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The new deflation and housing market bubbles in the USA and UK: a monetary policy dilemma

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Abstract

Purpose – The purpose of this paper is to develop an analysis of the improbable events of housing market bubbles occurring in a period when US and UK central bankers were responding to perceived risks of a new deflation.

Design/methodology/approach – The methodology focuses on how the anti-deflation policies implemented by the Federal Reserve and the Bank of England contributed to the housing market bubbles. The central bankers perceived the deflation as a Keynesian short-run deficiency in aggregate demand, triggered by a financial crisis. Indications are that the deflation is in the nature of long-run aggregate-supply-driven trend as explained in Veblen's theory of "chronic" deflation driven by cost-reducing advances in technology and globalization.

Findings – The Keynesian anti-deflation policies of the Federal Reserve and Bank of England failed to counter the deflation risks while contributing to housing market bubbles. Moreover, the policies failed to address the structural problems of unemployment and income inequality associated with long-run aggregate supply deflation.

Originality/value – Effective policies must be based on a correct theoretical understanding of the problems. The chronic nature of the new deflation points to the need for new approaches to deal with the negative income and employment effects that exclude an increasing number from the housing markets.

Keywords Keynes, Bubbles, Deflation, Disinflation, Veblen

Paper type Research paper

1. Introduction

Since the early 2000s, two complex economic phenomena – a shadowy new deflation and housing market bubbles – have assumed a seemingly improbable relationship in both the USA and UK. In this paper, we examine the dilemma that has posed for monetary policymakers at the Federal Reserve and Bank of England, namely, that their policies aimed at countering the risk of deflation through stimulating aggregate demand have contributed to the housing market bubbles. But we also find that the dilemma runs deeper. Monetary policymakers focus on short-run macroeconomic cyclical fluctuations and rely on policies aimed at aggregate demand management through changes in short-term interest rates and the money supply. Theoretical guidance for their policy analyses is provided by economic theories that explain cyclical fluctuations, including deflation, as caused by short-run changes in aggregate demand. The connection between the new deflation and housing market bubbles is explained as arising from a failure of policymakers at the Federal Reserve and the Bank of England to recognize that the deflationary forces stem from a long-run trend driven by aggregate supply forces. Consequently, short-run conventional and unconventional policies aimed at stimulating aggregate demand have failed to eliminate the deflation risk while contributing to housing market bubbles.

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1.1 Overview

In Section 2, we begin by reviewing the housing market bubbles that have occurred since 2002. As demonstrated by articles in this journal (e.g. Wilkinson, 1975; Pugh, 1986; Wenxian, 1991; Maddala *et al.*, 1998; Pan, 2003; Reisman, 2007), the functioning of housing markets have long been of critical interest in social economics. Bubbles in housing markets merit special attention for a number of reasons. They create euphoric feelings of wealth on part of homeowners, which in turn encourages excessive consumption at the expense of prudent thrift. Rising prices of houses encourage excessive debt assumption by those buying with expectations that prices will continue to rise. Perhaps most importantly, housing market bubbles effectively price many out of the housing market, a situation made worse by rapidly rising rents. When the bubbles collapse, real economic pain is inflicted not only on home buyers facing loss of wealth and foreclosure, but on the economy at large. As illustrated by what has transpired following the collapse of the housing market bubble in 2007-2008, the economic pain becomes deeper, wider, and longer when the underlying economy is affected by a major financial crisis.

The housing market bubbles in the 2000s occurred during a long period in which monetary policy has been heavily influenced by fears of deflation. History and logic suggest that asset bubbles of any type, but especially housing market bubbles, do not occur in periods of deflation. Indeed, the general theory of housing market bubbles essentially rules out any expectation that such developments would occur in the 2000s. Thus, the large housing market bubble that inflated in 2003-2006 and collapsed in 2007-2008, and the re-emergence of bubbles in 2013 appear to be anomalous developments.

But as we explain in Section 3, the bubbles have been side-effects of policies that were implemented to counter the type of deflation perceived by the monetary policymakers at the Federal Reserve and Bank of England. Deflation in the form of a sustained period of falling commodity and consumer prices, such as occurred in the early 1930s, leads to "debt-deflation" as falling prices effectively raise real debts and real interest rates. But since 2002, the perceived risk of deflation has influenced the policymakers at the Federal Reserve and the Bank of England to engage in extraordinary conventional and unconventional policies of ultra-low interest rates and massive injections of liquidity through quantitative easing, i.e., purchases of securities. Those policies were essentially still in effect at the end of 2015.

In Section 4, we explain that the policy actions were based on a perception of the nature of the deflation as a Keynesian short-run deficiency of aggregate demand triggered by a financial crisis. Within the context of that theory, the appropriate policy remedy for a deflation of that nature is quick and vigorous stimulus to aggregate demand. Any deflationary forces of that nature should have been effectively countered by the extraordinary policy actions taken in 2009.

But that was not the case. At the end of 2015, monetary policymakers at the Federal Reserve and the Bank of England clearly faced a dilemma. Their extraordinary policies aimed at stimulating aggregate demand were still in effect because the risk of deflation had not been eliminated. But by 2013 those policies were again contributing to bubbles in a number of housing markets, e.g., London and San Francisco. In Section 5, we explain why the policy dilemma is more complex and certainly more challenging. The combination of the continuing risk of deflation and the structural problems of unemployment and widening income inequality provides evidence of the subtle effects of an aggregate-supply-driven deflation resulting from advances in information technologies and globalization. This conforms to a modern version of Thorstein Veblen's theory of "chronic" deflation driven by cost reductions gained through investment in new technologies and the competitive price pressures from globalization.

A supply-side deflation has very subtle impacts on prices, and may appear to be caused by short-run deficiencies in aggregate demand. But supply-side deflationary trends entail

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structural changes that affect unemployment and income inequality. Unfortunately, that type of deflation seriously limits the efficacy of the monetary policy tools of the Federal Reserve and the Bank of England. The monetary policies in effect since 2009 have contributed to new housing market bubbles by enabling those with higher incomes to obtain low interest rate mortgages. But the failure of wages and employment to rise has left a growing number with insufficient incomes to afford houses. Consequently, the search for applicable tools to deal with these structural problems becomes imperative.

2. Housing market bubbles since 2000

Housing markets are subject to a complex of local, national, and international factors that are subject to change either in the short run or the long run, e.g., population growth; economic development, growth, and cycles; government policies and financial innovations; and cultural changes. In 1999, at the height of the boom driven by a surging stock market and record low unemployment rate without inflation, Alan Greenspan summarized the Federal Reserve's assessment of housing markets. Sales of new homes are driven by growth in population or more closely by household formation. Given the current birthrate and state of immigration, the number of new US households was being projected as flat at best, with little upside potential. Sales of existing homes would dominate as homeowners would seek to extract built-up equity, but this rate would be slower. Almost as an after-thought, Greenspan stated that a protracted fall in prices would be "unpleasant" but also a wholly unlikely scenario.

2.1 The 2002-2007 bubble

Those projections and the unlikeliness of a protracted fall in prices proved to be very wrong. Between 2002 and 2007, both new home construction and transactions of existing homes rose sharply (see Miles, 2013, Tables IV and V). In 2005, Greenspan was hailing the average 9 percent per year rise in home prices over the past decade and the surge in home construction. While acknowledging signs of froth in some local markets, he rejected arguments that a bubble was inflating in US housing markets. Prices were also rising sharply in many countries, and speculation occurring in some local areas was not significant in a national housing market that was "quite heterogeneous." Under the Greenspan-Bernanke doctrine, bubbles in any asset market cannot be ascertained except through hindsight. Confirmation came in 2008, when the previously denied housing market bubble collapsed, leading the global economy into the most serious financial crisis since the early 1930s.

The housing market bubble was not confined to the USA. In late 2013, David Miles, an External Member of the Bank of England's Monetary Policy Committee, opened a speech at the Dallas Federal Reserve Bank with the statement that "Housing was at the centre of the financial train wreck of 2007-2008 that seriously damaged most rich countries […]. In many countries house price volatility in the six or so years either side of the financial crisis of 2007-2008 has been extreme."

2.2 New bubbles inflating

But warnings of new housing bubbles were being issued in the USA and UK. Robert Shiller, Nobel prize-winner and Co-founder of the Case-Shiller index, said in an interview in December 2013 that "In the housing market, it has its own momentum right now as people see it coming back. We're sort of in the beginning of another housing bubble" (CNBC, 2013). The USA was experiencing the strongest gain since early 2006 when the first bubble was beginning to reach its peak. In January 2014, Peter J. Wallison wrote in *The New York Times* that: "Today, after the financial crisis, the recession and the slow recovery, the bubble is beginning to grow again." He warned that the new bubble would be difficult to prevent. In 2015, analysts in blogs and news reports were debating how much longer the bubble in

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US housing markets could continue inflating (La Monica, 2015). The new Chairman of the Federal Reserve Board, Janet Yellen (2014b) claimed to be among a group of policymakers who had recognized the housing market was in a bubble in 2005. But in May 2015, she denied that a new bubble was inflating, declaring that the appreciable rise in home prices was providing benefits to both homeowners and the economy through the wealth effect on consumers. Harney (2015) warned that Yellen was understating the price rises, citing statistics that were "even explosive in some major markets."

Warnings of a housing market bubble inflating were also being sounded in the UK (Nelson, 2013). In early 2013, US house prices were still 30 percent below their 2007 peak, while UK prices were down 20 percent (Miles, 2013). But in October 2014, average London prices had reached a new high that was 31 percent above the 2007 peak. In noting the extent to which the bubble in UK housing prices had boosted the economic recovery by underpinning consumer confidence, Gilbert (2014) warned that any downturn in those prices posed a "clear and present danger to growth" (see also Hirst, 2014). As prices continued to rise through 2015, Ben Broadbent, Deputy Governor of the Bank of England, took the same stance as Yellen in the USA. He told the BBC that "Clearly there are going to be pockets where at any one time house price inflation is quite high but I think overall in the UK we don't view that with great alarm" (Reuters, 2015). Yet, the Bank of England's Financial Policy Committee acknowledged that two-thirds of the 46 systemic banking crises globally had been preceded by housing boom-bust cycles (Treanor, 2014). To curb "cyclical exuberance" in housing markets, the Bank of England requested and received powers to intervene in housing markets by setting leverage to equity ratios for mortgage lending (GOV.UK News Story, 2015).

The new bubbles have been smaller than the 2002-2007 bubble because tighter lending standards and income limitations are keeping many from being able to obtain the necessary mortgage financing. But as a theory of housing market bubbles shows, the emergence of housing bubbles since 2000, and especially the new bubbles, stands as a historical anomaly.

2.3 The general theory of when to expect bubbles in housing markets

Teo Nicolais (2014) at the Harvard University Extension School's Professional Development Center has explained the conditions under which housing market bubbles have historically occurred. A general prosperity leads to increased demand in real estate markets. With the supply of housing essentially fixed in the short run, rents rise, which leads to construction of new houses. But it takes time to add to new inventory of housing, and prices of existing houses rise. By the time meaningful amounts of new houses have been constructed, the expansion has been underway for five to seven years. Rents and prices of available houses rise faster, creating speculative expectations of continued rises in prices, and construction plans increase. But because construction is a slow process, the supply of houses continues to increase after the expansion ends. With the market now in a "hyper supply" state, the bubble in prices collapses, rendering the recession phase of the economic cycle more severe.

Miles (2013) noted that housing markets are heavily leveraged – construction of residential properties are heavily financed by short-term debt and purchase of houses by long-term mortgage debt, and hence are influenced by low or high interest rates. Leverage also contributes to the speculative psychology of bubbles, and makes for severe reactions to even short-term downturns in prices. Given these characteristics of housing markets, a normal expansion in demand for houses during a sustained period of prosperity can morph into a housing market bubble, especially if central banks maintain policies of low interest rates.

In that respect, the bubbles since 2002 stand as historical anomalies, occurring in an era when a shadowy new deflation dominated the policymaking by the Federal Reserve and the

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Bank of England. Collapses of housing market bubbles have accompanied episodes of deflation, e.g., 1930-31. But there is no record of a housing market bubble inflating in the historic deflations surveyed by Groth and Westaway (2009) and by Broadbent (2015). Moreover, the major contributors to these anomalous events have been the extraordinary use of conventional and unconventional anti-deflation policies.

3. Policies driven by fears of a new deflation

In late 2002, Alan Greenspan as Chairman of the Federal Reserve Board of Governors, and Ben Bernanke as a Member of the Board acknowledged a fear that the collapse of the dot.com stock market bubble had exposed the economy to the risk of deflationary forces. For the next several years, those warnings continued (e.g. Bernanke, 2003). Greenspan responded to the perceived threat of deflation by lowering the federal funds rate to a historical low. But he went further, defending lax lending standards in the mortgage banking sector and encouraging homeowners to refinance at low interest rates and spend the "extracted" equity. In 2003, Greenspan began praising the benefits that rapidly rising prices in the US housing markets were provided by stimulating aggregate demand through the wealth effect on consumption spending. In July 2004, Greenspan told the US Congress that "the concerns about the remote possibility of deflation that had been critical in the deliberations of the Federal Open Market Committee (FOMC) last year can now be safely set aside." Similarly, Bernanke (2004, 2006) was now hailing the benefits of price stability, termed "the new moderation."

Both Greenspan and Bernanke were soon proved to be very wrong in their assessments that deflation had disappeared and that sharply rising housing prices posed no risk to economic and financial stability. In 2007-2008, the housing market bubble collapsed, triggering the worst global financial crisis since 1930-1932. The fears of deflation immediately returned in much greater intensity. In 2009, the research staff of the Bank of England addressed deflation in the Bank of England *Quarterly Bulletin* (Groth and Westaway, 2009), sounding a theme that would be repeated in both the UK and USA. While deflation was not really a threat to the UK economy, it posed a serious risk to the ability of monetary authorities to maintain a stable growth rate. The Federal Reserve and the Bank of England had responded to that risk by implementing policies of near-zero bank lending rates and massive injections of liquidity through quantitative easing (purchases of securities) aimed at increasing asset prices.

Year after year, the efforts of central banks to defeat deflation continued to be judged as ineffective (e.g. Barton and Krugar, 2013). In September 2015, neither the Federal Reserve nor the Bank of England had raised the bank lending rate since lowering it in 2008. But there were warnings that the anti-deflation policies could result in asset market bubbles (Miller *et al.*, 2013). And there were warnings that the adverse shocks of collapsing asset bubbles would increase the likelihood of deflation. At the Davos 2014 Conference, Christine Lagarde, Head of the IMF, cautioned that the collapse of a financial asset bubble could trigger a global deflation (Katz, 2014). In August 2015, economists at the Federal Reserve's annual Jackson Hole Symposium cast serious doubt on the ability of central bankers to deal with deflation (Black and Condon, 2015).

The fear of deflation led central bank officials in both the UK and USA. to repeatedly assure that bubbles were not developing in housing markets, and to applaud rising house prices as benefiting the economy through a wealth effect on consumer spending, e.g., Broadbent (2015) and Yellen (2015). On that score, Nelson (2013) commented on the political support of the Bank of England's anti-deflation policies that were pushing up house prices in the UK: "Politicians, of all political orientations, love house prices rising. It means that homeowners feel wealthier, and tend to borrow more against the value of their house, spending more on the street."

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3.1 The shadowy nature of the new deflation

Given the influence of the new deflation on policies which contributed to housing market bubbles, an understanding of its real nature is especially important. It is "new" in the obvious sense of being the first seriously regarded episode of deflation since the early 1930s. But more importantly, it has a shadowy nature that manifests in several ways. In contrast to previous episodes of deflation, its presence has not been easily observable to the general public. Indeed, the Bank of England's Deputy Governor for Monetary Policy reported that the UK consumer price index had dropped in February 2015 for the first time in 50 years (Broadbent, 2015). Consumers' doubts about the reality of deflation are easily reinforced by the language used by Federal Reserve and Bank of England officials. After Greenspan and Bernanke announced in 2002 that the Federal Reserve was being vigilant against the risk of deflation, the "disinflation" or "an unwelcome fall in inflation" became the code words for "deflation" (e.g. Bernanke, 2003). Yet, "deflation" has had a way of intruding back into speeches of Federal Reserve officials. Bernanke (2010) insisted there was no immediate risk of deflation in the US economy, but further disinflation could increase that risk. As Vice Chair of the Federal Reserve Board, Yellen (2013a, b) credited the policies implemented after the financial crisis of 2008 as having helped the USA "avoid excessive disinflation or even deflation." But as Chairman of the Federal Reserve Board since 2014, she has preferred to speak about the dangers of the inflation rate being too low, i.e., below the objective rate of 2 percent (Yellen, 2015). Bank of England officials have shown a similar reluctance to use the word "deflation." In a speech entitled "The Economics of Deflation," Broadbent (2015) explained: "The MPC's objective is not simply to prevent prices from falling: it is to ensure they rise at the target rate of 2% a year." Hence, he focused on coping with "negative inflation" in the UK.

While price deflation has been obscure, a negative consequence of deflation has certainly been recognized. In virtually all speeches and testimonies, Federal Reserve officials and Bank of England officials have acknowledged that while nominal wages have not fallen, real wage income growth has been very weak at best. Broadbent (2015) stated that "there is a risk that falling prices will beget yet weaker or even negative wage growth." Recast in the new rhetorical form, he stated that "sub-target inflation" persisting longer than expected was raising the risk of depressing wage growth. The impact of the new deflation on incomes has been most observed in housing markets. Nelson (2013) noted in the UK that "The house price resurgence is increasingly divorced from income growth." Gilbert (2014) stated that "With earnings still in the dumps […] houses are becoming less and less affordable." Yellen (2013d, 2015) has repeatedly expressed concern that anemic wage growth was keeping many out of the housing market.

Federal Reserve and Bank of England officials have been very vague about the theoretical framework that has guided their policies. Were those policies ineffective against deflation while contributing to housing market bubbles because they were based on an incorrect understanding of the nature and source of the shadowy new deflation?

4. Central bankers perceived a Keynesian short-run aggregate demand deflation

From their comments in speeches and testimonies, it is clear that policymakers at the Federal Reserve and the Bank of England (as well as the European Central Bank and the International Monetary Fund) have perceived the risk of the type of inflation explained by John Maynard Keynes (1936, pp. 292-309) in "The General Theory". Within the short-run theoretical framework of an upward sloping aggregate supply curve based on the current state of industrial technology and existing social institutions, shifts in the aggregate demand curve occur when changes in money supply (broadly defined) occur. If the money supply is sufficient to support a full employment level of effective aggregate demand, price

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stability is achieved. But if the money supply is reduced, either by central bank policies or the hoarding of cash by the private sector, the aggregate demand curve shifts downward, and the general price level falls along with a decrease in employment. The appropriate policy solution is to stimulate the level of aggregate demand through lower interest rates and increases in the money supply.

In Chapter 12 of "The General Theory", Keynes (1936, pp. 147-164) added an important new element into the deflationary deficiency in effective aggregate demand. Financial bubbles in the stock market produce wealth effects that lead consumers to increase their consumption rate out of income and business firms to increase investment through a reduction in the cost of capital. By implication, a housing market bubble has a wealth effect on consumers. And given the general effects of securitized mortgages on the financial system, a wealth effect on investors also occurs. But when the financial bubbles end in financial crises, the wealth effects on consumption and investment have the reverse effect. This, suggested Keynes, was the most likely cause of changes in the aggregate demand curve in the short run.

4.1 Keynesian anti-deflation policy actions

As revealed in their comments in speeches and testimonies, and especially in their policies, policymakers at the Federal Reserve and the Bank of England have clearly perceived the risk of a Keynesian-type short-run deflation caused by a deficiency in aggregate demand. In November 2002, as the US economy was experiencing the collapse of the dot.com stock market bubble, Bernanke stated that:

> The sources of deflation are not a mystery. Deflation in almost all cases is a side effect of a collapse of aggregate demand […]. The basic prescription for preventing deflation is therefore straightforward […] Use monetary and fiscal policy in a manner as nearly consistent as possible with full utilization of economic resources and low and stable inflation.

Bank of England officials have expressed similar views. A research staff report (Groth and Westaway, 2009, p. 37) declared that "deflation might have been avoided if policymakers had acted to stimulate nominal demand as necessary." That was reiterated in their conclusion that "if policy responds sufficiently promptly and decisively employing the full range of conventional and unconventional monetary policy instruments, deflationary episodes should be short-lived" (Groth and Westaway, 2009, p. 43). In October 2010, Bernanke reiterated that a continuing shortfall of aggregate demand was the principal cause of the risk of disinflation morphing into actual deflation, and defended the combination of conventional and unconventional policy actions aimed at bolstering aggregate demand after the housing market bubble collapsed.

Janet Yellen, Bernanke's successor at the Federal Reserve Board, has been very forthright in perceiving a deficiency of aggregate demand as the cause of the disinflation. As previously Vice Chair of the Board, Yellen (2011) stated that "we face a dearth of aggregate demand, not just among the advanced economies, but also for the global economy as a whole." In ordinary times the deficiency in aggregate demand would have been solved with an expansion monetary and fiscal policy. But these were not ordinary times and central bankers had correctly used unconventional tools (e.g. quantitative easing through purchasing securities) to attack the deficiency in aggregate demand.

4.2 Keynesian anti-deflation policies and housing market bubbles

In keeping with Keynes' theory, from Greenspan to Yellen, the overriding concern of Federal Reserve policymakers has been that the collapse of a financial asset bubble will trigger deflation. Greenspan (2002) stated that "lurking in the background of any deflation risks is the concern that those forces could be unleashed by a bursting bubble in asset prices."

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But the relationship between the perception of an aggregate demand deflation and the effects of policies on bubbles has been murky. Until 2001, Greenspan had hailed the wealth effects on the dot.com company stock market bubble on both consumption and investment. In 2002, he was now worrying about the negative wealth effects from the collapse of that bubble. Almost immediately, as the housing market bubble began to inflate under the encouragement of near-historic low interest rates and lax lending standards by mortgage banks, Greenspan repeatedly applauded the wealth effect of rising housing prices. The stimulation of aggregate demand was in this manner viewed as a convenient way to counter the risk of an aggregate demand deflation.

Critics have charged that policymakers in Britain have not been displeased with the effects of low interest rates and liquidity injections on prices in housing markets. Rather like Greenspan, they tended to deny bubbles existence until they collapse, defended soaring prices as part of a durable recovery, and generally "love house prices rising" (Nelson, 2013). In the USA, Janet Yellen has provided some credence to this charge. In praising the counter-deflation wealth effect of rising house prices on consumption expenditures, she stated that the purpose of quantitative easing (purchases of assets) was to lower the long-term interest rate to spur spending on housing (Yellen, 2013c).

5. A Veblenian "chronic" aggregate-supply-driven deflation

The extraordinary use of conventional and unconventional monetary policies that were implemented in 2008-2009 should have effectively countered any risk of a Keynesian-type deflation caused by a short-run deficiency in aggregate demand.

That the fear of deflation was still influencing policymaking in late 2015, after years of extraordinary conventional and unconventional policies, strongly indicates policymakers have failed to comprehend the true nature of the deflation. That assessment is reinforced by the inflation of a new housing market bubble after 2013 while a growing number of wage and salary earners are unable to afford to purchase houses.

In "The General Theory", Keynes emphasized that his analysis of deflation focused primarily on the short run. What happens to prices in the long run is a "question of historical generalization rather than for pure theory" (Keynes, 1936, p. 306). Long-run deflation was unlikely to occur because: "when money is relatively scarce, some means is found to increase the effective quantity of money" (Keynes, 1936, p. 307).

5.1 Veblen's "chronic" deflation theory

For an alternative analysis of the new deflation as a long-term trend driven by increases in aggregate supply, we turn to a theory of deflation presented by Thorstein Veblen in *The Theory of Business Enterprise* (1904), and subsequently modified in *Absentee Ownership* (1923/1996). Veblen explained that "chronic" deflation is endemic to the modern industrial economy, deeply systemic and occurring more or less under the surface over the long period due to discontinuous downward shifts in the aggregate supply curve. The driving force advances in industrial technologies that increase efficiency and lower unit costs of production. Businessmen are always seeking to invest in new equipment and new ventures if the rate of expected profit at current prices exceeds the current interest rate. In competitive markets, the new ventures operate at lower costs, and hence, push the general trend of prices downward (Veblen, 1904, pp. 227-237).

As Veblen explained, the problem in recognizing an aggregate-supply-driven "chronic" deflation is that the problem appears to be a deficiency in aggregate demand because aggregate supply tends to grow faster than aggregate demand. In *The Theory of Business Enterprise* (1904, pp. 257-258), Veblen could see no possible counters to chronic deflation by government or by collusive action by businessmen. But in *Absentee Ownership* (1923/1996), he perceived that a "new order" had evolved in which large investment banks had gained

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effective control over the financial system from commercial bank loans to the issuance of new stocks and bonds. Veblen saw the Federal Reserve as providing passive support for the large investment banks. And through holding companies, they had gained control over the large corporations in the "key" industries. Backed by the passive support of the Federal Reserve, their "grand financial strategy" (Veblen, 1923/1996, pp. 339, 341) was to maintain price levels that assured "reasonable profits" that provided "balanced returns" on financial investments, while avoiding the financial crises of the past. On the supply side, collusive control of corporations enabled a strategy of restricted production. As Veblen (1923/1996, pp. 357) explained, the strategic intent of this collusive control over both output and credit was to enlarge "the effective purchasing-power in the market without enlarging the supply of vendible goods in the market; which will act to raise or maintain the level of prices."

5.1.1 "Masked" deflation and "balanced" unemployment. Veblen repeatedly described the situation as one in which "the continued growth of the mechanical technology has taken effect to cheapen production in so large a measure as to have greatly *masked* the progressive inflation of prices which the larger use of credit has brought on and carried forward" (Veblen, 1923/1996, pp. 372-373; emphasis added). Stated alternatively, the apparent price stability of the 1920s was one in which "chronic deflation" was being "masked" by managed policies of "credit inflation." With prices and wages remaining relatively constant, the reduction in unit costs of production enhanced profits. In the absence of collusive control of production, competition would have forced prices down to a level such that only the most efficient producers could realize a "reasonable" profit. In the absence of the "credit inflation," aggregate demand based on earned incomes would have supported "reasonable profits" only at low levels of aggregate output.

Veblen's main theme was the negative effects of chronic deflation on the welfare of workers. Before the investment banks had gained control of aggregate output and credit creation by the investment bankers, chronic deflation meant protracted business depression and the accompanying social evils of long-running unemployment. Where chronic deflation was being "masked" by the strategic actions of the investment bankers in restricting aggregate output, the unemployment effects had become institutionalized as "Balanced Returns involves Balanced Unemployment" (Veblen, 1923/1996, pp. 389-390). As long as investment bankers controlled aggregate output, the economy would operate at significantly less than full employment.

5.2 Central bankers rejected an aggregate-supply-driven "chronic" deflation

By nature, central bankers are focused on short run economic conditions amenable to changes in interest rates and the money supply, i.e., macroeconomic cycles and short-run shocks to aggregate demand. Almost universally, policymakers at the Federal Reserve and the Bank of England have either rejected or ignored the possibility that the new deflation is more in the nature of a modern version of Veblen's "chronic" deflation. Bernanke (2002) acknowledged that aggregate supply factors could contribute to deflation if there were rapid gains in productivity and broadly decreasing costs of production. But he dismissed the possibility of that happening, declaring there were "no unambiguous" examples of a "supply-side deflation."

There were early indications that Greenspan recognized elements making for an aggregate supply deflation. In his 1996 semi-annual report on monetary policy to the US Congress, he "raised a hypothesis tying together technological change and cost pressures that could explain a puzzling quiescence of inflation." Investments in new technologies had made workers experience a "heightened sense of job insecurity" while increased productivity was reducing the units costs of production. In his 2001 semi-annual reports, Greenspan was explaining the recession that followed the collapse of the dot.com company

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stock market bubble as a temporary excess of aggregate supply over aggregate demand. In his 2002 deflation speech, he argued that increases in aggregate supply from technological innovations and globalization were complicating the link between monetary policy and prices. But in each case, Greenspan's emphasis remained on deflation as caused by a deficiency of aggregate demand triggered by a financial crisis.

5.3 Indications of a "chronic" aggregate-supply-driven deflation

A modern version of Veblen's "chronic" deflation is indicated by the persistence of deflationary forces despite the continuation of the extraordinary conventional and unconventional policies. Driven by the effects of rapid advances in computer and informational technologies on productivity and reinforced by globalization, aggregate supply based on lower per unit costs is increasing faster than aggregate demand based on income. Globalization has increased the pressures that tend to drive producers to maximize cost efficiency, with competitive global markets pushing impacted prices downward in line with the lower costs of production.

Indeed, the focus on "disinflation" or "negative inflation" rather than actual deflation suggests a situation similar to Veblen's "new order." While nominal prices have not declined, with oil being the exception that proves the rule, the deflationary pressures from declining costs of production are being "masked" by the extraordinary policy stimulus of aggregate demand. While our focus is on monetary policy, aggregate demand in the USA has also been greatly stimulated by large federal budget deficits. It is noteworthy that all the central bankers in both the USA and UK have repeatedly warned that reducing the stimulus would risk a slide into deflation.

While price deflation may be "masked," the most compelling indication of a modern version of a "chronic" deflation is what both Keynes and Veblen recognized as the great social evil of deflation – unemployment and increasing income equality. Structural unemployment is reflective of an aggregate supply function being changed by advancing technologies, and hence, is related to the cost-reducing effects that generate long-run deflationary pressures. In that regard, Yellen (2013c) has taken a Keynesian short-run aggregate demand view in stating that the "increase in unemployment since the outset of the Great Recession has been largely cyclical and not structural." Given Keynes' (1936) statement that a "deflation of effective demand below the level of full employment will diminish employment as well as prices" (p. 291), the appropriate policy response would be to reflate aggregate demand through zero federal funds rate and quantitative easing. Instead, the very anemic response in labor markets to the extraordinary amount of stimulus to aggregate demand makes a strong argument for structural unemployment associated with the processes contributing to chronic deflation.

Unemployment may be disguised or "masked" by the number of "employed" who are part-time or in low-wage jobs below the workers' education and skill levels. For that reason, the growing inequality of income may be the strongest indication of a chronic deflation. Firms investing in efficiency-enhancing information technologies and operating in competitive global labor markets realize enhanced profits as production costs fall. People with requisite education and technical skills demanded by the new technologies enjoy rising incomes. But an increasing number are being left behind: "Corporate profits are at their highest level in at least 85 years. Employee compensation is at the lowest level in 65 years" (Norris, 2014). Anti-deflation policies have contributed to the growing inequality of income, which in turn has been perhaps the key to how the policies have contributed to housing market bubbles.

How anti-deflation policies have contributed to the growing inequality of income is best explained in terms of institutional changes that have occurred in advanced economies. What is referred to as "financialization" (Konczal, 2014) is marked by a disproportionate growth in

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financial profits since 1990. Financial profits relative to non-financial profits rose sharply after 1990, soared until plunging in the 2008 crisis, and have strongly rose again since 2009 (Konczal, 2014). Implemented and continued under the fear that collapsing asset bubbles will release the forces of deflation, the low interest rates and massive injections of liquidity heavily contributed to rising stock market valuations and profits for corporations (both industrial and financial).

By enhancing the trend toward greater income inequality, those policies contributed to the re-emergence of housing market bubbles in 2013. Increased wealth from rising stock prices added to the rising incomes of those who have the skills and education demanded by the new technologies generated a strong demand for houses in key markets. With construction of new houses increasing only slowly, prices have easily risen to bubble levels in markets such as London and San Francisco, leading through economic osmosis to price rises in other markets. But those with losses or wage and salary incomes, or experiencing what Yellen (2014a) termed "pent-up wage deflation," i.e., stagnant wages, have been left to pay steadily rising rents, unable to gain mortgage financing to purchase houses.

It is noteworthy that both Keynes and Veblen warned of this outcome. Keynes (1930, Vol. 2, p. 144) stated that "a profit inflation is almost certain to bring about a more unequal distribution of wealth – unless its effects are balanced by the direct taxation of the rich." And Veblen (1904) warned that "chronic" deflation would bring unemployment as long as "incomes continue to be distributed somewhat after the present scheme" (p. 258).

5.4 The search for new policy approaches

The search for new policy approaches to deal with the unemployment (or underemployment) and income effects of a long-run aggregate-supply-driven "chronic" deflation must start with the recognition that a deficiency in aggregate demand is not the single target to attack. The difficulty of policymakers in reaching that recognition is illustrated by the policy recommendations by Lawrence H. Summers (2014) in presenting his hypothesis that the past 15 years has been one of secular stagnation for advanced industrial countries. With ample data to support his hypothesis, Summers explained that while the new technologies were facilitating a large expansion in aggregate supply, growth in aggregate demand was being hampered by much lower levels of investment spending required to launch new enterprises or to modernize existing ones. While that has resulted from the same factors that have contributed to the "chronic" deflation pressures, an additional factor has come into play. Modern technologies have greatly lowered the prices of capital goods, which translates into the need for lower capital expenditures.

But the only policy solutions that Summers offered were fiscal policies to stimulate aggregate demand, e.g., greater public outlays for infra-structure projects. While he documented the structural changes giving rise to persistent unemployment (and the more subtle problem of a falling labor force to population ratio) and increasing income inequality, his recommended policies did not address any institutional reforms to deal with the long-term employment problems or the distributional issues on the income side.

6. Concluding statement

In the "Introduction", we noted that both deflation and bubbles in housing markets are complex economic phenomena. Within the limited space and scope of this paper, we have focused narrowly on the importance of monetary authorities at the Federal Reserve and Bank of England having perceived the risk of deflation as a short-run deficiency in aggregate demand triggered by a financial crisis. As a consequence, the policy responses have failed to counter the long-run aggregate-supply-driven forces of a "chronic" deflation, while contributing to housing market bubbles as those enjoying higher and rising incomes can obtain mortgages at low interest rates. The complexity of the new deflation is shown in

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terms of the structural effects on employment and income distribution, complicated by the policies aimed at stimulating aggregate demand. It is to be hoped that recognition of the true nature of the new deflation and its socio-economic consequences will lead to further search for more effective policy approaches.

Similarly, we have focused very narrowly on the effects of the anti-deflation policies on housing market bubbles. The complexity of housing markets gives rise to many other policy issues which are beyond the scope of this paper. On that basis, we can make two observations. First, addressing the larger housing policy issues can only be helped if monetary policies are carefully managed to avoid contributing to the disturbances created by housing market bubbles. Second, staff economists and policymakers at the Federal Reserve in the USA and the Bank of England in the UK are actively searching for new ways in which the central banks may make meaningful contributions to effective housing market policies. A future paper that explores the direction and nature of the potential results of those searches would be a very welcome contribution to the social economics literature.

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