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THE INFLATIONARY IMPACT OF UNEMPLOYMENT: PRICE MARKUPS DURING POSTWAR RECESSIONS, 1947–70

A STUDY

PREPARED FOR THE USE OF THE

JOINT ECONOMIC COMMITTEE CONGRESS OF THE UNITED STATES

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The Committee regrets that the name of Professor Howard M. Wachtel was erroneously spelled in the letters of transmittal on page III.

LETTER OF TRANSMITTAL

OCTOBER 27, 1976.

To the Members of the Joint Economic Committee:

Transmitted herewith for the use of the Members of the Joint Economic Committee and other Members of Congress is a study entitled "The Inflationary Impact of Unemployment: Price Markups During Postwar Recessions, 1947–70," by Professors Michael M. Wachtel and Peter D. Adelsheim of the American University Department of Economics, assisted by David Moore. A comment on the paper by Professor of Economics Howard N. Ross of the Bernard M. Baruch College of the City University of New York is appended, as well as a reply to the comment by Messrs. Wachtel and Adelsheim. The study is the first in a volume dealing with the relationship of market structure to inflation as part of the Joint Economic Committee's 30th anniversary study series.

In the course of the 30th anniversary series, a wide range of economic issues is being examined in an attempt to develop improved means to achieve the goals of the Employment Act of 1946. Other studies focus on the problems of economic growth, planning, monetary and fiscal policy, and international issues, among others.

This study offers an explanation for the persistence of rapid inflation during periods of recession. Few problems in the past several years have proved more perplexing or more difficult to overcome. Messrs. Wachtel and Adelsheim recommend systematic government monitoring of prices in industries in which recent pricing behavior displays certain objective criteria indicating a lack of vigorous competition.

I would like to thank Messrs. Wachtel and Adelsheim, their assistant Mr. Moore, and Professor Ross for their extensive work in preparing this paper.

The views expressed in this document do not necessarily represent those of the Joint Economic Committee, individual Members of the Committee, or its staff.

HUBERT H. HUMPHREY,
Chairman, Joint Economic Committee.

OCTOBER 22, 1976.

Hon. HUBERT H. HUMPHREY,
Chairman, Joint Economic Committee, U.S. Congress,
Washington, D.C.

DEAR MR. CHAIRMAN: Transmitted herewith is a study entitled "The Inflationary Impact of Unemployment: Price Markups During Postwar Recessions, 1947–70," by Professors Michael M. Wachtel and Peter D. Adelsheim of the American University Department of Economics. They were assisted by David Moore. A comment on the paper

by Professor of Economics Howard N. Ross of the Bernard M. Baruch College of the City University of New York is appended, as well as a reply by the authors.

Messrs. Wachtel and Adelsheim expound a markup theory of pricing by firms and develop new evidence to show that recessions can spur rather than dampen price increases, thereby explaining the coexistence of rising unemployment and rising inflation rates in recent years. Examining the cyclical behavior of price markups over the business cycle, the authors conclude that many firms—particularly in concentrated industries—succeed in raising the margins between prices and direct costs in an effort to maintain profits, even though their sales and output levels are declining. They conclude furthermore, in view of the inverse relationship between margins and output in these industries, that Keynesian-type policies of macroeconomic restraint cannot be fully effective in combating inflation. Consequently, they argue, such policies must be supplemented by direct efforts to curb price pressures in those sectors which do not behave competitively.

This paper presents a number of new perspectives at a time when public policy toward controlling inflation and unemployment is being critically reexamined in an atmosphere of growing dissatisfaction with the performance of the economy.

JOHN R. STARK,
Executive Director, Joint Economic Committee.

CONTENTS

THE INFLATIONARY IMPACT OF UNEMPLOYMENT: PRICE MARKUPS DURING POSTWAR RECESSIONS, 1947–70*

By Howard M. Wachtel and Peter D. Adelsheim** With the Assistance of David Moore

I. INTRODUCTION AND SUMMARY OF CONCLUSIONS

Public policy is more comfortable in dealing with unemployment than it is in treating the problem of inflation. This would be of minimal consequence if inflation were not too severe or if inflation and unemployment occurred at different times but not concurrently. The problems of inflation and unemployment reach crisis proportions when inflation becomes very severe and when it occurs simultaneously with unemployment. This is the present state of affairs in the American economy and one which is likely to be a recurrent problem unless we take serious steps to confront the root causes of the problem: *growing economic concentration and power.*

This study addresses the specific question of why the simultaneous occurrence of inflation and unemployment is not an anomaly but is a logical and systematic outcome of the intersection of the business cycle with the pricing practices of concentrated industries. Economists have had difficulty in the past several years in the face of economic developments which transcend the boundaries of their traditional models. Keynesian economic theory and policy appears relatively impotent in the face of economic events not only in the United States but in virtually every other mature market economy in the world today.

Inflation explanations have been dominated by three main themes in recent years: inflationary expectations, excess demand, and random events leading to increased fuel and food prices. This study represents a departure from these other explanations in that the analysis of inflation is located in the pricing decision of firms—in particular, the formation of price markups during recessions.[1]

**Howard M. Wachtel is associate professor in the Department of Economics. The American University. Peter D. Adelsheim is an instructor in the Department of Economics, The American University. David Moore is a graduate student in the Department of Economics, The American University. William Noellert served as a research assistant on this study.

[1] A similar theme was echoed at a recent seminar on industrial concentration sponsored by the Library of Congress and the Joint Economic Committee. Frederic Sherer, Director of the Bureau of Economics of the U.S. Federal Trade Commission, said at that seminar: "Something is obviously wrong in the interaction between microeconomic behavior, especially industrial price setting, and macroeconomic events." And at that same seminar Lee E. Preston asked: "What is the connection between microeconomic organization . . . and the composition and functioning of macroeconomic systems?" (Library of Congress, Congressional Research Service, "Seminar in Industrial Concentration" (Sept. 20, 1975)).

In this study we examine the cyclical behavior of price markups. Of most importance for this study is how a model of price markups with target profits operates in the recessionary phase of the business cycle. Here we encounter a most interesting model which goes a long way toward explaining why the simultaneous occurrence of inflation and unemployment is a logical outcome of this type of economic behavior rather than a paradox as it is in traditional Keynesian theory. Consider a firm operating in a concentrated market environment attaining its desired target profit rate. Then introduce a recession (caused for any reason). If the firm loses revenue through a sales reduction during the recession, it will try to recoup the lost revenue from those diminished sales by increasing the price markup for its remaining sales so that it can get closer to the target profit rate it started with. The motivation to do this is pressure from stockholders on the company executives which takes the form of imposing some profit expectations on management as dictated by its previous profit posture and the profit position of others in the firm's orbit of comparison.

The consequence of this for economic policy is that traditional Keynesian macro prescriptions which call for the creation of unemployment and recession to mitigate inflation are in reality a major contributing cause to the inflation that occurs during recessions, as suggested in the theoretical discussion below of markup pricing and target profit behavior.

In the next section of this study we examine the theory of markup pricing and target profit behavior as it illuminates the phenomenon of stagflation—the simultaneous occurrence of inflation and unemployment. With conditions of economic concentration, the theoretical and empirical clue to unlocking the mystery of stagflation is found in a comprehension of the way markup prices and target profit behavior evolve during recessions. Following this, in the next section we discuss the problems encountered with the data needed to conduct an empirical inquiry flowing from the theoretical foundation we have prepared in the first section. With those data qualifications in mind, we then proceed in the final section to conduct an empirical inquiry into the movement of price markups during the postwar recessions. Finally, in the fourth section we combine our theoretical and empirical findings into some operational policy proposals concerning stagflation.

The following are some of the principal conclusions that emerge from the study:

1. In conventional economics, widely accepted among academic economists and policymakers, the firm is viewed as a passive recipient of prices which are established in a reasonably competitive market over which the firm has little control. However, when markets become concentrated, as they now are, firms are able to take an active role in setting the prices charged for their products. And if their sales fall below a level which would enable them to attain their target rate of profits, then they will raise their prices in order to recoup the revenue lost through the declining sales which occur in a recession. In this way the business cycle intersects with pricing practices in the firm. During a recession, when sales fall, firms operating in concentrated markets with substantial economic power will increase their prices to offset revenue losses from declining sales, thereby charging a higher markup per unit of sales in order to attain their desired target rate of profits.

When a recession exists, the tendency is for firms to raise their price markups if they are able to do so with relative immunity from any market revolt. This occurs primarily, but not exclusively, in markets which are highly concentrated.

In this way the simultaneous occurrence of unemployment and inflation becomes a logical and systematic outcome of the pricing practice of firms with economic power in the market rather than a paradox. If this analysis is valid then unemployment feeds inflationary pressures instead of mitigating them.

How long will the recession be inflationary under conditions described here? This depends on the concentration of economic power. The more markets are concentrated and the more intense is the perverse price behavior, the longer will be the period in which the response to the firm in the market is weak thereby permitting the firm to raise markups without suffering the consequences of substantially reduced sales in the market. Consequently, as the concentration of economic power increases in the economy, we need longer and deeper recessions before the conventional policy of creating unemployment to reduce inflation becomes anti-inflationary.

2. To evaluate the validity of our hypothesis that price markups rise during recessionary periods, particularly in concentrated industries, we collected data on price markups for three-digit manufacturing industries. We studied the behavior of price markups during the five postwar recessions from 1947 through 1970 and classified our industries into three concentration groups: High, medium, and low concentration. In general, the more concentrated the industry the greater the likelihood that price markups would increase during recessions, though this was not a total explanation for movements in price markups during recessions.

For example, between 53 and 57 percent of the industries in the high-concentration sector raised their markups during the postwar recessions (excluding the 1969–70 recession) while typically less than 50 percent of all industries in the low- and medium-concentration sectors raised their markups during the postwar recessions. On average, the increase in price markups in the high concentration sector was from 5 to 14 percent (again excluding the 1969–70 recession) while typically declines or only small increases in markups were recorded in the medium- and low-concentration sectors.

Though economic concentration takes us a good distance in explaining the perverse phenomena of rising markups during recession, it is not the complete answer to this puzzle because each recession is unique. For example, the concentration explanation is weakest during the 1969–70 recession for several reasons: first, the 1969–70 recession came on the heels of 9 years of expansion—a unique event in the American experience; second, foreign competition impacted with particular ferocity in the high-concentration sector during that period; and third, the conglomerate movement rendered our classification of industries by degree of concentration less reliable because a conglomerate is not identified in the data on economic concentration.

Since our data do not account for conglomerates, we discovered a most important phenomenon in the recessions of the 1960's compared with those of the 1950's. In the recessions of the 1960's the sectors of low- and medium-concentration manifested behavior more like the

high concentration sector in that many more industries increased their markups during the recessions of the 1960's than had done so in the 1950's. And we find that on average the decline in markups is much less in the 1960's in the low- and medium-concentration sectors, and in one instance they even rise.

The reason appears to be that, with the conglomerate movement, industries which are classified as being of low- or medium-concentration are owned by a parent company which operates in the sector of high concentration. Consequently, those industries which are parts of conglomerates take their price markup behavior from the sector of high concentration even though they remain classified as being in the sector of low or medium concentration. Thus, economic power overall has become more prevalent in the economy, and this is revealed in price markup behavior in the low- and medium-concentration sectors even though the data on economic concentration show minimal change in the quantitative measures we have to use to study economic concentration.[2] As a totality, though, this implies that the economy is becoming more inflation prone as the sectors of low and medium concentration join the high concentration sector in perverse flexibility in their price markups during recessionary periods. In short, as market power becomes more severe in the economy, the tendency for recession to feed inflation becomes greater, making it even more difficult to use traditional Keynesian policy prescriptions to alleviate inflation.

3. The statistical results of our study of price markups during the postwar recessions have important policy implications for inflation and unemployment. Standard economic policy used to combat inflation requires the creation of unemployment to ease demand pressures and thereby reduce the rate of increase of prices. However, this policy prescription is based upon the existence of a high degree of competition in product markets. If such competition is lacking then a different result occurs when unemployment is created to reduce inflation. As we have seen in this study, in sectors of economic concentration price markups are increased when unemployment exists in order to recoup the revenue lost from reduced sales.[3] And increasingly more sectors of the American economy are manifesting this type of perverse economic behavior. So instead of reducing inflation, unemployment can increase the rate of inflation under conditions of economic concentration. The traditional Keynesian antidote of unemployment to cure inflation may in fact be the toxin which spreads and multiplies the disease!

Once this problem is faced, then an array of possible policy options are opened, all of which focus on the way in which price markups evolve during recessionary periods. If we are in a situation of inflation

[2] John Blair in his "Economic Concentration" (New York: Harcourt Brace Jovanovich, 1972) reports that the share of total value added in the economy accounted for by the 200 largest companies increased between 1947 and 1954, then remained fairly stable between 1954 and 1958, and has risen slowly but steadily since 1958. Over the period 1947–66, the share of total value added in the economy accounted for by the 200 largest companies rose from 30 percent to 42 percent (p. 69).

[3] To see if increases in unit labor costs contributed to rising price markups during recessions, we analyzed fluctuations in unit labor costs for our three concentration groups. The results indicate that movements in unit labor costs are randomly distributed with respect to degree of concentration and therefore do not contribute to an explanation of rising markups in more concentrated sectors during recessions.

and recession, as we are today, using more recession to cure the inflation may be self-destructive, not to mention the numerous other pernicious effects of unemployment on the population. However, once a recession begins, for whatever reason, it is important to monitor price markup developments, since failing to do so might easily trigger a period of inflation making it all the more difficult to turn the recession around. To do this we need selective price markup monitoring. The industries and firms initially selected for price markup monitoring are based on the objective criteria that they increased their price markups during the most recent recessions. Rather than trying to influence prices on a universal basis, we should make anti-inflation policies selective and rooted in some objective criteria. If we try to control all prices, we control none, since the job is so vast as to paralyze any administrative effort mounted to monitor and influence prices. However, we could very easily monitor price markups selectively without undue administrative burdens. But this monitoring must be based on some objective economic criteria. The one proposed here, and implied by the theoretical and empirical work of this study, would have those price markups monitored in industries and firms which manifested perverse flexibility in recent recessions. Then once the recession begins, we can head off a potentially serious inflation which makes the recession more difficult to correct by selectively monitoring price markups in particular industries.

At this stage of development, our ability to select industries and firms for price markup monitoring is severely constricted by the availability of data. In order to effect such a policy, we need more accurate current data on price markups, as well as much more detailed data which will enable us to transcend the coarse three-digit classification with which we worked in this study. Additionally, we will need more rapid data collection so price markups can be identified and monitored quarterly.

Before these steps in data collection can have an impact, however, we need to accept market power as a way of economic life and understand that this market power can affect macroeconomic policy in ways not foreshadowed by competitive economic theory. The so-called anomaly of stagflation must now be put on center stage so the spotlight of research and policy formation can illuminate it to see its systemic contours more clearly than heretofore.

II. THEORY OF MARKUP PRICING

The firm in traditional competitive theory is seen as taking the price it receives for its product as given; it is simply a passive recipient of price information generated by the market. Since it deals in a very competitive environment, according to this theory, it is fanciful and indeed self-destructive for the firm to try to influence the price it charges for its product in any meaningful sense. Whether such a firm ever existed is a matter for serious conjecture; however, there is no doubt that such a firm exists in the minds of economists and has dominated the thinking of economists ever since Alfred Marshall in the late 19th century fathered, what is now called, neoclassical economics.

Once we depart from an assumption of competition the contours of the economic landscape become transformed. The firm operating in concentrated markets is not a mere passive recipient of market prices, but is an aggressive actor in the process of price formation. Instead of viewing the market in which it sells its products as competitive, the firm attempts to reduce the degree of competition in the market so it may better control the price it charges for its product. In fact, even if there ever were a perfectly competitive system, it could not be self-sustaining since the motivation of the dominant actors in such a system is to appropriate control over pricing decisions by beginning to control the markets for their products.

The firm controls the market for its product and, therefore, the price it can charge in two interrelated ways. First, it seeks to reduce the degree of competition it faces by eliminating other firms from the market for its product. Hence, price *competition* has as one of its outcomes the production of its opposite: Namely, the elimination of price competition and the creation of *concentration*. The competitive economy posited in the textbooks, viewed from this perspective, is an unstable one—it is not self-reproductive. Once an advantage is attained by one firm, say through a temporary technological breakthrough, it then uses that temporary advantage to create for itself a permanent advantage by pricing other firms out of the market, using its additional surplus to gain yet further technological advantages, buying out its competitors via "mergers," and so on. Whatever the mechanism used, the result is the same: The dynamic of a competitive system is toward concentration and noncompetition. And the economic history of this century in the United States is dominated by the phenomenon of concentration of market power. During this century competition has given way to concentration in more and more sectors of the economy until today we can legitimately classify the American economy by a variety of labels which tend toward one principal characteristic: economic concentration.

The price decision in the firm is based on its motivation to acquire profits. In traditional economic theory, firms maximize profits within the constraint imposed by the demand for its product, the technology

it has available to produce its product, and the price it must pay to attain the factors of production to produce its product. All this information is summarized in the price the market sets for a product, thereby seriously constraining the profits the firm can make. As a consequence all the firm can do is set its *level of production* in such a way as to maximize its profits in light of the price it obtains for its output and the other constraints we have mentioned above, all of which lie outside of the firm's control. Parenthetically, the dynamic toward concentration and away from this form of competition is precisely to push against these constraints forcing them further outward so a modicum of control over the firm's activity is internalized within the firm and not left to the "impersonal" decision of others in the market.

The firm in concentrated industries has a different profit motivation and faces different forms of constraints. Rather than trying to maximize profits by adapting its level of output to a variety of parameters, the firm in economically concentrated industries attempts to attain a *target rate of profit* by adjusting both its price and (to a lesser extent) its level of output.[1] The target rate of profit is a result of a number of forces. First, the firm in concentrated industries *patterns* its profit posture after firms of a similar structure in terms of size, market power, type of product, and so forth. Executives of corporations in such concentrated industries are evaluated in terms of how effectively they keep up with the pattern set within the *orbit of firms* to which their firm can legitimately be compared. Within this context, the executives of such firms will no doubt attempt to outstrip its patterned position by expanding profits beyond those normally indicated by its position within a particular orbit. But like the star circulating in its orbit, such movements are glacial in their time dimension and for the short term can be precluded from our consideration without doing undue violence to the propositions advanced here.

A second important consideration in the profit behavior we are describing are the profits attained by a firm in the recent past. Corporate executives will be evaluated by their stockholders in terms of how effectively they attain a rate of profit to which they have become accustomed as defined by profits in the most recent period of time. If you like, some form of *profit "epochs"* are informally defined, placing severe expectations on corporate executives in terms of what profits should be in their company.[2]

With this type of profit behavior in mind, the next question is how a target profit perspective is translated into pricing behavior by the firm. The link in the argument is found in the notion of *price markups*. Whenever economists examine price behavior of firms in concrete situations, inevitably the words "price markup" appear.

[1] For a slightly different version of target profit behavior, see: John M. Blair, "Inflation in the United States," in "The Roots of Inflation" (New York: Burt Franklin & Co., 1975), pp. 33-67.

[2] Putting these two considerations together and using more technical language, target profit rates depend upon some weighted average of previous years' profit rates for the firm (with some weighted distributed lag function) and the position of the firm in its profit orbit, as described by the patterned profit behavior of a particular firm in relation to other firms in its orbit.

Though this form of price behavior is quite common, economists, with few exceptions, have not built a markup price theory into either their micro or macro models.[3]

Markup pricing suggests that firms form their prices by first computing their labor and raw material costs, then adding a "markup" over raw material and labor costs in order to attain their profits. Theoretically, firms are constrained as to their price markup primarily by the extent to which increases in the price markup will result in a loss of sales owing to the excessively high price charged for the product. This is the familiar concept of *demand elasticity* used in the theory of price formation. If the firm faces a *highly elastic demand* for its product—that is, an increase in price will evoke a virulent negative response by consumers resulting in a more than proportionate loss in sales—then the ability of firms to increase their price markup is severely mitigated. In competitive economic theory, it is assumed that all firms face just such an elastic demand curve for their product. But any firm facing such a severe constraint, which cuts to the core of its profitmaking ability, will undertake steps to offset or eliminate this obstacle as much as possible by gaining control over their market, thereby influencing the demand curve for its product. The most common ways in which the firm gains control over its market is through acquisition of other firms, differentiating its product in order to obtain customer attachment, advertising and other forms of the sales effort, and the like. In short, it undertakes actions to concentrate market power within the firm rather than permitting this power to be dispersed in the anonymous market where consumers have the upper hand. Thus, we return to the proposition that competition is unstable and the dynamic is toward reductions in competition and the augmentation of economic concentration.

As the economy becomes more concentrated, induced by the normal motivation on the part of corporate executives to mitigate their constraints, firms can set their price markups in order to attain their target profits. Here the two theoretical arguments intersect—the one about target profit rates and the other about markup pricing. Firms will establish a price in order to attain a target profit rate for any given level of sales. In a curious way, the argument about what is taken as given by the firm is reversed from traditional theory: with economic concentration firms can adjust their price more readily than they can control their sales in the short term once you introduce an economy with business cycles.[4]

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[3] An important exception to this statement is the Polish economist, Michael Kalecki, who developed an integrated micro and macro model using a markup price system as his micro foundation in the early 1930's, predating the work of Keynes. The ideas developed in this study are in the Kalecki tradition. Kalecki's work appears in his "Theory of Economic Dynamics" (New York: Monthly Review, 1965) and "Selected Essays on the Dynamics of the Capitalist Economy" (Cambridge: Cambridge University Press, 1971). A most useful treatise on the work of Kalecki has been written by George R. Feiwel, "The Intellectual Capital of Michael Kalecki" (Knoxville: University of Tennessee Press, 1975).

Additionally, the work done by R. L. Hall and Charles J. Hitch, "Price Theory and Business Behavior," Oxford Economic Papers (May 1939), pp. 12–45, initiated a debate surrounding markup pricing practices of concentrated firms which is summarized in Frederic M. Sherer, "Industrial Market Structure and Economic Concentration" (Chicago: Rand McNally & Co., 1970), pp. 173–179.

Anyone addressing the issues encompassed by this paper must acknowledge their intellectual debt to Gardiner C. Means who, perhaps more than any living economist, has persistenly reminded us of the impact of concentration on price formation and economic instability. For example, see his essay, "Simultaneous Inflation and Unemployment," in *The Roots of Inflation* (New York: Burt Franklin & Co., 1975), pp. 1–31.

[4] In traditional micro theory, full employment of resources is an assumption. Once this assumption is dropped then price adaptation, rather than output changes, becomes the dominant active variable used to adjust to varying macro conditions.

This study addresses the question of the *cyclical behavior of price markups*. Of most importance for this study is how this model of price markups with target profits operates in the *recessionary phase* of the business cycle. Here we encounter a most interesting model which goes a long way toward explaining why the simultaneous occurrence of inflation and unemployment is a logical outcome of the behavior posited here rather than a paradox as it is in traditional Keynesian theory. Consider a firm operating in a concentrated market environment attaining its desired target profit rate. Then introduce a recession (caused for any reason). If the firm loses revenue through a sales reduction during the recession, it will try to recoup the lost revenue from those diminished sales by increasing the price markup for its remaining sales so that it can get closer to the target profit rate it started with. The motivation to do this is pressure from stockholders on the company executives which takes the form of imposing some profit expectations on management as dictated by its previous profit posture and the profit position of others in the firm's orbit of comparison.

An arithmetic illustration is helpful in illuminating this theoretical point. For example, say a firm operating in a concentrated industry has direct costs (raw material and labor) of $200 per unit of output and sets its profit markup 20 percent above direct costs, therefore selling the product for $240 per unit and making a profit of $40 per unit. Let us say the firm has a target level of profits of $40,000 (derived from its target rate of profits); to realize this profit level it will have to sell 1,000 units at $240 per unit. Now we have unemployment and a recession which causes the volume of sales to fall from that expected to 950 units. But if the firm still has a target profit level of $40,000, which it wants to attain, it will have to raise its price to slightly over $242 per unit from the previous level of $240 per unit. It does this by raising its percentage markup over costs to 21 percent compared to the previous 20 percent. Having increased their profit per unit, the firm now achieves its target profit level, but the resultant manifestation in the economy is the simultaneous occurrence of inflation and unemployment.[5]

In traditional theory this option is precluded from consideration because each firm faces an elastic demand for its product owing in large measure to the degree of competition in the market. But once that competition is mitigated, then the firm's demand curve becomes much less elastic and the option is available of raising the price markup during a recession. And as the economy becomes more concentrated, this is precisely what happens. So, as a consequence, reductions in sales during recessions lead to increased price markups and inflation. And if public policy assumes a traditional posture of using the creation of unemployment to reduce inflation, it could very well be self-defeating and merely fuel inflation for a time. Put bluntly, unemployment is inflationary whenever economic concentration leads to the adjustment of the price markup to attain a target rate of profit. How long will a recession be inflationary? This depends on the degree of economic concentration. The more markets are concentrated, the longer the

[5] This hypothetical example posits a very inelastic demand response. Such a restrictive case is presented for illustrative purposes, but even with a less inelastic demand response the conclusion holds.

period of recession in which the firm's demand response remains inelastic. Only when unemployment reaches a point where the firm encounters an elastic response to its price markup policy will traditional macropolicy toward inflation be operational in the way it is designed to be. Hence, as the economy becomes more concentrated we need longer and deeper recessions, even a depression, before such policy becomes anti-inflationary. Up to that point at which the firm begins to face an elastic response to price increases for its product, a recession will feed inflation. This suggests that price markup behavior will be different at different phases of the recession. In the early stages of the downturn, price markups should rise as firms try to recoup their lost revenues. But as the recession grows longer and deeper, price markups should increase by less or perhaps become stable (and even fall if the recession continues longer).[6]

The history of the postwar period is one of increased economic concentration which should lead to the necessity of deeper and longer recessions in order to offset inflation through traditional Keynesian tools. Traditional Keynesian theory and policy has missed this point because economists conventionally treat the behavior of prices in the microeconomy as being formed in competitive markets.[7] Indeed, Keynes himself accepted this. As a consequence, even today, macropolicy is formed in the context of a competitive microeconomy with the resultant inability to come to grips with the intersection of the micro- and macro-economy, as revealed through price markup and target profit behavior.

Though our chief concern in this study is the behavior of price markups during recessions, a word is in order concerning markups during the expansionary phase of the cycle. If the market is increasingly acting as a weaker constraint on the pricing power of firms in concentrated industries, why don't markups increase substantially during expansions too? The answer is that they do increase, though not without limit. The limits to the expansion of markups derive from the possibility that other firms in the oligopolistic industry may not initially follow the firm's expansion in its price markup causing ultimately severe damage to the target profit posture of the firm which tried to break from the pack in the first instance. Such behavior would indeed be self-destructive for a manager. In brief, the accepted theories of oligopoly behavior, whether they be of the game theory sort or the kinked demand curve variety, are sufficient to explain why price markups and target profit levels do not expand without limit during the expansion phase of the cycle. This raises a collateral theoretical point. It is possible to describe profit epochs in which the target profit posture is established for a given orbit of

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[6] A query is in order here concerning the form of the demand curve posited. Before examining that issue, however, a caveat is warranted. Since we are dealing with *fluctuations* in the level of demand, we are encountering dynamic *shifts* in the demand curve for the firm's product rather than static movements along a fixed demand curve.

If we start with a variant of the static kinked demand curve model, then *shifts* in that demand curve will yield a composite response in the market which is initially inelastic then becomes elastic at low levels of output. The profits attained in this manner may or may not be optimal. The presumption is that such a profit maximizing position is unknown whenever fluctuations in levels of demand exist. The search for optimal profits is conducted by varying the price markup, gauging consumer response to each alteration in the markup.

[7] Noteworthy exceptions to this generalization are found in the work of Gardiner Means whose initial work in the 1930's stimulated a debate which is still raging today. See Gardiner C. Means, "Industrial Prices and Their Relative Inflexibility," S. Doc. No. 13, 74th Congress (January 1935).

firms operating in concentrated industries. However, the dynamic of the system is to move those profit targets upward via increasing concentration, a higher degree of maturity and stability within the orbit of firms, influencing government policy, and so forth. So, not only are firms better able to control their markets over time, enabling them to adapt their price markups to the business cycle, but they can also raise their target profit levels, adding yet another dimension of inflationary bias to the economy.

The problems surrounding the relationship between economic concentration and prices over the cycle has been addressed by other research. However, this study is quite unique in its focus on the formation of price *markups* over the cycle, based as it is on a model of target profit behavior in the concentrated firm. Although there may be no direct link between these earlier studies and the present one, nevertheless it is useful to review that literature if for no other reason than to identify some shortcomings in the earlier work which this study avoids.

In modern times the controversy was kicked off by the work of Gardiner C. Means during the depression of the 1930's. His work evoked a virulent response and the debate has raged to this day with the most recent chapter written by Ralph E. Beals and Means himself.[8] In his early work Means argued that firms operating in concentrated industries manifested decidedly less price flexibility in all stages of the cycle than firms in less concentrated industries. In his empirical work he found that there was some tendency for firms in concentrated industries to raise their prices less in an expansion period and reduce their prices by less in recession in comparison with firms in less concentrated industries. This led to the beginning of the so-called *administered price thesis*. He extended his work in the 1950's to postulate an *administered inflation thesis* in which firms in concentrated industries have sufficient power to create inflation by raising their prices beyond the rate justified by cost increases and supported by more competitive markets. In his most recent salvo on the subject, Means argues that administered inflation is one that "may be initiated by management in an effort to widen profit margins and could then be properly called profit-push inflation." [9]

The critique of Means has as long a history as the work of Means itself. This critical interpretation of the Means work is admirably summarized by Beals, and we need only indicate the direction of criticism, inviting the reader to consult the Beals paper for detailed elaboration of the critique. The critique focuses on three points: First, Means' use of BLS wholesale prices is challenged in that those prices do not reflect rebates and other forms of special allowances. Second, Means eliminated certain industries from his study so that in his early work he reduced his initial 282 industries to 37 which

[8] See Ralph E. Beals, "Concentrated Industries, Administered Prices and Inflation: A Survey of Recent Empirical Research" (Washington: Council on Wage and Price Stability, 1975); Gardiner C. Means, "The Administered Price Thesis Reconsidered," American Economic Review, 62, 3 (June 1972), pp. 292-306; and Gardiner C. Means, "Simultaneous Inflation and Unemployment: A Challenge to Theory and Policy," Challenge, 18, 4 (September/October 1975), pp. 6-20. The "encyclopedia" for this entire area of inquiry is John Blair's "Economic Concentration" (New York: Harcourt Brace Jovanovich, 1972).

[9] Means, "Simultaneous Inflation and Unemployment: A Challenge to Theory and Policy," Challenge, 18, 4 (September/October 1975), p. 11.

complied with his criteria.[10] Third, Means' work takes no account of changes in costs as possible justifications for the form of price behavior he examined. Beyond these criticisms lies a further point: Namely, what is a "significant" relationship between economic concentration and price behavior? One's choice of adjectives to explain a regression coefficient which is statistically significant, yet small, leads to just such subjectivity.

The empirical work of this study goes some distance in avoiding the criticism thrust at Means. First, we are using price markups, derived from census data, so the problem of price rebates and other forms of deviation of actual prices from those reported to the BLS is mitigated. Second, by using price markups, we automatically take account of cost changes since our markups reflect price augmentations over direct labor and raw materials costs. Third, we do not eliminate any industries from our study, except where the census has not reported the data necessary for the computation of price markups.

[10] Means criteria of selection retained industries where: (1) The product of the industry is relatively homogenous; (2) the product is produced for a national or international market; (3) more than one-third of the value added is derived from the manufacturing process; and (4) "Reasonably reliable data" on prices exists.

III. MARKET POWER AND MEASURES OF ECONOMIC CONCENTRATION

In the theoretical section on markup pricing, much stress was placed on the concept of *economic concentration.* But how faithfully can we translate the theoretical concept of economic concentration into an empirical measure? Traditionally, the concept of "market power" has been translated into an empirical measure, "economic concentration," as revealed, for example, in the share of sales (value of shipments) accounted for by the four largest firms in an industry. Though this is the most inclusive quantitative measure we have of economic power in the market, it may fall short of being a precise indicator of "market power" in the conventional use of that term. It is possible that market power may increase during a particular period of time without any change at all in the measure of economic concentration. Consequently, measures of economic concentration may understate degrees of market power. This statement may at first glance seem contradictory, but it is not. Paradoxical perhaps, but not contradictory.

Why might this be so? The concept of *market power* connotes an ability to exercise influence with buyers of your product, suppliers of your inputs, and the political forces around you. At best, *economic concentration* is some indicator of power to influence buyers of your product through advertising, pricing policy, control of what is supplied to the market, and so forth. Taking just this one aspect of market power, however, our measure of economic concentration may not be adequate. First, measures of economic concentration which are available reflect only the proportion of sales accounted for by the four or eight largest companies in a particular industry. Because the measure of economic concentration is computed in this way, it ignores the aspect of *conglomeratization* in which one company begins to dominate several industries.[1] For example, Hostess Bakery is assigned to the industry covering its main line of output even though it is now owned by ITT (International Telephone and Telegraph)—certainly one of the corporate giants which can exercise enormous economic power. However, for purposes of the statistics on economic concentration, this aspect of conglomerate ownership is neglected. In fact, Hostess Bakery would appear as operating in a relatively competitive industry even though it is owned by one of the most powerful international corporations.

Consequently, the measure of economic concentration takes no account of the fact that the same firm may account for a considerable portion of sales in different industries. For example, say the concentration ratio in three different industries has remained the same for the

[1] Blair in his "Economic Concentration" (p. 41) defines conglomerate concentration as "the possession of a share of a given industry's resources or activity by companies that are primarily engaged in other industries but are not suppliers or users of the given industry's products."

past 20 years. Now consider two scenarios: First, have each industry self-contained in the sense that there is no ownership spillover from one industry to another. Put differently, no one company operates in more than one industry. However, during the 20 years of our example, there is now some conglomeratization so that one company is the leader in each of three industries even though its subsidiaries account for no more output in their particular industries than they accounted for at the outset. Statistically, there would be no change in the concentration ratio for each industry; however, there might very well be an increase in concentrated market power in these industries by virtue of the fact that one company is now the leader in terms of sales in all three industries. From the data on economic concentration, we have no way of detecting this development. This complicated point is simply meant to illustrate the fact that concentration ratios may remain constant while market power has been enhanced because of the development of conglomerates which operate via subsidiaries in many different industries.

The phenomenon of conglomerates can lead to more market power without being revealed in the conventional data on economic concentration. This occurs for several reasons: First, the subsidiaries of a conglomerate operating in what is classified as a competitive industry have more *market power* without a greater *market share* as revealed in the data, owing to preferential access to capital through the parent conglomerate, greater access to advertising resources and other forms of the sales effort, the potential for cross-subsidization, preferential access to sophisticated management capabilities, and access to political influence exercised through the parent conglomerate. Second, the parent conglomerate may have achieved its objective of increasing the price-earnings ratio of its stock without going to the extreme of reducing competition in the industries in which its subsidiaries operate. Third, market shares may remain fixed in an industry, but the entrance of the conglomerate can transform it from a type of competitive pricing behavior to one of *price leadership* exercised through the powerful conglomerate. As Blair in his book "Economic Concentration" states the argument (p. 47):

> . . . The danger to competition is that what had previously been an actively competitive industry might be transformed into one dominated by a single company and characterized by price leadership and a general absence of price rivalry. This would come about even though the share of the industry in the hands of the conglomerate is no greater than the share held by the firm it replaced.

A second point about the inadequacy of concentration ratios as a measure of economic power relates to the ability of members of an oligopoly to learn over time and develop a settled relationship which enhances their aggregate power as an oligopoly at the expense of consumers in the market. Initially, an oligopoly can be very unsettled in terms of its internal relations. Each member attempts to outsmart the others and obtain a larger share of the market in the hopes of becoming the most powerful. So, for example, price wars are a frequent result of this initial unsettled behavior, what can be called the stage of *infant oligopoly*. Some of us are old enough to recall price wars among gasoline stations where each of the stations on the four corners of an intersection would reduce their prices almost daily to attract you as a customer and undercut the other members of

the fuel oligopolies. What a far cry from today where now the fuel oligopoly has developed a more settled internal relationship which enables it to maximize their aggregate economic power at the expense of the consumer.

As an oligopoly *matures*, it creates a more settled and routine relationship for itself in which market shares are more or less stabilized and the "cutthroat competition" comes closer to the jugular of the consumer than the producer. In short, there is something distinctly different about a *mature oligopoly* as opposed to an *infant oligopoly*. A *mature oligopoly* acts to maximize the aggregate economic power of all members of the oligopoly at the expense of the consumer while the *infant oligopoly* can produce price competition in the short-run as fierce or more fierce as any in the competitive sector. It is important to note, however, the qualifying phrase, short-run; because it indeed is short-run behavior which has no long-run stability to it. The reverse is the case; the long-run dynamic of an oligopoly is to move toward a mature stage where pricing power is used to maximize aggregate profits and the days of price wars are relegated to the ash heap of history.[2] Consequently market shares can remain fixed and concentration ratios more or less stable, while market power is augmented substantially as an oligopoly moves from an infant to a mature stage.

No doubt this has happened in the postwar period. Starting from the stage of infant oligopolies after the Second World War, more and more oligopolies have moved to the mature stage in which internal price relationships are settled even though market shares and concentration ratios have not changed as much. For example, this has happened in retail gasoline sales, some food processing industries, some textile industries, and others. Put differently, market power can increase substantially, owing to the evolution of an oligopoly, while the measure of economic concentration changes by much less, if at all.

A third aspect of the way in which the measure of economic concentration understates the degree of market power pertains to whether the market for a product is national or regional/local in scope. The data on concentration ratios pertain to the Nation as a whole. However, the national measure of concentration may reveal a good deal of competition while in any particular local market there may be a great deal of economic concentration. Blair gives an example for the bread and other bakery products industry: In 1954, the four-firm concentration ratio for the Nation in that industry was 20 percent—that is, the four largest firms in the bread and other bakery products industry accounted for only 20 percent of the sales in that industry for the Nation as a whole. Conventionally, therefore, that industry would be classified as competitive. However, in that same year, retabulating the data, he found that in "only three States did the 4 largest companies in the State produce less than 30 percent of the product, while in 23 their proportion was over 50 percent."[3] In sum, locally a product might be sold in a concentrated market but if controlled by many different "local monopolies" this phenomenon will not be revealed in the national data where no one firm exercises its power nationwide.

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[2] Many of the neoclassical oligopoly models would confirm these behavioral observations, from Cournot's 1838 version of oligopoly behavior to Sweezy's 1939 model.

[3] Blair, "Economic Concentration," p. 10. See also his table on p. 11.

For all these reasons, the conventional measure of economic concentration *understates* the degree of market power that may exist in any particular industry. However, in one significant way the data on economic concentration *overstate* the degree of domestic market power exercised—namely in its exclusion of foreign competition. For example, the auto industry is classified as a highly concentrated one. However, foreign competition at times has impacted severely on that industry thereby rendering its actual price power in the market less than the simple data on economic concentration would suggest. Using the data on economic concentration which exclude foreign competition would, therefore, mislead us into thinking certain industries have more market power than is actually the case. On the other hand, to the extent that imports are products of foreign subsidiaries of U.S. multinational corporations, the concentration ratio will understate the degree of market power exercised by domestic corporations.

These qualifications and biases in the data should be borne in mind as we now proceed to confront our theory of cyclical markup pricing with an empirical investigation of the behavior of price markups over the business cycle in the postwar period.

IV. PRICE MARKUPS DURING POSTWAR RECESSIONS

To examine the behavior of markups over the business cycle, we collected data for three-digit manufacturing industries [1] for the postwar period. We isolated five recessions in order to determine whether markups increased during these recessions, thereby exhibiting what we are calling *perverse flexibility*. We label this form of behavior perverse flexibility—namely, an increase in price markup during the recession—since this type of pricing development is precisely opposite of what would be predicted by traditional Keynesian macroeconomics, based, as it is, on traditional neoclassical economic theory. In traditional theory, markups should not increase beyond the rise in costs during a recession since presumably sales are falling (or not rising as rapidly) and to adapt to this market condition firms should not increase their price markups.

The five recessions measured from peak to trough, for which we have data, are: 1948–49, 1953–54, 1957–58, 1960–61, and 1969–70.[2] We have not examined the most recent recession for two reasons: first, the recession may not be over as of the time this is being written; and second, the data are not yet available.[3]

We divided our industries into three groups based on the degree of market concentration in 1967, as indicated by the value of shipments accounted for by the four largest enterprises in an industry. Our high concentration sector includes all industries with a concentration ratio of 50 percent or more; our low concentration sector includes all industries with a concentration ratio of less than 25 percent; and the medium concentration sector includes all industires with a concentration ratio between 25 percent and 50 percent.[4] This measure of concentration is based on data provided by the Bureau of the Census and is typically called a *four-firm concentration ratio.*

The data for price markups are also obtained from Census publications. They are computed first by totaling the sum of labor and raw material costs—what is called *direct costs.* The price markup is then computed by dividing the value of shipments by these direct costs.[5] So, in effect, what the markup represents is a markup over direct costs. This method of computing markups is the standard one which has been used in studies of price behavior, sometimes called full-cost pricing behavior.[6]

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[1] "Three-digit industries" is a Census Bureau classification used to delineate industries in the American economy. There are over 100 three-digit classifications; each represents a particular type of output. The Census Bureau divides industries further into a "four-digit" industry classification. For example, the Census Bureau has a three-digit classification for "household appliances" and breaks this category into several "four-digit" categories for particular types of appliances.

[2] These dates for the postwar recessions are those used by the National Bureau of Economic Research. They identify a turning point by the month it occurs, while we have only annual data. Consequently, where a turning point occurs in the first half of the year, we used data for the preceding year. This affects the 2 recessions in the 1950's where we use data for 1952–54 and 1956–58. In the manuscript, we have used the conventional dating of these recessions as 1953–54 and 1957–58. Adequate data do not exist for 1948, so we took 1947 as our peak.

[3] The data before 1960 are sparser than for the recessions of the 1960's.

[4] We examined the classification of industries by degree of concentration using both 1958 and 1967 concentration ratios. Since there was general stability in industry classification, we used the 1967 data to classify industries.

[5] Specifically, the formula used is: $M.U. = \left[\left(\frac{V.S.}{L+M}\right) - 1\right]$ where M.U. is markup, V.S. is value of shipment, L is production-worker wages, and M is cost of materials.

[6] Kalecki uses this method in his work cited earlier. It is also used by A. L. Hall and C. J. Hitch, "Price Theory and Business Behavior," Oxford Economic Papers (May 1939), in which they coin the term, "full cost pricing."

If the hypothesis derived from our theory of target profit behavior is valid, we should expect to find rising markups in the more heavily concentrated sectors of the economy during the postwar recessions and less of a tendency in this direction in the less concentrated sectors. Though our primary hypothesis focuses on the impact of concentration on price markup behavior, nevertheless as in any complex pricing process, this is not the only explanation for fluctuations in price markups, owing to the peculiarities of each recession, the varying impact of these recessions on different industries, and so forth. As the analysis unfolds, we will be examining some important exceptions to the general concentration hypothesis we have been advancing.[7]

Table 1 presents the results of our first test of the perverse markup pricing hypothesis. In that table we have indicated the percentage of industries in our three concentration groups which show either rising, declining, or stable markups during the five postwar recessions from 1948 to 1970. An industry was classified as having either a rising or a declining markup from the peak to trough of a recession if it had, respectively, more or less than a 1-percentage point change in its markup. Put differently, an industry with a stable markup was one which had a less than 1-percentage point change; an industry with a rising markup was one with a more than 1-percentage point *increase;* and an industry with a declining markup was one with a more than 1-percentage point *decrease* from peak to trough of each recession.

TABLE 1.—PERCENTAGE OF 3-DIGIT INDUSTRIES SHOWING RISING, STABLE, OR DECLINING MARKUPS DURING POSTWAR RECESSIONS, BY DEGREE OF CONCENTRATION

	Recession [1]				
	1969–70	1960–61	1957–58	1953–54	1948–49
High concentration:[2]					
Number of industries	31	28	13	14	15
Markups:					
Percent decline	41.9	25.0	46.2	35.7	40.0
Percent show no change	16.1	17.9	0	7.1	6.7
Percent rise	41.9	57.1	53.8	57.1	53.3
Medium concentration:[2]					
Number of industries	66	61	20	17	16
Markups:					
Percent decline	27.3	27.9	45.0	29.4	62.5
Percent show no change	30.0	36.1	15.0	11.8	12.5
Percent rise	42.4	36.1	40.0	58.8	25.0
Low concentration:[2]					
Number of industries	43	38	20	17	14
Markups:					
Percent decline	23.2	18.4	50.0	35.3	64.3
Percent show no change	25.5	36.8	20.0	23.5	0
Percent rise	51.2	44.7	30.0	41.2	35.7

[1] Markups measured from peak to trough.
[2] High concentration: 4-firm concentration ratio 50 percent or more. Medium concentration: 4-firm concentration ratio between 25 and 50 percent. Low concentration: 4-firm concentration ratio less than 25 percent.

Several interpretative points are worth noting about the data in this table:

1. In each recession, exclusive of 1969–70, a majority of the industries in the high concentration sector exhibited perverse economic

[7] Another perspective on the fluctuations of price markups over the cycle is provided by Howard N. Ross, "Concentration and Margins: The implications for Price Behavior," in "The Roots of Inflation" (N.Y.: Burt Franklin & Co., 1975), pp. 275–286.
A sampler of other empirical work relating economic concentration to price markups is contained in: Daniel Suits," Principles of Economics," second edition (N.Y.: Harper & Row Publishers, 1973), ch. 18. In a paper by Norman R. Collins and Lee E. Preston, "Price-Cost Margins and Industry Structure," "Review of Economics and Statistics" 51 (1969), pp. 271–286, the relation between price markups and concentration is found to be significant after controlling for the capital intensity of production among 417 4-digit industries.

behavior. For example, in the 1953–54 and 1960–61 recessions, 57 percent of all the industries in the high concentration sector raised their markups, and nearly 54 percent raised their markups in the 1957–58 recession.[8] By way of contrast, less than 50 percent of the industries in both the medium and low concentration sectors raised their markups during the postwar recessions with but two exceptions—1953–54 in the medium concentration sector and 1969–70 in the low concentration sector.

2. Although typically the low and medium concentration sectors exhibit less of a tendency toward perverse economic behavior, the *trend* in these sectors over the postwar period has been to manifest *increasing amounts* of perverse economic behavior. For example, in the medium concentration sector, nearly 63 percent and 45 percent of the industries had a declining markup during the 1948–49 and 1957–58 recessions, respectively.[9] However, during the recessions of the 1960's less than 28 percent of the industries in the medium concentration sector showed a decline in their markups. Though there was some increase in the percentage of industries which increased their markups in the 1960's, the largest shift in the data was from the area of declining markups to stable markups. In the pre-1960 period only 12 to 15 percent of the industries had stable markups; in the 1960 recessions over 30 percent of the industries had stable markups. Consequently, overall the medium concentration sector exhibited a greater degree of perverse economic behavior in the 1960's compared to the 1950's, though still not as much as in the high concentration sector.

A similar trend appears in the sector of low concentration. In the recessions before 1960, anywhere from 35 to 64 percent of the industries in the low concentration sector showed a declining markup, while from 30 to 41 percent showed a rising markup. But in the recessions of 1960–61 and 1969–70, only slightly more than 18 percent and 23 percent, respectively, exhibited a declining markup and more than 44 percent and 51 percent, respectively, showed a rising markup. Therefore, like the sector of medium concentration, taken as a totality the sector of low concentration is also exhibiting a greater degree of perverse economic behavior in that its markups are increasingly behaving like the sector of high concentration in the recessions of the 1960's.

3. These two sets of observations reveal how our economy is increasingly susceptible to the type of stagflation we are experiencing in the current recession. Not only is there a sector in our economy which typically exhibits preverse economic behavior—the sector of high economic concentration—but the sectors of medium and high concentration are increasingly becoming like the sector of high concentration in their pricing behavior during recessions. The consequence of this for economic policy is that traditional Keynesian macro prescriptions which call for the creation of unemployment and recession to mitigate inflation are in reality a major contributing cause to the inflation that occurs during recessions, as suggested in our previous theoretical discussion of markup pricing and target profit behavior.

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[8] The 1969–70 recession departs from this pattern, and we discuss this later.
[9] 1953–54 seems to be an exception to the pre-1960 period for this sector.

So far the evidence we have accumulated relates solely to the direction of change during the postwar recessions. It is instructive to examine, as well, the precise amount of increase or decrease in the size of markups over the postwar business cycles. These data are presented in table 2, where we show the percentage change in the size of markups for the three concentration groups. In this case we are presenting the percentage change in the size of markups for both the expansion and recession phase of each postwar cycle.

TABLE 2.—PERCENTAGE CHANGE IN SIZE OF PRICE MARKUP DURING RECESSIONS AND EXPANSIONS IN POSTWAR BUSINESS CYCLES, BY DEGREE OF CONCENTRATION

	High concentration	Medium concentration	Low concentration
1948–52 cycle: [1]			
1948–49 recession	10.78	−8.52	−8.16
1949–52 expansion	4.76	8.67	−4.54
1953–56 cycle: [2]			
1953–54 recession	14.15	−.08	−.32
1954–56 expansion	6.97	14.42	3.60
1957–60 cycle: [3]			
1957–58 recession	13.47	−4.91	−7.55
1958–60 expansion	−10.92	7.42	5.04
1960–69 cycle: [4]			
1960–61 recession	5.29	−1.86	1.34
1961–69 expansion	15.28	18.36	13.65
1969–70 cycle: [5]			
1969–70 recession	−1.05	.82	2.54
Excluding the auto industry [6]	1.75		

[1] Base=1947.
[2] Base=1952.
[3] Base=1956.
[4] Base=1960.
[5] Base=1969.
[6] The auto industry was removed from this calculation of the change in markups in the high concentration sector.

The data in table 2 lend additional weight to the conclusions we derived from the evidence presented earlier:

1. In each recession of the postwar period (excluding the 1969–70 recession), markups increased in size in the high concentration sector. In the 1948–49 recession they increased by almost 11 percent in the high concentration sector, reaching a peak in terms of increase in size during the 1953–54 recession when they increased by over 14 percent in the high concentration sector. By way of conrast, typically markups *decreased* during recessions in the low and medium concentration sectors, though this tendency weakens a bit in the 1960's.

2. While markups were increasing during recessions in the sector of high concentration, typically they decreased or increased by less during the expansion phase of the cycle in these sectors. However, in the sectors of low and medium concentration, markups typically decreased during recessions and increased during periods of expansion, in some instances more than the increases recorded in the sector of high concentration. As a consequence, once again we see how the sector of high concentration exhibits its perverse reactions to the business cycle: In periods of recession markups increase; while in periods of expansion, markups increase by less than in recessions (and in one instance they decrease). However, in the sectors of low and medium concentration, markup behavior is more normal, in that markups typically decrease during recessions and increase during expansions.

3. As we discovered earlier, although the sectors of low and medium concentration exhibit more normal reactions to the business cycle, in the 1960's their behavior becomes more perverse as it takes on more of the form of price markup behavior of the sector of high concentration. For example, in the recessions of the 1969's, markups *increased* in the sector of low concentration and either decreased by less or increased in the sector of medium concentration. Even though the sector of high concentration had markup increases of less in the recessions of the late 1960's than in the 1950's, *overall* the economy was more inflation-biased during recession because the sectors of low and medium concentration were no longer offsetting the perverse behavior of markups in the sector of high concentration, but instead were reinforcing that perverse behavior.

Our data on price markups over the cycle implicitly take account of changes in unit costs. However, since movements in unit costs—especially unit *labor* costs—are so frequently cited as causes of inflation, there is some merit in making those movements in unit costs more explicit. In table 3 we present data on movements in unit labor costs for the two recessions of the 1960's.[10] Of particular interest for our purposes are the *differential movements* in unit labor costs among different sectors of industrial concentration, since the existence of such differential movements would occasion a qualification to our concentration hypothesis. In general, the data on unit labor costs reveal no difference in movements during recessions by concentration groups. In both the 1960–61 and 1969–70 recessions, unit labor costs changed by roughly the same amount in all three concentration groups. Consequently, the greater propensity for price markups to rise in more concentrated sectors is not explained by industries in those sectors experiencing sharp rises in unit labor costs. Since fluctuations in unit labor costs are distributed randomly across concentration groups, explanations for changing price markups during recessions must be located within the pricing decision itself.

TABLE 3.—PERCENTAGE CHANGE IN UNIT LABOR COSTS DURING RECESSIONS, BY DEGREE OF CONCENTRATION

	High concentration	Medium concentration	Low concentration
Recession:			
1960–61 [1]	−0.63	−0.45	−0.53
1969–70 [2]	6.00	6.32	5.92

[1] Base=1960.
[2] Base=1969.

A distinctly different behavior pattern appears in the price markup data for the high concentration sector between the cycles of the 1950's and the cycles of the 1960's. We have had occasion to note these differences in both tables 1 and 2, and this phenomenon requires some further elaboration. With reference to table 2, markups declined (by about 1 percent) in the 1969–70 recession in the sector of high concentration for the first time during the postwar period. That recession had one specific peculiarity which we have investigated in some detail: Namely, during the 1969–70 recession, foreign competition provided an extraordinarily intense competitive check in the auto industry on

[10] Data of sufficient detail for previous years were unavailable.

what had traditionally been a mature oligopoly with routinized pricing behavior.[11] Imports as a percent of total auto sales in the United States reached a peak of 23 percent in 1970, reflecting a steady rise from about 9 percent in 1966. This foreign competition, in effect, reduced the auto pricing policy for domestically produced cars to something closer to a competitive form. In fact, price markups in the auto industry *declined* by 5.8 percent in the 1969–70 recession, while in the 1960–61 recession they had *increased* by almost 6 percent. When we eliminate the auto industry from our calculations of markup changes in the 1969–70 recession, we find that overall markups increased by almost 2 percent instead of the decline of 1 percent caused by the unusual developments in the auto industry during that cycle and the heavy weight that autos exert in the high concentration sector.[12]

It is also worth noting that the impact of foreign competition in the auto industry was specifically addressed by national economic policy in the early 1970's by increasing tariffs on autos and by our dollar devaluations and flexible exchange rate policy. No doubt these policies have had the effect of substantially eliminating the "competitive" pressures induced by foreign competition so that the auto industry is behaving more like its former self of the 1950's and early 1960's. The policies adopted by the auto industry during the most recent periods of declining auto sales suggests they are following a policy of increasing their markups during periods of declining sales up to the point at which they reach an elastic demand response for their product, as our model of markup pricing in the sector of high concentration would predict.

Even though the sector of high concentration without the auto industry produces movements in markups in the 1969–70 recession which are consistent with earlier movements during recessions, the extent to which markups have been increasing is diminished in that recession as compared to earlier ones. This development has several possible explanations.

First, there may be something unusual about the 1969–70 recession since it follows directly on the heels of the longest period of expansion in the postwar period which extended from 1961–69. Perhaps managers of the companies in the sector of high concentration did not adjust their markup policy as quickly as previously if they perceived the recession as short-lived and instead based their markup policy more on the experience of the expansion in the 1960's. If they did not view the recession as "real" or "permanent" they would be less likely to adjust their markups instantaneously than if they perceived the recession as being serious enough to penetrate their own corporate reality. This raises the question of the extent to which the length of the expansion conditions increases in price markups during recessions in the sector of high concentration. At this juncture, we have insufficient knowledge of price markup behavior over the cycle to advance any

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[11] The impact of imports on domestic competition has been noted in a study by Otto Eckstein and Roger Brinner, "The Inflation Process in the United States," (Washintgon: U.S. Government Printing Office, 1972), where they argue that (p. 2): "While the introduction of import quotas on several major product lines has diminished competition, the overall increase of imports strengthened competition generally." And, they conclude that "foreign competition remains the major factor in limiting market power" (p. 44).

[12] The cigarette industry in the 1969–70 cycle also had an atypical movement to it owing to the cigarette cancer scare and the attention devoted to this problem by national policy. Markups in that industry *declined* by 16 percent in the 1969–70 recession when before they had *increased* by 3.6 percent in 1960–61, 13.8 percent in 1957–58, 29.2 percent in 1953–54, and 18 percent in 1948–49.

definitive answer to this question, only to note that there quite likely is some significance in the fact that the 1969–70 recession followed an expansionary period of some 8 years in contrast to all the other recessions of the postwar period which followed expansions of no more than 4 years duration.

Second, the period of the 1960's ushered in a substantial growth in the formation and expansion of conglomerate forms of industrial organization.[13] In terms of the evidence we have been presenting, this development has two impacts: first, as indicated earlier, the method of data collection does not reveal this growth in industrial power in the statistics on economic concentration. For example, ITT—a multinational conglomerate—acquired Hostess Bakery as part of their conglomerate empire. However, Hostess Bakery continues to appear in the food processing industry, and in terms of our classification is not considered to be an industry of high concentration even though it is part of ITT, an obviously powerful economic giant which belongs in the sector of high concentration. In short, the subsidiaries of conglomerates are assigned to an industry according to the product line of each individual company within the conglomerate, which frequently means assigning them to a sector of low or medium concentration. Where should one classify ITT; in which "industry" does it belong? Asking the question reveals the statistical dilemma. As a consequence of the development of conglomerates and the way in which subsidiary companies of the conglomerates are given statistical treatment by the census, the data on price markups in the 1960's have to be given a most careful interpretation.[14]

The expansion of these conglomerates can explain why industries classified as low and medium concentration begin to take on more of the markup pricing posture of the sector of high concentration in the 1960's. For example, take Hostess Bakery: it is part of ITT and being a part of this conglomerate has access to the pricing ability, managerial talent, capital markets and advertising resources of a very concentrated company. However, in terms of the data it appears as being in a sector of low or medium concentration. Therefore, its actual price markup behavior will take on the form of a concentrated industry, while it remains classified as low or medium concentration. The data in the 1960's which reveal more perverse behavior in the sector of low and medium concentration can be explained in part by the development of conglomerates. Many subsidiaries of conglomerates appear as sectors of low and medium concentration, but they formulate prices in terms of a sector of high concentration through their conglomerate parent.

A second part of this argument is the leverage that conglomerates can exercise in the market by using different price policies in different sectors according to an overall market strategy to maximize their economic power. They might, for example, price like an oligopoly in a sector of low or medium concentration where they have newly acquired economic power and use their superior marketing and distributional systems to sidestep competition, while pricing more like

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[13] One of the problems one encounters in studying economic concentration is the paucity and inadequacy of data on conglomerates. Blair, in his book "Economic Concentration," concludes that conglomeration increased in the 1960's, piecing together whatever bits of information are available. (See chs. 3 and 4.)

[14] Our earlier discussion of the inadequacy of the data on economic concentration is relevant here. This is contained in the section "Market Power and Measures of Economic Concentration."

a quasi-competitive industry in a sector of higher concentration in order to undercut oligopolistic competitors in an industry of relatively high concentration. The conglomerate, in short, need not necessarily behave like an oligopolist in its pricing activity only in the sector of high concentration. It can realize its market power by pricing like an oligopolist in sectors that are statistically classified as low or medium concentration. Put differently, a company like Hostess Bakery acquires it pricing policy through a parent company whose economic power in the market is vast even though Hostess Bakery might itself be housed in an industry of lesser concentration. And for ITT, they exercise their concentrated economic power through sectors of the economy traditionally classified as being of low or medium concentration. The result is manifested in the increased inflationary bias of the economy in general as indicated by the increasingly perverse pricing behavior of the sectors of low and medium concentration in the 1960's.

Evidence presented in table 4 indicates that there has been a greater movement toward increasing concentration in the low and medium concentration sectors lending support to our interpretation of the results on price markup behavior in the 1960 recessions. In table 4, we present data showing the percentage of industries within each of our three sectors that manifested a declining, stable, or rising degree of concentration. These data are presented for four-digit manufacturing industries which give us more detail than we previously had. About 62 percent of all the industries within the sector of low concentration increased their concentration ratio by more than 1 percent from 1947 to 1970, in contrast with 40 percent and 35 percent in the medium and high concentration sectors, respectively. In brief, the *trend* toward concentration in the postwar period has been greater in the low concentration sector, even though its level of concentration is still less than that in the high and medium concentration sectors. This is consistent with the proposition that many industries in the sectors of high and medium concentration reached a stage of oligopolistic maturity during the postwar period, resulting in stable market shares. And faced with that stability, companies in those sectors went fishing in the low concentration sector, acquired firms, and created conglomerates where now the process of evolving mature oligopolies out of infant ones is just beginning. This can account for the type of price markup behavior we witness in the most recent recessions in the sectors of low and medium concentration.

TABLE 4.—PERCENTAGE OF FOUR-DIGIT INDUSTRIES SHOWING RISING, STABLE, OR DECLINING DEGREES OF CONCENTRATION, BY SECTOR, 1947–70

	Percent of industries with: [1]		
	More than 1 percent increase in degree of concentration	Stable concentration	More than 1 percent decrease in concentration
Low concentration (29) [2]	62.1	10.3	27.6
Medium concentration (34) [2]	40.0	5.7	54.3
High concentration (45) [2]	35.6	4.4	60.0

[1] An industry is classified as having increased in concentration if its concentration ratio increased by more than 1 percent from 1947–1970. The converse is true for the industries classified as having declining concentration ratios. Industries are classified as stable if their concentration ratios changed by less than 1 percent.
[2] Numbers in parentheses indicate total number of industries included.

A final reason for the difference in price markups in the 1969–70 recession in the sector of high concentration relates to the overall impact of foreign competition in the 1960's. Though we have only isolated the auto industry from our calculations for the 1969–70 recession, the phenomenon of increased foreign competition in the 1960's as compared to the 1950's extended beyond that industry to others in the high concentration sector, rendering the movement of price markups in that recession atypical of the others in the postwar period. Foreign competition, in general, impacted on the sector of high concentration rendering its price markup behavior less perverse. For example, among industries in the high concentration sector, imports increased from 1960 to 1970 by the following percentages: machinery and transport equipment—662 percent; rubber tires and tubes—876 percent; iron and steelmill products—352 percent. Comparable increases in foreign sales were recorded in plastics and petroleum products. The impact of foreign competition is another of those phenomena that occasion a qualification to the measure of economic concentration. In this instance, our measure of economic concentration *overstates* the degree of market power since it does not take into account competition from foreign sources. In the context of this discussion, price markup behavior in the sector we call high concentration was mitigated by this foreign competition in the late 1960's, thereby reducing its markup behavior to more like that of the competitive sector of the economy.

V. POLICY IMPLICATIONS

Macro economic theory and policy has been dominated by Keynesian economics in government circles since approximately 1960 and in academic circles around a decade earlier. The theoretical foundations of Keynesian economics are based upon a high degree of competition in product markets (what economists call perfect competition) and a lesser degree of competition (imperfect competition) in labor markets. Since pre-Keynesian theory of competitive pricing in product markets was highly developed in neoclassical economics and since unemployment was the key problem of his time, Keynes devoted almost no attention in his own work to the problem of inflation which, by definition, involves the pricing of goods and services. Economists following Keynes have also neglected the study of the actual way in which prices are formed in the American economy, relying more on the traditional neoclassical theory of competitive pricing for presumptions about the actual pricing behavior of firms.

As a consequence of the paucity of conceptual and empirical work on pricing, we know little about the causes of inflation. The micro (pricing) theory is separated from the macro (employment) theory, and no integrative link has been seriously attempted in traditional economics in the context of concentrated product markets. In Keynesian terms, if a deficiency of aggregate demand causes unemployment (what used to be called deflation), then an excess of aggregate demand (relative to productive capacity) must be the source of inflation. Such excess demand places pressure on existing productive capacity which cannot expand in the short run, and the consequence is increased prices rather than increased production. So inflation occurs when there is too much aggregate demand and unemployment when there is insufficient aggregate demand. But what of the past several recessions? Demand insufficiencies are seen as the source of unemployment but we have also experienced inflation—which does not jibe with the theory.[1]

The theoretical clue to unlocking this mystery requires jettisoning the assumption of perfect competition in pricing behavior among firms selling products and services. When we add this missing ingredient to Keynesian theory, "an analysis of inflation emerges which is consistent with the empirical evidence and provides us with a systematic explanation of inflation that is rooted in the functioning of enterprises in the American economy." We need a theory of noncompetitive pricing to add to the macro model of the economy in order to understand why inflation and unemployment are systemic outcomes of the pricing and profit behavior within firms.

Though Western economists have been wont to study the American economy by looking at noncompetitive pricing behavior within a

[1] The reader will no doubt have detected the pertinence of this study to the notion of a *Phillips curve* which posits some *trade-off* between inflation and unemployment. Rather than being *substitutes*, as in the Phillips curve analysis, our work suggests that inflation and unemployment *complement* each other during particular phases of a recession under conditions of economic concentration.

micro context, the Polish economist, Michael Kalecki, did this in his macro work even before Keynes formulated his general theory.[2] Kalecki specifically incorporates both price and employment in his macro system. Additionally, he grafts onto his macro model of employment, a micro theory of pricing which explicitly recognizes the noncompetitive character of that decision. The work in this monograph is compatible with the way in which Kalecki constructs his model.

Several policy implications and suggestions for a policy research program flow from the theoretical and empirical work of this study. The Keynesian policy approach to inflation is called into question by this study, and we must start afresh in designing an inflation policy consonant with conditions of economic concentration. Rather than reducing inflation by using the Keynesian tool of recession to mitigate inflation, the very recession itself is a contributor to inflation. That explains why we have both inflation and unemployment occurring side by side, and we will continue to experience this even more as the economy increases in economic concentration. The Phillips curve, an offshoot to Keynesian analysis, which posits that there is a tradeoff between unemployment and inflation—the more we have of one, the less we have of the other—is seriously called into question by this work. The Phillips curve has been challenged by the conditions of the last several recessions, and this work merely provides a theoretical and empirical insight into why unemployment and inflation have occurred together. The reason Keynesian policy prescriptions become ineffective is a theoretical weakness of that model based as it is on a competitive theory of pricing within firms. Once we admit to noncompetitive pricing behavior of firms operating in concentrated markets, we then have both a theoretical and empirical basis for explaining events in an economy that does not depend on random shocks and anomalies. In short, the Keynesian *antidote* of unemployment to cure inflation may in fact be the *toxin* which spreads and multiplies the disease!

Once this problem is faced, then an array of possible policy options is opened, all of which focus on the way in which price markups evolve during recessionary periods. If we are in a situation of inflation and recession, as we are today, using more recession to cure the inflation may be self-defeating not to mention the numerous other pernicious effects of unemployment on the population. However, once a recession begins, for whatever reason, it is important to monitor price markup developments, since failing to do so might easily trigger a period of inflation making it all the more difficult to turn the recession around. To do this we need selective price markup monitoring. The industries and firms initially selected for price markup monitoring are based on the objective criteria that they increased their price markups during the most recent recessions. Rather than make price controls universal or haphazard, we should make them selective and rooted in some objective criteria. If we try to control all prices, we control none, since the job is so vast as to paralyze any administrative effort mounted to control prices. However, we could monitor price markups selectively without undue administrative burdens. But this monitoring must be based on some objective economic criteria.

[2] We have had occasion to reference Kalecki's work earlier in this study.

The one proposed here, and implied by the theoretical and empirical work of this study, would have those price markups monitored in industries and firms which manifested perverse flexibility in recent recessions. Then once the recession begins, we can head off a potentially serious inflation which makes the recession more difficult to correct by selectively monitoring price markups in particular industries.

TABLE 5.—PERCENTAGE INCREASE IN PRICE MARKUPS FOR SELECTED 3-DIGIT INDUSTRIES IN 1969–70 AND 1960–61 RECESSIONS

	1969–70	1960–61
High concentration:		
211—Cigars	12.1	2.7
286—Gum and wood chemicals	13.7	4.1
301—Tires and inner tubes	13.7	18.5
312—Industrial leather belting	3.9	18.3
357—Office and computing machines	10.6	2.2
363—Household appliances	8.3	8.7
372—Aircraft and parts	8.2	1.6
386—Photographic equipment and supplies	12.3	2.8
Medium concentration:		
227—Floor covering mills	10.1	2.5
252—Office furniture	12.2	4.6
274—Publishing	15.0	4.6
393—Musical instruments	10.2	14.8
394—Toys and sporting goods	11.1	13.4
Low concentration:		
201—Meat products	8.7	3.5
224—Fabric mills	2.3	9.2
231—Men's and boys' suits and coats	5.3	11.7
236—Children's outerwear	6.7	3.9
237—Fur goods	5.6	6.5
311—Leather tanning	7.7	2.4

Illustrative of this policy approach are the data presented in table 5. We have taken our gross three-digit industry data on price markups during the recessions of the 1960's and indicated the percent change in markups for *selected* industries during those recessions. These industries are selected from all three sectors of concentration: high, medium, and low.[3] By no means is this an exhaustive list of industries which conform to our criteria. We have limited this presentation to an illustrative selection. Even though our data by three-digit classification are somewhat coarse to perform an adequate administration of selective price markup monitoring, nonetheless they are illustrative. Those industries identified in table 5 increased their price markups during each of the previous two recessions. They are obvious candidates, therefore, for selective price markup monitoring. Each recession is different in that some industries will no doubt increase their markups in the next recession which are not identified here. However, the industries identified in table 5 form the basis for a policy and an administration of that policy. One can simplify the task even further by eliminating those industries which are of little consequence in the aggregate output of the economy. This would involve positing some minimum share of total output before any administrative time is spent monitoring price markups in that industry. In fact, one may

[3] The fact that price markups rise in some industries in the low and medium concentration sectors does not negate the general theoretical proposition advanced in this study. Some industries in those sectors show perverse flexibility, others do not. And in the subaggregate, the behavior of the low and medium concentration sector is less perverse than that in the high concentration sector as we discovered earlier in connection with our discussion of tables 1 and 2.

choose to monitor price markups in an industry with a large weight in total output if its price markup has been increasing by only 2 percent and ignore another industry whose price markup rose by 10 percent but contributed only a small amount to total production.

At this stage of development, our ability to select industries and firms for price markup monitoring is severely constricted by the availability of data. In order to effect such a policy, we need more accurate current data of price markups, as well as much more detailed data which will enable us to transcend the coarse three-digit classification with which we worked in this study. Additionally, we will need more rapid data collection so price markups can be identified and monitored quarterly.

Before these steps in data collection can have an impact, however, we need to accept market power as a way of economic life and understand that this market power can affect macro policy in ways not foreshadowed by competitive price theory. The so-called anomaly of stagflation must now be put on center stage so the spotlight of research and policy formation can illuminate it to see its systemic contours more clearly than heretofore.

COMMENTS ON THE INFLATIONARY IMPACT OF UNEMPLOYMENT: PRICE MARKUPS DURING POSTWAR RECESSIONS, 1947–70

By HOWARD N. ROSS, *Professor of Economics, Bernard M. Baruch College, The City University of New York*

The influence of monopoly and competition on the performance of the economy is a vital and still missing link in our perception of economic problems and their remedies. Without the link, I think it is impossible to say how the price level and changes in the price level are determined, macroeconomic dictates notwithstanding. To presume, as some do, that the degree of competition in a market is irrelevant to the behavior of the market, especially in regard to price movements, becomes with the passage of time and events the ultimate in pretense or innocence.

At this juncture in the history of the Employment Act, it is appropriate to reexamine the limitations of the stabilization policies created to fulfill the objectives of high employment without inflation. A new limitation has been painfully discovered in recent years: the inability of traditional stabilization policies to control inflation during periods of recession and to dampen price level changes during periods of galloping inflation.

Promises of a renewed emphasis on employment and growth as inflation slows must reasonably be hedged by the uncertainty of future inflation, especially so because we lack a decisive interpretation of the causes of the runaway inflation of recent years. It is timely to ask what role monopoly has played in past inflations, and it is understandably expedient to concentrate on monopoly in the product markets as an initial exploration, setting aside the problem of monopoly in the input markets.

I am sympathetic to the efforts of Professors Wachtel and Adelsheim to establish a basis for understanding the conundrum of inflationary recessions which have recurred since the 1950's. However, I must qualify my agreement with their analysis and methodology. The authors considerably overstate their basic thesis (p. 4):

> As we have seen in this study, in sectors of economic concentration price markups are increased when unemployment exists in order to recoup the revenue lost from reduced sales. And increasingly more sectors of the American economy are manifesting this type of perverse economic behavior. So instead of reducing inflation, unemployment can increase the rate of inflation under conditions of economic concentration. The traditional Keynesian antidote of unemployment to cure inflation may in fact be the toxin which spreads and multiplies the disease!

If unemployment causes inflation in a dynamic sense, more unemployment causing more inflation, rising unemployment causing rising inflation, then we are in the topsy turvy world of a positively sloped Phillips Curve. The authors come too close to suggesting this (second paragraph, p. 3), and all we need do to escape the ghastly fantasy is

contemplate how rapidly real income will fall under simultaneously increasing prices and unemployment. The seeming paradox of rising and rigid oligopoly prices during recessions is due to the fact that the postwar downswings are short-lived, typically a year in length, and that the downswings are not long enough nor deep enough to exact a fall in money wages and raw material prices. As demand falls during recessions, oligopolists will use their market power to set prices which limit profit losses—an option unavailable to more competitively organized industries.

The mechanism of the full-cost price is ideally suited for such purposes since it can be designed to protect gross margins above direct costs (labor and raw material costs). However, the power of oligopolists to limit profit losses by "perverse" pricing is surely constrained by consumers who will seek substitutes or defer purchases (as in the case of durable goods), by a watchful government and by the recognition that the policy works well—and perhaps only—under a short run decline in demand.

The authors should take note of the automobile industry, a classic oligopoly industry, which *reduced* prices during the 1973–75 recession in the form of unabashed rebates to stimulate sales and reverse the devastation to profits. The proposition that unemployment creates inflation is legitimate only as a short run, temporary and undynamic (static) depiction of events.

The notion that practitioners of markup pricing constrained by a target rate of return raise their percentage markups on direct costs during contractions and continue to raise markups during expansions (p. 10) is a challenge to the more orthodox views of such a price policy. Wachtel and Adelsheim are really talking about a variant of a full-cost price, and though they cite the relevant literature, they reject the inherent logic of a full-cost price.

The several versions of full-cost pricing to be found in the literature stress common features: price is unresponsive to cyclical swings in demand; on the other hand, price reflects all changes in direct costs, and the gross margin, determined at some standard volume of output either as a percentage markup or an absolute amount above direct costs, tends to be rigid over the cycle.

The rigidity of gross margins (profits and overhead) and consequently, the relative rigidity of a full-cost price over a cycle, is due to the embodiment of cyclicality in the determination of the gross margin at standard volume. If a recession is sharp or if the prices of capital goods are increasing, the rise in overhead costs per unit of output on reduced sales may cause an upward adjustment to margins as realized profits deviate below expected profits. In this way, gross margins could expand during recessions among concentrated industries, but are they likely to expand in revivals as well? The logic of a full-cost price says no. As output increases, the decrease in overhead costs per unit will raise the profit component without any change in the magnitude of the gross margin or markup. The pattern of anticipated markups and prices is that during recessions they will fall less or rise more than competitive industries, and during revivals they will rise less than competitive industries. The theory is tied to the operational short run and pointedly excludes longer-run considerations such as growth and technological change within industries.

The expected behavior of markups during recessions is fairly well confirmed in Table 2, particularly in the 1957–58 contraction which is the most severe of those included; the data on the expansions span greater intervals and are confounded by long run forces, but still they tend to support the theory.

My argument with the authors is that they do not provide sufficient and more precise motivation for oligopolists to raise markups continuously throughout the cycle. Is the objective a target return on investment? A target return is supposed to be achieved over a cycle rather than during each phase of a cycle. Is the objective a secularly higher profit rate? There is not much evidence for that, and there are reasons to believe that oligopolists are far more interested in reducing the dispersion of profit rates over a cycle than in increasing the size of profit rates. A reduction in the dispersion of profit rates reduces the risk of investment and can lead to a decrease in the cost of capital, which in and of itself can enormously increase the wealth of the firm.

Wachtel and Adelsheim think that only increased markups during recessions are inflationary. If wages and raw materials costs are rising, constant markups are also inflationary. This can best be seen by reexamining the authors definition of markup.

$$\text{(1)} \qquad \text{M.U.} = \frac{\text{V.S.}}{\text{L+M}} - 1$$

where M.U.=markup, V.S.=value of shipments, L=production worker wages and M=cost of materials. The definition can be rewritten as

$$\text{(2)} \qquad \text{M.U.} = \frac{\text{V.S.} - (\text{L+M})}{\text{L+M}} = \frac{\text{G.M.}}{\text{L+M}}$$

where G.M.=gross margins of overhead expenses and profits. These variables should be on an average per unit of output basis to determine what effects fluctuations in output have on their values.

If L+M per unit is rising in an inflationary context, despite a recession and a constant M.U., gross margins will rise as will price. A policy geared toward monitoring markups as suggested by the authors must include cases of this kind. However, I think the analytical foundation for a policy review of markups is misleading.

The crux of the matter between myself and the authors can be clarified in Equation (2). They believe that producers decide on M.U. as a determinant of prices and profits; I believe that producers stake their decisions on G.M. and therefore M.U. is a passive outcome of decisions on G.M. and market influences on L and M.

This is not a question of emphasis, but one of cause and effect. If oligopolists are primarily interested in maintaining profit and profit rates, control of the proximate variable gross margins will achieve their objectives simply and efficiently. In light of these objectives, why would oligopolists want to control the ratio G.M./L+M when in effect it adds no new information and complicates the fulfillment of the profit goals?

My understanding of the literature is that markup formulae prevail in the distributive trades, in pricing in local markets and perhaps in loose knit oligopolies but not among the big time operators whose price changes are newsworthy and of calculated importance. My own work leads me to conclude that a public policy with aims to reduce structural inflation—and there should be one—would *best* concentrate on gross margins per unit of output to determine whether and to what extent price increases are justified.

The authors' attacks on Keynesian economics are as gratuitous as they are unwarranted. An enlightened public policy must supplement the macroeconomic policies of Keynesian economics, not replace them. There is no way to eliminate an excess demand inflation but by attempts to restrict the growth in aggregate demand by fiscal and monetary measures. If as a result, a recession occurs and the price level continues to rise, the fault lies not with the policy but with the structural response of the economy.

Macroeconomic policies are structurally blind, and that is inherent to their nature and perhaps to their effectiveness. They represent hard won progress in American economic thinking and responsibility. They do require supplementary aids to contain undesirable increases in the price level due to monopoly in all markets, including the market for labor. A demand by the public for justification of price and wage increases in important industries which have multiple effects on the price level would be an auspicious beginning.

REPLY TO PROF. HOWARD N. ROSS' COMMENTS

By HOWARD M. WACHTEL *and* PETER D. ADELSHEIM

We welcome Professor Ross' comments on our study paper, the more so because Professor Ross' own work in the area of concentration and price behavior is a significant contribution to our understanding of contemporary economic phenomena.

Professor Ross is in agreement with us in his discussion of short-term recessions, when he concludes that "oligopolies will use their market power to set prices which limit profit losses" in such a way that they "protect gross margins above direct costs . . ." Our data support this proposition. In certain sectors of the economy, gross margins are protected via the mechanism of an increased price markup, creating a *segment* of the Phillips Curve which is indeed positively sloped, although Professor Ross seems to contradict himself at an earlier part of his commentary when he expresses skepticism about this possibility. A positively sloped Phillips Curve in the short-term need not imply a rapid fall in real income, as Professor Ross suggests, simply because government policy, dissaving, and trade union pressure can mitigate the potential fall in real income under contemporary political-economic conditions.

We agree with Ross when he argues that the phenomenon we have identified applies best to the short-term. In fact, we indicate this in our paper when we argue that, should a recession continue for a substantial period of time and become deeper, we would then encounter a more traditional Keynsian world of elastic consumer responses to rising price markups. When this occurs, sales would fall off sufficiently to cause a rollback in price markups. But this happens only in the longer-term (in the sectors of high economic concentration that concern us); and since the price behavior we have identified is becoming more pervasive throughout the economy, recessions must be longer and deeper before we reach this "Keynsian" world. The example of the auto industry, which Ross cites as counter-evidence, is in fact some of the strongest evidence in support of our analysis. In the auto industry markups were substantially increased at the same time as sales fell. Only when the rise in markups became self-defeating—that is, sales fell more rapidly in percentage terms than the percentage increase in price markups—did the auto firms reduce their markups through the sales gimmick of a rebate. But the rebate never pushed the price back to its earlier level; it only reduced the price slightly after the auto firms overshot the limits to which they could raise their markups. In brief, we have a situation where the auto firms increased their markups in the face of declining sales but increased them too much. Then they reduced their markups, but the end result was a higher markup after the declining sales than before.

Professor Ross cites the speculation about the cyclical behavior of price markups in the earlier literature on full-cost pricing. All we

can say is that our data and analysis indicate clearly that price markups are not stable over the cycle. Rather than "reject" the models of full-cost pricing, we have simply subjected those models to empirical inquiry and let the data speak for themselves. Behind our empirical analysis is a theoretical model of target profit behavior. This is the "sufficient" and "precise motivation" for oligopolists which Ross asks us to provide.

Finally, Ross raises the issue that firms "stake their decisions on [gross margins] rather than price markups." We do not see anything incompatible between these two propositions, since price markups are the means by which gross margins are attained and protected during recessions. Our method commenced with a theory of profit behavior, within which price markup practices were the means or instruments by which target profits were attained. We then translated this theoretical model into operational hypotheses and an empirical test. And the data indicate support for our hypotheses and the theoretical foundation upon which the empirical test was erected. This is the most cogent argument for our version of the contemporary economy. Instead of an "attack" on Keynsian economics, we see our work as bringing Keynes up-to-date with the addition of a price sector to his model which incorporates markup price behavior over the cycle under conditions of economic concentration.

O