# The Rise and Fall of Stagflation:
# Preliminary Results

## James Devine[*]

*Economics Department, Loyola Marymount University, Los Angeles CA 99046-8410*

## ABSTRACT

This paper explains the rise and fall of stagflation between 1960 and 1998 in terms of the fall and rise of the cyclically-corrected profit rate as part of a preliminary investigation. Not only is the theory presented and compared to mainstream visions of the Natural Rate of Unemployment, but empirical evidence for my thesis is marshaled.

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This paper sets the stage for a larger project aiming to understand and explain the phenomenon of stagflation for the United States after World War II from the perspective of the conflict theory (CT) of inflation, building on the work of Carlin and Soskice (1990) and Burdekin and Burkett (1996). Unlike their work, I emphasize a single

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[*] E-mail: jdevine@lmumail.lmu.edu

factor, i.e., the role of low profitability: in a society utilizing fiat money, capitalists are able to punish society for low profits with high inflation and/or unemployment, in a word, stagflation (Devine 1980, ch. 6).[1] While it is possible, in theory, that a well-organized and militant labor movement might cause a stagflationary impulse, I do not see that case as relevant to the historical period in question (cf. Brenner 1998).

After a discussion of the measurement and history of stagflation (in part 1), a preliminary version of the theory is presented in part 2. This is done by way of comparison to the orthodox Natural Rate Hypothesis (NRH). In recent years, many practitioners of the latter have moved in the direction of the conflict theory. It is not only that the phrase "natural rate of unemployment" seems to be replaced more often by the more scientific-sounding "Non-Accelerating Inflation Rate of Unemployment" (NAIRU). More crucially, as Pollin (1998) notes, recent confrontations of the NRH against empirical data in an era when the measured NAIRU has been falling have encouraged the use of CT-type concepts (cf. Stiglitz 1997: 7; R.J. Gordon 1997, 1998: 30; Blanchard and Katz 1997). For lack of a better name, this view is called the "soft-core NRH."

Part 3 deepens our understanding of the theory, while part 4 presents some preliminary empirical results. Note the word preliminary: this paper is part of a larger process that involves more complete specification of the model in order to avoid biases in favor of my prior theoretical convictions. Further, while the fall and rise of the profit rate are linked causally to the rise and fall of stagflation, little effort is done to explain profit-rate fluctuations or to examine the role of reverse causation. That is left to a larger, political-economic project which is still in progress.

## 1. The Rise and Fall of Stagflation

Stagflation is usually thought in terms of a rightward or upward shift in the short-run Phillips Curve (PC). For believers in the NRH, the only relevant shift factor in the medium to long run is the NAIRU, which corresponds to an assumed vertical long-run PC (and to inefficiencies in labor markets). On the other hand, some economists point to "structural inflation," built into the normal workings of the economy, which might be represented by a horizontal medium-run PC (cf. Piore, ed. 1979; Bowles and Edwards 1993: 400–2). In that case, the shift factor

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[1] Because he assumed the gold standard (which, absent gold discoveries, implies zero inflation), Marx (1867: ch. 25) sees a falling profit rate due to overaccumulation as causing only slowed accumulation and rising unemployment. Assuming fiat money allows inflation to occur, giving us a theory of low profitability shifting the Phillips inflation/unemployment trade-off.

would be the vertical distance, a measure of persistent inflation. Instead of these, the theory emphasizes the changes in the Stagflation Potential Factor (SPF) as the main shift factor of a short-run Phillips Curve.

To measure the SPF, this paper uses a version of the famous "Misery Index," the sum of the official inflation and unemployment rates $(p+U)$.[2] Referring to some sort of normative meaning, textbooks often remind us that the misery index has no "scientific basis." The usual misery index is basically a short-term political index, indicating the possibility of incumbent politicians being thrown out of office and the like. The SPF, on the other hand, represents the shift-factor of the PC. Unlike the standard misery index, the *ideal* SPF would be corrected for transitory changes due to supply shocks and cyclical unemployment.

Using Misery Indices, diagram 1 shows a broad-strokes history of rising SPF from the 1950s and the 1960s to the 1970s, followed by a fall in the 1980s to the 1990s. It shows three measures of the SPF based on (a) the CPI-U, the CPI for urban consumers; (b) the "core" CPI-U, stripped of volatile energy and food prices; and (c) the inflation rate based on the average price of GDP.

## 2. Profitability's Role

As a part of the soft-core NRH, Blanchard and Katz (1997: 57) and Stiglitz (1997: 7) see inflation and stagflation as being encouraged by the "wage-aspiration effect," i.e., excessive claims by workers relative to productivity growth. These imply a higher NAIRU to keep those aspirations in check and to avoid accelerating inflation. If one rejects the vertical long-run PC (as I do), this can be extended to say that a positive wage-aspiration gap encourages the SPF to rise, while closing of this gap encourages it to fall. Recent pleasant experience with falling SPF ("disinflation") might then be linked to a negative wage aspiration gap. In other words, the low unemployment of recent years is intimately tied to growing differences in income between classes, the victory of capital over labor, as the CT emphasizes.

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[2] Here and below, official measures of unemployment and inflation are used, since (a) they are the ones that affect economic policy, and (b) in many cases unofficial measures move in step with official measures.
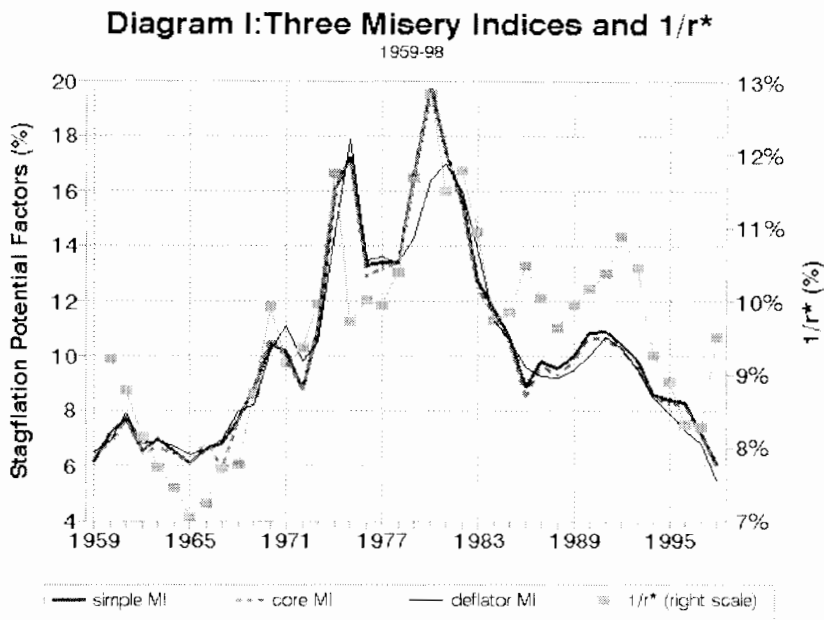
## Diagram I:Three Misery Indices and 1/r*
### 1959-98

Figure 1

My "profit-aspiration effect" thesis can be summarized by rewriting a sentence by Blanchard and Katz (1997: 57), which is broken into the short-run and long-run components:

> If, at a given unemployment rate, [a] capitalists keep asking for profits corresponding to the previous higher profit rate, lower productivity growth will lead to a higher NAIRU until [b] aspirations have adjusted to the new realities.

Consider the two stages indicated by the bracketed letters.

[a] A fall in the cyclically-corrected rate of profit ($r^*$), as after 1965, implied that in the short run capitalists "aspired" to a higher rate of profit than they could receive, given productivity growth and the like. Therefore, they strove to attain the profit rate to which they had become accustomed—by depressing the real claims of other classes and groups on the total product.

Considering the short run at any *given* unemployment rate, these other real claims on the product are hard to reduce, so the capitalists can only strive to restore profits by raising prices. Having a low

aggregate average $r*$ means that these conditions affect enough capitalists that it causes a *general* rise in prices rather than mere changes in relative prices. (The assumption of a given unemployment rate implies that nominal demand growth accommodates any inflation that occurs.) But these individual efforts to find a solution do not work for the class as a whole to raise the profit rate: price-hikes do not automatically solve the short-run problem of other groups having "excessive" real claims on the product at any given $U$. As long as these other groups can resist, capitalists must raise prices, so that a continuous process of inflation results, on top of any pre-existing inflationary hangover. If this process is persistent, it can raise the amount of that hangover, i.e., build more structural inflation into the economy. This implies a higher inflation rate (inflationary accelera-tion) at any given $U$, as seen at some points in the 1970s.

Now drop the assumed constancy of the $U$ rate and (for argument's sake) assume the existence of a vertical long-run PC and thus a NAIRU. The discussion implies that preventing accelerating inflation at any given $U$ when the $r*$ is low requires more *bargaining power unemployment* ($U_b$) than usual: the fall in $r*$ shifts the NAIRU relative to the structural-frictional unemployment rate $U_{sf}$. The relationship between different types of unemployment can be stated as follows:

$$N = U_{sf} + U_b$$

where $N$ is the NAIRU.

$U_{sf}$ corresponds to types of unemployment which would exist *even if* the number of available jobs equaled the number of unemployed workers. It is the unemployment rate associated with Friedman's definition of the "natural" rate of unemployment as due to "market imperfections, stochastic variability in demands and supplies, the cost of gathering information about job vacancies and labor availabilities, the costs of mobility, and so on" (1968: 8).

On the other hand, $U_b$ is the unemployment needed to undermine the bargaining power of workers so that wage demands are in sync with profit targets. It is akin to Marx's "floating" reserve army of the unemployed (1867: ch. 25). It does not exist in the unvarnished Walrasian general equilibrium model that dominates the hard-core NRH. Further, bargaining-power unemployment corresponds to a chronic kind of deficient-demand unemployment, with the number of unemployed workers usually exceeding the number of job openings. Thus, in the tradition of Keynes, Carlin and Soskice label it involuntary unemployment.

The existence of a positive $U_b$ implies that the NAIRU and the "natural" rate of unemployment ($U_{sf}$) are distinct concepts. The hard-core version of the NRH assumes that $U_b$ equals zero. But the soft-core

NRH theory in effect admits this distinction, seeing bargaining-power unemployment as necessary to keep workers' aspirations in line, preventing accelerating inflation (given capitalist profit aspirations).

As noted, this paper does not accept the vertical long-run PC. Thus, a falling $r^*$ causes accelerating inflation and a rising $N$.

[b] In the longer run, the CT presents a clear alternative vision of causation to that of Blanchard and Katz: unlike workers, the capitalists did not need to adjust to the new "reality" during the last 25 years. Instead, starting in the 1970s they used their political and economic power to launch a broad-based offensive, *changing* "reality" to make it more to their liking, so that "adequate" profit rates could be attained once again. Eventually, the full-capacity profit rate enjoyed substantial (though not complete) recovery, so that both the bargaining-power unemployment needed to protect profits and the SPF fell during the 1990s. This story is central to the political economy developed in the longer version of this paper.

## 3. Clarifications

The interpretations of the soft-core NRH and the CT have very similar empirical implications in both stages. But the theory presented here differs by emphasizing [a] the importance of the rate of profit, and [b] positing determinants of capitalists' aspirations or "reservation" profit rates. Turn to these issues next.

[a] The theory is quite appropriate to an economic system driven by aggressive profit-seeking (i.e., capitalism). Note that the actual, realized, profit rate $(r)$ is not relevant to this inflationary process: if the profit rate's depression results from a low rate of capacity utilization, that low demand counteracts the ability of capitalists to raise prices. So the relevant profit rate is cyclically corrected $(r^*)$. This number is supposed to measure the depression of profit rates due only to money costs and productivity, i.e., the other real claims on the product besides profits. It should be measured over a significant length of time (e.g., a year) to indicate the rigidity of those costs.

I follow Brenner's (1998) explanation of the falling rate of profit in the United States as being due to the rising degree of international competition, as other advanced capitalist powers recovered from World War II. (I disagree with Brenner on some matters, some of which are made clear in Crotty 1999.) Similarly, partial recovery of profitability in the 1990s seen as occurring not only due to the one-sided class struggle against workers, but due to U.S. victories in competition with its economic competitors like Germany and Japan. However, this paper's thesis is consistent with *any* theory of profit-rate fluctuations that does not stress aggregate demand fluctuations alone.

[b] This paper's theory of inflation presumes the anarchy of production, i.e., that capitalists may pursue price hikes on the micro-level even when they do not solve macro problems of low profitability. Further, there are two separate microeconomic perspectives behind the causal link between profitability and inflation, which help us state the theory more clearly. The first presumes product market imperfection, so that firms desire to apply short-run mark-up pricing where the magnitude of the desired mark-up is determined by a target rate of profit (as part of a long-term profit-maximization strategy). A falling $r^*$ relative to the target rate of profit $r^t$ means that a higher price/cost mark-up is needed. This implies more stagflationary potential. In this model, $r^t$ would likely be the average of past profit rates.

The second "microfoundation" assumes competition between industries: in the longer run, if an industry's profit rate is below that available in other sectors, exit of capital will occur, driving supplies down and prices up. For an economy as a whole, the "reservation profit rate" (the alternative profit rate, $r^a$) that would be relevant to encouraging inflation would be the rate on investment overseas.

For simplicity, $r^t$ and $r^a$ are merged and held constant. But note one implication: all else constant, it is possible that the United States might suffer from increased SPF if the rate of profit realized on foreign investment *rises*, encouraging higher capitalist aspirations in real production at home.

## 4. Some Evidence

Diagram I shows some evidence for the basic theory I am advocating. The right-hand scale measures the inverse of the cyclically-corrected rate of profit, $r^*$. In the diagram and those below, it is measured crudely, by taking the rate of return of domestic non-financial corporations and dividing it by the manufacturing rate of capacity utilization.[3] The rough correlation between the fall of the rate of profit (a rise in its inverse) and a rise in the SPF can be seen.

Diagram 2 shows more clearly the negative correlation between the SPF and $r^*$, using the CPI-U to measure the SPF. Similar graphs can be drawn for the core CPI and the GDP price. Not surprisingly, "supply shocks" and the like (e.g., the "looping" seen in most PC studies) lead to deviations between an ideal regression line and actual experience. However, unlike similar scatter plots for the Phillips Curve that litter macroeconomics textbooks, there are no obvious permanent

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[3] The rate of return is from the *Survey of Current Business*, June 1999: 13–15, while the rate of capacity use is from the *Economic Report of the President*, 1999, table B-54.

shifts in the profitability-stagflation curve (PSC), despite all of the monumental institutional and political changes that occurred between 1960 and 1998. Rather than requiring explanation of its shifts, the curve should help to explain the shifts of the PC and changes in estimates of the NAIRU.
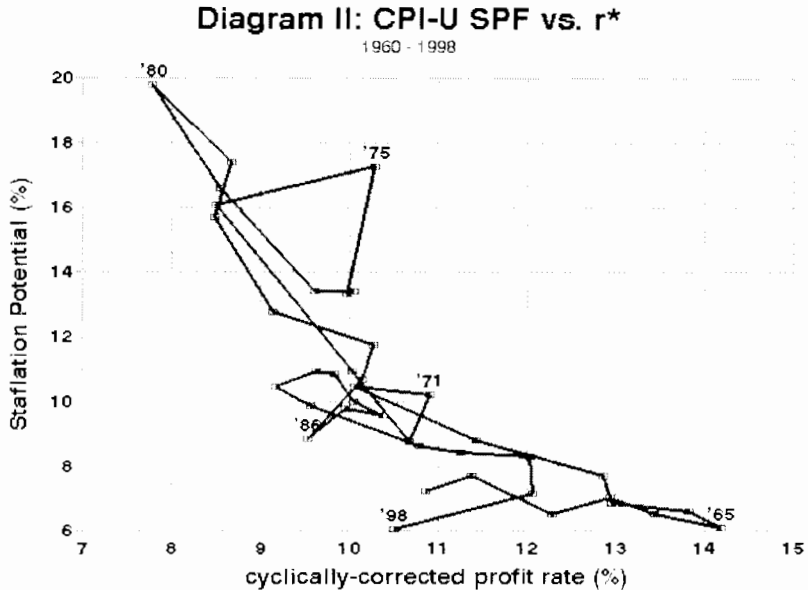


### Diagram II: CPI-U SPF vs. r*
1960 - 1998

Figure 2

Table 1 shows three ordinary least-squares regressions for the PSC, using three measures of the SPF, using logs of annual data for both the independent and dependent variables. In these simple tests, the regression coefficient for the relationship between a falling $r^*$ and rising SPF is statistically significant by usual standards. Regressions that introduce time trends (not shown) have significant negative coefficients on the time trend, but without knocking out the role of profits: in fact, the coefficients on $r^*$ become more significant.

Also fitting with my hypothesis (and based on more sophisticated econometrics), Federal Reserve economists Brayton, Roberts, and Williams write that:

Table 1: Different SPFs versus $r^*$, 1960–98

| | Stagflation Potential Factor based on: | | |
| | CPI-U | core CPI-U | ¹GDP price |
|---|---|---|---|
| Constant | 6.77 | 6.82 | 6.41 |
| Std Err of Y Est | 0.17 | 0.18 | 0.18 |
| R-Squared | 0.73 | 0.71 | 0.66 |
| Coefficient on ln($r^*$) | -1.90 | -1.93 | -1.75 |
| t-statistic | -9.88 | -9.59 | -8.43 |
| | (a) | (b) | |

Each regression had 37 degrees of freedom.
Regressions use annual data and are log-linear.

> Our preferred explanation [of changes in the NAIRU] is
> based on an augmented Phillips curve that includes the level
> of the markup of price relative to trend unit labor costs as an
> error correction term. We find that the level of the markup in
> the nonfarm business sector is highly significant in equations
> for all measures of inflation examined, with a high markup
> estimated to restrain inflation and a low markup putting
> upward pressure on inflation (1999: 4).

This markup relative to trend unit labor costs is of course the most
important determinant of $r^*$ (along with the output-capital ratio and
the terms of trade with the rest of the world).

It is notable that both in different versions of diagram 2 and in
Brayton, Roberts, and Williams (26–7), 1998 is an exceptional year,
with low SPF despite relatively low $r^*$ or mark-up. One possibility
(suggested by Brayton et al.) is that measured profitability is inaccurate
and will be re-estimated upward with new data on labor productivity.
Another is that either the measured or actual SPF will rise in the near
future (assuming, of course, that the theory is accurate). Third, there
may have been an unmeasured beneficial supply shock in 1998.

It should be stressed that the data only indicate the plausibility of
my hypothesis. But the econometrics should not go any further at this
point, leaving that for the longer paper.

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