

**Economic Volatility, Inflation-Output Trade-Off Variability and
the Challenges to Social Democratic Egalitarianism in Europe:
Informed Speculation and Preliminary Evidence**

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This is a work in progress, and, as such, comments and suggestions, from the whimsical to the brutal, are welcome. Do not quote or cite without the author's permission.

Abstract: This paper examines a challenge to instituting more egalitarian incomes policies in Europe posed by economic uncertainty and the consequent volatility in economic outcomes, specifically the variance in the profit rate of firms. Rising variance in the profit rate increases costs of equality in the form of foregone proportion of the surplus generated as well as threatening a larger number of firms with bankruptcy. Unlike appeals to specialization resulting from open trade, this explanation centers on dilemmas that can affect firms also at the sectoral level. Rising variance in firm profit rates, and thus wage dispersion, are tied to shifts in demand management and monetary policy that result in changes in the sacrifice ratio or the output-employment loss for disinflation. The sources of shifts in the sacrifice ratio, in so much as they rest in conservative monetary policy and increased capital mobility, imply different consequences for egalitarianism. While it's certainly premature to speak of Europe-wide social democracy, in the dynamics of the inflation-output tradeoff lie some possible impacts of European monetary policy on the pursuit of egalitarianism in Europe. Evidence from the recent experience of income distribution and shifts in macroeconomic policy in France suggests increases in the profit variance stemming from changes in macroeconomic policy towards a more conservative stance does negatively affect the degree of equality of wages. It concludes with speculation about the consequences of European monetary policy for the project of equality and the pressures for reform that may be generated by the European Central Banks conservative monetary stance.

I. Introduction

What does EMU mean for the hopes of egalitarianism in Europe? The question is vast, since the matter of equality depends on so much more -- trade union power and structures, public labor market policies, etc. And the question may be premature since much of the institutional configuration both of the EMU and the wider Europe in which it rests is inchoate or changing or as of yet opaque. That there will be in all likelihood negative consequences for wage equality seems to be consensus; the dispute rather is the mechanisms through which that trend will operate. In this paper, I explore the future of one constitutive aspect of social democracy, namely, the pursuit of egalitarian wage distributions, its relationship to macroeconomic, especially monetary, policy and one possible mechanism through which it operates -- variance in the degree and character of economic uncertainty.

Recent inquiry into the challenges and possibilities of social democratic practices has increasingly taken the form of an assessment of the technical feasibility of and potential coalitional support for social insurance against the vagaries of the labor market both within and outside typical working years. (E.g., Iversen and Soskice, 2000) Given the length and severity of the unemployment crisis in Europe and progressing inequality, this is no surprise.

Yet, for the bulk of the history of social democratic reformism, its hallmark has been less a welfare state than a more or less egalitarian outcome in the distribution of income and life chances. My intent in this paper is to explore one aspect of social democracy, namely, egalitarian income distributions, and its relationship with the practices by constituents that social democracy presupposes. Low wage differentials still strongly correspond with intuitions about the degree to which a society is "social democratic", as in Figure 1.

[Insert Figure 1]

At the outset I should clarify what I mean by social democratic practices. The distinction is meant to connote the inclusion of relations and institutions beyond the boundaries of the state. As such it entails the behavior of what are thought of as social democratic

constituents. Although "partners" may be a better term here since "constituent" is meant to comprise the relationship of both supporter and active agent in the pursuit of the desired policy outcome, a relationship that obtained in the pursuit of equality. Clearly, there are plenty of cases where the action of agents can be more or less taken for granted by policy makers: e.g., that private agents will invest capital gains when taxes are cut, credits cheapened, markets expanded and luxury consumption punished. At other times, the matter is more difficult; the classic example is whether wage restraint can be obtained in the face of expansion. These two examples are limited in that they don't presuppose a relationship of representative and supporter necessarily. This is not true of social democratic egalitarianism, where equality through wage compression and social insurance were complementary. The failure of the Left to seize political power is generally seen as a threat to egalitarian wage policies as the costs of wage compression are compensated for (Cameron, 1984) or facilitated by (Iversen, 1999) the credible maintenance of Left wing welfare policies.

It should be noted that wage bargaining here is key. While social democratic governments did and do use public policy to enhance egalitarian outcomes, equality in the social democracies was as much, if not more, a result of the wage bargaining system than state action -- which is why trade unions are thought of as partners in the social democratic coalition as much as they are supporters. Recourse to the welfare state alone to promote equality runs the danger of a fiscal crisis. For most of those in the labor market, while there may be welfare services that help to equalize income baskets, e.g., health care, the labor market is the ultimate determinant of income levels as it must be in a capitalist economy. It is the activities of supporters *qua* economic agents in the labor market that is presupposed by the social democratic project of equality that I will examine here. Or more accurately, one challenge to their egalitarian wage policies.¹

Why equality? Until the severe retrenchments of the welfare states found in the Anglo-American world, reference to the generosity of the social democratic welfare state was made to highlight its commitment to egalitarianism over its emphasis on social insurance. (E.g., Esping-Anderson, 1990) Since the crisis that coincided with the end of the Cold War, this emphasis has shifted from the former to the latter. Subsequently, discussions of the future of social democracy have centered on the issue of political

support for a welfare state that indemnifies those in the labor market against its risk. With the rising risks that come from both openness and the collapse of demand management, the unsurprising conclusion is that *ceteris paribus* higher risks bring greater support for the welfare state. (Iversen and Soskice, 2000; Garrett, 1998)

Egalitarian policies are a different matter. In some cases, egalitarianism itself, at least at high levels, is perceived to have been the pressure placed on social democratic welfarism. (Iversen, 1999) This is not to suggest that egalitarianism must necessarily be abandoned (though some do insist that this conclusion follows from recent economic transformations), but many do conclude that egalitarianism cannot be pursued in the manner as it has been in the past. (For agreement on at least this point on different sides of the debate, see Garrett, 1998; Iversen, 1999)

I do not contest the claim that egalitarian policies have become more difficult to pursue or the claim that, to the extent that egalitarianism is possible, the mechanisms of old for its realization will no longer do. Instead I will first examine the role of economic uncertainty and consequent volatility in the generation of unequal outcomes. In this paper, I will try to examine the peculiar challenges generated by rising uncertainty for egalitarian wage policies, using as a point of departure the logic of wage compression with attention to the predictability of economic decision-making at the firm level. (Sections II and III). This may seem an exotic leap, but the predictability of the market environment shapes the distribution of profit and thereby the extent to which there are losses to workers in following more solidaristic wages. Afterwards, I examine some of the sources of varying uncertainty, specifically those that stem from the character of marcoeconomic policy and marcoeconomic policy institutions. (Section IV.a. and IV.b.) I will then offer a tentative test of the claim using evidence from France -- admittedly, not quite a paragon of social democracy but still illustrative of the dynamics explored. (Section IV.c.) Finally, I explore some implications for the pursuit of equality in Europe - - adding to the growing list of hurdles -- and some suggested consequences of European monetary policy. (Section V.)

II. Egalitarianism and Wage Bargaining

For the most part, egalitarian distributions of income were achieved through the wage bargaining system. Generous labor market insurance was and still remains where it exists contingent on or a supplement to active labor market policies. These regimes are less de-commodifying than re-commodifying; that is, a wage floor operates only by virtue of the willingness of an unemployed worker to reenter the labor market, after the acquisition of appropriate skills and certainly when presented with a job. In such systems, labor market institutions work actively to achieve egalitarianism in ways that do not engender a fiscal crisis of the state. Egalitarianism through the provision of labor market insurance is generally a complement to the mechanism in the labor and temporary compensation for the failure of the labor market.

The logic of wage compression stemming from solidaristic wage bargaining is well known. Peak level bargaining reduced wage differentials between high wage and low wage workers. Whether a product of commitments to norms of solidarity (Swenson, 1989) or a Nash solution to a Rubensteinian bargaining game (Iversen, 1999), the consequence was the increase in the wages of low productivity workers above their marginal revenue product and the reduction of leading sector workers' wages below theirs.

For low wage sectors, egalitarianism via wage compression results in a real wage push and thereby unemployment. Ideally, high wage sectors are the site of accelerated investment as a result of 'superprofits' resulting from the fact that labor is paid less than its marginal product, and the ensuing growth absorbs dislocated and newly trained workers who now, while earning more, receive less than their contribution to output. To the extent that differences in the marginal product of high and low productivity sectors are low, foregone wages in the leading sector are small opportunity costs for an effectively accelerated investment cycle and thereby a larger output and higher real wage. When the difference becomes large, as is commonly noted, the result is rising wages in the form of drift. It's here that the narrative gets somewhat murky.

By one reading, trade leads to widening disparities (prior to the intervention of bargaining and/or public authorities) in wages between sectors. Competition fosters specialization and productivity increases in the exposed, leading sector. Differences in

profit rates grow. Globalization (*qua* trade more than capital market integration) alters the delicate balance between sectors by increasing the incentives to leading sector workers to defect. For employers, the premium on skill increases as skilled labor becomes an effective technological component in the face of competitive markets. Wage compression results in an undersupply of skilled labor, given that its wages are far below its marginal product, and drift wages are used to attract skilled labor. By another, slightly different reading, it is trade combined with the fragmentation of markets that undoes wage compression. In so much as fragmented markets comprise quality instead of price competition, producers in this sector will face a trade-off between the cost advantages of solidaristic wages and their needs for skilled labor with firm and sector specific knowledge. (Iversen, 1999: 94-103) Reconciliation between these two competing needs is enabled by drift structured in the form of profit sharing or quality bonuses, equity-based remuneration, etc., i.e., non-formally contracted, *ex post* bargaining, which combines wage flexibility and wage restraint.² The pressures generated by the need for wage flexibility and those emanating from the rising disparities in the value generated by workers in different sectors undermine equality through wage bargaining.

I bring up this narrative because it lends itself to a clear solution to the problem. If the problem of wage inequality stems from rising skill disparities the solution rests to a large extent in reskilling.³ If comparable skills entail comparable productivities, wage distribution would become more egalitarian as skill disparities disappeared. This solution to the problem of rising inequality can be criticized on the grounds that it is the low wage sector that is the engine of employment. High productivity sectors are highly productive because capital labor ratios, which stem from the capacity to substitute capital for labor, are high. That is, investment in high productivity sectors results in smaller employment gains than does investment in lower productivity sectors since the latter tend to be labor intensive.

II.a. Profit, Wages and Uncertainty

While I do accept the critique that notes the limits of reskilling as means of fostering egalitarianism, uncertainty exerts a dynamic that is autonomous of specialization from trade. Uncertainty generates its own peculiar dynamic that renders

solidaristic wage bargaining more difficult, and this dynamic implies different constraints on and avenues towards egalitarian outcomes. And it may be uncertainty and the consequent volatility instead of, e.g., the fragmentation of markets or quality production that explains the transformation of production organization comprising relations between management and labor.

The narrative of upgrading skills uneasily accommodates many of the very transformations to which it appeals in order to make its case, however. The original explorations of the rise of flexible production techniques, organizational forms and labor relations were keen to identify the need for rapid adjustment in a volatile world. (Piore and Sabel, 1984) If we take that observation seriously, the narrative seems to alter only slightly since fragmentation of markets and competitive pressures from newly industrialized economies. But the changes in the reading have significant consequences for the costs of egalitarian wage practices, coalitional support for a more equitable distribution of wages and the impact of policy on generating social democratic (read pro-egalitarian) constituents.

Before I get to the issue at hand, some preliminary steps are in order. Firstly, following Knight (1921), I take uncertainty to exist when agents are unable to assign meaningful probability values to the randomness they face over, e.g., future states of the world.⁴ That is, they may take guesses, but their actions are not based on probabilities that converge on true or objective probability distribution over events, and as such there exists no rational insurance scheme to indemnify agents.⁵ And therefore, any decision can lead to a surprising outcome, the latter a product of decision and the "state of the world", to use Savage's phrase. (Savage, 1954) Uncertainty does not simply result from lack of information about the preferences, endowments, technologies of others but also comprises non-fundamentals such as forecasts by any agent of another's forecasts of her own, etc., and interdependent beliefs and objectives, in general.⁶ (Keynes, 1936; Cass and Shell, 1983) For Knight, herein lies the source of profit; if only risk obtained, agents would be able to hedge and optimize over all possible states of the world. (Knight, 1921)⁷ Pure profit would be eaten away, and the rate of profit would reduce to the interest rate or the social rate of time preference.

Nor does an actual reduction of uncertainty to risk necessarily help. This seems counterintuitive; if, as in games with no dominant pure strategy as found in game theory (e.g., matching pennies) more than one choice seems optimal, wouldn't there be some optimal mixed choice, i.e., some randomization of choices in proportion to the likelihood of payoffs given other players' choices? Any game in which there is no dominant pure strategy but only a mixed strategy does in fact illustrate this point. In the game 'matching pennies,' a player's optimal strategy is a mixed one in which H and T are each played with a probability of 0.5. That is, she randomizes her choices with a frequency that converges on 0.5 for H and for T. Physically mixing a strategy is, of course, impossible. Two players playing this strategy will receive the same expected payoff and the same actual payoff as the rounds move to infinity. We could draw from this that profits would similarly be equalized, even if insurance markets for such market activity were prohibitive. Standing against this understanding and prediction is the fact that decisions taken by firms are not so easily and certainly not costlessly reversible, as in the standard neoclassical theory of investment.⁸ Adjustment costs do exist and these can lock in a firm (and its profit rate) into a particular market position for a while and, at the boundaries, push it towards bankruptcy.

Whether firms find themselves in such an environment depends in large measure on production technology (rigid vs. flexible), organizational structure (e.g., horizontal input linkages) and the orientation of government policy (price vs. demand stability). (The third is the matter of concern here, and I will return to it below.) For any given instant, wrong choices and lost profits are wrong choices and lost profits. Flexibility may permit faster reversals and quicker adjustment and thereby lower adjustment costs, but the "correctness" of the choice depends on the predictability of the environment if there are any costs to readjusting decisions. (Schmutzler, 1991; Jones and Ostroy, 1984) One manifestation would be an increase in the variance of the profit rate around a more or less stable mean and median.

Uncertainty increases variance in the profit experiences of firms in a clear manner. To take a hypothetical example, firms are confronted with predicting whether there will higher or lower demand and consequently deciding upon their level of output. If subjectively each outcome seems equally likely⁹, firms will, therefore, choose high and

low output in equal measure. Profit experiences will follow suit, dispersing according to the distribution of correct and incorrect decisions.¹⁰ And to the extent that the choices are associated with investments, hirings and other *ex ante* input costs, decisions are imperfectly reversible. Because of these costs of reversing a decision, a firm taking losses may be locked into a decision for some time, especially if profits happen to be positive but below the average rate of return since the investment represents a sunk cost. For firms taking losses, the problem of readjusting decisions may be costly especially since other firms would have seized markets, enjoying incumbent advantage. The outcome is rising variance in the firm rate of profit within a sector.

For those engaged in a world in which capital hires labor and wages are determined in definite, organized ways, the level of uncertainty and consequent volatility associates with each mode of bargaining its own peculiar trades-offs. But in the main, rising variance in the rate of profit will bring into tension goals of equality or equity and objectives of maximizing income (or equivalently norms of a fair division of the surplus). The following figure, Figure 2, represents the opportunity costs and potential impact of rising variance in the rate of profit on wage bargaining by reference to differing cumulative profit distributions.

[Insert Figure 2]

The horizontal axis represents the cumulative distribution of firms in a sector, from lowest to highest profit (productivity). The vertical axes measure profits for low disparity cases (line $\pi\pi$) and high disparity cases (line $\pi'\pi'$) and wages (line $\omega\omega$). The assumption is made that wages move in tandem with productivity up (or down) to a sectoral minimum wage. The cost of setting wages at suprafirm levels is lower in the case of low surplus disparities between firm. That is, a sectoral wage rate that does not distinguish sharply between the particular profit experiences of each firm entails smaller costs in the form of foregone share of the contestable surplus – which exists if there are quasi-rents or increasing returns.¹¹ When the disparity in profits between firms is low, this cost is relatively small. As disparity in profits increase, this cost increases, as depicted in the figure. This cost is in a sense the premium paid for lower wage income disparity.

To the extent that workers are unwilling to pay the premium, unions cannot compensate at suprafirm levels.¹² That is, they may be normatively committed to equalitarian outcomes but unless they are willing to sacrifice potential wage to their employer, their behavior will subvert egalitarian wage distributions. Wage compression in Scandinavia was able for a while to win restraint because a series of policies existed that were able to transform 'superprofits' into investment and thereby into higher real wage in the future.

There are various solutions to the problem of the 'fairness' of the division of the surplus. One is to devolve bargaining to the firm level. Firm level bargaining, however, runs the risk of fragmentation of the union movement. But more importantly it amounts to a surrender of wage equality at least through the wage bargaining mechanism. Demands tailored to the particularities of the firm may weaken the union movement, especially if workers at the firm level have sources of bargaining strength such as firm specific knowledge. The matter of disparate firm financial experiences exerts further pressure on union solidarity and suprafirm bargaining if the 'lower' end of the profit income distribution entails substantial losses for a significant number of firms. The number of potential bankruptcies increases from X to X' . If the number of firms taking losses is high, there may be pressures, as mentioned earlier, to adjust wages firm by firm to prevent bankruptcy and higher unemployment.

II.b. Wage Drift, Remuneration and the Rising Variance in Firm Profit Experiences

On the face of it, an appeal to uncertainty as the mechanism through which equality augmenting wage institutions are subverted has much in common with explanations of the collapse of solidaristic bargaining that center on drift, as suggested above. And given that drift is always drift 'away' from levels established by collective agreements, drift is possible at any given level from that of the peak to those of the firm. Lower levels reduce the possibility of drift by enabling contracts that are more tailored to particularities such as sectoral competitiveness and an industry's skill requirements.

The usual reading of the pressures faced by centralized wage bargaining appeal to trade and the ensuing competitive pressures. The channels through which the logic of competition operates in this new environment are debated. One is straightforward:

skilled labor becomes in effect a crucial asset in highly competitive environments and consequently employers try to attract skilled labor with higher pay, which is necessarily wage drift. Skill augmentation will face limits in this world since wage compression, if supply adjusts to price (wages), skilled labor will always be undersupplied and hence relatively scarce.¹³ Drift will continue and generate inflation, since drift is not offset by lower wages at lower skill levels, unless bargaining is decentralized. With centralized bargaining goes egalitarian wage policies. Drift in this frame exists only to the extent that a collective contract, in setting wages at the level of common denominator, entails the loss of potential wages to some workers as firm productivities diverge. A devolution of bargaining to the firm eliminates drift because the initial problem is not *ex ante* contracting *per se* but rather the ability of a contract to particularize.

Another explanation appeals to the character of production itself; quality production renders "monitoring of work effort . . . more difficult". To compensate for potential shirking, non-standard forms of remuneration such as profit sharing and quality bonuses are introduced. (Iversen, 1999: Chapter 4) That is, the joint-production equivalent of a piece rate system is enacted. There are limits here to what a contract can do.¹⁴

While the latter claim is certainly plausible, it should be noted that these modes of payment are ones that help to spread risk. And many of the earlier accounts of the rising importance of skilled labor in flexible production stressed its ability to quickly respond to new information and shifts in the competitive environment, i.e., its capacity to increase thru-put. In these types of firms, workers not only help to cope with uncertainty but also increasingly bear the costs of risk. Profit sharing makes part of workers income derived from residuals, that is, in a form common to risk bearers. And recourse to it may be an indication of managerial assessments of the rising level of risk. One reason to believe rising uncertainty to be at play rather or to a greater degree than incentives is the rise of a symmetric phenomenon on the side of financing, namely increasing recourse to equity financing over debt financing. (Pontusson and Swenson, 1996) The former, like profit sharing, serves to spread risk in a way that the latter does not.

III. Some Evidence of Uncertainty and Rising Profit Variance in the Case of France

There is some evidence associating rising market volatility with rising inequality, in so much as the former results in growing profit variance, and there is evidence linking rising profit variance with larger wage dispersion. The boxplot below (Figure 3) depicts the distribution of profit rates of some of the 52 largest French firms (controlling for continuity over 3 decades), including Peugeot, Alcatel, Citroen, Rhone Poulec, Michelin, Pernod Ricard and Dassault. These firms account(ed) for a considerable share of turnover in their respective sectors. And there is little reason to believe that their experience does not point to a general trend in French industry, although the possibility that this group of firms is not typical cannot be ruled out.

[Insert Figure 3]

The largest French firms were affected in very particular ways by rising economic uncertainty beginning in about 1967. The standard deviation of annual profit rates begins to increase. Through the 1970s, the variance in the profit rate appears to map shifts in fiscal and monetary policy, e.g., Barre's monetarist contraction in the late 1970s. The variance in the rate of profit increases dramatically after the 'Right Turn' of the Parti Socialiste in 1982. (Note that the profit rate of the median firm does not fluctuate significantly except in 1983 with the sudden deflation. The average rate of profit moves between 4% and 6.7% between 1960 and 1978.) Rising uncertainty transformed the financial experiences of firms in ways that had significant consequences for labor; some of these consequences have been suggested above (see II.a.).

Admittedly, the data must be interpreted with extreme caution. In addition to the fact that the sample set of firms is small ($n = 52$), it covers many sectors with only a few firms for each. Since unionized workers are generally organized by sector, the chart may tell little about profit disparities within a sector. Certainly, rising trade leads to expectations of specialization and the attendant decline of some sectors and rapid growth of others. The growing spread in the profit experience of firms could have less to do with uncertainty than with the dynamics of relative factor prices and expertise.

Yet, despite the small number of firms for any given sector in the data set, the available figures suggest that even within a sector the variance of the profit rate increased significantly between 1966 and 1981 and increased spectacularly after 1982. The following eight charts (Figure 4), which plot the profit rates and dispersion of profits of a handful of companies, segmented by sector, show that the increasing variance in the profit rate is not merely a result of specialization, since its growth can be seen within sectors as well.

[Insert Figure 4]

While the number of firms should give pause to attributing undue weight to the data, the fact that the variance of the profit rate shows a similar trend across eight sectors implies that there is more than just coincidence at play.¹⁵ While the greatest increase in the disparity of the profit rate is unsurprisingly found in the car industry, the one of the three most exposed to trade, the increases in the variance of the others including some presumably very sheltered sectors such as retail are substantial.

IV. Sources of Uncertainty: Macroeconomic Right Turns and the Inflation - Output Volatility Trade-off

IV.a. Demand Management, Monetary Stability and Profit Variance

There are of course many places to which to point when searching for the sources of uncertainty and the consequent rising variance in profits: e.g., trade, exchange rate regimes. I am not disputing the common claim that trade and exchange rate volatility can exert pressures which make markets unpredictable and volatile and thereby render profits varied across firms. I would like to focus instead on demand management and the nature of the monetary policy regime, or the degree of commitment of public monetary institutions to low inflation. Evidence from large French firms suggests that the variance in the profit rate is lower when full employment is actively sought than when a government is willing to deflate to maintain price stability. (See Figure 3.) Table 1 lends further support to this intuition. The measurement of the inflation trend I use is admittedly crude -- the annual change in the inflation level. Crude though it may be as a

measure of a trend, the annual shift in the inflation level may be sufficient for a firm to feel an effect on the demand for its goods. To the extent that inflation is not the product of an input, supply shock but rather an accommodationist monetary policy designed to facilitate demand management, a rise in the money supply will enable a firm to sell all products produced while operating at full capacity. A contraction of the money supply, by contrast, can result in lost sales and rising inventory.¹⁶ The evidence does show that negative shifts in the consumer price index (rate of inflation in any given year subtracted from that of the previous year) have a strong positive impact on the variance in the profit rate for the period 1963-90. (More below.)

[Insert Table 1]

There is a simple mechanism by which active demand management can reduce the variance in the profit rate. Private economic agents can assume relatively optimistic market conditions and be confident in these guesses since an active central authority acts to ensure that full employment obtains. Ideally, at an actively maintained full employment the rate of profit should equalize as the risks of economic activity fall. Of course, one limit of this explanation is that the variance in the rate of profit of these large French firms increases as the PS reflatd upon first coming into office. Symmetrically, fiscal and monetary contractions did not increase the variance in the rate of profit in the late 1970s anywhere to the same degree they did in the mid and late 1980s.

IV.b. The 'Sacrifice Ratio' and Profit Variance

One other source of profit variance and rising wage inequality may be a shift in the 'sacrifice ratio'. The sacrifice ratio (hereafter SR) refers to costs of disinflation, measured in terms of the cumulative decrease in output (and employment) from its trend level. And this is the price that is paid for reducing inflation through a demand contraction. Thus, it refers to the loss of output (from its trend) as a result of the anti-inflationary efforts of public authorities and can be thought of as the steepness of a Philips curve for any given moment.

It was first observed by Robert Lucas (1973) that this cost of disinflation in output and employment varies across economies. Specifically, he noticed that economies with greater variance in nominal GDP had lower sacrifice ratios than ones with a smaller variance in nominal GDP. The study suggests that even with all else being equal there are some costs to price stability. The debate on the sacrifice ratio is quite considerable and the literature vast as it touches the core of some of the most important issues in macroeconomic policy, e.g., optimal inflation rates, inflation targeting, wage structure, capital mobility and central bank independence. Nor is it the case -- and I am not claiming here that it is the case -- that a high SR is undesirable. Cukierman suggests that the fixation on the SR in deflationary periods obscures the fact that economies with high SR's may mean that the economy is more responsive to monetary policy, i.e., output and employment increases more dramatically than in economies with low SR's.¹⁷

How the SR affects the average rate of profit is clear -- departures from full employment reduce the average profit rate by reducing the set of actual trades. Whether shift in the SR also impacts the variance in the profit rate depends on the mechanisms through which the former operates.

The following robust observations have been made about the SR:

- O1. the greater the variance in nominal GDP, the *lower* the SR (Lucas 1973)
- O2. the higher the mean inflation rate, the *lower* the SR (Ball, Mankiw and Romer, 1988)
- O3. the more flexible wage contracts, the *lower* the SR (Ball, 1994)
- O4. the less gradual the deflation, the *lower* the SR (Sargent, 1983)
- O5. the less restrictive the controls on capital, the *higher* the SR (Lougani, Razin and Yuen, 2000)
- O6. the more independent the central bank, the *higher* the SR (Fischer, 1995)

Some of these, e.g., **O(bservation)3**, have implications for egalitarianism in and of itself. But I raise the matter of the SR to examine its impact on variance in the profit rate. Table 1 offers evidence that changes in the inflation rate negatively impact the variance in the rate of profit, at least as measured as the standard deviation in the profit rate for 52 large French firms. Furthermore, it also suggests that this difference varies by period. The impact of a change in the inflation rate on the variance in the profit rate is small and

statistically not significant for the period 1963-76, whereas it is considerable for the period 1977-90. The principal reason to believe that the SR impacts the rate of profit is because the SR is effectively a measure of "recessionary-ness" of a deflationary strategy, and, of course, departures from full employment entail losses in the profit rate.

It should be noted that the periodization is only partly arbitrary, partitioned to coincided with data for wage equality. The division of the period examined before and after 1976 also coincides, more or less, with Raymond Barre's right turn. Barre introduced his 'Stabilization Plan' in 1976 and proceed on an anti-inflationary and more free-market trajectory. Given the Right Turn of the PS and the imposition of a more effective anti-inflationary policy in 1982, the reflation of 1981-82 can be seen as an aberration in the direction of French macroeconomic policy. While in many ways some of the reforms of in the initial years of Mitterrand's term as President went more leftward, the tightening of monetary policy and attempts to reduce the deficit even at the expense of higher unemployment show a right turn in the orientation of economic policy institutions. Consequently, it implies if not an actual change in the macroeconomic policy regime, then a shift towards a new, anti-inflationary one.¹⁸

Whether the fall in output has any impact on the variance in the rate of profit depends in large measure on the mechanisms through which it is thought to operate. Table 1 suggests that the impact of shift in inflation does impact the variance in the profit rate differentially across institutional configurations. How it does so depends of course on the mechanisms that SR operates. Corresponding with the observations on the SR listed above are plausible mechanisms:

- M1.** the variability of nominal GDP leads agents to treat shocks, whether real or nominal, as nominal, thereby preserving the level of economic activity¹⁹ (Lucas, 1973)
- M2.** under higher mean rates of inflation agents are more accustomed to changing prices, therefore menu costs -- of the costs of changing prices -- are lower, real prices are more flexible and thus the economy adjusts more quickly (Ball, Mankiw, Roemer, 1988)
- M3.** when wages are negotiated more frequently, e.g., one year contracts instead of three year contracts, wages can adjust to demand shifts more quickly and thereby help return the economy to its full employment levels (Ball, 1994)

- M4.** gradualism produces speculation about future reversals, whereas a sudden deflation is credible (Sargent, 1983; Ball, 1994)
- M5.** while there is little empirical evidence for the negative impact of openness (*qua* trade) on the SR, the substantially positive impact of capital mobility on the SR is theorized to be a result of interest rate parity conditions -- adjusting for risk premiums -- constraining the extent to which the domestic interest rate can adjust to the domestic demand shock without encouraging capital flight (Lougani, Razin and Yuen, 2000)
- M6.** the higher SR found in economies with more independent central banks is thought to result from the same logic as **O1** and **O2**, namely, (i) agents are more likely to take any shock, whether nominal or real, as real in economies with greater price stability and (ii) when prices change infrequently, as in economies with conservative monetary institution, higher menu costs result in real output losses (Fischer, 1995; Cukierman, 1998)

Some of these mechanisms do not lead to a prediction of greater variance in the profit rate, e.g., **M(echanism)4** and **M5**. The others suggest that sectors and firms can be affected differentially. For example, firms in the export sector may be forced to change prices more often than firms in the sheltered sector if exchange rates are volatile. These firms would be more accustomed to changing prices. Or firms in the tradable sector may be ones with higher growth in productivity and therefore price may rise more slowly. Similarly, the export sector may be more likely to treat shock as real if it expects exchange rates to adjust. Finally, wage setting may (and often does) vary heavily by sector.

IV.c. Price Stability, Profit Variance and Equality: Evidence from France

Of course, the central question is whether shifts in inflation and changes in the orientation of policy towards demand management, through their effect on the variance of the rate of profit, also impact wage dispersion; i.e., does uncertainty and the differential capacity to cope with it lead to greater inequality? Conceivably, it can do so by at least two separate mechanisms: first, pressures from workers to have their wages particularized to that of firm surplus; and second, pressures to render wages more flexible in order to reduce the costs of demand shocks.

To test the claim that economic uncertainty shapes the dispersion of wages through the distribution of firm profit rates I use the standard deviation of the rate of

profits of 52 large French firms over a 30-year period to test the posited mechanism. In Table 1, I provided some evidence that suggests that this mechanism is shaped by the orientation of macroeconomic policy, specifically that it is affected by the orientation of monetary authority to price stability. And I have provided some reasons why we should think of the orientation of macroeconomic policy as determining the degree and character of uncertainty as defined above. (Note that I am not claiming that a shift to a monetarist macroeconomic policy regime increases uncertainty overall, only that it increases the uncertainty of demand given that production decisions are made prior to sale. A monetarist macroeconomic policy regime clearly *decreases* the uncertainty or doubt about the value of prices as units of information.)

To measure the degree of equality of wage distribution, I make use of a Theil Index, scores for which have been recently collected for a large number of economies by the University of Texas Inequality Project. While a longer note on the Theil Index is desirable, for reasons of space I will restrict myself to simply noting that the measure $T \in [0, \log n]$, where 0 is perfect equality and $\log n$ is the upper bound.²⁰ (A T score of 0.301 obtains for any population in which half have all the income, and a population where 1 tenth of the population has all the income has a T score of 1, for sake of reference.) The UTIP database measures the distribution of income across industrial groupings. The measures used here cover wage dispersion.

The results of a preliminary OLS estimation are presented in Tables 2a and 2b.

[Insert Tables 2a and 2b]

The results for both the orientation of demand policies (as measured by surplus (deficit) as a share of GDP) and the trend in prices, here loosely used a sign of the orientation of monetary policy are both very significant and have the predicted signs, as expected. Both also have roughly the same impact. Regressing only the trend in the inflation rate and the level of government spending onto wage inequality produces highly significant results. Furthermore, these two variables accounted for slightly more than two-thirds of the variance, in keeping with common understanding about the impact of Keynesian macroeconomic policies on the distribution of income. (The introduction of an

interaction term of the two produced no significant results.) Nonetheless in both models that include the distribution of the profit rate, the variables account for a substantial amount of the variance; the adjusted R^2 are higher than 0.80.

Of course, the issue of relevance here is whether changes in the distribution of wages operate through the distribution of the rate of profit among firms. While the signs in both models are as predicted, in the first case the impact is neither substantial nor highly significant. The second model attempts to account for the interaction of the profit rate with the level of government spending in order to compensate for shifts in profit variance that are due to changes in demand management as opposed to say a supply shock, e.g., oil. These shocks can also affect companies differently as a result of, e.g., in the instance of oil, differing energy requirements. The impact of the variance in the profit rate in this model is more substantial and more statistically significant, though still falling short of the $p < .10$ level.

Wage bargaining institutions have to be controlled for and the impact of a shifting SR on their stability considered in order to make a more accurate assessment of the matter. As suggested, rising SR's may engender changes in economic institutions such as wage bargaining -- if the "efficiency" of institutions is sufficient for them to obtain. And it may in the case of wage bargaining institutions exert special pressure if, corresponding with greater profit variance, there are greater incentives on the part of workers to particularize wages -- to capture quasi-rents -- and on the part of firms to devolve bargaining -- to mitigate wage costs pressures in downturns. There is some evidence that devolutionary pressures are being felt and responded to, as identified in and OECD report on changes in wage bargaining in Germany.

The German wage bargaining system has been evolving rapidly, *de facto* if not *de jure*, in the direction of greater flexibility. Although the branch-wide wage agreement remains dominant, the tendency toward more decentralised wage bargaining has continued . . . Non-observance of branch wage agreements is also growing, with companies making agreements with their workforces to secure employment and cut costs. Many of these "agreements" made with the works councils might not be in line with legal provisions. . . [In OECD fashion] [p]roposals to strengthen the powers of the social partners to challenge local wage agreements need to be resisted . . . Indeed, as argued in the 1998 *Survey*, the authorities could support plant-level agreements by strengthening the role of works councils.²¹

A more full assessment would have to consider the structure and changes in wage bargaining.

V. **Conclusions: Implications for European Monetary Policy**

Admittedly, this inquiry is highly speculative, and discussions about Europe-wide pursuits of egalitarianism may be overly premature. My purpose here has been, well, to add to the growing list of hurdles to Europe-wide equality. Of course, it may be easier to change monetary policy, in so much as it matters to egalitarianism, than it is to change the distribution of endowments between, say, Germany and Portugal. I have tried to present some evidence why rising uncertainty can render income distributions less egalitarian, tying the dynamic of uncertainty of demand to the profit experiences of firms and directly and indirectly to the macroeconomic policy regime. Using the SR as a mechanism to link the variance in firm profit and macroeconomic policy offers some explanatory promise, though much more research is needed.

To the extent that this argument, that variance in firm profit is the transmission belt of wage distributions, has any merit, the variability of the SR has some obvious implications for the consequences of European monetary policy on future wage trends in Europe.²² At the outset, it should be noted that the claims are about the possible impacts of the orientation of European monetary policy and not monetary unification *per se*. In fact, one reason for unification may be to minimize background shocks altogether. There remains substantial national variation, and national variation -- e.g., in the duration of wage contracts -- may remain within the framework of monetary union to sustain variance in the SR and thereby profit variance and wage distribution.

But one implication of the dynamics of the SR, depending of course on the mechanisms that it operates through, is the generation of pressures towards convergence in institutions such as wage setting. I realize that there are many more factors at play in the determination of institutions such as wage setting, to make any concrete predictions. Cursory evidence from new forms of wage setting in Germany, however illegal, are indications of the pressure. And in all likelihood other states are feeling similar pressures.

The strong anti-inflation bias of the ECB may serve to worsen income distribution as time and again the costs of equality under monetary non-accommodation appear to be unemployment. Increased capital mobility may not really permit any other orientation, however. Thus, the clear target to reduce the costs of deflation is also the key mechanism used to achieve income equality, name the relatively rigid determination of wages in the labor market. Of course, pressures to reduce the sacrifice ratio via the flexibilization of wages have been felt throughout Europe now for decades, and in truth, wage setting and labor markets generally have become progressively more flexible. The quest for egalitarians is to find new avenues to the reduction of income differentials, e.g., the cross subsidization of low productivity labor through negative income taxes or a basic income.

Tables and Figures

Table 1: OLS Estimates of the Impact of Level and Direction of Inflation on the Variance in the Rate of Profit, 1963-90 (N=28)

Variable	1963-76		1977-90		1963-90	
	Inflation Trend	Inflation Trend and Level	Inflation Trend	Inflation Trend and Level	Inflation Trend	Inflation Trend and Level
<i>Intercept</i>	3.960 (2.067)	3.1309 (2.149)	21.873** (7.523)	26.649* (14.817)	12.430*** (4.185)	10.363 (7.053)
<i>Variance in the rate of profit_{t-1}</i>	0.423 (0.300)	0.427 (0.556)	-0.103 (0.237)	-0.114 (0.232)	0.154 (0.183)	0.135 (0.166)
<i>CPI</i>		-0.174 (0.130)		-0.939 (1.355)		0.029 (0.830)
δ CPI	0.303 (0.510)	2.221 (1.484)	-8.412** (-2.554)	-19.203** (6.435)	-3.320* (1.737)	-14.250*** (4.242)
<i>CPI*δCPI</i>		-0.174 (0.130)		1.407* (0.688)		1.067*** (0.387)
σ	3.153	3.153	19.35	17.09	17.01	15.35
<i>df</i>	11	9	11	9	25	23
R ²	0.313	0.438	0.373	0.600	0.161	0.371
F	2.503	1.75	3.274	3.372	2.397	3.393
p-value	0.127	0.223	0.0766	0.0600	0.1112	0.0254

Source: IMF electronic Database, Jacques Marseille (1995); *p < .10; ** p < .05 ***p < 0.01

Table 2a: OLS Estimates of the Impact of Demand Management and Profit Variance on Wage Equality in France, 1960-90

Variable	Coefficient	s.e.	t- test	p-value
<i>Intercept</i>	0.0142	0.0032	4.4059	0.0023
<i>Theil_{t-1}</i>	0.3644	0.1653	2.2045	0.0586
<i>Profit Variance_{t-1}</i>	0.0011	0.0012	0.8963	0.3963
<i>Surplus (Deficit) as a Share of GDP_{t-1}</i>	0.0921	0.0220	4.1933	0.0030
<i>ΔCPI_{t-1}</i>	-0.0862	0.0315	-2.7372	0.0256
<i>N=14</i>	Adj. R ² = 0.808	σ = 0.00072	<i>F</i> _{4,8} = 8.411	<i>d.f.</i> = 8

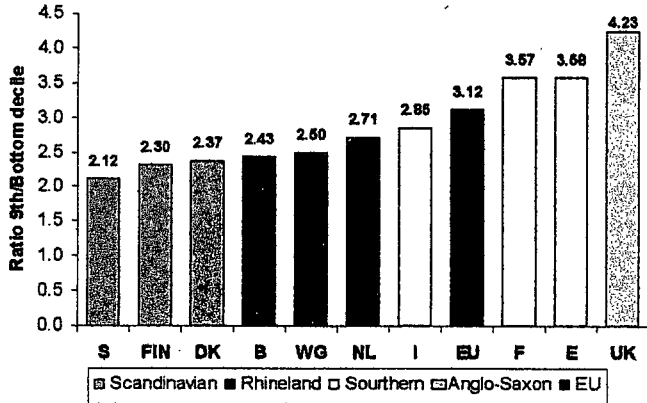
Source: see Table 1.

Table 2b: OLS Estimates of the Impact of Demand Management and Profit Variance on Wage Equality in France, 1960-90

Variable	Coefficient	s.e.	t- test	p-value
<i>Intercept</i>	0.0113	0.0035	3.2343	0.0144
<i>Theil_{t-1}</i>	0.4782	0.1695	2.8220	0.0257
<i>Profit Variance_{t-1}</i>	0.0109	0.0065	1.6875	0.1354
<i>Surplus (Deficit) as a Share of GDP_{t-1}</i>	0.0808	0.0216	3.7457	0.0072
<i>ΔCPI_{t-1}</i>	-0.0966	0.0298	-3.2369	0.0143
<i>Surplus (Deficit) as a Share of GDP_{t-1} * Profit Variance_{t-1}</i>	0.1407	0.0911	1.5448	0.1663
<i>N=14</i>	Adj. R ² = 0.857	σ = 0.00067	<i>F</i> _{5,7} = 8.372	<i>d.f.</i> = 7

Figure 1

Wage Dispersion: Ratio of Earnings of Ninth to Bottom Decile of Wage Earners, 1995



Source: Eurostat, *Structure of Earnings Survey, 1995* (WG excludes the new Lander of Germany. The ratio for the former DDR in 1995 was 2.35.)

Figure 2:

Surplus, Profit and Wages from Least to Most Productive Firms

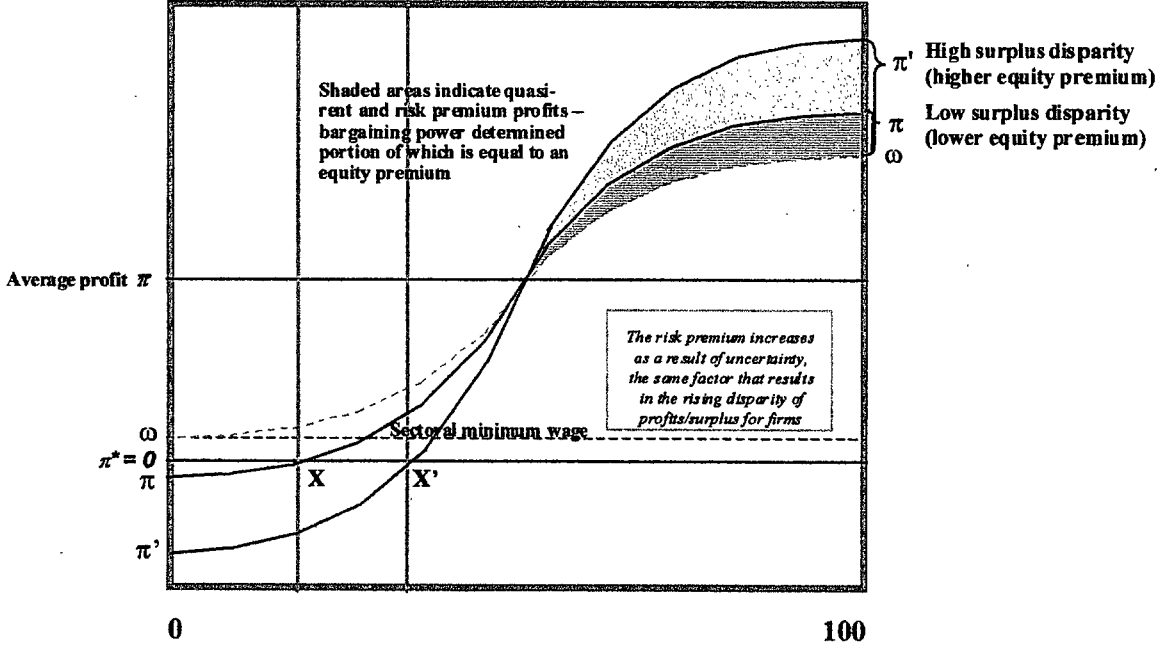
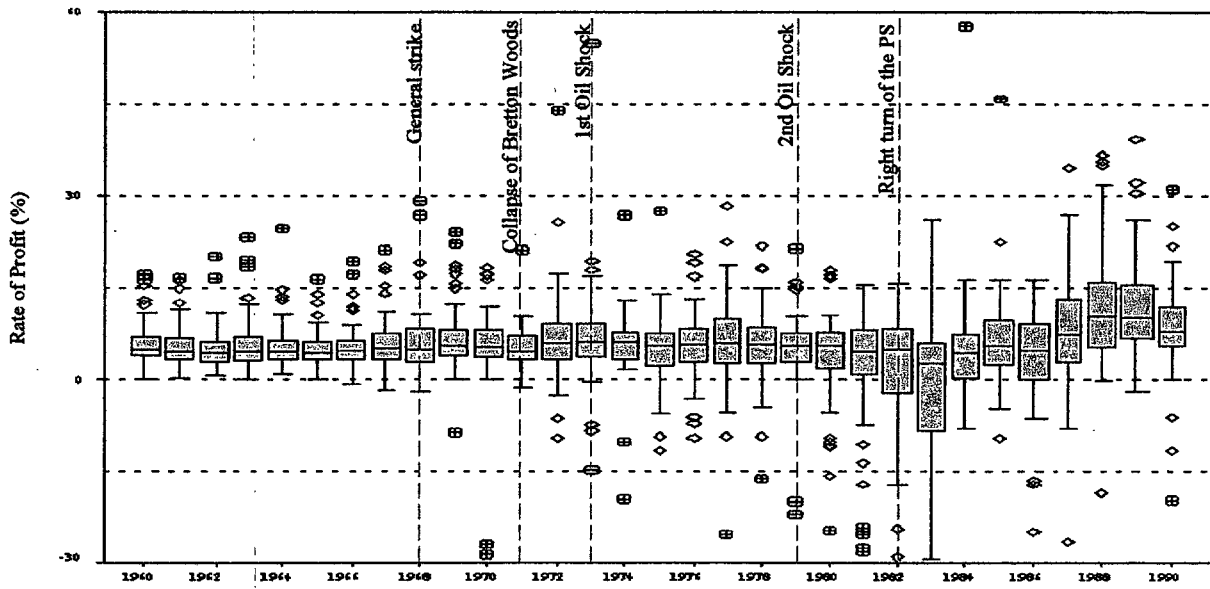
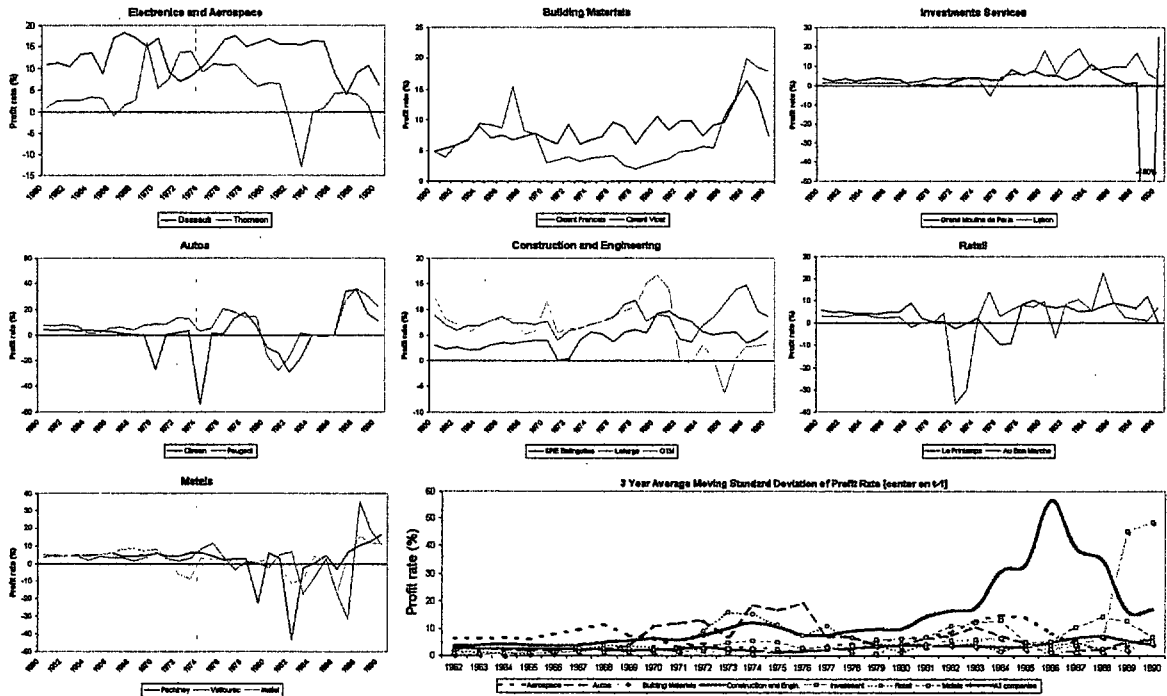


Figure 3: Distribution of the Rate of Profit of the Top French Firms 1960-90



Source: Jacques Marseille, *Les Performances des Entreprises Française au XX^e Siècle* (Paris: Le Monde Editions, 1995)

Figure 4: Sectoral Breakdown of the Dispersion of the Profit Rate for Selected Companies, 1960-90



Source: Jacques Marseille, *Les Performances des Entreprises Française au XX^e Siècle* (Paris: Le Monde Editions, 1995)

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Notes

¹ There are, of course, many challenges for the social democratic project both generally and within the context of European unification: e.g., rise of the service sector, the absence of a Europe wide trade union movement.

² The need to retain experienced labor prevents defection on the part of employers in 'fair' *ex post* division. The German bargaining system seeks or sought to reconcile these competing tensions by having industry level bargaining based on average profit rates and wage levels contracted in the past and works councils bargaining over firm level profits. See Kathleen Thelen, *Union of Parts*. The use of works councils to negotiate profit sharing is not peculiar to Germany; e.g., it is common in France. See Chris Howell, *Regulating Labor*.

³ E.g., see Carles Boix, *Political Parties, Growth and Equality*. (New York: Cambridge University Press, 1998)

⁴ One response to such appeals to uncertainty is that rising uncertainty would simply increase the rate by which agents discount the future. In some instances this is clearly the case. But it should be remembered that this is shown when all other factors are held constant. In some ways flexible production techniques and organizational forms can be seen as hedging techniques; agents place themselves in a position to play all sides until sufficient information comes in, when matters seem less uncertain. Such a world may be susceptible to self-fulfilling prophecies since hedging is never complete. It may reveal its own pathologies if rigidity in labor contracts or if high adjustments costs serve, as in some models with increasing returns or overlapping generations, generates anchors against self-fulfilling pessimistic expectations. (See Frank

Hahn and Robert Solow (1995) for such a claim and formal demonstration.) But from a local perspective, it provides a means of coping with uncertainty.

⁵ Theoretically, uncertainty can be treated, e.g., with state contingent commodity contracts (Debreu, 1959), but the costs, in an expansive sense, of writing such contracts may be prohibitive. For a formal argument how, in some cases, uncertainty cannot be reduced to risk and how violations of the postulates of rational choice under risk are not necessarily irrational under genuine uncertainty, see Daniel Ellsberg [1961] (1990)

⁶ The various outcomes can be Pareto ranked but its Pareto ranking in and of itself may be insufficient reason (cause) for it to obtain.

⁷ Common (and correct) assessments of risk would permit complete Arrow-Debreu markets in which pure profits (above the interest rate) would fall to zero. Differences in information, and in guesses about information and actions can generate a genuine uncertainty against which agents cannot be indemnified and, importantly, as a result of which they are presented with profit opportunities.

⁸ "[A] restaurateur from this particular world who had more customers on weekends as opposed to weekdays would . . . buy a small restaurant for weekdays but would sell it on Friday nights and purchase a large restaurant for the weekend, reselling it on Monday mornings." (Nickell, 1978: 9) This may sound silly, but it is a direct prediction of the theory.

⁹ I realize that there are good arguments against assigning equal probabilities to possible outcomes whose likelihood are unknown. I use the assumption here for the sake of simplicity.

¹⁰ In this particular case but unlike say a game in which there is no dominant unique strategy but where the optimum strategy is mixed (e.g., matching pennies), one can physically mix a 'strategy', i.e., produce a moderate level of output. But this -- the addition of more states of affairs and choices -- does not change the problem of profit dispersion.

¹¹ Two caveats: firstly, while it need not be the case that the most productive firms face the greatest degree of risk, the latter spurs productivity-enhancing measures for the sake of survival, hence the neat positive correlation in this hypothetical instance between productivity and risk. Secondly, it can be objected that wages and profits reflect marginal productivity of labor and capital respectively. This holds, however, only in the special case of constant returns to scale and/or where productivity can be neatly attributed to labor or capital. With increasing returns to scale and non-attributable or 'total factor' productivity, as witnessed in most large scale manufacturing, much of the surplus becomes subject to bargaining.

¹² The German solution has been to have works councils negotiate firm specific bonuses on top of base pay. See Kathleen Thelen, *Union of Parts*.

¹³ While below a certain point (wage), the labor supply curve may bend backwards, i.e., workers will supply more labor as wages fall to maintain a certain income, it is unlikely that this is the case at higher skill levels.

¹⁴ Although contracts that set payment in terms of a percentage of revenue can accommodate *ex ante* such particularities and the need for performance-based reward in so much as revenue is determined by labor performance. See James Meade, 1989.

¹⁵ I include the investment services sector because it itself is a good indicator of how investing agents are assessing the predictability of profits in the economy. After the 2nd oil shock of 1979, the variance in the profit rate increases dramatically.

¹⁶ The mechanism may simply be expectational, consumers will buy during inflationary cycles expecting goods to become more expensive in the future and similarly hold off on purchases during deflations expecting goods to become cheaper. Or consumers may buy (not buy) during inflation (deflationary) periods because the opportunity costs of holding money increases (decreases).

¹⁷ Though Okun's "Law" may still apply, and the symmetry of adjustment upward and downward cannot be assumed. For example, stick wages may easily permit upward adjustment but not adjustment downward. Similarly, weak or absent unions may render wages downwardly adjustable but less so upwardly. This is not necessarily an economic bad as suggested by many in this era that fixates on the level of the real wage as the source of current economic ills. To the extent that there are increasing returns, lower wages may go to a limit with lower output.

¹⁸ Here 'macroeconomic policy regime' is meant the sense used by Peter Temin's, who defines it as: an abstraction from any single decision; [rather] it represents the systematic and predictable part of all decisions. . . [constituting] the thread that runs through the individual choices that governments and central banks have to make. It is visible. . . [even if there are] some decision[s] that do not fit the

general pattern. These isolated actions have little impact because they represent exceptions to the policy rule, not new policy regimes.

Peter Temin, *Lessons from the Great Depression*. (Cambridge, MA: MIT Press, 1990) p. 133

¹⁹ This is ironic coming from Lucas since this implies some mirror of a 'money illusion' which would seem to equally deny rational expectations.

²⁰ The Theil measure is:

$$T = \frac{1}{n} \sum_{i=1}^n r_i \cdot \log r_i$$

where, r_i is the ratio of individual income, y_i , and average income, μ_y

$$r_i = \frac{y_i}{\mu_y}, \quad \mu_y = \frac{\sum_{i=1}^n y_i}{n}$$

The index does not have a fixed upper bound, unlike the Gini. But the upper bound reflects a degree of inequality that is sensitive to the population size, which Theil believed to be desirable. The upper bound for any society is $T = \log 1/\theta$, where θ is the share of the population having all the income. It is invariant under permutations of individuals, mean independent and is worsened by regressive transfers. And complementary with Gini measures, "[i]t is also Lorenz-consistent, meaning that it agrees with the quasi-ordering that can be derived from Lorenz curves." (Conceição and Galbriath, 1999: 5) Its chief advantage is that it is decomposable, enabling between-group and within-group assessments. Clear and full discussions are available at the University of Texas Inequality Project web site, www.utip.gov.utexas.edu. See especially, Pedro Conceição and James K. Galbriath, "Constructing Long and Dense Time-Series of Inequality Using the Theil Index" UTIP Working Paper No. 1. I use the Theil mainly because of the availability of continuous annual data. Gini estimates are choppy, though future avenues of research can test the claims against Gini data from the Luxembourg Income Study.

²¹ OECD, *Economic Survey of Germany 1999*. (Paris: OECD, 2000) Chapter 1.

²² The recent European past offers some clues. It certainly appears to have been the case in the 1980s and 90s that participation in EMS entailed higher costs for reducing inflation in employment and output. (Dornbusch, 1989; Pelagidis, 1998) And some important lessons may be found in the aftermath of the 1992 crisis of the ERM. Gordon (1996) observes faster declines in the inflation rate among countries which withdrew from the EMS (e.g., the UK and Italy) than among those that remained in but depreciated internally (e.g., Spain and Sweden). More importantly, the former had a smaller loss from the output trend.