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Summary of the Dissertation

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II. Title of the dissertation:

Macroeconomic Policies in the Presence of Currency Substitution in Lao People's Democratic Republic

III. Abstract

Among Asian countries, Lao PDR or Laos is one of the countries that use foreign currencies in parallel with domestic currency. The degree of currency substitution (CS), measured by the ratio of foreign currency deposits to money supply (M2), was on average around 56% during 1993–2012. The feature of CS in Laos is peculiar and more complicated than the case of the highly dollarized economy, namely Cambodia or some Latin American countries. In Laos, there are two main foreign currencies— the US dollar and Thai baht—that are widely used in parallel with the domestic currency, kip. The presence of CS has important implications for the conduct of monetary policy, exchange rate determination, and stability of demand for money functions. First, monetary policy becomes less effective, because changes in the domestic money supply or the domestic monetary base have less impact on domestic expenditure. Second, the volatility of exchange rates is likely to increase. With two or more currencies in circulation, the demand for domestic currency may become more sensitive to changes in its expected opportunity costs. Third, the presence of CS causes the instability in the demand for money functions. As the demand for domestic money becomes less stable, the impact of monetary policy measure on spending is harder to predict.

In view of the adverse policy implications of widespread currency substitution, a strategy for reducing CS or de-dollarization is important in Lao stabilization and adjustment programs. However, there are limited studies which provide a rigorous analysis of the causes and consequences of the CS which may be useful for a more effective design and implementation of monetary, fiscal, and exchange rate policies in Laos. The main objective

of this dissertation is to address this issue by examining the effectiveness of macroeconomic policies in the Lao economy.

The term ‘macroeconomic policies’ here refers to the monetary, fiscal and exchange rate policies that help determine the rate of inflation, the budget deficit, and the balance of payments. In particular, this research examines three issues that play a crucial role in the macroeconomic management for promoting monetary and financial stability conducive to the sustainable growth in Laos.

First, the dissertation investigates the determinants of CS in Laos based on the money demand function. The empirical model is estimated using the autoregressive distributed lag approach to cointegration for the period 1993–2012. This study differs from the existing literature in three important respects. First, it makes use of the error-correction framework to report both long- and short-run impacts. Second, instead of using the Johansen method, it uses the bounds testing procedure to cointegration, within an autogressive distributed lag (ARDL) framework, which was developed by Pesaran and others (Pesaran and Pesaran, 1997; Pesaran and Shin, 1999; Pesaran et al., 2001). Finally, it includes the interest rate differential and the ratchet variable in modeling CS in Laos. The empirical results from this study indicate that the interest rate differential is a significant CS determinant in the Lao economy. Moreover, there is evidence supporting the existence of a ratchet effect in the currency allocation of deposits, implying that particularly strong policies would need to be pursued over an extended period of time in order to convince depositors to switch back to kip-denominated assets.

Second, the dissertation tests the proposition of long-run neutrality of money (LRN) in the Lao economy over the period 1984-2011. In theory, it is assumed that changes in the quantity of money affect the nominal variables in the macroeconomic system such as prices, wages and exchange rates, but not the real variables, such as employment, real GDP, and real consumption. So far, there are limited studies that provide and empirical analysis of the relationship between money and output in Laos, and this study is an attempt to fill this gap. Laos is a very interesting case study for testing the proposition of long-run neutrality of money since the empirical study for Laos provides more empirical evidence to the existing literature on LRN in the context of developing countries. The underdeveloped financial systems and less sophisticated economies in developing countries may conduce to money neutrality. Three sources of non-neutrality, including sticky prices, sticky nominal wages, and fixed nominal costs, are unlikely to exist in developing countries (Humphrey, 1991). In this regard, the relationship between money supply and real gross domestic product (GDP) is analyzed econometrically in this dissertation, in the context of Laos. The results from the analyses of LRN show that changes in the quantity of money have negative effect on the level of real output in the long-run in Laos. A permanent rise in the levels of M2 from 20% to 50% reduced real GDP by 1.5%. The negative impact of money on real GDP implies that monetary expansion is unlikely to stimulate output, eliminate recession, and increase job opportunity. By contrast, the net effect of expansionary monetary policy may result in higher prices and make the economy more vulnerable. Hence, the monetary authority should not manipulate monetary policy to stabilize the fluctuations in business cycle before considering the relationship between money and real output.

Third, I construct a macroeconometric model to evaluate the effectiveness of macroeconomic policies in the Lao economy over the period 1993-2012. Macroeconomic policies are evaluated for the case of an economy with partial CS compared with the case of an economy with complete CS. The economy with partial CS is represented by the managed-floating exchange rate regime, whereas the economy with complete CS is represented by the fixed exchange rate regime. The effectiveness of macroeconomic policies is evaluated against changes in real GDP. The results from the simulation analyses of macroeconomic policies effectiveness show that the combination of fiscal and monetary policies tends to be more effective under the fixed exchange rate regime than under the managed-floating exchange rate regime, implying that a strategy to reduce the degree of currency substitution seems to be a clear means to strengthen the instruments of monetary policy and minimize seigniorage loss.

The structure of this dissertation has been organized in the following way:

Chapter 1 provides a broad picture of the Lao economy in the pre- and post-structural reform. It first describes the reform process, transitioning from a centrally-planned economy to a market-oriented one. Then, major economic developments in the modern economic system have been reviewed by describing sources of output growth, and the financial system. Special emphasis has been placed on the financial system through the investigation of the banking system and flows of funds analysis.

Given the structure of the Lao economy as explained in Chapter 1, Chapter 2 contributes to answering question whether the present institutional arrangements and the implementations of macroeconomic policies in Laos promote financial sector stability and enhance efficiency and development. This chapter describes the institutional and macroeconomic policies framework for the Lao economy. The structures of two macroeconomic institutions have been investigated, including the Bank of Lao PDR, and the Ministry of Finance. The chapter ends with the review of three macroeconomic policies, including monetary policy, exchange rate policy, and fiscal policy.

Chapter 3 focuses on the theoretical and empirical developments of three macroeconomic issues, namely the determinants of currency substitution in Laos, the long-run neutrality of money, and the effectiveness of macroeconomic policies in a dollarized economy. The chapter starts with a review of a theoretical model of currency substitution and follows by empirical issues on the analysis of the determinants of currency substitution. It then reviews the empirical evidence of the proposition of long-run neutrality of money as well as its theoretical foundation. The chapter ends with a review of the application of macroeconometric model to evaluate the macroeconomic policies in Laos.

In Chapter 4, I develop empirical models to investigate determinants of currency substitution, and examine the impact of money stock on real output. Then I construct a macroeconometric model for Laos to evaluate the effectiveness of monetary and fiscal policies under the managed-floating exchange rate system and fixed exchange rate system. The analysis of CS determinants is based on a standard money demand function in which real domestic balances are specified to be a function of income and the opportunity cost of holding real balances. The analysis of LRN is based on the Fisher and Seater's (1993) method which relies on a single-equation analysis for the relationship between money and real GDP. The macro-econometric model for the Lao economy is based on the assumption of demand-determined economy in the short-term, implying that increase in aggregate demand leads to increase in output and prices. The simulation results under the two exchange rate systems are compared in terms of changes in outputs and prices, particularly, real GDP, private investment, exports and imports of goods and services, and inflation.

In Chapter 5, two main empirical results are presented. First, the determinants of CS in Laos are estimated using the bounds testing approach to cointegration for the period 1993–2012. The empirical results indicate that the interest rate differential is a significant CS determinant in the Lao economy. Moreover, there is evidence supporting the existence of a ratchet effect in the currency allocation of deposits, implying that particularly strong policies would need to be pursued over an extended period of time in order to convince depositors to switch back to kip-denominated assets. Second, the long-run neutrality of money in the Lao economy is tested, applying the Fisher and Seater model. The empirical results indicate that changes in the quantity of money have negative effect on the level of real output in the long run in Laos. The conclusion is robust whether M1 or M2 is used as the monetary measure. It is also robust for an alternative specification with a time dummy for the period during which the Asian financial crisis affected the Lao economy.

Chapter 6 deals with the third major research objective of this dissertation, the evaluation of macroeconomic policies in Laos. The macroeconometric model has been formulated and estimated. By incorporating a model of foreign currency deposits into the Lao macroeconometric model, I conducted simulation analyses by changing kip-denominated deposit rate and/or government investment to evaluate fiscal and monetary policies effectiveness under the managed-floating and fixed exchange rate regimes. The simulation analyses show that policy mix tends to be more effective under the fixed exchange rate regime than under the managed-floating exchange rate regime. This implies that adopting foreign currency to replace the Lao kip tends to increase the effectiveness of Lao macroeconomic management. But the decision to move toward this direction depends on the political view which may not occur in the short-term. An alternative strategy is to reduce FCD, which seems to be a clear means to strengthen the instruments of fiscal and monetary policies.

Finally, key findings and final conclusions are provided at the end of the dissertation.

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