Remarks on "Monetary Policy, Inflation and Dollarization in the Economies of Central Asia"
Ph.D. dissertations of Asel Isakova

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The dissertation contains three interesting applications that discuss important issues for these transition countries: the transmission channel of monetary policy in economies with a weakly developed financial sector, the inflation dynamics during the transition period, and the problem of dollarization for countries with a highly unstable history. These topics are well situated in the specific experience of each of the three Central Asian countries. In my opinion, the three papers are technically well executed and lead to interesting and useful policy conclusions. So my overall impression of the dissertation is positive and proves that Ms. Isakova is able to execute high-level research on topics that are well defined and relevant from a policy perspective. At the same time I have the impression that the three papers would have benefited from a more focused presentation and motivation. As a consequence, my remarks and suggestions mostly relate to issues of interpretation of the results and the potential policy conclusions. My remarks mainly concentrate on the first and the second paper.

Chapter 1: Monetary Policy Efficiency in the Economies of Central Asia

This paper contains two exercises. The first exercise estimate a VAR model to identify the relative role of three transmission channels of monetary policy (the interest rate channel, the exchange rate channel and the credit channel). The second exercise analyses in detail the pass-through of the policy rate towards the market interest rates.

The VAR exercise is based on a recursive identification of three shocks (the interest rate shock, the exchange rate shock and a money growth rate shock) in a system of five variables (output growth, inflation, the interest rate, money (or credit) growth and the exchange rate depreciation). The reported results suggest that the exchange rate shock is the only one that affects inflation in a significant way. This result is plausible, but the interpretation of this result is not straightforward for me. More in particular, it is not clear whether the impact of an exogenous exchange rate shock (and the same remark applies for the exogenous money growth shock), is informative about the importance of the exchange rate channel (or the credit channel) in the transmission of monetary policy. In fact, the identification approach assumes that these shocks are orthogonal to the interest rate shock. Therefore, it is difficult to interpret these shocks as the result of monetary policy actions. Although they might be induced to some extend by direct foreign exchange interventions of the central bank (or by direct monetary or credit restrictions imposed by the central bank as for as the money growth is concerned), but this interpretation is not really exploited in the paper. In fact, the exercise compares the impact of three independent shocks on inflation and output, without much direct implications for the relative importance of the different transmission channel of monetary policy.

I would suggest three options to overcome this problem:

1. The conclusions could take into account this interpretation problem, which implies that the policy conclusion are less clear in terms of the precise nature and importance of the different monetary policy transmission channels;
2. The paper could document the impact of the interest rate shock on the exchange rate and the money growth. In general, I think that the paper would benefit from a more exhaustive documentation of the results: the IRF of the three shocks on all five variables in the system could be shown instead of providing only a selection of the IRFs on output and inflation. In particular, if there is a significant impact of the interest rate shock on the exchange rate and the money growth, one could effectively speak of an exchange rate and a money or credit channel of monetary policy actions.
3. The identification exercise could be extended by taking into account the simultaneity between the interest rate on the one hand and the exchange rate and the money growth on the other hand. A simple recursive identification strategy for monetary policy and exchange rate (or money growth) shocks is clearly not satisfactionary. For example, a restrictive monetary policy action would tend to appreciate the exchange rate, while an exogenous exchange rate appreciation might induce a more expansionary interest rate policy. These two instantaneous interactions will be present in the observed correlation between the interest rate and the exchange rate innovations in the covariance matrix. The recursive ordering, with interest rates before the exchange rate, assumes this second causality to be zero and therefore, the impact of interest rate shocks on the exchange rate might be insignificant as it will be disturbed by the reverse causality channel. In the literature on open economy VARs, there have been suggestions to overcome this identification problem (see Smets 1997). A minimal exercise would be to discuss how the impact of an interest rate shock depends on the ordering of the variables in the VAR.

The exercise on the pass-through of the policy rate to the market interest rate yields complex results. However, the graphical representation in Figure D suggests that there is a relatively close relation between the policy rate and the banking rates. Therefore, I would like to see more conclusive evidence on the existence of a cointegrating vector with the imposed restriction of complete one-to-one pass through, and also on the dynamic coefficients $\mu$ and $\kappa$ in the regressions. Alternative cointegration tests could give a more definite answer to the first question. Significant dynamic effects between policy and market rate would document the speed of the pass-through, even if there is no cointegration in the long run. I would also prefer a complete documentation of the results for all countries and not just a selection of the results as is the case for Tajikstan.

The relation between the two exercises, the VAR exercise for the complete transmission mechanism on the one hand and the interest rate pass-through on the other hand, could be explored somewhat further. The pass-through of the policy instrument in the market interest rates is a first condition for an effective monetary policy transmission channel. From the results it is not immediately clear whether the pass-through is perfect, but at least there is a significant impact of the policy rate on the market rates, and so the explanation for the weak interest rate effects on inflation and output, does not seem to be situated in the lack of pass-through of interest rates to the market rates. The question is then whether the private sector has alternative sources to finance or alternative saving instruments that can explain the weak importance of the domestic interest rates. Another issue, related to the discussion above, is whether the monetary policy interest rate affects the exchange rate and the money growth rate. If this is the case, then why does this not lead to further effects on inflation, similar to the exogenous exchange rate and money growth shocks?

Chapter 2: Currency Substitution in the Economies of Central Asia: How Much Does It Cost?

Again this is an interesting research topic, and I like the approach that is followed in the paper. Dollarization is considered as an endogenous choice that follows from the optimal portfolio allocation of domestic residents. Foreign money balances are considered as a substitute for domestic money balances in providing transaction services (approximated by a direct utility flow). At the same time, holding money balances has a cost against holding interest bearing domestic assets (why no foreign interest bearing assets? and would it make a difference if such assets are considered?). Depending on the real interest rate, the domestic and foreign inflation rate (and their effect on the implied rate of depreciation under PPP), the transaction function parameter (the share parameter and the degree of substitution between domestic and foreign balances), and the utility parameters, the residents will determine their optimal portfolio holdings of domestic and foreign money balances.

Given the estimated parameter values, the loss in terms of seigniorage revenue for the government are evaluated, taking into account the endogenous portfolio adjustment for different levels of domestic and foreign inflation, and different values for the transaction share parameter.
Furthermore, the welfare effects of dollarization are approximated, as the joint outcome of the seigniorage costs on the one hand and the potential gain from the hedging against domestic and foreign inflation through the portfolio adjustment, on the other hand.

I have two main questions on the actual exercises performed in the paper:

Q1: the share parameter is considered as an exogenous parameter that can be changed, representing higher or lower degrees of dollarization. Is this the correct way of representing changes in the degree of dollarization? More specific, in calculating the seigniorage cost for the three countries in Table 3, the actual degree of dollarization is used to calibrate this share parameter $\alpha$, but would it not be more correct to use the observed degree of dollarization to calibrate the $h=m^*/m$ ratio instead, and solve the expression for $h$ in equation 18 to solve for the corresponding share parameter. What is the implied share parameter from such an exercise, and would this approach change the conclusions?

Q2: the simulated sensitivity of the seigniorage income to the inflation rate and the share parameter reported in Table 3, seem to be much larger than the actual realized changes in seigniorage income. The paper notices a high correlation between the theoretical and the actual realized values of seigniorage, but it is silent on the relative volatility. How can this difference in volatility be explained? How does it affect the final results for the welfare calculations which are based on the simulated outcomes?

One minor question relates to the derivation of equations 11 to 13. I do no longer succeed in making these derivations, so it would be useful to document this somewhat more, probably in an appendix.

Chapter 3: Modelling Inflation in the Economics of Central Asia

This paper studies the inflation dynamics in Kazakhstan and the Kyrgyz Republic. The estimated model considers the CPI index as a combination of a traded-good price index and a non traded-good index. Both components have different determinants with the exchange rate and foreign inflation mainly affecting traded good prices, and the domestic money growth or excess money holdings being crucial for the domestic non-traded good prices. The results again look plausible and stable across alternative estimation approaches.

I have a few minor technical questions:

- in estimating the long run equilibrium money demand equation, the sign of the interest rate are different across countries. The positive sign of interest rates for M2 demand is mentioned as contradicting with the theoretical expected sign. On the contrary, I would expect a positive sign of the short rate on M2-demand (own rate) and expect only a negative sign for the long rate;

- money growth seems to work better than excess money holdings in explaining inflation if measured by the R2 of the regression, but not in terms significance of the parameters. This observation could be noted;

- a simulation exercise could illustrate maybe more clearly the relative importance of the money growth or the excess money holdings on inflation;

- why is the SUR system (containing the inflation rates of the two countries) estimated with 3SLS? The only contemporaneous variable on the RHS is the exchange rate, which is exogenous to the system, so I do not understand why a 3SLS estimator is used here;
- the list of the exogenous variables in the IV estimators should also contain the lagged inflation rates and other exogenous variables appearing in the model, in addition to the lagged exchange rate.

**Final conclusion:**

My overall impression of the dissertation is positive. In my opinion, this work satisfies the requirements of a dissertation defense that can result in a doctorate title. I hope that my remarks and suggestions can lead to further improvements of the papers, so that they can be submitted to journals that have a high interest in macroeconomic issues of transition countries.

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