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RECONCILING OPPOSING THEORIES OF UNEMPLOYMENT

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1. Introduction

The economic contributions of Marx and Friedman would traditionally be considered in opposition to one another. Friedman (1962) himself contributed to this view by arguing against the views of Marx in his book, *Capitalism and Freedom*. He advocates for a free market system, whilst Marx advocated a complete transformation of the market, to deal with its inherent failings. Despite their differences, as will be discussed in greater detail below, both Friedman (1968) and Marx (2015) [1867] argue that there would always be some level of unemployment in the long run. They both explain structural unemployment as being intrinsic to the capitalist system, with its level being determined by social institutions and their actions.

They come to this conclusion using very different routes, however. Marx's analysis presumes that labour has little to no power in deciding the level of employment and wages. There is constantly a class conflict, through which labour attempts to secure a more favourable position; but, it is ultimately the accumulation of capital that determines the size of the industrial reserve army. The implication of this is that labour demand, and not supply, determines unemployment. This approach makes it clear that unemployment, from the perspective of Marx, is involuntary. On the other hand, Friedman assumes that supply and demand of labour are relatively on equal footing and therefore one can assume that Friedman's analysis rejects the concept of involuntary unemployment. Voluntary unemployment will be discussed further in section 6 below.

Neither Marx nor Friedman intended to develop a theory of unemployment, but they both used their understanding of unemployment to explain other aspects of economics. As a result, they ended up focusing their explanations on different dynamics of unemployment. Marx (2015) [1867] intended to show how capital accumulation functions in a capitalist system, and in order to do that, he explains how unemployment is a necessary component of capital accumulation. Friedman (1968) intended to show the limitations of monetary policy and needed to develop a theory of unemployment as a structural phenomenon in order to oppose the Phillips curve, which dominated monetary theory at the time. My aim is to find the commonalities and differences between the two approaches and to establish whether or not a more holistic understanding of long-run unemployment can be attained.

Very little attempt has been made to reconcile the works of Marx and Friedman, presumably because of the view that they are in opposition to each other. This view is not unfounded, but I will show in this essay that, in the case of their understanding of structural unemployment, there is much that they had in common. An exception in the literature is Pollin (1999) who argues that the natural rate of unemployment (NRU) is determined through class struggle and is, therefore, a concept rather similar to the notion of an industrial reserve army. Pollin's contribution is limited to this finding, and he does not go further to attempt to analyse and compare other aspects of the NRU and industrial reserve army.

Stockhammer (2008) also shows how the reserve army of labour can be the theoretical foundation for a NAIRU (non-accelerating inflation rate of unemployment) model. The notion of a reserve army can at least, to some extent, be used to develop a NAIRU model similar to those created with the NRU as its theoretical foundation. Stockhammer does not, however, develop the link between the reserve army and the NRU, and simply uses these two theories to develop two distinct NAIRU models. In this essay, I make that theoretical link and show the ways in which the models can be reconciled, and the ways in which they cannot.

It may at first seem counterintuitive to attempt this reconciliation, given their opposing political stances, but I would argue that it is exactly because of their differences that it is so interesting that they came to such a similar understanding of unemployment in the long run. This reconciliation could be particularly useful in understanding the many complexities of unemployment, which remains a pervasive global challenge.

In this essay, I will discuss these two theories of unemployment. I start by explaining the natural rate of unemployment (NRU) that was conceived by Friedman and Phelps, after which Marx's reserve army of labour will be discussed. Thereafter, I will attempt to reconcile the theories, which will include a discussion of incommensurability and voluntary unemployment. I conclude with an example of how the reserve army of labour can be employed to understand the limitations of monetary policy in the vein that Friedman originally intended for the NRU.

2. The natural rate of unemployment

The concept of a natural rate of unemployment was presented by Friedman (1968) and developed by Phelps (1967)[1] around the same time. The NRU has since become a central part of orthodox macroeconomics and is covered in most major macroeconomic textbooks. The reader is therefore, in all likelihood, familiar with the concept, broadly speaking, but a cursory revision of the NRU will highlight key concepts that will be important for the development of this essay.

The NRU is built on a short-run Phillips curve which implies that, if expansionary monetary policy were applied, the initial effect would be an increase in economic activity and inflation. The increase in economic activity would lead to an increased demand for labour and, as a result, a decrease in unemployment, which would lead to an increase in nominal wages. The original Phillips curve illustrated an inverse relationship between wage inflation and the rate of unemployment (Phillips, 1958), but wage inflation soon morphed into CPI inflation. For a discussion of this development, see Galbraith (1997).

This chain reaction, Friedman (1968) claims, is only a part of the story. In the short run, there is a discrepancy between wage expectations and actual wages. The prices of outputs increase faster than wages do, and as such, employers notice that real wages are decreasing, making labour more cost effective, which is what results in the decrease in unemployment. Then, as employees begin to realise that their real wages are lower than expected, they will press for wage increases, which will result in unemployment returning to its original natural rate. Note that Friedman's example relates to an upswing (expansionary monetary policy). During a downswing, labour would not have the same bargaining power. Phelps (1967) envisions this change in unemployment as a series of Phillips curves that shift upward along with price expectations. It is here that the issue of voluntary unemployment comes into the picture. Friedman's adherence to labour supply and demand functions that carry equal weight in wage setting imply that unemployment is voluntary. It is this labour supply and demand dynamic, along with its implied voluntary unemployment, that form the major difference between the theories of Marx and Friedman. I will discuss voluntary unemployment and the labour supply curve further in Section

[1] Note that Friedman's presidential address to the American Economic Association also occurred in 1967, but was only published in 1968.

The level of the NRU, according to Friedman (1968, p. 9), is determined "In the United States, for example, [by] legal minimum wage rates, the Walsh-Healy and Davis-Bacon Acts, and the strength of labor unions". It is, therefore, social institutions that determine the NRU (Pollin, 1999). It is this dynamic of social institutions that determines the long-run unemployment that will form the lynchpin around which the reconciliation of the NRU and the industrial reserve army will be developed. In short, it can be argued that the NRU illustrates a class struggle, with the proletariat using social and legal institutions to counteract the power of the bourgeoisie. This argument will be elaborated on in Section

In the literature on the NRU, one will often find reference to the non-accelerating inflation rate of unemployment (NAIRU). This is a term that is often used interchangeably with the NRU (Ball & Mankiw, 2002), but it is more convenient to adopt Tobin's view (Snowdon & Vane, 2005) that the NRU is the theoretical concept of the natural rate, while the NAIRU refers to empirical estimations of that rate. This distinction seems to be in order, as alternative methods of calculating the NAIRU are based on theories different from Friedman's NRU, as for example in the case of Stockhammer (2008). In this essay, I will concentrate on the NRU.

2.1 Alternative logic to the NRU

We have now covered Friedman's NRU, but as with most theories, alternatives have developed over time. One particular such alternative is that of Blanchard (2017, pp. 150-151). He explains that real wages are set as a function of the unemployment rate and of all other factors that determine wages. This, as will be seen in Section 3, is reminiscent of the way Marx characterises wages to be determined by unemployment, and not the other way around as it is characterised by Friedman. The rate of unemployment has a negative relationship with real wages. As the unemployment rate increases, the bargaining power of workers decreases, resulting in lower real wages. Blanchard (2017, pp. 150-151) then goes on to explain that price setting is mostly determined by a firm's mark-up of the price over the cost. The natural rate of unemployment is then set as the equilibrium between the price setting of firms and the wage setting of workers.

By setting wages as a function of the mark-up of the firm, Blanchard has shifted the decision of the rate of unemployment from the labourer (as Friedman saw it) to the firm (which is more in line with the views of Keynes and Marx). By removing the impetus from labour supply and making employment dependent on firm behaviour (and therefore the demand for labour), Blanchard effectively removes voluntary unemployment from the NRU without rejecting the premise that the Phillips curve is only a short-run phenomenon. Thus, he maintains that, in the long run, unemployment will tend toward the natural rate.

Blanchard's approach to understanding the natural rate of unemployment is important because it circumnavigates some of the critiques against the NRU and brings it closer to Marx's view on unemployment. Voluntary unemployment does not, for example, play a role in returning to the NRU, in this case. The firm's mark-up, and its decision to not employ workers that might jeopardise that mark-up, results in a return to the NRU. For example, if the unemployment rate is lower than the NRU is, then wages will increase due to increased bargaining power, and firms would decide to hire fewer people in order to cut costs. This allows for the same phenomenon of the NRU without assuming that people are fooled by nominal wage increases, as was suggested by Friedman (1968). Blanchard's (2017) explanation of the NRU directly contradicts Stockhammer's (2008, p. 480) assertion that the NRU "is a theory of voluntary unemployment", since Blanchard argues that the NRU can be

understood without resorting to an argument incorporating voluntary unemployment. Since the issue of voluntary unemployment is one of the major critiques of the NRU, Blanchard's approach successfully nullifies that criticism, adding to a more realistic understanding of unemployment in the long run. Voluntary unemployment will be discussed in more detail in Section 6.

Blanchard's (2017) approach places the NRU on what I would consider to be a sounder theoretical foundation, largely because it avoids the obvious problem of assuming voluntary unemployment and a perfectly competitive market. A more fruitful discussion of what the NRU is and how its internal mechanisms function can thus proceed.

Although Blanchard can be seen as updating the NRU, he has in no way linked this to Marx's analysis of the reserve army. Marx does more than other economists do to show the power imbalances between labour and capital, and how this affect unemployment in the long run. Therefore, even with Blanchard's analysis, we still miss out on an integral part of the power relations that exist for labour. In the next section, I will elaborate on Marx's industrial reserve army of labour.

3. Industrial reserve army

Marx (2015) [1867] investigates unemployment while presenting his theory of capital accumulation. The emergence of an industrial reserve army (surplus labour, or unemployed) is an integral part of the accumulation of capital. For capital accumulation to occur, a reserve army is necessary for two reasons. Firstly, the reserve army provides the necessary labour for the expansion of production. Since capital can only create commodities in conjunction with labour, surplus labour is necessary for there to be any expansion of production, or capital accumulation. Secondly, the size of the reserve army and the possibility of job replacement, subdues the bargaining power of labour. Wages therefore, are determined by the size of the reserve army. This process is better understood if we first look at the "general law of capitalist accumulation" within which Marx's (1867, pp. 434-505) understanding of the industrial reserve army is embedded. Marxian analysis falls outside the orthodoxy; therefore, this explanation of the general law of capitalist accumulation will be done in more detail than was necessary for the NRU.

Marx initially assumes a constant relationship between the means of production and the labour necessary to employ the means of production. Marx refers to this as the technical composition of capital. Whenever capital accumulation occurs, or its rate is increased, there will be increased demand for labour, which, as labour is absorbed, will result in higher wages. He does not specify whether it is real or nominal changes that he is referring to. Marx uses this to show that wages are determined by the accumulation of capital, and not the other way around. "To put it mathematically: the rate of accumulation is the independent, not the dependent, variable; the rate of wages, the dependent, not the independent, variable." (Marx, 1867, p. 437). Capital accumulation increases the demand for labour that is necessary to augment the value of that capital. The higher demand for labour results in increased wages. This rise in wages as a result of capital accumulation, however, also results in a slowing of the capital accumulation. Higher wages result in a lower profitability of firms, which reduces the incentive for capital accumulation. This slower accumulation reduces the demand for labour, which will then lower wages (or keep them in check). Capital accumulation, therefore, temporarily increases wages, which limits its expansion, but the wages are then ultimately

reduced. Alternatively, as Marx (1867, p. 437) puts it: “The mechanism of the process of capitalist production removes the very obstacles that it temporarily creates.”

Marx then drops the assumption of constant technical composition. This allows for a situation in which capital accumulates at an increasing pace, due to the pressures of competition. Labour productivity would then have to increase in order for firms to perform better than their rivals do, resulting in labour playing a smaller part in production, in comparison to capital. “The battle of competition is fought by cheapening of commodities. The cheapness of commodities demands, caeteris [sic] paribus, on the productiveness of labour, and this again on the scale of production.” (Marx, 1867, p. 441). Labour and its productivity therefore play a central role in capital accumulation and competition in capitalism.

If there were constant technical composition, then an increase in the amount of capital would necessitate an increase in the amount of labour. When constant technical composition was assumed, an increase in capital would have resulted in an increase in the demand for labour. This assumption has, however, now been replaced with the, more realistic, assumption that, as labour productivity increases, less labour is required to produce the same quantity and quality of goods. This means that as capital increases, the demand for labour will be dependent only on the ratio of the mass of labour necessary to employ the means of production to that capital, and not simply the total amount of capital. Marx (1867, p. 443) remarks that “Since the demand for labour is determined not by the amount of capital as a whole, but by its variable constituent alone, that demand falls progressively with the increase of the total capital, instead of, as previously assumed, rising in proportion to it.”

It is at this point that Marx introduces the idea that capitalism both needs and creates a level of unemployment, implying a long-run theory of unemployment (since we are assuming capital lasts in the long run). This is most clearly seen in the following quotation: “But in fact, it is capitalistic accumulation itself that constantly produces, and produces in the direct ratio of its own energy and extent, a relatively redundant population of labourers, i.e., a population of greater extent than suffices for the average needs of the self-expansion of capital, and therefore a surplus population.” (Marx, 1867, p. 443).

The accumulation of capital, on the one hand, creates this surplus population by displacing workers when labour productivity expands at a greater rate than the expansion of production. It is possible for capital accumulation to result in absorption of labour in the same proportion of capital to labour (as was discussed in the first section), but it is very unlikely that the portion of labour required in the production process would increase, unless labour productivity for some reason decreases. As a result, we can assume that, as capital accumulation occurs, there will inevitably be the creation of a surplus population, which would reduce wages again.

The relative size of this surplus population, in comparison with the active population, is what regulates wages. If a larger portion of the labour force is unemployed, due to increased capital accumulation, then there will be downward pressure on wages because of the competition between those who are, and those who are not, in the reserve army. If the opposite happens and wages rise, then the incentive to increase labour productivity is increased, resulting in an increase in the surplus population.

These explanations illustrate the point that capital accumulation creates a surplus population, but do not explain why that surplus population is a necessary component of further accumulation. “But if a surplus labouring population is a necessary product of accumulation

or of the development of wealth on a capitalist basis, this surplus population becomes, conversely, the lever of capitalistic accumulation, nay, a condition of existence of the capitalist mode of production." (Marx, 1867, p. 444). The expansion of capital into new spheres of production, into new markets, or expanding markets, is limited by the available labour. Therefore, the size of the pool of unemployed will determine the potential for capitalist expansion. Without a surplus population, the accumulation of capital would be restrained by population growth. "Capitalist production can by no means content itself with the quantity of disposable labour power which the natural increase of population yields. It requires for its free play an industrial reserve army independent of these natural limits" (Marx, 1867, p. 445).

The size of the reserve army therefore dictates the rate of capital accumulation. But, capital also generates a surplus population as capital accumulation changes the technical composition of capital. In other words, as technological advancement results in less labour being necessary for production, the redundant labour forms part of the industrial reserve army, which is then ready to supplement the labour requirements in other spheres to which capital expands. "Capital works on both sides at the same time. If its accumulation, on the one hand, increases the demand for labour, it increases on the other the supply of labourers by the 'setting free' of them, whilst at the same time the pressure of the unemployed compels those that are employed to furnish more labour, and therefore makes the supply of labour, to a certain extent, independent of the supply of labourers." (Marx, 1867, p. 448).

It is precisely the increase in the bargaining power of labour that allows for the right environment for labour to be replaced. This is partly because increased wages push firms to look for alternatives, and partly because, during these times of high employment, there are more workers who can innovate on the job, increasing their efficiency. As capital accumulation then occurs, some labour is replaced by capital, but at the same time, increased productivity also absorbs labour. Labour therefore is neither tending towards full employment, nor is the trend one of labour becoming completely obsolete. Unemployment is always present, but also always fluctuating. The industrial reserve army therefore serves as surplus labour that capital can draw upon when it needs more labour, and it also keeps the bargaining power of labour in check. Marx distinguishes between three forms of the industrial reserve army – floating, latent, and stagnant. Each of these provides capital with surplus labour. They merely differ in how readily they are absorbed by capital. Notice that unemployment is explained with very little reference to the decisions of labour, as though it is the demand for labour that dictates the unemployment, and not also the supply of labour as was evident in the NRU.

There is a negative relationship between the relative size of the reserve army of labour and the wages of those employed. In this we can note that Marx's understanding of the relationship between unemployment and wages is not that dissimilar to the inverse relationship between the unemployment rate and the rate of change of wages presented by the Phillips curve (Phillips, 1958), even though Marx does provide a different theoretical reason for this relationship. Marx does not, however, make the link between wages and general inflation that is assumed in modern macroeconomics and the Phillips curves used by both Friedman (1968) and Phelps (1967) in deriving the NRU.

4. Reconciling the theories

In reconciling two theories, it is important to highlight not only those aspects of the theories that are reconcilable, but also those aspects that are not. It would not be realistic to presume that all of one theory could be reconciled with another, because if that were the case then one would have proven not that they are reconcilable, but that they are in essence the same. From the description of the NRU and the industrial reserve army, we can already conclude that these are two very different theories. I will show in this section that supply and demand analysis and the subsequent acceptance, or rejection, of voluntary unemployment forms the essence of the difference between the two approaches. It is important to acknowledge this obvious difference before proceeding to highlight what is reconcilable. Marx and Friedman both argue that unemployment is inevitable in capitalism and that the level of this unemployment is constantly changing, depending on social and other factors that influence labour's bargaining power. It is here that we find common ground between the NRU and the industrial reserve army.

Before I expand on the commonalities and differences between the two theories, I will firstly discuss incommensurability. It is important that we start with incommensurability because, if there is complete incommensurability between the NRU and the reserve army, it would not be possible to find common ground. After establishing that the theories are not incommensurable, I will discuss their understandings of involuntary unemployment, which constitute their most important difference. Thereafter, in the third part of this section, I will show how the theories are similar in their core understanding of unemployment in the long run and its determinants. In the final part of this section, I will show, using the example of expansionary monetary policy, that these two theories essentially come to the same conclusion regarding the role of monetary policy in affecting unemployment.

4.1 Incommensurability

A subtle difference exists between reconcilability and commensurability, even though these terms are often considered synonyms. To find that two theories are commensurable means to find that there is some common standard measure that can be used to compare the theories, in order to determine which of the theories is best. To reconcile two theories means to show that the theories have common ground. I would like to show that the theories are, to some extent, commensurable. Without showing that, it would not be possible to show that there is enough common ground between the two theories to consider them reconcilable. It is for this reason that I will first establish commensurability before showing that the theories are indeed reconcilable. We are also not necessarily dealing here with absolutes. These theories, as the reader will notice in the rest of this section, are reconcilable in some ways, but they are also irreconcilable in some others. My aim is not only to show that they are reconcilable, but also to highlight the ways in which the theories will simply remain in opposition to one another.

There are various forms of incommensurability (Torr, 1999). For the purposes of this essay, I will highlight the forms that are relevant to this study. These forms include problems of translation, in which supporters of both theories use the same words but mean different things when using those words – see section 4. Another potential way in which the two theories could be incommensurable is that "rival theories may investigate different issues" (Torr, 1999). The two theories we are looking at do indeed attempt to explain different issues. The industrial reserve army was developed by Marx as a component that explains the

accumulation of capital in a capitalist society. The NRU, on the other hand, was developed by Friedman to illustrate the limitations of monetary policy. I show in Section 8 that both of the theories can be used to illustrate the potential limitations of monetary policy.

There are other forms of commensurability that I will not elaborate on because they are not applicable to this study. For example, one form of incommensurability is concerned with the evaluation of track record. If one is able to use the same past phenomenon as successes that prove their validity, it makes it impossible to compare the theories in order to determine which is better. Stagflation in the 1970s was considered proof of the NRU, since it showed the deviation from the Phillips curve that Friedman predicted. But, it could also be used as proof that the industrial reserve army holds, since a reduction of unemployment could ultimately lead to higher wage inflation along with an increase in unemployment as capital accumulates (due to the incentive created by higher wages). Both of these theories have grounds to reject the Phillips curve in the long run and can therefore use stagflation as evidence of the theory's success. They are therefore incommensurable in terms of track record, because that measure cannot be used to evaluate both theories, but they not necessarily irreconcilable, as will be seen in Section

4.1.1 Problems of translation

There are various ways of determining the commensurability of two theories. One such form is to determine whether the language used by the two theorists mean the same thing. It is possible that both Marx and Friedman are discussing unemployment, but that they actually mean different cohorts of jobless people. In other words, they could be defining unemployment in very different ways. One example of such incommensurability is illustrated by Torr (1999) when he shows that the term 'equilibrium' in fact means two different things when it is used by Keynesians and when it is used by Classical economists. In our case, the two theorists use very little of the same language, but it is still important to determine if they are discussing the same concept. If not, then it would not be necessary to even discuss any other forms of commensurability, since they are then confirmed to not discuss the same phenomenon. We will now show how a few important terms may differ in their use between Marx and Friedman, but retain the same meaning and are, at least to that extent, commensurable.

The first of the terms we need to inspect is "unemployment". This is obviously essential since we are comparing two theories of unemployment. Two aspects of unemployment need to be discussed here. Marx uses the terms "surplus labouring population" and "industrial reserve army" interchangeably with unemployment. He does this presumably to highlight different aspects of unemployment, such as the idea that the unemployed are that part of the population that is in addition to what is necessary by capital at that time, in the case of "surplus labouring population". In the case of referring to the unemployed as the "industrial reserve army", it is to indicate that the unemployed form a specific role in capitalism, which is to be at the ready for when capital needs to expand into new spheres of production. Friedman simply uses the term "unemployed". They are both referring to that part of the population that is not currently employed. This is enough to show that there is enough similarity in their understanding of unemployment to make it possible to compare the two theories and their merits. This does, however, not imply that they share an understanding of the dynamics of how unemployment is created. Their most fundamental difference lies in that Friedman assumes that the unemployment, in the long run, is determined through voluntary action by labour, while Marx on the other hand assumes that it is capitalism as a system and

its expansion that determines unemployment in the long run, and not voluntary action by labour. We will expand more on this difference in Section 6.

The second factor that needs to be discussed is that Marx and Friedman had different classifications for different types of unemployment. It is reasonably presumed that Friedman did not really deviate from the normal mainstream classifications of unemployment at the time. However, he does not factor them into his theory of the NRU. Marx does have different classifications for types of unemployment based on how readily the unemployed can be drawn back into unemployment, given a change in wages, but those categories are not essential in understanding the industrial reserve army. There is, therefore, no reason to believe that they were actually discussing different phenomenon, despite using different terms at times.

The second important term to analyse is "inflation rate". This is especially important since it is central to the monetarist theory, but does not get an explicit mention when Marx discussed unemployment. Marx does discuss wage rates and how they relate to unemployment. Friedman discusses inflation, but makes use of the Phillips curve as the foundation for the NRU theory. It is here that the first link between Friedman and Marx can be drawn. The Phillips curve was originally graphed with wage inflation and unemployment on the axes. In modern macroeconomics, the wage inflation rate with which the Phillips curve was initially graphed, is replaced with the overall inflation rate. The reason for this is that it is assumed that wage inflation would be one of the major contributors to the overall inflation rate. If this assumption is maintained, then Friedman and Marx are essentially discussing the same thing when Friedman talks of inflation and Marx of increased wage rates. This assumption is not infallible, as Galbraith (1997) points out there is a difference between wage inflation and general inflation. Wage inflation only relates to the general increase in wages, and is not always the major driver of general inflation. Many factors, other than wages, have over the years been the dominant factors that influence inflation, such as oil prices and import prices. It is, however, still conceivable that wages would have a considerable impact on inflation, making the assumption not unreasonable. Regardless, we can, for the purposes of determining commensurability, agree that Friedman and Marx are in essence discussing the same phenomenon and are therefore not incommensurable.

4.1.2 Relativist vs. absolutist

John Neville Keynes developed a distinction in the way in which one can view theories in history (see for example Torr, 2001). One could hold an absolutist account, in which the theory is potentially relevant throughout time. The alternative is a relativist account, in which a theory is only relevant to the time and place in which it is developed. This is a useful distinction, especially when looking at older theories, when one would need to determine whether the factors and elements that made them relevant at the time are still present, or if the theory should be relegated to the history books, at least until such time as the original circumstances are recreated.

When discussing Marx's theory, which is more than a century and a half old[2], it may be necessary to consider whether one considers the theory to only have been applicable at that time (relativist), or if it is still relevant today (absolutist). There is no doubt that *Capital* was a

[2] The NRU is just over 50 years old, and it is doubtful that enough has changed in the economy to warrant going through this exercise for it as well.

product of its time. The 1800s saw the first wave of major changes emanating from the industrial revolution. The circumstances for most workers at the time were especially bad, with legislation and labour movements taking a long time to bring about tangible changes to that environment. Marx (2015) [1867] explains some of these terrible working conditions in England throughout the first volume of *Capital*. As an example, in describing the lot of the labouring class, Marx (1867, p. 449) quotes the following striking passage:

> "… that the average age at death of the Manchester ... upper middle class was 38 years, while the average age at death of the labouring class was 17; while at Liverpool those figures were represented as 35 against 15. It thus appeared that the well-to-do classes had a lease of life which was more than double the value of that which fell to the lot of the less favoured citizens."

The fact that a piece of writing is a product of its time is, however, not enough to claim that it is no longer relevant for latter times. If it were the case that changing times nullify past theories as a rule, then very little of the classical works would have any relevance. Ricardo's comparative advantage was, for example, a product of the classical economist's drive to discredit Mercantilism, and yet it is still common practice to teach it to undergraduates to this day. The reason that it has maintained relevance is because the debate concerning free trade is still ongoing, and although the dynamics of international trade have changed, the concerns of protectionism and free trade are recurring.

The conditions of the average person have definitely improved since the 1800s (Deaton, 2013), but this does not mean that the elements and dynamics that Marx explains are no longer relevant. The major and increasing inequalities between the rich and the poor, or between those who control the means of production and those who do not, highlight the point that there is still room for class analysis. The various Marxist scholars who continue research through class analysis further confirm that there is value in viewing Marx's theories not through a relativist account, but through an absolutist account – see for example Fine (2019), Foster and Holleman (2014), Gall (2020) and Woodcock (2020).

4.2 Voluntary unemployment

As has been mentioned above, the major point of contention between the NRU and the reserve army is the concept of voluntary unemployment. Unemployment in the Marxian sense is involuntary because it is capital, and its expansion, that determine the size of the reserve army. Workers therefore have little to no power to determine the rate of unemployment. In essence, it is the demand for labour that determines the rate of unemployment, not the supply of labour. Friedman, on the other hand, uses supply and demand analysis to determine the rate of unemployment in the long run. He concludes, therefore, that it is partly workers, through their rejection of wages that they deem too low, who determine the unemployment rate. Unemployment is therefore voluntary.

When discussing the rift between voluntary and involuntary unemployment, it is useful to look to Keynes (2018) [1936] who pointed out in the *General Theory* that the classical economists had largely ignored involuntary unemployment. He therefore saw it as his task to set the matter straight. The *General Theory* was not the first to mention the idea of

involuntary unemployment[3], but it did succeed in popularising the term and extending the debate throughout mainstream economics.

The *General Theory* is about the short run and this has been a problem for scholars of different schools of thought, including Keynesian economists (Shapiro, 1984-85). For the purposes of this study, the short-run focus of the Keynesian theory of employment, makes it incommensurable with that of the NRU and the reserve army. One could perhaps interpret the reserve army through both a short-run and a long-run lens, so it may be possible to compare the Keynesian theory of employment with the reserve army. This comparison would, however, still fall outside the scope of this essay. Torr (1999) shows how the Keynesian and Classical definitions of unemployment are incommensurable because of their different understandings of what is meant by "equilibrium". That, however, does not mean that there is no use in looking at the works of Keynesian economists for this study. Keynes's development of involuntary unemployment is very useful in this essay, since it highlights the difference between the NRU and the reserve army.

To unravel the concept of involuntary unemployment, it is useful to discuss the debate between Pigou and Keynes. Much like Friedman, Pigou did not acknowledge, or perhaps even realise, that his analysis necessitated the assumption that unemployment is voluntary. In defining unemployment, Pigou (1913, p. 14) states: "For unemployment clearly does not include all the idleness of wage-earners, but only *that part of which it is, from their point of view and in their existing condition at the time, involuntary*." Keynes's argument is not that Pigou was unaware of the concept of involuntary unemployment, but rather that he completely overlooked its effects in his analysis. Ambrosi (2009, p. 9) points out: "The implication of Pigou's definition is, of course: if the workers wanted to work more at the going real wage but found not sufficient employment, then, if there is a small decrease in the real wage but more jobs are offered, then it is not plausible that workers will work less than before." This implies that the marginal disutility of labour (or what is its inverse, the marginal utility of leisure) must be equal to the real wage, for if workers worked less than before, then their unemployment would indeed be voluntary.

So how did Keynes define unemployment? He offers the following definitions of involuntary unemployment (Keynes, 1936, pp. 14-15): "Men are involuntarily unemployed if, in the event of a small rise in the price of wage-goods relatively to the money-wage, both the aggregate supply of labour willing to work for the current money-wage and the aggregate demand for it at that wage would be greater than the existing volume of employment." Keynes argued from this definition that the marginal disutility of labour is only equal to the real wage if the economy is in full employment. It is possible, and indeed probable, for the marginal disutility of labour to be less than the real wage, in which case unemployment is involuntary.

Keynes argues that it is aggregate supply and demand that determines the level of employment, and not labour supply and demand. If the equilibrium level of aggregate supply and demand does not equate to full employment, the resulting unemployment can be seen as involuntary. The use of labour supply and demand analysis accordingly militates against the existence of involuntary unemployment. Any unemployment outside the equilibrium would be considered as voluntary, which is exactly what Friedman assumes in the NRU.

[3] For an interesting discussion on the work that Wicksell and Cassel did on involuntary unemployment before Keynes, see Boianovsky and Trautwein (2003).

Keynes's idea, that it is investment that determines the level of employment, relates quite closely to the idea that it is capital's expansion that determines the size of the reserve army. The notable difference between the theories of Keynes and Marx is that Keynes considered it possible for full employment to be reached with enough investment, whereas in the case of the reserve army, Marx considered it impossible for capitalism to be sustained without a reserve army. The reserve army would always be expanded through the increase of labour productivity inherent in capital accumulation.

The NRU is sometimes defined as the level of unemployment at which inflation is stable and the economy is at full employment. For example, Mankiw in his popular textbook (2016, 296) equates full employment with the natural rate of unemployment. In some ways, for those that advocate for this definition, the NRU shifted the goalpost of full employment[4]. Classical economists argued that equilibrium included full employment, and if there was unemployment, beyond full employment, then it would have had to be because of the voluntary decisions to withdraw labour. Keynes countered that equilibrium is possible without full employment; that it is the interaction between aggregate demand and aggregate supply that determines the level of employment, and not the supply and demand for labour. Friedman's NRU then shifted the blame for unemployment back to the decisions of labour. To reach full employment, in the case of Friedman, one would again have to simply ensure that the labour market was able to clear. Note that Marx does not feature in this explanation of the change in definition of full employment since he (contrary to any of the economists mentioned) did not consider full employment to be a possible outcome within capitalism.

Stating that the NRU is also the level of full employment is, however, a misunderstanding of the NRU, at least in the way it was conceived by Friedman. It can be easily disputed in two arguments. Firstly, Friedman (1968, p. 9) claimed that the NRU is determined by social institutions. In order to maintain continuity of the definition of the term full employment, which is definitely worthwhile considering that we are unlikely to end unemployment any time soon, a disclaimer would need to be added when considering the NRU as the level of full employment. This would take into account the point that full employment should be considered in relation to the social institutions at the particular point in time under discussion. The second argument is that the phrase "full employment" implies that there cannot be a lower level of unemployment, since all the labour available is employed. The theory of the NRU, as developed by Friedman, makes no such claims; in fact, it contradicts such a claim by showing that temporary unemployment could be lower than the NRU before workers realise that their real wage is below expectation and they withdraw their labour. The NRU merely shows that, in the long run, there would be mechanisms pushing unemployment toward the natural rate. It is entirely possible (and expected) for unemployment to fluctuate around the NRU.

A crucial point that I have tried to highlight throughout the essay is that the pivotal difference between the analyses of Friedman and Marx lies in their use of labour supply and demand analysis. Friedman (1968, p. 8) set up the NRU to "… be ground out by the Walrasian system of general equilibrium equations, provided there is imbedded in them the actual structural characteristics of the labor and commodity markets, including market imperfections, stochastic variability in demands and supplies …". Marx (2015) [1867], on the other hand,

[4] Torr (1999) describes these differences in the understanding of full employment as a type of incommensurability. I drew on that work to discuss incommensurability in Section 5.

does not use supply and demand analysis to determine unemployment. He shows that unemployment is determined by capital, in other words by the demand for labour, and not by the supply of labour. When workers realise that their real wages are not as high as they expected, they withdraw their labour. This is the mechanism that would shift a rate of unemployment that is lower than the NRU back towards the NRU. Voluntary unemployment is therefore implied within the NRU.

The idea of voluntary unemployment being a major cause of overall unemployment gained considerable traction in the sixties and subsequently informed Friedman and Phelps' NRU. Friedman (1968) considers unemployment to be partly due to the *decision* of labour to increase wages, which increases production costs and leads to an increase in unemployment. So in that sense, labour, through its desire for increased wages, inadvertently brings unemployment upon themselves. Phelps goes further in showing that it is a utility-maximising decision that leads to a withdrawal of labour when there is a discrepancy between expected and actual prices. As unemployment decreases from the initial increase in inflation, and as people start to realise that their real wage has not changed, they will voluntarily withdraw their labour, or as Phelps (1968, p. 293) puts it:

> "We know that a reduction of the unemployment rate, with its promise of reduced waiting time in the unemployment pool, increases the number of people quitting to search for better jobs (though reducing average time so spent)."

The NRU signified a return to the acceptance of voluntary unemployment, which was common practice in classical economics, although it is Keynes who brought awareness of the fact that their view of unemployment is that there is voluntary unemployment. The idea behind this claim of voluntary unemployment was that collective labour action that resulted in an increase of unemployment, through for example an increase in wages, was due to a collective voluntary action and therefore unemployment is voluntary. The same criticism of voluntary unemployment that was relevant to classical economics is still relevant to the NRU.

Keynes (2018) [1936] introduces the concept of involuntary unemployment in his second chapter. It highlights the premise of his book, that classical economists only analyse a special case of the economy in which macroeconomic equilibrium also equates to full employment. To prove his point, he introduces the concept of voluntary unemployment as an essential assumption for this equilibrium full employment. In the post-Great Depression world in which the GT was written, the concept of voluntary unemployment seems especially nonsensical, much as it does in present day South Africa, with unemployment perpetually above 20%. The unemployment rate in South Africa is gradually increasing and passed the 30% mark in the first quarter of 2020 (StatsSA, 2020).

4.3 Common ground

Pollin (1999) argues that the class struggle is what determines the level of the natural rate of unemployment (NRU). This argument is supported by (and based on) the fact that Friedman (1968) claimed that the NRU level would be determined by man-made institutions, such as minimum wages and labour unions. The NRU is then determined by the bargaining power of labour within the process of class conflict. This has been, to the best of my knowledge, the only other attempt to reconcile the NRU with the industrial reserve army. There have, however, been attempts to develop a Marxian version of the NAIRU. See for example: Stockhammer (2008). Pollin's contribution is limited to linking the NRU to class conflict, and

does not further elaborate on Marx's view of long-run unemployment. Neither does he address how the conceptualisation of the reserve army of labour links up with the NRU, meaning he has not done the work of actually reconciling two seemingly opposing theories; instead, he has simply shown that it might be possible. Reconciling these theories may encourage a more nuanced, pluralist understanding of unemployment in the long run. If it is indeed reconcilable, then it is possible that proponents of the reserve army of labour could draw from the link between inflation and unemployment that is described in the NRU. Likewise, proponents of the NRU could benefit by considering the power dynamics between labour and employers as an inherent cause of unemployment in the long run.

For Marx, the size of the reserve army of labour is determined by the rate of capital accumulation. It is then the size of the reserve army and its impact on the bargaining power of labour that determines the real wages (Robinson, 1941). So, in essence, both Friedman and Marx's theories hold that it is class conflict that would determine the level of unemployment in the long run (Pollin, 1999). In both cases, the institutions that influence the bargaining power of labour (such as minimum wages and labour unions) will have an impact on unemployment in the long run.

An essential requirement for these theories to be reconcilable is that they should both be discussing a similar time frame. The NRU is clearly meant to be a theory of long-run unemployment. Friedman (1968) implied that the long run is the time it takes for labour to realise that only nominal wages increased, and not real wages. In other words, the long run is as long as it takes for price expectations to adjust to actual prices. Marx (2015) [1867] does not directly state that his theory is a long-run theory, but based on his view that the reserve army of labour is a permanent and necessary element of capitalism, he implies that unemployment will be a feature of capitalism for the entire duration of the existence of the capitalist society. It is fair to say, then, that the time frames within which these two theories function are indeed compatible with one another. Unemployment, therefore, is a long-run (or permanent) feature of a capitalist society.

Both Friedman and Marx also agreed on the existence (at least in the short run) of an inverse relationship between inflation and the rate of unemployment. Friedman's acceptance of this relationship in the short run manifests itself through his acceptance of the short-run Phillips curve. Of course, his theory of the NRU then continues to debunk that relationship in the long run. Marx similarly illustrates this relationship through the influence that the reserve army has on wage prices. Increased unemployment results in a reduction of bargaining power, leading to lower wages. As discussed in the section on language, Marx does not make the claim that unemployment will directly influence overall inflation, but rather that it will influence wages. Friedman's conception of the relationship between the unemployment rate and inflation is based on the Phillips curve that graphs wage inflation (not CPI inflation) with the rate of unemployment. Friedman therefore accepts, at least in the short run, that prices are determined by wages. It is, therefore, reasonable to suggest that both their theories were in reality based on changes in the wage rate. It is necessary to assume that wage inflation is a major contributor to inflation in general, for this to be true. This assumption has been criticised by Galbraith (1997).

These unspoken agreements between Marx and Friedman in no way mean that they were unknowingly discussing the same theory. There is considerable divergence between their theories, as well.

One point in which it is difficult to determine the difference between Marx and Friedman regards the variability of long-run unemployment. Friedman assumes that unemployment would, in the long run, always tend towards the natural rate, although he also acknowledges that this rate could change over time, given changes in certain social institutions (see section 2). One could, therefore, assume that the NRU is always changing as bargaining power fluctuates through the actions of labour organisations and as changes in labour legislation occur. Unlike Marx, however, Friedman's theory has a built-in mechanism that ensures that unemployment would always return to the natural rate, even though that rate is also in perpetual motion. Marx does not indicate that there is some leading variable that would guide the movement of unemployment, and therefore gives no indication that bargaining power dynamics would shift, if some threshold were to be passed. Rather, he views the size of the reserve army of labour to be in constant flux, with no indication of where it would tend, other than through changes in the social institutions that signify shifts in bargaining power.

We could assume that it is not possible to pin down the NRU because it is constantly shifting, given changes in the different institutions that determine bargaining power. This assumption is supported by the lack of empirical success at establishing a consistent measurement of the NAIRU (Galbraith, 1997). A constantly shifting NRU is largely the same thing as a constantly shifting reserve army of labour. Marx (1867, pp. 434-435) does, conceptually in line with the NAIRU, expect that a continual increase in employment will result in an increase in wages:

> "For since in each year more labourers are employed than in its predecessor, sooner or later a point must be reached, at which the requirements of accumulation begin to surpass the customary supply of labour, and, therefore, a rise of wages takes place."

The other large divergence between the views of Friedman and Marx's theories of unemployment is seen in their views on voluntary unemployment. Friedman assumes that all unemployment is voluntary in the long run. It is the mechanism with which he explains the deviation from the Phillips curve in the long run. This perspective is, at best, defensible when there are very low levels of unemployment in a country and it can reasonably be assumed that the unemployment is largely frictional. Characterising unemployment as a voluntary occurrence provides the illusion that unemployment is equally determined by the supply of, and demand for, labour. The level of unemployment is determined by the interplay of the wages and employment requirements set by firms and the demands for employment and wages set by labour. This, however, is not the case if involuntary unemployment exists. It is then determined largely by the demand for labour. Marx makes no provision for voluntary unemployment. He assumes that all unemployment is due to the decisions of firms, based on how much labour they can afford in order to retain their surplus value and on the power of the working class to push for higher wages. Blanchard (2017) provides an alternative logic to the NRU in which it is the mark-up of firms and of labour power that determine their level of unemployment. This understanding of the NRU without voluntary unemployment is much more comparable with the view of Marx, since it incorporates both supply and demand dynamics in the determination of the level of long-run unemployment.

4.4 Monetary policy

The Natural Rate of Unemployment was clearly developed to illustrate the limitations of using monetary policy beyond ensuring price stability, which is evident from the title of Friedman's (1968) address, "The Role of Monetary Policy". Marx's understanding of the industrial reserve

army was developed with a completely different aim in mind. Marx (2015) [1867] wanted to develop an understanding of capital accumulation, and considered unemployment to be a central element in determining the rate of capital accumulation. To illustrate the reconcilability of these two theories, Marx's industrial reserve army theory can be used to explain the limitations of monetary policy as intended by Freidman. Astonishingly, we come to similar conclusions, using Marx's industrial reserve army, as with Friedman's NRU, when it comes to how effective monetary policy can be in reducing unemployment. I am not going to explain Friedman's theory here again, because his theory is so embedded in an explanation of monetary policy that this has already been done in the section explaining the natural rate of unemployment. Instead, I am going to embed Marx's theory within an explanation of monetary policy in order to illustrate the similarities and differences between the two theories. Instead of using terms such as "Industrial reserve army" and "surplus population", I will use the term "unemployment". As discussed previously, they all mean the same thing and are therefore interchangeable. No example figures are provided in this mental exercise, because, even if one knows the direction of causality, or at least the theory thereof, it is still difficult to estimate what the impact of any change will be. This is the case with the NRU, but even more so in the case of the reserve army where no steady rate is assumed at any point, but rather a variable in constant flux, where not even the rate of change can be accurately predicted.

Let us assume an expansionary monetary policy, which will result in an increase in production, leading to a reduction of unemployment. How much this unemployment will decrease due to an economic expansion will be dependent on labour productivity. This change, so far, can easily be illustrated through a movement along a standard Phillips curve. The deviation from the Phillips curve is then due to capital accumulation. When unemployment is lower (in other words, the industrial reserve army of labour is smaller) the bargaining power of labour is strengthened and wages increase, on aggregate. The higher wages limit profitability, due to the higher production costs. Capital accumulation is then slowed down. Assuming that labour productivity will continue to rise, unemployment will increase again. This assumption is made more relevant, given that high wages can be expected to encourage innovation in order to increase labour productivity. How much unemployment will rise will be dependent on the change in labour productivity.

The conclusion of this explanation of unemployment is similar to that of Friedman in one key respect. Expansionary monetary policy will only lead to a reduction of unemployment in the short run. In the long run, unemployment will again increase. There are also two key differences in the policy conclusions that can be drawn from these two theories. Firstly, Marx's approach only limits the role of monetary policy in terms of unemployment. The expansionary monetary policy will lead to long-run increases in production, just not a long-run reduction in unemployment. Friedman's argument was, however, that the only role for monetary policy should be price stability. The second key difference is in the stability of the long-run unemployment rate. Marx's long-run unemployment rate is quite volatile, as it is dependent on increases in labour productivity, for which one cannot make an assumption of a stable rate of change. There is no way of telling whether the initial reduction in unemployment will be greater than, or smaller than, the subsequent increase in unemployment. It is possible for there to be a long-run, minor decrease in unemployment, although one cannot bank on that since it is also possible that expansionary monetary policy could lead to a long-run increase in unemployment, due to large increases in labour

productivity. Friedman argues for a very precise long-run rate of unemployment (NRU). Ceteris paribus, in the long run, the decrease in unemployment due to expansionary monetary policy will be reversed exactly to return to the original NRU. Of course, Friedman does allow for changes in the NRU over time due to institutional changes, but volatility is not built into his theory.

5. Conclusion

The natural rate of unemployment and the industrial reserve army of labour have their origins in very different circumstances, one century apart. Marx attempted to show the nature of capitalist accumulation, and in so doing, he developed the concept of an industrial reserve army of labour that would form an integral component of his theory. The reserve army was a necessary and inevitable component of capitalism. Marx therefore saw unemployment as a phenomenon that would always be present in capitalism. Friedman, on the other hand, in a continuation of his work on monetary policy, wanted to explain the limitations to monetary policy, and to do that, he had to develop the natural rate of unemployment as a long-run variation of the Phillips Curve.

The differences between these two economists come through most clearly in their conceptions of the role of the supply of and demand for labour. Marx's analysis does not employ demand supply analysis, as he considers the size of the reserve army not to be determined by the interplay of choices between workers and employers, but rather to be a process through which capital expands, absorbing sometimes more and sometimes less labour from the reserve army. Choice has, in essence, been removed from the analysis, allowing us to characterise unemployment in the way Marx portrays it, as involuntary. Friedman clearly disagrees with this position. For him, the level of unemployment is determined by the interplay of labour's supply and demand. In this case, if there is deviation from an equilibrium employment, then it is labour that chooses to remove their labour because they are dissatisfied with the current wage offered by employers. His characterisation of employment is therefore that it is voluntary.

It is, however, remarkable that economists, with such differing political and economic perspectives, could develop theories of unemployment in the long run that are underpinned by the same social phenomenon of class struggle. Marx does this explicitly and intentionally as a recurring theme throughout *Capital*. Friedman makes no reference of this fact, other than to acknowledge that it is indeed institutions and legislation that protect labour, which determines the NRU. These institutions and bodies of legislation are, I would argue, the outcome of an ongoing class struggle. It is in this fact that we find the common ground with which to reconcile the NRU and the reserve army.

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