THE MINIMUM WAGE IN THE NEOCLASSICAL AND THE BEHAVIOURAL LABOUR MARKET THEORY

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Abstract

The question of the minimum wage has been constantly discussed in scientific economic literature. The dominant economic paradigm is neoclassical economics, which must cope with the attacks from modern streams of economic thought. The article analyses the fundamental differences in the approaches of the mainstream neoclassical and modern behavioural approach to labour economics.

The comparison of the neoclassical and behavioural interpretation of the minimum wage points to the basic differences in the approach to the minimum wage. Neoclassical economics is founded on the theoretical basis of the competitive market and presents a reserved attitude to the minimum wage. From the position of positive economics, it demonstrates the decline in employment and the rise in unemployment as a consequence of this external intervention into market forces. It is, in essence, considered as inefficient redistribution, which acts as demotivation. Behavioural economics stems from imperfectly competitive labour markets and applies a normative approach: it articulates what the minimum wage should be. This line of reasoning leads to the concept of a "living wage" and a "social wage".

The empirical studies support both the neoclassical and the behavioural approach towards labour markets. It would seem suitable to consider markets according to the type of competition and treat them differently regarding impact assessment and eventual minimum wage introduction.

Keywords: neoclassical labour economics, rational choice model, behavioural economics, minimum wage

JEL Classification: D01, D91, J40

Introduction

The question of the minimum wage is persistently debated in scientific papers and has a long history. The development of views on the minimum wage is inseparably linked to schools of economic thought and their influence in the sphere of labour economics. The dominant economic paradigm is the neoclassical economics that must cope with attacks from modern streams of thought. The aim of this article is to elucidate the basic differences between mainstream neoclassical economics and modern behavioural approaches to labour economics, specifically, the comparison of the neoclassical and behavioural interpretation of the minimum wage.

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The starting point of the article is the position supported by most behavioural authors in relation to the neoclassical economic paradigm. The behavioural approach does not want to eliminate or replace the paradigm of neoclassical economics; neither in the field of labour economics nor its model of the market agent. While using several examples from the real functioning of labour markets, the behavioural approach demonstrates that standard neoclassical explanations and predictions are often simplified and incomplete. By also using psychological concepts, it is clear that we gain a more distinct and broader insight into the behaviour and decisions of the people in the labour markets. The behavioural approach calls for an interdisciplinary basis for explaining agents' actions in the labour market and encourages greater openness of the economics towards the research of other disciplines (e.g., see Thaler, 2016; Etzioni, 2011; Cahuc and Zylberberg, 2004; Manning, 2003; Kaufman, 1999).

1. Core Concepts and Principles of Neoclassical and Behavioural Economics

The labour market economics that explains and predicts the behaviour and decision-making of agents on the labour market is elaborated on by various schools of economic thought. The dominant economic paradigm for this area is undoubtedly neoclassical economics. This is based on methodological individualism because only the individual can act, decide and have his or her preferences and goals that govern his or her conduct towards maximising his or her own utility. The individual preferences of each person in the neoclassical paradigm are consistent and independent from his or her past or expected future consumption or the preferences, actions and experiences of anyone else (e.g. Becker, 1996). People are confronted in this process with a scarcity of resources and income or time; therefore, they decide in the space shaped by the limitations of their constraints.

Neoclassical economics has a rational choice model, where the rational subject (*homo economicus*) decides who measures the costs and profits of every possible alternative (*cost-benefit analysis*) and chooses the one that gives them maximum satisfaction. He or she acts in the market system managed by Smith's *invisible hand* and by intervening institutions and legal rules. This system tends to the perfect competition in the long term. The competitive market generates an effective equilibrium through the interaction of market supply and market demand. Equilibrium wage and equilibrium employment maximise the welfare of all agents. The firms pay wages for cleaning the market and employees make only the necessary effort.

The formalisation and axiomatisation of economic relations in the neoclassical labour market models developed since the times of J. Hicks, i.e. since the 1930s and supported by, for example, M. Friedman and G. Becker, have reached a high level. For other economists, this is a sign of their distance from true, real labour market relations. They formulate a fundamental objection: the models with a high degree of abstraction are not able to adequately explain the actual behaviour of subjects in the labour market (Kaufman, 1999; Thaler, 2016).

They point out that the labour market realities are somewhat different. There are subjects with different market power on the labour market. Employers have a dominant position, primarily determined by greater market power and a higher level of information, and they apply this when bargaining, in particular, for wages, while employees have

a market power that is disproportionately smaller (if they do not have any exclusive capability they can offer) and their information is imperfect. It is only market power and information asymmetry that is a fundamental fact that defines imperfect competition in the labour market, whether it has a specific form of monopsony, oligopsony or monopsonistic competition (Card and Krueger, 1995; Manning, 2003). Wages are often decided on a collective bargaining basis, which reflects the decision-making of institutions, firms and trade unions. Challenges to the current institutional order change the outcomes of the labour market: wage and employment. The concept of markets governed by formal and informal sets of rules established by firms, trade unions or the state to determine the hiring of workers, filling vacancies, promoting employees, relocations, temporary dismissal and or retirements, has become the basis of the dual market theory (Doeringer and Piore, 1971). In the conditions of imperfect information, asymmetric market power, conflict, and non-cooperative strategies, one becomes under the influence of institutions that set the rules, deform markets and place obstacles and constraints on the rational behaviour of market agents.

Over the last few decades, we have witnessed renewed interest in behavioural economics.[1] The supporters of behavioural economics emphasise the role of psychological and social variables that influence human behaviour and decision-making in markets and cannot be embedded in the definitions of rational behaviour. They point out that the real behaviour of people who are making decisions differs from the assumptions of neoclassical economics because psychological, social or anthropological factors are absent. Internal human psychological processes that determine, for example, the origin of needs, the perception and processing of incentives and information are seen as a "black box". The performance of the worker and thus their achievable wage rate can also be influenced by the psychological characteristics and individual psychological processes – the so-called *behavioural trait* of an individual (Bowles, 2001). The standard model of a market agent is perceived as simplified and incomplete from this point of view.

Behavioural economics can be defined as a combination of both psychology and economics, which examines what happens to the markets when some agents are exposed to their human limits and other complications (Mullainathan and Thaler, 2000); as an area focusing on the empirical validity of neoclassical assumptions about human action, whereby these assumptions are found to be invalid, and dealing with describing the behaviour, which is more adequate to reality (Calhoun, 2002); as an area oriented to increasing the realism of the psychological basis of economic analysis with the aim to achieve better predictive abilities (Camerer and Loewenstein, 2004). Etzioni (1990) defined behavioural economics briefly and comprehensively as the psychology of economic choices. He emphasises that one is never completely free from social and societal influences. Individuals cannot be examined as atomised entities, outside the social context, without interpersonal relationships. Kahneman (2003) emphasises that the benefits cannot be separated from emotions and the paradigm that ignores it is unrealistic and leads to predictions that do not maximise utility.

The followers of behavioural economics do not step out in a radical way, do not strive for a fundamental change in the economic (i.e. neoclassical) paradigm; they only want to

1 Based on the works of D. Kahneman and A. Tversky, influential psychologists; some contributions in this spirit were written e.g. by G. Akerlof, R. Thaler, B. Kaufman.

supplement it and expand it by including psychological factors into economic analyses, thereby increasing their relevance and explanatory and prediction skills. Thaler (1991) recommends modifying assumptions in a standard economic paradigm in the direction of greater psychological realism; and to incorporate psychological factors into economic analysis, allowing a better understanding and prediction of market participants' behaviour (Thaler, 2016). Kahneman (2003) wants to maintain the basic architecture of the rational choice model and extend it to other variables, including intuition. Etzioni (2011) points out that after the further expansion of behavioural economics on the microeconomics decision making, a new paradigm may be on the agenda.

Agent

The neoclassical market agent aims to maximise utility (or another form of satisfaction). They have a set of needs and build a preferential scale on them. The cost-benefit analysis method calculates, assuming complete information, the optimal path to achieve maximum utility.

The psychologists define *the self-concept* as a specific psychological entity (Kaufman, 1999), which has its internal motivation (*intrinsic motivation*) for the explanation of behaviour and cannot simply be rationalised into responses to externally established motivation (*extrinsic motivation*) (Epstein, 1993), how the rational choice model assumes.

The psychological concept of *self* is shaped by the direct and unique experience and individual interpretation and evaluation of interactions with others. Part of it is based objectively: it is determined, e.g. by gender, employment, job position; another part is formed by subjective impressions and experiences. These internal motivations may be inherited or acquired. Unlike the model of rational choice, where the agent responds only to changes in the surrounding external environment, the behavioural human agent responds to their internal motivation.

The concept of *self* has important links to the understanding and interpretation of human action in working relationships, for example, on work effort. If work is the source of a negative utility (*disutility*), as neoclassical models assume, then workers have a motive to work only with the least effort required. The firm must then invest in controlling and monitoring workers and the results of their work or pay them wages according to selected motivational scenarios, (i.e. wages higher than equilibrium). They can also be motivated internally so that work is not disutility, but a utility in itself and makes the work interesting, creative, and free. Then the work is perceived itself, respectively its results, as an internal satisfaction for the effort made and the worker is motivated to work well because they enjoy the work and are interested in it. The firm does not need to spend such financial resources on supervision and control. The productivity of workers is improving. In addition, it contributes to the workers´ feeling of satisfaction. Surveys show that most people regard gratifying work as an important factor for satisfaction, often more important than income (Kaufman, 1999).

Kaufman (1999)[2] suggests broadening the standard model of a market agent with psychological aspects; he elaborates three psychological constructs: *motivation* (leading to behaviour), *cognition* (mental processes of gathering and processing information) and

2 He refers to the influential works of the psychologists D. Kahneman and A. Tversky.

emotions (subjective mental sensation). Kaufman divided the process of human action into five steps: The first is to set the target as the central element of the motivation process. In economics, the aim is usually maximisation of utility. The second step is choosing how to achieve the target. This is influenced by the human agent himself, their needs that determine the order of preferences, and then the external environment where the agent is located. The third step is a decision that includes the process of perception and reasoning in addition to the person of the active agent themselves. The following step is the action to achieve the maximum utility. The last step is the change of utility resulting from the actions taken. Throughout the process of human action, Kaufman also included psychological theories based on three of the above-mentioned fundamental psychological processes: motivation, cognition and emotion, and points to their role throughout the decision-making process. By including the psychological image, Kaufman increases the level of complexity of the model.

Preferences

Neoclassical economics assumes that preferences are given, consistent, and result from subjective individual needs (Becker, 1976). If something changes, it is an external environment. The subject responds to a change in income or prices that affect its budget constraint and, eventually, other external signals coming from the market. They do not address the issue of how the preferences are formed. The Nobel Laureate P. Samuelson (1983) wrote that economics left this question to be answered by psychology and sociology. The economists consider preferences as given and constant.

From the psychological point of view, this assumption is difficult to accept because one develops and responds to incentives and social environment. The preferences of one person are influenced by the preferences of others with whom they are in social contact and with whom they are compared. Preferences change over time (Kaufman, 1999).

According to neoclassical economics, with the growth of an individual's income, his or her utility also increases as it reaches a higher combination of goods. Is that really true? This is true if the individual's income grows relative to other people's incomes. People like comparisons with others, the relations are important. If the incomes of all the people grow at the same rate, the utility of the individual remains relatively the same.

In the neoclassical "income-leisure" model, the hours of work depend on wage rates, on achievable income, or on changes in technology in domestic production or in a married woman's case, on the change in her husband's achievable wage rate. These are objective factors that change the environment, i.e. extrinsic motivation. An increase in the hours of work in the labour market over time is traditionally explained by real wage growth and more expensive leisure time, by improving household technologies, and by increasing education and job opportunities for women. It can also be a change in preferences. The change in preferences is something different and concerns the human agent and their perception, feeling, i.e. intrinsic motivation.[3] People may want more work in order to gain more experience and competencies. And that is the psychological explanation (Kaufman, 1999).

3 For the *extrinsic and intrinsic motivation* concept, see Kreps (1997).

Imperfect Rationality

Conventional neoclassical economics makes clear assumptions about the ability to make decisions with each agent. The agent has the necessary information, knowledge of the environment and the intellectual and mental ability to successfully calculate a choice that maximises utility. He or she behaves rationally.

The assumption of objective rationality is criticised as unsustainable. Simon (1982) claims that people do not have the brain capacity necessary to create optimal calculations. He offers an alternative form of *limited rationality*, which takes account of the cognitive limits and the possibility to be content with less optimal solutions. This has additional implications for behaviour in the labour market. The concept of incomplete information necessarily brings a degree of rational ignorance. Limited brain capacity (in the sense that the brain is not omnipotent) also means limited cognitive abilities. Then there is the emotional state of mind of each person, which restricts rational thought processes. These are, for example, passion, enthusiasm, and frustration. The lack of rationality is replaced by other abilities, emotions, ethical norms, social ties (Elster, 1998). In relation to the rationality of decision-making, we can also consider the influence in terms of the deterioration or improvement of the decision-making quality.

While neoclassical economics works with rational, elaborated choice, according to Kahneman (2003), the intuitive choice is an essential characteristic of the human agent's choice. Intuitive choices are impulsive, fast, and emotional. They claim that there are more intuitive than rational choices from the total number of the subject's choices. People predominantly decide not according to calculations but according to what they decide at that moment. These decisions are far from rational calculus, they are imperfectly rational. The real paradigm of decision making is a combination of intuitive choices and rational behaviour.

2. Minimum Wage Debate

The cardinalists Marshall and Pigou understood the minimum wage as a redistribution of income to low-income workers. The basis was the utilitarian argumentation based on the law of decreasing marginal utility. Because the marginal income utility is lower for a man with a high income than for a man with a low income, when a person with a high income gives the last unit of his income to the person with a low income, the loss of utility for the former will be lower than the increase of utility for the latter. The total wealth of society understood as the aggregate value of individual utility (in the spirit of most goods for most people) will be increased. This was a strong argument for the redistribution and support of the minimum wage concept.

The ordinalistic concept of utility did not accept its interpersonal measurability and defined the criterion according to which societal utility only increases if the increase in one person's utility does not diminish the utility of the other (*Pareto's efficiency*). Those that gain are potentially able to compensate those who lose and still have a better situation (*Kaldor's and Hicks's compensation test*). Pareto's criterion that refused to aggregate individual utilities and interpersonal comparisons of utility does not provide scientific justification for a minimum wage.

Neoclassical economics analyses the minimum wage from the positions of a positive economy. It is interested in relations between economic variables and the impact of changes in some of them. On the competitive market, there are actors with the same bargaining power, where both the employer and the employee are recipients of the market wage and nobody can raise or lower the wage. Workers are paid according to the value of the marginal product. Such a labour market protects employees with zero costs and competition ensures economically optimal working conditions.

For neoclassical free market economics, the minimum wage is outside intervention limiting the "invisible hand" and reduces the efficiency of its operation. If the minimum wage is set above the equilibrium wage, which is particularly relevant for labour markets with low-skilled and young inexperienced workers where the market wage is low, then it lowers employment and increases involuntary unemployment. The Marshall-Walrasian line of the self-regulating market was followed by the economists from Chicago University (Stigler, Friedman) supporting the idea of a positive relationship between the minimum wage, possibly its growth, and the scale of involuntary unemployment. Their followers are current economists such as Manning (2003), Cahuc and Zylberberg (2004), Neumark and Wascher (2008), who confirmed the neoclassical-Chicago position in empirical research by pointing to the increasing involuntary unemployment of low-skilled and young workers whose labour market participation is the most vulnerable to the minimum wage. They present a negative view of the minimum wage.

In the 1990s the *new economics of minimum wage* became the challenge for neoclassic mainstream labour economics, whose representatives, aided by empirical research, demonstrated that the rise in the minimum wage did not reduce employment, did not increase involuntary unemployment and supported the minimum wage. These were especially Card and Krueger (1995) and Katz and Krueger (1992). Their empirical findings have not confirmed the competitive market model; on the contrary, they develop a model of dynamic monopsony, which gives a theoretical basis to their empirical findings. In this model, there is no negative effect on employment.

The core of the debate is the question of which model better reflects labour markets where low wages are paid: competition or monopsony? If the introduction or increase in the minimum wage reduces employment and increases unemployment, then empirical data shows that these labour markets are much closer to the model of the competitive market. If the effect on employment is zero or even positive, then the market situation is close to monopsony (or monopsonistic competition). Both sides of the debate have their supporters.

Neumark and Wascher (2007) claim that the minimum wage has a statistically significant negative effect on employment, which allows them to conclude that labour markets where low wages are paid can be meaningfully modelled solely by the neoclassical competitive model. The real effect of the minimum wage is the reduction of jobs for workers with low education and limited opportunities for training programmes for young workers with no education (Neumark and Wascher, 2008). This follows Stigler's assertion that the markets with low wages are competitive (Stigler, 1946). The minimum wage should, according to its supporters, reduce the poverty of low-income households and distribute income towards low-income households and thus promote the normative aim of social justice. According to its critics, these aims are not fulfilled by the minimum wage (Stigler, 1946; Sobel, 1999; Leonard, 2000).

Behavioural economics, on the other hand, assumes imperfect competition on the labour markets, where the distribution of resources and rights puts the employer in a dominant position in terms of negotiating, and the workers in a dependent position. As a result, market competition cannot protect wages and working conditions; therefore, a mechanism is needed in the direction of greater equality and social justice.

The basis of the behavioural concept of the minimum wage is a normative and ethical concept. Modern behavioural proponents of the minimum wage are based on a normative position, which is a concept describing what the minimum wage should be, and respectively, what it should cover. Kaufman differentiated the economic *concept of needs* and the *concept of wants* (Kaufman, 1999). *Wants* are desired and wished for the subject, and their fulfillment brings satisfaction, utility. They are important in economic models of economic behaviour because they stimulate active behaviour. *Needs* are explained by the behaviorists as necessity inevitable needs, i.e. the necessity of securing at least a minimum level so that one can function effectively. Some needs of this type are given biologically (a certain level of consumption of food, beverages), others socially, e.g. contact with other people, the need for respect by others. This line is represented by the concept of *living wage*. It is defined as an income that a man must have in order to obtain goods, such as food, objects for everyday use, for medical care and so on, necessary to save life which cannot be evaded (the condition of continuity and nonsatisfaction) – reference in the sense that more is better than less (Kaufman 1999).

This wider concept of minimum wages fulfils the idea of so-called *social costs*. Adam Smith (cited in Kaufman, 2010, p. 445) wrote that "a man must always live by his work, his wages must be at least sufficient to maintain him." In this sense, later S. and B. Webb (1897) wrote that the minimum wage eliminates *sweating* on the job market by providing workers with a reasonable standard of living. Clark (1923) analysed the "national minimum" as a necessary level in forms of wage, earnings and benefits. From this idea, as Kaufman points out (2010), the concept of *social wages* has developed. The wage paid to a worker, as he explains further, must cover not only the cost of sacrificing their time but also ensure the saving of their human capital, the wage must cover in the long run those labour costs such as minimum health costs, minimum retirement, minimum income during a time of unemployment, minimum income for dependent children. Firms should pay such wages and include them in the prices of their products.

3. Selected Empirical Studies Overview

In a number of empirical studies, support can be found for both the neoclassical model and the institutional and behavioural approach to the minimum wage. It is shown that the low-qualified labour markets tend to be closer to the competitive model and, therefore, there are some negative effects on employment, while highly-qualified labour markets tend to present the features of imperfect competition. Dickens et al. (1999) argue that the empirical labour market research supports the theoretical monopsony model where the increase of a minimum wage raises labour productivity and, therefore, also employment. Manning (2003) also supports the prevailing market structure of monopsony or another type of imperfect competition, oligopsony or oligopsonistic competition, for the labour markets.

An important study on the influence of the minimum wage on employment was written in 1982 (Brown et al.) and stated that a rise in the minimum wage reduces employment. Based on the data from the USA, Brown et al. confirmed the statistically significant negative effect of the minimum wage on the employment of teenagers who are one of the most vulnerable groups: a 10% increase in the minimum wage reduces employment by about 1 – 3%.

One decade later, a study with the opposite results was published. Card and Krueger (1994) examined the influence of the minimum wage on employment in fast food restaurants in New Jersey and Pennsylvania using the Difference-in-Differences (D-in-D) method. Their findings proved to be inconsistent with the conventional competitive market model. The comparison of minimum wage development in New Jersey and in Pennsylvania where the minimum wage stayed constant did not show any negative effect on employment. This finding became the subject of scientific discussion in the following period when it had its supporters and opponents (see O´Neill, 2015). O´Neill (2015) supported the conclusion of a small or no effect of the minimum wage on employment.

De Linde Leonard et al. (2014) points out the fact that politicians usually introduce the minimum wage when unemployment is high, or an increase is expected, which eliminates the negative effects on employment. Using the panel data from the UK and the method of fix effects, they supported a significant negative effect on employment in residential care services and in the retail trade. They recommend considering the introduction and regulation of the minimum wage differently according to sectors.

In 2015, a study of Neumark (2015) was published, which examined the national minimum wage in the USA and supported the negative effect on the employment of low qualified workers. The effect was found where there was a difference between high and low qualified workers. According to Neumark, the minimum wage influences the employment of low qualified workers. There is an interesting finding by the authors that with the rise of the minimum wage, it comes to "labour-labour" substitution where the low-qualified workers are pushed out by the highly qualified ones ready to work for minimum wage. These are preferred by firms. This leads to the reduction in positions for low-qualified workers although the minimum wage should help them.

Allegretto et al. (2017) confirmed in their research on panel data for the USA that a minimum wage does not have any significant impact on the employment of teenagers. They note that their employment was low even before the introduction of a minimum wage and is influenced by already existing trends.

The unemployment of young people in the EU was examined by Laporšek (2015). He analysed inter alia the dramatic rise of the minimum wage in Slovenia with its consequence of doubling the number of the minimum wage recipients. His analysis using the D-in-D method confirmed the negative effect on the possibility for the minimum wage recipients to stay employed. Harasztosi and Lindner (2015) reported a limited effect of the minimum wage on employment in Hungary. Only one out of ten minimum wage workers lost their job, while those who kept their job experienced a 50% wage increase, states the author. Firms with tradable goods reduced employment, while in those firms with non-tradable goods, there was zero impact on employment. In Germany, where the minimum wage was introduced differently according to sectors, Bossler and Gerner (2016) proved using the D-in-D method that the introduction of a minimum wage in the concerned sectors caused job losses.

Conclusion

Neoclassical economics is based on a competitive market, consistent preferences, and a rational choice model. The market agent responds to a change in external incentives and chooses an alternative with the highest utility based on a cost-benefit analysis.

Behavioural economics, on the other hand, takes into account imperfect competition, asymmetric bargaining power, and follows the choices of a human agent who has limited intelligence capabilities, is not out of social bonds, and uses internal psychological motivations and emotions.

Neoclassical economics analyses the minimum wage from the position of positive economics and analyses the relations between economic variables and the consequences of their changes. The minimum wage is understood as redistribution, as an external intervention in markets, which reduces the effectiveness of the invisible hand. The consequences of introducing a minimum wage, or increasing it, the decline of employment and a rise of unemployment in those markets that generate an equilibrium wage below the minimum wage.

Behavioural economics prefers a normative approach. Therefore, it examines what the minimum wage should be and what it should cover. This differentiates between the *concept of wants* and the *concept of needs*. From the latter, it derives and explains the *living wage* and the *social wage*.

The current debate on the minimum wage has opponents represented by the neoclassical-Chicago line of economic thinking, who see a number of negative features of the minimum wage that restrict and distort market forces and cause inefficiencies. It also has its supporters looking for reasons and explaining why the minimum wage should be set. They use the knowledge of modern behavioural economics. They have no ambition to replace the current neoclassical economic paradigm but would like to incorporate their psychological and social variables into the existing economic paradigm and into standard economic models.

Empirical studies support both the neoclassical and behavioural approach towards labour markets. It appears to be a suitable and reasonable approach to consider markets according to the type of competition and the level of labour qualification and treat them differently regarding impact assessment and eventual minimum wage introduction.

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