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## Commentary on Three Papers

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*Andrew Oswald would like to record here that he was originally drawn into doing a PhD in economics partly by reading when young — as an undergraduate interested in economic theory and mathematics — the 1970 Phelps-Winter paper on how to model gradual customer migration away from high prices (though the paper was then not included on any undergraduate economics syllabus, and Oswald was not meant to be reading it). From that point, Oswald started to believe that it might be helpful to use formal calculus of variations to understand elements of the economy. Since then, his interests have become more empirical, but he retains an interest in formal models. Oswald currently serves on the board of editors of Science and retains scepticism about some of the work done in orthodox macroeconomics.*

Let me start with “The Slump, the Recovery, and the New Normal” by Edmund Phelps. With this stone, I would like to hope that I am killing two birds: Ned Phelps’s paper is, in part, a non-mathematical version of the “Macroeconomic Effects of Over-Investment in Housing in an Aggregative Model of Economic Activity”, written by Hian Teck Hoon. The first paper is in words; the second has some words and, in parts, some Hamiltonians.

Both papers are extraordinarily stimulating. Both bear on the issues of the day.

A key thing to say, and admire, about the first paper is the fact that in a fairly readable way — not that it will be an effortless read for the non-economist — it addresses the great macroeconomic issue of our time. Why did the remarkable financial crisis of the first decade of the 2000s come about, and what happens next? Phelps begins by pointing out that we experienced a major contraction before in the post-war era, namely, during the severe downturn that began around the mid 1970s and took unemployment levels to a frightening point seen by few living worker (in my country, the UK, unemployment was 12% of the labour force by the year 1983). That crisis took place as I was in the middle of college; it encouraged in me an interest in economics.

It is logical, scientifically, to begin by wondering whether — if in ways initially masked from us — the nature of the very recent crisis is similar to that earlier one.

Phelps usefully states today’s conventional wisdom: the financial crisis was fostered by lots of Chinese savers flooding the world with liquidity, which drove up the prices of Americans’ homes (if unintentionally of course), and in this way eventually led to the formation of a housing bubble that, as we know now, ultimately crashed down around us all and has in some states of the United States actually led, at the time of writing, to the best part of 50% drops in home values and the attendant collapses in spending. Hence, as Phelps says, in a sense: “Bad

loans...ushered in a slump". In the model of this process — a miserable one for many American families — lies an over-indebtedness that eventually caught up with individuals.

At this juncture, Phelps takes a bold, valuable stance. He wants to question how much we truly understand. He does not buy the entire package of conventional-wisdom. Surely, too, he is right to point out that a Keynesian account of the crisis may be on sensible ground when arguing that some fall in aggregate demand went with the collapse, but that such an account does not predict the mildness of the fall in inflation nor tell us much about the causes of the original upswing. Keynesians, unlike Keynes, are largely silent on the nature of bubbles.

So Phelps turns to structural mechanisms.

He is not persuaded by a rational-expectations (REH) framework. His prose includes the lovely and palpably sensible sentence: "The school that laid the ground for belief in 'the magic of the market' cannot pretend that its models succeed in encompassing gross mispricing of risk and pathological values put on familiar assets." I would not be unhappy to see this sentence blown up to 60 point font and hung in the corridors of a number of the world's economics departments (and finance ministries and central banks). There are two reasons. First, I agree with it. Second, although no online gambling organization (legal in the UK, and for fun I often put 50 pence bets on soccer matches) will take my money, I am prepared to bet that by the middle of this decade the Phelps sentence will be ignored completely. In some places, I expect, it already is. There is much vested interest in holding onto intellectual frameworks.

Ned Phelps gives equally short shrift to economists who argue that the key problem was a lack of proper banking incentives. He believes that non-monetary models may be able to explain the big facts that need explanation. His framework eschews REH and has no role for illiquidity.

### *Thinking*

Imagine that people start to think, overoptimistically, that house prices will be high in the future. A construction boom occurs. Employment rises (through a complex chain described in the Phelps paper). Eventually, reality asserts itself, and house prices both in truth and in expectation start to decline. A key problem is then that the house-building boom has been at work for some years, so the stock of houses is high. Phelps believes that this wealth effect leads older workers to focus on enjoying leisure in their houses -- and thus employment drops. Proposition 1 of the Hoon paper meshes closely with this: house prices drop abruptly, at time  $t(2)$ , when agents realise that the "earlier anticipation of a future

parametric shit is not justified”. A few other forces operate but, in a closed economy, this is a key one for Phelps.

To an Englishman like me, this is interesting, but the problem is that the mechanism does not sound large enough to do the job of explaining the frightening recession after the recent banking and housing collapses. From what I have seen, in my life and in my regression equations, we need a framework in which borrowing constraints and herd behaviour are integral. I return to that shortly.

Interest rates play a major — if backstage — role in Phelps’s account, so in an open economy we must, he reminds us, bear in mind that domestic interest rates cannot differ from world interest rates. We must also keep in mind that domestic residents could in principle “sell to foreigners the entirety of the added housing stock, opting to own ... only the normal level”. A key finding, in my judgment, is the possibility identified by Hoon that if domestic and foreign housing services are imperfectly substitutable, and surely that is the case to be expected, the country will have to put up with a period where there is a weak real exchange rate, and thus a fall of housing prices that actually overshoots the normal level. The slump in employment is then exacerbated by this exaggerated fall in housing prices below the price steady-state level.

Why did it all begin in the world economy?

One possible cause, Phelps argues, of the housing bubble, is a mix of (i) a low world rate of interest brought about indirectly by the Chinese and (ii) US government actions to make housing more affordable. Speculation by wealth-owners does most of the rest. Thus he is not against all of the standard view (number i).

Phelps is also attracted to the idea that in the throes of the crisis the typical bank wished to cut back its loans. That bank was worried about potential bankruptcy, so it moved from attempting to maximize long run profits in a stable environment to attempting to simply live to see the long run. It pulled back on loans to generate more cash flow today. Stock markets also fell — the world was suddenly more uncertain. I agree with all this logic.

Phelps then goes on to describe the possible mechanisms of turnaround. He is pessimistic – I will not go through all the arguments, but they are deeply interesting – about the immediate future and likely dynamism of the US economy.

### *Formal aspects of the Hoon paper*

One of the things that struck me when reading the Phelps paper is how difficult it is to understand complex arguments without any mathematics. I appreciate that many, many kinds of scholars will not understand such a remark. But some will. The density of the logic in the pure prose of the Phelps paper makes one’s head

swirl. In a sense, the maths of the paper by Hian Teck Hoon leaves the reader able to get the oxygen that seems in short supply when reading the non-technical Phelps paper.

So here, in Hoon, we are actually able to figure out the utility function that is unspoken in the Phelps paper. People maximize, over their perceived lifetime to come, a mixture of enjoyment of leisure and an enjoyment of housing. They do so in a discounted way, of course, so other things constant they prefer pleasure today to pleasure tomorrow (we have all experienced that). The key constraint is a differential equation. The dependent variable is the rate of change in financial wealth. It is made up, of course, of an interest-rate flow, plus some labour income, minus what the person has to pay for housing. Rational choice by the individual means then that the marginal utility of leisure is set equal to the marginal attraction of working (which is the wage) multiplied by, well, a multiplier called  $\mu$ , which is the usual kind of shadow price in a dynamic optimization model.

From my perspective, and probably that of most readers, a novel bit here is the great emphasis on the inclusion of housing. If we go to the Journal of Urban Economics we may well find lots of models where individuals enjoy housing, but even though Phelps explains some of the intellectual history, most practising macroeconomists in the world will be unfamiliar with such a modelling idea. I found it a simple, appealing and interesting step.

*What might still need to be said?*

What, if anything, is missing in this Phelpsian account of the greatest economic event of the last few decades?

I think the most notable absence is *herd behaviour*. The herd took us up; the herd took us down. Yet if one goes to standard macroeconomics textbooks (or even micro ones), there is essentially no mention of herding. In the early pages of Thomas Hardy's novel *Far From the Madding Crowd*, a herd of sheep plunge to their deaths together from a cliff, because each is following the rational instinct to imitate. Economists need to read and think about this.

What can such an idea possibly mean in terms of an economist's utility theory?

First, as James Duesenberry knew, humans are creatures of comparison. Relative things are absolutely fundamental in their utility functions. If Phelps goes to a conference in an expensive dark grey suit and bright Versace tie, he puts me in the shade (goddamn); so next time I see him on the programme, I will first spruce myself up — if only subconsciously — before I go. I compete.

Economists ignore this too much: it must surely be central to bubbles. If you want some algebra, think of me as maximizing

$$U = u(a) + v(a-a^*) - c(a) \quad \text{My overall utility}$$

where  $a$  is some action,  $a^*$  is the action that others are doing, and  $c$  is some convex cost-of-action function. Action  $a$  gives me direct utility through  $u(\cdot)$  and also some relativistic utility through  $v(\cdot)$ . Ned has that sharp sartorial look,  $a^*$ . I will raise my own  $a$  in response whenever the  $v(\cdot)$  function is strictly concave. I follow Ned. And he follows me, by the way. (We can then start to think about a Nash equilibrium but I will not do that here.) Clark-Oswald (1998) sets out the mathematics of all this.

These sorts of herd-like actions are, in my view, absolutely fundamental to an economy, too. If my neighbours are doing something — buying up-market houses or engaging in fancy financial trading — I will tend to try my hand at the same. Just because they are doing it! Not because it is justified by fundamentals, because in a sense *there are no fundamentals that are free of comparison effects*. From this building block, bubbles in human society will always emerge. And the result, every now and then, is that we all plunge off a cliff.

### *Zoega meets Phelps*

Now to the further paper, that by Gylfi Zoega on the crisis and ‘investmentlessness’. I like this concept and especially the word (certainly more than my spellchecker in Microsoft Word does).

Zoega’s foundational point, and it is a good one, is that the world has not seen as much employment growth recently as has been expected and hoped. He would like to know why. He would also like to understand ‘jobless recoveries’ more broadly. Reasonably enough, Zoega is influenced by the experience of countries like Sweden and Finland after their crises of the 1990s.

Like Phelps, Zoega finds it helpful to think in terms of there being a natural rate of unemployment in an economy — but one that moves around as other variables alter. I like this way of thinking. Indeed, for most of us trained in neoclassical economics, or for anyone who has had any training in engineering and physics, it is hard to think carefully without some frame of this sort. Yes, conceiving of the world as having equilibria makes sense; but yes, as the context changes, the level of that kind of equilibrium may move around.

The distinctive contribution of Zoega is his emphasis on investment. He believes that a recovery in jobs requires first a recovery in firms’ investment rates in capital. Table 1 in the paper makes the point well — that if we look at output data the current crisis is widespread, yet if we rely on unemployment figures the crisis looks less widely distributed (at least in intensity).

Recent writers have gone back to the old idea of hysteresis in labour markets. I am sympathetic to the idea that there may be long-run continuing consequences, and not very nice ones, from short-run high unemployment. Today

can induce scars that are visible, on both people and the economy, a long way into the future. But Zoega does not want to make this his key element.

Figure 1 of Zoega's paper is helpful, and reminds us of the strong inverse relation between growth in GDP and the change in the unemployment rate. I think it is dangerous to put too much weight on individual dots in such small-scale scatters, but Zoega is keen to make the point, correctly, that Finland, say, exhibits some outlier symptoms. I am on the side of Honkapohja in thinking that persistent elevation of joblessness in a country can come about in the following way: a high business level of debt means that mark-ups must be higher, and this means the real wage must be lower, and the way that can come about in equilibrium is if unemployment is higher. (Years ago my colleague Blanchflower and I wrote an MIT Press book about what we called the wage curve.)

Zoega has a good observation here, however. We still need to explain things like the fall in house prices in recent years and the fact that output recovers before unemployment moves down significantly.

Table 3 in Zoega's paper is interesting. It shows a regression in which the dependent variable is the change in unemployment, with a sample of 29 nations. It is a fair point that statistically the fall in unemployment is explained better, if in an elementary correlational framework, by growth in investment rather than GDP. This is important, and new. If it were my table, I would have pointed out to the reader that an extra bit of evidence comes from the stability of the coefficient on Investment (change). Going from column 2 to column 3, the coefficient alters only from -0.49 to -0.43 as the extra independent variable of GDP Growth is inserted. In a sense, this is a simple proof of the notion of a jobless recovery.

I think it is important to emphasize that many non-economists would find it obvious that investment and unemployment move in opposite directions from one another. They would see them as two sides of the same economic coin. We economists probably ought to get our models in line with common sense belief.

As Zoega says, the Okun downward-sloping function is consistent with various macro models. He makes the very fair point that a lot of modern models on the labour market hardly mention investment. Building on Phelps' book, *Structural Slumps*, Zoega argues in the following way: higher expected profits encourage firms to offer higher wages; increased demand for capital raises labour demand; the natural rate of unemployment is then lower.

I was much interested in the empirical part of the Zoega paper. In Table 4, he estimates unemployment equations for the Nordic countries. The data are five-year averages, which leads to 10 observations per nation (I am not sure why we have 38 observations, but perhaps some years are missing). It would be important in such a regression to have country fixed-effects and year dummies; I was not sure whether that is done in Table 4, so that was a concern in my mind. But leaving that aside, Zoega's main punchline is the negative coefficient on

Investment. This pattern is worth knowing. However, there is a huge change in the coefficient going from column 1 of Table 4 to column 2: it alters from -0.75 to -0.19. This would worry me if it were my empirical work, although we are working here with tiny samples of observations so I appreciate that we cannot expect strong robustness.

Table 5 is nice. I like the way the author builds up slowly, going from column 1 to column 2, so that the reader can see for himself or herself how coefficients change as other regressors are included. Again I do not know whether country and year dummies are included, and they should be for convincing results, but Zoega does here persuasively uncover a strong negative relationship between unemployment and investment.

Table 5 has one extraordinary feature. I recommend it to all those who are convinced that high duration of unemployment benefits is a key bad thing for an economy. In column 9 of Table 5, the Duration of Benefits variable has a negative rather than a positive coefficient: -3.13 ( $t=2.07$ ). I am reminded of the statement that nothing is sadder than a beautiful theory destroyed by an ugly fact.

Overall, Zoega's work is provocative and interesting. He has done us all a service by emphasizing the role of investment; it has been easy over the last decade of labour economics and macroeconomics to forget about that role. Although I am not sure I buy all aspects of the empirical regression equations, and we have to beware of tiny samples in science, Zoega's analysis reveals a number of important and interesting patterns.

### *Finally*

I got a lot out of reading these three papers. Where would I like to see this impressive trio of thinkers go in the future? My preference — of course theirs will probably be different — would be to see them blend into these models, theoretically and empirically, a key feature of human beings that is currently missing from the theories. Humans are deeply imitative creatures.

In my view, herd behaviour needs to be a central part of any new and more convincing economics. Think of Ned Phelps in his suit.

Now, forgive me, I need to go shopping.

### *References*

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