

THE IMPACTS OF MACROECONOMIC VARIABLES ON WELFARE IN THE SULTANATE OF OMAN

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ABSTRACT

This paper investigates how Oman's welfare and the citizens' wellbeing is affected by macroeconomic variables. In this study the impacts of inflation, wages, unemployment and openness of welfare - GDP per capita (current local currency)- in Oman are estimated using the Pearson correlation coefficient to find the nature of the relationship between them. Gini index was added to see if it has any impact on the welfare. The study showed that Inflation, wages and openness positively and directly affect welfare with over 90% correlation for wages and openness. Unemployment showed a negative relationship with the same variables. Policy makers, in their pursuit of increasing Omani welfare and the level of citizens' wellbeing, should focus more on reducing the unemployment rate rather than on restraining inflation and give more freedom for international trade (which may create more jobs and might lead to an increase in wages).

INTRODUCTION

This study addresses the issue of the cyclical relationship between welfare level as a dependent variable and macroeconomic independent variables such as wages, unemployment, and inflation, as well as the long-term association between welfare, growth, and inequality. It also examines the relationship between welfare and growth as asymmetrical, whether it varies by level of development, and whether it differs by policy context, where structural reforms undertaken in Oman during last decades are taken as a case in point. The analysis benefits from a variety of welfare conceptions, primary source measures, and a great deal of variation in all variables, to date only found in a cross-country context. Conclusion of this project will help government to apply policies for increasing the prosperity of households in rural and urban areas of the Sultanate of Oman.

Previous studies indicate that an evaluation of the effect of macroeconomic variables on welfare

reveals that unemployment rate, inflation rate and Gini coefficient variables have an adverse relation to the cardinal welfare in both Pareto and non-Pareto cases, while the literacy rate and government expenditures have a positive relation to the welfare index. The findings also imply that there is a positive relationship between economic growth and welfare level in Iran (Tash, Molaie & Kamran, 2017).

The multidimensional poverty concept is relevant for assessing deprivation in developed countries and, in line with the relevant literature, the dynamics of some macroeconomic variables are crucial to deprivation performances. The latter result is robust as it holds for different measures of poverty.

It is believed that the level of poverty is significantly determined by macroeconomics variables such as inflation, government expenditure and unemployment rate. In addition, there is a negative relation between poverty and growth, Unemployment and inflation have positive effects on poverty, while social security expenditure relating to government expenditure has no meaningful effects on poverty (Farhad & Nabi, 2014).

Is unemployment costlier than inflation? Our answer seems to be “yes” (Blanchflower, et al, 2014). Unemployment is a bad thing. It is bad for the economy and for society, for unemployed people themselves, for their families and for the communities in which they live (Peter Saunders, 2002). The relationship between unemployment and (income) inequality cannot be assumed to automatically exist (Peter Saunders, 2002). The relationship between poverty and unemployment has been seemingly unclear, since being unemployed usually results in a fall in one’s living standard due to the absence of income, and it is also possible for one to be employed and still be poor. Even with the policy of unemployment reduction and poverty alleviation being the core goals in many developing countries, attaining these objectives has been relatively defeated with the high incidence of both poverty and unemployment (Agenor, 2004). Being employed does not guarantee the escape from poverty (Ryscayage, 1982).

Inflation is usually measured using the idea of a price index. The consumer price index (CPI) is the most frequently used measure of inflation and cost of living. The CPI measures the change in the average price of fixed goods or package of consumer goods and services from the base year to the year in which the change is to be measured (Mariam Alubaid, 2008). Inflation lowers the value of the currency and thus raises the poverty line, which contributes to the increase in the number of poor in the country, which in turn contributes to reducing the skills and abilities of young people to contribute to economic development

An increase in trade openness may be detrimental to economic growth by increasing inflation and lowering exchange rates (Cooke, 2010; Jafari Samimi et al., 2012). Trade openness may impact

economic growth negatively for countries which specialize in production of low-quality products (Hausmann, Hwang, & Rodrik, 2007). Trade liberalization encourages specialization in sectors which have economies of scale that contribute to improving the efficiency and productivity in the long-run (Krueger, 1978; Bhagwati, 1978).

METHODOLOGY

This part is concerned with the research methodology followed in this study. More specifically, it casts light on the research method, data collection, criteria for selecting the data sample, and procedure of collecting data. Taking into account that the terms "methodology" and "method" are not interchangeable, Saldanha and O'Brien (2013:13) distinguish between the two concepts: "methodology is a general approach to studying a phenomenon whereas a method is a specific research technique". To put it differently, while the former refers to the systematic analysis of the methods applied to find out knowledge, the latter refers to the tools, techniques and data analysis, i.e., a qualitative method and quantitative method, or even the combination of both, are examples of methods.

In this study, the relation between macro variables and the welfare level was investigated through an econometric model. In line with achieving this goal, two main test have been applied. First, the Pearson correlation coefficient has been applied to find the nature of the relationship between the dependent variables (Welfare) and the independent variables (Wage rate, Unemployment rate, Inflation rate and Openness rate) and Analysis of variance (ANOVA) for the dependent variable (welfare) regression in predicting Wage rate, Unemployment rate, Inflation rate and Openness rate. In this research, the variables of inflation rate, unemployment rate and wage rate during recent decades are considered as determinants of welfare level. Since theory offers little guidance in the construction of a structural system, the research chooses a reduced-form specification in the tradition of that employed in the literature where focus is on what a long span of comparable and high-quality data says through the use of appropriate estimation techniques.

The statistical information related to mentioned variables and also the price index and Gini coefficient are obtained from Central Bank of Oman. In order to study the effect of macro variables on welfare in Oman, the following regression has been considered:

$$D \ln(Wel)_t = a + \beta_1 D \ln(Wage)_t + \beta_2 D \ln(Unemp) + \beta_3 D \ln(Infl) + \beta_4 D \ln(Open) + e_t$$

in which *Wage* is the wage rate, *Unemp* is unemployment rate, *Infl* is the inflation rate, *Open* is the Openness rate and *Wel* shows the welfare Index. *Ln* indicates logarithm, *D* shows the reduced form, and *e_t* is considered as error terms.

Data has been collected from several reliable sources that are concerned mainly with gathering countries' economics data, such as the World Bank site. The World Bank collection of development indicators is compiled from officially recognized international sources. It presents the most current and accurate global development data available, and includes national, regional and global estimates. The information gathered were starting from 1998 to 2018 for most variables.

Another main resource was the National Center for Statistics and Information - Data portal-(NCSI). It is a free data-sharing portal where anyone can access data relating to the Sultanate of Oman. The Data Portal provides many datasets from different entities, for everyone - citizen, investor, researcher or developer. Most of the related specific date were from these two websites.

RESULT AND DICCUSSION

The results of testing the study hypotheses: The Pearson correlation coefficient has been applied to find the nature of the relationship between the dependent variables (Welfare) and the independent variables (Wage rate, Unemployment rate, Inflation rate and Openness rate).

Table 1: Pearson Correlation between welfare (dependent) and wage rate, unemployment, inflation, openness(independent).

welfare Independent variables	N	Sig. (2-tailed)	Pearson Correlation
Inflation	24	0.001	0.639**
Unemployment	24	0.003	-0.577**
Openness	24	0.000	0.807**
Wages	24	0.000	0.910**

Table 1 shows the existence of a statistically significant positive correlation (Sig. (2- tailed)) between welfare and inflation, with the Pearson correlation coefficient of R= 0.639 **, and the existence of a statistically significant negative correlation between welfare and unemployment, where the Pearson correlation coefficient reached R= -0.577 **. There is a statistically significant positive direct correlation between welfare and Openness, where the Pearson correlation coefficient reached R= 0.807 **, and the presence of a statistically significant direct correlation relationship between welfare and Wages with Pearson's correlation coefficient of R=0.910 **.

How much did welfare contribute to predicting Wage rate, Unemployment rate, inflation rate and

Openness rate?

To answer the question, Simple linear regression analysis was used to see the extent to which welfare contributed to predicting Wage rate, Unemployment rate, Inflation rate and Openness rate.

Table 2: Analysis of variance (ANOVA) for a variable (welfare) regression in predicting Wage rate, Unemployment rate, Inflation rate and Openness rate.

Dependent variables		Sum of Squares	Df	Mean Square	F	Sig.
	Regression	100073698.119	4	25018424.530		
welfare	Residual	4728693.172	19	248878.588	100.525	.000
	Total	104802391.291	23			

From the previous table it becomes clear that there is a statistically significant effect (Sig.) of the welfare variable in predicting the level of Wage rate, Unemployment rate, Inflation rate and Openness rate. Significant at $\alpha = 0.05$.

Table 3: Results of the welfare correlation factor in predicting Wage rate, Unemployment rate, Inflation rate and Openness rate.

Dependent Variables	R	R Square	Adjusted R Square	Std. Error of the Estimate
Welfare	.977	.955	.945	498.87733

From the table, it is possible to know what is explained by the welfare variable as a whole in predicting the level of Wage rate, Unemployment rate, Inflation rate and Openness rate, with the correlation coefficient R reaching 0.977, while the square of the correlation coefficient is $R^2=0.955$. That is, with (95.5%), for Wage rate, Unemployment rate, Inflation rate and Openness rate.

Table 4: Simple linear regression variance analysis of the prediction

	Unstandardized Coefficients	Standardized Coefficients	T	Sig.

Model	B	Std. Error	Beta		
(Constant)	-33389.266	5545.177	-	-6.021	.000
welfare					
Inflation	207.840	43.563	.280	4.771	.000
Unemployment	378.219	255.276	.108	1.482	.155
Openness	60.343	10.580	.397	5.703	.000
Wages	331.382	56.287	.569	5.887	.000

It is clear from the table that the statistical significance (Sig.) in welfare is smaller than the level of significance ($\alpha = 0.05$). This means welfare1 is predictable at Wage rate, Inflation rate and Openness rate.) Except for unemployment being greater than the level of significance ($\alpha = 0.05$), the results also indicate that the value of the beta coefficient (β) was positive in Wage rate, Unemployment rate, Inflation rate and Openness rate.), and this confirms the range of the positive contribution.

Discussion

At this point, and to make the result clearer and understandable, here is the equation for the dependent variable (welfare):

$$D Ln(Wel)t = a + \beta_1 D Ln(Wage)t + \beta_2 D Ln(Unemp) + \beta_3 D Ln(Infl) + \beta_4 D Ln(Open) + et$$

The analysis showed most of the mentioned independent variables have a positive relationship with the independent variable (Welfare). Openness and Wages have the most impact on Welfare with almost 80% and 90% correlation respectively. That mean the increase in salaries over the last 23 years has contributed positively in the level of welfare and the wellbeing of the Omani citizens. Also, the policies that have been adjusted over the last two decades to give the market more freedom and openness had a huge positive impact in the happiness and the level of living in the sultanate. As the share of the international trade contribution increases in the local GDP, welfare has also increased.

Inflation as an indicator of the consumer price appears to have a significant positive relationship with welfare. The increasing inflation rate has always escorted an increase in the welfare level. In 2008 when the inflation rate was at its highest, welfare was also at its highest ever for the same period.

Even though all the independent variables have a significant relationship with welfare,

unemployment takes a different direction from that of the other variables. It has a negative relationship with Welfare. The increasing unemployment rate leads to a decrease in the welfare level. More jobs mean more satisfaction for the citizens as their capability of fulfilling their needs will be higher, which means an increase in the welfare and well-being level.

The Gini index varies from country to country, and although it might be higher in poor countries and lower in the richest, it does not always have a negative relationship with welfare (Moatsos and Baten, 2014). However, it is a very reliable index that reflects the wealth or income distribution. Here are some of the results that I found about the Gini coefficient in Oman for both Urban and Rural towns from 2006 to 2018:

Table 5: Oman Gini Index

Year	Urban	Rural
2006	0.3923	0.363
2007	0.3296	0.3332
2008	0.3438	0.3272
2009	0.3302	0.3044
2010-2017	0.3072	0.307
2018	0.3075	0.2856

Table 5 shows that income improved over the years 2006 to 2018. Since the index ranges from 0 (or 0%) to 1 (or 100%), 0 means the distribution of income is perfectly equal and 1 the opposite. Both Urban and Rural have almost the same level of income distribution. Oman holds a comparable an adequate position regarding the equality of income distribution. Unfortunately, there is not much information and data about the Gini index in Oman; therefore, the relationship between it and the welfare level in the country cannot be tested.

CONCLUSION

Macroeconomics variables' impacts on welfare vary from one variable to another, yet it can be said that all of them (inflation, unemployment, openness, wages) can affect the outcome of welfare in one way or another. When inflation affects welfare positively, welfare increases. That leads to the highest welfare value being reached while the inflation rate was at its highest as well. In 2008 the inflation rate in Oman jumped to almost 13% and the welfare1 value was around

8,500. It is confirmed with the Unemployment variable which has almost the same impact (58%) on welfare, yet in a different direction. An increase in the number of jobless people compared to the population will lead to a decrease in the wellbeing and welfare level in the country.

According to numerical evidence and the test that has been run, openness and wages have a very strong impact on welfare (80% and 90% respectively). With openness and the movement of exports and imports, the level of welfare has increased. Yet there is not enough evidence about the significance of this relationship.

Although wages and welfare from 1995 to 2018 increased together, and the Pearson correlation test shows a strong 90% relationship, the significance of this relation is not high at all, which makes further study of their connection important.

Recommendations

- Monitor the unemployment rate and make the most appropriate policy to keep the rate low and controllable.
- Create more job opportunities in both the public and private sectors to reduce the negative impact of the unemployment rate.
- Enhance and prepare the local ports to make them more capable of receiving commercial ships.
- The inflation rate should be focused on so that it will not reach a level where it might hurt the welfare level instead of increasing it.

Enforce the rules regarding wages and make sure that employees receive at least the minimum according to the country's regulations.

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