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The Slump, the Recovery And the ‘New Normal’

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The powerful downswing in economic activity in the past two years is *not* the only disturbing downswing experienced in the western world since the Great Depression of the 1930s. The Big Slump that took hold in the U.S. and western Europe from the early 1970s into the 1980s was also powerful. It was disturbing in part because – as in the Great Depression of the 1930s – there was little insight at first into the causes. Jean-Paul Fitoussi and I came to see that its causes were structural shifts, not the usual “Keynesian” forces. A cause common to all economies was the slowdown of “technical progress.” The upward pull on world real interest rates resulting from the U.S. fiscal stimuli added to the slump in Europe. As progress returned and the stimuli abated, the Continent saw a modest recovery.¹

This time, there has been a quick agreement on the causative events that led to the boom, then ended the boom and led to the slump. In the now-standard narrative, Chinese saving caused a world “savings glut”; the U.S. Congress cut the cost of capital for residential investment to expand “homeownership”; the U.S. Federal Reserve then cut its “policy rate” to match the decline in the “natural” interest rate; U.S. regulatory changes allowed banks to borrow more in order to do more mortgage lending for residential and commercial structures; finally, changes in social norms permitted CEOs to ask and receive outsize bonuses, permitted speculators to make one-way bets

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1 Jean-Paul Fitoussi and Edmund Phelps, *The Slump in Europe: Open Economy Theory Reconstructed* (Oxford, Blackwell, 1988). With the internet innovations from Netscape to Google, technical progress picked up for awhile in the U.S. and perhaps less strongly in Europe, as did employment, then sank back to a lower rate by the mid-2000s while employment was gaining strength. What matters is the change in *expectations* of technical progress, not the realization of an already anticipated path. Also, other forces intervened in the second half of the recent decade. The latter period is our subject here.

on housing prices, and permitted homebuyers to file fraudulent loan applications, all of which removed the last line of defense against a scramble for more houses. The scramble drove up house prices to unsustainable levels, which in turn led to a construction boom. The subsequent collapse of the prices of houses and commercial structures left the economy with an over-investment. The return of these prices and the over-investments too left the economy over-indebted – banks, many businesses and households. Over-investment and over-indebtedness didn't just end the boom: it replaced it with a slump.

Yet there is no persuasive causal account – none well-known. The Keynesian school asserts that the missing links are filled in by the mechanisms in the monetary models of American Keynesianism: “aggregate demand” was the vehicle that carried the economy to boom, to slump and now to the beginning of some sort of recovery. But Keynesians do not explain how *aggregate* demand shot housing prices into the sky but not other prices. And there is little evidence to show that the aggregate demand curve (in the output-price plane) *did* plummet – by enough to cause the downturn: In Europe, inflation in the consumption deflator has not fallen; and, in the U.S., the inflation rate fell only for 2 or 3 quarters and it then recovered – it is now running about 2.3 % p.a. It is possible that the “Fed” supplied just enough liquidity to meet the increased demand for it, so *aggregate* demand was *not* deficient. Though residential investment demand surely fell, export demand rose and public sector demand rose.

The Chicago-MIT-NYU school answers that its models leave room at every place for random disturbances and, for this school, it is the probability distributions governing the disturbance terms that – to the extent possible – explain fluctuations, including the recent one. But the excessive vulnerability of banks (and counterparties) to loans gone sour, which has been recurrent in the past two centuries, cannot be viewed as another random variable in this school's models. The precepts of this school imply that episodes of excessive leverage do not occur for two reasons: Markets are perfectly “efficient” to a decent approximation and so markets have information on the amount of each bank's assets in every risk category. Further, markets have perfectly correct understanding of how the economy works and use this perfect knowledge to estimate “rational expectations” of the means and variances of all the relevant prices. A school that laid the ground for belief in “the magic of the market” cannot prepare us for gross mispricing of risk and pathological asset prices.

Another school, one focused on industrial practice, is undoubtedly right to point to “poorly designed incentives” as an explanation of banks’ over-borrowing in order to over-lend – their over-leveraging. But that theoretical perspective does not explain the near-escape of housing *prices* from the gravitational pull of fundamentals, especially when the consumer price deflator never drifted very far from the targeted at the central bank. Absent from the narrative and from policy discussion is any role for misguided or unguided expectations and the actions of speculators.

This paper studies the boom and the slump from the perspective of a stylized model of a *structuralist* kind – a model akin to those in my 1994 book *Structural Slumps* and later papers on the internet boom.² My aim is to see how far such an analysis can go toward illuminating the stages of the recent crisis – the boom, slump and recovery – that originated in the U.S., U.K., Spain, and Ireland and had repercussions on other economies where banks made bad loans. The story told is non-monetary in character in the sense that it abstracts from any role played by illiquidity.³ It is also non-REH in that it avoids the surreal premises of pervasive efficiency and knowledge that is unknowable. Let me add that parts of this survey remain sketchy at points. It is very much a work in progress. (This version is still a working paper intended for discussion.)

MECHANISMS FROM OVER-INVESTMENT TO SLUMP

If one or more mechanism failures figured in the crisis, we want a model containing the suspect mechanisms. Let me begin with a classical model and its mechanisms. Take the famous model in which

² Phelps, *Structural Slumps: The Modern Equilibrium Theory of Unemployment, Interest and Assets*, Cambridge, Mass., Harvard Press, 1994. See also Phelps and Gylfi Zoega, ‘Structural booms: productivity explanations and asset valuations,’ *Economic Policy*, April 2001, vol. 16, issue 32, 85-126, Hoon and Phelps, “Over-investment and Employment Dynamics in a Non-Monetary Incentive-Wage Economy,” ms. 2007. See also closed-economy digressions in papers in fn. 9.

³ The economy is discussed as if units of the economy’s assets, say homogeneous houses, were bought and sold using certificates entitling the holder to one unit of services of some house for one year. Thus the going, market-clearing rent on houses is the *numeraire* in terms of which the price of houses and other prices are measured. I don’t see this feature of the model to be as restrictive as might be imagined. It does not mean that the future is foreseeable, that there is no uncertainty, that there are loans at banks of uncertain value and debts at companies of uncertain value, since default probabilities are not exactly known, even if people are willing to put some bounds around the value.

there is a single durable capital good, say, houses, which shrink as they age. This asset is produced with labor alone and the services of a unit of housing are produced unassisted by labor. This model emerged from Böhm-Bawerk and Wicksell around the turn of the century and was developed further by Meade, Kaldor and Hicks in the 1930s.

False expectations. False expectations are not a *prime* cause – a first cause – of the recent crisis but they play a key role and it is convenient to begin there, circling back later on. I will suppose for the moment that some new *vision* of the future has caused speculators to expect a new and higher plateau of housing prices in the medium-term future, so that housing prices have been bid up. It is one of Keynes's lessons in elementary economics that an increased supply of "finance" is *not needed* to drive up an asset price: The mere expectation that the asset will command a higher price in the future is sufficient to cause the price to jump onto a higher path. Yet many commentators carelessly speak of the financial sector as having "fuelled" the rise of housing prices. (They overlook that the homeowners selling to speculators will use their proceeds to pay off the mortgages and the proceeds can finance the banks supply of new mortgages to the speculators.)

What is the effect of this speculation, which is unambiguous with respect to the price, on the rate of *construction*? I will be assuming that the speculation excites a construction boom. I will discuss briefly what it takes to reach that conclusion in theory. On the one hand, the increase in the price of houses causes employers in the construction industry to pull up the wage and the *wage effect* on employment we may safely take as positive. On the other hand, the increase in the price of the economy's capital asset represents an increase in the value of the wealth and, if that increases the demand for leisure, the *wealth effect* on employment is negative. It would be forgivable to assume that the wage effect exceeds the wealth effect and let the matter go at that.⁴ But in fact there is another channel of influence on employment and this one tilts (or at any rate could tilt) in the direction of increased employment. Any increase in investment in housing must be matched by increased saving as a matter of national income accounting. A lesson here, which resonates with another theme of Keynes, is that it is unnecessary for households to reduce their consumption to supply the saving to finance the extra investment activity: It is enough that

⁴ Hian Teck Hoon has worked out an analysis of a model like the one here in which he shows that the increased price of houses has unambiguously a net positive effect on employment. My discussion is an attempt to explain that result.

workers leave leisure pursuits – or, very commonly, unemployment – to add to the workforces producing new houses without demanding additional services of housing before the additional housing has been built. How is that to be done? If the increase in wages paid to workers increases saving (net of the decrease in saving induced by the increase in wealth) by less than the investment the workers produce, there is an excess demand for consumption – for the consumption of the services of houses, called shelter. Whatever shortfall of saving is implied will have to be resolved through the short-term interest rate, since still higher wages will only aggravate the excess demand for shelter. The way out of the impasse is suggested by the point that the jump in the price of houses leaves room for expectations of a gradual rise over the future to the new and higher plateau, which pulls up short-term interest rates. The price jump must be just small enough to make the expected rate of remaining house price appreciation just high enough to deliver the needed increase in the rate of interest. Only through this elevation of short rates about their level in the steady state will workers agree to accept ownership claims to housing that just matches the extra housing they are producing. Lastly, the elevation of short-term interest rates has an interest-rate effect on the supply of labor – known, if it is a positive effect, as the Hicks-Lucas-Rapping effect. This shifts the balance of forces toward an increase of employment as the net result of the speculation.

Now suppose that these expectations are actually unrealizable. Then a time comes when speculators finally abandon their newfound expectations. The model implies that, when the disillusion arrives, the price of houses drops. The wage, wealth and employment, which were pulled *up* in tandem with the price of houses, are now pushed *down* by the fall in the price of houses. If the price of houses drops only to the steady-state level where it was at the start of the boom, then, on this account, employment is driven down only to its steady-state level. The collapse of the price of houses to its original level is contractionary, of course, but cannot cause employment to go from boom to slump.

Yet there is the complication. The stock of houses is now *elevated* owing to the recent boom in construction. This has two effects: The increase in the number of houses means an increase in households' wealth. In the closed economy here, thus one without foreign owners, the wealth increase saps older workers' will to go on earning. (All those houses to enjoy! And so many to look after!!) And in contracting the supply of labor, the wealth increase has a *negative* effect on employment. So it might seem that from a

classical standpoint employment will drop to a level *below* the normal level from which we suppose the economy started.⁵ But there is also a wage effect. The elevation of the capital stock, in forcing down the relative price of the consumer good, namely the consumption of shelter, forces *up* the real price paid for a house – that is, the price paid relative to the rental per annum for housing. The price increase in turn pulls up the wage, which in turn has a *positive* effect on employment. *Both* effects cause an initial elevation of the wage and the price of houses. If the *wage effect* dominates the *wealth effect*, the net result is also an initial bulge of employment over the steady-state level. A slow decline of employment to its normal level then follows. But if the *wealth effect* is dominant, a recession relative to the normal follows, though one that is transient.⁶ (Provided current construction, though higher than normal, is below the level required to replace the housing stock as units are retired, the stock of housing is then on a descending course to its normal level; the wage and employment subside to their normal level as well.) Our new friend, the *interest rate effect*, also has to be factored in. With the price of houses propped up above its normal level by the bulge in the housing stock, and thus the price expected to be taking a downward path, short-term interest rates will be below normal. The Hicks-Lucas effect then contracts employment.

In the *closed* economy case, then, it appears to be a theoretically possible that a *slump* will result from the over-investment, though the theoretical case for such an outcome is not overwhelming. What the Austrians took to be obvious is not exactly certain. It's complicated.

Let us then check for the existence of some other route from boom to outright slump, still staying with the confines of classical theory. In the above story, the wage rise and the house price rise yoked to it depend on a drop of the short-term interest rate – really, a rotation of the yield curve toward lower rates at the short end – so that

⁵ I came to this conclusion off and on in talks at the Milan Stock Exchange, the BIS conference in Luzern and Central Bank conference in Buenos Aires over 2008. My thinking was that if the rewards of work and those of leisure exhibit very little substitutability, the income effect would dominate and that would add to the wealth effect in increasing the demand for leisure.

⁶ The forthcoming paper by Hian Teck Hoon obtains the result that a helicopter drop of additional houses causes unambiguously a drop of employment to somewhere below its normal level. Such a result – a voluntary depression – is easily lampooned. But when much of Europe was left demolished after the second world war, it was taken for granted that the wealth effect would generate a huge increase in the supply of labor.

the capitalized value of the expected future stream of rentals is increased. But, in the age of globalization, we must now consider an *open* economy under conditions of *capital mobility*. In the long run in such an economy, the domestic interest rate (in terms of the domestic consumer good, here, housing services) cannot differ from the world interest rate. Take the case where the home country is not so large that it can budge the world interest rate. Then capital mobility ensures that, in response to the bulge in the housing stock that has occurred, the short-term interest rate may be lower but it cannot remain lower indefinitely; it has to end up at the level of the world interest rate. Furthermore, interest rate parity means that the short-term domestic interest rate can drop only to the extent that the drop of the real exchange rate offers cosmopolitan lenders the expectation of a capital gain from subsequent recovery of the exchange rate.

Let us “open” our model economy by supposing that, while houses are fixed, ownership and services of houses are “mobile.” The latter feature has important consequences. Take first the case of *constant terms of trade*. Recall that in the closed economy, households consumed the services of the additional housing as it shrank back to its normal level. The newfound prospect of future consumption smaller than present consumption forced a reduction of the short-term interest rate, which would then be rising gradually to its old level as the housing stock fell back to its old level. The bulge of houses causes interest rates to be depressed and the fillip that gives to the price of houses is how the bulging stock of houses manages a soft landing – with no slump. The tradeability of housing services in an open economy case means that domestic residents do not have to put their increased wealth into the increased stock of houses: they could instead buy assets or consumption services abroad. Domestic residents could, for example, sell to foreigners the entirety of the *added* housing stock, opting to own – and consume the services of – only the *normal* level of houses; then future consumption would equal present consumption and the interest rate would be at the level from which it started (prior to the new vision triggering the rosy expectations) and the price of houses would be back at its old level. In parallel to such “consumption smoothing,” workers, faced with the normal wage, would work just enough to produce new houses at the normal rate: “work smoothing.” Neither the real exchange rate nor the domestic interest rate departs from its steady state level.⁷ Left standing is the wealth effect, which

⁷ In the thinking of Mundell and Fleming when they were Keynesians, the exchange rate depreciates by just enough to restore aggregate income (on which the

will prompt households to work less and consume more until their wealth is back down to its steady-state level.

What of the usual case in which, as exports are steadily increased, there are *diminishing terms of trade*? I will restrict attention to the possibility that the increase in the housing stock represents an initial increase in the stock under domestic ownership. Then domestic households will again act to export added houses to foreigners in exchange for overseas assets, though they will not trade away as many houses as in the extreme case above. As a result, the consumption of housing services after the boom will not be as high as in the closed economy. So consumption will not be falling as rapidly as in the closed economy. Hence the short-term interest rate will not drop as much and the price of houses will not be as elevated as in the closed economy. With real domestic interest rates not able to drop as much as in the closed-economy case, the wage cannot be pulled up as much in that case either. Thus the *interest rate effect* that is crucial to turning the bulge of houses into a blessing is shut down to a degree. In this respect, the scale of the positive “wage effect” of the overhang of houses on labor supply is moderated, which leaves less opposition to the wealth effect, with its adverse effect on labor supply. The conclusion is that there is still something of a *presumption* of slump. The hitch is that it is a slump resulting from an overhang of wealth.

To develop another mechanism tending to produce a slump out of the boom we need an enriched version of the above model or some broader kinds of models. One such enrichment would have the export sector require labor as well as capital for its production. And each company in that sector is large enough that it has a degree of monopoly power: it faces a downward sloping demand curve. In such a model, a real exchange rate depreciation, taken alone, operates to contract the power or the threat of foreign competitors and thus to increase the monopoly power of domestic companies. As a result, these companies raise their mark-ups and that leads to a contraction of their output and employment. Labor is then forced to seek work in the nontradeable sector. In doing so it pushes down the real price and the *real wage* (in terms of tradeables), with the result that not all displaced workers take work (thus refuge) in the non-tradeable sector.⁸

demand for money depends), thus to pull the domestic interest rate all the way back to the world level; and in restoring income, the depreciation restores jobs too.

⁸ See Seppo Honkapoyja and Erkki Koskela, “The Economic Crisis of the 1990s in Finland,” *Economic Policy*, 29, 1992, 399-436; Gylfi Zoega, “Financial Crises and the

A classical economist would feel that she could stop here. Of course, by injecting *job rationing* into the model, making it somewhat modern, we obtain the result that the fall of employment largely takes the form of increased unemployment. (The models in my *Structural Slumps* do inject that feature into its models.)

The story starting from prime causes. Before leaving this relatively standard kind of model, let us see whether it is possible, up to a point, to cast the entire story – the boom as well as the slump – into these terms. We need a disturbance – what Alfred Hitchcock called a McGuffin – to start the speculation on housing. An attractive possibility is the fall of the world rate, r^* , brought about by increasingly large current account surpluses of China, India, Germany and other surplus countries. Another possibility is the actions of the U.S. government in making housing more affordable and affordable for more people. The cost of capital, r , thus falls relative to r^* , which has itself fallen. Central banks must lower their “policy rate” unless they want the price level to grope for a bottom from which gradually to rise, so that the over-high interest rate is offset by a rising price level. Owing to these forces, the price of extraordinarily long-lived assets, such as houses (as well as minerals and precious stones), would climb and the price would be expected to climb further on its way to docking at some new higher plateau. But how low would world rates be in the future? Lower because China was growing or less low because Chinese consumption would soon increase? And what would happen to the cost of capital, given the world real rate? All this was (and always is) is highly uncertain – a matter for speculation.

In this situation, wealthowners might decide to speculate by bidding to acquire ownership of another house or to try to have an owner-occupied house instead of a rented one on the belief that the general level of houses will soon rise a notch. As a result, the prices of houses will go up; or at any rate some houses will, then still more houses and so on. (Note that a new mortgage is created but an old mortgage is paid off, as the previous owners decide to rent a house newly acquired by a speculator.) At this stage, the expectation of the typical speculator is *exceeded*, since such a speculator thought he was one of not very many. (The price increase came immediately instead of after some wait.) This increase would give evidence to each such

speculator that there were other speculators thinking along the same lines, which they could not have been certain of. So these speculators will feel reinforced in their thinking and may well decide to bid for yet another house; and other speculators who had not found it convenient to speculate before might join in. Thus house prices can be bid up to still higher levels. It is pretty clear that speculators may go on taking chances until they are disappointed that the price increases did not bear out their guess. At this point, speculators may retrench, trying to sell the third house or the *k*th house.

In this completed version of the story, housing prices will *not return* either sooner or later to the previous level before the structural changes; but rather to some *higher* normal level – a level that corresponds to somewhat lower world real interest rates. The exercises of the previous section have to be revised to allow for the fact that the price rise of houses represented overshooting of the price above the new and *higher* normal price, not merely above the old normal price. As a corollary, if, *before* China's emergence as a big (as well as growing) supplier of saving to the rest of the world, the natural unemployment rate was, say, 5½ %, as it appears to have been in 1995 and 1996 (on the eve of the internet boom), the natural rate would *now* be 5 % *on this account*. On the other hand, subsidies to lower the cost of capital for residential investment are unlikely to continue forever. And if an outright slump has resulted from the mechanisms studied above, we have to think not only of a medium-term natural rate *level* but also an equilibrium recovery path leading down to the medium-term natural level.

MECHANISMS FROM OVER-INDEBTEDNESS TO SLUMP

I hope the discussion to this point gives a sense of how over-investment could have driven the unemployment rate in the U.S. back down from the 4.5 % level it had reached in mid-decade and toward a somewhat *higher* level than the 5.5% level of 1995-1996 if the natural unemployment rate had not shifted in the interim; and to an *even higher* level like 7.5% if the natural unemployment rate had risen to about 7 %. However, the fact is that the quarterly unemployment rate rose in the U.S. to nearly 10 % before backing off in the early part of 2010. So if we are to reach a sense of having explained how the unemployment rate could be driven by the crisis to such a level in the U.S. – and also in the U.K. Spain and Ireland – we need more causes or, if not more causes, more mechanisms linking causes and effects. An important set of causes are the over-indebtedness and, in extreme

cases, the insolvency that were created during the speculative run-up of various asset prices.⁹ These considerations help not only to explain the depth of the downturn but also to understand why the *rate of recovery* is apt to be very slow, statistically speaking.

In the story of the previous section, the labor force was willing in the aggregate to do the additional saving to finance the jobs created by the additional residential investment. This turned out to be a bad investment. The older people, getting ready to do reverse mortgages, are made worse off while the younger people, getting ready to buy houses, are in this respect better off; but that has to be weighed against their unemployment and reduced interest rates. What was won will be largely offset over ensuing years through delayed earnings and careers, reduced saving and declining capital stock as the economy journeys back to its normal state – or, more generally, growth path. The standard narrative, however, recognizes that much of the investment in added housing was financed by borrowing from overseas. So the collapse of (some) asset prices left the country with not only the subtle Austrian inconveniences of over-investment but also the painful Anglo-Saxon hardships of over-indebtedness. But, after that, the propositions of the narrative are novel from the standpoint of structuralist theory.

The narrative assumes, reasonably enough, that when households' balance sheets suffer a sharp rise in indebtedness, unaccompanied by any (but the most fleeting) rise in the values of their houses and other assets, households tighten belts in an attempt to repair their balance sheets. The narrative goes on to assume, however, that the reduction of consumer demand for domestic output causes a drop of employment. But there are two difficulties here. First, the drop of consumption would cause an "excess supply," thus a "deficiency" of aggregate demand, only over some short term. After adjustments of inventories, real wages, interest rates and the rest, the "excess" would have vanished – there would be no more surprises in product markets. In the standard Mundell-Fleming variation on the Keynes-Hicks model, the fall of aggregate demand results in a real exchange rate depreciation of a magnitude that reduces import demand and increases the demand for exports by just enough to restore aggregate demand and total employment. So the narrative's reference to household balance sheets cannot rest on Keynesian theory. However, in a

⁹ For the record, I began to emphasize balance sheet effects of increased indebtedness at the Long Term Investing Conference in Paris in June 2009.

structuralist model, the contraction of consumer demand, which leads to a real exchange rate depreciation in structuralist theory too, has supply-side effects that contract employment.

There is a one-sector structuralist model with a mechanism through which such a real exchange rate depreciation tends to produce a slump. In a customer market model, the real exchange rate depreciation operates like a tariff on supplies of goods by potential overseas competitors. With this lessening of the threat of foreign competition, domestic producers calculate that the customer outflow that would result from raising their price to domestic customers has decreased. So they raise the price they require for any given output – equivalently, they reduce what they are willing to supply at any given price. This hike in the “supply price” is equivalent to a cut in the “demand wage” and thus causes a movement down the labor supply curve that lowers real wages and employment.¹⁰ This is a strange paradox: when consumers lower their demand, domestic suppliers sock them with an increase in the markup, which raises their prices or lowers their wages.

The model can be extended to encompass increased indebtedness within *companies*. I believe that Seppo Honkapohja and Erkki Koskela were the first to point to corporate indebtedness as a force operating to drag out the recovery from a financial crisis. The way this works in my customer market model was called to my attention by Gylfi Zoega. The presence of a steep increase in company debt presents a hazard to companies wishing to remain in business for the long term and they will want to take measures to reduce those debts sharply within a few years. This consideration will induce companies in customer markets to recalculate their optimum markups. Ordinarily they were not setting markups to obtain the largest sustainable cash flow; they pulled back from such a monopoly policy to one with reduced markups aimed at increased competitiveness. The increased indebtedness, though, causes firms to raise markups, thus to move closer to the monopoly point and

¹⁰ Hian-Teck Hoon and Edmund Phelps, “Asset Prices, the Real Exchange Rate and Unemployment in a Small Open Economy,” in Warren Young and Arie Arnon (eds), *The Open Economy Macromodel*, Norwell, Mass., Kluwer Academic Press, 2002; Hoon, Phelps and Zoega, “The Structuralist Perspective on Real Exchange Rate, Share Price Level and Employment Path,” in W. Semmler (ed), *Monetary Policy and Employment*, London, Routledge, 2005. The models there grow out of Phelps, *Structural Slumps*, op. cit., Part III. (“No amount of money-wage/money-price flexibility and exchange-rate flexibility is sufficient to insulate the economy from fluctuations...”)

farther still from the point of pure competition. The higher prices at any given money wage level translates into lower real wage offers, with the result that there is a movement down the labor supply curve to reduced employment – or down the wage curve toward increased unemployment.

There are also financial companies such as the banks. Recall that the standard narrative also cites the near insolvency of the banks: It says that the damage to balance sheets “impaired” the ability of banks to make loans. This led in turn to a massive “credit crunch” – a sharp *increase in credit rationing*. We want a causal mechanism. Fortunately, the above analysis of the effects of company indebtedness on the supply of output by businesses appears to translate well to the effects of bank indebtedness on banks’ supply of loans. The typical bank, at risk of tipping into insolvency, found it optimal to cut its supply of new loans and even decline to roll over existing.

It is now clear that “recovery” to the (unchanged) medium-term level of employment is apt to be a slow process since it involves the gradual self-repair of balance sheets – in the same way that recovery from a heart attack involves the gradual self-repair of the heart.

Yet another reason for a rise of unemployment was the *increased uncertainty premium* resulting from ignorance of how far the downswing would go and thus what the prospects were for asset results and loan repayments in the future. Thus a collapse of share prices will tend to accompany the sickening slide of housing prices. (At the Banco Central in Buenos Aires in September 2008 I depicted in the basic diagram the contractionary effect on asset prices of this premium.) But see below.

THE MECHANISMS OF TURNAROUND

Only radical pessimists supposed that western economies would remain mired at the low employment levels to which they were sinking. Now we are seeing a marked upturn of employment in Germany, France and the U.S. and waiting for upturns in the other economies of the western world. The question now is: What are the mechanisms propelling an upturn? That is, why should employment, after going down, turn around and go up? And what determines the extent – the reach – of the recovery?

An answer found in textbooks is that inventory investment will have to turn around once inventories have fallen sufficiently far. As the stock is shrinking while producers go on expecting to be able to sell at an unchanging rate, there comes a point when they step up their production the level of sales rather than see inventories depleted further. But we do not really know whether inventories will level off because output will rise to equal spending once again or whether spending will fall to equal output! In any case, we will never see an appreciable recovery if the only engine is the bottoming out of inventories. We want a recovery based on improved expectations of what will be sold.

Another textbook answer is that, as long as investment activity is not enough to cover the retirement of the capital stock because of age and obsolescence, the useful capital stock is shrinking. And it can only shrink so far until continued shrinkage powers a gradual increase in investment activity. It is clear from the section on over-investment that this reason over-investment does not necessarily lead to under-employment. It is theoretically possible that the diminution of the over-investment by age and technical progress can only speed the over-employment that came from the high wages brought by the bulge of the housing stock. But in the models in the section on over-indebtedness, if the absence of abnormal levels of debt employment would have left employment at its medium-term natural level, an excess debt, taken alone, would send employment into a slump. Technical progress will be steadily diminishing the contractionary influence of any given amount of excess debt.

Another force bringing about a turnaround is the gradual improvement of balance sheets as extra saving by households, increased profits at firms and reduced loans by banks do their work. Of course, in the Keynesian view, the extra saving households decide to do is frustrated, since it only causes consumption to fall, thus output and incomes; and if investment is weakened, saving will actually fall – the “paradox of thrift.” But in the present models, which are not fixated on a short run of a few months, increased thriftiness does increase saving – but not necessarily by very much. The repair of the balance sheets of companies and of banks are also cast into doubt by the Keynesian models. Nevertheless, these models have not been tested, so their rather extreme claims have not yet received econometric support.

An answer more in the spirit of my structural models is that, empirically, markets tend to overshoot as the result of speculative excess – the same sort of excess that propelled the boom too far. If expectations have driven employment to overshoot, the correction of expectations will then pull output and employment up. But how big is this overshoot? Maybe on the average it is not big at all.

Another powerful reason for a turnaround is that once employment and output level off, the *uncertainty will lift*. When housing prices and the prices of bank shares have been bouncing along the bottom for a month or two, the uncertainty premium presumably abates. The sense of “free fall” is over. That in turn will send share prices up, which had been so hard hit by the increased uncertainty during the downswing.

Another source of the turnaround is that the *credit crunch will let up* once the number of non-performing loans stops increasing. (An added reason banks did not lend much during the downswing was their doubts about the ability to businesses to repay.) But see below.

I would *not* say that a weaker dollar (or euro or pound) is a solution – a recipe for return to high employment. These currencies are weaker, of course. The problem is, as touched on earlier, that this weakness, while wonderful for exporters, such as manufacturers of tradable products, tends to *lower* the relative price of *non-tradable* goods, which are relatively labor-intensive. So recovery through this mechanism will tend to produce a recovery of output with little accompanying recovery of jobs.

WHERE IS THE ‘NEW NORMAL’?

Does the recovery *ultimately* have to go back to its *original* level? If the original level was the *natural* level, at any rate? Not if the natural rate has shifted. The question is whether it has. Even if we conceive of the U.S. unemployment rate prevailing in 1995-96, which was about 5.5%, as the medium-term natural rate in the U.S. then, should we suppose that this is where the natural unemployment rate is now? In one respect, the natural rate of interest may have been somewhat *lowered* in the early 2000s, thanks to the exploding current account surpluses in China and India. The natural unemployment rate may have been as lowered to 5.0% on this account.

A force pulling in the opposite direction is the colossal surge within the global economy in the stock of sovereign debt. The aggregate number is not readily available. However, if the *extra* fiscal deficits emerging in the 3 years since the start of 2008 were 2%, 6% and 10% of initial GDP and those over the next 6 years were 8%, 6%, 4% and 2%, the global public debt would have risen at the end of 2014 by 38% of initial GDP. So global public debt would have increased from about 40% of 2008 GDP to nearly 80% of 2008 GDP. If global GDP were to grow only at the historically normal rate over these 7 years, the pre-2008 base level of 40% would remain while the increment would be diminished to something like 30% of GDP, which, when added to the 40%, give 70%. Various estimates suggest that such an increase may be enough to push the global long-term rate of interest from 5% to a level in the neighborhood of 6%.

It has to be added that work by Hoon and myself in the 1990s goes farther. It argues that an increase in the constant level of the deficit as a ratio to the GDP might be *contractionary* for present employment when full account is taken of the effects of the mounting debt on the short-term (and afortiori the long-term) rate of interest. Of course, this “backfiring” of fiscal stimulus is more likely to arise if the public debt to GDP ratio was large to begin with.

All of this has an excessively mechanical tone, however, notwithstanding the nod to Knightian uncertainty. It is a mistake to think that the level of investment, on which (in my view) the level of employment depends, is driven almost exclusively by the capital required, given interest rates and productivity growth, for current production – particularly production of consumer goods. The economy can operate on a sort of war footing – in which only current consumption needs are addressed – as companies shy away from keeping or acquiring employees for work on *future* projects and there are no enterprise valuing capital goods highly enough in relation to their cost of production to cause it to purchase capital goods. Hence the above “mechanical” sources of turnaround may be able to get the unemployment rate down to, say, 7%. But getting unemployment from there to 5% will require a revival of the old propensity to innovate. Really high employment will require really high investment and the latter will require *dynamism* – a high propensity to invest in general, not just when the sun is shining.

The 'new normal' and the new dynamism. The question – for the U.S., and for the world – is whether the US economy is still structured in

such a way as to possess the dynamism that powered the economy to the “old normal” – the normal dynamism of old. If it has the old dynamism, we can expect the natural unemployment rate to be around 5.5% – or something like 5.0% owing to the China effect.

One bad sign is that investors have withdrawn their funds from the venture capital firms in Silicon Valley. They say they became disillusioned by a decade of poor earnings on their investment. The venture capitalists say that there were few good entrepreneurial projects to invest in, such as solar energy. Perhaps the VCs made excessive demands on the start-ups, e.g., high interest charges. In any case, V.C. investment, which was over \$100 billion in 2000, shrank to \$23 billion in 2005 and to \$17 billion in 2009.

A bad sign on the horizon is the prospective increase in tax rates on corporate taxes and on middle and high personal incomes. The former will lessen the demand of entrepreneurs for the finance to create a start-up firm and the latter will lessen the supply.

Another difficulty is that the banking industry became greatly over-crowded early in the past decade, as Leo Tilman, a colleague of mine at the Center on Capitalism and Society, argues in his *Financial Darwinism*. Now, as banks are forced to shrink, the contraction of credit may ultimately induce new nonbanks and new operations in existing nonbanks to arise. But it is not clear that these developments will fill the gap in the supply of finance for business investment in general and for business innovation in particular.

Moreover, the banks are not only shrinking: they have oriented themselves away from lending to business, except indirectly, and heavily toward financing residential and commercial structures (alongside proprietary trading). In the *Harvard Business Review* this past January, Tilman and I advocate creating state-sponsored banks that, like the misnamed “merchant” banks of old, would lend to and invest in businesses for investment projects of an innovative character – including large-scale long-term projects. But this is not in prospect.

Yet another deficiency in the system is the terrible short-termism in the business sector. There is a fixation on earnings in the next quarter. We have all been so caught up the housing boom, the commercial real estate boom, the explosion of exotic new financial products as banks struggle to avoid Darwinian extinction, etc. that we

have not noticed the possibility that that the business sector and the financial sector are both no good anymore.

To sum up: The medium-term outlook for the U.S. is not bright though not as dim as it is for Europe. The best hope for the long run is pinned on a fundamental *refounding* of Anglo-Saxon capitalism – the very system that has been saddled in recent decades with many perverse institutions and many failures on the regulatory side. In the meantime, the west must seek to avert a “lost decade” by taking measures soon – but not hastily – to reverse the decline in its economic dynamism and in its economic inclusion.

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