Creating a pluralist paradigm: An application to the minimum wage debate

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Abstract

The paper offers a pluralist route along which different theoretical approaches can be integrated into a common framework. It proposes to use causal mapping and combine it with a micro-meso-macro architecture to get well-structured descriptions of different economic theories and to provide a good foundation for integrating these theories. In order to illustrate this point and to shed some new light on a contested economic issue, the paper applies this strategy to the minimum wage debate. It follows from the analysis that from a theoretical viewpoint, the effect of the minimum wage on employment is indeed ambiguous, which is perfectly in line with the existing empirical evidence.

JEL Classification Numbers B52 · E12 · J30 · J42

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"A pluralist explanation may be indefinite, lacking elegance and refinement. But it is better to be approximately and inexactly right than to be perfectly and precisely wrong."

Richard A. Lester (1953, 199)

1 Introduction

The domination of economics by a neoclassical mainstream has left other schools of economic thought increasingly marginalized. This state is problematic when we agree with Kurt W. Rothschild (1999, 5) that "plurality in economic and in social sciences in general is not only an obvious fact but also a necessary and desirable phenomenon in a very complex and continually changing subject." If this plurality is denied or ignored, it undermines the general quality of analysis, since (Ibid., 5) "[d]epending on circumstances and the problem to be tackled, different approaches, or a combination of them, have to be used in order to be able to get nearer to the far-away 'truth'." While the idea, that a plurality of paradigms is required within economics, receives great support outside of the mainstream, there seems to be less of a consensus on how such a state should look like.

In this context, Kapeller and Dobusch (2012) have recently proposed in this journal three types of how to understand pluralism in economics: According to them, 'selfish pluralism' takes place when scholars think of their preferred paradigm as superior to other schools of thought, but support calls for pluralism because it helps the survival of their own paradigm. Another version would be so-called 'disinterested pluralism', which means that scholars show more tolerance for different theoretical and analytical approaches, but shy away from applying these concepts or engage in interdisciplinary discussion. The key difference between those two is that the latter would be compatible with a coexistence of different paradigms in the long run, while the former would not. Eventually, the authors propose a third, superior type of pluralism, called 'interested pluralism'. This form of pluralism requires that scholars actively engage across different schools of thought and are able to choose from a broad set of theories and methods without being limited by a

certain paradigm.

While the latter understanding of pluralism is surely demanding, it also seems very promising. Kapeller and Dobusch (Ibid., 1054) suggest that a "pluralist paradigm" based on such an understanding "could help synthesize the 'solved puzzles' of different economic traditions in a single corpus – and such a competitor to neoclassical economics could build on a greater potential for empirical explanation than any strand of dissenting thought could come up with in isolation." Besides collecting and integrating identical, convergent or compatible theories, such a paradigm would also involve testing conflicting hypothesis in case of divergent or contradictory theories. It is worth mentioning that neoclassical economics would of course also play a part, though its role would be significantly diminished compared to its present position of dominance.[1]

Once we subscribe to the idea of a pluralist paradigm, the practical question becomes one of operationalization. Here the researcher will often face the obstacle that different schools use different methods (formal models, econometric evidence, simulations, case studies etc.). Coming up with a framework for the synthesis is therefore not straight forward: Integrating them within one mathematical framework can be a difficult task, since formal models originating from different schools usually start from very different axiomatic and methodological foundations. Hence trying to integrate them might create logical inconsistencies on the way, while integrating non-formalized theories into such a

[1]Some authors have advocated for a pluralist paradigm that excludes neoclassical economics (e.g. Dow 2008, Lawson 2006, Lee 2012). These arguments are based on a critique of its methodology (i.e. mathematical formalism) and its unrealistic axiomatic foundations (for a classic critique of these foundations see Lester 1946). However, the understanding of pluralism used in this paper is not only interested in improving economic theory by combining compatible concepts, but also in testing divergent or contradictory theories. Excluding neoclassical theories a priori would conflict with this idea. See on this also King (2012), who argues that since neoclassical ideas have been shaping economic debates and policies for quite some time, any critique of the social and economic status quo has to be presented with a critique of the underlying theory. Omitting neoclassical arguments from the discourse would therefore not be practical. Moreover, he argues that entirely excluding it would mean to deny that some concepts (like the law of supply and demand) do have some merit and are fairly used in everyday life. Rothschild (1989, 5; italics in original) also argues that neoclassical theories can be useful as long as one keeps aware of its limitations: "One may very well regard neoclassical economics as an interesting and useful *partial* theory as long as it is clearly restricted to its original research program: the study of the workings of a market economy with (in principle) flexible prices in a relatively simple and stable setting. In this respect the theory with its numerous modifications and developments can throw considerable light on the intricacies of such a system. The point here is that this theory with its strict axioms *adapted to its specific research subject* is hardly capable to deal with the diverse and complicated questions which turn up when we want to give more weight to the neglected political and sociological elements."

framework would almost surely involve sacrificing part of their content.

Therefore, a better way to move forward might be to use verbal exposition as a preferred tool. This way the researcher can avoid to overly simplify certain theories and can retain a pragmatic stance on differences in axiomatic foundations. A potential shortcoming of verbal exposition is however that it may lack the precise structure that can be provided by a formal model. This paper argues that such potential disadvantage can be overcome by representing economic theories in terms of causal maps and by embedding these causal maps within a micro-meso-macro structure. In order to illustrate this point, the paper applies this method to the topic of the minimum wage in economics.

2 Causal maps and the micro-meso-macro architecture

In order to integrate economic theories that originate from different schools of thought, this paper proposes to focus on the causalities assumed by the respective models and represent them within structured causal maps. Causal mapping is a popular technique in the field of management studies, where interview data is turned into causal maps in order to reveal common patterns of entrepreneurial intentions (see e.g. Jenkins and Johnson, 1997). Within economics, Margolis (2017) has recently proposed to use such graphs to represent econometric models. He shows how using causal maps makes it easier to spot contradictions in identification strategies. While Margolis illustrates how graphical representations can contribute to a pluralist paradigm by *testing conflicting hypothesis*, I will argue that they can also be used to provide a platform for the *integration* of different theories.

Causal maps are a convenient tool for reducing complex content down to its essentials. In order to apply them to the complex matter of economic theories however, the paper proposes to augment them with a micro-meso-macro structure. Micro-meso-macro frameworks have initially been proposed by evolutionary economists in order to analyze evolutionary economic dynamics. Here the meso-level contains existing institutions, whereas

the micro-level refers to the individual carriers of these institutions and the macro-level represents their aggregation (see Dopfer et al. 2004, Dopfer 2012, Elsner 2007). The emphasis within mainstream economics on the necessity of 'microfoundations', i.e. that macroeconomic phenomena be derived from individual behavior, has led to the prevalence of bottom-up explanations (King 2008). In contrast, many heterodox economists have argued that causality is not only a bottom-up, but also a top-down phenomenon (Dopfer et al. 2004, Lee 2011, King 2012). In order to reflect that within our framework, causality is allowed to take place bottom-up, bottom-down as well as within levels (see Bunge 1996, Kapeller and Schütz 2013, Gräbner and Kapeller 2017).

The next section applies this method of using structured causal maps to the minimum wage discourse. This serves two purposes: On the one hand it illustrates how such a pluralist research agenda could look like, while on the other hand it sheds a better light into one of the most contested issues within economics.

3 An application to existing minimum wage theories

Not many subjects seem to be able to provoke such intense academic debate within economics like the minimum wage does. While some regard it as an appropriate tool to protect those who struggle to protect themselves, others insist that it harms exactly those it wants to help by taking away their jobs. While some have attributed the intensity of the debate to its political significance, others claim that it is due to the potential implications it holds for neoclassical economic theory: If higher wages do not lead to lower employment, this would be at odds with the core economic principles that the vast majority of mainstream economic models are built on nowadays (Leonard 2000, Kaufman 2010).

On a theoretical level the mainstream debate in economics has more or less been narrowed down to a controversy about whether the so-called 'competitive' or the 'monopsonistic' labor market view is more accurate (Dube et al. 2007; Neumark and Wascher 2007; Kaufman 2010). While the former represents the standard neoclassical view, the

latter allows to explain the – to some at least – more counter-intuitive result of positive or zero employment effects within the narrow boundaries of neoclassical theory. While the latter does so by changing one key assumption (i.e. existence of market power by firms), it derives its legitimacy from the empirical part of the dispute: While some studies find evidence for negative employment effects, others find insignificant or slightly positive effects of the minimum wage on employment.[2] It is therefore not surprising that meta-studies conclude that once publication bias is controlled for, the employment effect across studies is close to zero (see Belman and Wolfson 2014; De Linde et al. 2014; Doucouliagos and Stanley 2009). Due to the narrow state of the theoretical debate, it also does not surprise that studies that find negative results interpret them as evidence for the validity of the competitive labor market view (e.g. Neumark and Wascher 2007), while those who find zero or positive results attribute it to the validity of the monopsonistic labor market view(e.g. Card and Krueger 1995; Giuliano 2013).[3] Reducing the mainstream theoretical debate to a struggle between the competitive and the monopsonistic labor market view of course represents an unjustified simplification that omits post-Keynesian, institutionalist and evolutionary concepts that also shed some important light on the minimum wage issue.

The fact that the impact of the minimum wage is theoretically as well as empirically contested makes it an ideal candidate for pluralist economic analysis. In what follows we will discuss each of the existing theories by using the method described in the previous section.

3.1 The neoclassical standard model of the firm

We start with what can easily be called the most influential theoretical approach concerning the general minimum wage debate – the neoclassical model of the firm. Its textbook version is usually the first – and often also the last – model along which students are taught to think about the minimum wage. Accordingly it also has an enormous weight in public discussions. It exists in several versions, which differ from each other in the type

[2]For a review of the literature see Giuliano (2013).

[3]Hirsch et al. (2015), who draw on an institutionalist framwork, recently provided a notable exception.

of product market (competitive vs. monopolistic) and substitution possibilities between capital, high skilled and low skilled labor assumed.

3.1.1 Competitive and monopolistic firms

The model takes the single firm as its point of departure. This firm can either operate on a competitive or a monopolistic market.[4] In the first case, the firm is assumed to be small and not to have any kind of market power. This means that the firm is able to sell any amount of its products as long as it charges the prevailing market price. Since it is small, its supply will not affect the market price and since it does not have any market power, charging above the market price would leave it unable to sell its products. In the second case the firm is assumed to have some kind of market power. On the one hand this can be the case when the firm has a significant market share, which means that a change in its supply of products has an effect on the market price. On the other hand it could mean that the firm's products have some kind of unique feature which give them a competitive edge and allows the firm some autonomy in setting its prices.

In both cases it is assumed that the firm can hire any amount of workers as long as it pays the market wage, where it is assumed that the individual firm takes the market wage as given, i.e. the firm does not have the market power to influence this wage rate. The latter is a crucial assumption, since it distinguishes the current approach from the model of the monopsonistic labor market, which arrives at different conclusions regarding the employment effect of the minimum wage (see below).

Within this context it is assumed that the capital stock is given and cannot be changed (changing it would require a longer time period, see the long run below) and that the marginal product of labor is declining (i.e. the additional output that can be gained by adding an additional worker to a machine or another piece of capital is declining). Firm management is assumed to constantly optimize in order to maximize profits. The latter is obtained at the point where the cost for employing an additional unit of labor (the marginal cost of labor, MCL) is equal to the additional revenues related to hiring this

[4]For a more detailed discussion see e.g. Pindyck and Rubinfeld (2013) and Varian (2010).

unit of labor (the marginal revenue product of labor, MRPL).[5]

Let us now illustrate these two versions of the neoclassical model by using the representation described in the previous section: Figure 1 shows the impact of the minimum wage according to the model of the competitive firm. The minimum wage represents an institution and is therefore located at the meso-level. Once it is raised (indicated by the upward-pointing arrow inside the box), it directly raises the real market wage at the micro-level. The resulting positive correlation between those two is also indicated by the '+' next to the arrow representing the causal link. The rise in the market wage leads to a rise in the MCL (i.e. how much it would cost to higher an additional unit of labor or, vice versa, by how much costs would decline if the firm got rid of one unit of labor). With the MCL higher than before (suddenly exceeding the MRPL, since profit maximization meant that they were initially equal to each other), the firm reacts by reducing employment (the negative correlation indicated by the '-' next to the arrow linking those two). Reducing employment increases the MRPL, hence employment continues to fall until the MRPL has risen sufficiently (at the end being equal to the MCL again). The MRPL therefore has a positive impact on employment. With employment being reduced, output declines, which ends up in reduced sales.

[**Figure 1 should be put somewhere here**]

The model of the monopolistic firm looks pretty similar, except for the fact that due to the firm's market power, the fall in output increases the market price, which has positive influence on the MRPL and real revenue.[6]

[**Figure 2 should be put somewhere here**]

The conclusion drawn from this standard neoclassical model is that a rise in the minimum wage leads to (since all firms are assumed to behave similarly) a fall in employment

[5]For the competitive firm the marginal revenue product of capital (MRPC) is equal to the marginal product of labor multiplied by the price that the firm receives on the market. In case of the monopolistic firm one has to additionally factor in the drop in the market price that follows from increasing the market supply by the respective amount.

[6]The net effect on revenue nevertheless has to be negative, otherwise the profit maximizing firm would have already reduced output independently of the rise in the minimum wage.

and, depending on the structure of the market, maybe a rise in prices. Crucial assumptions behind this result are that firms always maximize profits and that the MRPL rises as employment falls. Both of them will be challenged once we turn to institutionalist theory.

3.1.2 The long run

In the short run the neoclassical model assumes that the firm is unable to change the stock of capital and therefore has to take it as given. This assumption is justified by reference to the fact that installing additional capital takes some time. In the long run, however, the capital stock is variable. It follows that in the long run the firm gains additional flexibility in dealing with the minimum wage as it can substitute capital for labor.[7]

The respective structured causal map is displayed in figure 3. Here a rise in the real market wage implies that the relative cost of using capital as opposed to labor has declined. Firms react to it by using more capital instead of labor. While decisions to acquire additional capital can be made in the short run, its effects only become active in the long run, since it takes time to make this change to the production structure. These long run relationships are represented by dashed arrows within the causal map. Once the capital is acquired and installed, it causes a reduction in employment. Just like before, reduced employment goes along with a reduction of output, though this time this is partly compensated by the additional contribution of capital.[8] We omit the impact on sales and revenue (which is similar to before) for reasons of exposition.

[**Figure 3 should be put somewhere here**]

Concluding, the long run version of the neoclassical model predicts a fall in employment accompanied by an increasing capital intensity of the production process. A crucial assumption behind this result is that this capital is readily available (i.e. already exist-

[7] See again e.g. Pindyck and Rubinfeld (2013) or Varian (2010).

[8] The net change in output must be negative, since the total marginal cost of production has increased. If this was not the case, it would have already been optimal for the firm to pay higher wages and employ more capital prior to the rise in the minimum wage.

ing). Once we turn to Keynesian and post-Keynesian theory we will see how it could change the results if we took into account that these units of capital (machines etc.) have to be actually produced by someone.

3.1.3 Skill substitution and relative wage considerations

Furthermore it has been suggested that the minimum wage leads to substitution not only between labor and capital, but also between different kinds of labor (e.g. Gramlich 1976). More precisely, workers whose wages increased due to the minimum wage might be substituted with workers whose skill sets allow them to earn wages above the minimum wage. In the literature the latter are often called 'high skilled' workers, whereas the former are referred to as 'low skilled'. If these two types of workers are imperfect substitutes, employment of low skilled workers will decrease, while employment of high skilled workers will increase (see Card and Krueger 1995, Ch. 11). Assuming that the productivity of high-skilled workers exceeds the productivity of low-skilled workers, fewer workers will be needed in total. Substitution will also go along with rising wages of high skilled workers as the demand for the service of the latter increases. Furthermore the wages of workers above the minimum wage may also increase because of relative wage concerns voiced in wage negotiations (see e.g. Gramlich 1976).

Let us again look at it by using a structured causal map (figure 4), where we distinguish between the group of 'low wage workers' and the remaining group of 'other workers' (the latter earning above the minimum wage): The minimum wage increases the real market wage of low wage workers, which not only increases the marginal cost of labor, but also raises the wage of low wage workers relative to the other workers. The firm reacts to it by reducing the proportion of low wage workers in their workforce by replacing them with other workers. Since those other workers are assumed to possess superior skills, the firm needs less workers in total, leading to a reduction in employment. However, wages of those other workers are also expected to increase. First, if firms want to hire more of the other workers, it will increase their wage demands. Second, their wages may also go up directly as a reaction to the initial wage increase of low wage workers (e.g. fairness

concerns). Higher wage demands will increase their market wages and in turn reduce the relative wage of low wage workers compared to other workers. Depending on the size of this reaction, the proportion of low wage workers might in the end also remain unchanged (indicated by the '–' next to the ↑). The rest is similar to before: Reducing the units of labor employed in production reduces output and increases the MRPL.

[**Figure 4 should be put somewhere here**]

In sum, the model predicts that the market wages of both group of workers go up, which is accompanied by a fall in employment that is more likely to affect low skilled workers.

3.2 The neoclassical model of the monopsonistic labor market and efficiency wage theory

Second in attention to the model of the competitive/monopolistic firm – though by quite a significant margin – stands the neoclassical model of the monopsonistic labor market. Whenever students are introduced to the possibility of minimum wages having a positive effect on employment, the topic is usually conveyed in terms of the monopsonistic model. Correspondingly, it is this model that researchers usually reference when they find zero or positive employment effects of the minimum wage. The textbook version of the model can be described as follows:[9] The previous models assumed that the individual firm can hire any amount of workers it needs as long as it offers the prevailing market wage. This followed from the initial assumption that the individual firm's labor demand is very small compared to the total size of the labor market. The current model drops this assumption and assumes instead that in order to attract additional workers, the individual firm has to increase the wage that it used to offer previously. Moreover, it is assumed that offering new entrants a higher wage means that the wages being paid to the previously hired workers have to be adjusted to that higher level.[10] In such a setting, the total cost

[9] See again e.g. Pindyck and Rubinfeld (2013) or Varian (2010).

[10] This follows logically from the axiomatic structure of the model: As soon as one firm pays above the previously existing market wage, the remaining firms would have to follow. If they did not do so, some of

related to hiring an additional unit of labor (MCL) exceeds the wage that has to be paid to that additional worker, since one has to add the wage increase that consequently has to be given to all the previously hired workers. When taking that into account, a firm could abstain from hiring additional workers even if their wage demands fall below the MRPL that they would bring to the firm. In this setting a situation could arise in which the introduction of a minimum wage reduces the marginal cost related to hiring an additional worker, when the firm has to pay their other workers the higher wage anyway, so hiring an additional worker at a higher wage no longer has an effect on the remaining wage bill.[11]

We can illustrate this concept in the familiar environment (figure 5): Just like before, the minimum wage raises the real market wage, which has a positive impact on the MCL. However, this time there is also a counteracting direct influence from the minimum wage on the MCL. This link exists because the minimum wage raises the wages of those already employed and therefore reduces the increase in wages that would have to be given to them if the firm decided to hire an additional worker. Depending on the particular situation, the overall impact on the MCL can be positive or negative. If the MCL rises, we get the result from the competitive model. If it falls, however, employment and output will increase, while the MRPL will subsequently decrease.

[**Figure 5 should be put somewhere here**]

Furthermore, monopsony theory can be complemented by efficiency wage theory.[12] The latter assumes that workers have an incentive to provide lesser effort if the probability of detection or the implicit cost of losing a job is small enough. In this context, a higher wage would decrease the incentive for workers to display this kind of shirking behavior,

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their workers would want to join competing firms. If all firms switched to paying higher wages, the firm that increased its wage offer in the first place would also have to offer their previously hired employees that higher wage. Another, less technical, justification that one could think of would be that firms fear that not granting that higher wage to their other employees would raise severe fairness concerns within their workforce.

[11] See e.g. Card and Krueger (1995, Ch. 11) or Varian (2010, Ch. 26). The original concept goes back to Robinson (1933).

[12] See Card and Krueger (1995, Ch. 11), Pindyck and Rubinfeld (2013, Ch. 17) and Rebitzer and Taylor (1991).

since in case of being detected their loss (a well-paid job) would be higher.[13]

Efficiency wage theory establishes an additional link between the market wage and the MRPL (see figure 6): While the rise in the market wage due to the minimum wage still has the familiar effect on the MCL, it now also has a positive direct impact on the MRPL (because it leads to a rise in worker effort). Depending on which of those two effects dominates, employment might either increase or decrease – a situation similar to the monopsonistic model.

[**Figure 6 should be put somewhere here**]

We can conclude that following monopsony and efficiency wage theory, the minimum wage could increase employment if either the labor market can be described as a monopsony or wages have a strong effect on worker performance.

3.3 The institutionalist theory of the firm and evolutionary dynamics

The next two subsections discuss approaches that are much less represented in the academic and public debate. The first of these alternative perspectives is provided by the school of institutionalist and evolutionary economics. Institutionalist economists reject the 'marginalist' foundations on which neoclassical economics is built upon. In their view, firm decisions are not based on the principle of profit maximization and employment and prices are not determined by the interplay of marginal costs and marginal revenues.[14] As an alternative to the strict axiomatic foundations of neoclassical economics, institutionalist economics provides a detailed assessment of internal decision making processes of business enterprises and how the latter shape industrial structures and markets (see e.g. Jo 2018): Economies are not dominated by small firms reacting to market sig-

[13] In this model the worker would not be able to find immediate employment elsewhere, since it follows from the model of the competitive firm that if firms pay these higher wages, some level of unemployment would emerge as the supply of labor would exceed the demand (see e.g. Pindyck and Rubinfeld 2013, Ch. 17).

[14] See the seminal paper of Lester (1946) as well as the resulting controversy taking place in the American Economic Review (Machlup 1946, 1947; Stigler 1946, 1947; Lester 1947). For a summary of this controversy see Prasch (2007). See also Lee (1984) and Jo (2016).

nals, but by large business enterprises that act strategically to increase their market power (Veblen 1904[1994]). These enterprises are complex organizations led by 'captains of industry' (Veblen 1904[1994]), 'controllers' (Berle and Means 1933), 'technostructure planners' (Galbraith 1967) or conglomerate managers (Dugger 1988), where management is more often than not separated from ownership (Eichner 1976).[15] Giant corporations create and control markets and exercise power over employees. Moreover, in contrast to the neoclassical notion that firms always maximize profits, institutionalist theory acknowledges that corporations are subject to more than one goal at a time (e.g. short term vs. long term profits, growth, long term survival, independence etc.).[16]

Other institutionalist authors have pointed out that, in contrast to neoclassical economics, managers cannot be viewed as agents who maximize profits at any time (see Lester 1946, Hirsch et al. 2015). Instead they emphasizes that managers are constrained by time and cognitive capacity. In such an environment, managers can be better described as 'satisficers' rather than optimizers.[17] This has widespread implications for how managers are supposed to react to a higher minimum wage. As Hirsch et al. (2015, 231) put it with reference to survey results: "[M]anagers are overloaded with daily operation issues and work long weekly hours (often 50-55) and, hence, cannot devote the time to actively address important but longer-run or secondary operational issues. [...] Second, a principle-agent problem is present to the extent that owners cannot fully monitor salaried managers who may therefore satisfice rather than fully cost minimize." Under these circumstances "[a] [minimum wage] hike thus acts as a catalyst or shock that forces managers to step out of the daily routine and think about where extra savings can occur." In other words, since managers do neither have the time nor the incentive to constantly optimize, a sudden shock to profits (like a minimum wage) leads to a reassessment of the production process, at the end of which they often find some possibility to compensate for the cost increase. In those common cases in which business enterprises control the

[15]For a more detailed discussion see Jo (2018).

[16]See on this also Penrose (1995).

[17]The term satisfizing goes back to Herbert Simon (1955, 1956) and is a combination of the words "satisfy" and "suffice". It basically states that in a complex environment people stop searching for a solution as soon as they find one that fulfills some threshold aspirations.

market, the increase in wages can act as a common signal for each firm in the industry to raise prices (Galbraith 1967).[18]

The labor market, on the other hand, is not viewed as just another market that clears and allocates according to a market price. Instead institutionalists emphasize that employment selection is an administered process during which workers are "filtered" into their positions according to their formal qualifications, where higher formal qualification provides people with higher entry slots. Once granted access, it is up to the employed to adjust to the demands of their role within the corporation and prevail (Dugger 1981).

It follows from these foundations that institutionlist theory is very skeptical about the neoclassical concept of employment being determined by marginal cost and revenue and rather sees actual and expected sales as predominant determinants.[19] We look at the determinants of the latter in more detail once we come to the post-Keynesian view in the next section.

Moreover, institutionalist economic thought challenges the idea that the marginal revenue product of labor is declining as the number of workers increases. See on this e.g. Lester (1947, 138): "[E]mployers generally seem to believe that unit variable cost (and, judging from numerous interviews, particularly unit labor cost) increases significantly as the scale of operations of a plant declines from 100 per cent of plant capacity."[20] Taking additionally into account that a firm usually has to cover substantial (non-labor related) fixed costs, reducing output by reducing the amount of employed workers just would not make sense unless wages have increased to such a level that the contribution margin to cover these fixed costs has become negative.[21]

[18]See on this also Galbraith (1967, 249): "In the mature corporation the technostructure sets prices not where they maximize profits but where they best contribute to the security of the technostructure and to the growth of the firm. This means with rare exceptions that it has latitude to increase revenues by increasing prices. Accordingly, it can pass wage increases along."

[19]See on this e.g. Lester (1947, 138): "My position is that variations in the total volume of employment in a modern manufacturing plant already constructed are primarily the result of actual and anticipated changes in the volume of sales or orders for the products of the plant and that employers [...] do not think or act in the labor market in terms of equating marginal net revenue productivity and marginal labor cost."

[20]See also Lee (1984) and Blinder et al. (1998). The latter present survey evidence showing that the majority of firms report that their marginal costs are declining as production increases.

[21]Note that without the neoclassical assumption of a falling MRPL, the latter would mean that the firm should end production all together, since any reduction in employment would not lead to an improvement of the MRPL and thus the contribution margin.

Besides these institutionalist insights into the nature of firms, a complete picture of the minimum wage should also take into account the evolutionary nature of the labor-saving process: While the neoclassical economic approach assumes that the technology which can be used to substitute labor in the production process is already available, evolutionary economists would argue that firms attempting to save labor in the production process will not always be able to draw on pre-existing technical solutions. Instead, some will find it necessary to look for tailor-made solutions. If this process succeeds, it will not only add to the demand for goods at the macro-level (we will come to this point once we discuss the post-Keynesian perspective), but will also lead to the origination of an innovative technology that adds to the realm of technological possibilities at the meso-level. As a consequence, other firms might also adopt that new technology, leading to a further rise in labor-substituting capital at the micro-level until it has become the new production standard. These phases in turn correspond to the standard trajectories of economic evolution (origination, adoption, retention) (Schumpeter 1934[1987]).[22]

We can now look at these concepts in terms of a structured causal map (figure 7): As just mentioned, we add to the framework that attempts to substitute capital for labor should be accompanied by the origination of new technologies. Therefore, in the long run increases in capital will add to the realm of technological possibilities at the meso level. Other firms are expected to follow suit, leading to a prolonged rise in capital accumulation at the micro level for this period of adaptation.

However, the most important difference to the figures discussed previously is that the impact of a higher minimum wage, and thus higher real wages, does not come through the MCL. Instead, higher real wages act though their impact on total real labor cost, which in turn has a direct negative effect on actual and expected profits. This shock to profits can trigger a number of adjustment strategies: One of the strategies with which management can react to a sudden drop in actual/expected profits consists of reducing real non-labor costs (e.g. looking for ways to save energy or to reduce waste). If successful, this has a

[22]For applications within a macroeconomic context see Dosi et al. (2010, 2017). See also Cassetti (2003) and Naastepad (2006) who argue from a post-Keynesian perspective that higher wages promote technological progress by increasing aggregate investment into labor-saving capital.

positive influence on the profits of the individual corporation. On the revenue side the most obvious strategy is to pass on these higher costs through higher prices. The latter is an attempt to raise revenues, but might come at the cost of reducing actual sales. In order to increase sales (a sensible strategy when the corporation has to cover fixed costs), the corporation can also respond by increasing quality or sales effort. Whatever happens to sales determines the outcome on employment: less expected/actual sales will lead to less employment, less output and correspondingly a reduction in labor cost, whereas a rise in sales would be accompanied by more employment, higher output and a rise in labor cost.

This represents a key difference to the neoclassical models discussed before: the latter see the level of employment as the result of an interplay between the MCL and the MRPL. Due to its lack of importance to the institutionalist framework, the MCL is missing from the figure. In contrast the MRPL does feature in it, but only to highlight the difference in assumptions: whereas neoclassical economics assumes a negative causal effect of employment on the MRPL, institutionalists assume that it is positive (see the '+' next to the linking arrow in figure 7, which stands in contrast to the '-' in figures 1-6).

[**Figure 7 should be put somewhere here**]

This section highlighted the importance of actually observed behavioral patterns as well as the significance of actual and expected sales. The next section discusses the latter aspect in more detail.

3.4 Keynesian and post-Keynesian perspectives

Keynesian and post-Keynesian economic theories offer a macroeconomic perspective on the minimum wage. Keynes (1936) famously argued that higher wages, contrary to the standard neoclassical notion, do not necessarily lead to a loss of employment. He rather argued that firms produce the amount of goods they think they will be able to sell for a profitable price and that, under normal circumstances, this number is lower than the

number they would like to sell. Employment decisions are hence based on these actual and expected sales, which in turn depend on aggregate demand (*principle of effective demand*). Within this setting the wage obtains the double character of being a cost to production on the one hand, and a source for consumption demand on the other hand. Aggregate demand consists of the already mentioned demand for consumption goods and the demand for capital goods. While the former depends on peoples incomes and their propensities to consume (with workers' propensity to consume exceeding the one of entrepreneurs or rentiers), the latter depends on expected future profits and the 'animal spirits' of the entrepreneurs (Keynes 1936).[23] On the one hand, a rise in the minimum wage can depress these expectations by increasing labor cost. On the other hand the minimum wage could also increase profit expectations, as higher wages would increase labor income and increase expected sales. If the latter effect is significant, firms might even increase production and employment levels.

According to Keynes, these investment decisions however also depend on meso-level factors such as the political and social atmosphere: The introduction of a minimum wage could influence this atmosphere in a manner which could be congenial (e.g. if business perceives it as a necessary measure to preserve social cohesion and consumer demand) or detrimental (e.g. if business perceives it as part of an agenda against the rich) to investment.[24]

In line with neoclassical economists, Keynes (1936) assumed that the marginal product of labor declined as employment increased. Though, contrary to the latter, he did not think of the wage and the marginal product of labor as the determinants of employment,

[23]See on this Keynes (1936[1997], 162): "It is safe to say that enterprise which depends on hopes stretching into the future benefits the community as a whole. But individual initiative will only be adequate when reasonable calculation is supplemented and supported by animal spirits, so that the thought of ultimate loss [...] is put aside as a healthy man puts aside the expectation of death. [...]This means, unfortunately, [...] that economic prosperity is excessively dependent on a political and social atmosphere which is congenial to the average business man. If the fear of a Labour Government or a New Deal depresses enterprise, this need not be the result either of a reasonable calculation or of a plot with political intent; – it is the mere consequence of upsetting the delicate balance of spontaneous optimism. In estimating the prospects of investment, we must have regard, therefore, to the nerves and hysteria and even the digestions and reactions to the weather of those upon whose spontaneous activity it largely depends." On the role of expectations with regard to the impact of changes in the wage rate see also chapter 19 in Keynes (1936[1997]).

[24]See again the quote in the previous footnote.

since the latter was ultimately determined by the level of aggregate demand.[25] In this respect the post-Keynesian school has developed a different view: Since originating from the works of Keynes, Kalecki, Kaldor Robinson and others, it has incorporated many contributions from institutionalist economics (e.g. Means 1936, Eichner 1986, Lee 1984). Therefore post-Keynesian economics argues, in line with institutionalist economics, that most firms face a constant or increasing MRPL (i.e. the MRPL is unaffected or increases as employment rises; see e.g. Lavoie 2014) until the plant reaches full capacity, which rules out the possibility of the MRPL being an effective constraint: a firm facing an increasing MRPL would want to produce as many goods as possible given existing production capacities. Based on empirical evidence post-Keynesians assume that firms usually operate below their full capacity.[26]

Generally, post-Keynesian and institutionalist economic thought show many overlaps and similarities, especially when it comes to the nature of the firm and the role of aggregate demand, which makes them ideal candidates for integrating them within a pluralist paradigm.[27]

We can illustrate these Keynesian and post-Keynesian views in figure 8: As the minimum wage drives up the real market wage, labor cost increases at the firm level, thereby influencing expected profits negatively. If firms only reacted to this particular information, they would probably raise prices in an effort to cover some of the cost increase and reduce investment. However, the inclusion of aggregate demand provides a further dimension to the analysis: Higher wages also mean that employed workers will earn more than before and aggregate labor income would increase, implying more demand for consumption goods. However, while rising labor incomes would increase workers' purchasing power on the aggregate level, rising prices tend to do the opposite: here individual firm decisions to increase prices add up to the aggregate price level, which in turn negatively affects the real market wage. As long as the increase in prices does not fully match the

[25] See on this also Wells (1987).

[26] See on this Lavoie (2014, 147) who sums up the previous points: "[F]irst, short-run average costs are generally decreasing; second, marginal costs, and hence average variable costs, are roughly constant up to full capacity; third, firms generally produce at levels where there are reserves of capacity."

[27] See on this e.g. Kaufman (2010), Jo (2016) and Lavoie (2014).

rise in labor cost however, aggregate demand for goods would go up as a result.

The second component of aggregate demand is summarized under non-labor cost in figure 8. Its main component here is production capital: any additional investment into production capital would not only have an impact on profits, but would directly contribute to the aggregate demand for goods. This means that whenever the rise in the demand for consumption goods is not offset by an equal decline in investment, sales would increase. On the one hand such a rise in sales would result in higher employment and higher output. Higher employment simultaneously means higher labor cost, with the latter being again a source of aggregate income (therefore feeding its way back into the system) and a burden to profits at the same time. On the other hand higher sales result in higher revenues, which in turn affect profits positively. Due to these counteracting influences, the total impact on profits can be positive or negative. In the end, whatever happens to actual profits influences investment (i.e. the demand for capital goods), which has the familiar repercussion effects through aggregate demand.

Moreover, the minimum wage can exhibit a meso-level effect by influencing the political and social atmosphere. The direction of this impact depends on the wider circumstances, but exerts an influence on employment through its impact on profit expectations. Whatever happens to profit expectations on the micro-level of course also feeds back to the meso-level as individual entrepreneurs' expectations contribute in shaping collective sentiments (i.e. causality runs both ways).

Finally, we add that some of the elements introduced in the previous section (quality and sales effort, real non-labor cost) exert different impacts when seen from such a Keynesian/post-Keynesian perspective: Quality and sales effort as well as changes in real non-labor cost have an effect on the aggregate demand for goods, just as real non-labor cost and real revenues are, by definition, also affected by changes in the aggregate price level.

Finally, we see that Keynes and post-Keynesians disagree on what happens to the MRPL once employment increases: Keynes argued, in a Marshallian fashion, that it should decline, whereas post-Keynesians, in line with institutionalists, assume a rising

MRPL (hence both '+' and '-' in figure 8). However, both agree that the MRPL is not the determinant of employment (hence no link back to employment), since that role is taken by aggregate demand.

[**Figure 8 should be put somewhere here**]

Concluding, whether the positive or the negative effects prevail depends on the the reaction of corporations in the short run: If the rise in expected labor cost causes a strong negative reaction (i.e. sharp increase in prices and large reductions in investment), the above mentioned positive effects on aggregate demand would be outweighed by negative ones and employment would decline. If on the other hand firms act reluctantly (i.e. not much change in investment behavior) or even optimistic (e.g. firms anticipating positive future effects on consumer spending), positive effects on employment would prevail.

4 Towards a pluralist understanding of the minimum wage debate

Having discussed these different approaches, we can integrate them to get the general picture. Figure 9 combines the information gathered in the previous section: It contains every box and every causal link included in figures 1-8. On the one hand figure 9 shows the large variety of variables one has to take into account if one really wants to adopt a pluralist perspective on the effects of the minimum wage. On the other hand it reveals interesting complementarities and contradictions between theories.

Let us take a closer look at it. Again it all starts with a change in the minimum wage.[28] According to our previous discussion a rise in the minimum wage can have three direct effects: First of all it increases the real market wage of those workers earning a low wage. This can have a number of potential consequences: it can increase the MCL, reduce the cost of capital vs. labor, increase the relative cost of low wage workers vs. the

[28]The arrows within the boxes have been dropped in this exposition, since in the general picture practically everything could either increase or decrease, which dramatically reduces the additional information that can be gained by adding these arrows.

other workers, increase the marginal revenue product of labor and increase the total cost of labor. Each one of these comes with its own consequences:

- According to neoclassical theory, a rise in MCL goes along with a reduction of employment (for some workers the cost of employing them suddenly exceeds the revenue expected from keeping them).
- Also according to neoclassical theory, a fall in the relative cost of capital vs. labor will lead to additional investment into capital, which allows the firm to reduce employment in the long run without sacrificing too much in terms of output.
- Similarly, the rise in the relative wage of low wage workers vs. other workers reduces the share of low wage workers, which reduces the number of employed workers, but also potentially increases the wage demands and the real market wages of the other workers. The consequences of the rise in these other market wages are similar to the rise in those lower wages.
- Neoclassical theory has it that a rise in the MRPL increases employment (additional revenue expected from hiring new workers suddenly exceeds the cost of employing them).
- The rise in total labor cost has a negative effect on actual and expected profits as well as a positive impact on aggregate labor income. The former triggers a couple of adjustment strategies at the firm level (institutionalist theory) and has a negative impact on capital formation (Keynesian and post-Keynesian theory). The latter contributes positively to the aggregate demand for goods.

[**Figure 9 should be put somewhere here**]

The second direct effect of the minimum wage concerns the MCL, where according to neoclassical theory a rise in the minimum wage could actually reduce this marginal cost if we have monopsonistic firms: If firms fear that hiring an additional worker would drive up current wages, then the introduction of a minimum wage could mean that this

threat ceases to exist, since under the minimum wage these wages have already gone up anyway. The declining marginal cost in turn has a positive impact on employment.

The third direct effect concerns the political and social atmosphere: According to the Keynesian view, the latter has an impact on entrepreneurs' profit expectations, which subsequently influence their investment decisions. The precise impact can be positive or negative, depending on whether firms focus on the negatives (higher costs) or positives (creation of potential consumer demand). Moreover, causality goes into both directions, as individual expectations at the micro-level shape the collective sentiment at the meso-level.

Whatever happens to actual/expected profits and capital accumulation comes along with further consequences: According to institutionalist theory, a fall in actual/expected profits can lead to a couple of coping strategies, which involves increasing prices, quality or sales effort (especially important in those cases where corporations are effectively controlling the market) or reducing non-labor cost. While the former represent attempts to raise revenues (which is important when the firm has to cover substantial fixed costs), the latter tackles the problem of reduced profits from the cost side. Each of these strategies has an impact on the macro-level: When firms raise prices, it raises the aggregate price level, which subsequently affects real wages and real labor cost (i.a. important for consumer demand), real profits and real non-labor cost. Attempts to raise sales have a positive impact on aggregate demand, while successful steps to reduce non-labor costs reduce the aggregate demand for goods. Capital is part of non-labor cost, so whatever happens to capital accumulation has an important impact on aggregate demand (see the Keynesian and post-Keynesian perspective). Furthermore, according to evolutionary theory the acquisition of new capital can, in the long run, lead to the origination of new technologies at the meso-level. When these technologies are subsequently adopted by competing firms, it leads to even more capital accumulation.

Finally, this kind of analysis also allows for spotting potential contradictions. One such case in figure 9 is the effect of employment on the MRPL, which can be positive or negative (indicated by the '-/+'): While neoclassical economists (and Keynes) assume

a negative relationship (each additional worker contributes less than the worker hired before), institutionalists and post-Keynesians argue in favor of a negative relationship (i.e. unit variable cost increasing as the scale of operation of a plant declines). This has rather interesting implications: In the neoclassical case it makes logical sense for the firm to react to a rise in the MCL by reducing employment and output, since doing so would increase the MRPL (i.e. unit variable costs should decline). In the other case such a marginal reduction of employment and output does not make sense: Lower employment would be associated with a lower MRPL and would therefore make the situation even worse for the firm. Therefore, the neoclassical story in figure 9 (MCL $\rightarrow$ employment $\rightarrow$ MRPL $\rightarrow$ employment) only makes sense when the effect of employment on the MRPL is negative, since otherwise the theory would contradict itself. Indeed, when the effect is positive, a firm would always want to produce at the highest possible scale, which in turn fits nicely to the institutionalist/post-Keynesian story that employment is essentially determined by the amount of actual/expected sales (sales $\rightarrow$ employment): If firms could increase the MRPL by producing more (i.e. hiring more workers) but refrain from doing so, what is it that holds them back? The institutionalist/post-Keynesian answer to that question would be that it is the amount of goods they expect being able to sell.

5 Conclusion

The discipline of economics usually offers multiple explanations for economic phenomena, where each of these explanations potentially captures important arguments. From this perspective, restricting the analysis to a narrow set of theoretical approaches will almost inevitably lead to premature conclusions. However, incorporating all relevant insights into one's thinking can be quite difficult, since first of all one has to be aware of all of them, and secondly one has to be able to think of them in an integrated way. Especially the second one can be quite hard as different fragments of economic analysis can differ substantially in their degree of formal treatment and their axiomatic foundations.

The paper offers a pluralist route along which different theoretical approaches can

be compared and integrated within a common framework. Causal mapping has the advantage that due to its straightforward nature, the essence of economic theories can be presented quite easily without imposing additional assumptions onto them. When this method is combined with a micro-meso-macro architecture, we get well-structured descriptions of theoretical economic processes.

The analysis exposes compatible as well as conflicting patterns amongst the theories. Whereas institutionalist and post-Keynesian theories are very compatible with each other, neoclassical theories show more patterns of conflicting with respect to the rest. Here this type of analysis facilitates exposing the origins of this conflict. In the case at hand the conflict boils down to the question whether employment is determined by marginal cost and revenue, or by expected sales. The former rests i.a. on the assumptions that firms maximize profits, face a declining MRPL and are subject to rather competitive markets, whereas the latter is built on an institutionalist assessment of the nature of corporations and markets.

The analysis also exposes the various building blocks upon which these arguments are based on and how these elements are intersecting each other at times. Some of these intersections show how different theories could complement each other, while others reveal a direct conflict of hypotheses. An example for a potential complementarity is capital accumulation, where the neoclassical theory of the firm would become more general if it took into account that adding to the capital stock means that some other firm has to produce that unit of capital (i.e. capital accumulation adds to aggregate demand) or that introducing such labor-saving capital can involve the origination of new technologies. A direct conflict in terms of hypotheses being used concerns the link between employment and the marginal revenue product of labor. Whereas neoclassical economic analysis rests on the assumption that the MRPL rises as employment falls, institutionalist and post-Keynesian analysis claims the opposite.

Although the analysis shines considerable light into the theoretical debate, it falls short of solving the question of whether or not minimum wages reduce employment. However, this should not come as a surprise to anyone, since this is a simple reflection

of the results gained in empirical studies. Ultimately, the integrated model provides an excellent justification for this mixed empirical evidence, since it indicates that in the end there are just so many potential channels (compatible as well as conflicting) through which the minimum wage can affect employment, that the idea that they roughly cancel each other out does not seem to be far off. In this sense our pluralist analysis provides a much more comprehensive answer than the mainstream focus on the "competitive" vs. "monopsonistic" labor market argument could ever provide.

This does not mean that the method displayed here should replace the way in which economic theories are currently developed and presented by different schools of thought. Structured causal maps are not able to capture the full spectrum of underlying assumptions and conceptual differences (e.g. the nature of corporations, markets, decision making, time etc.) that exist across these different schools. However, what it can contribute to is to create an understanding of those theories' compatibilities and conflicts, which ultimately leads to a better understanding of the theories' underlying subject.

References

Belman, Dale and Paul J. Wolfson. 2014. *What Does the Minimum Wage Do?* Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Berle, Adolf A. and Gardiner C. Means. 1933. *The Modern Corporation and Private Property*. New York: Macmillan.

Blinder, Alan S., Elie R. D. Canetti, David E. Lebow and Jeremy B. Rudd. 1998. *Asking About Prices: A New Approach to Understanding Price Stickiness*. New York: Russell Sage Foundation.

Bunge, Mario A. 1996. *Finding Philosophy in Social Science*. Yale University Press.

Cassetti, Mario. 2003. "Bargaining power, effective demand and technical progress: a Kaleckian model of growth." *Cambridge Journal of Economics* 27 (3): 449–464.

Card, David and Alan B. Krueger. 1995. *Myth and Measurement: The new economics of the minimum wage.* Princeton, New Jersey: Princeton University Press.

De Linde Leonard, Meagan, T. D. Stanley and Hristos Doucouliagos. 2014. "Does the UK Minimum Wage Reduce Employment? A Meta-Regression Analysis." *British Journal of Industrial Relation*s 52 (3): 499–520.

Dopfer, Kurt, John Foster and Jason Potts. 2004. "Micro-Meso-Macro." *Journal of Evolutionary Economics* 14 (3): 263–279.

Dopfer, Kurt. 2012. "The origins of meso economics: Schumpeter's legacy and beyond." *Journal of Evolutionary Economics* 22: 133–160.

Dosi, Giovanni, Giorgio Fagiolo and Andrea Roventini. 2010. "Schumpeter meeting Keynes: A policy-friendly model of endogenous growth and business cycles." *Journal of Economic Dynamics & Control* 34: 1748–1767.

Dosi, Giovanni, Marcelo C. Pereira, Andrea Roventini and Maria Enrica Virgillito. 2017. "The effects of labour market reforms upon unemployment and income inequalities: an agent-based model." *Socio-Economic Review* 16 (4): 687–720.

Doucouliagos, Hristos and T. D. Stanley. 2009. "Publication Selection Bias in Minimum-Wage Research? A Meta-Regression Analysis." *British Journal of Industrial Relations* 47 (2): 406–28.

Dow, Sheila C. 2008. "Plurality in Orthodox and Heterodox Economics." *The Journal of Philosophical Economics* 1 (2): 73–96.

Dube, Arindrajit, Suresh Naidu and Michael Reich. 2007. "The Economic Effects of a Citywide Minimum Wage." *ILR Review* 60 (4): 522–543.

Dugger, William M. 1988. "The Administered Labor Market: An Institutional Analysis." *Journal of Economic Issues* 22 (1): 79–111.

Dugger, William M. 1981. "An Institutionalist Analysis of Corporate Power." *Journal of Economic Issues* 15 (2): 397–407.

Eichner, Alfred S. 1976. *The Megacorp and Oligopoly: Micro Foundations of Macro Dynamics*. Cambridge: Cambridge University Press.

Eichner, Alfred S. 1986. *Toward a New Economics: Essays in Post-Keynesian and Institutionalist Theory*. London: Macmillan.

Elsner, Wolfram. 2007. "Why Meso? On 'Aggregation' and 'Emergence', and Why and How the Meso Level is Essential in Social Economics." *Forum for Social Economics* 36 (1): 1–16.

Galbraith, John K. 1967. *The New Industrial State*. Boston: Houghton Mifflin Company.

Giuliano, Laura. 2013. "Minimum Wage Effects on Employment, Substitution, and the Teenage Labor Supply: Evidence from Personal Data." *Journal of Labor Economics* 31 (1): 155–94.

Gramlich, Edward M. 1976. "Impact of Minimum Wages and Other Wages, Employment, and Family Incomes." *Brookings Papers on Economic Activity* 2: 409–451.

Gräbner, Claudius and Jakob Kapeller. 2017. "The micro-macro link within heterodox economics." In *The Handbook of Heterodox Economics*, edited by Tae-Hee Jo, Lynne Chester and Carlo D'lppoliti, London et al.: Taylor & Francis.

Hirsch, Barry T., Bruce E. Kaufman and Tetyana Zelenska. 2015. "Minimum Wage Channels of Adjustment." *Industrial Relations* 54 (2): 199–239.

Jo, Tae-Hee. 2016. "What If There Are No Conventional Price Mechanisms?" *Journal of Economic Issues* 50 (2): 327–344.

Jo, Tae-Hee. 2018. "The Institutionalist Theory of the Business Enterprise: Past, Present, and Future." MPRA Paper No. 84036.

Jenkins, Mark and Gerry Johnson. 1997. "Entrepreneurial Intentions and Outcomes: A Comparative Causal Mapping Study." *Journal of Management Studies* 34 (6): 895–920.

Kapeller, Jakob and Leonhard Dobusch. 2012. "Heterodox United vs. Mainstream City? Sketching a Framework for Interested Pluralism in Economics." *Journal of Economic Issues* 46 (4): 1035–1058.

Kapeller, Jakob and Bernhard Schütz. 2013. "Exploring Pluralist Economics: The Case of the Minsky-Veblen Cycles." *Journal of Economic Issues* 47 (2): 515–523.

Kaufman, Bruce E. 2010. "Institutional economics and the minimum wage: Broadening the theoretical and policy debate." *ILR Review* 63 (3): 427–53.

Keynes, John M. 1936[1997]. *The General Theory of Employment, Interest, and Money.* New York: Prometheus.

King, John E. 2008. "Heterodox Macroeconomics: What, Exactly, Are We Against?" In *Keynes and Macroeconomics after 70 years. Critical Assessments of the General Theory*, edited by L. Randall Wray and Matthew Forstater, pp. 3-19. Cheltenham: Edward Elgar.

King, John E. 2012. *The Microfoundations Delusion: Metaphor and Dogma in the History of Macroeconomics*. Cheltenham, UK: Edward Elgar.

Lavoie, Marc. 2014. *Post-Keynesian Economics: New Foundations*. Cheltenham, UK: Edward Elgar.

Lawson, Tony. 2006. "The Nature of Heterodox Economics." *Cambridge Journal of Economics* 30 (4): 483–505.

Lee, Frederic S. 1984. "The Marginalist Controversy and the Demise of Full Cost Pricing." *Journal of Economic Issues*, 18 (4): 1107–1132.

Lee, Frederic S. 2011. "Heterodox microeconomics and the foundation of heterodox macroeconomics." *Economia Informa* 367: 6–20.

Lee, Frederic S. 2012. "Heterodox economics and its critics." *Review of Political Economy*, 24 (2): 337–351.

Leonard, Thomas C. 2000. "The Very Idea of Applying Economics: The Modern Minimum-Wage Controversy and Its Antecedents." *History of Political Economy* 32 (supplement): 117–144.

Lester, Richard A. 1946. "Shortcomings of Marginal Analysis for Wage-Employment Problems." *American Economic Review* 36 (1): 63–82.

Lester, Richard A. 1947. "Marginalism, Minimum Wages, and Labor Markets." *American Economic Review* 37 (1): 135–148.

Lester, Richard A. 1953. *Labor and Industrial Relations.* New York: Macmillan.

Machlup, Fritz. 1946. "Marginal Analysis and Empirical Research." *American Economic Review* 36 (4): 519–554.

Machlup, Fritz. 1947. "Rejoinder to an Antimarginalist." *American Economic Review* 37 (1): 148–154.

Margolis, Michael. 2017. "Graphs as a Tool for the Close Reading of Econometrics (Settler Mortality is not a Valid Instrument for Institutions)" *Economic Thought* 6 (1): 56–82.

Means, Gardiner C. 1936. "Notes on inflexible prices" *American Economic Review* 26 (1): 23–35.

Naastepad, C. W. M. 2006. "Technology, demand and distribution: a cumulative growth model with an application to the Dutch productivity growth slowdown." *Cambridge Journal of Economics* 30 (1): 403–434.

Neumark, David and William L. Wascher. 2007. "Minimum Wages and Employment." *Foundations and Trends in Microeconomics* 3 (1-2): 1–182.

Penrose, Edith. 1995. *The Theory of the Growth of the Firm.* Oxford: Oxford University Press.

Pindyck, Robert S. and Daniel L. Rubinfeld. 2013. *Microeconomics.* New Jersey: Pearson.

Prasch, Robert E. 2007. "Professor Lester and the Neoclassicals: The 'Marginalist Controversy' and the Postwar Academic Debate Over Minimum Wage Legislation: 1945-1950." *Journal of Economic Issues* 41 (3): 809–825.

Rebitzer, James B. and Lowell J. Taylor. 1991. "Work incentives and the demand for primary and contingent labor." Working Paper No. 3647, Cambridge, MA: National Bureau of Economic Research.

Robinson, Joan. 1933. *The Economics of Imperfect Competition.* London: St. Martin's Press.

Rothschild, Kurt W. 1947. "Price Theory and Oligopoly." *Economic Journal* 57 (227): 299–320.

Rothschild, Kurt W. 1989. "Political Economy of Economics? Some Terminological and Normative Considerations." *European Journal of Political Economy* 5: 1–12.

Rothschild, Kurt, W. 1999. "To Push and to Be Pushed." *The Americal Economist* 43 (1): 1-8.

Schumpeter, Joseph A. 1934[1987]. *Theorie der wirtschaftlichen Entwicklung.* Berlin: Duncker & Humblot.

Simon, Herbert A. 1955. "A Behavioral Model of Rational Choice." *Quarterly Journal of Economics* 69 (1): 99–118.

Simon, Herbert A. 1956. "Rational choice and the structure of the environment." *Psychological Review* 63 (2): 129–38.

Stigler, George J. 1946. "The Economics of Minimum Wage Legislation." *American Economic Review* 36 (2): 358–365.

Stigler, George J. 1947. "Professor Lester and the Marginalists." *American Economic Review* 37 (1): 154–157.

Varian, Hal R. 2010. *Intermediate Microeconomics: A Modern Approach*. New York, London: W. W. Norton & Company.

Veblen, Thorstein. 1904[1994]. *The Theory of Business Enterprise*. London: Routledge.

Wells, Paul. 1987. "Keynes's employment function and the marginal productivity of labor." *Journal of Post Keynesian Economics* 9 (4): 507–515.

Whalen, Charles. 2008. "John R. Commons and John Maynard Keynes on Economic History and Policy: The 1920s and Today." *Journal of Economic Issues* 42: 225–42.

Figure 1: The neoclassical model of the competitive firm

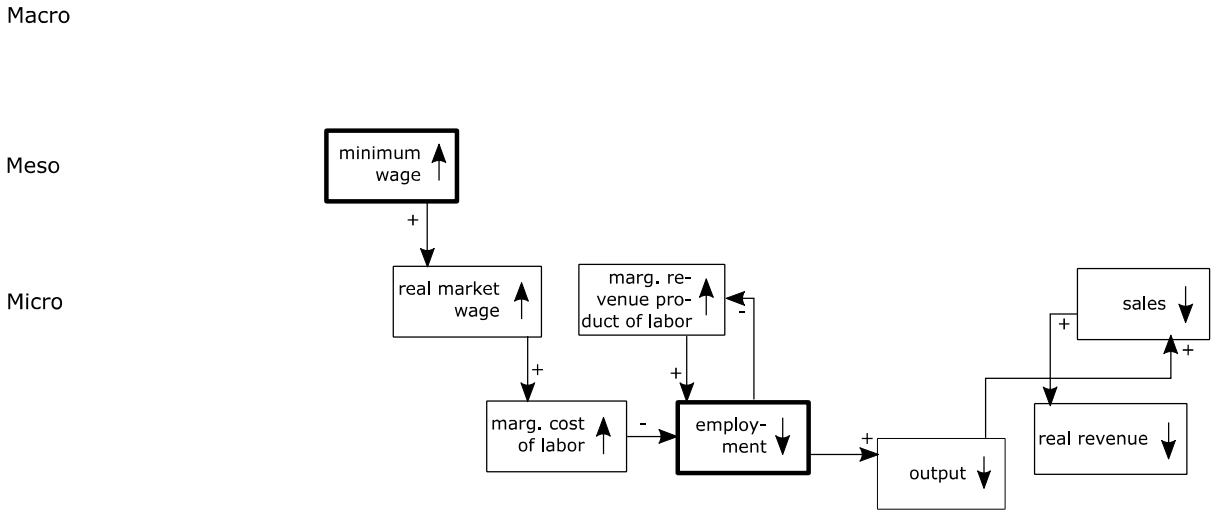

Figure 2: The neoclassical model of the monopolistic firm

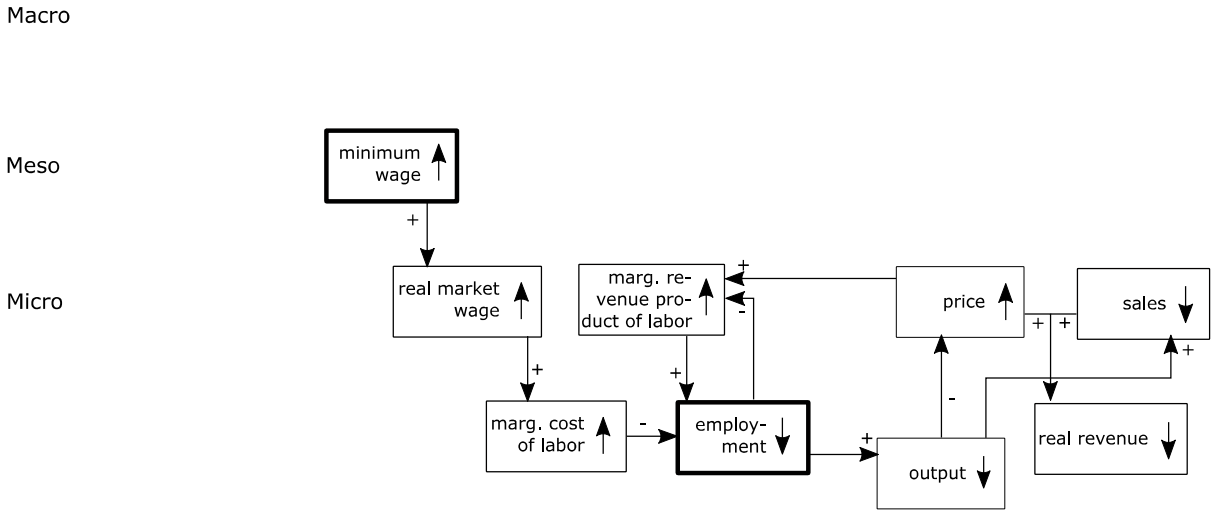

Figure 3: The neoclassical model of the competitive firm in the long run, with dashed arrows expressing long run effects

Macro

Meso

Micro

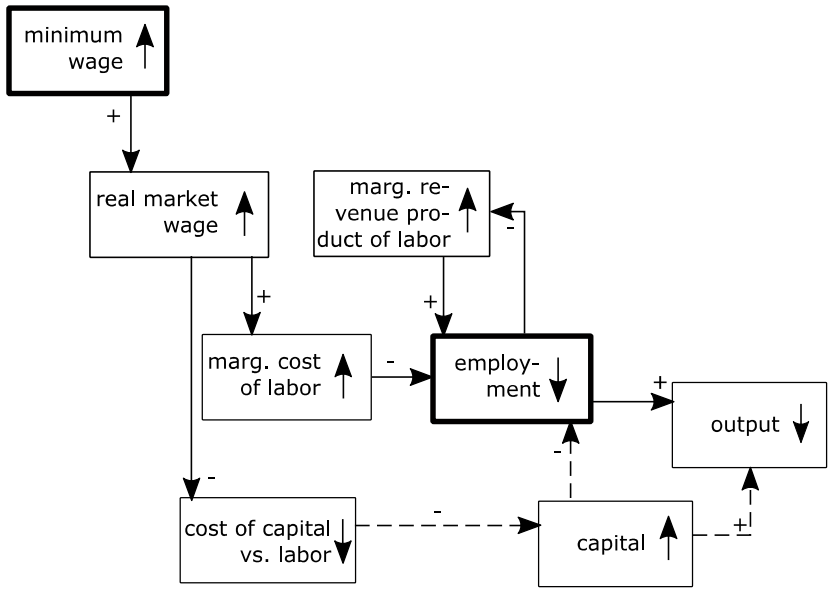

Figure 4: Skill substitution and relative wage considerations in the neoclassical model of the competitive firm

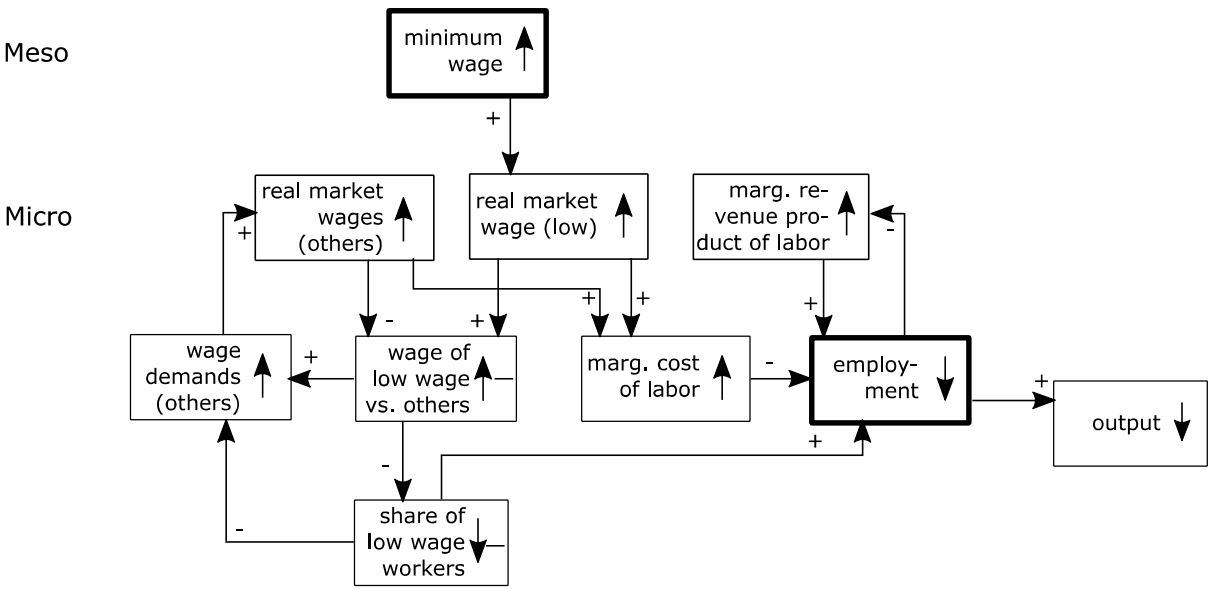

Figure 5: The neoclassical model of the monopsonistic labor market

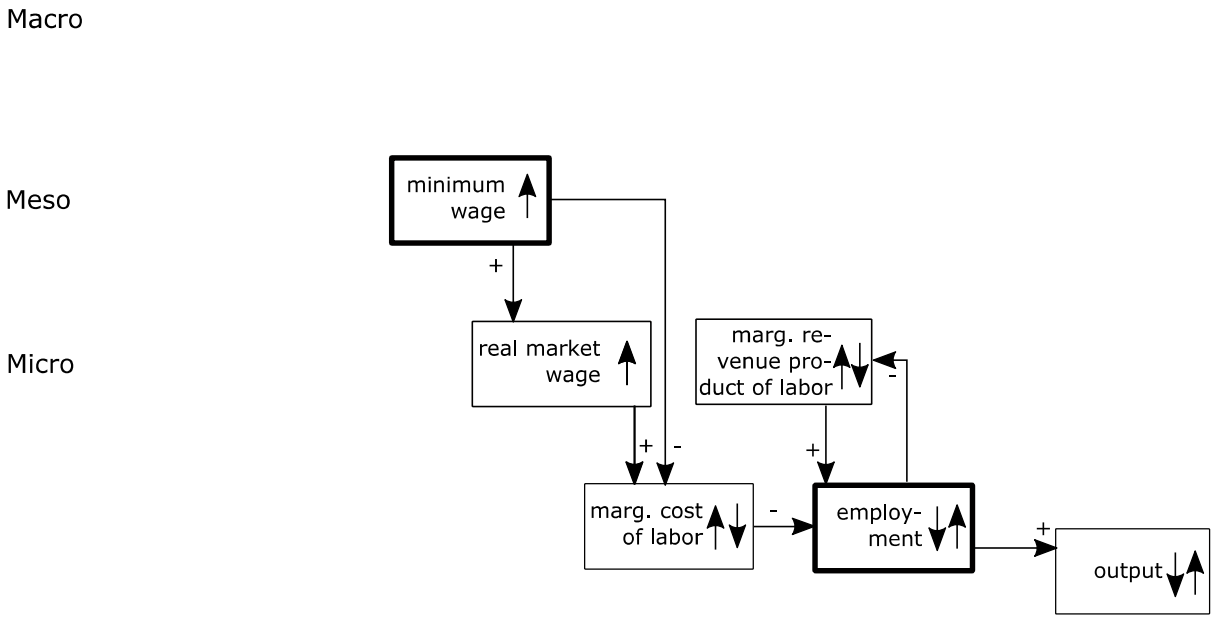

Figure 6: Neoclassical efficiency wage theory

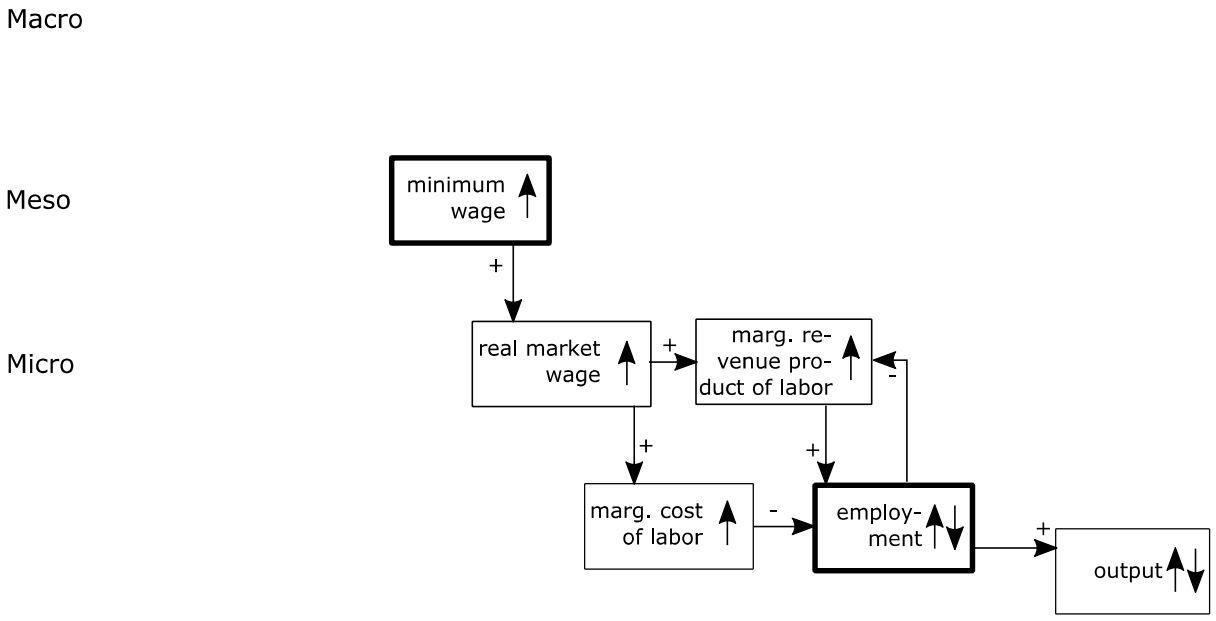

Figure 7: The institutionalist theory of the firm and evolutionary dynamics

Macro

Meso

Micro

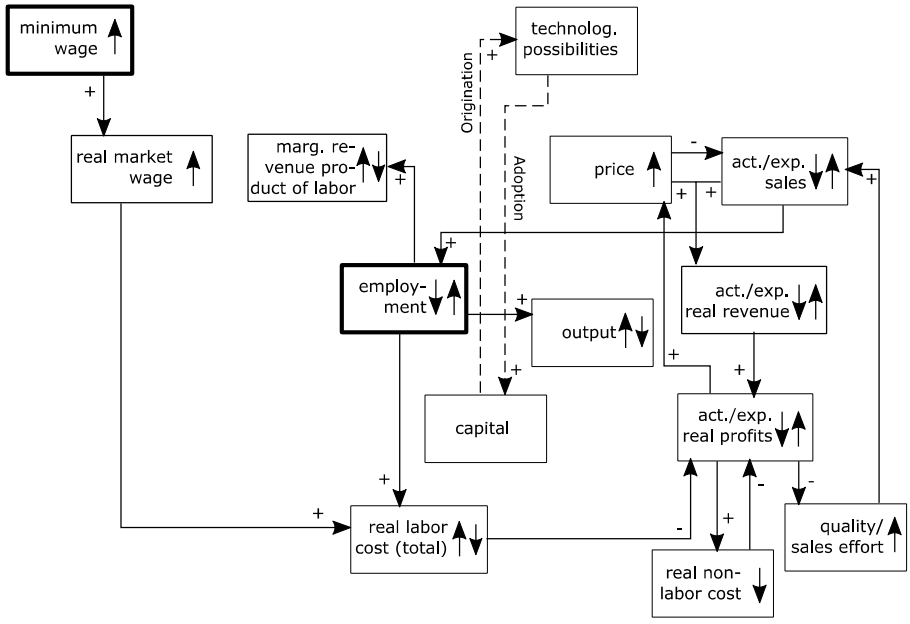

Figure 8: Keynesian and post-Keynesian perspective

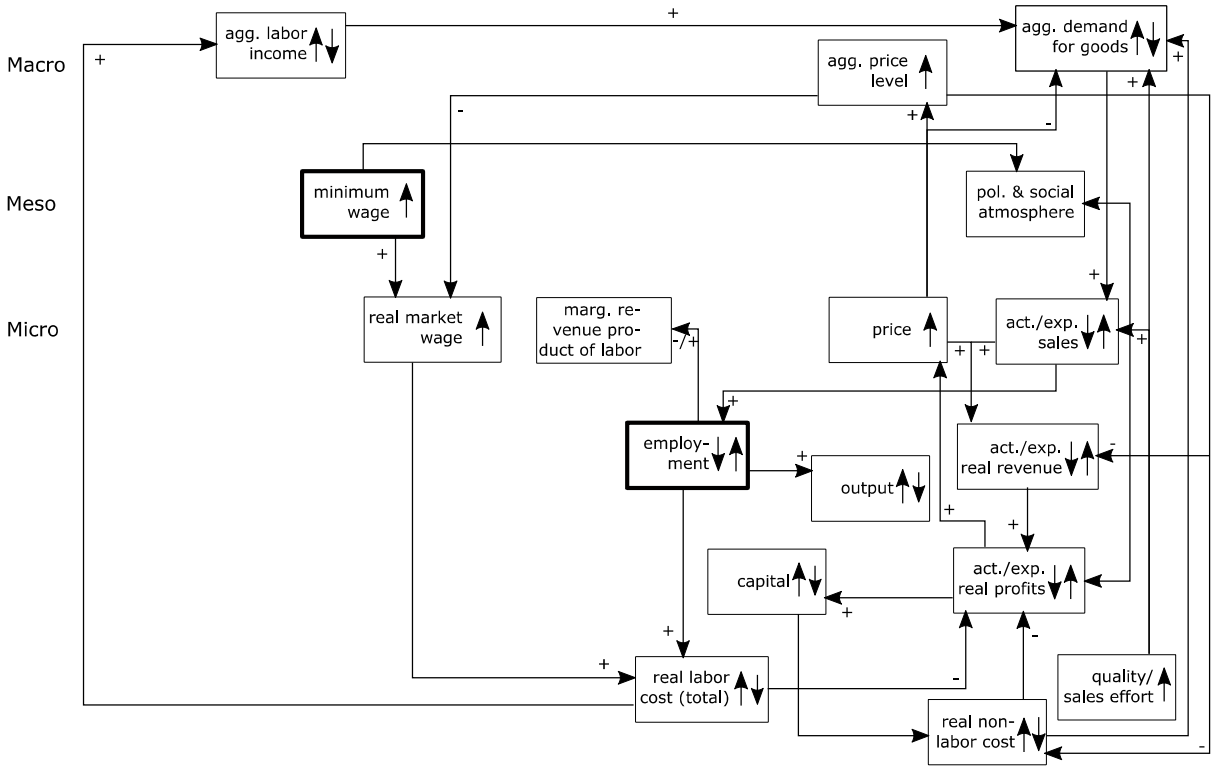

Figure 9: A pluralist framework to assess the minimum wage – employment relationship