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DOES THE THEORY OF BUSINESS CYCLE WORK

İŞ ÇEVRİMİ TEORİSİNİN GEÇERLİLİĞİ AÇIKLANABİLİR Mİ

Doç.Dr. Ömer EROĞLU[*]
Doç.Dr. Çetin DOĞAN[**]

SUMMARY

Business cycle has been a main topic of the history of the capitalist economies. This paper reviews the business cycle theory and examines whether there is convincing theory of the business cycle. After analyzing many theories, it is apparent that there is no precise theory of business it is still in its infancy and thus remains an incomplete theory of business cycle.

ÖZET

İş Çevrimleri kapitalist ekonomi tarihinin ana konularından birisi olmuştur. Bu çalışmada da iş çevrimi teorisi anlatılmakta ve geçerliliği sorgulanmaktadır. Konuyla ilgili tüm teoriler incelenmesine rağmen hiç bir teorinin iş çevrimlerini kesin bir dille anlatamadığı anlaşılmaktadır.

Business Cycle, Trade Cycle, The Monetarist Interpretation of Trade Cycles.

İş Çevrimi, Ticaret Çevrimi, Ticaret Çevriminin Monetarist Yorumu.

INTRODUCTION

Many economists in the 1960's viewed the business cycle as dead. Keynesian economic model provided all the necessary instructions for manipulating the levers of monetary and fiscal policy to control aggregate demand. Inflation rate increased if aggregate demand was stimulated excessive and unemployment rate arose if demand was insufficient. In this case, policymakers were only determining the most desirable location along this inflation-unemployment trade off.

After almost a decade of economic expansion and accompanying high rates of inflation, the business cycle occurred in 1970's. It became increasingly apparent that the Keynesian economic model was not the appropriate for understanding what happens during a business cycle, her did

[*] Süleyman Demirel Üniversitesi, İktisadi ve İdari Bilimler Fakültesi Öğretim Üyesi
[**] İnönü Üniversitesi, İktisadi ve İdari Bilimler Fakültesi Öğretim Üyesi

it seem capable of providing the empirically correct answer to questions involving changes on the economic environment or changes in fiscal or monetary policy.

Business cycle models view aggregate economic variables as the outcomes of the decisions made by many individual agents maximizing their utility under production possibilities and resource constraints. Business cycle models ask the question of how individuals respond over time to changes in the economic environment and what implications those responses have for the equilibrium outcomes of aggregate variables. It is necessary to specify the economic environment and how it evolves through time. It is important in developing a model to recognize that business cycle is fundamentally phenomena that are characterized by their behavior through time (Plosser, 1989, p.51).

The trade cycle has been a central feature of the history of the capitalist economies. In this study, we will intend to find a convincing theory of the business cycle which is called short-run trade cycle.

1. THE CLASSIFICATION AND MAIN FEATURES OF THE BUSINESS CYCLES

Since industrial revolution, economies have been a world of continuing and some times enormous fluctuations in economic activity. Business cycles have come to be taken as a fact of life. But modern economies operate differently because of changes in technology, employment, finance, along with the globalization of production and consumption. The waves of the business cycle may be becoming more like ripples in developed economies (Weber, 1997, p.65).

Short term macro economic fluctuations in classical approaches involve an analysis of total increases (declines) in output and / or other indicators over a given time period independent of the underlying nature of the change. But a competing approach puts focus on the cyclical fluctuations in economic time series data around their long term trends (Rand and Tarp, 2002, p.2074). In the trade cycle literature three very important cycles distinguished. These are;

i. The short; approximately it has forty month duration. This short term fluctuations are often referred to as growth cycle.

ii. The longer; averaging nine and half year's length.

iii. Very long; taking more then fifty years to run its course (Schumpeter, 1939, p.169).

Business cycle consists of expansions followed by recessions, contractions, and revivals which merge into the expansion for the next cycle. Business cycles durations generally vary from more than one year to ten or twelve years (Rand and Tarp, 2002, p.2073). To these may be added the Kuznets cycle, or "secular swing" of 16-22 years. It dwarfs the 7 to 11 years

cycle into relative insignificance. Generally, average length of the business cycle for developing countries is no more than four and a half years. The average duration of business cycles in developing countries is clearly shorter than in industrialized countries. Business cycles durations in industrialized countries vary from six years to eight years (Rand and Tarp, 2002, p.2076-2078).

Technically, the business cycles can be defined as, movements about trends in gross national product in any country which stochastically disturbed difference equation of "very low order" (Lucas, 1981, p.217). Business cycles are a type of fluctuations found in the aggregate economic activity of nations that organize their work mainly in business enterprises (Rand and Tarp,2002, p.2073).

The main features of business cycles or in other word economic time series are following: (Lucas, 1981, p.217).

i. Output movements across broadly defined sectors move together (they have high coherence)

ii. Production of producer and consumer durables exhibits much greater amplitude than does the production of non-durables

iii. Production and price of agricultural goods and natural resources have lower than average conformity.

iv. Business profits show high conformity and much greater amplitude than other series.

v. Prices are generally pro-cyclical.

vi. Short-term interest rates are pro-cyclical; long-term rates slightly so.

vii. Monetary aggregates and velocity measures are pro-cyclical.

In the literature there are mainly two approaches to trade cycle which are citing exogenous and endogenous factors respectively. Former group does not rely so strongly on internal factors; we call them physical force cycle theorists. Latters believe that expansion generates factors which bring about its own end induce a period of contraction. Similarly, the process of contraction generates the conditions for recovery.

2. THE REASONS OF BUSİNESS CYCLES

Business cycles have been linked to big changes in international politics and economics over the last century. This class of theorists denies that cycles are self perpetuating. They maintain that each cycle must be set off by physical forces which impose their results up on the business world. The particular physical forces which they think generate business cycles are; climatic changes, discovery and development of new rich natural resources;

invention of new capital equipments; new types of consumer goods and wars. These theorists are Moore, Schumpeter, Robertson, and Adelman.

Schumpeter divides all members of the business community into two classes; creatures of habit, and economic innovators. The innovators are the dynamic influence in business and change the habits of the members of the other class. Innovations are taken up by imitators and this leads to an expansion of business and credit. The wave strikes the rock of crisis. Capital for developing further innovations in not available. So the "wave" settles down to the dead level of depression. Schumpeter can be criticized, because he does not explain just why innovation comes in waves. Also other dynamic forces which play apart in bringing about prosperity have been ignored. Schumpeter lays stress only upon two of the most important generating forces.

According to Irma Adelman, cycles are entirely the result of random shocks, which in a completely irregular and uncoordinated fashion; disturb the economy's component parts. It has been shown that the application of such "shocks" to models so constructed that no endogenous fluctuations are possible. (Adelman, 1960, p36)

Developments depend on sustained global growth that requires trade and open markets, stable investment flows, diffusion of appropriate technologies and protection of the environment, are tied to business cycles. Finance also tends to follow business cycles; investment flows that increase during upswings often suffer retrenchment and repatriation during downturns. Understanding what causes business cycles and how those causes have changed suggest that business cycles will not be as important in the future as they were in the past (Weber, 1997, p.66-67).

3. KEYNESIAN BUSINESS CYCLE THEORIES

The existence of trade-cycles is prima facia evidence of failure of market coordination for Keynesian economists, and they tried to explain with multiplier-accelerator interaction. A basic criticism of business cycle is the heavy reliance of such models on technology shocks to explain business cycle facts. From Keynesian view point, demand shocks are thought to be important for generating business cycle because the slow adjustment in prices may cause resources to be underutilized, making possible the expansion of output without significant increases in marginal costs in response to a higher aggregate demand. In contrast, resorces are fully utilized in business cycle becuase prices adjust quickly to clear markets. Therefore, transitory demand shocks tend to generate a strong crowding-out effect. Consequently, business cycle models have relied on supply shocks to explain the business cycle (Benhabib and Wen, 2004, p.503).

The theory in Kaldor's paper is similar to theories which explain the trade cycles as a result of the multiplier and the investment demand function. He is trying to show what are the necessary and sufficient assumptions under

which the combined operation of these two forces gives rise to a cycle (Kaldor, 1940, p.78).

The basic principles of Kalecki's and Harrod's studies really derived from Keynes' "General Theory" that economic activity always tends towards a level where savings and investments are equal. Economc fluctuations are due to investment in the models of Kaldor and Kalecki. Kaldor has been used the terms of investment and saving but in an ex-ante sense not in an ex-post sense.

If ex-ante investment exceed ex-ante saving, either ex-post investment will fall short of ex-ante investment, or ex-post saving will exceed ex-ante saving, and both these discrepancies will induce an expansion in the level of activity. These can be summarized as below:

$I_{E\text{-}A} > S_{E\text{-}A}$ □ $I_{E\text{-}P} < I_{E\text{-}A}$ or $S_{E\text{-}P} > S_{E\text{-}A}$

If ex-ante investment falls short of ex-ante saving, either ex-post investment will exceed ex-ante investment, or ex-post saving will fall short of ex-ante saving, and both these discrepancies will induce a contraction. So this can be shown as below:

$I_{E\text{-}A} < S_{E\text{-}A}$ □ $I_{E\text{-}P} > I_{E\text{-}A}$ or $S_{E\text{-}P} < S_{E\text{-}A}$

Kaldor express that the magnitudes of both ex-ante saving and ex-ante investment are themselves functions of the level of activity, and vary positively with the level of activity. He assumes that the I(x) and S(x) functions can not be linear. When I > S, activity tends to expand, and when S > I, activity tends to contract. The economic system would always be rushing either towards a state of hyper inflation with full employment or towards a state of complete collapse with low employment. The economic system can reach stability either at a certain high level of activity or at a certain rate of activity. Eventually he concludes that the period of the cycle depend on two time laps, or rather time-rates of movement (Kaldor, 1940, p.79-80).

4. SAMUELSON'S CONTRIBUTIONS

Samuelson (1939) analyzed the accelerator theory of investment which constructs cumulative upwards and downward movements in real output. He first used multiplier relationship with the unstable investment and then used Hansen assumptions to express accelerator theory. According to Hansen assumption:

The national income at the time t, Y_t, is written as the sum of three components; Government expenditures ($g_{t)}$, Consumption expenditure (C_t), Induced private investment ($I_{t);}$

$$Y_t = g_t + C_t + I_t$$

$C_t = \alpha\, Y_{t-1}$

$I_t = \beta\, [C_t - C_{t-1}] = \alpha\beta Y_{t-1} - \alpha\beta Y_{t-2}$

And $g_t = I$

Therefore national income can be written as:

$Y_t = I + \alpha\, [I + \beta]\, Y_{t-1} - \alpha\beta\, Y_{t-2}$

İf we know the national income for two periods, according to accelerator theory, the national income for the following period can be simply derived by taking a weighted sum. The weights depend upon the values chosen for the marginal propensity to consume, and for the relation, β. In Samuelson's study, it is shown that the field of possible values of α and β can be divided into four regions. Each of these regions gives different types of behavior. Each point represents a selection of values for the marginal propensity to consume and relation. Corresponding to each point there will be a model sequence of national income through time.

A single impulse of investment will send the system up to infinity and on the other hand a single very small unit of disinvestments will send the system ever downward at an increasing rate. These regions can be shown graphically as below:

Also the first order multiplier-accelerator can be derived in a different way.

$I_t^n = v\, (Y_t - Y_{t-s)}$

Consumption is assumed to depend proportionally on the current level of income.

$C_t = (1\text{-}s)\, y_t$, where s is the marginal propensity to save.

In the short-run the equilibrium is achieved where aggregate demand equals national output.

$Y_t = C_t + I_t + AE_t$, where AE is autonomous expenditure.

For short-run equilibrium,

$Y_t = (1\text{-}s)y_1 + v\, (y_t - y_{t-1}) + AE_t$

Output and demand vary from one period to another, because aggregate demand depends on last period's income and also it depends on current income. Since different ion in income, aggregate demand changes from period to period. Solving above equation for y on we can obtain:

$Y_t = (1 + s / (v\text{-}s))y_{t-1} - AE_t / (v\text{-}s)$

This equation is lagged just one period. If one starts from the static level of income which equals AE / s and set $y_t = y_{t-1}$ income in period 1 can be obtained as:

$y_t = (1 + s / (v\text{-}s))Y_0 - AE / (v\text{-}s)$, and by substituting each equation for next periods, below equation would be derived:

$y_t = (1-g)^t (y_0 – AE / s) + AE / s$, where $g = s / (v-s)$

Using the general form of equation in which $\alpha = 1 + g$, four kinds of adjustment path can be derived which is mentioned before:

i. Waves would be stable and monotonic when α lies between 0 and 1 so α^t gets steadily smaller as t increase.

ii. Waves take stable and oscillating shape, when α lies between –1 and 0.

iii. Explosive and monotonic, if α is greater than 1. As time passes α^t gets larger.

iv. Explosive and oscillating, if α is less than –1, α tends to infinity as time passes.

If given values for s and v are plausible, the first order multiplier-accelerator can not generate cycles by itself. It only produces continuous (that is, monotonic) upward and downward movements.

On other interpretation can be done with the second order multiplier which contains both current income and income lagged by one and two periods.

5. HICKS' CONTRIBUTIONS

Hicks (1951) contributed three very important path to the cycle theory. Firstly, he converted his analysis from its stationary background into terms of a progressive analysis. The second contribution is that, he assumed that at any given time output is not indefinitely extensible against an increase in effective demand. There is ceiling which Keynes called full employment. The third and final contribution is that, falls in output can not induce disinvestment in the same way as rises in output induce investment. (Hicks, 1951, p.83)

Hicks' solution is imposing ceiling and floor for limiting the explosive path of multiplier-accelerator interaction. The floor is set by autonomous investment and the ceiling is determined by quantity and capital-goods industries.

6. THE MONETARIST INTERPRETATION OF TRADE CYCLES

Friedman and Schwartz (1963) examine monetary factors in economic fluctuations and the relationship between money and income in the USA. They found out that the stock of money displays a systematic cyclical behavior. The rate of change in the money stock regularly reaches a peak before the reference peak and through before the reference through, though the lead in rather variable. The amplitude of the cyclical movement in money

is closely correlated with amplitude of the cyclical movement in general business and is about half as large as the amplitude of cyclical movements in money income. The stock of money is much more closely and systematically related to income over business cycles than is investment or autonomous expenditures.

İt has also been pointed out that the close relation tells nothing directly about whether the cyclical changes in money are simply a consequence of the changes in income or are in large measure the source of those changes. Sizable changes in the rate of change in the money stock are a necessary and significant condition for sizable changes in the rate of change in money income. For minor movements they interpreted that changes in the stock of money plays an important independent role (Friedman and Schwardz, 1963, p.63).

In their studies they estimated the money multiplier, or the rate of the percentage change in income to the associated percentage change in the stock of money.

According to Nicholas Rau (1974), with regard to cyclical fluctuations, the monetarists do not claim to have a complete theory of the cycle, but have sought elements of an explanation of cycles embodying the preposition that changes in the rate of growth of the money stock are a necessary and sufficient condition for appreciable changes in the rate of growth of money income. Finally, they pointed out a transmission mechanism that could explain new monetary changes can produce cyclical fluctuations in income, and that is consistent with their studies. Their study criticized on the point of timing and causal factor. Although they concluded that income in the causal factor, also they accept that money leads income (Rau, p.50).

7. CONCLUSION

Studies in business cycles indicate important differences between the theory and empirical features of business cycles. When financial markets become more integrated, there are no strong cross-country comovements. Neoclassic economists believe that business cycles are self contracting. The business cycle is seen as a transitory deviation of economic activities from their stationary or equilibrium level. This view of economic fluctuations is consistent with aspects of neoclassical economics. Because of supply creates its own demand and hence there is stationary between the two. Hence, neoclassic situation is transitory and there is no need for governmental intervention.

Business cycle in which real output undergoes serially correlated movements about trend which are not explainable by movements in the availability of factors of production. These movements involve unsystematic monetary fiscal shocks. The role of money in business cycles demonstrates that the stock of money displays a systematic cyclical behavior. The stock of

money is much more closely related to income over business cycles than is investment on autonomous expenditures.

The neoclassical model generates fluctuations in response to external disturbances that resemble business cycles. The genesis of economic fluctuations in new classical macroeconomic economics, is errors in the formulation and execution of expectations caused by individuals in reducing the stock of unemployment by increasing the supply of labor hours when they perceive real wages to be above its natural rate on the one hand and increasing the stock of unemployment by withdrawing their labor when they perceive real wages to be below its natural rate (Gyles, 1987, p.6).

The genesis of economic fluctuations is relative divide between the numbers of "energetic innovators" and "creatures of habit". According to the physical force group of theories, fluctuations in the capital stocks are caused by supply side and demand side factors. These affect firstly production and secondly the rate of capital stock utilization, then expectations, industrial structure, namely production and industrial performance, namely relative profitability.

Fluctuations of business cycles are the unique set of causes and circumstances which are themselves unique: however, there are some causes and circumstances which are common to certain cycles at certain times. Business cycle theories need not to rely on technology shocks to explain economic fluctuations. Demand shocks with capacity utilization and mild increasing returns to scale,can play a pivotal role in explaining actual economic fluctuations.

After analyzing many theories, it is apparent that there is no precise theory of business it is still in its infancy and thus remains an incomplete theory of business cycle. One can thought that every event can be explained by its own time and conditions.

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