Relationship between inflation and wage rates

The R square is also known as the goodness of fit. The R- square is found between zero and one. If the R-square is close to one, it is a good fit and if it is near to zero, it is not a good fit. Now, if the R-square is equal to one, it is a perfect fit (R-square= 1). The formula for R-square is explained sum of square divided by the total sum square.

R -Square = ESS/TSS

In this model, there are 59 observations where the R-square is 0. 512 and in terms of percentage it is 51. 2 which is a bit low. The value 53 is obtained by (58-5) and 58 is obtained by (59-1). When R square comes out to be a positive figure, it is recognised as the “ coefficient of multiple correlation”. The R square is 51. 2 which is low and is not a good fit because data was not available in the wage rate index in Mauritius before 1992. Therefore, the inflation rate can be resolved with government intervention. The adjusted R square is 0. 466 and the root MSE is 0. 42203.

Blue means Best linear Unbiased Estimator. BLUE comes from the model of Gauss Markov Theorem. Firstly, Best is about the variance which comes out to be the smallest in value. Secondly, Linear means that the function should be a linear one. Thirdly, Unbiased means that the expected beta hat should be equal to the value of the real beta. Finally, it is an efficient one as it has the least variance in the model.

Multicollinearity came out from the research work of Ranger Frisch. The VIF is a good way to detect multicollinearity. If the VIF is more than 10, then there is the problem of multicollinearity. In our model the VIF is less than 10. If in multicollinearity, the R-square is greater the model will be good.

Table 4. 5 is on Multicollinearity Test used VIF Factor

Variable	VIF	1/VIF
In IMP	9. 5	0. 18603
In PPI	8. 69	0. 17937
In EXP	8. 54	0. 11704
In GDP	4. 36	0. 229406
In INF	1. 1	0. 908899

Autocorrelation is " correlation between members of observations ordered in time [as in time-series data] or space [as in cross sectional data]". Autocorrelation is concerned with time series analysis. Autocorrelation can be positive as well as negative in figures.

In a simpler way, it can be understood that the disturbance term is not affected by other mode of observation.

Ho: no serial correlation

H1: serial correlation

Table 4. 6 on Heteroskedasticity and serial correlation

TEST	CHI2	PROB > CHI2	DF
Heteroskedasticity	0. 19	0. 6614	
Serial correlation	1. 043	0. 3071	1. 00

When the P-value is greater than 0. 1, we should accept the null hypothesis (Ho) . In other words, there will be no serial correlation.

Ho : Homoscedasticity	
H1: Heteroscedasticity	

A second test is for the problem of heteroscedasticity. The above table is showing a probability value which is lower than 0. 1, meaning that heteroscedasticity is present in the model; the estimators are not BLUE and thus need to be corrected by taking robust standard errors.

4. 4Regress and Analysis

Table 4. 7Regression and Analysis

Table 4. 7

Dependent wage

Dependent: Wage

Variables	Coefficients	P-value	Std Err	t-ratio
In INF	1.152907	0.096	0.709871	1.62
In EXPORT	2.4042	0.017	0.971344	2.48
In IMPORT	-3.44879	0.000	0.541179	-6.37
In GDP	0.500892	0.115	0.312145	1.6

In PPI	3. 3688	0. 000	0. 667596	5. 05
CONSTANT	2. 904849	0. 492	4. 200478	0. 69

Number of observations	59
F(5, 53)	11. 12
Prob> F	0
R-Squared	0. 512

It has been stated that when there is an increase in inflation rate, the wage rate should be increased by 1. 152907. It is a positive sign. This is so because both in sugar sector and manufacturing sector where most of the people are employed, the wage rate is rising. Nowadays even the tourism and financial sector are moving in a positive trend and are employing more workers. The wage rate is increasing because they are making profits and the trade union is bargaining for higher wages. The inflation rate is significant and the p value is 0. 096. As the p value is below 0. 1 we will reject the null hypothesis. In Oswald (1982) where the prices were increasing more than the wage but in the end wages have been increased with the bargaining power of the trade union. Apart from inflation, there are many factors that affect the wage rate such as social and politics. The government of Mauritius has set up the Pay Research Bureau (PRB) and the National Remuneration Board (NRB) to determine the wage rate of the civil servants and those people working in the private sectors. In Mauritius, every five years, the PRB gives a rise in the wage rate so that the employees can be compensated for the increase in the inflation rate. When the PRB does not make any effect on the wage rate, the government might or should move towards the national minimum wage scheme.

It is argued in Mauritius the wage-price spiral holds, as there is higher inflation rate in the country where the workers get an increase in their wage rate. The government of Mauritius compensates the employees by giving them wage compensation which is calculated by the PRB (Pay Research Bureau) on a five years basis. As, the nominal wage increase, it can be seen that people tend to demand more, whereby price will increase again and in the end, once again, they will be compensated for their loss in their purchasing power. This is similar to the theory of Blanchard (1986) where he reports that as soon as there is a rise in the aggregate demand, the price level goes up and the employees wage rate have been increased. It has been shown in his theory that wage price spiral dynamics is found in all economy around the world when the decisions of the price and wage rate are not taken at the same time. In Mauritius, the PRB (Pay Research Bureau) reports to increase and compensate the wage rate come after five years. Therefore, the price and wage rate decision are not taken at the same time in Mauritius. Therefore, Mauritius is influenced by wage-price spiral where wage rate of an employee should be increased when it is affected by the inflation rate.

Moreover, there has been an increase in the export prices, so it is absolute automatic that the wage rate should rise by 2. 4042. It is a positive figure and it is also significant. The alternative hypothesis should be accepted. The products that Mauritius exports are fisheries, sugar, flowers, clothes, jewellery and others. Mauritius exports most of its products to the European countries in the world. In the Manufacturing sector, in the 1970 Mauritius had an export processing scheme to export clothes abroad which were quite helpful. Apart from the EPZ scheme, Mauritius was also focusing on the MEDIA (Mauritius Export Development and Investment Authority) 1984 where it helps Mauritius to export its products abroad more easily as well as help investors to invest in Mauritius. In 1997, the export of the products of EPZ has helped to bring a rise in the GDP. In Subramanian and Roy (2001) reports that as Mauritius was exporting its products, it helps the Mauritian people to have a better standard of living and leads towards economic growth. In the past, the government was also giving subsidy on export to decrease the effect of implicit tax on the goods that were exported. As Mauritius is exporting more products to abroad, money is coming into the country and the companies are making huge amounts of profits. The export companies are making huge amount of profits by sending their products abroad. As, the companies are maximising their profits, thus the company is more open to pay the labour a higher wage rate. The Export leads to economic growth so the wage rate of all employees should be increased.

Furthermore, it has been stated in the theory that when there is an increase in the GDP, the wage rate should be increased so that people can have a better standard of living. According to Marinakis (1980), when there is an increase in the GDP, the wage rate has moved up in the Latin America. Unfortunately, it is not possible in the case of Mauritius. It is quite surprising to note that the GDP will not increase wage rate in Mauritius. The wage rate will not be increased by 0. 500892 which has a positive sign and the p value is 0. 115 which is non-significant as the p-value is greater than 0. 1. Therefore, the p value is moderately important as it is closer to 0. 1. The wage rate will not increase in Mauritius because it is the Pay Research Bureau (PRB) and the National Remuneration Board (NRB) do not depend on the GDP rate to bring an increase in the wage rate by giving wage compensation to the employees. The wage compensation is decided through the tripartite meeting in Mauritius. In the Journal of Sobhee (2009) shows that GDP has increased by 3 % in 2005. An increase in GDP rate in Mauritius will not bring an increase in the wage rate. GDP has some shortcomings which cannot be ignored. Firstly, GDP may not be recorded such as the underground economy and poor data collection. In Mauritius, the wage rate index data is available since 1992. Before 1992, there was no data on the wage rate index which shows a poor data collection was in practice in Mauritius before 1992.

Nevertheless, it has to be highlighted that the import turns out to be negative -3. 44879 as it was expected. The p value is 0 and it is significant . It has become negative because revenue are going abroad from Mauritius. Most of the products that Mauritius imported come from Europe and from different parts of the world such as China, India and among others. In Sargan (1980), the government has put into practice the floating exchange rate where he varied the exchange rate system and keep hold of the import prices. This is different from the analysis as there has been the use of indirect taxes and ad-valorem tax rate in the other economy. The imports prices turn out to be negative because we are importing more products and less goods are being produced locally. Also, wages are rising more than the level of productivity level in the country, such as in the EPZ sector. Therefore, the wage rate will not be increased as the import figure is -3. 44879.

Factor price equalisation has to be taken into account in this study. Samuelson (1986) uses the theory of Heckscher –Ohlin (1919) to introduce the factor price equalisation model o show the one to one relationship between relative commodity price and relative factor price. There are three assumptions which are as follows: Firstly, there should be country A and country B that are producing both goods, the same level of technologies and there is equalisation of the prices of the product in both countries. Let’s assume that Mauritius is export capital-intensive products such as clothing and import labour intensive products, for instance, food. The price of the import will be higher in Mauritius compared to the other nation as Mauritius would have produced and export the product if the price was lower, that is, comparative advantage. Mauritius is trading more; this will cause a fall in the wage rate of the country.

Finally, when there is an increase in the producer price, the wage rate should be moved up by 3. 3688. This is so because the trade union especially in the public sector and the sugar sector are very strong to bargain for a higher wage rate so that people have a better standard of living on this blue planet. Therefore, the producer can charge for a higher price for their products. Even in the private sector the wage rate is increased by the trade union and the forces of demand and supply. The trade union has bargained to bring a rise in the wage rate and it has increased as they were having more money into their hands as the wage rate has goes up. In Mauritius, the producer price is useful for the sellers as well as the buyers to take precaution in advance against the coming inflation rate. The producer price will also be increased when the country is moving towards economic growth. In Borum (1981), the analysis is the same and there has been the use of anti-inflation programme to deal with inflation rate. The difference is that the wage rate is calculated in hourly earnings and in Mauritius it is based on normal hours of work. Even, the producer price turns out to be significant and the alternative hypothesis will be accepted. The producer price index shows the producer price meaning the producer inflation. As the producer price increases, they get more profits and thus the trade unions can bargain so as some of these profits are given to labour in terms of higher wage rate.

4. 5The Error Correction Model (ECM)

As a next step, an Error correction model, made famous by Nobel Prize Winners Engle and Granger, is presented to capture the short-run effects of the variables in the model. The table below illustrates that most of the variables in the model do have a short-run effect on the wage rate of the country; in fact, inflation, GDP and PPI are returning a positive sign on the coefficient while import on its turn is showing a negative sign.

ERROR CORRECTION MODEL

VARIABLES	Coefficient	P-value	Std Err	t-ratio
dlninf	1. 945232	0. 103	1. 171716	1. 66
dlnexp	-0. 36393	0. 942	4. 969895	-0. 07
dlnimp	-0. 02609	0	0. 002846	-9. 17
dlngdp	12. 01238	0. 007	4. 30228	2. 79
dlnppi	0. 003162	0. 018	0. 001292	2. 45
Ut-1	-0. 17705	0	0. 022963	-7. 71
Constant	-4. 08079	0. 715	11. 09744	-0. 37
Observations	58			
R-squared	32. 65			

Adj R-squared	0. 7691
Prob> F	0
Standard errors in parentheses	
*** p <0. 01, ** p <0. 05, * p <0. 1	

Moreover, the ECM variable (Ut-1) has the expected negative and significant sign, meaning that any errors happening in the model in the short-turn are indeed converging towards the long-run co-integrated relationship at a speed of 17. 7%. It has to be taken into consideration that the inflation, import, exports, producer prices which seem to have a short term effect.

CHAPTER 5: CONCLUSION AND RECOMMENDATIONS

5. 0Conclusion

As a conclusion, it has to be noted that when there is an increase in the inflation rate, the wage rate should be increased. The government should give wage compensation to the employees so that they can have a better standard of living and satisfy their basic needs and wants. In Mauritius, the government has created institutions such as the PRB to bring an increase in the wage rate on an every five years basis and when the institution does not work properly and effectively, the government should shift to the minimum wage scheme. The results that have been obtained from the variables are positive except for the GDP rate.

The econometric model that has been used is a log-log model to show the relationship between wage and other economic variables such as import, export, producer prices and others. The variables which are statistically significant are inflation, import, export, producer prices and the GDP is an exception which is statistically insignificant. In Mauritius, it is confirmed that wages are affected by the prevailing inflation rate and holds a wage-price spiral model. The government needs to get involved to control the inflation rate in order to establish a balance in the society as well as the country can make progress in the future and moves towards economic growth. The government intervention is needed as the R-squared is 51. 2% which is low. The government should design some policies to combat the inflation rate.

5. 1Recommendations

5. 1. 1Import inflation

Mauritius is small country which depends on high level of import products. There will be imported inflation in the country. The government should find a way to import fewer products from abroad. The government should give some incentives and facilities to the people so that the products can be made locally instead of importing them. Thus, the inflation rate will be in control. The government can apply the import restrictions policies so as to prevent import and this can lead to higher wages. The can control import by using quota, tariff and other restrictions to reduce the inflation rate in a country. A quota is a barrier that is imposed on the goods that is brought in the country and sells in other markets. A quota will be helpful for the domestic industries and infant industries as they will be protected and they can increase the wage rate of their workers as well as the country will moves towards a good balance of payments. Export subsidy can also be utilised. In an export subsidy the payment is not delayed by doing an indirect payment and the government helps the foreigners by giving them subsidy, loans and other packages to be attracted to the country's exports.

5. 1. 2Fiscal policy and Monetary policy

Fiscal policy can also be used to deal with the inflation rate. Fiscal policy will bring an alteration in the aggregate demand. The fiscal policy is concerned with the tax system. For example, if the government can bring an increase in the tax rates, this can bring a reduction in the demand of the economy. Monetary policy can also be used. The monetary policy deals with the rate of interest. The monetary policy will lead to a fall in the money supply and the interest rates will be increased. When the interest rates will go up, people will prefer to save their money. The purchasing power in the market will decline which in the end can bring a decrease in the inflation rate. By controlling the inflation rate in the country, the people can satisfy their basic needs and wants as there wage rate has been increased and will not be affected by a larger amount as the government is monitoring the inflation rate by the use of fiscal and monetary policy.

5. 1. 3Income policy

Furthermore, the income policy is another way to deal with the inflation rate. A proper income policy has to be determined to halt the wage price-spiral from increasing. If the inflation rate is based on cost push nature, the government will use the income policy. The government and the trade union should set a meeting to negotiate and cooperate together to bring an increase in the wage rate. A rise in the wage rate should be given when the level of productivity is rising. In the case of the EPZ sector, the wage rate was increasing more than the level of productivity which was not effective at all. When the productivity is rising and the wage rate is increasing at the same pace, this will have little effect on the inflation rate. A good work is being done by the labour party in Mauritius. As it has clearly stated in the budget of 2013 presented by the Honourable Xavier Luc Duval, the Minister of Finance and Economic Development where he said that with the help of PRB and Errors Omission and Anomalies Commission, the wage rate will be increased at around 25 %. The government is spending Rs 6 billion to help consumers to have a good purchasing power. Another policy is concerned with theprice policy. The price policy is where the government can controlled the price level and what price is going to be fixed in the market.

5. 1. 4 Maximum price

The producer price can be control if the government uses the maximum price. The government put a maximum price where the producer cannot exceed the price level. This will bring price stability in an economy and the consumer will be protected from their purchasing power not be eroded.

5. 2Problems and Limitations

The problem that has been arisen is that there was difficulty in finding data on the wage rate index in Mauritius. The data on the wage rate index was available in Mauritius since 1992. Thus, it has to be converted in terms of quarter to get a smooth graph and to do its regression. Due to the unavailability of data, the R squared is low which shows a poor fit. Therefore, the result should be decided in the light of the problem that has occurred. The limitation is that it is not always that inflation rate affects wage rate. There are other factors such as exchange rates, public utility rates, marks-ups and others which also affect the wage rate which has been showed in the journal of Marinakis (1980). It has also to be noted that even the political and social factors are used to decide the wage rate.