

CHAPTER 9

SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS

9.1 INTRODUCTION

This chapter presents a summary of the study, the major conclusions drawn from it and their policy implications. This study set out to develop a medium scale macroeconomic model for the economy of Lesotho with the objectives of estimating the model and using it to perform dynamic policy simulation experiments with a view to determine and analyse the effects of different policy regimes on key macroeconomic variables and evaluating their implications for economic policy.

9.2 SUMMARY OF THE STUDY

The model developed in this study presents seven sectors namely, the production sector, the employment sector, the aggregate demand sector, the government sector, the balance of payments sector, the monetary sector and the price sector. The model has a total of 140 variables of which 36 are exogenous and 39 are dummy variables. It has 65 endogenous variables of which 22 are determined by stochastic behavioural equations. The model is estimated using time series data spanning the period 1980 to 2000 using the Engle-Granger two-step technique. Both the long-run and short-run versions of the equations are used in the solution of the model, which in turn is solved from 1984 to 2000 for the in-sample solution and 1984 to 2001 for the out-of-sample solution. This is because of the lags used in the ECMs. These are restricted to lags of the second order so as to preserve the degrees of freedom. The model is solved as a coherent system within-sample and out-of-sample using the Econometric Views software package. The performance of the model is evaluated by means of forecast accuracy statistics and by inspection of the plots of the actual series against the series generated by the solutions of the model. The tracking performance of the model and its forecasting accuracy is satisfactory as evaluated by means of the MAE, the MAPE, the RMSE and the Theil inequality coefficient.

The model covered both the supply and demand sides of the economy adequately, thus maintaining a balanced synthesis of the two sides. The level of disaggregation adopted in the model is considered sufficient to explore the necessary policy options and is dictated to a large extent by the availability of data. On the supply side, labour and capital are found to be important determinants of changes in the level of output as judged by their statistical significance. Private investment is determined to a large extent by the level of domestic output and the real user cost of capital. Employment is found to be determined to a large extent by real domestic output as well as real wages. According to the estimates of the model, the main determinants of real wages are labour productivity and consumer prices. On the demand side, disposable income, the level of wealth and the real rate of interest are the main determinants of private consumption. While world demand and the relative price of exports were found to be important in determining exports, import demand is determined mainly by national income and their relative price. Within the monetary sector, real national output plays a major role in determining the demand for the key monetary variables. For broader aggregates, the real rate of interest appeared to be a significant determinant. In the government sector real domestic and national outputs, exports of goods and services, nominal wages, real private investment and real private consumption perform well as bases for different types of tax variables. Changes in the GDP deflator are explained by changes in capacity utilization and real wages relative to the real user cost of capital. The CPI is determined to a large degree by changes in excess demand, changes in the GDP deflator and import prices. The GDP deflator, world prices and the nominal exchange rate determine export prices while import prices are largely determined by world prices and the nominal exchange rate.

A number of simulation experiments are performed to fulfil the policy analysis objective of the study. The impacts of policies are evaluated in terms of percentage deviations of the simulation paths from the baseline paths of the key macroeconomic variables. In addition, dynamic multipliers and elasticities are computed for each of the variables. Overall, policy analysis involved four simulation experiments. Two experiments with regard to fiscal policy are evaluated. These involve an increase in government

consumption expenditure by 10 per cent and an increase in government investment expenditure by 10 per cent. One simulation experiment that involves an increase in the nominal Treasury bill rate by 2 percentage points is performed with regard to monetary policy shocks. External shocks are simulated to portray the susceptibility of the domestic economy to shocks from the global economy. These are performed by applying a 5 per cent depreciation of the currency. The increases in the variables are made from 1988 to 2000.

9.3 MAIN FINDINGS OF THE STUDY

The following remarks can be made based on the estimated structure of the model and the impact analysis. An expansionary fiscal policy in the form of an increase in government investment expenditure is more potent than an increase in government consumption expenditure. The effect of both policies on the government budget position is only temporary. In addition the former policy tends to raise domestic output in a more robust manner than the latter. A notable outcome with regard to government investment expenditure is that it appears to have a substantial crowding out effect on private investment, a result which is not observed with regard to government consumption.

A monetary policy intervention in the form of a rise in the nominal interest rate has the effect of reducing major monetary aggregates. Some of the notable outcomes are an increase in domestic output, a reduction in consumer prices, an improvement in the current account balance and an increase in employment.

One of the outcomes of the analysis is that a depreciation of the currency is not very effective in improving the overall balance of payments position, although it improves the current account balance significantly through a sustained increase in exports. It is contractionary in the short run as it reduces output and employment in the early years of the simulation period. This is in contrast to the results of Elliot *et al.* (1986) and Musila (2002) for the Kenyan and Malawian economies respectively. In this particular case, a depreciation is inflationary towards consumer prices.

9.4 CONCLUDING REMARKS

The analysis in this study has provided a medium size coherent macroeconometric framework that can be used for policy analysis and short-term forecasting purposes with some degree of accuracy. The construction and estimation of this framework has attempted to incorporate as much available information as possible regarding the structure of the economy and the theoretical developments up to the level at which the data set could permit. It is noteworthy that the inconsistency of the data set has provided one of the major challenges in the construction and estimation of this framework. Nevertheless, this framework has been used in this study to assess the effects of both fiscal and monetary policy and external shocks on the economy. It is evident from the policy options explored in this study that fiscal policy remains the main and most potent policy instrument available to policy makers. In particular, the most notable outcome is that shocks from the supply side of the economy have far more robust impacts on key macroeconomic variables than shocks emanating from the demand side. It is also evident that the effectiveness of fiscal policy is not exclusive as monetary policy can still be used to some extent. A salient outcome of the policy simulation experiments is that Lesotho is highly vulnerable to external shocks, as they tend to work their way through virtually all sectors of the economy.

9.5 POLICY IMPLICATIONS

The following policy implications follow and can be highlighted from the impact analysis and the conclusions drawn in the preceding sections.

- Supply side shocks are more potent and affect key macroeconomic variables such as real output, employment and the level of capital stock in a more sustained and robust way than demand side shocks.
- A fiscal policy expansion that raises the level of government consumption expenditure has more detrimental effects as it proves to be inflationary.

- Monetary policy in the form of interest rates can still be used effectively as a policy tool, although constrained by the CMA arrangement. A rise in the nominal rate of interest works to discourage private investment in the long run, though the effect is marginal and short-term. Many of the impacts are temporary, except to the impact on prices.
- The economy of Lesotho is highly susceptible to external shocks. The effects of a change in the exchange rate have significant influences on the domestic economy. A depreciation of the currency is advantageous for the domestic economy as it boosts exports and discourages imports by making them dearer. This mechanism does not however work in favour of the balance of payments and the economy's external indebtedness as the rise in exports is not sufficient to change the deficit position of the overall balance of payments by much.
- It is noteworthy that domestic prices show a higher responsiveness to external shocks as compared to internal shocks. A depreciation tends to raise consumer prices, as higher import prices that follow a depreciation are passed directly onto the domestic prices.

9.6 AREAS FOR FURTHER RESEARCH

It is noteworthy that macroeconomic modelling is a continuous process. While the study has covered the major aspects of the tasks outlined in the objectives, and therefore presented a snapshot of the economy of Lesotho over the sample period and subject to constraints faced, acknowledgement is made here of areas that need further investigation. One of these is the need for improvements and extensions of the data base. The short span of data and its poor quality has presented a major obstacle in terms of estimation and ultimately the interpretation of coefficients and policy simulations, hence the liberal use of dummy variables in this study. Prominent peculiarities related directly to this problem relate to the signs and magnitudes of estimates such as the tax rates and the propensities

to consume and invest. These are almost invariably in turn blamed for some of the non-standard results obtained in simulation experiments and hence the instability portrayed by the model in this regard. The issue of data also restricted the scope for specification of some equations in the model. In some instances, proxies were used in place of variables at the expense of robust theoretical underpinnings. Because of this, it is deemed necessary to investigate some of the specifications further in later work.