there has been a serious erosion of real wage growth over the past decade. The

magnitude of that slowdown seems to be overstated by the use of the consumer price index and by the shift of income to employer-paid health and welfare plans. The decline in productivity is, however, of real consequence, and its effects on real incomes cannot be buffered indefinitely by an increase in labor's share of total income.

Real Income Trends

The notion of a slower growth in living standards is seemingly contradicted, however, by another set of data—per capita real disposable income as reported in the national income accounts. On this basis, gains in after-tax income in the 1970s nearly matched those of the prior decade. Typically, the difference between the growth of real wage rates and per capita real incomes is attributed to a growing proportion of employed persons in the total population and the use of the consumer expenditure deflator instead of the consumer price index to adjust for inflation. But trends in overall disposable income are also influenced by nonlabor incomes and changes in taxes and transfers. The influences of these various factors are illustrated in Table 2.

The table begins with *earned income* (before the deduction of employee social insurance taxes or the addition of transfer payments) per employed person in the population. All of the income measures are adjusted for inflation as measured by the consumer expenditure deflator and are expressed in per capita terms. The growth of income per employed person slowed very substantially during the 1970s,

TABLE 2
TRENDS IN PER CAPITA REAL INCOME, 1959–79
(annual rates of change, adjusted for inflation)

Total income	Annual rates of change	
	1959–69	1969–79
Earned income/employed person	2.5	0.8
Employment/population ^a	0.5	1.3
Earned income/per capita	3.1	2.2
–Employment taxes	8.7	4.3
+Transfers	5.6	6.6
Personal income	3.1	2.6
Personal taxes	5.7	2.6
Disposable income	2.7	2.5

Source: Department of Commerce, Bureau of Economic Analysis, and author's calculations.

^aEmployed persons from the household survey of the labor force.

averaging only 0.8 percent annually compared with 2.5 percent in the 1960s. A sharp rise in the proportion of the population employed, however, did offset much of this decline in growth. The ratio of total employment to the population rose about 2.5 times more rapidly in the 1969-79 period than in the prior decade.¹⁰ The effect on *personal income* growth was also muted by a marked deceleration of the growth in employee social insurance taxes and a rapid expansion of transfer payments, primarily social security. Thus, the decline in the growth of per capita personal income between the two ten-year periods was limited to 0.5 percentage points (2.6 percent annually versus 3.1 percent). Finally, the slowdown is nearly eliminated on the after-tax basis because personal income taxes rose at less than half the rate of the 1960s.¹¹ The net result is an expansion of real disposable income at an annual rate of 2.5 percent in the 1970s compared with 2.7 percent in the prior decade.

The upshot of all this is that the slower growth of productivity was not fully reflected in consumer incomes during the past decade, but these trends cannot be sustained indefinitely. The government cannot continue to increase the share of transfer payments in the total budget, and the budget deficit cannot again be increased to sustain such payments without an offsetting rise in taxes. In fact, there are currently strong pressures for higher defense spending, and large increases in social insurance taxes are scheduled for the early 1980s. Furthermore, most labor force projections suggest that the growth rate of the employment-to-population ratio will slow in the next decade. Thus, a slow growth in productivity in future years will have a much more evident impact on growth in real income.

Continued slow productivity growth is likely to have a major impact on economic policy during the 1980s as its implications for growth in standard of living become more evident. It will lead to intensified conflict between different social groups. In the past, a portion of each year's productivity growth was used to improve social security programs, expand private health and pension benefits, and raise the relative incomes of the most disadvantaged; yet, there remained enough to allow a significant general increase in real disposable or spendable incomes. Thus, it was possible to mediate among competing groups by promising more to some without actually reducing incomes of others. Such methods of avoiding direct social conflict will be far more limited in an economy with little or no

10. Surprisingly, this accelerated growth of the employment-to-population ratio reflects increases in the number of self-employed workers, not an expansion of wage and salary jobs.

11. This result is also in contrast to the common view that inflation has pushed taxpayers into higher tax brackets. The 1970s, however, was a period of several major tax cuts.

growth. Against this backdrop, it will be more difficult to garner support for regulatory programs that individuals may perceive as further reducing their real incomes. This will be true even if their benefits exceed the costs they are forced to bear because the beneficial effects of regulation may be less obvious than price or output effects.

Specifically, policy measures designed to improve productivity may require that a larger portion of the nation's current production be directed into capital formation, and research and development. It is evident that the productivity slowdown involves far more than just a reduced rate of capital formation. Much of the slowdown must lie with factors such as a reduced rate of technological progress, smaller gains from economies of scale, and special problems in individual industries. But capital formation is one of the few determinants of productivity growth that government policy can influence. The need for increased capital formation is reinforced by the failure of industrial capacity to expand during the 1970s, in contrast with the sharp growth of the labor force. Since that spending cannot expect to be reflected in any increased productivity benefits for several years, it will be sought against a background of small or nonexistent gains in consumer incomes, and a rising level of demands for more resources in areas such as defense spending, energy production, and payments for a growing retirement population.

Changing Competitive Advantage

Inflation and the policies used to restrain it have both had differential impacts on wages and prices in various industries. Some groups are more successful than others in adjusting their incomes for inflation, and there is a wide variation among markets in the sensitivity of prices and wage rates to changes in demand and supply. One consequence has been a major shift in the distribution of wages across industries.^{1 2} This has significant implications for the competitive position of some U.S. industries.

The role of relative wage changes is well illustrated for two industries whose competitive problems have attracted considerable public attention: automobiles and steel. Certainly a complete evaluation of the decline in their competitive positions would have to take account of many factors. Management has made mistakes in anticipating future market trends. The sharp decline in ocean freight rates reduced the competitive advantage of the domestic steel industry with respect to location near markets and raw materials. The shift away from large

12. B. Bosworth, Inflation and Relative Wage Rates (paper presented at Ontario Economic Council's Conference on Stagflation, Toronto, Ontario, Nov. 1980).

cars removed what had heretofore been a major trade barrier for foreign auto producers—without a home market base, they could not realize the economies of scale required to compete effectively in selling larger cars. As a final contribution to their problems, both industries have been slow to adopt new technology.

Although it has not attracted much attention, I believe that a sharp change in the relative wages paid in the auto and steel industries is an important element in the trade problems they have experienced. Relative wages (inclusive of fringe benefits and employment taxes) for the steel and automotive industries are shown in Figure 1. Compared with wages in all industries, wages in steel and autos are rising and it is difficult to explain this by normal models of competitive markets: both industries have experienced substantial declines in employment over the past decade. The very sharp rise in steel industry wages results in part from the effort to formulate a rule for adjusting wages for periods stretching beyond the formal three-year contract in return for a no-strike pledge. Currently, total hourly employment costs in automobiles and steel are in excess of \$18 per hour, compared with about \$11 per hour for all of manufacturing. This has had a doubly sharp effect on automobile prices because of the importance of steel as an input in production.

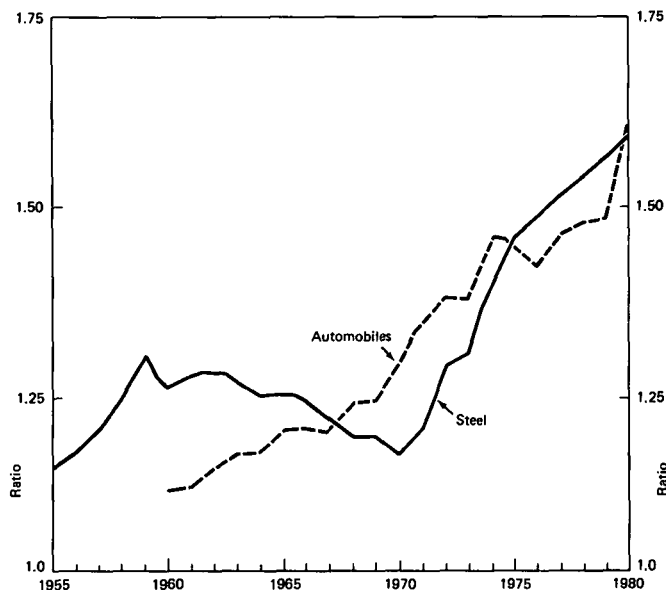
This shift in relative wage rates reflects the structure of labor markets in the steel and auto industries. Wage rates display little or no sensitivity to changes in demand conditions. Instead, these industries rely heavily upon formal and informal rules for adjusting wages (covering periods longer than that of a formal contract) as a means of avoiding continual conflicts between employers and employees. The adoption of such rules is not limited to these two industries, being relatively common in large impersonal establishments; but steel and autos are more exposed than most to foreign competition.

Such a practice is most evident in the 1946 adoption within the automobile industry of a formal rule for determining wage increases that has changed very little in 30 years: the wage increase is equal to an annual productivity increment plus cost of living. That is, it is a form of indexing, but on a much broader basis than inflation alone. Throughout the 1950s and 1960s, this was quite a reasonable rule and was adopted implicitly and explicitly in many other industries.¹³ As long as the productivity increment was closely related to the economy-wide average of 3 percent maintained between 1948 and 1966, it simply increased auto workers' wages in parallel with the rest of the economy. But two things happened to upset the balance of this

13. *Id.* at 13-16.

FIGURE 1
Relative wage rate trends.

(Industry compensation divided by that of total manufacturing) (Source: Computed from data of the American Iron and Steel Institute, General Motors, and the National Income Accounts. Compensation includes employment taxes and fringe benefits, and the hours are hours worked rather than paid.)



relationship during the 1970s. First, the growth of productivity slowed sharply from 3 percent to about 2 percent annually in the 1967-73 period, 1 percent between 1973 and 1979, and it has actually been negative in the past two years.¹⁴ Second, the consumer price index, to which these wages were tied, began to include a substantial element of external inflation—that is, a decline in the terms of trade as a result of higher food, energy, and land prices, as well as devaluation of the dollar. On average, domestic workers cannot be compensated for such cost increases, which originate from outside the domestic economy unless other factor shares decline. Thus, while the average real wage of the typical factory worker actually declined between 1969 and 1979, the real wage of workers in the auto and steel industries continued to rise at past trends.

The persistence of these wage rules in the face of changing economic circumstances is particularly evident in the 1979 automotive

14. ECONOMIC REPORT OF THE PRESIDENT 69 (1981).

contract. Prior to the negotiation, the auto workers' relative wage rate had increased from 1.25 times that of all manufacturing workers in the early 1960s to 1.5 times the average in the late 1970s; thus, there should have been no call for a catch-up for past inflation. Unemployment was high and rising and the industry was facing severe competitive pressures from foreign producers. The upcoming recession was widely predicted to have a disproportionate impact on the automotive industry. If ever competitive pressures would point toward wage restraint, it was true in the 1979 automotive negotiations. Yet the contract followed the same historical rule of an annual productivity improvement, compensation for inflation, and maintenance of existing fringes. The total nominal increase will total near 40 percent over three years and further increase the premium over other manufacturing workers' wages to about 75 percent. An even stronger case for restraint could be made in the negotiations with Chrysler where the workers faced the imminent loss of their jobs. The only result was an agreement to postpone the increases for four months. Despite the severity of the 1980 recession, it had no impact on automotive wage rates, increases in which continued to be dictated by the prior year's contract. Yet, the unemployment costs extended far beyond those who were party to the agreement.

In general, an economy that has experienced excessive inflation relative to its competitors will find that the depreciation of its currency will keep the price of its products competitive in world markets. Certainly this has been one element in the decline in the value of the dollar during the past decade. A decline in the exchange rate to offset increases in the economy-wide average wage rate, however, is not sufficient to afford protection to the automobile and steel industries.

The high relative wage rates in autos and steel would cause no particular competitive problem if they were matched by a similar wage structure in other countries. This is not true, however. The range of variation in relative wages is much narrower in other countries. In steel, only the Japanese wage differential approaches that of the United States and in automobiles no other country is close. There is also no common trend of changing relative wage rates in other countries comparable to that of the United States. In fact, one striking aspect of the international comparisons is that the United States has a far wider distribution of relative wage rates than other countries. Whereas that for the United States ranges from 60 to 160 percent of the manufacturing average, the range for other countries is a more narrow 80 to 125 percent.¹⁵

15. B. Bosworth, *supra* note 12, at 18.

Given equal access to capital and technology, it is difficult to believe that the United States can compete with other countries where wage rates are far below those here. It is equally important to remember, however, that this is a special problem for certain industries and not a general condition of the overall economy. Losses in autos and steel have been offset by the gains of other industries, such as textiles, which now find that their low relative wages improve their competitive position. Of course, while workers in these industries have jobs, many can't afford to buy an American automobile.

What does the behavior of relative wages in the automobile and steel industries imply about regulation? Like the problems of inflation and slow productivity growth, it seems to indicate a difficult period in which to launch new initiatives or perhaps even maintain the stringency of some existing rules. The difficulties faced by the auto and steel industries will place increasing pressure on government to provide some form of assistance to them. Naturally, industry will identify external factors such as regulation and foreign competition as the cause of its problems, rather than internal factors such as wage settlements or the quality of its management. Hence, the likelihood of pushes for regulatory relaxation and protection against imports.

This pattern will not apply across all industries, of course. For example, one industry heavily affected by environmental regulation—electric utilities—cannot claim the threat of foreign competition.¹⁶ Nevertheless, they will no doubt try to pin on regulations some of the blame for poor profitability that may result from overestimation of capacity needs or other internal causes. The challenge across all industries, of course, is a clear one. It is to separate as best we can the effects of regulation from those of the many other factors influencing industry and firm performance. Only when this is done will it be possible to weigh the legitimacy of plans for regulatory relief.

SUMMARY

In the years after the 1974–75 inflation shocks, Japan and Western Europe adopted more restrained economic policies that sharply slowed their rate of growth. Only the United States among the major developed countries attempted to return to the pre-1973 growth path. Western Europe adjusted to lower growth by a variety of different measures. It reversed the previous inflow of foreign guest workers and cut the length of the work week. In addition, most of these

16. They can point and have pointed, however, to environmental restrictions on coal use as rendering them more dependent on foreign sources of the energy used to generate their output.

countries experienced a slowdown in productivity growth equal to or greater than that of the United States;¹⁷ but, because their prior rate was so much higher, their lower growth rate placed smaller pressures on real incomes. By all of these measures, other industrial countries were able to minimize the domestic unemployment and political pressures associated with a reduced rate of economic expansion.

The growing difficulties with inflation in recent years now seem to have driven the United States into a policy of slower growth in step with that of other countries. The United States is likely to face far greater difficulties, however, in adjusting to the consequences of that policy. It cannot export its unemployment, which is already high, to other countries; and the continuation of slower productivity growth will have more dramatic implications for real income growth. Since the United States has far more heterogeneous population than many other industrialized nations, the tensions among competing interest groups for an increased share of a slowly growing pie are likely to be more severe.

The clear implication for environmental regulation is that there will be an intensified competition for the use of economic resources. This makes it more important than ever that environmental goals be pursued in cost-effective ways. The use of economic incentives in regulation is one way to accomplish this goal. While these tools are the subject of the final paper in this volume, one point is worth emphasizing here. The more we can reduce the costs associated with a given regulation, the greater are its chances of passing a rigorous cost-benefit test. Given the outlook for the 1980s, this test will play a larger role in the fate of all regulations, new and old.

17. Lawrence, *Keeping Up with the Mitsubishis*, in EXECUTIVE 24-25 (Spring 1980).