REAL EXCHANGE RATE DETERMINANTS IN TRANSITION ECONOMIES:
Do Macroeconomic Fundamentals and Political Risk Play a Role?

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REAL EXCHANGE RATE DETERMINANTS IN TRANSITION ECONOMIES: Do Macroeconomic Fundamentals and Political Risk Play a Role?

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Introduction
Armenia witnessed an impressive economic growth during its transition from Soviet central to a market economy. By mid-2000s, Armenia was able to achieve a sustained economic growth, which was accompanied by drastic appreciation of Armenia’s national currency by 43% between March 2003 and Sept 2007.

Rapid appreciation triggered alarms and gave rise to speculative theories of government manipulation to pocket hard currency and benefit government-connected importers. Central Bank denied all wrongdoing and insisted that drastic increases in dollar remittances and economic growth were major cause. The real exchange rate (RER) is an important relative price that significantly impinged on the development and growth of the economy and social welfare. An increased understanding of exchange rate determinants and impacts should be quite useful in evaluating macroeconomic and monetary policies and anticipating their short and long run impacts.

The development of models that can successfully predict future exchange rates has become one of the major objectives of macro and monetary economists worldwide. All past developments in exchange rate modeling and estimation were undertaken in Meese and Rogoff (1983) that showed that none of these models were able to out-perform the simple random walk model in out-of-sample forecasting.

Problem Statement
Rapid movements in exchange rate have generated serious social effects and speculative arguments and accusations dominate public-private debate. Scientifically robust explanations are timely and crucial to avoid further speculation and manipulations for political gains.

Objectives

\checkmark Identify the modeling approach that better suits the small sample properties of our study based on the evaluation of the out-of-sample forecasting power of various estimation approaches.

\checkmark Investigate the role of macroeconomic fundamentals on the real exchange rate dynamics in Armenia.

\checkmark Do macroeconomic fundamentals influence RER?

\checkmark Is there a politically motivated manipulation?

\checkmark Assess the potential of improving the out-of-sample forecasting performance of the real exchange rates model by accounting for the changes in the political climate and investment risk.

Model

This study follows the equilibrium real exchange rate approach pioneered by Edwards (1989) and subsequently adopted as a standards workhorse in analyzing real exchange rate dynamics. 

\[ \Delta \log r_t = \gamma_1 + \sum_{j=1}^{p} \gamma_j \log (f_t-j) - \log \varphi_{it-j} + \epsilon_i + \sum_{m=1}^{M} \Delta \phi_j m \log (c_t-j) + \epsilon_t \]

Where \( \epsilon \) is the real exchange rate, \( f \) is a set of economic fundamentals, \( \phi_m \) represents macroeconomic policy variables, and \( \epsilon_t \) stands for nominal devaluation.

Data


\checkmark Real effective exchange rate (RER)

\checkmark Openness of trade (open)

\checkmark Net foreign assets (NFA)

\checkmark Domestic credit growth (DCG)

\checkmark Productivity (prod)

\checkmark Government spending (gov)

\checkmark Remittances (remitt)

\checkmark Political risk rating (politrisk)

Political risk measures are obtained from International Country Risk Guide (ICRG). ICRG Political Risk Rating has 12 indicators and covers 140 countries. Since 1984, indicators are added to produce the aggregate political risk rating (politrisk).

Table 1. Out-of-Sample Forecasting Performance

<table>
<thead>
<tr>
<th>Model</th>
<th>Bias</th>
<th>MSE</th>
<th>RMSE</th>
<th>MAE</th>
<th>MAPE</th>
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Method

A. Multiple econometric approaches are utilized to analyze real exchange rate dynamics in relation to economic fundamentals and political risk.

\checkmark Vector Autoregression (VAR)

\checkmark Vector Error-Correction Model (VECM)

\checkmark Autoregressive Distributed Lag Model (ARDL)

\checkmark Random Walk

B. Models are evaluated for their out-of-sample forecasting performance based on the root mean squared error (RMSE) and compared to the simple random walk (Table 1).

C. Individual political risk indicators are utilized in the ARDL specification to investigate if, as suggested by many, accounting for political risk will improve out-of-sample forecasting performance.

Results and Implications

Results strongly indicate that RER dynamics over the study period were driven by economic developments.

\checkmark 10% reduction in trade restrictions and 10% growth in the inflow of remittances each generate approximately 27% real exchange rate appreciation.

\checkmark 10% positive changes to the net foreign assets and domestic credit will induce permanent real exchange rate depreciation by approximately 1 and 4 percent, respectively.

\checkmark Results weigh against the claim that the government and the Central Bank did not manipulate the exchange rate.

\checkmark Policymakers and monetary authorities should take the natures and magnitudes of these relationships into account when designing monetary and/or macroeconomic policies to stabilize real long-term economic growth.

\checkmark The multi-directional impact of changes in various endogenous components of the economy is a major challenge in assessing macroeconomic dynamics in the economy. Our results help policymakers to understand these relationships and anticipate real exchange rate effects from policy changes that are not directed at the exchange rate as well as the multiple effects of policies that are directed at the exchange rate.

\checkmark Results also indicate that nominal devaluation can be a valuable tool for affecting the real exchange rate, however its effectiveness will depend on the magnitude of the nominal devaluation and country’s ability to finance sustained interventions.

\checkmark Political risk indicators are often correlated with the main political and economic events in Armenia, but had a very weak or no effect on real exchange rate.

\checkmark Major foreign investors to Armenia are Diaspora. Earlier studies suggest ethnic identity and its connections are more important motivational and triggering factors behind investment decisions than conventional business related concepts.

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Table 2. Long-run parameter estimates from ARDL models

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