A THEORETICAL PERSPECTIVE ON A MINIMUM WAGE IN SOUTH AFRICAN AGRICULTURE

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Abstract

Most economists agree with the proposition that a minimum wage set above the market clearing equilibrium wage will cause unemployment. What happens when a minimum wage is set below the equilibrium wage is, however less clear. This is partly because the literature shows that the effect of a minimum wage will depend on the reason for its implementation. The literature also shows that the effect of a minimum wage depends on a range of macro level considerations. In this paper the international literature on the effects of a minimum wages is reviewed, and lessons are drawn for the implementation of a minimum wage in South African agriculture.

1. INTRODUCTION

Most economists agree that a minimum wage set above the market clearing equilibrium will cause unemployment. What happens when it is set below the equilibrium wage is, however, less clear. This is partly because the literature shows that the effect of a minimum wage will depend on the reason for its implementation. The literature also shows that the effect of a minimum wage depends on a range of macro level considerations. In this paper the international literature is reviewed, and lessons are drawn for South African agriculture.

2. MINIMUM WAGES: MICROECONOMIC CONSIDERATIONS

A 1979 survey of economists working at universities, in government and in the business sector in the United States (Kearl *et al.*, 1979) showed that 90% of them generally agreed (68%), or agreed with provisions (22%) that 'A minimum wage increases unemployment among young and unskilled workers.' This is unsurprising, given the relatively simple textbook 'proof' of the effect of a minimum wage presented by Stigler (1946). This proof has been supplemented by arguments that also include the losses that occur when the highest productivity firms cannot hire the lowest-wage workers and when firms with a high ability to evade minimum wages displace firms

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with a low ability, even though the latter may have higher productivity (Palda, 2000).

The minimum wage was, of course, originally proposed as a part of broad labour market policy aimed at increasing labour productivity and achieving stability. However, in recent times the emphasis has shifted to the use of the minimum wage to fight poverty. The reasons behind this shift in focus are explained by Levin-Waldman (2001). Notwithstanding, Deepak Lal (1995) provides a summary of the standard economists' argument against the minimum wage as a tool for poverty alleviation. From the perspective of the poor as a group, a minimum wage that is set above the equilibrium wage reduces employment in those sectors where it applies. The important exception is where employers are strong enough to determine wages (i.e. they are in a monopsonistic position).

In the case of perfect competition, however, some poor people gain higher wages, but the loss amongst those who become unemployed could be greater. Obviously, unless those who are paid higher wages are from amongst the poor, there is a good chance that a minimum wage will merely benefit low wage earners from wealthier households (i.e. teenagers, second income earners). Further, those who lose jobs will seek employment in sectors where there are no minimum wages. This will depress wages in those industries as well. This is supported by Lang & Kahn (1998) who argue that, despite an increase in employment, increased competition from higher productivity workers makes lower productivity workers worse off.

Nevertheless, there have always been dissenting theoretical voices, concentrating on issues such as:

- The effects of different relative capital/labour ratios. For example, if the sector covered by the minimum wage were more capital intensive than the rest of the economy, and if the demand for its goods were fairly elastic, a minimum wage would cause its employment and output levels to fall. Both capital and labour would move to the relatively less capital-intensive parts of the economy. The added capital would make these sectors more capital intensive by definition, and thus wage rates would be higher (Johnson, 1969).

- The presence of dualism in developing countries. In this case a minimum wage can by definition only be set in the 'formal' economy. The extent of unemployment will then depend on the method of job search (Harris & Todaro, 1970).

- The case of trade between middle-income and rich countries. Here it is argued that measures such as a minimum wage in a middle-income country may enhance welfare by moving it to a superior equilibrium (Rodrick, 1996).

- The long-term positive growth effects occasioned by improved human capital. This model is very close to the human capital theory. It states that, in an overlapping generations model with endogenous growth, high minimum wages can have positive effects on the growth rate and welfare by increasing the proportion of skilled workers (e.g. Cahuc & Michel, 1993; Acemoglu & Pischke, 1999).

Another strand of economics literature that cannot be ignored is the debate among the institutional economists, one of the key figures being John R Commons (see Barbash, 1976, 1989). He argued that the regulation of employment did not interfere with the efficient operation of the economy. Employers with unorganised work forces generally pay wages below the full social costs of labour, while legal measures could potentially force employers to pay wages at least equivalent to and more likely greater than the social costs of labour. If they were successful in doing so, the state, charitable institutions, and individual members of society would no longer need to subsidise low-paying producers by providing income or goods in kind to those earning wages below the social costs of labour. In the process the dynamic efficiency of firms would also be enhanced. As wages rise, managers are pushed to improve efficiency. At the same time, higher wages need not lead to lower employment. First, employers have a great deal of flexibility regarding wage levels. Firms faced with little competition could increase wages by sacrificing some of their high profits or by raising prices on their final products. Second, if increased productivity offsets increased labour costs, employers would have little inclination to reduce employment levels. Assuming no negative employment effects, an increase in wages would increase the overall demand for goods and services in the economy, allowing companies to expand production and, perhaps, reach lower points on their long run average cost curves. While unions are positive for the economy, many workers are not unionised. It is the state's responsibility to impose a full-cost social wage on non-union employers by setting an appropriate minimum wage.

Thus, the theoretical effects of a minimum wage are ambiguous. These ambiguous conclusions are also reflected in the available empirical evidence[2]. Here, however, an interesting historical pattern emerges.

[2] *Ghellab (1998) provides an exhaustive summary of review articles on the employment effects of the minimum wage from around the world.*

Virtually all of the empirical studies conducted during the 1970s found fairly strong negative employment effects, while those conducted during the 1980s mostly found weak negative effects. During the first part of the 1990s, however, a body of empirical work was published that tests and confirms the theoretical prediction of a positive relationship between a minimum wage and employment[3], while the late 1990s have seen a resurgence of studies that show a negative relationship[4].

Four potential explanations for this empirical confusion can be found in the literature:

- First, Herren (1996) has analysed the evolution of thinking amongst staff of the Council of Economic Advisors in the USA on two key labour economics propositions, one being the employment effects of a minimum wage[5]. The analysis shows that there are key differences between the analyses conducted during Democratic and Republican Administrations. However, these differences have generally concerned differing interpretations of empirical findings and not differences in underlying economic theory.
- Second, the literature shows that, although the mode of implementation of a minimum wage differs between countries, most have implemented rather cumbersome processes for bringing about amendments. Thus, in most countries the real minimum wage was eroded by inflation during the 1970s and the 1980s. This could explain the weakened effect on employment found in the literature.
- Third, in an important recent paper, Sobel (1999) examines the relationship between the stated goals of minimum wage policy and the actual wage rates that are implemented in the USA. The author rejects the hypothesis that actual minimum wage policy has been driven by a desire to achieve these goals and finds that a simple interest group model best explains the historical path of the minimum-wage rate.
- Fourth, empirical analysis shows that the institutional framework matters. For example, the effects of a minimum wage on youth unemployment seem to be related to specific labour market institutions, as the results of recent cross-country research (e.g. Neumark, 1999) as well as a comparison of labour market institutions

[3] The two most important examples are Card & Krueger (1994) and Machin & Manning (1994).
[4] See, for example, Partridge and Partridge (1999).
[5] The other is how changes in marginal tax rates affect aggregate labour supply.

between the USA and France (e.g. Abouwd *et al.*, 1999) show.

These conclusions are best summarised by Wood (1997) who examined the rhetoric employed in arguments 'for' and 'against' national minimum wages in the UK hospitality industry. He found that a key aspect of the debate was the protagonists' reliance on economic studies, which for the most part demonstrate either a positive or a negative effect. He concludes that, much like the cumulative evidence from the economic research, such strategies are flawed, making moral predisposition rather than rational choice the only basis on which to argue about the desirability or otherwise of a national minimum wage. Two other important effects of a minimum wage are the evidence that it compresses the distribution of wages in different earnings classes (Dickens *et al.*, 1999); and the evidence that the disemployment effect is larger among small firms than among large firms (e.g. Martin, 1996).

3. MINIMUM WAGES: MACROECONOMIC CONSIDERATIONS

The literature on the macroeconomic effects of minimum wages is, by contrast, poor. None of the few published references in this genre explicitly measure the total employment effects of a minimum wage when the effects in the upstream and downstream industries are also accounted for. Nevertheless, a (small) net decrease in employment may also lead to an increase in total employment if the upstream and downstream employment effects of the increased spending by those whose wages increase is larger than the direct and indirect disemployment effects of the decreased spending by those rendered unemployed by the minimum wage (Manning, 1994). Cubitt & Heap (1999) also present a two period general equilibrium model in which agents foresee how the second period outcome is determined by the investment decisions that they make in the first period, inter alia when there is a minimum wage in the second period. Finally, Roberts *et al.* (2000) study the impact of group interests in a general equilibrium model with a dual labour market where the union sector is characterised by two-stage bargaining whereas firms set wages in the non-union sector. Firms and unions of the union sector have a common interest in extending the minimum wage to the non-union sector, although the union sector does not seek to increase the non-union wage above the market-clearing wage.

4. THE IMPLICATIONS FOR AGRICULTURE

The experience of the UK is instructive, as there was a period during the early 1990s when the agricultural sector alone was covered by a minimum wage. Empirical research shows that employment was reduced, and that the

negative employment effect increased during the 1930s (i.e. in the Great Depression when farm profits were under severe pressure) (Gowers & Hatton, 1994).

However, a later study showed that the average earnings of farm workers were consistently higher than the minimum wage. Econometric tests show that the level of the minimum wage is 'caused' by the average wage. Thus, the Agricultural Wages Boards have been reactive, and minimum wages have had no impact on average earnings (Tiffin, and Dawson, 1996), but may have had a positive effect on total employment (Dickens *et al.,* 1995). These authors conclude, contrary to the previous paper, that the minimum wages set by the Agricultural Wages Boards are important determinants of the average level and distribution of earnings. They also conclude that there is no evidence that minimum wages have reduced the level of employment in agriculture, finding instead a weak positive effect on employment. In particular, they conclude '…They (minimum wages) have raised the pay of low paid workers without adversely affecting their employment.'

Two papers from the USA are also relevant to this debate. Perloff (1986) shows, *inter alia* that wages in agriculture rise significantly with the number of hours worked per week, and that there are some large demographic differentials that lead to large earnings differentials. Kebede & Gan (1999) evaluate the potential of vegetable production to enhance the declining farm income of limited resource farmers. One of the results is that, as vegetable production is labour intensive and sensitive to change in labour cost, an increase in the minimum wage might adversely affect the return from vegetable production for these vulnerable farmers.

India is one of the few countries with long experience in the implementation of a minimum wage. Much of their literature is focused on implementation rather than on the impact on employment. Recent examples include Parthasarathy (1997), Srinivasan (1997) and Gill & Lohumi (1997). There seems to be a consensus that the minimum wage is one of the instruments required to alleviate poverty among farm workers (together with land reform, unionisation and other social security measures, etc.), largely because there is a close correlation between the caste system and farm labourers, with the majority belonging to Scheduled Castes (Thangaraj, 1995).

Another interesting perspective is provided by evidence from Morocco (see e.g. Azam, 1997). Here a positive relationship is found between wheat production and the level of the agricultural minimum wage by applying a version of Stigler's monopsony model. An increase in the minimum wage, where the productivity of the labourers depends on their consumption level and where wage incomes are shared among family members entails a labour movement in favour of the dominant employer.

Finally, only one publication on the possible effect of a minimum wage in South African agriculture exists (Newman *et al.*, 1997). The study suggests that, all things being equal, farmers who pay relatively lower cash wages tend to provide more rations per worker and allocate more land use rights. Most respondents agreed that there is some need for labour legislation in agriculture, but the majority perceived the present legislation to be time-consuming and costly, and wanted the legislation to be less ambiguous, more flexible and less extensive. Labour legislation has increased transaction and wage costs in farming and could lead to the substitution of own machinery, contract machinery or contract labour for own labour. Survey respondents indicated that, if minimum wages were imposed, cash wages would be paid and perquisites would be charged for. If the minimum wage were set above present wages, labour would be replaced with machinery and contractors. Respondents would prefer an industrial council to determine minimum wages (if they are imposed), accounting for enterprise and regional differences.

5. CONCLUSIONS

There are at least five broad implications from this theoretical argument about the effect of minimum wages for the agricultural sector.

First, the minimum wage cannot be opposed purely on the grounds of its adverse effects on employment. Theoretically, there will be a negative effect in the case of a free market without monopsony powers. However, the magnitude of the employment effect depends on the degree to which the wage is set above the equilibrium wage rate. When the minimum wage is set below the average rate in the industry, a minimum wage could compress the wide range of wage rates found in a sector, increasing the wages of the lowest-paid workers without increasing unemployment.

Second, the empirical evidence on the poverty alleviating effects of a minimum wage is as ambiguous as the evidence on the employment effects. From a purely economic view, it is better to provide direct income transfers to the poor rather than to manipulate market prices (wages)[6]. Thus, the aim of a minimum wage should be clearly set out. Poverty is the result of low incomes, and the relationship between incomes and wage rates is not necessarily direct[7].

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[6] *Agricultural economists have generally argued in favour of income transfers to farmers rather than price supports as a mechanism of farm subsidies, yet politicians have, until recently, preferred the latter. Economists have turned to public choice theory to explain this paradox.*

[7] *Governments have likewise tried to manipulate the prices of agricultural commodities in order to achieve stability and to combat the relative poverty of*

Third, successful implementation may call for a decentralised system of wage determination (as in the UK). However, the experience in India, which also faces implementation capacity constraints, shows that simple implementation systems are preferable. This does not, however, negate the need for differential minimum wages in different regions or for different commodity production systems, even though a differential wage is more complex to administer.

Fourth, the agricultural sector is diverse, and existing wage differentials can often be explained by differences in the number of hours worked rather than by different wage rates. Thus, where the empirical evidence from South Africa also shows a wide range of wages paid in the same area, there is an expectation this is the result of the wide variety of employment contracts.

A further important implication for South African agriculture can be drawn from this analysis. Public policy makers have to accept that, even though the agricultural sector is shedding labour, every indication is that farm workers will remain amongst the poorest formal sector employees in the country in the absence of State intervention. However, the extent of State intervention is meliorated by the considerable potential for creating adverse effects, especially among the most vulnerable farm workers.

REFERENCES

ABOWD JM, KRAMARZ F & MARGOLIS DN (1999). *Minimum wages and employment in France and the United States*. NBER Working Paper No 6996. Cambridge, MA, NBER.

ACEMOGLU D & PISCHKE J-S (1999). *Minimum wages and on-the-job training*. NBER Working Paper No 7184. Cambridge, MA, NBER.

AZAM J-P (1997). Efficiency wage and the family: An explanation for the impact of the agricultural minimum wage in Morocco. *Kyklos* 50(3):369-382.

BARBASH J (1976). The legal foundations of capitalism and the labor problem. *Journal of Economic Issues* 10(4):799-810.

BARBASH J (1989). John R Commons: Pioneer of labor economics. *Monthly Labor Review* 112(5):44-49.

CAHUC P & MICHEL P (1993). *Minimum wage, unemployment and*

farmers. The problem is that farmers need higher and more stable incomes, and there is no direct relationship between commodity prices and incomes.

growth. Actes du colloque international: Analyse économique des bas salaires et des effets du salaire minimum, 30 Sept- 1 Oct 1993, Arles, France, pp. 167-199.

CUBITT RP & HEAP SPH (1999). Minimum wage legislation, investment and human capital. *Scottish Journal of Political Economy* 46(2):135-157.

DICKENS R, MACHIN S & MANNING A (1999). The effects of minimum wages on employment: Theory and evidence from Britain. *Journal of Labor Economics* 17(1):1-22.

DICKENS R, MACHIN S, MANNING A, METCALF D, WADSWORTH J & WOODLAND S. (1995). The effect of minimum wages on UK agriculture. *Journal of Agricultural Economics* 46(1):1-19.

GHELLAB Y (1998). *Minimum wages and youth unemployment*. Employment and Training Paper No 26. International Labour Office Geneva.

GILL SRS & LOHUMI VK (1997). Administration of minimum wages in agriculture: An appraisal. *Indian Journal of Labour Economics* 40(4):759-769.

GOWERS R & HATTON TJ (1994). *The origins and early impact of the minimum wage in agriculture.* Centre for Economic Policy Research, Discussion Paper 1021.

HERREN RS (1996). The Council of Economic Advisers: Selected issues in labor economics. *Journal of Economics* 22(2):49-55.

JOHNSON HG (1969). Minimum wage laws: A general equilibrium analysis. *The Canadian Journal of Economics* 2(4):599-604.

KEARL JR, POPE CL, WHITING GC & WIMMER LT (1979). A confusion of economists? *American Economic Review* 69(2):28-37.

KEBEDE E & GAN JB (1999). The economic potential of vegetable production for limited resource farmers in south central Alabama. *Journal of Agribusiness* 17(1):63-75.

LAL D (1995). *The minimum wage*. UCLA Department of Economics Working Paper No 723.

LANG K & KAHN S (1998). The effect of minimum wage laws on the distribution of employment: Theory and evidence. *Journal of Public*

Economics 69(1):67-82.

LEVIN-WALDMAN OM (2001). *The case of the minimum wage: Competing policy models*. New York, SUNY Series in Public Policy.

MACHIN S & MANNING A (1994). The effects of minimum wages on wage dispersion and employment: Evidence from the UK Wage Councils. *Industrial and Labour Relations Review* 47(2):319-329.

MANNING A (1994). *How do we know that real wages are too high*? London School of Economics Centre for Economic Performance Discussion Paper No 195.

MARGLIN S (1990). *Towards the decolonisation of the mind*. In: Apffel-Marglin F & Marglin S (eds), Dominating knowledge: development, culture and resistance. Oxford, Claredon Press.

NEUMARK D (1999). *A cross-national analysis of the effects of minimum wages on youth unemployment*. NBER Working Paper No 7299. Cambridge, MA, National Bureau of Economic Research.

NEWMAN RA, ORTMANN GF, LYNE MC (1997). Farm labour remuneration, labour legislation and commercial farmers' perceptions in KwaZulu-Natal. *Agrekon* 36(1):73-84.

PALDA F (2000). Some deadweight losses from the minimum wage: The cases of full and partial compliance. *Labour Economics* 7:751–783.

PARTHASARATHY G (1997). Minimum wages within agriculture: A review of Indian experience. *Indian Journal of Labour Economics* 40(4):731-742.

PARTRIDGE MD & PARTRIDGE JS (1999). Do minimum wage hikes reduce employment? State-level evidence from the low-wage retail sector. *Journal of Labor Research* 20(3):393-413.

PERLOFF JM (1986). *Union and demographic wage, hours and earnings differentials in the agricultural labor market.* University of California at Berkeley, Department of Agricultural and Resource Economics (CUDARE) Working Paper No 387, January.

RAMA M (1996). *The consequences of doubling the minimum wage: the case of Indonesia*. World Bank Research Paper, Washington, DC, IBRD.

ROBERTS MA, STAEHR K & TRANAES T (2000). Two-stage bargaining with coverage extension in a dual labour market. *European Economic Review* 44(1):181-200.

SOBEL RS (1999). Theory and evidence on the political economy of the minimum wage. *Journal of Political Economy* 107(4):761-785.

SRINIVASAN MV (1997). Minimum wages in agriculture: An analysis of secondary and village survey data. *Indian Journal of Labour Economics* 40(4):743-757.

STIGLER G (1946). The economics of minimum wage legislation. *American Economic Review* 36:358-365.

THANGARAJ M (1995). Socio-economic conditions and problems of agricultural labourers. *Social Change* 25(4):44-55.

TIFFIN R & DAWSON PJ (1996). Average earnings, minimum wages and Granger-Causality in agriculture in England and Wales. *Oxford Bulletin of Economics and Statistics* 58(3):435-447.

WOOD RC (1997). Rhetoric, reason and rationality: the national minimum wage debate and the UK hospitality industry. Discussion Paper. *International Journal of Hospitality Management* 16(4):329-344.