Secular Stagnation: the History of a Macroeconomic Heresy

Version 1

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The re-discovery of secular stagnation

On November 8, 2013, at an IMF conference in honor of Stanley Fisher, Lawrence Summers raised the question of whether it might be necessary to revive the doctrine of "secular stagnation", an expression introduced in passing by Alvin Hansen in 1934 and elaborated extensively in his 1938 book and in his 1938 American Economic Association (AEA) Presidential Address (Hansen 1939). The evidence Summers adduced for reviving this long-dead idea was twofold: before the 2007-8 financial crisis there had been a massive financial expansion, yet there were no signs of overheating in the real economy; and once the crisis was resolved, there was no upturn in the economy, with incomes stagnating. A negative Wicksellian natural rate of interest, implying that saving exceeded investment at any non-negative interest rate, could explain both of these observations. These remarks revived the debate over secular stagnation, prompting discussions of, for example, whether the problem today is that output is failing to keep up with productive capacity or whether the rate of growth of productive capacity has fallen dramatically. Summers's talk attracted attention from macroeconomists and raised a number of reactions, included in an ebook edited by Coen Teulings and Richard Baldwin (2014). That was followed by a session on "The Economics of Secular Stagnation" held at the AEA January 2015 meetings, with papers by Summers, Robert Gordon and Barry Eichengreen.[1] For the first time since Hansen's formulation of the "stagnation thesis" and the extensive debate it prompted throughout the 1940s and 1950s, the topic is back in the research agenda of (Keynesian) macroeconomics.

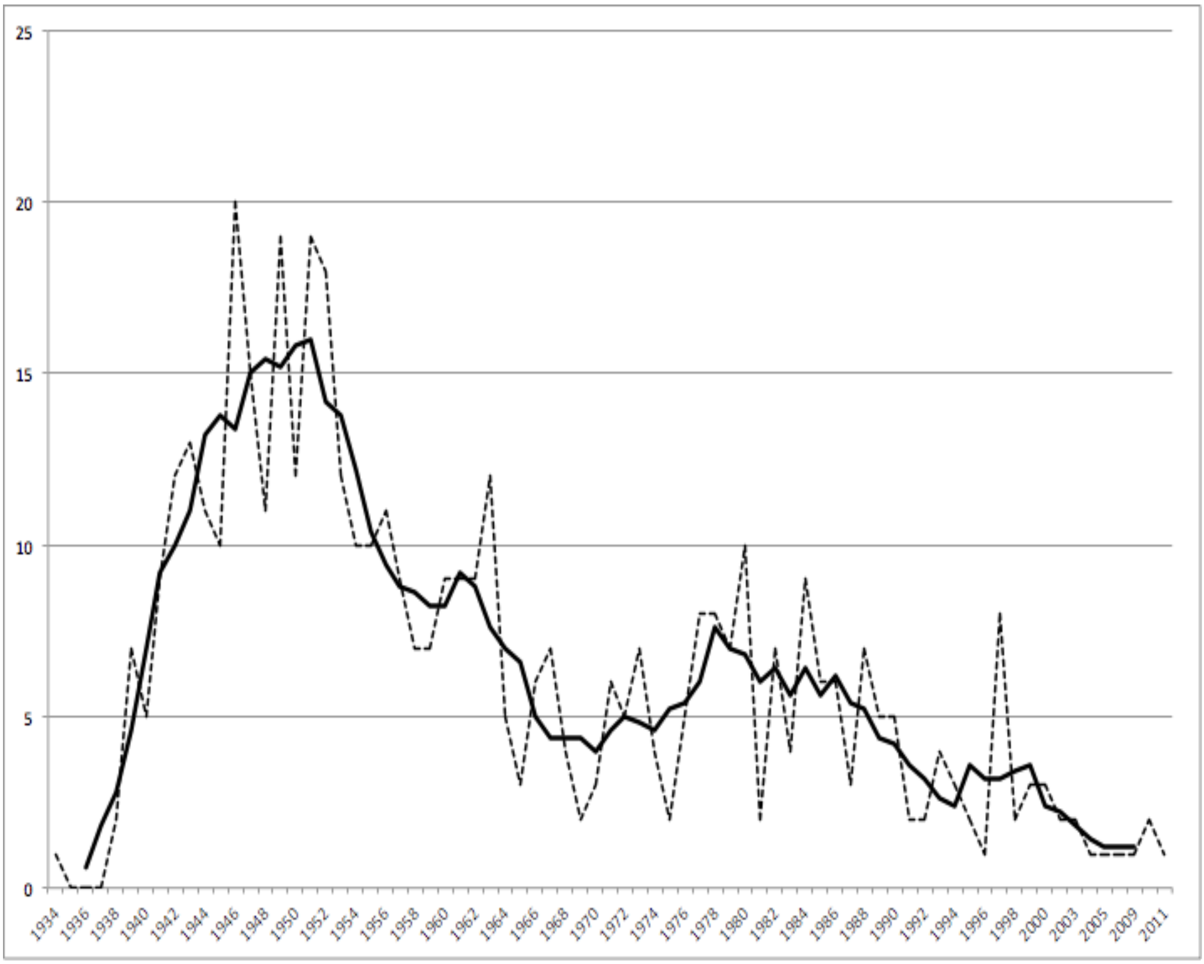
The timing of interest in secular stagnation is shown by Figure 1, which plots the number of articles in JSTOR using the word together with a 5-year moving average, to give a clearer picture of the trends. Since Hansen's 1938 use of the term, it was used increasingly frequently until 1950, after which its use declined steadily (with a brief upward blip around 1960) before becoming used more frequently in the 1970s, reaching a much smaller peak in 1978, before declining again. There will be another rise in 2012-15. This graph makes no allowance for the rising number of journals and articles: doing so would make the decline since 1950 even greater. However, at no point after 1938 did it ever completely disappear.

Concealed within this graph are changes in the way the term was used. As we will explain, For Hansen, secular stagnation was a long term historical trend, rooted in American experience and grounded in an institutionalist approach to economic theory. In contrast, by

[1] Video available at https://www.aeaweb.org/webcasts/2015/Stagnation.php.

the early 1950s, secular stagnation was more of an analytical category or descriptive label—economies might exhibit secular stagnation, secular exhilaration, or there might be no trend in unemployment rate—rather than a long-term tendency of capitalism. It had also come to be associated with Keynes rather than specifically with Hansen, even if Hansen was considered the foremost proponent of the idea. The perceived strength of the theoretical case against secular stagnation was connected to the spread of competitive-equilibrium theorizing, in which it was hard to avoid the conclusion that, in the long run, the Pigou or real-balance effect would eventually generate sufficient aggregate demand to maintain full employment. From the 1950s onwards, secular stagnation increasingly became a concept used primarily in economic history, development economics (where the use of rational-choice, competitive equilibrium models was very limited prior to the 1970s) and the history of economic thought (such as making sense of Malthus and Marx).Having lost much of its apparent relevance, except for underdeveloped countries, as they were then called, with the Korean war, when inflation a more pressing problem than unemployment, stagnation re-emerged as a problem in the 1970s (”stagflation”) and in Europe, though not the United States, it remained a problem for much of the 1980s. Japanese problems with stagnation appear not to have stimulated use of the term in the European-language literature covered by JSTOR. Perhaps the main reason for this is that economics is dominated by the United States, and that problems affecting Europe or Japan will almost inevitably be explained in terms of factors specific to those regions rather than prompting any reappraisal of economic theory. It was not until the last decade, financial crisis of 2007-8, that it was possible to believe that worldwide stagnation had re-emerged.

Figure 1: Economics articles using the phrase "Secular stagnation" in JSTOR, 1934-2011



Source: dfr.jstor.org, search for "secular stagnation" in "Economics". 29 April 2015. The solid line is a 5-year moving average

As historians of economics, our role is not to adjudicate on this current controversy, which hinges as much on the interpretation of contemporary data as on economic theory. On that we will take a vow of silence. Our concern is with the history of the idea. It is generally accepted that, though it may be possible to find similar ideas in, for example, the classical economists from Adam Smith to John Stuart Mill, or in twentieth century economists such as John A. Hobson and Maynard Keynes, the modern theory originated with Hansen. We will take that as our starting point, tracing the course of the doctrine from Hansen to Summers. We document its demise in the 1950s but explore some of the traces it left behind on economic theory and how the focus changed as economic theory changed.

We do not challenge the obvious explanation of the idea's demise in the 1950s—the fact that the world economy did not revert to the conditions of the 1930s but entered a period of unprecedented growth—but we do complicate it. It is not just a story of a disproved theory disappearing from sight.

Alvin Hansen and the origins of the stagnation thesis

> Up to and including 1880 the country had a frontier of settlement, but at present the unsettled area has been so broken into by isolated bodies of settlement that there can hardly be said to be a frontier line. In the discussion of its extent, its westward movement, etc., it can not, therefore, any longer have a place in the census reports. (Superintendent of the Census for 1890, quoted in Turner 1921, p. 1)

According to historian Frederick Jackson Turner, this short piece of bureaucratic prose marked a historic moment in American society. Up to that point the history of the United States had been dominated by its Westward expansion. “The existence of an area of free land,” Jackson wrote, “its continuous recession, and the advance of American settlement western, explain American development” (Turner 1921, p. 1). It affected not just the American economy but the whole of society. Its significance was that, unlike European frontiers—boundaries between dense populations—it marked the edge of free land. This thesis, proposed in 1893, was widely discussed and became an important part of public discourse in the early twentieth century.

The economist who introduced this idea into economic theory was Alvin Harvey Hansen. Born in 1887 in rural South Dakota to immigrants from Denmark, he came from the frontier that according to Jackson was ending. After majoring in English, he moved to the University of Wisconsin to study economics and sociology, before moving to Brown and writing a thesis on business cycle theory, in which he became a specialist. His early work, *Cycles of Prosperity and Depression* (1921) was empirical. Believing the British economist, John A. Hobson, to have rebutted the charge that under-consumption was impossible, Hansen explained cycles of prosperity and depression as the result of changes in money and credit. From the beginning he sought a dynamic theory and made much use of the accelerator, which showed that even a slowing down of the growth of consumption could lead to an absolute fall in investment.

During the 1920s, Turning to the ideas of Albert Aftalion, Arthur Spiethoff and other continental European writers, he began to see fluctuations in investment, driven by population changes and waves of innovations, as the root cause of the cycle.[2] He still thought monetary factors played a role, but they merely served to magnify other forces rather than being an independent factor. From Aftalion he took the idea that the price level is determined by level of money income in relation to the quantity of goods and services being produced. The other element was the idea, taken from Spiethoff, there were certain investment opportunities available and once these were taken up, investment would fall off, causing a downturn. The price system played a dynamic role, assisting the movement of resources into sectors with greater investment opportunities. A free enterprise system tended towards full employment because price flexibility encouraged a healthy level of investment and a high level of spending. However, though there was a tendency towards full employment, the business cycle was an inevitable feature of a dynamic, growing economy with rapid technological change. Only if the economy matured and accumulation slowed down would the cycle become a thing of the past.

These ideas conditioned Hansen's response to the Great Depression: it was a particularly deep depression because it was the result of large monetary and technological shocks happening together.[3] Recovery required innovation and technological advance that would lower costs, raise profitability and stimulate investment. The price mechanism played an important role in this process of adjustment of output to technological innovation, and if allowed to work, recovery would eventually come. However, though he focused on monetary policy and adjustment to technological change through the price mechanism, he never abandoned the idea that the flow of spending was important, talking of the "three faucets" though which purchasing power entered the economy: business spending, consumer spending and government spending. It might sometimes be necessary, he believed, for government to take responsibility for maintaining the flow of purchasing power.

In the mid to late 1930s, Hansen added a further element to his theory: declining population growth. The most public expression of this idea came on December 28, 1938, in

[2] This account of Hansen draws on Mehrling 1997, pp. 96-101.

[3] See Mehrling 1997, pp. 107-10

Detroit, where he delivered his AEA Presidential Address on the theme of "Economic progress and declining population growth" (Hansen 1939). Its central point was that population growth was declining and that this would lead to a large fall in investment unless there was a rise in technical progress. "We are," he argued, "rapidly entering a world in which we must fall back upon a more rapid advance of technology than in the past if we are to find private investment opportunities adequate to maintain full employment" (Hansen 1939, p. 10). The accelerator was central to this argument, for what mattered was not the level of economic activity but its growth rate. It would be possible to compensate for a decline in private investment by increasing public investment "in human and natural resources and in consumers' capital goods of a collective character" (Hansen 1939, p. 12), but such compensation could be no more than partial. If government spending were taken too far, it might alter the cost structure so as to prevent the achievement of full employment. There were thus difficult choices, with which economists would have to grapple for a long time.

This explanation fitted well into a long view of American economic history. The expansion of the frontier had sustained investment for a century. After the closing of the frontier, demand for investment came from technological advance: motor vehicles and electricity stimulated the building of a vast infrastructure, sustaining demand in the 1920s. The Great Crash of 1929 may have originated in finance and the collapse of speculation, but its consequences were severe because the stimulus from these industries was at an end. Declining population growth and the absence of new industries meant a dearth of investment and a period of stagnation. The immediate origins of the crisis might be short-term, but its severity was the result of long-term structural factors.

Hansen (1939, p. 4) defined the "essence of secular stagnation" as "sick recoveries which die in their infancy and depressions which feed on themselves and leave a hard and seemingly immovable core of unemployment". As discussed by Hansen (1941) in the chapter "The dynamic versus the circular flow economy", the roots of that concept go back to the classical notion of the "stationary state", particularly as elaborated by J.S. Mill (see also Schumpeter 1954, p. 570). Hansen (p. 310) suggested that the term "mature economy" described better Mill's formulation of the stationary state as a low-investment but high-consumption economy. However, differently from Mill's stationary state, Hansen's secular stagnation featured chronic unemployment. "The classicals were quite right", claimed

Hansen (p. 288), "when they argued that without technological progress the price system, including the rate of interest, would progressively drive the economy to the point at which there would be no net investment." However, he continued, "they were wrong in assuming that the price system could also ensure a propensity to consume compatible with this investment situation so as to produce full employment".

Hansen's secular stagnation concept provoked two different kinds of critical reaction by orthodox non-Keynesian economists at the time, related respectively to the investment and saving functions. Frank Knight (1936, 1944) rejected the concept of the "stationary state" altogether, on the grounds that there is no tendency to diminishing returns to capital accumulation, so that, from the long-run perspective, the demand for capital is infinitely elastic. As pointed out by Patinkin ([1973] 1981, pp. 32-33), this resulted from Knight's contention that the process of increasing the stock of capital must necessarily change the given conditions that generate diminishing returns. Knight had an inclusive concept of capital as encompassing all production factors, which can all be accumulated, leaving no fixed factor as source of diminishing returns.[4] The notion that the rate of return on capital tends to zero was also rejected by Henry Simons (1942), but on the somewhat distinct grounds that the demand for durable assets increases rapidly at very low but positive interest rates. The investment demand curve as a function of the long-term rate of interest is accordingly very flat, an argument Simons ascribed to Gustav Cassel (1903).

A.C. Pigou (1943) accepted, of course, the notion of the stationary state. He rejected, however, Hansen's correction of the classical formulation of that concept. Pigou famously introduced, as a reaction to Hansen (1941), the hypothesis that the saving function should include real money balances as an argument.[5] Downward price flexibility, therefore, should be able in principle to bring about a shift of the full-employment saving function until it intersected investment demand at a positive interest rate. According to Pigou, Hansen's stationary state with unemployment featured a negative equilibrium full-employment rate of interest (Wicksell's natural rate), whereas the market money rate of interest could not fall below zero. As pointed out by Pigou, under the classical assumption that saving is made only

[4] Knight would be one of the influences on the so-called AK endogenous growth models with linear technology (see Rebelo 1991, p. 507, n. 6).

[5] Patinkin (1948, 1956) would call it "Pigou effect", and further elaborate it as the "real balance effect". Haberler (1941) had already suggested that notion in his criticism of Keynes's *General Theory*.

for the sake of the income it is expected to yield in the future, in the long-run equilibrium of the stationary state the rate of interest must be equal to the rate of discount of the "representative man". In order to account for a negative natural rate, Pigou assumed that savings are made also for other motives (such as the "desire of possession as such"), which are inversely related to real cash balances.

Apart from the classical notion of the stationary state and its limitations, Hansen's idea of secular stagnation was influenced by Keynes's (1937) *Eugenics Review* article about the macroeconomic effects of a fall in the population growth rate, and by Hawtrey's (1937) distinction between "capital deepening" and "capital widening". Hansen (1939) was the first to refer to Keynes's population essay, which remained relatively unknown until its reprint in Keynes's *Collected Writings* in the 1970s. Although he mentioned Keynes (1937) only briefly, in connection with the relative historical stability of the capital-output ratio, Hansen (1939) may be seen in part as a further elaboration of Keynes's theme.[6] Indeed, the perverse economic impact of declining population growth attracted the attention of British economists at the time, such as Reddaway (1939) and Harrod (1939a), whose economic dynamic framework (1939b) would attract Hansen's attention only after its restatement by Harrod in 1948. Hansen would later refrain from any references to Keynes (1937), which contained an incipient formulation of Harrod's distinction between the natural and warranted growth rates. In his obituary article on Keynes, Hansen (1946, p. 184) asserted that Keynes (1936) took for granted the "real factors" that determine the marginal efficiency of capital in a "dynamic society". In Hansen's view, Keynes focused on the "psychological" and "institutional" aspects of investment and the rate of interest, while the "real" or "objective" factors were "passed by almost unnoticed". Clearly, Hansen did not associate Keynes with the stagnation thesis, which has been a controversial issue in history of thought ever since the 1940s (see Schumpeter 1954, pp. 1172-73, on Keynes's stagnationist "vision"; and the survey by Guthrie and Tarascio 1992).[7]

Hansen (1939, 1946) distinguished sharply between movements along the marginal efficiency curve associated with changes of the rate of interest and upward shifts of the curve

[6] Hansen made detailed notes about Keynes's 1937 article, kept as part of his papers held at Harvard University (Barber 1987, p. 203, n. 46; see also Mehrling 1997, pp. 133-34).
[7] Dillard (1955, p. 328) expressed his bewilderment at the fact that Hansen's 1954 well-known *Guide to Keynes* discussed neither the relation of Keynes's ideas to the stagnation thesis nor Hansen's own formulation of that hypothesis.

due to population growth and technical progress. Movements *down* the curve are not of great relevance for *continuing* income and employment creation, that is, for the process of economic growth away from secular stagnation. “Outlets for investment” may be of the widening type, in the form of population growth, and of the deepening type associated with technical progress that increases the capital-labour ratio (Hansen 1946, p. 185; this is distinct from Hawtrey’s original definition in terms of capital per unit of output, adopted by Hansen in 1939). In the absence of population growth and innovation, a “constant level of the rate of interest, no matter how low, would ultimately result in zero net investment”. The upshot is that “under-employment equilibrium” may be reached not mainly because of an elastic liquidity preference schedule, but essentially because of “limited investment opportunities (technical progress, etc.) combined with a marginal efficiency schedule which is not very highly elastic” (Hansen 1946, p. 185).

Hansen (1936) introduced the term “underemployment equilibrium” into the literature . At that point, he was still critical of Keynes.[8] After he started using Keynes’s theory of the multiplier and effective demand, seeing it as filling a gap in his own theory, he increasingly identified underemployment equilibrium with secular stagnation. By the mid 1960s, in his unpublished notes on Harry Johnson, he went so far as to claim that "‘secular stagnation’ was another name for … Keynesian ‘underemployment equilibrium’", as both are based “fundamentally upon the same foundational stones” of the long-run behavior of population, technology and natural resources (quoted from Rosenof 1997, p. 51). Nominal wage rigidity and the Keynesian liquidity trap were not necessarily part of Hansen’s interpretation of unemployment equilibrium, although they could be included in the picture.[9] Hansen (1946) acknowledged, after Haberler and Pigou, that an increase in the real amount of liquid assets could shift upwards the consumption function, but claimed that the ultimate effect of such increase – whether in absolute terms or in relative terms due to wage reductions – on consumption depended on the route by which increased liquidity was created and distributed among economic agents. He, therefore, disputed Haberler’s position (further elaborated by Patinkin 1948) that unemployment equilibrium was incompatible with price and wage

[8] On Hansen’s “transformation” see Barber 1987 and Mehrling 1997. Note that in his review of the *General Theory* he wrote of “secular unemployment” and of “stagnation” but did not use the term “secular stagnation” (Hansen 1936).

[9] On Hansen’s depiction and interpretation of the liquidity trap, as part of the Hicks-Hansen IS-LM diagram, see Boianovsky 2004, pp. 108-09.

flexibility, since wages and prices would fall continuously.

It is worth noting that Hansen's secular stagnation concept had nothing to do with the notion – often ascribed to Keynes – that the problem is caused by the fact that "rich people save proportionally more", so that the marginal propensity to consume is lower than the average propensity, with a declining ratio of consumption demand to income as income grows.[10] Hansen (1941, pp. 233-34; see also Samuelson 1943) argued that for both theoretical and empirical reasons (referring to Kuznets 1941), the typical Keynesian consumption-income schedule did not hold for long-run secular changes in real income, but only when large changes in income take place within a relatively short period of time over the business cycle.

Hansen's students and colleagues and postwar Keynesianism

The Second World War, in which government spending rose dramatically as a fraction of national income, cured the depression. The United State was able to overtake the British Empire in producing war materiel, without significantly reducing civilian consumption because of the scale of the unemployed resources that could be brought into use. However, what would happen after the war? One of the economists to tackle this problem, working as a consultant for the National Resources Planning Board (NRPB), was Paul Samuelson, a young mathematical economist, aged 24 when war broke out in Europe. Unlike Hansen, with whom he had been working closely since the latter's arrival at Harvard in 1937, Samuelson feared that the end of the war would be followed by a major depression. The argument on which this conclusion was based was provided in a pamphlet, published by the NRPB, that he co-authored with Everett P. Hagen, *After the War: 1918-20* (Samuelson, & Hagen 1943).

This pamphlet's history of America's involvement in the First World War contains passages that echo Keynes's *Economic Consequences of the Peace* (1919).

> The days before 1914 were far enough away to seem Utopian in retrospect, so that one could speak glibly of a return to "normalcy." Those with more accurate memories

[10] For a description of the stagnation thesis precisely in those terms see e.g. Branson 1979. pp. 185-86.

> might have known that in 1914 there were signs that the world was about to enter upon a depression period and that, but for the World War, the Wilson administration might have had to face the same type of problems which were to become acute only two decades later. (Samuelson & Hagen 1943, pp. 2-3)

The First World War had saved the United States from depression, as the Second World War had done twenty-five years later. As Keynes had argued two decades earlier, Samuelson and Hagen argued that the return to 'normalcy' for which people longed was impossible.

However, Samuelson and Hagen based their conclusion not on Keynesian economics but on Hansen's analysis. Recovery required something to drive investment. In the nineteenth century this had been provided by the frontier, population growth and the development of new industries. Even with such powerful forces driving investment, depressions could be long lasting, as in the 1890s but given strong underlying economic growth it was possible simply to wait and eventually demand would catch up with supply. In contrast, by 1914, the frontier was closed and population growth had slowed down, so investment had to rely on the development of new industries. There was a problem in that though rising wealth meant saving had risen, the need for investment had fallen, a combination that meant that depression would become more common.

Though the theory of stagnation was Hansen's, he became more optimistic about the situation after the war, though Samuelson remained pessimistic till experience proved him wrong. In 1946 he wrote, anonymously, in the first issue of *The American Economist*,

> Economic experts, in Government, universities, and private industry are just beginning to crawl out of the forecasters' doghouse. Their well-publicized dire predictions of last fall—that by late in 1946 eight million unemployed people would be walking the streets with the nation's Gross National Product down more than 20 billion dollars—have not yet been forgotten. And each new record height in department stores sales and job vacancies only adds to their discomfiture. (Samuelson 1946, p. 7)

However, though predictions about immediate post-war difficulties proved wrong, Samuelson remained cautions about long-term prospects. In his widely-read textbook, *Economics*: *An Introductory Analysis*, he devoted several pages to the topic of secular stagnation (Samuelson

1948, pp. 418-23). A mature, wealthy economy was, so Hansen argued, continually prone to a shortage of investment that might cause production to lag behind potential output. However, he left open the question of whether Hansen was right, explaining the arguments that could be made on the other side, leaving his readers to decide between the two positions. This passage was retained for the next two editions, and it was not till the fourth edition (1958, p. 349) that it was reduced to a short paragraph summarizing Hansen's theory. It was followed by an even shorter paragraph outlining the alternative case where population growth and rapid innovation led to an excessive level of investment. "Secular stagnation" and "secular exhilaration" had become two analytical possibilities. Secular stagnation was no longer a historical thesis.

In the 1960s the discussion was linked to contemporary policy problems. In the fifth edition (Samuelson (1961, p. 392) he introduced a new possibility, that a democracy might choose to increase its growth rate by using easy monetary policy to increase the fraction of national income going to investment, creating a need for tight fiscal policy to hold back consumption spending. In the sixth edition (1964, p. 353), this was followed by a new section titled, "A decade of sluggish growth and rising unemployment" in which he pointed out that since 1953, the unemployment rate had been higher at each successive cyclical peak: 1952, 2.5%; 1957, 4%; 1960, 5%. He concluded, "Although the picture does not add up to one of stagnation, it does seem to have elements of sluggishness in it" (ibid.). This was the justification for the policy of the Kennedy and Johnson administration of running a budget deficit, and in later editions was described as the New Economics at work. In the eighth edition (1970, p. 357) Samuelson illustrated this with a diagram, showing how "In the longer run, deficits may cancel out or public debt may trend upward or downward": secular stagnation was the case where public debt was trending upwards. Using the same diagram, the message became even clearer in the ninth edition (1973, p. 361), in which he wrote "Whether surpluses must balance deficits must depend on circumstances". Secular stagnation was part of an argument that, under some circumstances, the budget should not be balanced. The term disappeared from the index only in the twelfth edition (Samuelson and Nordhaus 1985), when William Nordhaus completely restructured the book.

In all editions of his textbook, secular stagnation and what Samuelson called "secular exhilaration" were the linked to discussion of the problem of public debt. This was a problem addressed by another of Hansen's students, Evsey Domar. The context for his first publication on the topic (Domar 1944) was the stagnation thesis—the problem that private investment after the war might be insufficient to absorb total savings. As recalled by Domar (1992, p. 124), his investigation was prompted by a diagram on p. 272 of Hansen (1941) showing the effect of a constant stream of investment on income. After an initial growth, income approached a horizontal asymptote, so that the capital-output ratio would increase without limit. Domar then investigated the consequences of a constant rate of growth of investment, with a resulting asymptotic capital-output ratio. He first applied that idea to the public debt burden problem. If the gap between private investment and saving had to be filled by government investment, the result would be growing debt, on which interest would have to be paid, raising the question of what would happen to the burden of debt. Domar made different assumptions about the growth rate of national income and proportion of saving absorbed by the government to establish whether the proportion of income taken in taxation would have to rise. These turned out to be an inverse function of the income growth rate.

Though this paper acknowledged the importance of productivity this was not modeled explicitly, an omission that was remedied in a second paper, "Capital expansion, rate of growth and employment" (Domar 1946). This focused on the relationship between productive capacity and national income. Investment was related to both of these, for it generated aggregate demand, which determined income, and it added to productive capacity. Because investment was linked to the growth rate of productive capacity and the level of income, Domar could show that there was an equilibrium rate of growth, at which income would grow at the same rate as productive capacity. Secular stagnation was what happened when investment grew more slowly than this, for in that case there would be an increase in unused capacity and unemployment. However, if, somehow, the growth rate of income could be guaranteed, the result would be sufficient investment to achieve growth without resorting to a government deficit.

The doctrine of secular stagnation originated in Hansen's analysis of the specific, perhaps unique, circumstances of the United States in the 1930s: the end of the frontier, declining population growth and the problems of a mature economy. In contrast, though Domar started from the immediate postwar problem of maintaining sufficient investment to absorb rising savings, he shifted his focus towards a general analysis of the problem of economic growth. In a parallel paper (Domar 1947) where he drew out the economic implications of the model, he discussed the relevance of his theory to both the United States and the Soviet Union (hardly a mature economy) and he traced his ideas back to a large literature that was European as much as American. Much of the literature, he claimed, omitted one of the two aspects of investment that he believed needed to be considered together. Though he ended his discussion of the literature with Hobson and Keynes, it was Hobson he wanted to praise—"Hobson's writings contain so many interesting ideas that it is a great pity he is not read more often" (Domar 1947, p. 51). In a footnote (numbered 11a) inserted after his article had been sent to the printer, he acknowledged that Harrod (Harrod 1939b) had developed similar ideas.

Interestingly enough, Domar (1957, pp. 6 and 14) criticized Keynes (1936), but not Hansen, for suggesting that the economy tends to the "desert of the stationary state". This resulted, according to Domar, from Keynes's "peculiar" treatment of investment: whereas in the short-run Keynes considered only the multiplier effect of investment, in the long-run investment served only to increase the capital stock. This paradoxical approach, which overlooked the "dual" character of investment, was Domar's explanation for some "less enlightened passages" of the *General Theory*, such as the euthanasia of the *rentier* and the blessings of the Egyptian pyramids. What should be explained, from Domar's perspective, was how industrial economies had sustained secular rapid growth and moved away from the stationary state. He was bewildered at the fact that the "vision of the stationary state hung so heavily over the thinking of the Great Masters of the last century, and still preoccupies many of our contemporaries".

Domar's general framework was, however, influenced by Hansen's broad notion of the conditions to reach dynamic equilibrium. This comes out clearly in his contribution to the Hansen Festschrift, where Domar (1949) adopted Hansen's approach to the determination of net investment in terms of two sets of changes, that is, "spontaneous changes" (technological progress, population growth, discovery of new resources) and "induced changes" caused by a preceding rise in income of the accelerator kind. Moreover, the whole "problem of capital accumulation" – in the sense of the ability of the economy to absorb capital at a rapid rate – only exists under the assumption that the possibilities of capital-deepening are limited, leading to potentially depressing effects of capital accumulation. As pointed out by Domar

([1948] 1957, pp. 109-10), this was the essence of the view, rejected by Knight and Simons, but shared by Marxist, under-consumptionist and Keynesian branches of macroeconomics. Such a view was based on the assumption of a stable capital-output ratio, which was merely implied in Hansen but explicit in other authors such as Paul Sweezy and Roy Harrod.[11] In contrast, from the perspective of the Knight-Simons position, investment opportunities are practically unlimited, and the whole problem of capital accumulation, which is behind Domar's growth model, does not even exist. As acknowledged by Domar, there was insufficient empirical information to settle the issue. In terms of Domar's well-known growth equation, a country with the "spontaneous" dynamic factors discussed by Hansen is able to "digest" a relatively large propensity to save, while absence of these factors makes a high propensity to save an obstacle to full employment.

Gardner Ackley (1961, pp. 509-12) – in a section about "Keynes and the stagnationists" in chapter 18 of his well-known macroeconomic textbook – criticized both Keynes and Hansen for overlooking that a growth of income (which the very act of investment permits) can prevent capital saturation. Keynesian stagnation, claimed Ackley, was not the "inevitable result" of capital accumulation. Keynes and the stagnationists had failed to realize that the size of the capital stock could only be considered large or small in relation to the size of output, and that it was possible for the two to grow together. According to Ackley, Domar was the first to see that by asking at what rate aggregate demand would have to grow in order to maintain full use of the rising capacity provided by capital accumulation. Domar's growth model has no explicit role for population growth or technical progress, differently from Hansen's approach. Ackley's criticism, as based on Domar's formulation, of Keynes and Hansen was that, even without population growth and technical progress, expansion of income could provide a market for the output of an increasing capacity. However, as pointed out by Alan Sweezy (1974, p. 46), Ackley missed the point that, in the absence of population growth, the problem was not just the impossibility of providing a market, but the "lack of labour to operate the additional capital goods". Hansen was left open to Ackley's criticism, Sweezy suggested, because he did not make completely clear that capital widening is only

[11] Samuelson (1964, p. 743), in his new chapter on growth, ascribed to Hansen the notion that the capital-output ratio is a technical constant and that any attempt to accumulate capital beyond the rate required by the annual growth of output will soon be unsuccessful due to excess capacity. Samuelson contrasted that with Solow's neoclassical growth model.

possible if labour supply is increasing. Domar (1957, p. 121) quoted a passage from Hansen (1947, p. 177) to that effect, where the boom may be interrupted because of labour shortage. Interestingly enough, Domar rejected that notion, which, of course, played an important role in Harrod's explanation of the lower turning point. But, then again, Harrod made us of the concept of a "natural rate of growth", absent from Domar's equations.

Whereas stagnation is not explicitly mentioned in his 1939 essay, Harrod (1948, pp. v-vi) stated in the foreword to his *Dynamic Economics* that "the idea which underlies this lectures is that sooner or later we [UK] shall be faced once more with the problem of stagnation, and that it is to this problem that economists should devote their main attention". The US was not exempt from the problem of "chronic depression" either. That was explained in Harrod's model by excess saving associated with the interaction between the natural, warranted and actual growth rates. If the warranted rate is above the natural rate, the actual rate must be below the warranted rate for most of the time, "and the centrifugal forces pull it further down, causing frequent periods of unemployment", which he described as a "dynamised version of the stagnation thesis" (Harrod 1959, p. 455; see also 1960, p. 286; 1973, p. 103). According to Harrod (1973, p. 103), fears of stagnation in the postwar period were not confirmed, due mainly to the vast postwar requirements for industrial reconstruction. However, symptoms of stagnation in the late 1960s in the UK and USA meant that economists should "keep a weather eye" on the dynamized version of the secular stagnation thesis (ibid). Hansen (1951, pp. 477-83) essentially subscribed to Harrod's model of unstable growth. In a book missing detailed discussion of the stagnation thesis, the only reference to secular stagnation appears in Hansen's (pp. 478-79) remark that Harrod (1948) dealt "fundamentally with the problem of long-term underemployment equilibrium, or secular stagnation". In particular, pointed out Hansen (p. 479, n. 11), Harrod's approach to the determinants of investment outlets was very close to Hansen's (1941) own analysis. Benjamin Higgins (1950, p. 266), a former student and colleague of Hansen's at Minnesota and Harvard respectively, suggested that Harrod's theory was in many respects "an alternative formulation of the Hansen thesis".

Hansen's stagnation thesis was largely an "oral tradition", as pointed out by Higgins (1959, p. 171, n. 3). Higgins (1948, 1950, 1959 chapter 7) discussed that thesis extensively, and attempted a formalization of the argument by means of a theoretical model and diagrams.

The controversial character of the secular stagnation thesis came in part from the fact that it was advanced during the second Roosevelt administration, when the New Deal was implemented, with Hansen's active participation. Hence, it became associated, in the opinion of businessmen and the public in general, with "New Deal economics" (Higgins 1948, pp. 83-84). The core of the Hansen thesis, according to Higgins (1950, p. 255), is the growing gap between the trend of potential income and the trend of actual income. Higgins suggested that the thesis was better described as a theory of "increasing deflationary gap" or "increasing unemployment" instead of "secular stagnation", since it was consistent with a rising trend of actual income per capita or even of actual investment. The issue of the proper interpretation of Hansen's theory had come up in Alan Sweezy's (1943, p. 69)[12] clarification that "stagnation" meant essentially wasted productive capacity and unemployment caused by excess saving. It did not imply a cessation of technical progress, entrepreneurial initiative or private investment. The 1930s provided a striking example of "stagnation" accompanied by a "highly dynamic economic and social development" in the United States. Technological progress continued at a rapid rate, productivity rose markedly, but investment was not enough to keep income at such a level that would fully use the growing productive capacity, claimed Sweezy. He would come back to that in an historical piece about the New Deal, when he argued, like Higgins before him, that the term "secular stagnation" was misleading in that it suggested a general loss of potential for economic growth, which did not reflect Hansen's meaning (Sweezy 1972, p. 121).

Higgins's (1950, 1959 chapter 7) attempted formalization of the stagnation thesis was based on the discussion of the path of the investment and saving functions as determined by differentiation with regard to the arguments in the respective functions. It did not explicitly contemplate the notion of a negative natural rate of interest, which Pigou (1943) had associated with Hansen. Lawrence Klein (1947a, pp. 84-85; 206-13), in his well-known book based on a PhD thesis written under Samuelson's supervision, picked up the negative natural interest rate from Pigou and turned it into a main feature of Keynesian economics. The probability of a negative natural rate of interest resulted from the interest-inelasticity of both saving and (especially) investment functions, which Klein regarded as empirically well established. Klein described the contrary opinion of "orthodox economists", that the

[12] Alan Sweezy was Paul Sweezy's elder brother. Both had been at Harvard, with Hansen and Samuelson, in the late 1930s.

investment function is infinitely elastic, as pertaining to the world of Say's law. In a companion article to his book, Klein (1947b, pp. 127-29) included a section about the stagnation thesis, where he defended its validity and traced it back to the Marxian hypothesis of the declining rate of profit.

These developments help explain why, by the end of the 1940s, secular stagnation was increasingly associated with Keynes, not specifically with Hansen. The basis for this was of course the final chapter of the *General Theory*, "Concluding notes on the social philosophy towards which the General Theory might lead" in which he had speculated on a world in which capital became so plentiful as to cause the euthanasia of the rentier. In the early years this was not associated with secular stagnation, a doctrine linked with Hansen who, despite talk of his "conversion" on the train from Minnesota to Harvard, and despite his adoption of the Keynesian multiplier, continued to differentiate his work clearly from that of the "Keynesians", as did his student Samuelson. However, once secular stagnation was interpreted in terms of a negative natural rate of interest and discussed in the context of the Pigou effect, it could become detached from the institutionalist-continental European theoretical framework in which Hansen had defended the doctrine and be linked to Keynes.

Hansen's version of the secular stagnation thesis was not the only one available. Something that resembled secular stagnation in that it involved stagnation that persisted over several business cycles from the idea, widely used in the 1930s, that there were fifty-year "Kondratiev" cycles in economic activity. A Kondratiev downturn might, till the upturn, be hard to distinguish from secular stagnation. So too might the lulls between Schumpeterian waves of innovation. But this was as much a description of the problem as an explanation. Apart from the Marxian approach supported by Paul Sweezy and Klein, Schumpeter (1942) and Steindl (1952) put forward distinct explanations of the lack of dynamism of capitalism. Steindl, like Schumpeter, was concerned with the potentially depressing consequences of the shift of capitalism from competition to oligopoly. Whereas Schumpeter's *Capitalism, Socialism and Democracy* was widely read, Steindl's *Maturity and Stagnation* did not attract much attention until its reprint in 1976 by the Monthly Review Press, when heterodox economists started to take it into account. Hansen (1954b) wrote a largely positive review essay on Steindl (1952). One should, according to Hansen (p. 409) classify stagnation hypotheses into three different categories: (i) a theory based mainly on exogenous factors (technology, population and new territories), represented by Hansen's own analysis and "perhaps also that of Harrod"; (ii) a theory based mainly on fundamental changes in social institutions (increasing state intervention, growth of the labour movement, non-competitive structures) and their impact on the "arterial sclerosis" of capitalism, as represented by Schumpeter; and (ii) a theory based mainly on endogenous microeconomic factors, inherent in capitalism, such as the development of imperfect competition and oligopoly, as represented by Steindl.

Hence, whereas both Schumpeter and Steindl looked for changes in the price system as remedies to be applied in order to prevent stagnation, Hansen's macroeconomic approach stressed the role of fiscal policy. The timing of publication of Steindl (1952) did not help, as the American economy, stimulated by spending on the Korean War, was experiencing a period of economic growth. In Hansen's (p. 412) view, that did not disprove any of the versions of the stagnation thesis. "How inventive, productive and dynamic the American private enterprise can be when operating under the pull of adequate aggregate demand", claimed Hansen, "has been demonstrated in a remarkable laboratory experiment during the last fifteen years" (the Second World War). However, he warned, there were "sound reasons for the proposition that the economy cannot on its own generate enough steam to provide its full potential growth". Unaided by the "massive fiscal powers of the federal government", the American economy should not be able to reach its full-employment growth path.[13] Hansen (1957a, p. 114) would deploy again the term "laboratory experiment" in his review of W. Fellner's 1956 *Trends and cycles in economic activity*, a Keynesian economist critical of the secular stagnation thesis. Hansen disputed Fellner's claim that exogenous technical progress was the main element behind the long period of sustained growth since the end of the war. Such path of "unparalleled growth and expansion", starting from a condition of stagnation in interwar Europe and in the 1930s in the US, could not happen, argued Hansen, without the remarkable increase in the fiscal activities of the government. "Now this is precisely the Keynesian remedy for the stagnation from which we have emerged" (ibid). Moreover, technological progress was probably stimulated by adequate aggregate demand conditions,

[13] Stagnation was also the topic of Ingvar Svennilson's (1954) well-known monograph about the European economy in the interwar period. His analysis was based on the so-called Kaldor-Verdoorn law – formulated independently by him – about the positive effect of production on productivity due to dynamic returns to scale (see Boianovsky 2012). As Hansen (1957, pp. 6-7) pointed out with evident satisfaction in his *American Economy*, Svennilson took into account as well the negative impact on economic activity of the declining European population growth rate.

meaning that the actual and potential growth trends are not independent from one another. "It requires", charged Hansen, a "pretty heavy black-out of a vast laboratory experiment to believe that this vastly enlarged role of government has really played no role in the spectacular transition from stagnation to sustained growth and expansion"(ibid). Clearly, from Hansen's point of view, the postwar boom did not disprove but rather confirmed the secular stagnation thesis. But many macroeconomists thought otherwise, as discussed next.

Macroeconomic theory

By 1953 when, unemployment fell to a mere 2.5%, the idea that the US economy was doomed to secular stagnation had fallen out of favor. The term was still discussed but references were more often critical—for example, some economists saw it as illustrating the tendency of some economists to treat any problem that had lasted for more than a short period as being a permanent one. In the 1930s that problem had been stagnation, in the 1950s it was the dollar shortage, and in other periods would be something else. There was also an increasing tendency over the next twenty years for secular stagnation to be linked not to macroeconomics but to occur in discussions of economic history, history of economic thought or, increasingly, development economics, the field in which Higgins increasingly specialized. However, as Samuelson's textbook shows, secular stagnation was still used, not as a historical tendency, but as descriptive of a particular problem, such as the stagnation, over several business cycles, to which the "New economics" of the Kennedy administration was the response. Remaining flexible over its causes and permanence, economists used secular stagnation to describe a situation into which capitalist economies could get into. There was no presumption that a free market economy *must* exhibit full employment without government intervention, leaving open the possibility that inappropriate policy could create stagnation. For economists, such as Samuelson, who assumed that the United States was characterized by oligopoly, analyzed using devices such as mark-up pricing and horizontal supply curves, there was no theoretical problem in maintaining such a position. However, for economists who thought in terms of perfectly competitive markets, or who believed that free enterprise must generate an optimal outcome, the situation was different.

Robert Lekachman (1964, 1966) was one of the few economists in the 1960s who regarded secular stagnation as central to Keynesian macroeconomics. Lekachman (1964, p. 5) suggested that secular stagnation could be a convenient label for "*any* persistent tendency" of aggregate demand and supply to approach equilibrium at less than full employment. In his Richard T. Ely lecture delivered at the AEA, Harry Johnson (1971, p. 6) pointed out the role played by the stagnation thesis in turning Keynesian economics into the new orthodoxy in the postwar period. According to Johnson, the view that unemployment is always the foremost social problem was elevated into a "dogma" in the US under the leadership of Alvin Hansen, whose theory of secular stagnation "has been quietly forgotten, or frugally converted into a theory applicable to underdeveloped countries", although vestiges of it still lingered in American Keynesianism at the time.

Johnson was quite positive about Leijonhufvud's (1968) distinction between Keynesian economics and the economics of Keynes. From Leijonhufvud's perspective, "Keynesian economics", as represented by the Hicks-Hansen IS-LM diagram and by Hansen's stagnation thesis, differed essentially from the "economics of Keynes", which should be understood in terms of a disequilibrium framework. By the late 1960s, disequilibrium macroeconomics had become relatively influential, although this would be short-lived (see Backhouse and Boianovsky 2013). The disequilibrium approach to macroeconomics had started with chapters 13 and 14 of Patinkin's (1956) *Money, Interest and Prices*. Chapter 14 included a section on "secular growth versus secular stagnation", an expression he used to describe what the classical economists had in mind when discussing the problem of "a general glut on the market". That was part of his analysis of Keynesian and classical theories of unemployment. The real balance effect meant that there could be no permanent stagnation or long-run equilibrium with unemployment, but there might be an adjustment process in which unemployment persisted for a long period of time. In emphasizing the secular aspects of the real-balance effect, Patinkin followed Pigou (1943) and Hansen (1951), both mentioned by him.[14]

Leijonhufvud (1968, p. 316), too, pointed out the original secular context of the

[14] Hansen (1951) granted that the Pigou effect can stop deflation and the decline in output and employment in the downswing. He argued, however, that, since prices stop falling when the economy reaches the upper turning point, real balances will cease rising and the economy will stabilize short of full employment.

Pigou effect, which should be seen against the background of postwar "Stagnationist Keynesianism" and its insistence that it proved the possibility of "unemployment equilibrium". Leijonhufvud (1968, pp. 159-61) interpreted the stagnationist school as denying the proper working of the price mechanism, due to inelastic functions, which he contrasted with Keynes. Like Patinkin before him, Leijonhufvud deemed a purely static interpretation of unemployment equilibrium incompatible with Keynes, and argued for a dynamic disequilibrium interpretation. He acknowledged Patinkin's priority, but claimed that his point for a dynamic interpretation was made in "stronger and more general terms" than Patinkin's, for Patinkin had laid great weight on the interest-inelasticity of investment as a factor influencing the time length of disequilibrium while the real balance effect operates. As noted by Leijonhufvud (p. 176), the stagnationist point about a negative natural rate of interest was based on the lack of outlets for saving. Leijonhufvud rejected that notion by referring to Martin Bailey's (1962, pp. 107-14; 123-30) and Cassel's (1903, pp. 106-09) argument – subscribed to by Simons, as discussed above – that the demand for fixed durable capital goods becomes very elastic at low interest rates. As observed by Leijonhufvud (p. 189, n. 2), Keynes's position about the possibility of capital saturation was quite distinct from Cassel's or Bailey's. At the same time, Leijonhufvud (pp. 410-11) denied that Keynes was a stagnationist in Hansen's sense.

Throughout the 1970s and early 1980s, as macroeconomic performance deteriorated in the US and Europe, the notion of "stagflation" (the combination of economic stagnation with inflation) caused by aggregate supply shocks came to the fore. The direct observed relation between unemployment and inflation posed a challenge to the traditional Phillips Curve. But that differed from secular stagnation, which remained out of most of the macroeconomic literature. As documented by Rosenof (1997, chapter 13), secular stagnation then attracted some attention from heterodox economists who had already discussed it in the past, such as Paul Sweezy (1982) and Joseph Steindl (1979). It also caught the attention of economic journalist Leonard Silk (1976), who referred to Hansen in the process. Steindl (1987) wrote the entry on "stagnation" in the *New Palgrave*, which mainly restated his 1952 interpretation and surveyed classic contributions by Hansen and Marxian authors. Steindl's entry would not be reproduced in the second 2008 edition of the *New Palgrave*, which did not include an entry on the topic. The economic effects of the decline in population growth in developed countries was also discussed in the 1970s and 1980s by demographers, with occasional references to secular stagnation that tend to dismiss its practical relevance (see e.g. Neal,1978; Espenshade 1978).

Secular stagnation continued to be discussed from the point of view of the history of economic thought, especially after Hansen died in 1975. Samuelson (1976, 1988, 2002) discussed Hansen's stagnation thesis in a series of papers, where he pointed to its relation to Keynes's 1937 essay and to Domar's and Harrod's growth models, and called attention to the fact that Hansen did *not* anticipate stagnation in the postwar period.[15] Samuelson's 1988 article – written on the occasion of the centenary of Hansen's birthday – was the first formalization of Hansen's secular stagnation thesis since Higgins's (1950) early attempt. As explained by Samuelson in correspondence of 11 February 1997 with one of the authors (M. Boianovsky), "I enclose a 1988 reprint few have noticed. This Keynes-Hansen-Samuelson non-linear limit cycle enabled me to discern (50 years later!) that decelerating population growth, at the same time that it lowered the acceleration-principle *investment* propensity, also lowered (by virtue of Modigliani's lifecycle theory of saving) the propensity to save."

Changing conceptions of a mature economy

The major problem with the stagnation thesis was that, though US defense expenditures did fall sharply after 1945, there was sufficient demand for output to continue to grow; resources had to be poured into Europe to alleviate hardship and sustain US allies against the Soviet threat. Over the slightly longer term, the outbreak of the Korean War caused defense spending to rise dramatically, albeit not to the heights of the Second World War, making inflation, not depression the immediate threat. Irrespective of whether or not there was a tendency to secular stagnation, it was not an immediate threat. There was, however, a more

[15] Samuelson probably had in mind Hansen's (1943, pp. 18, 21) expectation that the "potentialities for expansion of consumption and private investment in the immediate postwar period are sufficient to indicate the possibility of a genuine and fairly prolonged postwar boom". In a latter post war period, following the transitional readjustment, "we may assume a gradually increasing national income due to increased productivity and population growth". Hansen (1954, p. 412) would later refer to the postwar increase in population growth as a "spurt closely related to World War II".

profound reason for secular stagnation losing its appeal. In the 1930s, the idea of a mature economy was associated with the demographic transition and the exhaustion of investment opportunities, making it easy for Hansen to associate it with stagnation. However, by the 1960s, though the United States was still seen as, in some sense, a mature economy, that notion came to be conceived very differently. The development of the national accounts meant that the United States could be contrasted much more clearly with Europe and the "under-developed world": the gap between the US per capita income and that of the rest of the world had increased enormously. "Modernization theory", which pervaded not only development economics but other social sciences, such as political science and international relations (see Gilman 2003), saw the United States as the economy towards which other countries were moving. It was, in John Kenneth Galbraith's words, the archetypal Affluent Society (195?).

This conception of the United States as a mature, modern economy was shown most clearly in its political context in Walt Rostow's widely read book, *The Stages of Economic Growth: A Non-Communist Manifesto* (1960). Countries passed through a series of historical stages, such as the "take-off into self-sustained growth", Rostow's characterization of the British Industrial Revolution, a stage through which other developed countries had passed, and culminated in the "age of high mass consumption", represented by the contemporary United States. This thesis was challenged, most strongly by Alexander Gerschenkron, but though he questioned the idea that countries had to go through preordained stages, the idea of "backwardness", with its implication of a hierarchy, was still there. A modern economy might have slower growth than one less advanced in its economic development, because there would be less opportunity for others to "catch up". In the growth accounting of Angus Madison, "catch up"--growth that arose from the adoption of technologies already in use in more advanced countries--was one of the many contributions to economic growth, by definition not available to the most advanced country. But this was hardly a context that left room for a mature economy to stagnate. Worse, if it did, it would raise fundamental questions about the superiority of the free-market system over its Soviet counterpart. Government spending might be necessary to maintain full employment, as was the case in the 1960s when the Kennedy tax cuts showed the effectiveness of Keynesian remedies, but in the Cold War it was natural for the government to play a larger role in the economy than in the 1930s. The consensus on this point had not yet broken down.

Rostow (1956, p. 27) did not exclude the "possibility of growth giving way to secular stagnation or decline in the long term". The mechanism is not discussed, although Rostow (1960, p. 91) referred to "secular spiritual stagnation" as a possibility beyond high mass-consumption, provoked by diminishing marginal utility of real income as economic growth advanced. "Will man fall into secular spiritual stagnation, finding no worthy outlet for the expression of his energies, talents, and instinct to reach for immortality?", asked him. That was a speculative question, but some 50 years later Rostow discussed in detail the secular stagnation scenario in his 1998 book *The great population spike and after: reflections on the 21st century*, followed by his 2000 article on Japan and the "political economy of a stagnant population". Japanese economy had entered in the 1990s in its fourth phase, after the intense growth of the decades 1950-1980. Rostow (2000) addressed, in Hansenian terms, the connection between the decline of population growth and Japanese economic stagnation in Japan. According to Rostow (p. 391), Japan was just the first case, since data indicated that "all nations will have to settle down to a stagnant population, at best, if they are to survive", including the problem of the investment gap. Differently from his 1960 manifesto, Rostow (1998, p. 131; 2000, p. 393) discusses secular stagnation carefully, and relies on Hansen's framework for that. "Three quarters of a century forward, there is a distinctly worried character to Alvin Hansen's presentation of what he believed in the 1930s was the end of the the great innovations of the past and the coming of a stagnant population". Clearly, Rostow's sense of a "mature economy" changed since his 1960 book, reflecting not only the new economic landscape of the 1990s but also the end of the Cold War.

Secular Stagnation, now and then

The heretical character of the secular stagnation hypothesis is well reflected in Summers's reference, at his 2013 IMF speech in honour of Stanley Fischer, to "a set of older and much more radical ideas that I have to say were pretty much rejected in 14.462[16], a set of older ideas that went under the phrase secular stagnation". Summers contrasted secular stagnation with theories that take the average level of output and employment over a long time period as given. Mainstream macroeconomics – in both its New Classical and New Keynesian versions – has focused on the variance of output and employment, under the assumption that the working of the market will eventually bring back full employment and bridge output gaps. From that perspective, macroeconomics is about fluctuations of employment and output around their normal or equilibrium levels, in the sense that the goal of macroeconomic policy is to reduce volatility. The "new secular stagnation hypothesis", on the other hand, as claimed by Summers (2014a, p. 29), argues that "the second moment" of the time-series is "second-order relative to the first moment – the average level of output and employment through time". The Japanese experience since the 1990s and the overall poor performance of the American and European economies after the 2007-08 crisis may indicate, along the lines of the secular stagnation hypothesis, that market forces are insufficient to bring the economy to its full-employment growth path. Summers (p. 32) has defined secular stagnation as a permanently negative natural rate of interest, a concept he ascribed to Hansen (1939). Although that definition may be thought implicit in Hansen, its first clear formulation was , as we have seen, given by Klein (1947).

The return of the secular stagnation thesis has been preceded by the revival of the concept of the liquidity trap and its implications for the formulation of monetary policy, now under the guise of the "zero lower bound" to nominal interest rates (see Boianovsky 2004). Secular stagnation means that the zero lower bound problem is turned into a permanent – not just transitory cyclical – feature, of the economy (Krugman 2014). Modeling the economy with a permanent steady state negative natural rate of interest is not straightforward. In the representative agent framework, of the Ramsey-Cass-Koopmans kind, steady state real interest rate cannot fall below the rate of discount, which is assumed positive (otherwise the model explodes). An alternative is to build an overlapping generations model along the lines of Samuelson (1958), with heterogeneous agents, which in principle can accommodate a long-run negative natural interest rate. This has been done by Eggertsson and Mehrotra (2014), the first attempt to formalize Summers's "new secular stagnation hypothesis". As seen above, Pigou got around the analytical problem of a negative natural rate by postulating

[16] That was the course number for Stanley Fischer's class on monetary economics at MIT for graduate students, attended by Summers.

that saving decisions of the "representative man" are affected by other factors beside the expected yield from capital accumulation. The Pigou effect, which played a role in the 1940 and 1950s in the critical reception of Hansen's thesis as a long-term proposition, is conspicuously absent from recent discussions about secular stagnation, as it largely was before in the literature about the zero lower bound (see Boianovsky 2004, p. 116, for the general exclusion of the real balance effect from the Euler condition used in deriving the IS function in optimizing IS-LM models).

As observed by Ben Bernanke (2015), the secular stagnation hypothesis is about inadequate aggregate demand, not aggregate supply. Even if potential output is growing, the hypothesis holds that depressed investment and consumption spending will prevent the economy from reaching this potential.[17] Robert Gordon (2014) has focused on the "supply side" of secular stagnation, that is, the effects on the potential growth trend. According to Gordon (p. 48), Hansen's version of the secular stagnation thesis was written before the invention of the concept of potential output and its measurement. Therefore, he argues, Hansen and his colleagues lacked a notion of aggregate productivity or its growth rate. However, as discussed above, Higgins (1950) and other stagnationists stressed that the key indicator was the deflationary gap between potential and actual output trends. Gordon implies that the 1930s and 1940s stagnationists were not aware of the fact that average aggregate productivity was on the rise in the late 1930s, in contrast with recent experience. Available data mentioned by Gordon indicate that productivity increased by 3.8% in 1937-40, as compared to 0.8% in 2009-14, which points to an important difference between stagnation then and now. Nevertheless, the absence of precise numbers about productivity growth in the 1930s did not prevent A. Sweezy from pointing out that secular stagnation was not about lack of technical progress, which proceeded at a rapid rate at the time.

Summers (2014b) points to some main factors behind the apparently negative natural rate of interest: the reducing capital intensity of some key industries (particularly in sectors involving information technology), declining population growth, increasing saving due to higher income and capital inequality, and falling relative prices of capital goods. He refers to Hansen only in connection with the demographic factor, probably because that is expressed in the very title of Hansen's 1938 presidential address. However, Hansen did discuss the perverse effect of capital-saving innovations on investment demand and the increase of

[17] Bernanke, however, rejects the notion that secular stagnation applies to modern American economy, partly for reasons that remind of the Knight-Simons contention.

savings coming from corporations (see Higgins 1948). Like many others, Summers believes Hansen's stagnation thesis was proved wrong by the post-war economic growth and the baby boom, until changing economic and demographic circumstances led to its recent restatement.

It is generally assumed that the secular stagnation hypothesis disappeared because it was obviously refuted by events. However, any refutation is far from obvious, begging questions about how the concept is defined. Changing attitudes towards secular stagnation have always had an important political dimension. Though Hansen had mentioned the idea earlier, it took off only in 1938. It was not just that the US had experienced nine years of depression: the shock was that recovery, that till the summer of 1937 seemed strong, suddenly aborted, with a downturn even more severe than that of 1929. By this point, after a number of attempts to tackle the depression, some of which had to be abandoned, the New Deal was widely seen as taking a turn that was critical of business and business opposition to the New Deal was growing (see Phillips-Fein 2010). In 1938, responding to a request from Roosevelt, a joint resolution of Congress established a Temporary National Economic Committtee, which sat for three years and produced 33,000 pages of hearings and monographs on problem of excessive concentration of economic power, believed to lie at the root of America's problems. This was the context in which Hansen and Currie persuaded policy makers to take seriously the idea that the problem might lie in the coordination of saving and investment, an idea closely linked to secular stagnation (see Backhouse 2014). Secular stagnation was thus highly political from the start: it was not just an academic idea.

Herbert Stein (1969, pp. 175-6) writing an insider's history of America's "fiscal revolution" put the politics in a more subtle way.

> There were a great many people who would not accept the fiscal prescription based on this explanation [historic changes that had reduced the propensity to invest]. They did not like the explanation because it denied the possibility of stimulating investment by modifying policies to which they were opposed [perceived as anti-business]. They could not accept the view of investment as a passive response to historical factors, which seemed to deny the dynamic role of the businessmen, in which they took pride and which "legitimized" their incomes and position in society. And they could not accept the never-ending growth of the federal debt to which the thesis seemed to point.

Conservatives could only accept fiscal policy when it was presented as a remedy for fluctuations, not for the problem of stagnation and when it was not linked to the prospect of continuing government deficits. Stein claimed that the fading of secular stagnation was "partly" the result of economic arguments: intellectual arguments were well developed by 1941, and the data were changing, with the rise in spending due to the war, which continued after the war.

Postwar experience certainly showed that there was no immediate problem but its implications for secular stagnation depended critically on how the ideas was interpreted. The historical thesis centered on Turner's argument about the ending of the frontier might seem an argument from a different era. It no longer made sense to see secular stagnation as a problem of economic maturity—now seen as involving high mass consumption and rapid technological development, for it seemed to be a problem afflicting "immature economies" in the under-developed world. Yet as long as Keynesian theory was thought to show that economies would not necessarily achieve full employment, the idea that fiscal stimulus might be needed to maintain aggregate demand remained a real possibility. Postwar reconstruction, the Korean War, the Cold War and the massively increased role for government might raise demand sufficiently that there was in practice no need to make a case for expansion (at least till the early 1960s when Keynesians did make this case) but it did not mean that secular stagnation was completely disproved. It remained possible that stagnation would re-emerge should the role of government be reduced.

What probably killed the idea among academic economists was the acceptance, by the 1970s, of the rational-agent general competitive equilibrium model as the dominant framework in macroeconomics, finally displacing the presumption, rooted in the institutionalist literature of the 1930s, that markets were oligopolistic, with prices being set not by competitive markets but by corporate pricing policies. When this happened, it became very difficult to make a case that secular stagnation was theoretically coherent. Arguments from economic theory and ideology came together to push the concept out of contemporary economics. This makes it much less surprising that the concept has re-emerged in the face of the prospect of continuing stagnation. The history of the doctrine suggests that its future will depend as much on political factors as on specifically economic arguments.

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