Keynesian Theory - the Evolutionary Basis to Change the Paradigm of Economic Development

Nikolai Mihailovich Tyukavkin [1], Inessa Vjacheslavovna Kosjakova [2], Gennady Ivanovich Yakovlev [3]

[1]Samara State University, Akademik Pavlov Str.,1, Samara, 443011, Russia
[2]Samara State Technical University, Molodogwardeiskaja Str.,244, Samara, 443100, Russia
[3]Samara State University of Economics, Sovetskoi Armii Str.,141, Samara, 443090, Russia

Abstract. The article deals with the review of the theory of English economist J. Keynes. The evolution of this theory and its transformation into new economic theory is shown based on accumulation of fundamental provisions and discoveries. The theory formation and development stages were analyzed, the economic views of J. Keynes are presented, and the comparison with "old" economic theories is executed. The main part of the work presents key differences of Keynesian approach and neoclassics. The article also presents main provisions and economic discoveries of J. Keynes and his school. The authors suggest the systematization of scientific knowledge of this theory, based on main methodological directions of this theory development; the clarifications for investigations of main Keynesian concepts are provided.
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Introduction

Starting from 1929, there was the first global economic crisis in the world, which involved the USA and some European countries. The decrease of production volumes, and, consequently, the trade, continued up to 1933, after what the next stage of crisis processes began; it got the name of "Great Depression". The lack of effective demand promoted the beginning of nonpayment and overstocking with products, bankruptcy of business and banks, acceleration of inflation and unemployment. National manufactures declined practically twice. In its turn, it caused the thirty percent unemployment of the whole working population of the states.

According to the classical economic theory and political economy, the market is a self-regulating system, and it shall recover itself the economic equilibrium in conditions of instability, providing full employment of population and full production.

However, it did not happen indeed, the market could not recover lost positions, and crisis processes continued. To overcome crisis, a new concept was required, which would provide an opportunity to recover and develop all economic processes. At that stage, a new economic direction has appeared in the science; it got a name "Keynesian theory" according to the name of the theory founder John Maynard Keynes.

Main part

John Keynes, who lived in 1883-1946, was an English economist. He was a councilor of English government on economic problems. In 1936, his work, titled "General Theory of Employment, Percent and Money" [1], was issued. It became substantiation for the whole number of economic directions and programs on overcoming the crisis and "Great Depression". J. Keynes suggested the specific variants of anti-crisis state economic policy. He also took part in organization of International Bank for Reconstruction and Development (IBRR) and International Monetary Fund (IMF) [2]. The main provisions of J. Keynes's works are presented in Table 1.

Modern world macroeconomics is mainly based on the scientific provisions and investigations, developed by Keynes, although his theory was relevant only up to 1960-1970. "The Theory of Investments and Savings" presents a special block in the works of Keynes, where he provides the main principles and factors, determining the volume of consumers' expenses, as well as the amount of their savings (Table 2) [11].

He divides the reasons, motivating people to save or to spend the earnings, into subjective and objective.

According to Keynes, the income increase results in decline of average striving of population for consumption; it drops and begins to exceed its marginal propensity. As per Keynes, the income increase also results in the decline of marginal propensity to consume [29, 33].

Table 1. Main provisions of J. Keynes's works

Item #	Main provision of J. Keynes	Content
1.	He defined a concept of "aggregate market demand" [3]	J. Keynes considered that, as distinct from classical economic theory, there is a single interconnected market, joining three markets: the one of capital, labor and marketable products. He considered them all together, and the leading role assigned to macroeconomics, to its key figure - aggregate market demand.
2.	He revealed the reasons of disturbance of aggregate market equilibrium [4].	J. Keynes proved, that the existing savings in economy are frequently not equal to the investments in their value, because the solutions on savings are made by the households, which, in this case, are determined, based on their own profit, and the solutions on the quantity of investments are determined by the companies, which are oriented at the value of the supposed net profit margin by the invested capital. That is why the solutions of investors (company) and the households on the economy investment can mismatch, and the aggregate market equilibrium will be broken.
3.	He disposed of the law, opened by Say [5].	J. Keynes disposed of the law, opened by Say. In the opinion of Say, the supply, providing the income for manufacturers, automatically generates the demand, equal in value. However, the part of income goes for savings, that is why people consciously reduce the market demand, and it can become lower, than the supply.
4.	He introduced the notions of "investment multiplier" and "income multiplier" [6].	J. Keynes introduces the notions of "investment multiplier" and "income multiplier", deriving the formulas for them. He analyzes the change in currency exchange rate and gold standard in its substantiation in his works "A Treatise about Monetary Reform" (1923) and "A Treatise about Money" (1930). The state policy shall be oriented at stabilization of internal prices, but not at the support of overvalued national currency in relation to the world one. Keynes suggested refusing from the use of gold standard as a monetary unit.
5.	He determined the organization of qualitative interconnections between groups of market phenomena [7].	Keynes divided the economic phenomena into two variable groups: -independent (constant), such as salary, the inclination of individuums to consumption, marginal efficiency of capital, interest rate etc. -dependent (variable), such as employment volume, national income, production level etc. Then, he concluded that the economists' task is to organize the quantitative interconnections between these groups of market phenomena.
6.	He introduced a notion of "effective demand principle" [8].	Keynes admitted that the main reason of the crisis in 1930 was the insufficiently small market aggregate demand. He introduced a new principle of neutralization of crisis phenomena - the principle of effective market demand. He clarifies that, in case of low aggregate demand, it is necessary to increase personal savings, the volume of which shall exceed the growth of production investments. As per Keynes, it is the savings, that can adapt to all changes in structure of possible investments, but not vice versa. It is the growth of all investments, that determine the increase of public income, resulting in saving rise.
7.	He added the employment theory [9].	Keynes developed a modern employment theory. If in the classical economics the salary rate is considered to be flexible, then, as per Keynes, the labor supply and demand cannot be regulated by the salary rate. The salary shall be stable, it depends only on labor capacity. Trade unions are against the salary cut, saying, that the salary shall exceed the minimum subsistence level, and shall provide the reproduction of labor for the workers to agree to execute the work.
8.	He explained general market equilibrium in conditions of part-time employment [10].	When the market demand falls, then, as per Keynesian model, the production volume shall also decrease, that is why the definite number of workers is dismissed. Taking into account the unemployment at the market, new market equilibrium is established. The commodity prices and salary level remain the same, but the production volume decreases. J. Keynes substantiated, that the general market equilibrium can be reached even in case of part-time national employment. From this follows, that the market equilibrium will not always be optimal. The employment of population is always determined by the general state of economy, but not only by the balanced labor market, as it was determined previously. The reduction of salary, which is the principal earner, causes the reduction of payable market demand, resulting in the reduction of labor demand and, consequently, unemployment. Keynes considered the unemployment to be the main economic problem, and he thought, that to get the general, the state shall stimulate the increase of aggregate market demand.
9.	He controverted the doctrine "laissez-faire"[10]	Keynes proved the disability of market to recover its equilibrium and withstand, and also to find the way out of the crisis. At that, the increase of state regulation and involvement into economy shall take place even in conditions of democracy.

These provisions of J. Keynes are also proved by modern economists, who also think, that even if any income changes, the marginal propensity of population to consume will remain the same. It is explained by the fact, that in the period of economic prosperity, the income of population increases and, consequently, the share of their savings in the obtained income increases as well. This provision comes to the problem, which is "a paradox of saving" in the economic theory: the population increases its savings, trying to become richer in future; it, in its turn, reduces its current consumer expenditures, consequently, the aggregate demand declines, the volumes of production and national income reduce, resulting in decline of living standards. At present, in developed countries, there is a tendency to exceed the level of savings over the level of investments, resulting in economic declines [31, 32].

Table 2. The main provisions of "The Theory of Investments and Savings" by J. Keynes.

Item #	Main provisions of the theory	Brief content
1.	The presence of subjective reasons for savings[12,13,14]	Keynes proposes the following reasons: foresight (money accumulation for deferred charges), caution (a desire to have a reserve for emergencies), prudence (a desire to get the percentage), meanness, pride etc.
2.	The presence of subjective reasons for expenses [15,16]	The subjective reasons for expenses are the following: short views, a desire to "use the life", non-prudence, generosity, extravagance and vanity.
3	Objective reasons for savings[17,19]	Keynes refers the dynamics of the following factors to them: the difference between the profit and net profit of the households, salary level, salary purchasing capacity, values of property, which returns, the supposed change of future and current income.
4.	The main factors, influencing on the volumes of consumer spendings and earnings (the disposable income) [19].	The disposable income is a factor, determining the value of consumer spendings and expenses and spendings. On its basis, Keynes introduced a notion of average propensity to save and to consume.
5.	Average propensity to save [20]	It is determined by the relation of consumer spending to earning. To develop the economy policy measures, it is necessary to know the dynamics, how the consumer savings and earnings will change in dependence on disposable income. For this, Keynes introduced a notion of marginal propensity.
6.	Marginal propensity to consume [20]	It is a relation of dynamics of consumer spendings to the income behavior. This value is equal to one in sum.
7.	The influence of household impact on saving and consumption [21, 22]	Keynes formulates this provision in the following way: "The main psychological law is that the population tends to increase its consumption with the increase of income, but not equally to the income increase" [28]. The more the income is, the less income goes for consumption, consequently, the more is the share for saving.
8	Consumption function [23]	Keynes presented the consumption formula as follows: $C = a + bY$, Where: a-exogenous variables (do not depend on the volume of income); Y— income; Marginal propensity to consume.
10.	The expected return of investments [24]	The investment return is determined as a difference between the marginal efficiency of capital and interest rate.
11.	Limiting efficiency of the employed capital [25]	The index of relation of income by the unit of new capital (main funds) again, to the replacement costs of this capital.
12	Investment multiplier or income multiplier [26]	It is a multiplier, which shows, how much the income increases due to the increase of investments. It is a relation of income dynamics to the investment dynamics. This income increase got the name of multiplier effect. It has direct and reverse direction.
13.	"Liquidity preference" [27]	It characterizes the striving of population for keeping the part of their savings in monetary form. Due to liquidity, the population has an opportunity to buy capital issues at low prices.
14	Interest rate level [28]	Keynes proved that the money demand depends on the level of bank interest rate. The money demand declines, when the interest rate increases. The presence of interest rate level, below which it is unprofitable to invest into capital issues. This phenomenon is called a liquidity trap.
15.	Stimulation of aggregate demand [16]	Keynes paid much attention to the stimulation of aggregate demand as a state regulation. In fiscal policy, he suggested to increase the state expenses, including the state investment. The emergence of budget deficit in crisis period, as well as the economic decline, in his opinion, is not a problem, and the budget shall not be balanced annually. With regard to monetary management, Keynes says, that the reduction of borrowing rate stimulates the investments.

In classical economics, this economic decline is explained as a time market deviation from equilibrium. Due to the cut of prices on goods and reduction of salary, the economy can rehabilitate its stable equilibrium quite quickly. In reality this process does to take place quickly [33]. That time, required for the market to recover, to reduce the production level and aggregate income of population, promotes the deepening of economic decline. J. Keynes explained these declines by the presence of market adjustment lag to the economic changes, and the presence of uncertainty in the future potential situation for economic parties of the market.

In his theory of decline origin, Keynes also stated about an important role of instability of level of investments into production. The main factors, that determine the volume of all investment expenditures of population and private companies is the net profit margin, determined as a difference of the profit rate, which is expected, taxes and existing interest rate [33, 34].

J. Keynes suggested a mathematical apparatus, reinterpretation and development of ideas in his "Mr. Keynes and "a Classic". He made an attempt to interpret a book by J. Hicks, published in 1937 [12]. (John Richard Hicks, lived in 1904-1989, was an English economist, a Nobel laureate (got it in 1972) for fundamental work and strong contribution into "The Theory of General Balance" and "The Theory of Welfare". J. Hicks, in the work "Cost and Capital" (1939), suggested his own model of successive equilibrium states of the market, which he named a multi-period model, and made an attempt to join current and future periods of market relations development through the market mechanism of price expectations, as well as to recover the equilibrium state [11]. The suggested by him model in modern "Economic Theory" is known under the name of the IS - LM model [34,35,36].

This model characterizes the market from the following positions: it assumes, that in conditions of market equilibrium on the existing goods market, the investments will be equal to the savings (I=S). The savings (S) can be presented as the function from income (Y), and investments - as the function from the existing interest rate (i). The required equilibrium at the market of money presupposes, that the money supply (M) shall be equal to the money demand (L) and be a function from the interest rate and consumer income. Hicks presents the model of J. Keynes in the following way [20]:

$$S(Y) = I(i)$$
$$M = L(Y,i)$$

The equation S(Y) =I(i) presents a curve IS as a geometric locus of Y and i, for which the equality of saving and investment volume shall be performed (Figure 1) [20, 37].

As per Keynes model, there is a question: to determine the investment quantity, it is necessary to know the interest rate: I=I (i). The interest rate depends on the consumer income in dependence of liquidity function. However, the income is calculated as a sum of consumer expenditures (C) and a volume of investments Y = C+I(i). In other words, to know it, it is necessary to know the interest rate.

J. Hicks suggested a way out of this situation. He began to determine the interest rate in equilibrium and the income at the market simultaneously [20]. The figure 1, (Y is along the axis of abscissa, i is along the axis of ordinates), IS is additionally curved due to transfer of all Yc values from the diagram S(Y) and i values from the diagram I(i) to the ordinate axis. In the economic theory, this curve is called a curve of Hicks - Hansen [37].

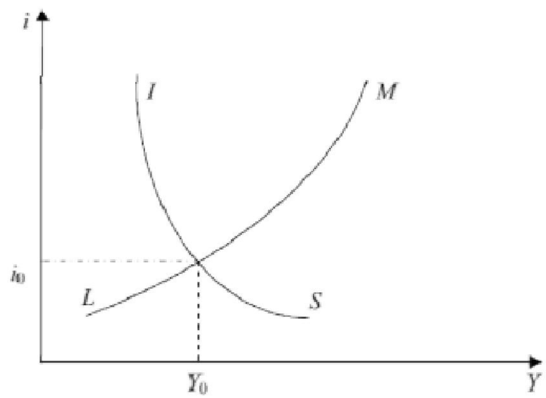

Fig.1 A model of monetary equilibrium as per Keynes.

The second equation M=L(Y,i), describing the equilibrium at monetary markets, also presents a curve ML, as well as a geometrical locus Y and i, for which the equation of volumes of money demand and money supply is performed. Due to the fact that the money supply is determined by the policy of the state central bank, then the supply does not depend on the interest rate, consequently: ML = const. To make a new curve M, based on the set value of income Y0, L0 is determined from the diagram L = L(Y). After it, based on the value L0 from the diagram L = L (i), it is necessary to set i0 and to transfer it to the ordinate axis. As a result, we get the equilibrium curve ML for different values and combinations Y and i [23].

When joining the curves ML and IS on one diagram, let us determine their cross-point, as an equilibrium value of interest rate and income. In modern economic science this diagram is called a Hicksian cross.

Here definite curves ML and IS correspond to each value of price level. Changing the price value, it is possible to determine the values of final curve PY, which describes the simultaneous equilibrium of both monetary and goods market. It is this curve, that shows the dependence between the price levels and volumes of good sales.

Conclusion

The analysis and systematization of Keynesian theory shows, how the theory was developed and distributed in science in the last years. In current moment, it is a main part of the modern economic science.

Corresponding Author:
Dr. Tyukavkin Nikolai Mihailovich
Samara State University, Akademik Pavlov Str.,1,
Samara, 443011, Russia.

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