Increasing returns and the foundations of unemployment theory: an explanation

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I would like to express my gratitude to the contributors for their stimulating comments and to the editor for kindly providing me with an opportunity to reply. There is much in the comments with which I agree, and from which I have learned. I certainly wish I had expressed myself more clearly on certain points in the article. I hope that my remarks here will help to clarify some of these points.

At first I thought I would reply to each comment by addressing, more or less systematically and exhaustively, the specific issues they were raising. Now I am not so sure that is the best approach. The issues are too disparate, and some of them, if I may be excused for expressing myself so directly, seem to me beside the point. Instead, I think it would be more fruitful if I tried to restate my general thesis, in words, taking into account as best I can the criticisms that seem to me most relevant.

My immediate point of departure is the "Keynesian message." By that term I have in mind not another rendition of what Keynes meant in *The General Theory*. (I am not particularly qualified, in any event, to give such a rendition.) I have in mind more the spirit of that which constitutes what might be called the Keynesian outlook or economic philosophy. Now this "spirit" is hardly an objective entity, and needless to say it is my interpretation of it which is here recorded. Nevertheless, and allowing for normal human differences in perception, I would hope there might be rough agreement on those features I am about to highlight. All this is by way of leading up to where I think increasing

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returns (and imperfect competition) fits into the picture—why I think this has been an extremely important (if hidden) element in the Keynesian story up to now and why it is likely to be even more important in the future.

The Keynesian message

The starting point of a Keynesian outlook is the observation that the advanced capitalist countries frequently suffer from "involuntary unemployment." While most attention is naturally focused on the labor market, in such a condition labor *and* capital are unemployed. A striking thing about this phenomenon is that there does not appear to be any deep-seated rationale or justification for it. When there is an oil shortage energy prices shoot up, but that is an understandable, if sometimes annoying, aspect of the capitalist system, and it does serve an important purpose. When there is involuntary unemployment, it is as if the system itself is malfunctioning or operating in a self-destructive mode. The welfare losses associated with this form of "market failure," if that is the best term for it, are typically astronomical compared with other forms of market failure. I mention all of this explicitly because there has been some tendency, which is now becoming more pronounced again, to deny the problem. So right from the beginning there tends to be a difference between Keynesian and classical perceptions of the importance of the problem of involuntary unemployment. I hope to show, among other things, that the issue of returns to scale is involved even at this initial perceptual level.

As we all know, there has been no small effort expended on finding the "source" of such a massive market failure. Literally thousands of articles have been written on the microfoundations of macroeconomics. Naturally enough, there is no unanimity here. But there is plenty of repetition. All of this is as it should be, because the issue is an extremely important one. Some of the main themes in this "failure of coordination" literature which tie into *The General Theory* may perhaps be summarized as follows.

The Keynesian view looks out over a capitalist world that is full of uncertainty. In such a world, expectations play an important dual role as both a manifestation of uncertainty and a cause of it. An economic agent's expectations in that kind of environment are arbitrary to a large degree because they can be based on almost anything, including self-fulfilling expectations of the behavior and expectations of other

agents.[1] "Being based on so flimsy a foundation," as Keynes put it, such expectations are "subject to sudden and violent changes." The system itself is poorly equipped to handle uncertainty about the future because of the conspicuous absence, undoubtedly for good reason, of most Arrow-Debreu type markets for future and contingent deliveries of commodities. Money, or near-money government debt, then serves as a store of value linking the present with an uncertain future. This kind of money, unlike its classical counterpart, has important non-neutrality properties which can be exploited by policy makers for better or for worse.

The fact that most prices, including wages, are denominated in the monetary unit of account also has important implications in a genuine monetary economy. Wages tend to be rigid or sticky. An important strand of the post-Keynesian literature has sought to justify this stickiness, or at least to remove from it the dreaded taint of *ad hoc* money illusion. This strand has led to several sub-theories—implicit contracts, efficiency wages, interdependent utilities, and others too numerous to mention—with the common theme of trying to prove, in some broader-than-usual sense, the "rationality" of sticky wages.

I will end this tiresome litany here, even though it could be extended in yet further byways and directions. The bottom line to most believers in the Keynesian message is that there are more than enough reasons to justify government intervention to recoordinate private failures of coordination. And classical macroeconomists, on the other hand, are not likely to be persuaded by what they are prone to see as one set of *ad hoc* reasons replacing another. What, then, you may ask, is the reason for yet another story of coordination failure based upon, of all things, economies of scale?

The macroeconomic role of increasing returns

Suppose, just for the sake of argument, we lived in a world where there was strict constant returns to scale—down to the level of a person or even a grain of sand, or even, if that were necessary, an atom. The standard reasons for macroeconomic failure listed above, and many

[1]A remarkable series of important recent papers can be interpreted as supporting the contention that the concept of "rational expectations" in a macroeconomic context can be a very tenuous construct. See, e.g., Farmer and Woodford (1984) and the numerous references cited therein.

others, would continue to hold. Money might be non-neutral, there could be a genuine role for government as a Pareto-improver of social welfare, etc., etc. But, and here is the crucial distinction, *there can be no involuntary unemployment with strict constant returns to scale in all aspects of technology*. Note carefully the claim: some form of increasing returns is a *necessary*, but by no means *sufficient*, condition for genuine involuntary unemployment. Under constant returns, the macroeconomic inefficiencies would show themselves in the form of "wrong" labor–leisure choices (or, more generally, wrong substitution choices among various factors and commodities). An economy of blueberry pickers, mushroom gatherers, and clam diggers cannot exhibit involuntary unemployment no matter what else is present or absent. It can show fluctuations, inefficiencies, poverty, even starvation, but it cannot show involuntary unemployment. Any "involuntarily unemployed" resource would merely form itself into a mini-firm, hire (with non-increasing returns to scale in borrowing) a few grains of cooperating input, and sell its mini-output on competitive markets. Balanced expansion would take care of the rest. Involuntary unemployment is logically impossible in a strict constant returns to scale world of one-person firms.

Now it seems to me that the really damaging macroeconomic inefficiencies of advanced capitalist countries are caused by involuntary unemployment, not by the wrong labor–leisure choice. It seems to me that Keynes would never have written his book if he had lived in a constant-returns-to-scale world because there would never have been a Great Depression. It seems to me that if we could magically turn our economy into a constant returns systems—if the automobile worker laid off from a 10,000-man plant could produce in his home workshop 1/10,000th of what that plant produces (by using in his home workshop 1/10,000th of its capital)—we would have eliminated the lion's share of macroeconomic losses due to coordination failures. Other coordination inefficiencies admittedly might remain, but my casual empiricism tells me they would be orders of magnitude smaller in terms of welfare losses. As James Tobin has remarked in a different context, it takes a lot of Harburger triangles to fill up an Okun gap. So I see increasing returns and imperfect competition as not just another minor detail, but as crucial aspects of the Keynesian story. That story simply cannot be told at all credibly or completely without something like increasing returns blocking unemployed laborers from working on their own or in small groups. It was simply to focus as sharply as possible on the

underlying "real" role of increasing returns and imperfect competition that I attempted (perhaps unsuccessfully) to trim away as much as possible of all else from the model. (Certainly there is a crucial place, in any complete story, for money, sticky wage contours, expectations, and so forth—my basic point being that increasing returns constitutes a necessary, but by no means sufficient, condition for the existence of involuntary unemployment.) Furthermore, as I tried to show in the paper, the quantity-adjustment mechanisms which play such an important role in the operational part of Keynesian theory can be grounded much more solidly in imperfect competition than in perfect competition, where they really do represent an artificial intrusion.

In most reasonable models of an economy with non-trivial increasing returns to scale, there is going to be a theorem showing that higher levels of equilibrium employment are associated with higher real wages. This aspect comes out quite clearly in the model under discussion and I believe it obtains under fairly general circumstances.[2] The existence of economies of scale will generally mean that higher levels of long-run economic activity go together with higher real pay. Now pro-cyclical real wages is a very un-classical feature which not only corresponds empirically to what we typically observe in the real world,[3] but makes it extremely difficult theoretically to accept the idea that the economic system can automatically, and relatively easily, adjust itself toward full employment. After all, the classical argument is that unemployment will be eliminated by *downward* pressure on wages. Arguing where burdens of proof lie is always tricky, but it seems to me that the burden of proof here rests squarely on whoever would assert that downward pressed (money) wages spontaneously cause the *increased* real wages that accompany higher employment. For that to happen, prices must decline even faster than wages. It is possible, but some good stories have to be told. Here is yet another indication that economies of scale form a natural backdrop for Keynesian macroeconomics.[4]

As I perhaps did not sufficiently stress in my paper but have been at pains to emphasize here, it is not increasing returns *alone* that causes involuntary unemployment. The astute comments of de Meza and

[2]This issue is further explored in the working papers of R. M. Solow (1984) and J. E. Meade (1984).

[3]See the recent work of Bils (forthcoming) and the references cited there.

[4]This has long been the contention of N. Kaldor. See Kaldor (1984) and the references there to his earlier work.

Perlman, and Davidson (without the polemics), note that ingredients like money, expectations of other firms' responses, reasonable specifications of tastes, a sticky wage contour of equal pay for equal work, and so forth are also needed to give a credible account of involuntary unemployment. Yet, I would maintain, it is important not to lose sight of the major truth that large scale division of labor makes for an economic environment in which, as contrasted with constant returns, it really is quite fundamentally difficult to tell reasonable stories about how a market economy naturally adjusts to create full employment.

Beyond post-Keynesian economics

There is at least one additional reason why increasing returns and imperfect competition are essential ingredients in the Keynesian approach. This reason I believe to be the most important of all. It has to do with where the subject of macroeconomics is going, or ought to be going.

The current failure of economic policy is not so much a failure of the Keynesian case for government intervention per se, as it is a failure to find new ways of permitting a high level of employment to coexist with low inflation. The general considerations put forth by Keynes and others for justifying government intervention to improve the macroeconomic environment do not indicate the best *form* of government policy. Keynes naturally thought in terms of standard fiscal and monetary instruments to manage aggregate demand. But there is no reason why such sledgehammer tools should remain equally appropriate for dealing with the macroeconomic problems of our own day.

It is my contention that Keynesian economists have not been nearly imaginative enough in devising new mechanisms for dealing with stagflation. This lack of imagination goes completely against the spirit of Keynes himself. As E. A. G. Robinson has expressed the thought recently, there has been a "failure of our generation to analyse clearly the essential preconditions of reconciling a high level of employment with avoidance of inflation, to identify the institutional changes necessary to achieve this, and then to establish first a consensus and then action regarding the making of the institutional changes."

What is most desperately needed, in my opinion, is an improved framework of microeconomic incentives to *automatically* induce better output, employment, and pricing decisions at the level of the firm, thereby greatly reducing the need to rely so exclusively on discretionary

macro policy. In this search for an improved economic mechanism, the ideas of increasing returns and imperfect competition within a Keynesian macrostructure will, I am convinced, play a central role.[5]

[5]My own opinions on this matter have been developed in my book *The Share Economy*.

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