

KNUT WICKSELL

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Knut Wicksell was born on 20th December 1851 in Stockholm. His mother died when he was seven, and he also lost his father when he was 15. After the death of his parents, Knut and his siblings lived with relatives. His inheritance from his father was enough to cover the cost of his education. Young Wicksell showed an interest in the study of languages and mathematics. In spite of the



fact that he was a believing Christian in early youth, he later abandoned religious faith and became a freethinker and a critic of all forms of the Christian religion. In 1869, he began to study mathematics and physics at Uppsala University. In an effort to support himself during his studies, he taught at a secondary school in Uppsala and worked as a private teacher.

In spite of the fact that he gained his university education in mathematics, Wicksell's interest in social questions afflicting society led him to newly emerging social sciences. He attributed the alcoholism widespread among workers to their poverty and the monotony of their lives, the prostitution to the fact that wages of young workers were too low for them to be able to start families, and so they sought services of prostitutes. He often lectured to the public, including workers, he analysed their social problems and sought ways to solve them. In the period 1885-1889, Wicksell spent several years studying abroad. Thanks to a private grant he obtained, he studied works of some classical economists in London. Later he studied in Strasbourg, Vienna and Paris. At Vienna University, he attended lectures of Carl Menger.

After his return to Sweden, he again had to resolve the problem of earning his living. In this period, economics was taught at law faculties, and those who wanted to teach it, needed at least a bachelor's degree in law, as well as a doctorate in economics. Since he did not fulfil this condition, Knut Wicksell had to return to the lecturing for the public and writing articles for newspapers. In this period, he began to give more detailed attention to issues of monetary theory and problems of taxation and public finance. In 1896, he gained a doctorate in economics at Uppsala University, with a dissertation in the area of public finance. Then he applied for teaching positions at the Uppsala and Stockholm universities, but gained neither of them, because

he had not completed the study of law. Therefore, in the following years, he concentrated all his efforts to fulfil this condition. He succeeded in gaining the bachelor degree in legal sciences in less than two years. In 1900, he became a part-time professor at the University of Lund, and in 1904, he became a full professor at the age of 53. He was popular among students for his friendly attitude to them. When he found out that students lacked basic knowledge of economics, he shifted from the explanation of pure economics to the teaching of applied economics. For example, in his lectures he devoted attention to problems of the organization of agriculture and industry, commerce, economic recessions and inflation.

After retiring, Wicksell returned to Stockholm. This period of Wicksell's life can be described as very active and productive. He acted as an advisor to the governor of the Swedish central bank; he was a member of the parliamentary committee for banking and credit and the committee for the taxation of income and property. He wrote numerous articles analysing up to date economic situation in Sweden. In Stockholm he also actively participated in work of the Swedish Economic Association, in which he significantly influenced the rising generation of Stockholm economists, which entered the history of economic thought as the Stockholm School.

Knut Wicksell was married and had two sons. He died on 2nd May 1926 at the age of 74.

Wicksell's Economic Views – the Theory of Marginal Productivity, Capital and Interest

In his works Knut Wicksell rejected the understanding of economics as a pure science and emphasized that individual economic theories are directly connected with particular times and places. The mainly formal character

of his analyses and a frequent use of mathematical apparatus to solve economic problems can be attributed to Wicksell's mathematical education. He was a supporter of theories of the neo-classical school of economics, which he spread and promoted in Sweden. He accepted the marginal utility theory as a basic method for determining the value of goods, but he was critical to the appro-



ach of the Austrian school, when he pointed to the problematic nature of comparing the absolute size of utility among different individuals, which was supported by this school.

The contribution of Wicksell to the development of economic theory is many sided. He contributed to the development of the theory of marginal productivity, he made a crucial contribution to the theory of public finance, and he contributed to the monetary theory by the further development of the quantity theory of money and with his theory of interest and money. His theory of the business cycle attracted interest. The attention he devoted to aggregate variables opened the way to the further development of the macro-economic analysis.

In his formulation of the theory of marginal productivity, Wicksell emphasized that if we analysed the results of production as a function of the production factors used, then every factor would need to be used to such an extent, that a small reduction in the quantity of the production factor used should lead to a decline of output to the same degree as the output brought by the last unit of any production factor used in the production. Thus, Wicksell's theory determines the functional distribution of output among individual production factors on the basis of marginal productivity.

Wicksell started from the assumption of the use of two primary production factors, labour and land, and capital was built into his production function indirectly. In this model, the wage of a worker is determined by his marginal productivity, rent is regarded as the residual of the product. Changes in the technology lead to changes in the quantity of labour and capital used. With the progress of accumulation, the marginal productivity of capital has a tendency to decline, in spite of the fact that the share of capital in the creation of the total product may increase in absolute terms. Assuming the full employment Wicksell thought that the accumulation of capital can occur only if savings grow faster than the labour force. However, competition for resources creates the pressure on the growth of prices of production factors, and so the growth of real wages absorbs part of savings. This thesis is known in economics as Wicksell's effect. Wicksell assumed that if perfect information flow existed in the market, a businessman would foresee this effect and adapt to it. However, if the assumption of perfect information is not fulfilled, Wicksell's effect may appear.

The theory of marginal productivity led Wicksell to the theory of capital, in which he devoted primary attention to the problem of the accumulation of capital and its influence on distribution. In his theory of capital, the time element comes into the forefront. According to Wicksell, the marginal productivity of accumulated stock of labour and land is higher than the marginal productivity of labour and land. This difference can be expressed by the marginal productivity of waiting, which is quantified by the

interest. The equipment of any company with capital, then, depends on the total quantity of accumulated labour and land during the time period, in which this labour and land was invested. Wicksell realized the unlimited nature of the accumulation of capital, since its available quantity could be constantly increased with savings. This illustrated his efforts to dynamize economics, which was also typical for other Swedish economists.

Wicksell regarded a well functioning credit system as a precondition for a smooth functioning of an economy. The primary task of the credit system is to mediate exchange. The level of interest rates has an important function here. It is possible to look at it as a real or „natural“ interest rate, which expresses the „real“ price of capital, and would exist in an economy, even if money did not exist. The real interest rate expresses the difference between the productivity of accumulated labour and land and their present productivity. The second form of interest rate is the „monetary“ or market interest rate, which exists in the financial market and oscillates around the real interest rate. According to Wicksell, the real interest rate must be the same for all businesses and for all uses of capital at any moment. Thus, there exists an equal mutual share between the value of accumulated and present quantities of individual production factors. According to Wicksell, any imbalance in this respect would lead to a change of the value of capital and subsequently to a change in the relationship between industries producing capital and consumer goods. The level of interest rate is the result of supply and demand for real capital. Technical progress leads to the increased demand for capital and the population growth leads to the decline of the supply of capital due to the absorption of savings in a Malthusian tradition. Thus, the total interest is divided on the basis of the marginal productivity of individual components of real capital.

Wicksell's Monetary Theory

Wicksell also occupies an important position in the history of monetary theories. He is regarded as the formulator of the „cumulative process“, the mechanism, which explains how deviations of the monetary (market) interest rate from the real (natural) interest rate lead to changes in price levels. If the monetary interest rate is below the level of the natural interest rate, the price level rises and vice versa. Wicksell's influence on the views of J.M. Keynes about monetary problems and on the views of I. Fisher is often pointed out.

Wicksell's monetary theory was developed at the end of the 19th century, when there was much discussion about the need to maintain the gold standard, falling prices led to demands for the introduction of bimetallism and consideration of other possible ways of organizing



the monetary system. Doubts appeared about the validity of the quantity theory of money, and the demand to use banking operations primarily for the control of credit resources came to the forefront. Wicksell's monetary theory was formed on the background of these discussions.

The aim of Wicksell's analysis was to define conditions for the stabilization of price level. He regarded interest rate policy as a mean to achieve this aim. As already mentioned, Wicksell regarded the cumulative process of changes in prices in an upward or downward direction as a result of a discrepancy between the real and monetary interest rates. According to Wicksell, growth in the quantity of money leads to the increased reserves in the banking system. When banks find out that they have excessive reserves, they decide to increase the quantity of loans, so they decrease the interest rate. As a consequence of this, the market (monetary) interest rate falls below the level of the natural (real) interest rate, which is determined by the marginal productivity of capital. This encourages businessmen to borrow more, and so increases the demand for investment goods. At the same time, savings decline and the demand for consumer goods increases. Therefore, increased bank credit brings about the growth of overall demand. On the other hand, the supply remains unchanged, since this model is based on the assumption of the full utilisation of production factors. Overall demand will be higher than the supply, which will put the pressure on the increase of prices and wages. This is a cumulative process in the sense that it will continue as long as the monetary interest rate is below the real interest rate. The process stops only when the internal banking resources, which led to the cumulative process, are exhausted. In an attempt to stabilize the price level, therefore, the monetary policy authorities should attempt to raise the monetary interest rate to the level of the real one. In spite of the fact that Wicksell did not assume that the price level declines to the original level, he held the view that this measure creates pre-conditions for establishing a new equilibrium. Wicksell's theory of interest rates was received with a great attention, but also became a subject of criticism. It was most criticized for the assumption that the real interest rate was equal for the whole economy as well as its primary formulation to the economic system based on the natural exchange.

Wicksell regarded money in the first place as a medium of exchange. He was a supporter of the quantity theory of money, but he considered that it needed to be supplemented to make it a useful instrument of analysis. According to Wicksell, monetary factors determine the overall price level, but changes in relative prices of goods occur under the influence of other factors. He regarded the analysis of aggregate supply and demand as an important element in the understanding of the processes, which underlie the development of the price level.

For example, he regarded excessive aggregate demand as an important source of pressure on the growth of prices. He thought that the main aim of the monetary policy – the stability of the price level, could be achieved when the economy is in a state of a general economic equilibrium that is in a situation, when the aggregate supply is equal to the aggregate demand, and productive resources are fully utilised. Disequilibrium will lead either to an excessive demand or to a relative surplus of goods and production factors.

In the area of practical monetary policy, Wicksell expressed doubts about the need to preserve the gold standard. He also demanded that transactions in international trade should be carried out on the basis of clearing agreements. He demanded the strengthening of the functioning of banking supervision. Among the instruments of monetary policy, he required an active use of open market operations and a discount rate policy.

His theory of the business cycle can also be partly regarded as a part of Wicksell's monetary theory. By connecting monetary and real factors, he attempted to explain the cause of cyclical fluctuations of market economies. According to him, the primary causes of a recession lie in real factors. On the basis of Wicksell's view, he has been identified as a forerunner of a real business cycle theory. Wicksell saw the real causes of cyclical fluctuations in the contradiction between the population growth continually raising consumer demand and technical progress, which shows substantial fluctuations. Changes in the technology and the population growth cause changes in the real interest rate, which influences especially branches producing capital goods. However, according to him changes in the monetary interest rate occur with greater problems, since banks only rarely make changes if they are not forced by external circumstances to do so. In his theory of the business cycle, Wicksell attempted to connect investment and the function of money in the economy. This opened the way to the explanation of processes, which occur when the economy is put into motion. This analysis acquired its final form with the later introduction of the multiplier and the consumption function by Keynesian economists. However, it is impossible to avoid mentioning that Wicksell's analysis started from the Malthusian tradition, in the background of which the threat that the population will grow faster than the resources is hidden. Wicksell also held the view that if the size of population was stabilized, it was necessary to widen the activity of the public sector directed towards the support of private sector activities.

In spite of the fact that Wicksell's theory is primarily anchored in the area of the micro-economic analysis, already around 1900 his theory of the business cycle and his monetary theory founded the tradition of looking



at economic problems from the aggregate point of view. It was continued by economists of the Stockholm School, many of whom can be regarded as Wicksell's pupils.

Contribution to the Theory of Public Finance

Knut Wicksell made a fundamental contribution to the development of the theory of public finance. He criticized the regressive impact of the Swedish tax system of that period. He supported the utilisation of a progressive system of taxation of personal and corporate income, as well as of property. In case of decisions about spending programmes, financed from public resources, he called for the application of marginal analysis and the comparison of benefits of the proposed spending programme with the additional tax burden needed to finance it. If services provided by the new public spending programme bring advantages to all taxpayers, as in the case of the construction of roads or railways, according to Wicksell, the additional tax burden should depend on their ability to pay. However, if a given programme brings advantage only to a certain part of tax payers, Wicksell thought that it should be financed on the basis of the so-called utility principle, and put the additional tax burden only on those tax payers, who would benefit from it. When constructing the tax system, he demanded the maximum possible degree of unity. According to Wicksell, the application of these principles would facilitate political negotiations and agreements about these questions, which are often politically very sensitive.

Wicksell also realized imperfections of the electoral systems used in democratic societies to decide about fiscal questions. He pointed to the fact that situations could arise, when the majority of voters could vote to force the minority to bear the cost of approved spending programmes, although the programmes would not be useful to the minority. Wicksell regarded the system of unanimous voting as the only way to prevent some individuals to transfer the cost of their decisions to other individuals. Wicksell demanded that the approval of important fiscal measures should require the agreement of all

voters (the so-called Wicksell's unanimity). However, he realized that the agreement of all voters, especially in case of a more numerous group of voters, would be associated with significant costs of negotiations and convincing of voters. The ability to veto decisions would also give every voter a significant position in the negotiation process. Therefore, Wicksell replaced the requirement for unanimous agreement with a notion that important fiscal decisions, such as the state budget, should be approved by a qualified majority. Wicksell regarded the development of democratic political institutions as an important pre-condition for improving the tax system. Therefore, he supported the introduction of universal suffrage and the broad movement of workers as a basis for a transition to a wider democracy. His criticism of electoral systems used in democratic societies and the analysis of further problems of the functioning of the public sector attracted the attention of representatives of the public choice theory, especially of a Nobel Prize winner for economics - James Buchanan. This part of Wicksell's theory became one of theoretical sources for the public choice theory.

During his life Wicksell did not gain much recognition for his contribution to economics. His views became the subject of research and further analysis by many economists only after his death, when the translation of his most important works into English made Wicksell's ideas accessible to the international academic public. His work from 1898 „Geldziins und Güterpreise bestimmenden Ursachen“, translated into English by R.F. Kahn and published in 1936 under the title „Interest and Prices. A study of the Causes Regulating the Value of Money“ (London, Macmillan), is regarded as Wicksell's most important contribution to the monetary theory. Considering Wicksell's contribution to the development of economic sciences, it is also necessary to emphasize that his pioneering work in the area of analysis of aggregate demand and aggregate supply opened a Swedish tradition, which later found the expression in the form of the theory of the Stockholm School, which is to a large extent regarded as a parallel to Keynes' General Theory.

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