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# Employment and the minimum wage: A pluralist approach

**Bernhard Schütz**

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Bernhard Schütz \*

## Abstract

When discussing the employment effects of minimum wages, mainstream economic discussion as well as mainstream economics textbooks mainly center around two variations of the neoclassical model: the model of the competitive and the monopsonistic labor market. The current paper offers a different perspective: it provides an assessment of the broader variety of existing theories and develops a new theoretical account which integrates these different views. For the comparison as well as for the later integration of these theories, it draws on an evolutionary economic concept: a micro-meso-macro framework. Here it shows that due to its simple structure and conceptual flexibility, the micro-meso-macro framework is very well suited to the task of integrating these different theoretical visions as well as assessing their evolutionary features. 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.

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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

Not many subjects seem to be able to provoke such an amount of 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 academic debate has more or less been narrowed down to a controversy about whether the so-called competitive labor market view 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 (at least to some) more counter-intuitive result of positive or zero employment effects within the narrow boundaries of neoclassical theory by changing a key assumption (existence of market power by firms). The latter largely 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.<sup>1</sup> 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 negative results attribute it to the validity of the monopsonistic labor market view (e.g. Card and Krueger 1995; Giuliano 2013).<sup>2</sup>

This narrowing of the perspective also applies to economic textbooks. Textbooks may be even more important than empirical results in shaping the public discourse, not only because they are the principal means to teach students, but also because they determine what is regarded as accepted knowledge in a ‘normal science’ according to Kuhn (1996, 10): “[N]ormal science’ means research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice. Today such achievements are recounted, though seldom in their original form, by science textbooks, elementary and advanced. These textbooks expound the body of accepted theory, illustrate many or all of its successful applications, and compare these applications with exemplary observations and experiments.” Economics in this sense corresponds very well to such a ‘normal’ or – as Kuhn also calls it – ‘textbook’ science.<sup>3</sup>

The current paper argues that the current state of the debate represents a major simplification of the underlying phenomenon. Thereby this simplification is not only undesirable, but also completely unnecessary: there exists a much broader variety of theories that can contribute to our understanding, though they usually do not get into economic textbooks or mainstream

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<sup>1</sup>For a review of the literature see Giuliano (2013).

<sup>2</sup>Hirsch et al. (2015), who draw on an institutionalist framework, recently provided a notable exception.

<sup>3</sup>For a discussion of how economics resembles a ‘textbook science’ see Bäuerle (2017).

economic discussion. In order to give a more complete account of the set of available theories and provide a pluralist perspective, the paper employs an innovative method from the field of evolutionary economics – the micro-meso-macro framework (Dopfer et al. 2004) – to present and compare these approaches in an accessible way.<sup>4</sup> Within this framework the micro-level deals with the individual decision making of individuals and firms, while the macro-level mirrors the macroeconomic consequences of these individual decisions. This conventional distinction is augmented by a meso-level which incorporates economic institutions and allows for representing evolutionary dynamics (see Dopfer et al. 2004, Dopfer 2012, Elsner 2007). Interactions between different levels are displayed in kinds of causal maps,<sup>5</sup> where causality can take place bottom-up, bottom-down as well as within levels (for an example see Kapeller and Schütz 2013).<sup>6</sup>

Representing economic processes in terms of causal maps comes with the advantage that it gives abstract mathematical models as well as less formalistic ones an equal footing by focusing explicitly on the postulated causal relationships. The result is a framework which makes transparent the particular mechanisms postulated by each theory as well as the economic levels involved. These features make it very suitable for pluralist economic analysis.

In the underlying case this method is used to illustrate how a rise in the minimum wage is said to affect employment according to different strands of economic thought. Based on this analysis, the paper comes up with a framework that integrates these different concepts and thereby provides a more comprehensive understanding of the minimum wage debate.

## 2 The neoclassical model of the competitive labor market

We start with what can easily be called the most influential theoretical approach concerning the general minimum wage debate – the neoclassical model of the competitive labor market. Its textbook version is usually the first – and occasionally 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. The model of the competitive labor market exists in several versions, which differ from each other in the type of product market (competitive vs. monopolistic) and substitution possibilities (capital, high skilled labor) assumed.

### 2.1 The competitive firm

The model takes the single firm as its point of departure. This firm is subject to a number of more and less restrictive assumptions, which can be outlined as follows: It produces a good which is also produced by a large number of other firms. Thereby the model assumes that all firms sell their products on a common market, where – since all goods are identical – they charge a uniform price, which is called the market price. The individual firm cannot increase its price unless all other firms do, since if it did so it would lose all its customers to other firms selling that identical good. How many goods consumers want to buy depends on the market price, where in principal a lower market price leads to higher sales and vice versa. However, the model assumes that the individual firm can sell any amount of its goods as long as it charges the market price. In other words, it assumes that the firm is so small that its contribution to the total supply of that good is insignificant and therefore the fall in price, that would be necessary for the market

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<sup>4</sup>For a contemporary discussion of pluralism in economics see e.g. Kapeller and Dobusch (2012).

<sup>5</sup>Causal mapping is a popular technique in the field of management studies, where interview data is turned into causal maps in order to reveal patterns of entrepreneurial intentions. See Jenkins and Johnson (1997) for an example.

<sup>6</sup>It thereby stands in contrast to the micro-foundational approach embraced by many mainstream economists, which treats causality foremost as a bottom-up phenomenon. For a discussion see King (2009).

to absorb that additional quantity, is also negligible. This also implies that none of the firm's actions will change the market price.

Similar assumptions apply for the labor market: It is assumed that firms pay workers the so-called market wage. Its exact level depends on the leisure preferences of workers (i.e. how much they have to be paid in order to choose work over leisure) and how workers can contribute within the production process, i.e. their productivity. The market wage is supposed to settle at the point at which the wage, that workers demand to choose work over leisure, corresponds to the level that makes it just profitable for the firms to employ these workers.<sup>7</sup> The model assumes that the firm under consideration can hire any amount of workers as long as it pays the prevailing market wage. This follows from the assumption that the firm is very small, meaning that the rise in the market wage, that would be necessary to convince additional workers to choose work over leisure, is negligible. As a consequence none of the firm's actions are supposed to change the market wage.

Firm managers are assumed to constantly optimize in order to obtain the maximum amount of profits. They obtain the latter at the point where costs for producing an additional unit (marginal costs) are equal to the revenue that they receive for it (the price). In this respect another important assumption is that the marginal product of labor is declining, i.e. the additional volume of production that can be gained by hiring an additional worker decreases with each additional worker. This assumption can be justified by referring to the limited amount of space, tools, computers, machinery etc. within a firm which makes it increasingly difficult for any new worker to be as productive as the worker hired before him or her.<sup>8</sup>

Figure 1 represents our first micro-meso-macro framework. Here the arrows within the boxes indicate whether the respective variable increases ( $\uparrow$ ) or decreases ( $\downarrow$ ) in the end.  $\uparrow\downarrow$  indicates that, due to the variable first going up and later going down (or  $\downarrow\uparrow$  if the opposite is the case), both seems plausible. Arrows linking the boxes indicate causation, where the symbol next to them informs whether causation is positive (i.e. a rise in A causes an increase in B, while a fall in A causes a decrease in B) or negative (i.e. a rise in A leads to a decrease in B, while a fall in A leads to an increase in B). An analysis of the neoclassical model of the competitive firm within this framework looks as follows (see figure 1): The minimum wage represents an institution, which is located at the meso-level. As soon as it is established, it directly affects the market wages of those workers earning a low wage. Market wages are located at the micro-level. Since any individual firm has to pay its existing workforce the market wage if it wants to retain it, labor costs at the micro-level increase. The rise in labor cost decreases expected profits. In order to restore expected profits to some extent, the firm has to reduce employment. This follows from the fact that firms initially hired workers up to the point where the wage that had to be paid to the additional worker was just about equal to the marginal revenue expected from hiring that worker. In the new situation, higher wages mean that for some workers the cost of employing them exceeds the additional revenue expected from doing so.<sup>9</sup> By reducing employment, the firm lowers its actual labor costs, which in turn affects profits positively. However, it also comes at the cost of reduced output. The latter translates into lower sales, resulting in lower revenues. In terms of profits the reduction in labor costs more than compensates for the lost revenue. This is due to the before mentioned assumption of decreasing marginal productivity of labor: Since the additional output that can be expected from each additional worker declines, any reduction in employment reduces labor cost more than it reduces output (all workers are paid the same

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<sup>7</sup>At this point increasing the wage in order to convince an additional worker to join the workforce would reduce firms' profits.

<sup>8</sup>For a more detailed discussion see e.g. Pindyck and Rubinfeld (2013) and Varian (2010).

<sup>9</sup>Since this analysis remains at the micro-level, it takes the price level as given. Any changes in the nominal wage therefore also correspond to changes in the real wage.

wage, so labor cost decreases proportionally, whereas output declines less than proportional).

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

The conclusion is that creating a minimum wage reduces employment at the single firm. Since all firms are assumed to behave in a similar manner, aggregate employment is supposed to decline following the introduction of a minimum wage.

## 2.2 The monopolistic firm

While the model of the competitive firm assumed that the individual firm does not have the power to set its own prices, the next setup assumes that consumers do not regard products as being equal and that therefore producers do have some degree of market power to set their own prices. When thinking about raising prices, the firm faces the trade-off of receiving higher revenue per unit of output on the one hand, but losing some of its customers on the other hand. A different, but in terms of outcome equivalent, way to look at the problem is that the firm can choose the volume of production, where a lower volume leads – via the logic of supply and demand – to a higher price for its products. The latter way of looking at the decision – choosing quantity – fits more natural into the neoclassical framework and is therefore usually preferred for doing analysis. However, in terms of realism, the former – calling a price – provides a more accurate description of the internal workings of most firms.<sup>10</sup>

Let us depict the effects of a minimum wage for the monopolistic firm in the familiar micro-meso-macro framework (figure 2): Just like before, the minimum wage increases the market wages of those earning a low wage, which increases labor cost and thereby depresses expected profits. As a reaction to the fall in expected profits, the monopolistic firm increases the price of its product. This has a positive impact on revenues from current sales, though coming at the price of reducing the number of those sales (see the two arrows pointing from price to revenue and from price to sales in figure 2). Under these counteracting influences total revenue should fall. If the latter was not the case, the firm – which is assumed to constantly optimize – would have already increased prices independently of the rise in the minimum wage. The fall in revenue has a negative influence on profits. However, lower sales also mean lower output and less need for labor. The latter means that the firm reduces employment, which reduces labor cost. The fall in labor cost has a positive impact on profits, which more than compensates for the fall in revenues due to the already discussed assumption of a declining marginal product of labor.<sup>11</sup>

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

Similar to the model of the competitive firm, the model of the monopolistic firm predicts a fall in aggregate employment, since all firms are assumed to behave similarly. Additionally it also predicts a rise in prices.

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<sup>10</sup>See on this Varian (2010, 439): “We can view the monopolist as choosing the price and letting the consumers choose how much they wish to buy at that price, or we think of the monopolist as choosing the quantity, and letting the consumers decide what price they will pay for that quantity. The first approach is probably more natural, but the second turns out to be analytically more convenient. [...] [B]oth approaches are equivalent when done correctly.”

<sup>11</sup>Remember output declines less than proportional while labor cost declines proportional because all workers are paid the same market wage.

## 2.3 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.

The remaining discussion of the neoclassical model takes the monopolistic firm as point of departure since this is the empirically more relevant case.<sup>12</sup> Representing this model in terms of our micro-meso-macro framework (figure 3) looks as follows: A rise in market wages for those at the bottom of the wage distribution implies that the cost of using capital in the production process instead of labor has declined. Firms react to it by using labor-substituting capital. 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 our framework. Labor-substituting capital increases capital costs in the long run, but also allows for a reduction in employment and therefore labor cost. In terms of profits the positive effects of lower labor cost stands against the negative effect of higher capital cost. In the new situation with the given minimum wage, the benefits of the former must outweigh the latter; otherwise such substitution would not take place.<sup>13</sup>

[Figure 3 should be put somewhere here]

Concluding, the long run version of the neoclassical model predicts a fall in employment (since all firms are assumed to behave similarly) accompanied by an increasing capital intensity of the production process.

## 2.4 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 wages may also increase because of relative wage concerns voiced in wage negotiations (e.g. Gramlich 1976).

Let us again illustrate that within a micro-meso-macro framework (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 market wages of low wage workers, which increases expected labor costs and causes a decline in expected profits. Moreover, it 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

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<sup>12</sup>See on this e.g. the classic essay from Rothschild (1947).

<sup>13</sup>See again e.g. Pindyck and Rubinfeld (2013) or Varian (2010).



them with other workers. Since those other workers are assumed to possess superior skills, the firm needs less workers in total, which reduces its labor costs. The net effect on expected profits must be positive, since otherwise the firm would refrain from such substitution.

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.

Prices on the other hand are definitely supposed to go up, as increases in both types of market wages reduce expected profits. Similar to above, the firm raises its price, leading to a drop in sales and output. Lower sales cause lower revenues, but it also means that the firm needs less employees and can save labor costs.

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

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

### **3 The neoclassical model of the monopsonistic labor market and efficiency wage theory**

Second in importance to the model of the competitive labor market – 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, they usually learn to think of it 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:<sup>14</sup> The previous models assumed that firms recruit workers from a labor market in which workers can choose from a large number of potential employers. In such a scenario, firms have to pay the market wage in order to attract workers. At the same time it is assumed that the single firm is small enough such that it can attract workers without increasing the market wage. Contrary to that, the model of the monopsonistic firm assumes that there exist a sufficiently small number of potential employers such that the individual firm has to pay a higher wage in order to attract additional workers.<sup>15</sup> In this case the firm would hire a lower number of workers than what would otherwise be optimal, because it takes into account that in order to attract an additional worker, it would have to offer a higher wage, meaning that it would increase the market wage. Thereby the wage bill would not only increase by the wage of the additional worker, but also by the wage increase that would have to be granted to the other workers (since each has to be paid the market wage). If this additional cost is taken into account, marginal costs could exceed the marginal productivity of that particular worker and employment remains sub-optimal from a social point of view (i.e. the firm could employ more workers and produce more without making losses, but the lower level of employment and production promises the highest level of profits). From a dynamic point of view, a higher minimum wage means that the firm has to pay higher

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<sup>14</sup>See again e.g. Pindyck and Rubinfeld (2013) or Varian (2010).

<sup>15</sup>See e.g. Card and Krueger (1995, Ch. 11) or Varian (2010, Ch. 26). The original concept goes back to Robinson (1933).

wages, which would attract more workers and allow it to fill its vacancies. The latter is something which it refrained from in the past because of its total effect on the wage bill. Therefore, in contrast to the models discussed above, a minimum wage would actually lead to an increase in employment.

This can again be illustrated in our familiar micro-meso-macro framework (figure 5): The minimum wage increases the market wage of low wage workers, which – as before – increases labor costs and thereby depresses expected profits. However, now the higher market wage also has a positive influence: it leads to a higher ability to fill vacancies at the firm level. The latter exhibits a positive effect on expected profits, as more output could be produced at a positive marginal return (or otherwise the vacancies would not be filled). In order to utilize the newly available workers in production and realize profit expectations, the firm has to decrease prices, which leads to the necessary rise in sales and output.

Furthermore, dynamic monopsony theory can be complemented by efficiency wage theory. 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, since in case of being detected their loss (a well-paid job) would be higher.<sup>16</sup> Furthermore it is assumed that the probability of detection decreases with the size of the (non-supervisory) workforce, since a larger workforce is harder to monitor for the manager. Hiring an additional worker would decrease the probability for the individual worker of being detected while shirking. If the firm wants to avoid the surge of shirking behavior, it would have to offer a higher wage rate. Therefore, similar to before, the firm could abstain from hiring that additional worker if it takes this cost into account (i.e. it could refuse to hire more workers although it would be able to do so without incurring losses, but it refuses to do so because the lower level of employment provides higher profits).<sup>17</sup>

Establishing a minimum wage means that the firm has to pay those higher wages that would deter workers from shirking, but which it did not want to pay in the past because of its total effect on the wage bill. We can include this in figure 5: The minimum wage increases the market wage of those at the bottom of the distribution, which has a positive effect on workers' effort. The latter in turn has a positive direct impact on expected profits as firms can expand their workforce without the fear of increasing shirking behavior. In order to capitalize on that, the firm reduces prices, which increases sales and output and thereby contributes positively to profits. However, of course there is also the impact on expected labor cost that deterred the firm from raising employment in the initial situation, meaning that profits decline on aggregate despite there being the counteracting effect just discussed.

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

It follows from the monopsonistic and the efficiency wage model that, since all firms are assumed to behave in a similar manner, employment should go up following a minimum wage increase.

## 4 Institutional channels of adjustment

The next two sections discuss approaches that are much less represented in the academic and public debate. These are the institutionalist and the Keynesian (see next section) view on the

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<sup>16</sup>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).

<sup>17</sup>See Card and Krueger (1995, Ch. 11), Pindyck and Rubinfeld (2013, Ch. 17) and Rebitzer and Taylor (1991).

minimum wage. Institutional economist have pointed out many of the features discussed in the preceding analysis, though without placing them in the strict formal environment as neoclassical economists have done. These include i.a. market power (see the monopolistic firm), inequality of bargaining power (see the monopsonistic firm) and the relation between worker remuneration and worker motivation (see efficiency wages). For the sake of the analysis, however, these are left out here in order to limit the discussion to those features that have not been part of the analysis yet.

Institutionalist economic thought does not provide one single theory of the minimum wage, but rather a set of observations of how firms react to it (or “channels of adjustment” as Hirsch et al. [2015] have called them).<sup>18</sup> A key difference is that institutionalist economics does not treat managers as rational agents who maximize profits at any time. Instead it emphasizes that managers are constrained by time and cognitive capacity. Moreover, it acknowledges that they are usually subject to more than one goal at a time (e.g. short term vs. long term profits, firm growth, long term survival of the firm, customer satisfaction, employee satisfaction, personal advancement etc.). In such an environment, institutionalist economists have argued that managers can be better described as ‘satisficers’ rather than optimizers.<sup>19</sup> 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 cost shock (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.

These strategies to cope with reduced profits due to the minimum wage are depicted in the meanwhile familiar manner in figure 6: One of the strategies with which managers react to a sudden drop in expected profits consists of reducing non-labor costs (e.g. looking for ways to save energy or to reduce waste). If successful, this has a positive influence on expected profits of the individual firm. On the revenue side the most obvious strategy is the already discussed increase in prices. However, among the strategies mentioned by managers are also efforts to increase sales, since firms face substantial fixed costs and allowing production to drop would depress profits even further. Means to push sales include increasing quality and intensifying sales efforts. As firms engage in quality and sales enhancing actions, they might succeed in increasing their sales (or at least prevent the drop in sales that might otherwise follow from higher prices).

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

In sum, institutionalist analysis does not offer any clear-cut conclusion about the employment

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<sup>18</sup>See the seminal paper of Lester (1946) as well as Kaufman (2010) and Hirsch et al. (2015). Lester (1946) is particularly interesting, as this article started an extensive discussion in the *American Economic Review* immediately upon publication (see Machlup 1946, 1947; Stigler 1946, 1947; Lester 1947; for a summary see Prash 2007). The resulting controversy gives interesting insights into the nature of both neoclassical and institutionalist theory.

<sup>19</sup>The term satisficing 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 fulfils some threshold aspirations.

effect of the minimum wage. Rather it stresses that there are many different ways in which firms are affected by it, making an a priori conclusion impossible.

## 5 The Keynesian perspective

Keynesian economic theory presents the route to a macroeconomic perspective on the minimum wage.<sup>20</sup> From the Keynesian perspective, wages possess the double character of being a cost to production on the one hand, and a source for product demand on the other hand.<sup>21</sup> Employment and investment decisions are taken based on expected future profits. A rise in the minimum wage can depress these expectations by increasing labor cost, as was the case in the neoclassical model discussed before. 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. Moreover, expected profits are also crucial for investment decisions. Whenever firms expect future profits to be high, investment will go up and vice versa. The demand for capital goods adds to the aggregate demand for goods and thereby contributes to the determination of sales and profit expectations.

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.<sup>22</sup>

We can illustrate this in our micro-meso-macro framework (figure 7): As the minimum wage drives up the market wages of those at the bottom of the wage distribution, labor cost increases at the firm level, thereby influencing expected profits in a negative way. If firms only reacted to this particular information, they would (still assuming monopolistic competition) raise prices in an effort to cover some of the cost increase and output and employment would go down. Furthermore, investment would also suffer as a consequence of reduced expected profits. However, the inclusion of aggregate demand provides a further dimension to the analysis: Higher wages also mean that those workers who keep their jobs will earn more than before. If a sufficient amount of workers keep their jobs, aggregate labor income would increase. While rising labor incomes would increase purchasing power on the aggregate level, rising prices tend to do the opposite. As long as the increase in prices does not fully match the rise in labor cost, aggregate demand would go up. Sales and output would increase as a result, leading to a rise in profits and employment. As this translates into higher expected profits, investment (the purchase of capital goods) would go up, thereby adding to the aggregate demand for goods. This investment would also lead to a rise in capital cost in the long run (when capital goods are delivered and installed).

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<sup>20</sup>See Keynes (1936). For a contemporary assessment see Davidson (2007).

<sup>21</sup>The role of aggregate demand for determining employment is also part of institutionalist economic thought (see Kaufman 2010). However, it was excluded from the discussion in the previous section to avoid redundancies.

<sup>22</sup>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]).

Higher employment would in turn feed its way back into the system as the increased labor cost represent a further source of demand at the aggregate level and so on. Finally, 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. Here it turns out that the chosen micro-meso-macro framework is well-suited to capture an evolutionary aspect of the Keynesian understanding of the economy.

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

Concluding, whether the positive or the negative effects prevail depends on the firms' reactions 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 (which allows for the positive demand effects to occur) or even optimistic (anticipating positive future effects on consumer spending), positive effects on employment would prevail.

## **6 Towards a pluralist understanding of the minimum wage debate**

Having discussed these different approaches, we can integrate them to get the general picture. In order to do so we start by making a couple of meso- and macro-level-related amendments to some of the previously discussed concepts (figure 8). The first relates to the aggregate demand for goods: Some of the previously discussed models adopted a pure microeconomic perspective. If we want to integrate these insights into a framework that also includes the macro-level, we have to take into account that changes in price and quality/sales effort affect the demand for goods at the macro-level. Furthermore, we have to add that changes in non-labor costs also have direct implications for the aggregate demand for goods: If one firm reduces its non-labor cost by e.g. saving energy, it means that the suppliers of that energy observe declining demand.

The second one relates to the treatment of the price level. Most of the discussed concepts adopted a pure micro-perspective, which makes it acceptable to treat the aggregate price level as given. If we include the macro-level into our considerations, individual firms' price decisions not only affect the aggregate demand for goods, but also contribute to the observed aggregate price level. This price level influences observed real wages, which has important implications for the behavior of households. In terms of our micro-meso-macro framework (figure 8) this means that price decisions at the micro-level determine the observed price level at the macro-level. This price-level in turn affects the micro-level through wage demands (a higher price level means that workers demand higher wages), worker effort (a higher price level means that workers earn a lower real wage, which reduces their effort) and the firms' ability to fill vacancies (a lower real wage means that households are less willing to supply labor). Another more trivial amendment is that if we include two groups of workers, of course the wage rate of both groups affects the cost of capital relative to labor.

The final additions relate to labor-substituting capital: First, a rise in labor-substituting capital at the firm level of course necessitates that someone produces that capital good (neoclassical economics tends to overlook that fact). The result is an increase in aggregate demand. Second,

we have to account for the evolutionary nature of the labor-saving process: Firms attempting to save labor in the production process are not always 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 (see above), 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]).<sup>23</sup>

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

Having considered the necessary amendments, we can integrate the micro-meso-macro frameworks developed in figures 2-8 into one general framework. The result is displayed in figure 9: The analysis starts with a change at the meso-level with an increase in the minimum wage. This event raises market wages of low wage workers, driving up labor costs at the micro-level. Furthermore it increases the relative wage of low wage workers, which potentially increases wage demands of other workers, leading to an increase in those workers market wages. This in turn feeds back into labor cost at the firm level.

At the micro-level there are several ways in which firms can react to the decline in expected profits which follows from the rise in labor cost. First of all, firms can raise prices to pass the cost increase on to consumers. This has a positive impact on revenues from current sales, though coming at the price of reducing these sales. Lower sales would mean lesser production and lower employment, which would save labor cost at the firm level. Individual firms' decisions to increase their prices also increase the observed price level at the macro-level. Since this implies a lower real wage, it raises wage demands, leads to lower worker effort and reduces firms' ability to fill vacancies at the micro-level.

Whatever happens to labor costs has repercussion effects at the macro-level, where labor incomes translate into demand for goods. That demand for goods is also affected by the price decisions on the firm level, where any price increase exerts a negative influence. Whatever happens to aggregate demand feeds back to the micro-level, where it determines sales, revenues, profits, output and – ultimately – employment. Thereby any change in employment will again produce the just described feedback effects through the demand for goods. It is because of this macro-level effect that the impact of the minimum wage on firm profits could also be positive.

At the micro-level firms can also react to higher market wages by substituting production factors. In the short run this can happen by reducing the proportion of low wage workers who are now earning more than before. Hiring more employees from the group of other workers comes with the potential benefit of having to employ less workers in total, since those other workers are supposed to possess superior skills. However, as firms hire more other workers, this may increase their wage demands and therefore their market wages, contributing further to the rise in labor cost. Wage demands of other workers may however also increase simply as a reaction to the rising wages of low wage workers (e.g. due to fairness concerns).

Furthermore, rising market wages reduce the cost of using capital relative to the cost of using labor. Firms react to the latter by investing into labor-substituting capital, which in the long run reduces employment but increases capital cost. While these effects only become effective in the long run, investment into labor-substituting capital has immediate short run effects as the

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<sup>23</sup>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

demand for capital goods adds to the aggregate demand for goods at the macro-level. So capital-labor substitution goes along with potential employment gains in the short run while exerting direct negative employment effects in the long run, both causing the kind of feedback-effects described above.

Investment into labor-saving capital can also give rise to the origination of new production technologies at the meso-level. If those are adopted by other firms, it will lead to additional investment in labor-substituting capital at the micro-level until the the production technology has become standard.

Whatever happens to expected profits will generally affect the demand for capital goods at the micro-level. If it depresses firms' profit expectations, investment will decline, going along with a reduction in the aggregate demand for goods and the already mentioned feedback effects. Firms' profit expectations furthermore depend on the political and social atmosphere at the meso-level, which can become more or less favorable to business investment as a result of the rise in the minimum wage. Profit expectations at the micro-level in turn feed back into the meso-level as individual entrepreneurs' expectations contribute in shaping collective sentiments.

Other ways to react to an initial fall in expected profits include intensifying efforts to reduce non-labor costs. This potentially increases profits at the firm level, but also reduces the aggregate demand for goods and therefore has potential negative feedback effects. Furthermore, firms may also try to keep profits at their level by increasing the quality of products or stepping up sales efforts, where both have the potential to increase the demand for goods and therefore sales. These types of reactions can be explained if firms and their managers are seen as not fully rational in the neoclassical sense (i.e. not being engaged in optimizing profits all of the time), since both behaviors could also increase profits in the absence of a new minimum wage.

Finally, higher market wages should make it easier for firms to fill their vacancies as they increase the number of applicants per job. As firms find it easier to fill vacancies, it raises their profit expectations. In order to utilize the newly available workers in production and realize profit expectations, firms would have to decrease prices, which would lead to the necessary rise in sales and output. In a similar vein higher market wages have a positive impact on expected profits through higher worker effort: Higher wages increase motivation and raise the stakes for being caught while exerting low effort. A better motivated workforce means that firms can expand production and employment without the fear that the loss of control that goes along with a larger workforce leads to increasing shirking behavior. Correspondingly firms might reduce prices in order to raise sales to the attainable higher level of production.

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

In the end the micro-meso-macro framework illustrates that the impact of a rise in the minimum wage on employment can be positive or negative due to the many factors that can potentially play a role. What is however also remarkable is that the same theoretical ambiguity also applies to a host of other factors involved, such as the effect on profits, prices and investment. Many of it is related to the complexity that suddenly starts to emerge once one includes all three layers of the economy (micro, meso and macro) and starts to think of potential economic effects in an integrated rather than an isolated way.

## 7 Conclusion

The discipline of economics usually offers multiple explanations for economic phenomena, where each of these explanations may capture some important aspects of reality. Under this circumstance, 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 formality and their axiomatic foundations.

The paper offers a pluralist route along which different theoretical approaches can be integrated into a common framework in order to develop a better understanding of relevant economic processes. Due to its simple structure and conceptual flexibility, the micro-meso-macro framework turns out to be very well suited for this task. It shows that in this particular application the theoretical result is ambiguous, i.e. we simply cannot tell a priori whether or not minimum wages lead to lower employment. In light of the existing mixed empirical evidence, this ambiguity presents itself as the actual strength of the framework: It demonstrates that, at least from a theoretical viewpoint, there are so many interdependent ways in which minimum wages may affect the economy, that the idea that they roughly cancel each other out becomes far from unrealistic. In this sense a pluralist analysis provides a much more comprehensive answer than the orthodox focus on the "competitive" vs. "monopsonistic" labor market argument ever could.

While providing new insight to an ongoing debate represented the narrow focus of this paper, its wider focus was to demonstrate how micro-meso-macro frameworks can be used for doing pluralist economic analysis. In this latter sense (to return to the quote from the beginning) it showed that though such an analysis can be a little indefinite and lacking elegance and refinement, it may well succeed in getting it approximately and inexactly right, which is sometimes more than we are used to.

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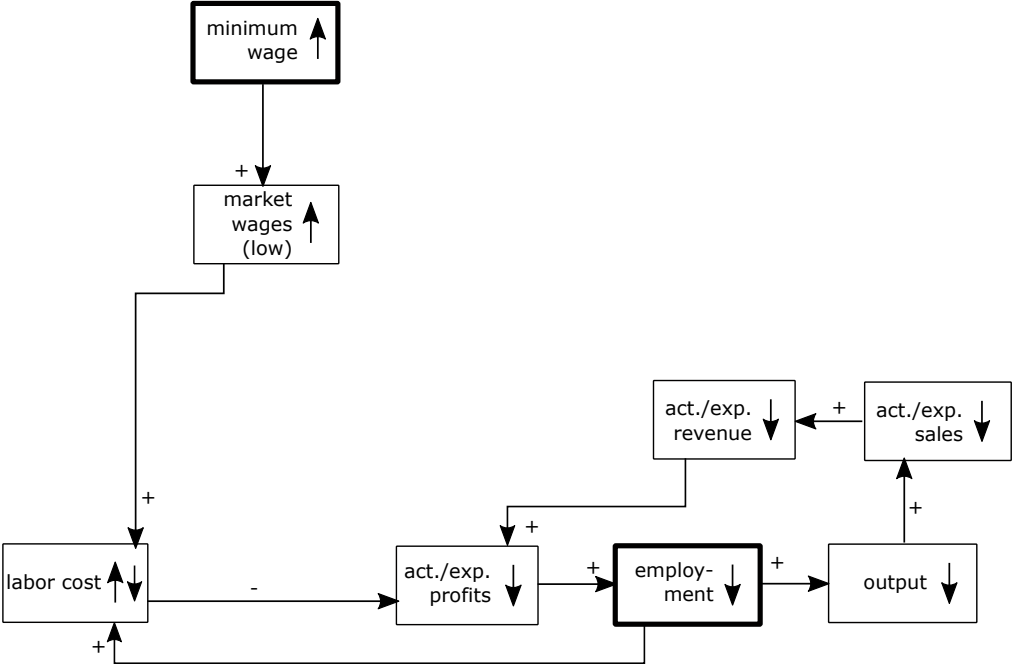
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**Figure 1:** The neoclassical model of the competitive firm; The arrows within boxes indicate whether the respective variable increases (↑) or decreases (↓); ↑↓ indicates that, due to the variable first going up and later going down (or ↓↑ if the opposite is the case), both seems plausible; Arrows linking the boxes indicate causation, where the symbol next to them inform whether causation is positive or negative.

Macro

Meso

Micro

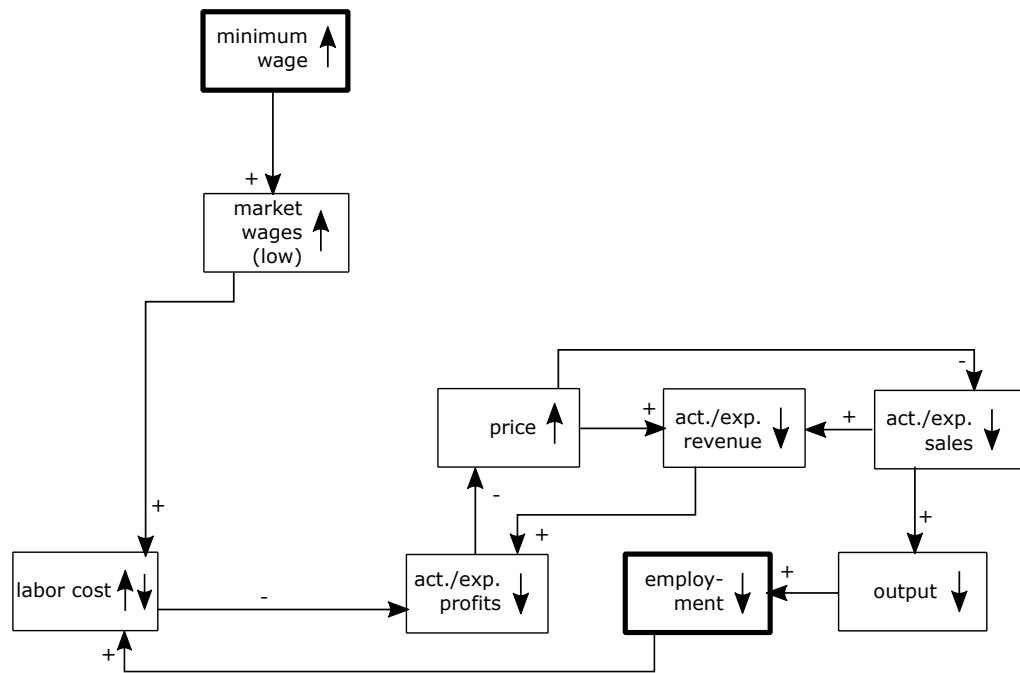


**Figure 2:** The neoclassical model of the monopolistic firm

Macro

Meso

Micro

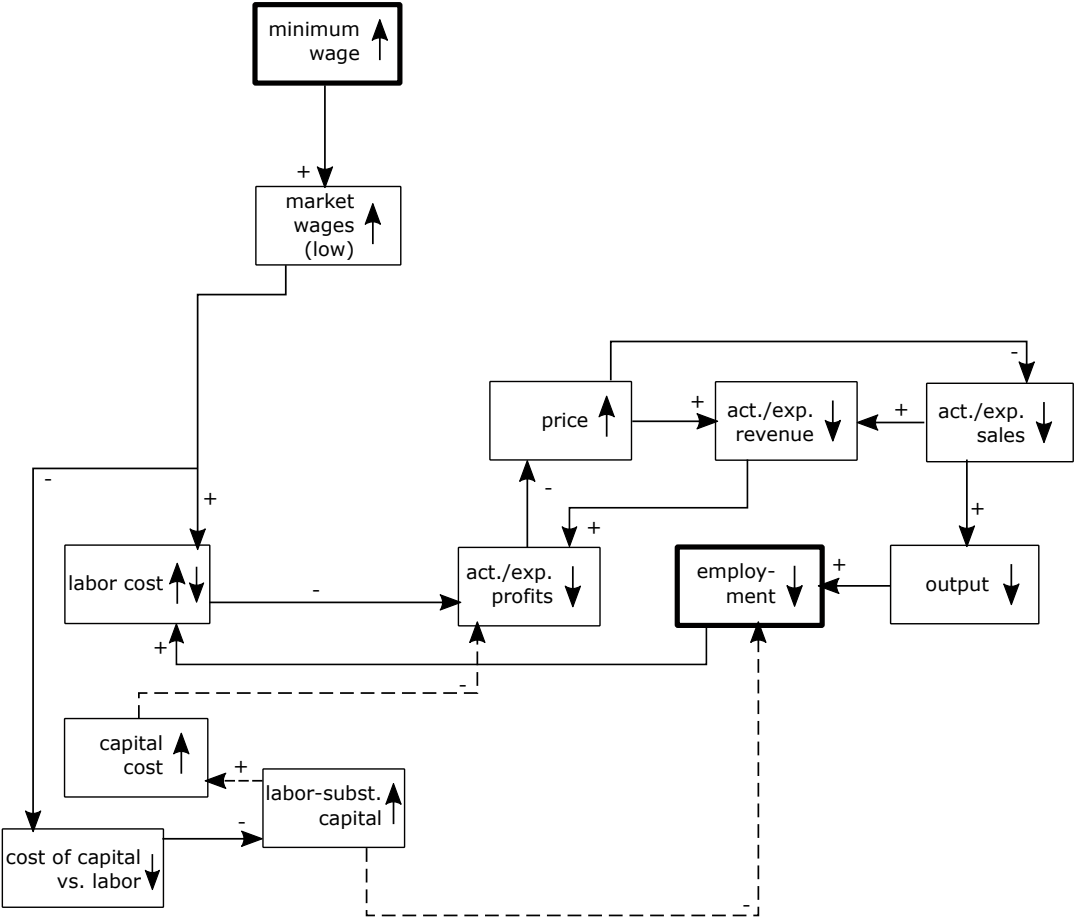


**Figure 3:** Neoclassical model of the monopolistic firm in the long run; Dashed arrows express long run effects.

Macro

Meso

Micro



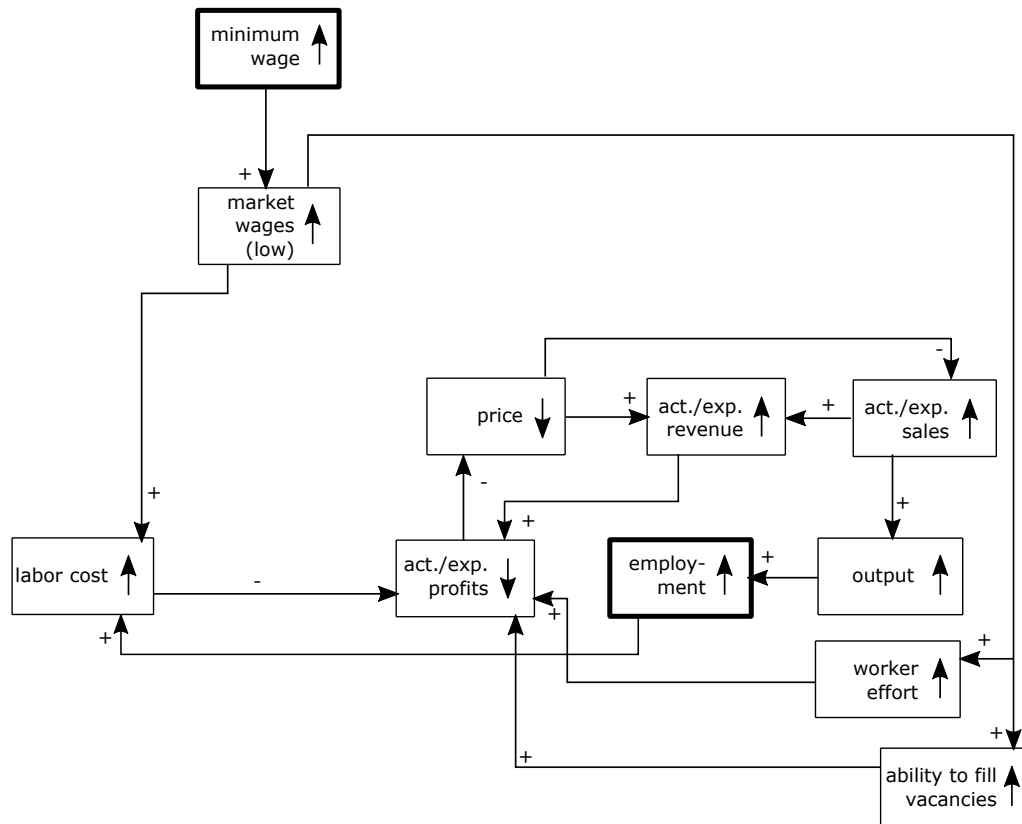


**Figure 5:** The neoclassical model of the monopsonistic firm and efficiency wage theory

Macro

Meso

Micro

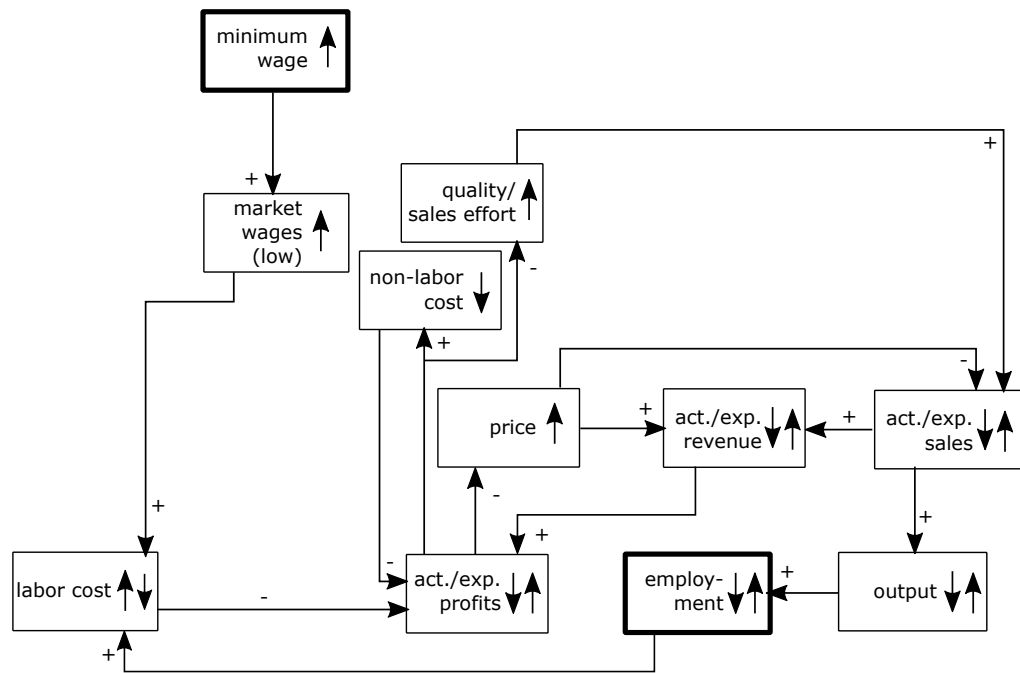


**Figure 6:** Institutionalist channels of adjustment

Macro

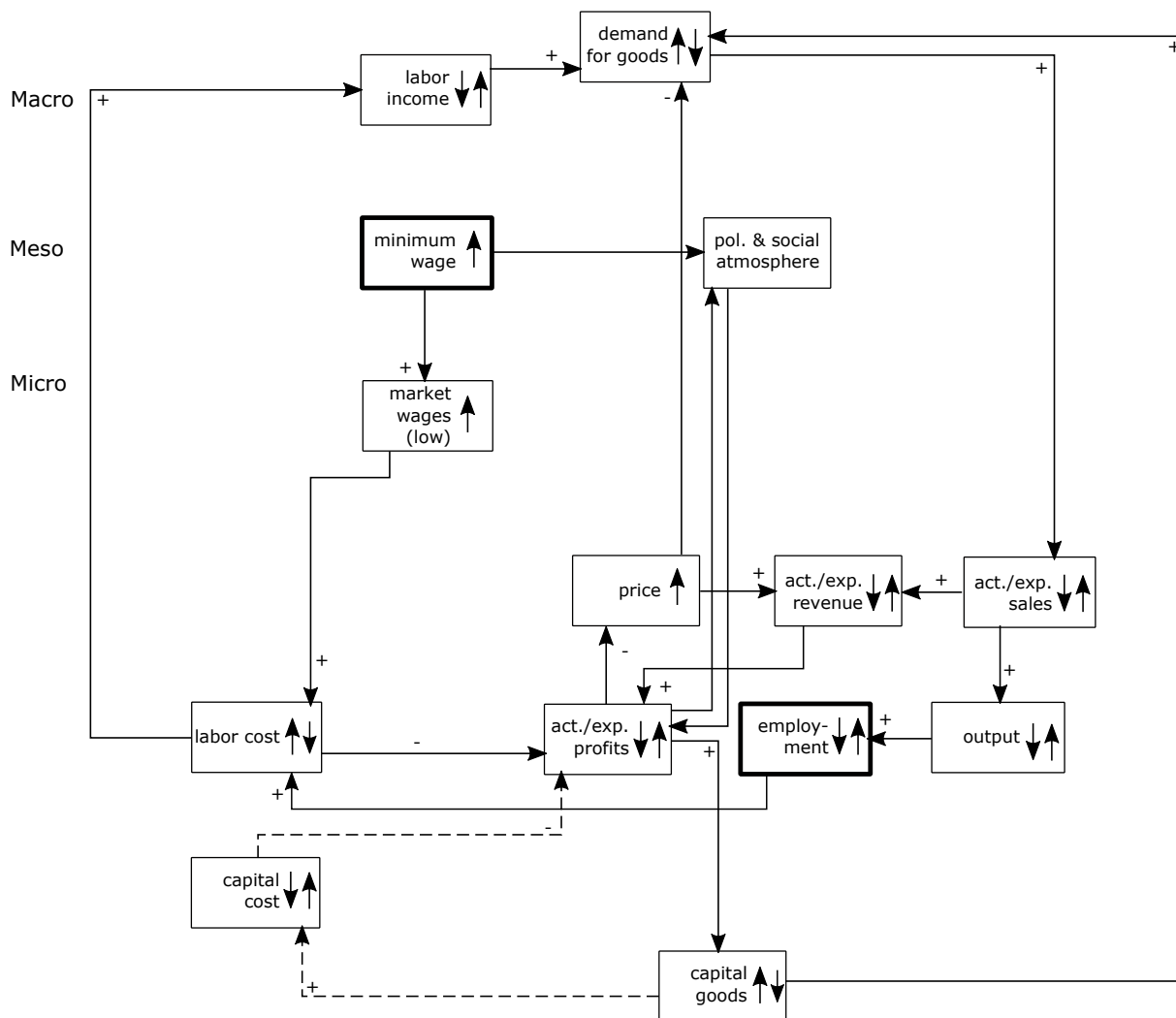
Meso

Micro





**Figure 7:** The Keynesian perspective



**Figure 8:** Meso- and macro-level-related amendments

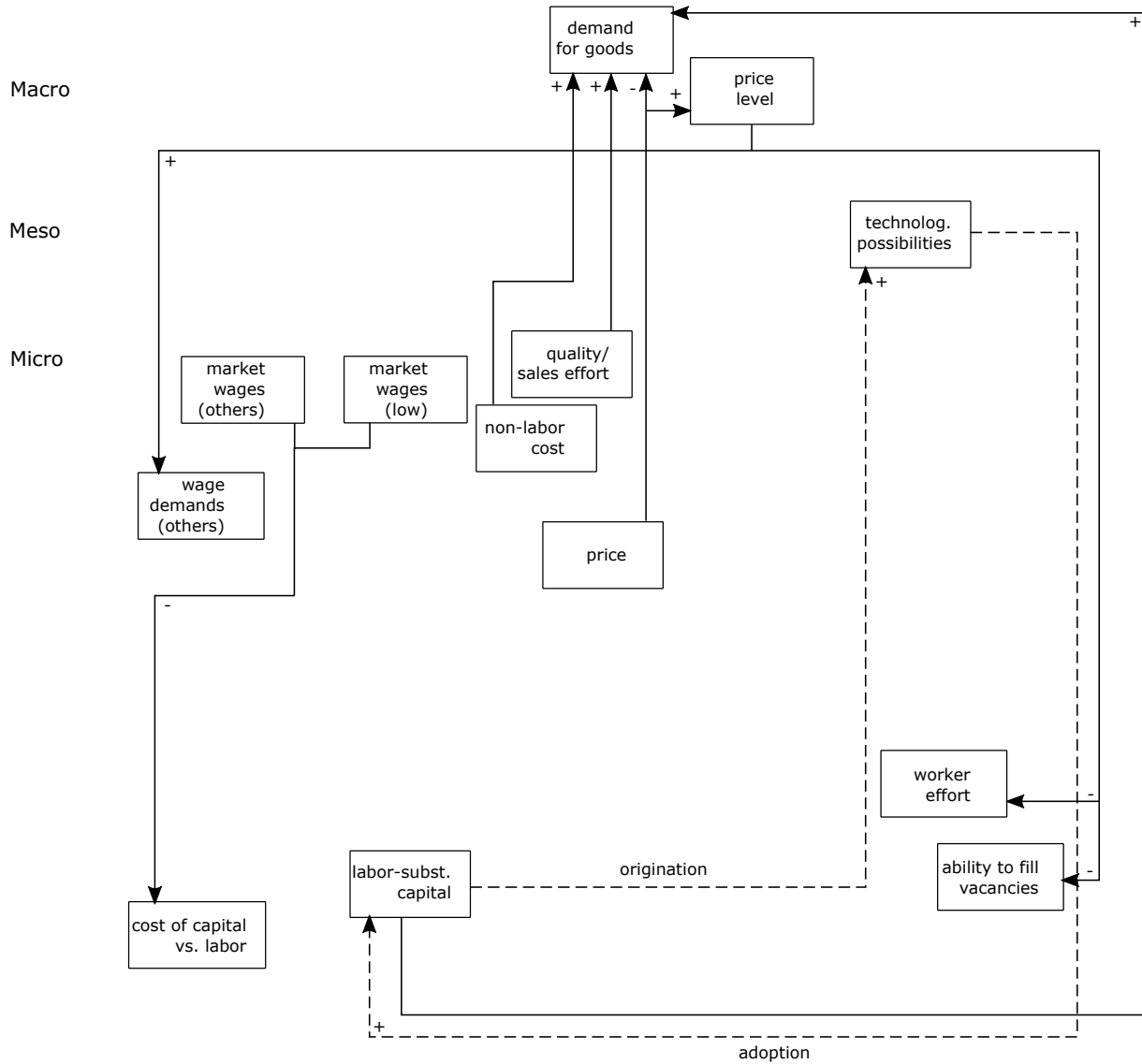


Figure 9: A pluralist framework to assess the minimum wage – employment relationship

