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A Review of Pre-Keynesian Neoclassical Business Cycle Theory

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Abstract

Although some practicing economists believe there was no macroeconomics before Keynes, historians of economic thought recognize a rich and varied stream of literature on monetary and business cycle theory that predate and form the context for Keynes's General Theory. *Accordingly, the present paper examines many of the popular Neoclassicalbusiness cycle theories developed prior to the Keynesian Revolution. There are several valuable classifications of these theories; however, it is common to sort the writings on business cycles according to the cause attributed. In particular, this paper will follow an early twentieth century convention, using the terms "originating cause" and "self-generating cycle" to describe the various business cycle theories.Originating causes, such as war and weather, keep the business system in a continual state of unbalance. The business responses to those originating causes create a self-generating cycle of recurrent upward and downward movements in economic activity.*

This paper should prove useful to teachers (and students) of macroeconomics who wish to complement their technical material with a historical perspective.

Keywords: *Business Cycle Theory, Neoclassical School, Originating Cause, and Self-Generating Cycle.*

1. INTRODUCTION

Economic change is one of the most vital and all-pervading of economic problems. Change in economic conditions determines the amount of available employment, and has an important influence on the use of leisure, the rate at which people marry and divorce, attitudes toward religion, and the liberality of ideas. Many social theorists believe that economic change has a disproportionate influence on life in general. Some have suggested that we should slow down technological progress, so that there would be fewer changes for which adjustment is needed. Some have suggested various minor policy adjustments for reducing fluctuations. Others have suggested that the capitalist system should be replaced by socialism or communism.

The understanding of economic change is often the critical factor determining success or failure in business. Of even more importance, an understanding of economic change is essential to the development of sound social policy. Policy makers need to know why economic change takes place, how it can be measures, and the extent to which it can be forecasted.

In general, economists believe economic change can be logically explained. If economic activity tends to be higher at one time than at another, there are good reasons for the difference. It is possible to determine the factors responsible for economic growth. The alterations from prosperity to recession and from recession to prosperity become explainable if we are aware of all of the forces acting upon these changes.

Economists have long recognized that business fluctuations are cyclical in nature. The business cycle may be defined as a recurrent upward and downward

movement in total economic activity which, in practice, rises and falls successively to above and below normal levels of production. This definition of business cycles emphasizes a fixed recurrence of phases. Although there are numerous ways of classifying and defining the phases of the business cycle, for the discussion at hand, a very simple classification of the phases will suffice. We can speak of two phases: the phase of incline, and the phase of decline. The phase of incline lasts as long as the cyclical movement is upward and the phase of decline lasts as long as the cyclical movement is downward. Cyclical movement is usually measured by industrial production, gross domestic product or some other measure of aggregate economic activity.

2. PURPOSE OF THE STUDY

According to Diebold, "A striking and easily forgotten fact is that, before Keynes and Klein, there really was no macroeconomics" (in Adams, 1992, p. 31, Diebold's emphasis). In contrast, Dimand (2003) stresses that the business cycle theory forming the context for Keynes's General Theory was much more than "passing asides of classical and Neoclassical value theorists" (p.121). Economists analyzed fluctuations in output and employment long before the Keynesian Revolution. In fact, historians of economic thought recognize a rich and varied stream of literature on business cycle theory that predate the General Theory. As Dimand (2003) states, "Keynes transformed macroeconomics, but a substantial and valuable body of macroeconomics already existed to be transformed" (p. 146).

In light of these observations, the aim of this paper is to examine pre-Keynesian business cycle theory. Because the literature is so rich and diverse, this study will focus on the work of those scholars generally considered coming from the Neoclassical tradition.

The Neoclassical School includes a large body of work dedicated to the understanding of business cycles. Although extremely diverse, a common thread in the literature is the acceptance of the precepts of orthodox economics thought. From these presuppositions they derived a body of theory that early twentieth century economists classified into two broad categories: (1) originating cause theories and (2) self-generating cycle theories. It is the purpose here to examine the most popular of these theories and to point out the position occupied in the whole process by the factors selected as causes.

3. ORIGINATING CAUSE THEORIES

According to Clark (1934) and Bratt (1937), total economic activity moves in cycles because of originating causes which keep the business system in a continual state of unbalance, and also because of business responses through which the forces set up by the originating causes produce a cycle. Early twenty century economists used the term "originating cause" to refer to exogenous causes or factors from outside the economic system. The business responses to originating causes, in turn, create a "self-generating cycle" of recurrent upward and downward movements.

Fundamental principles of neoclassical economic analysis explain the tendency of economic forces to seek an equilibrium. The originating causes of business cycles prevent production from taking place at the balanced levels. Originating causes may drive production either above or below the balanced level. Originating causes, influential in creating business fluctuations, include the weather, inventions and discoveries of new or improved processes and of new goods, wars, and cyclical movements in foreign countries.

3.1 Weather Variations

The oldest of the originating cause theories of the business cycle relates to the weather and its impact on agricultural crops. The production of any agricultural crop may vary either from a variation in acreage planted or from a variation in the yield per acre. In practice, the principle variation in most crops is due to variations in the yield. Variations in yield are chiefly due to a variation in weather conditions. Many scholars, notably W. S. Jevons (1884) and H. L. Moore (1914), attempted to explain business cycle variations solely on the basis of this variation in the yield of agricultural crops. If the yield is above average,

the prices will be below average. With lower agricultural prices the costs of industrial firms are reduced, their profits are increased, and they are encouraged to expand. There is an opposite result when yields are below normal.

H.L. Moore (1914), who worked out the weather theory with great care, showed how weather changes may produce changes in crop yields, which produce a change in the price of raw agricultural commodities. This, in turn, changes the cost of agricultural products purchased by industrial enterprises, which causes a change in business activity. Moore's analysis of rainfall in the central part of the United States showed evidence of an eight-year cycle. The behavior of rainfall was matched with pig-iron production and measurements of the general price level. He discovered that pig-iron production lagged approximately two years and the price level four years behind rainfall variations. Based on these lags, he inferred a meaningful relation between cycles in rainfall, cycles in crops, and cycles in aggregate economic activity.

Huntington (1919) held that the business cycle is due to mental attitudes, which are indirectly affected by the weather. In particular, changes in the weather cause changes in health, which impact mental attitudes. The link between mental attitudes and the business cycle was never explained.

W.S. Jevons' (1884) theory attributed the weather cycle to the sun spot cycle. Later, when scientists found that the length of the sun spot cycle had been miscalculated, Jevons' son, H.S. Jevons (1910), conveniently revised the length of the business cycle. Mata and Shaffner (1934) presented evidence indicating a relationship between sunspots and other solar phenomena and general business conditions, although they found no evidence between solar cycles and weather cycles. The clearest relationship found was between the variation in solar faculae (i.e. bright spots) and Persons' yearly Index of Total Production in the United States, 1875-1930. In two recessions, 1903-1904 and 1913-1914, the changes in solar faculae were above normal.

Mata and Shaffner (1934) suggested that the relationship they found between business conditions and solar phenomena may be explained by two possible mechanisms involving biological changes, an approach somewhat similar to Huntington's. First, the number of sunspots controls the amount of ultraviolet rays that reach the earth, and this may alter human health. Second, there is a cycle in the magnetic activity of the earth similar in length to that of solar phenomena. Since nerve energy is electrical in nature, Mata and Shaffner (1934) surmised that a direct biological effect may result from the variation in the magnetic activity of the earth.

By the 1930s, economists were beginning to doubt that business cycles move in general with cycles in solar phenomena. As Mata and Shaffner (1934) recognized, even if solar phenomena could explain the cyclical turning points, it appears difficult to see how solar phenomena can be held responsible for the factors creating the self-generating phases of incline and decline.

3.2 Invention and Discovery

The commercial utilization of inventions and discoveries in the development of new goods tends to drive production toward or away from balanced levels. The commercial application of improved processes in the production and management of industry results in an increase in productivity. Such an increase, of sizable, results in vast increases in the potential output of goods without any increases in the labor power. If the demand for the good is inelastic, or if the manufacturers decline to make reasonable decrease in the price of the good, much labor will be displaced. In time, this displaced labor will be taken up in new industries, in the expanding of old industries, or in re-employment in the given industry. If this increase in productivity occurs in the early part of a prosperity period, demands for new capital goods or for durable consumer goods will likely be great enough to absorb the displaced labor force. Since the additional labor offered on the market at this point will tend to keep wages down, profits will be increased and production will tend to move even further above balanced levels. However, if this increase in productivity occurs at the peak of the cycle, after the increasing demand for capital goods has tapered

off and wage rates are high, the displaced labor will not be so readily absorbed. The result will be a decrease in purchasing power, and then a decrease in total production, tending to drive production down toward balanced levels. If the increase in productivity occurs in a depression period, profits may increase and therefore encourage capital investment, tending to drive production back up to balanced levels. It may be, however, that the increase in productivity will be offset by the resistance of wage rates to decline. If such occurs, labor will be displaced, with no tendency toward reabsorption while business is declining; the total purchasing power will be decreased, tending to drive prices down, and tending to drive production still further below balanced levels. Temporarily, the increase in productivity may not increase profits.

Both Schumpeter (1927) and England (1915) emphasized the idea that innovations come in waves, and initiate periods of activity followed by crisis and depressions. Invention and discovery are closely related to several forces present in the self-generating cycle (discussed in section 3). Schumpeter (1927) has shown that imitators of successful innovators accentuate business activity during the phase of incline, and that this leads to an unstable prosperity. This, in turn, increases the proportion of capital goods produced during prosperity, and adds to credit extension. It may be that the business cycle would not occur without the progress made possible by invention and discovery, but these forces alone do not comprise a sufficient explanation. As Bratt (1937) observed, Schumpeter's theory of the business cycle "does not explain the intensified fluctuations in derived demand for durable goods, nor several self-generating cyclical forces, including the cyclical shift in the efficiency of workers and the slow rate of change in the habits of consumption in prosperity" (p.144).

3.3 War

Many have suggested, at times, that wars are chiefly or solely responsible for business cycles. Wars drive industrial production away from balanced levels in two ways. First, goods purchased for war purposes are destroyed rather than consumed in the normal economic process. Second, wars are almost invariably financed by inflation.

Production of goods for war creates an atypical pattern of scarcity. In addition, dictatorial policies are usually followed, by means of which, artificial stimulus is given to the production of certain goods, over and above that which would be induced in any case by the abnormal scarcity due to war consumption. Capital funds which otherwise would be used to produce dwellings and peace-time factories must be shifted into the production of ammunition, weapons, and ships. After the war ends, vast accumulated shortages appear in residential building and in factories for producing consumer goods, since depreciation and obsolescence will have continued during the war. The making up of the deficits will abnormally stimulate industry.

Major wars are often financed by inflation. Instead of taxing at the time to pay for the war, governments resort to the flotation of large bond issues. Real savings are not large enough to buy these bonds in addition to the private investments necessary for the conduct of the war, and therefore the bonds must be purchased on credit. If the bond market should prove inadequate, the government would resort to paper money inflation. In a social sense, when the war is over it is paid for whether by inflation or taxation. Many of the goods which were created have been destroyed, and they cannot be made at a later date. Society has already paid for these goods, and it is merely a matter of against whom the costs are to be levied. In other words, the question is whether the funds are to be obtained by taxation and the wealth redistribution effected immediately, or whether the funds are to be obtained by inflation and the redistribution put off to some extent. The later method is often chosen.

Bratt (1937) and others cited war inflation as an originating cause of business cycle movements. Its primary characteristic is to force a rise in prices. This price rise lightens the burden of debts and people become optimistic. Since prices are rising, money cannot be expected to buy as much in the future, so people shift from money to goods, and that causes prices to rise still further. The result is an upward spiral of mounting prices and a piling up of debts, since it is now profitable to owe money. This upward spiral

movement has the same characteristic as the upward movement of the business cycle. Due to these psychological factors, prices inevitably go higher than justified by the additional credit created over and above real savings.

At this point, one of two things may happen. Mounting quantities of credit may be created by the flotation of bonds or by the printing of money. For a time, people are abnormally active in trying to convert their money into goods. Production is driven above the balanced level. Ultimately the money comes to be worth nothing. All debts or money claims are of little or no value. Only equities and ownership are of value. Such an experience is disruptive and production is driven below balanced levels until people again have faith in credit and contracts.

Instead of uncontrolled inflation resulting, the government may contract credit or at least discontinue its expansion. The resulting decline in prices paralyzed business and is a powerful factor tending to drive production below normal levels.

3.4 Business Conditions in Foreign Countries

Other than for major depressions, business cycles often move with some independence across countries. An opposite phase of the business cycle in foreign countries may act as an originating cause of on the home country's cyclical condition. Suppose, for example, the home country is in a depression and most of the other countries of the world were in a prosperity phase. Prices would be high in these foreign countries but low at home, and therefore exports would be stimulated and imports would be discouraged. An outlet for additional goods at current prices would thus be provided, and this would tend to drive the home country back to normal. If the home country were in a prosperity phase, but most of the rest of the world were in depression, exports from the home country would be discouraged and imports would be encouraged. This situation would be a drag on further upward movements of production, which is already above normal levels, and therefore would be beneficial if not carried too far.

Rapid industrial or agricultural development in foreign countries serve to lower prices, and therefore acts as an unbalancing factor on the same industries in the home country. The unbalancing effect is especially pronounced if these industries in the home country customarily have a large export balance. In agriculture, the net effect on total production is somewhat uncertain. On the one hand, agricultural production is approximately maintained for a time, prices are reduced, therefore costs of industries using these products are reduced, profits are increased, and these industries tend to expand and production is driven above balanced levels. On the other hand, the purchasing power of farmers is reduced and therefore they can buy fewer goods. This reduces the sales of many companies, tending to drive production below balanced levels.

In the case of manufacturing industries, unless they are protected by a tariff, foreign competition reduces prices and requires contraction. Such contraction releases factors of production for other industries, but nevertheless introduces a force tending to drive production below balanced levels.

3.5 Episodic Theories

In commenting on the frequency distributions of business cycles obtained by W.C. Mitchell, Working (1928) expressed a widely held view:

"The form of several of the distributions (of length and amplitude) is precisely what one should expect if business cycles result in considerable measure from a cumulation of the influence of mutually independent chance factors. We have too much evidence of the interaction of economic forces in business cycles to accept such a theory as a complete explanation, but there may be more truth than is now generally admitted in the episodic theory of business cycles, as thus revised" (p. 89).

"Episodic" theories of the business cycle state that each depression, and each recovery has its own unique cause. In many cases, some single force may be predominant in making for depression or recovery, but there may be, and usually is, more than one originating cause creating the unique characteristics of the particular business cycle. Veblen (1904), Fisher

(1913), and Adams (1925) seemed to have espoused such a theory at times. Mitchell (1923) phrases it, "like all historical phenomena, each cycle is, strictly speaking, a unique phase of human experience" (p. 658).

4. SELF-GENERATING CYCLE THEORIES

Originating cause theories of the business cycle suggest that exogenous factors keep the business system in a continual state of unbalance. They are called originating because they are not generated within the round of the cycle itself. However, originating causes, in and of themselves, do not produce a business cycle. As stated earlier, originating causes throw production off of balanced levels. As soon as their operation is discontinued, production might be expected to return to balanced levels if no other forces were at work.

The responses of the business system to these originating causes create the business cycle. The business responses to originating causes create a self-generating cycle of recurrent upward and downward movements in economic activity. That is, one phase of the business cycle grows out of the preceding phase. Bratt (1937) and others referred to this line of reasoning as self-generating cycle theories.

Various writers have attempted to trace the responsibility of the business cycle to some particular characteristic of the business process. These include, psychological factors, over-investment, malinvestment, money and credit, and consumers' income and saving.

4.1 Psychological Factors

Many early twentieth century economists traced the cumulative change in business activity to psychological factors. According to this approach, businessmen are constantly trying to forecast the future. These forecasts impact short-run operations and the development of long-term contractual obligations. Because business conditions change erratically, errors in forecast occur. According to Pigou (1927), these errors are likely to become generalized. That is, the optimistic errors of some do not offset the pessimistic errors of others. As Pigou (1927) puts it, "optimistic error and pessimistic error, when discovered, give birth to one another in an endless chain" (p. 103). This "chain" of errors gives rise to large fluctuations in economic activity. For example, technological improvements may lead people to take an overly optimistic view. Errors of optimism will be realized when competition tightens and profit margins begin to shrink. This realization brings a halt to optimistic tendencies and the economy begins to decline. Eventually, optimism gives way to pessimism. Excessive pessimism offsets optimism, and trough of the business cycle is reached when the pessimistic errors are detected.

Hexter (1925) also attributed the business cycle to emotional aberration. According to his theory, variations in the birth and death rates create alternations of optimism and pessimism, and that these in turn create the cycle. Huntington (1919) also traced variations in business directly to variation in mental attitudes.

4.2 Over-Investment

Capital goods industries are typically more sensitive to the business cycle than consumer non-durable goods industries. According to a number of neoclassical economists, this greater cyclical sensitivity is the result of a serious imbalance that occurs during a phase of economic incline. For example, an upswing originating in the capital goods sector brings with it an increased demand for raw materials, such as iron, steel, cement and, lumber. Consequently, investment to add capacity to these industries is essential. According to Spiethoff (1902), these areas of business activity become overdeveloped and it is impossible to use the entire supply of raw materials in the construction of more capital equipment and durable consumer goods. Ultimately, a decline in capital goods production spreads to consumer goods industries and sets off a decline in overall economic activity.

Tugan-Baranovski (1894) held that current savings are not sufficient to satisfy demand for capital in prosperity, and a crisis is brought on because the demand for capital cannot be satisfied. Conversely, investments fall below savings made in the depression, and when investing becomes aggressive once more, recovery is underway.

Hobson (1909) held that the large incomes,

existent in a prosperity, lead to over-saving and hence to over-investment, until there is an excess supply of capital. In the following depression over-saving ceases, the excess supply of capital is used up, and recovery becomes possible. His theory is an apparent contradiction of Tugan-Baranovski's, but actually there is no essential contradiction. Whereas Hobson suggests that too much cash is allocated to investment in prosperity, Tugan-Baranovski argues that too much credit is extended. Hobson points out that a disproportionate share of aggregate savings comes from upper-income groups in society. As such, over-saving can be corrected through a more equitable distribution of income.

4.3 Malinvestment

Malinvestment, a term often used by Austrian economists, is a form of over-investment that occurs due to unsustainable increases in the money supply and artificially low interest rates. The main proponent of the malinvestment theory is Hayek (1932). His theoretical explanation of the business cycle focuses on arbitrary tampering with the credit mechanism, which impedes the natural flow of economic activity.

According to Hayek, businessmen must constantly decide how to channel resources between production for current consumption (consumer goods) and production for future consumption (capital goods). Similarly, consumers allocate money income between consumption and saving. A market-determined interested rate assures that these decisions correspond. That is, there is a balance between the savings plans of consumers and the needs of businessmen for investment funds.

The disrupting factor, according to Hayek's explanation, is the banking system. If the central bank increases the supply of money, the interest rate falls below its equilibrium level. Businessmen respond by allocating more resources to the production of capital goods. As workers are hired and/or wages rise in producer-goods industries, consumer income grows. The result is an increase in consumer demand. Assuming consumers do not increase the proportion of saved income, consumer demand will eventually rise relative to the rise in funds available for investment. Banks respond to declining reserves by raising interest rates. Businessmen, who undertook investment assuming available credit and favorable interest rates, now find their costs have risen. Discouraged by the higher interest rates, they abandon their capital projects. The ultimate consequence of this malinvestment is economic decline. Businesses liquidate inventories, the price level falls, profits decline, and large-scale unemployment results.

4.4 Money and Credit

The monetary explanation of the business cycle is based on changes in the supply of money and bank credit and their impact on effective demand. One of the earliest and best-known proponents of a monetary explanation of the business cycle is R.G. Hawtrey. Hawtrey (1913) emphasized the impairment of bank reserves and how interest rates direct the use of credit. As the business cycle reaches its peak, "traders" (a term Hawtrey used to describe manufacturers, retailers, and wholesalers) reduce new orders as profit margins begin to fall. In response to declining orders, manufacturers cut back their operations and a downward spiral in business activity sets in. Income payments and employment fall, bank loans contract, and households save cash rather than spend it. The severity of the downturn depends on what Hawtrey referred to as development of a "credit deadlock." This occurs when banks shift the composition of their portfolios from short-term business loans to longer-term securities in the investment market. Because of unfavorable assessments of future demand, the investment market is hesitant to use these funds for new capital equipment. The result is a reduction in short-term interest rates, an increase in orders for goods, and renewed activity in manufacturing. Conversely, during expansion, it becomes increasingly difficult for banks to expand credit. Once they are loaned up, they become more selective in their lending and charge higher interest rates. Higher interest rates affect the margins of manufacturers, wholesalers, and retailers and set in motion a contraction of business activity.

Other advocates of a monetary explanation of the business cycle include Hansen (1921) and

Schluter (1923). They held that banks increase purchasing power by lending larger and larger quantities of credit in a period of prosperity until the undue extension of credit places a strain on bank reserves, at which time the credit must be deflated. In the following depression, idle funds accumulate in the banks enabling them to start a new movement of expansion.

4.5 Consumer Income and Over-Saving

Several writers attributed the business cycle to the characteristic behavior of income payments, spending, saving, and prices. Aftalion (1927) and Bouniatian (1928) developed theories largely dependent upon the tendency for consumers to save too much in prosperity. They suggest that there is a rapid increase in the production of capital goods in the phase of incline. This leads to a large capacity to produce consumer goods, resulting in a decline in the marginal demand prices for consumer goods. With the increase in the available quantity of goods, people are not willing to spend as much for each good, leading to a decline in price. This failure to buy all of these goods, if it is a result of the consumers' valuation, must be due to the fact that consumers begin to save too large a portion of their income.

Lederer (1925) stressed the dispersion of various prices when general prices are rising or falling, concluding that this leads to an in income level that is insufficient to take the goods off the market in prosperity and excessive income for the purpose of taking goods off the market in depression. Foster and Catchings (1925) and Hastings (1923) also stressed this alternate deficit and excess of consumer income. The relative variation in consumers' income, however, does not explain the excessive variation in the production of all durable goods. Adams (1925) has attempted to relate these variations, attributing an excessive consumers' income in prosperity to an increased production of capital equipment. In the latter part of the phase of prosperity, however, consumers' income suffers not from being excessive, but from being too small to take off the market, at the then present prices, the goods which could be created by the then existent capacity.

Another form of the over-saving theory points out that consumer demand is alternately larger and smaller than the current supply of goods because of a lag in the change of wage rates behind the change in the price of goods. During an economic expansion, this lag induces greater investment and productive capacity tends to outpace consumer demand. Due to a lack of effective consumer demand, the purchasing power of wage-earners is insufficient to absorb the flow of goods from the new productive facilities.

5. CONCLUSION

Although Keynes transformed the nature and language of macroeconomics, a rich and varied stream of literature on business cycle theory existed before the General Theory. As Mitchell (1927) observed, "Before the end of the nineteenth century there had accumulated a body of observations and speculations sufficient to justify the writing of histories of the theories of crises" (p.7). The purpose of this paper is to bring to light some of the popular Neoclassical business cycle theories that predate and form the context for Keynes's General Theory.

The Neoclassical School has contributed to our understanding of economics by identifying the forces that cause business cycles. It may be concluded that past attempts to trace the business cycle to a single cause have been unsuccessful. The business cycle must be viewed as the result of all of the forces which create it. Most economists would agree that the inter-relationships of the economic processes are so great that it is futile to attempt to trace the business cycle to any single cause. Nonetheless, the purpose of this paper is to show the worth of the ideas involved.

The present paperis intended for teachers (and students) of macroeconomics wishing to complement their technical material with a historical addendum. As such, the material presented herein has been stated, so far as possible, in accordance with commonly accepted and long-published transcripts of the theorists' ideas.

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