

WAGES DETERMINATION IN POST HYPER INFLATIONARY ZIMBABWE

Shynet Chivasa 

Faculty of Commerce, Lupane State University, Bulawayo, Zimbabwe

schivasa@lsu.ac.zw, shynet.chivasa5@gmail.com

Christine Ivy Hurasha

Faculty of Commerce, Department of Accounting and Information Systems

Great Zimbabwe University, Zimbabwe

churasha@gmail.com

Abstract

The study examines empirically the determinants of real wages in the manufacturing sector in Zimbabwe by employing a macroeconomic real wage function. The paper presents some quantitative results on the determination of the manufacturing real wage. It examines the extent to which the government, profits, past inflation (price), output, trade union and wages of other sectors affect the real wage of the manufacturing sector. The results indicate some relationship between real wages and output, and wages and past inflation. Using an error correction model (ECM) the research found that real wages are an increasing function of real wages of other sectors, output, profit and a decreasing function of the past inflation level and trade union militants was found to be insignificant. This could be because of the inelastic labour demand and a very elastic supply curve.

Keywords: Real wages, manufacturing Sector, hyperinflationary, error correction model, macroeconomics

INTRODUCTION

Wages are one of the important variables in the economic and social life of any community. The wage is often seen as one of the most important prices in the economy. As a price it allocates scarce labour resources to their most urgent uses. It attracts jobs in all its respects, that is, it determines the working conditions, degree of security, seniority, and pension rights that influence the worker to make job changes decisions. It shapes the distribution of income, the level of employment and unemployment. It has a direct influence on the standard of living and poverty. Workers and their families depend partly on wages for food, clothing, housing and all other necessities of life. Changes in real wages provide the fundamental test as to whether the worker is improving his economic well being or not.

There are two sides of the wage coin, that is, its purchasing power and wages as a cost. Labour leaders normally emphasise the purchasing power aspect of wages, whereas the businessman gives primary emphasis to the cost side. It is natural that trade unions and their members seek to achieve high wages for a worker to be able to satisfy most of their basic needs. In industry wages form a big part of the employer's cost of production. At the same time, high wages compel management to use labour efficiently, and this sometimes leads to modernisation of the economy.

Thus, both parties involved in the setting of wages must understand the factors that affect the wage. The employers must understand why their employees demand high real wages and at the same time, the employees must understand why their employers are reluctant to give them the higher real wages as per their demand.

The statement of problem

It has to be stressed that real wage determination is one of the key processes with a substantial influence on macro-economic variables such as inflation, employment, and on the eventual success of stabilization and adjustment strategies, and it is one variable that fundamentally influences poverty directly. Despite the fundamental role-played by wages in the socio-economic and political fabric of any country, empirical evidence on their determinants is sparse, especially in Zimbabwe post hyper inflationary period. Currently the wage determination game is not very clear after the transition from a hyperinflationary period where inflation was the major driver of real wages. The current macroeconomic environment poses a very difficult challenge to those involved in the wage bargaining be it employees or employers

Literature on the Zimbabwean labour market is very extensive. Among these are Ncube (1997), Kanyenze (1996), Knight (1996) and Fallon and Lucas (1993). Ncube (1997) has focused on the dynamics of employment, while Kanyenze (1996), Knight (1996) and Chitiga

(1996) looked at other various aspects of the labour market such as the minimum wages and the impact of ESAP (Economic Structural Adjustment Program) on the labour market. Fallon and Lucas (1993) have looked at the impact of government regulation on employment. Of this abundant literature little attention has been paid to the issue of wages, especially their determination at macro-level especially in a transitional period.

Without some understanding of the wage determination process, the dynamics of the labour market cannot be fully understood. This is true especially in developing countries such as Zimbabwe. The understanding of the wage determination process is important to trade unions, employers, the government and employees so as to minimise the conflict between the parties involved in solving wage issues.

The Objectives and importance of the study

Given that empirical evidence on real wage determination post hyper inflationary is sketchy, this study seeks to provide such information. The study aims at identifying the factors that determine the movement of real wages in the manufacturing sector using macro- time series data. In particular, the study seeks to analyse how factors such as past inflation, wages of other sectors, profits, trade union militants and output affect wages.

The study is important regarding labour market policy formulation and evaluation. Knowledge of the real wage determination process is important to policy makers in their endeavor to formulate labour market policies in particular income policies in the light of decreasing manufacturing sector capacity (Confederation of Zimbabwe Industries (CZI) 2014).

LITERATURE REVIEW

There are many theories that seek to explain the wage determination process and these include the following; subsistence wage theory, marginal productivity theory, the neoclassical theory of demand and supply of labor theory, the bargaining theory the purchasing power theory and efficiency wage theories. One has to note that none of these is universally applicable. Again no theory has been generally accepted because the factors affecting wages are so complex and are so closely linked with the whole economic and industrial system. Also, theories that seem reasonable in a static economy have little validity in dynamic economies.

Subsistence Wage theory (David Ricardo)

The theory states that what determine the wage is the basic needs of the individual worker. The worker must be given the wage, which is enough to make him earn a living. In this theory, if

wages rise more than enough to provide some basic subsistence, the population would expand at a greater rate than the increase in food and other necessities.

These would increase the number of workers seeking jobs and the pressure from excess supply of labor, forces wages to go down to subsistence level. This is in line with Adam Smith's view that wages are fixed through the forces of demand and supply, but believe that pressure of increasing supply would keep them at subsistence level. Although this theory seemed to be supported by what was happening in Western Europe, today in heavily populated African countries, including Zimbabwe, with high birth rates, the theory is no longer having considerable validity. Again in the present century of rapid rises in industrial efficiency and technological progress, greater output of labor resulting from improved education, health, skills and experience have resulted in wages of some workers to rise above the subsistence level.

The wage fund theory

The principal exponent of the wage fund theory is John Stuart Mill. In its simplest form, the theory states that in any country, in the short run, there are limited funds available for wages. It states that the wages if divided up between the total number of workers their total wages should not exceed the amount of the funds available. It follows that if other workers in some industries gain a bigger share of the fund by raising their wages through trade union action or economic conditions favorable to them, they do so at the expense of other workers whose wages will fall. The theory also implies that the general wage level can increase if the number of workers fall, and if the number of workers increases, the average wages would decline.

The theory has to be treated with caution for it is subject to many objections. It is not true that the amount of money available at any given time to pay workers is fixed. Nor is the quantity of labour rigidly determined. It is flexible within limits, yet in the short run the limits are narrow.

The Marginal Productivity Theory

The theory gives emphasis on the relationship between wages and the volume and the value of the goods and services workers produce.

The value of wage is the marginal productivity of labour under perfectly competitive markets, and the labour equation is $PMPPN = VMPN = W$

where P is the price of the product produced,

MPP is the marginal physical product of labour (N),

VMP is the value of the marginal physical product and

W is the wage

The polar case of non-competitive behavior in the labour market is the monopolist, which is defined as a single big industry, which can absorb a substantial level of labour. In this case, the wage is not determined by $P = MPP$ but by the marginal revenue (MR_q). $MPP_N = MRP = W$ since the monopolist is interested in the revenue and not the price level. Thus the wage is determined by the value of marginal revenue. The theory suggests that more labour will be hired when it is profitable to do so and that the workers will be laid off when it is not profitable. However, this is only in the long run as in the short run profits are relatively high.

Demand and Supply Theory

With the spread of *Laissez faire* doctrine and the growth of competition in the eighteenth century, the influence of demand and supply led, increasingly to breakdowns of the former standard wage theories. Adam Smith argued that if wages were fixed in accordance with demand and supply, workers would be attracted by higher wages to industries where they are most needed and would tend to leave industries where the labour supply is greater than demand and wages are lower. This would lead to improvement in the distribution of manpower and would be in the best interest of the national economy. In competitive models, the influence of demand and supply on wages will ensure mobility of labour, though the movement might be retarded by such reasons as the shortage of housing in the localities where workers are needed or by the worker's willingness to move from their established social relations, and the need to retain skilled workers in new occupation.

This theorem seems to have some backing in practical situations. The principal influence in the wage determination is the demand and supply of labour, which are powerful factors in both planned economies and free competition economies. Demand and supply must always be taken into consideration, though levels of wages which might be expected to result in the free interaction of demand and supply are often modified by the willingness of workers to accept wages that are much below subsistence level. Similarly, social factors may have some effect on the adjustment of demand and supply. Also the actions of the trade unions affect the free play of competition as well as government intervention in the regulation of minimum wages, or the application of arbitration awards. The neoclassical model implies that wage controls result in unemployment and that flexible wages is a key to reducing unemployment.

The Bargaining Theory

This is more of description of process of wage determination than a theory of wage determination. It states that the wage rate is determined through collective bargaining. The approach assumes that there is a range of adjustments, which will be acceptable to all parties.

There are the upper and lower limits for wages, and that actual rates between limits are determined by the urgency of the employer's need for workers and the urgency for workers' needs to accept employment so as to earn wages to provide for the necessities of life. The rates fixed between these limits will therefore depend on the bargaining power of the two parties. World Bank (1995) using the equation $S^t = (w^d - w^e)$ where S^t is the wage difference, w^d is the desired wage rate by employees and w^e is the wage rate of the employers. In bargaining theory disputes in the labour market are because of employers are failing to accept w^d , and unions failing to accept w^e . The further apart unions and employers, the greater the likelihood that strikes will occur. This means that disturbances will take place whenever there is a divergence between the parties in terms of w^e and w^d .

If the union is relatively strong, wages will tend to be near the upper level of the range (ILO, 1982). If management has the greater strength, the level of wages will be lower. Frank, (1979) argues that for the short run there is undoubtedly some substance to this approach to wage theory. Various factors such as inertia, customs and relative power of the parties may raise or hold down the level of wages to some extent.

Efficiency wage theories

The fundamental idea underlying the theory of efficiency wages is that firms may gain some benefits from paying their workers more than the market wage. It can be seen as an alternative to the incentive problem that avoids contingent contracts. Paying higher wages than all other firms, the firm cuts down on high costs of monitoring their workers. The efficiency wage theory can be explained by the shirking model and the turnover model.

The Turnover Model

Salop (1979) argued that as shirking is costly to a firm so is the turnover of its labour force. A worker who quits the job has to be replaced, which means firms have to incur the recruitment and training costs. The firm has to employ a variety of strategies to reduce the cost of recruiting and training. One such device is to set the wage at a level that prohibits high turnover. Workers are more reluctant to quit the higher their current wages relative to opportunities elsewhere. Assuming everything is constant, the firms that pay higher wages experience lower turnover.

Generally, the efficiency wage is the wage that minimizes labour cost per efficiency unit and which is higher than the wage firms need to pay to attract a given quality of labour. This is because in shirking models firms pay an efficiency wage to ensure that workers provide the labour services they contracted to exchange.

In turnover models the reason is that to lower the cost of labour turnover, firms again need to pay high wages to motivate workers not to look for greener pastures.

The policy implication of the efficiency wage theory is that, a single firm in raising its wage, imposes a negative externality on the other firms who then must raise their wages or incur the additional monitoring costs to prevent shirking. Thus the wages of other sectors assuming mobility in the labour market has the effect on other sectors in the economy.

METHODOLOGY AND MODEL ESTIMATION

Real wages are used in the study as they factor inflation. Again real wages are used instead of nominal wages to get rid of money illusion. The nominal variables to some extent have the weakness of not showing the actual/real changes in wages.

The model

The study is based on the modified equation, which was adopted from Sanfey (1992), which takes the form:

$$W_t = f(W_{a_t}, P_{t-1}, Y_t, \pi_t, G, T, \varepsilon_t)$$

Where;

- W_t is the real wage of the manufacturing sector at time t,
- W_{a_t} is the real wages of other sectors in the economy at time t,
- P_{t-1} is the past inflation at time t,
- π_t is the real profit of the manufacturing sector at time t
- G is the government influence through minimum wages
- Y_t is the real output of the manufacturing sector and
- T trade union militancy
- ε_t the usual error term.

In its estimation form the equation can be written as

$$W_t = \kappa + \alpha W_{a_t} + \Psi P_{t-1} + \phi \pi_t + \sigma G + \tau Y_t + \omega T_t + \varepsilon_t$$

The expected signs of the coefficients from the literature review are:

$\alpha > 0$, $\Psi > 0$, $\phi < 0$, $\tau > 0$, $\omega > 0$ and σ is ambiguous.

ANALYSIS & FINDINGS

The variables were tested for stationarity using the Dickey Fuller and Augmented Dickey Fuller tests, both in log levels and in first differences. The obtained results are shown in Table 4 below.

The variables are defined as;

Y_t	is the real manufacturing output,
Wa_t	is the real wage of other sectors,
W_t	is the real wage of the manufacturing sector,
π_t	is real profits,
P_{t-1}	is the past inflation level
L	is the log operator
D	is first difference operator

The results show that the variables become stationary after first differencing, especially when using the Dickey Fuller test. In log levels the variables are integrated of order one, I (1), which means that they become stationary after being differenced once. In first differences most of the results confirm that the variables are I (0).

.Table 1 The null hypothesis is that the series is non stationary or it has a unit root

Variable	DICKEY FULLER TEST			AUGMENTED DICKEY FULLER TEST			Order of integration
	No constant	Constant	Constant & trend	No constant	Constant	Constant and trend	
Ly_t	6.5404	0.13965	-1.9116	2.2524	-0.14944	-3.1934	I(1)
Lwa_t	-0.6744	-1.2937	-1.0019	3.6363	-1.5850	-2.2721	I(1)
Lp_{t-1}	10.735	1.9856	-1.2623	-0.16837	1.0144	-1.4008	I(1)
LW_t	-0.69819	-0.4616	-0.98592	-0.16625	-0.86815	-1.3925	I(1)
$L\pi_t$	0.65055	-2.455	-2.145	-0.51906	-1.7522	-2.2785	I(1)
DIY_t	-2.325*	-4.67**	-4.591**	-3.377**	-2.101	-1.8659	I(0)
$DIWa_t$	-3.605**	-3.521*	-4.125*	-2.175*	-2.111	-2.102	I(0)
Dlp_{t-1}	-1.247	-3.605*	-4.163*	0.3107	-1.668	-3.216	I(0)
DIW_t	-3.584*	-3.569*	-3.952*	-2.207*	-2.226	-2.005	I(0)
$Dl\pi_t$	-0.2691	-3.361*	-3.672*	-1.5392	-1.400	-2.9645	I(0)
Critical value							
5%	-1.957	-2.997	-3.622	-1.96	-3.026	-3.029	
1%	-2.67	-3.75	-4.417	-2.697	-3.837	-3.83	

Note: * significant at 5% level of significance ** significant at 1% level of significance

Using the bivariate procedure data was tested for cointegration and the results are shown below. The following relationships were tested for cointegration and the results are shown in the Table 2.

$$LW_t = \alpha_1 + \beta_1 LY_t + \varepsilon_1 \quad [1]$$

$$LW_t = \alpha_2 + \beta_2 LP_{t-1} + \varepsilon_2 \quad [2]$$

$$LW_t = \alpha_3 + \beta_3 L\pi_t + \varepsilon_3 \quad [3]$$

$$LW_t = \alpha_4 + \beta_4 LWa_t + \varepsilon_4 \quad [4]$$

Where $\alpha_1 - \alpha_4$ are the constants of the system of equations 1 –4, respectively;

$\beta_1 - \beta_4$ are the coefficients of the explanatory variables and

$\varepsilon_1 - \varepsilon_4$ are error terms.

Table 2 Null hypothesis: There is no long run relationship between W_t and its explanatory variables

Variable	No constant	With constant	With constant and trend
ε_1	-2.2097*	-2.0352	-1.0029
ε_2	-2.1114*	-1.8637	-4.3665*
ε_3	-0.88890	-1.2376	-1.0656
ε_4	-1.5663	-1.4657	-0.91380
Critical values			
5%	- 1.959	-3.02	-3.633
1%	-2.689	-3.807	-4.441

note:* means significant at 5%

$\varepsilon_1 - \varepsilon_4$ are the residuals of the equations 1-4, respectively.

The model to be estimated is thus,

$$\Delta W_t = \kappa + \alpha \Delta Wa_t + \psi \Delta P_{t-1} + \phi G + \sigma \Delta \pi_t + \tau \Delta Y_t + \omega T_{t-1} + \Omega (ECM_{1,t-1}) + \varphi (ECM_{2,t-1}).$$

Table 3 Estimated results (empirical results)

Variable	Coefficient	t-value	standard error
Constant	-0.0382	-0.962	0.040
Dgvt	0.0466	1.320	0.035
DLY_t	0.229	0.942	0.243
$DLWa_t$	0.424*	3.226	0.131
DLP_{t-1}	-0.085*	-2.448	0.035
$DL\pi_t$	0.127	0.865	0.147
DLT_{t-1}	0.125	0.732	0.123
ECT_1	-0.815**	-3.212	0.254
ECT_2	-0.911*	-2.232	0.408

. $R^2 = 0.743234$ $F(7,14) = 3.6059[0.0097]$ Standard Error = 0.0386292 DW = 2.07

AR 1 -2F(2, 10)	= 0.44449 [0.6532]
ARCH 1 F(1, 10)	=0.0068288 [0.9358]
Normality Chi ² (2)	=0.79421 [0.6723]
RESET F(1, 11)	= 0.32426 [0.5805]

*Notes: * and ** denotes significance at 5% and 1% respectively. DW is the Durbin Watson statistic; AR is the Langrage multiplier test for autocorrelation; ARCH is the Engle ARCH test for autocorrelated squared residuals; Normality is the Jaque-Bera test for normality of the residuals and RESET is a general test for model mis-specification.*

The regression provide a strong support for the study hypothesis that real wages are an increasing function of profitability, output and wages of other sectors, and a decreasing function of the past level of inflation. Real wages of other sectors turn to be the most influential factor with the average elasticity of 0.42 and government the least with the elasticity of around 0.04. Real wages of other sectors are found to be significant in the model. Since the ECM model was estimated, this implies that in the long run growth in wages of other sectors has a positive effect on the real wages of the manufacturing sector. The results show that the real wages of the manufacturing sector responds positively to current real wage changes of other sectors in the long run. A percentage change in wages of other sectors leads to a 0.465% change in the real wages of the manufacturing sector. This is because, like as noted in the previous chapters, workers have the tendency to compare their wages with workers from other sectors and this exerts a positive effect on the real wages of the manufacturing sector. As the wages of other sectors adjust upwards, they tend to pull up the wages of the manufacturing sector as the manufacturing employees want to be identified with the *jonases* (with their neighbours), thus the band wagon effect.

The significant and negative lagged price coefficient suggests that real wages have a delayed adjustment effect to changes in the price level, thus, real wages' adjustment track behind the inflation rate. This means that past inflation is significant in wage setting. The significance of price level shows that wages in Zimbabwe are adjusted in concomitant to the cost of living, which is measured by the price level. The coefficient of the price level which is -0.845 show that a ten percent change in the price of goods and services results in a decline of about 8,4% of the real wages of the manufacturing sector. This is true of the Zimbabwean labour market since wages are not adjusted by the same percentage, as the percentage change in prices. Percentage change in wages always tracks behind the inflation rate.

The coefficient of a government dummy is positive, but not significant. This implies that government policy has no influence on the wage setting process of the manufacturing sector. In Zimbabwe, there was government intervention, but probably the minimum wage was set at a level below what companies paid, thus why it had no influence.

Output and trade union militancy, like government, is not significant, although it exerts a positive pressure on real wages of the manufacturing sector. A change in output by ten percent results in real wages of the manufacturing sector change by 2,3% as shown by the estimated results in Table 5. In Zimbabwe output does not measure the ability to pay for workers as they are not paid in kind, but in cash.

Real profits are not significant though they exert a positive pressure on real wages. This means that there is no guarantee that once the owner of the manufacturing firm realises an increase in profits, he/she will automatically increase the wages. In our case profit changes by one percent results in an increase of real wages by 0, 12%. A significant coefficient is more consistent with more appropriate in situations where there is profit sharing between the employer and the employees.

The two error correction terms are significant and have the expected negative signs. The negative signs of -0.815 and -0.911 imply that wages will always move towards the equilibrium wage. However, the sizes of the error correction terms (0.8 and 0.9) indicate a very fast speed of adjustment towards equilibrium. The figures indicate that between 80% and 91% of the divergence from the long run disequilibrium is eliminated in one year. The fastness of the speed of adjustment implies that the manufacturing sector was not, to a larger extent, subject to wage controls of the 1980s. It also means the sector paid wages far above the minimum wages and therefore could adjust its wages relatively faster.

CONCLUSION AND POLICY RECOMMENDATIONS

Though the model passes the above diagnostic tests and seems to explain Zimbabwe's manufacturing sector wage determination process very well, it has some weaknesses embodied in it. The model omits some important variables, which have been seen to be significant by Christophides (1992). Among the variables are unemployment, and expectations and capacity utilisation. These variables were omitted because there are gap in their series. For expectation and capacity utilisation, these required primary data collection for the manufacturing sector that the study could not capture because of resource constraint, otherwise the model could have been improved by the inclusion of the missing variables.

Policy recommendations

In spite of these shortcomings, the model estimated is important for policy formulation and evaluation. The study confirms that real wages of the manufacturing sector are sensitive to variations in the labour market. The most controversial finding is that government policies appear to have no significant effect on real wages. It contradicts the neo-classical view that government policies restrain wages. This means that if the government policy is not supported by better economic environment, it might be difficult to implement given the challenges that are faced by the manufacturing sector.

From the regressions above, it can be concluded that there is need for transparency in wage settings. Company profitability was found to have positive impact. Employees should know how the company is operating, whether it is making profits or losses, thus employees should have access to the right information concerning how their wages are adjusted. Since inflation is spilling into the real wages, the government should come up with policies to control inflation so as to improve the welfare of the employees since real wages is one of the variables that measures the employee welfare. This is because, holding other things constant, the higher the past prices, the lower the real wages of the manufacturing sector.

Different sectors of the economy should come together and co-ordinate the adjustment process so as to avoid wage competition among workers, which has the tendency to pull up the real wages of the manufacturing sector there by increasing the cost to the manufacturer. The efficiency wage hypothesis has some relevance in all this. Various sectors of the economy should agree on certain wages. Efficient wages have some negative effects on other firms who are forced to increase wages of their employees to reduce the turnover costs although they may not be able to meet the costs of wages. Thus, irrespective of there being various sectors in the economy there should come together in settling wage adjustments.

Future challenges

This study is by far not exhaustive. We only estimated wage curves for the manufacturing sector alone. It is important to investigate the wage determination process for other sectors, as it may be difficult to generalise from this piece of work alone. Differences between sectors in the wage determination processes, if any may help explain the sectoral wage differences. In these sectoral models future research can attempt at incorporating the process of expectations formation. Also our understanding of the subject of wages may be enhanced by including variables not in our model, which theory assume play a major role in the wage setting process.

REFERENCES

- Ashentelster O (1997) Employment, Labour Unions and Wages. Edward Elgar.UK
- Author L (1947) The Dynamics of Wage Determination under Collective Bargaining. The American Economic Review.
- Blanchflower G (1990) Inside Power In Wage Determination. Economica Volume LVII 1990a
- Chitiga M (1996) Computable General Equilibrium Analysis Of Income Distribution Policies In Zimbabwe PhD Thesis, Gothenburg University; Sweden
- Christophides L (1992) Real Wage Determination And Rent Sharing In Collective Bargaining Agreements. Quarterly Journal of Economics. Volume CVII 1992
- Christopher J (1985) Wage Bargaining In Macro-Economic Model With Rationing. Quarterly Journal of Economics(3)
- Confederation of Zimbabwe Industries (2014) 2014 State of the Manufacturing Sector report.
- Dickins R (1987) Error Components In Grouped Data. Is It Ever Worth Weighting. Review of Economics And Statistics.
- Fallon and Lucas (1993) Job Security Regulation And The Dynamic Demand For Industrial Labour In India Ad Zimbabwe. Journal Of Development Economics
- Horton S (1997) Labour Markets In Sub-Saharan Africa. University of Toronto
- International labour organization (1997) Wage Indexation, Flexibility And Inflation. Some Latin American Experiences During The 1980s. ILO, Geneva
- International labour Organization (1998) Industrial Relations In Southern Africa. The Challenge Of Change. SAMAT, Harare Zimbabwe.
- International labour Organisation (1982) Workers' manual, ILO Geneva
- John P (1990) Labour Markets Under Unionism, Employment, Wages And Hours Of Work. Blackwell, USA
- Kanyenze G (1996) Adjustment, Employment And Labour Market Institutions In Zimbabwe. Paper Presented At A Seminar On Adjustment. Harare Zimbabwe
- Knight J (1996) Labour Market Policies And Outcomes In Zimbabwe. Sweden
- Layard R (1982) Is Income Policy An Answer To Unemployment? Economica Volume 49(1950)
- Lester R (1994) Wage Differentials And Minimum Wage Effects In Labour Economics And Industrial Relations. Market And Institutions Harvard College
- Manning H (1994) The Effect Of Minimum Wages On Employment. Theory And Evidence From Britain. London School Of Economics. CEP
- Ncube M (1998) Employment, Unemployment And The Evolution Of Labour Policy In Zimbabwe. Department Of Economics University Of Zimbabwe. (Forthcoming Zambezia)
- Ncube M (1997) Analysis of Employment Behavior in Zimbabwe. Ph.D. Thesis Gothenburg University Sweden
- Ncube M (1996) Financial Sector Reform And Liberalization; The Case Of Zimbabwe. African Economic And Social Review. Volume 1-2
- Oswold A (1995) Rent Sharing In The Labour Market. Mimeo, Centre For Economic Performance.
- Owoye (1994) Wage Determination And Strike Activity In Nigeria, Journal Of African Economies Volume 3(3)
- Pettengil G (1980) Labour Union And The Inequality Of Earned Income. Contribution To Economic Analysis 129. Amsterdam. London

Robinson G.E (1989) The Joint Determination Of Union Wage Effect. Some Tests Of Alternative Models. The Journal Of Political Economy

Sanfey P (1992) Insiders And Outsiders In Union Models. The Theory And Evidence For UK And US, Yale University.

Smith J (1996) Wage Interaction, Fall Back Or Comparison Options. The Economic Journal Volume 106 (453)

Stiglitz and Shapiro (1984) Equilibrium Unemployment As Worker Discipline Device. Efficiency Wage Models Of The Labour Market, Cambridge University Press

Velenchik A (1996) The Labour Market, Wages And Earnings. The Manufacturing Sector In Zimbabwe. Dynamics And Constraint, Amsterdam.

Winter M (1998) Institutional Dynamics Of The Manufacturing Sector Under Structural Adjustment. University Of London

World Bank (1995) Research Working Paper Series Number 1609. World Bank Advisory Staff Washington D.C