

## THE LONG-RUN MONETARY MODEL OF EXCHANGE RATE DETERMINATIONS IN JORDAN

Mohammad Alawin\*

**Abstract:** *The objective of this paper is to test the long-run validity of the monetary model of exchange rate determinations for the Jordanian economy. Two empirical models were tested; the flexible price monetary model and the sticky price monetary model. These models postulate the existence of a strong link between exchange rates and a set of macroeconomic fundamentals. The methodology used in this paper is the OLS (after verifying that it is an applicable tool).*

*The empirical results tend to give the Jordanian data mixed results regarding whether we find support for the monetary model of the real exchange rate (RER) determinations. Specifically, we find that the only coefficient that was significant and gave the corrected sign to affect RER was for the money supply. Other variables (Real GDP and expected inflation) gave wrong signs. Finally, interest rate gave the corrected sign, however, it was insignificant.*

*One possible explanation for these results lies behind the policy of fixing the nominal exchange rate against the US dollar, and the heavily economic and social procedures to stabilize inflation rate which result in a relatively stable RER that cannot reflect movements in macroeconomic variables.*

**Key words:** *Monetary Model of Exchange Rate, Real Exchange Rate, Jordan.*

### 1. INTRODUCTION

The monetary model of exchange rate determination is a useful theoretical tool for understanding fluctuations in the exchange rate over time. This model suggests the existence of a strong link between exchange rates and a set of macroeconomic fundamentals; namely, the real income, the money supply, the interest rate, and the inflation rate (Civcir, 2002). This link usually appears in the long run since the relatively stable fundamentals are inconsistent with the volatile of exchange rates observed in the short run. However, there is no general consensus by previous studies, as will be explained in the literature review section, to verify the long run relationship between the exchange rates and macroeconomic fundamentals.

The monetary approach to exchange rate determinations was developed and empirically tested after the collapse of the Bretton Woods monetary system in 1973 when the exchange rates of industrialized nations were allowed to float freely.

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\* Professor, Department of Economics, Kuwait University, Kuwait, E-mail: m\_alawin@hotmail.com

A number of early studies on industrial nations found little evidence of strong relationship among exchange rates and monetary fundamentals during the post-Bretton Woods float (Baillie and Pecchenino, 1991). The lack of empirical evidence for a stable long-run relationship among exchange rates and monetary fundamentals implies that the monetary model has little practical relevance.

On the other hand, recent studies using long span of data and/or panel data find support for a stable long-run relationship between nominal exchange rates and monetary fundamentals using panel cointegration tests for the post-Bretton Woods float. These studies find strong evidence of cointegration among exchange rates, relative money, and relative real output using panel cointegration tests [Groen (2000) and Rapach and Wohar (2001)]. In addition, previous studies on high inflation countries show that monetary fundamentals are important in determining behavior of the exchange rate [McNown and Wallace (1994) and Bahmani-Oskooee and Kara (2000)].

In this paper, we aim to test, using quarterly data for the period 1992:1-2009:4, the long-run validity of the monetary model of exchange rate determinations in the Jordanian economy. The rest of the paper is organized as follows. Section 2 gives the literature review of the monetary model of exchange rate determinations. Section 3 presents the theoretical framework of the flexible price and the sticky price monetary models of exchange rate determinations. Section 4 outlines data. Section 5 presents the methodology and reports the empirical results. Section 6 summarizes main findings.

## **2. LITERATURE REVIEW**

The debate over the importance of the monetary fundamentals on affecting and explaining the exchange rate behavior is continuous. As indicated in the introduction, previous research is split between supporting and not supporting the monetary model of exchange rate determinations. Here, we separate both stances to see the main findings and explanations for each view.

### **Part one: papers supporting the monetary model**

Some recent studies found evidence of the strong link between the exchange rate and a set of macroeconomic fundamentals. Frankel (1976) and Bilson (1978) presented empirical evidence that reflects favorably on the monetary model. Their assessment was based on the multiple correlation coefficients and the comparison of estimated coefficients with the expected signs as predicted from their theoretical models.

Mark (1995) found that the superiority of the monetary models for long horizons might actually be statistically significant. Mark showed that deviations from a simple set of monetary fundamentals – relative money supplies and relative output

levels- can be useful in predicting U.S. dollar exchange rates for longer horizons, over the 1981-1991 period.

Diamandis *et al.* (1996) examined the exchange-rate determination of the Canadian-U.S. dollar exchange rate over the floating exchange rate period. He demonstrated through the use of multivariate cointegration methodology that an unrestricted monetary model provides a valid explanation of the long run nominal Canadian-U.S. dollar exchange rate. This suggests that the monetary model might still be usefully applied.

Mark and Sul (2001) tested for cointegration based on the monetary model and for exchange rate predictability in a panel of bilateral exchange rates for 17 OECD countries over the 1973-1997 period. Their results indicated that there exist cointegration based on the monetary model and that monetary fundamentals significantly predict future exchange rates when using panel regression estimates with fixed time effects.

Rapach and Wohar (2001) tested the long run monetary model of exchange rate determination for 14 industrialized countries using data spanning from the late nineteenth and early twentieth century to the late twentieth century. They found support for a simple form of the long run monetary model in over half of the countries analyzed. They speculated that the failure of the long run monetary model for some countries using long span data must be due to instability of the long run relationship between relative price levels and monetary fundamentals for those countries.

Civcir (2002) applies the Johansen cointegration technique to examine the validity of the monetary model of exchange rate determination as an explanation of the Turkish Lira -United States dollar relationship over 1987:1-2000:12. A single cointegrating vector is identified, lending support to the interpretation of the model as describing a long-run equilibrium relationship.

Adawo and Effiong (2014) examine the long-run validity of the monetary exchange rate model in Nigeria for the flexible exchange rate regime with quarterly data covering the period 1987 to 2008. They found a unique long-run relationship between the nominal exchange rate and the traditional monetary fundamentals (money supply, output and interest rate differentials). The estimated cointegrating coefficients are theoretically consistent with the monetary model and statistically significant exception of the output differential.

### **Part two: papers not supporting the monetary model**

On the other hand, other certain studies found a little evidence of cointegration among nominal exchange rates and monetary fundamentals during the post-Bretton Woods float. For example: Meese and Rogoff (1983), Baillie and Selover

(1987), McNown and Wallace (1989), and Baillie and Pecchenino (1991). The lack of empirical evidence for a stable long run relationship between exchange rates and monetary fundamentals would render the monetary model and its applications.

Meese and Rogoff (1983) studied the behavior of the exchange rate of the dollar against three currencies; the pound, the mark, and the yen. They suggested a structural model that includes the flexible price monetary model, the sticky price monetary model, and the sticky price monetary model that incorporates the current account. The results suggest that a weak link between these exchange rates and the monetary fundamentals. A possible reason for the poor performance of these monetary models may be a partial deviation from uncovered interest parity condition, which means that a risk premium may be an important determinant of the exchange rate. Another reason could be an incorrect specification of the demand for money in either of the two countries, their dynamics, and the restrictions imposed by assuming identical parameters in both money demand functions.

Kilian (1997) used a boot-strap method on Mark (1995) data set, he found little statistically significant evidence that monetary fundamentals help improve long horizon predictability. Diamandis *et al.* (2000) examined the long run properties of the monetary exchange rate model by using data on the drachma/dollar and drachma/mark exchange rates based on the hypothesis that the system contains variables that are integrated of order 2;  $I(2)$ , that is a variable should be differenced twice to be stationary. Their analysis resulted in the rejection of the forward-looking version of the monetary model for the drachma/dollar case but not for the drachma/mark case.

Similarly, Groen (2000) did not find evidence of cointegration in the monetary exchange rate model for a large number of OECD countries. However, Groen found that the use of cross-section regressions for a large number of countries offers empirical evidence in favor of the monetary exchange rate model.

Zhang and Thomas (2005) investigated the validity of the monetary model of exchange rate determination by using quarterly data for Germany, Japan, the United States, and the United Kingdom, for the 1973 to 1999 period. They applied the Johansen's cointegration methodology to test whether there would exist a long run relationship between the exchange rate and certain macro economic variables. When the U.S. is excluded, the test results lend strong support for the monetary model of exchange rate determination. If the U.S. is included in the econometric tests, the support for the monetary model tends to be more tenuous.

### 3. THE THEORETICAL MODEL

The economic theory of monetary model states that exchange rate is determined in the market where prices can adjust instantaneously. The assumptions that make the basis of the monetary model of exchange rate determination are: (a) perfect

capital mobility, (b) perfect substitution among bonds, (c) purchasing power parity (PPP), and (d) the uncovered interest parity (UIP), (Zhang and Thomas, 2005). Accordingly, two versions of the monetary model are investigated in this section, namely the flexible price monetary model and the sticky price monetary model.

### First: The Flexible Price Monetary Model

To define equilibrium condition in the monetary model, we assume that purchasing power parity holds continuously over time (Civcir, 2002), that is

$$s_t = c + p_t - p_t^* \quad (1)$$

where  $c$  is a constant,  $s_t$  is the logarithm of exchange rate expressed in units of home currency per foreign currency, and  $p$  and  $p^*$  are, respectively, the domestic and foreign price levels. If  $c = 0$ , then equation 1 implies that the absolute PPP holds, and if  $c \neq 0$ , equation 1 implies that the relative PPP holds.

Another basic principle of the monetary model of exchange rates is that higher domestic interest rates relative to a foreign country are associated with the appreciation of the domestic currency, a phenomenon known as the uncovered interest parity (UIP), (Dornbusch, 1976). In addition, we will assume that bonds (foreign and domestic) are perfect substitutes. The UIP condition can be expressed as:

$$E(\dot{s}_t) = E(s_{t+1}) - s_t = i_t - i_t^* \quad (2)$$

where  $E(\dot{s}_t)$  is the expected rate of depreciation of the exchange rate,  $E(s_{t+1})$  is the expected exchange rate to be prevailed in time  $t+1$ ,  $i_t$  and  $i_t^*$  are, respectively, the domestic and foreign interest rates.

The second building block of the model assumes a stable money demand function in domestic and foreign countries. The money market equilibrium conditions for domestic and foreign countries are assumed to depend on the logarithm of real income ( $y$ ), the logarithm of price level ( $p$ ), and the nominal interest rate ( $i$ ), (McCallum, 1996). An identical relationship can also be assumed for the foreign country. Monetary equilibria in the domestic and foreign countries are then given by equations 3 and 4, where foreign variables are denoted by asterisks:

$$m_t = \alpha_1 p_t + \alpha_2 y_t - \alpha_3 i_t \quad (3)$$

$$m_t^* = \alpha_1^* p_t^* + \alpha_2^* y_t^* - \alpha_3^* i_t^* \quad (4)$$

where  $m_t$  is the domestic money supply;  $\alpha_1$  is price elasticity of demand for money;  $\alpha_2$  and  $\alpha_3$  are, respectively, the income and interest rate elasticities of demand for money. Equations 3 and 4 imply that if prices increase, then, the demand for money increases; people have to hold more money to fulfill the requirements of their daily transactions.

$\alpha_1$  is expected to be positive (higher prices enforce a one to carry more cash).  $\alpha_2$  is assumed to be positive, that is an increase in real income induces people to hold more money. Finally,  $\alpha_3$  is expected to have a negative effect since an increase in interest rate (the opportunity cost of holding money) will raise the tendency of people to put their cash in assets like securities with returns.

If we rearrange equations 3 and 4 for domestic and foreign price levels and substituting into equation 1 (the PPP condition), this yields the following flexible price monetary model of exchange rate (Bilson, 1978):

$$s_t = c + [(1/\alpha_1) m_t - (\alpha_2/\alpha_1) y_t + (\alpha_3/\alpha_1) i_t] - [(1/\alpha_1^*) m_t^* - (\alpha_2^*/\alpha_1^*) y_t^* + (\alpha_3^*/\alpha_1^*) i_t^*]$$

or

$$s_t = c + B_1(m_t - m_t^*) - B_2(y_t - y_t^*) + B_3(i_t - i_t^*) + \varepsilon_t \quad (5)$$

where  $B_1 = (1/\alpha_1 - 1/\alpha_1^*)$ ,  $B_2 = (\alpha_2/\alpha_1 - \alpha_2^*/\alpha_1^*)$ ,  $B_3 = (\alpha_3/\alpha_1 - \alpha_3^*/\alpha_1^*)$ ,  $c$  is an arbitrary constant, and  $\varepsilon_t$  is a disturbance term.

In equation 5, the nominal interest rate consists of two components; the real interest rate and the expected inflation rate, that is:

$$i_t = r_t + \pi_t^e \quad (6)$$

$$i_t^* = r_t^* + \pi_t^{e*} \quad (7)$$

where  $r_t$  and  $r_t^*$  are the domestic and foreign real interest rates, and  $\pi_t^e$  and  $\pi_t^{e*}$  are the expected rates of domestic and foreign inflation, respectively. Assuming that the real interest rates are equalized in both countries, then equations 6 and 7 become as:

$$i_t - i_t^* = \pi_t^e - \pi_t^{e*} \quad (8)$$

If we substitute equation 8 into equation 5, then we have:

$$s_t = c + B_1(m_t - m_t^*) - B_2(y_t - y_t^*) + B_3(\pi_t^e - \pi_t^{e*}) + \varepsilon_t \quad (9)$$

Equation 9 represents the first model; the flexible price monetary model to be applied in this research paper. The coefficient of the relative money supply ( $m_t - m_t^*$ ) is positive. This means there would be a depreciation of the domestic currency ( $s_t$  increase) if domestic money supply increases over foreign money supply.

In the flexible price monetary model, a rise in the domestic real income creates an excess demand for the domestic currency. Agents will then decrease their expenditures in order to increase their real money balances, leading to a fall in prices. Then via PPP, an appreciation of the domestic currency will ensure that equilibrium is restored (Civcir, 2002). However, the prediction of a negative coefficient for relative income ( $y_t - y_t^*$ ) is opposite to what the Mundell-Fleming approach predicts. In that model, a higher real income increases import worsening

the trade balance and will require a depreciation of the domestic currency in order to restore equilibrium (Cave *et al.*, 2007).

Regarding expected inflation, an increase in the expected long-run inflation results in agents switching from domestic currency to bonds or real estates (both domestic and foreign). Thus, the demand for domestic currency decreases, causing a depreciation of the domestic currency (an increase in  $s_t$ ). Therefore, we expect the coefficient of the relative expected rate of inflation to be positive.

### Second: The Sticky Price Monetary Model

Frankel (1979) developed a sticky price monetary model of the exchange rate (overshooting model), which incorporates a short-run interest rate to capture liquidity effects. This model assumes the expected rate of the exchange rate depreciation;  $E(\dot{s}_t)$ , is a function of the gap between the current exchange rate and the long run equilibrium rate ( $\bar{s}_t$ ), and the expected long run inflation differential between the domestic and foreign countries. This can be expressed in the following equation:

$$E(\dot{s}_t) = -\lambda(s_t - \bar{s}_t) + (\pi_t^e - \pi_t^{e*}) \quad (10)$$

where  $\lambda$  is the speed of adjustment towards equilibrium. This equation states that the current exchange rate is expected to return to its long-run equilibrium at the rate of  $\lambda$ . In the long-run,  $s_t$  equals  $\bar{s}_t$ , then the expected rate of depreciation of the currency,  $E(\dot{s}_t)$ , will just be equal to the difference between domestic and foreign expected inflation.

Substituting the uncovered interest parity (UIP), equation 2, into equation 10 gives:

$$i_t - i_t^* = -\lambda(s_t - \bar{s}_t) + (\pi_t^e - \pi_t^{e*})$$

or

$$(s_t - \bar{s}_t) = -(1/\lambda)[(i_t - i_t^*) - (\pi_t^e - \pi_t^{e*})] \quad (11)$$

In the long-run, the long-run interest differential must be equal to the expected inflation differential, that is:

$$(\bar{i}_t - \bar{i}_t^*) = (\pi_t^e - \pi_t^{e*}) \quad (12)$$

If we substitute equation 12 into 11, then we have:

$$(s_t - \bar{s}_t) = -(1/\lambda)[(i_t - i_t^*) - (\bar{i}_t - \bar{i}_t^*)]$$

or

$$(s_t - \bar{s}_t) = -(1/\lambda)[(i_t - \bar{i}_t) - (i_t^* - \bar{i}_t^*)] \quad (13)$$

Equation 13 states that the exchange rate will overshoot its long-run equilibrium rate whenever the relative nominal interest differential increases above their equilibrium levels.

Similar to equation 1, the long run purchasing power parity can be written as follows:

$$\bar{s}_t = \bar{p}_t - \bar{p}_t^* + c$$

Now, if we follow the same steps (3-8), this will yield the following expression:

$$\bar{s}_t = c + B_1(\bar{m}_t - \bar{m}_t^*) - B_2(\bar{y}_t - \bar{y}_t^*) + B_3(\pi_t^e - \pi_t^{e*}) + \varepsilon_t \quad (14)$$

Equation 14 is actually identical to the reduced equation of the flexible price monetary model [equation 9]. The short-run dynamics of the sticky price monetary model is obtained by substituting equation 14 into 13 which gives the sticky price monetary model of Dornbusch (1976) and Frankel (1979),

$$s_t = c + B_1(\bar{m}_t - \bar{m}_t^*) - B_2(\bar{y}_t - \bar{y}_t^*) + B_3(\pi_t^e - \pi_t^{e*}) - (1/\lambda)[(i_t - i_t^*) - (\bar{i}_t - \bar{i}_t^*)] + \varepsilon_t \quad (15)$$

Then, by using equation 12 with equation 15, we have:

$$s_t = c + B_1(\bar{m}_t - \bar{m}_t^*) - B_2(\bar{y}_t - \bar{y}_t^*) + B_3(\pi_t^e - \pi_t^{e*}) - (1/\lambda)[(i_t - i_t^*) - (\pi_t^e - \pi_t^{e*})] + \varepsilon_t$$

or

$$s_t = c + B_1(\bar{m}_t - \bar{m}_t^*) - B_2(\bar{y}_t - \bar{y}_t^*) + B'_3(\pi_t^e - \pi_t^{e*}) - B_4(i_t - i_t^*) + \varepsilon_t \quad (16)$$

where  $B'_3 = B_3 + (1/\lambda)$  and  $B_4 = (1/\lambda)$

Obviously, the sticky price monetary model is nested within and reduces to the flexible price monetary model in the long run. The  $B_i$  in equation 16 is the same as in the flexible price model. Regarding the coefficient of the interest rate differential;  $B_4$ , it is expected to have a negative sign, which implies that an increase in the domestic interest rate leads to capital inflow, which increases the demand for the domestic currency, and in turn leads to its appreciation.

#### 4. DATA

Data series are obtained from the Central Bank of Jordan and the IMF's International Financial Statistics. The analysis in this research covers quarterly data over the period 1992-2009. The needed data includes: nominal exchange rate, consumer



price index (*CPI*), expected inflation, wholesale price index (*WPI*), nominal GDP, real GDP, and money supply (*M2*).

The exchange rate variable, introduced in the empirical model, will be presented by the real exchange rate. Here, we calculate the real exchange rate as the nominal Jordanian exchange rate per US\$ unit, adjusted for relative Jordanian and American prices. Short-term interest rates are represented by quarterly treasury bills rates. Finally, all variables are in natural logs except the interest rates or rates of growth.

Regarding expected inflation, to get its value at time  $t$ , it is proxied by one period ahead of the value of GDP deflator. According to Schiller (2007), GDP deflator is better rather than Consumer Price Index (*CPI*) and Producer Price Index (*PPI*) as an index for measuring inflation because the GDP deflator covers all output, including consumer goods, investment goods, and government services.

## 5. METHODOLOGY AND EMPIRICAL RESULTS

Variables that enter in our model should be tested first if they are stationary or not (have a unit root). This will be accomplished through applying the Augmented Dickey-Fuller (ADF) test. To perform the ADF test on Autoregressive model of order  $p$ ;  $AR(p)$ , the following regression should be estimated for each variable:

$$\Delta Y_t = a_0 + \gamma Y_{t-1} + \sum_{i=2}^p \beta_i (\Delta Y_{t-i+1}) + t + \varepsilon_t \quad (17)$$

where  $Y_t$  is the variable of interest,  $\Delta$  is a difference operator,  $a_0$  is an intercept,  $t$  is time trend, and  $\varepsilon_t$  is the error term. The null hypothesis of a unit root will be tested against the alternative of stationary variable; i.e.

$H_0$ :  $Y_t$  has a unit root

$H_1$ :  $Y_t$  is stationary

If the coefficient  $\gamma$  equals zero in equation 17, then the equation is entirely in the first difference (has a unit root). To test the hypothesis that  $\gamma = 0$ , we use Dickey-Fuller's critical values tables. Since lag values are used in the unit root test, the test results might be sensitive to the lag length of  $p$  (which appears in equation 17). Thus, the appropriate lag length will be determined using the Schwarz Information Criterion.

The next step of the methodology is to check whether the concerned variables have a long run cointegration relationship among them. This step will be done in case the investigated variables found to have a unit root, i.e. they are non stationary. Then, we are interested in knowing if the variables are cointegrated and a common relationship could be exists among those variables. To check this relationship we

can apply either the two steps Augmented Engle and Granger (AEG) or the Johnson test for cointegration. On the other hand, if the variables were found to be stationary, then there is no need to apply the cointegration tests and the Ordinary Least Square (OLS) method is applicable.

The results for the ADF test (were not reported) reveal that all variables under consideration are non stationary on the 1% or 5% significant levels. However, since the empirical model presents variables as a difference between the domestic and the foreign levels, the results for the ADF test, now, reveal that all variables under consideration are stationary (so, we have to reject  $H_0$  in favor of  $H_1$ ). Since all variables in the model are stationary, the OLS method is applicable (Seddighi *et. al.*, 2000) and (Alawin, 2008). The results for the first model; flexible price monetary model, and the second model; the sticky price monetary model are reported in equations 18 and 19, respectively, where numbers inside the parentheses are t-statistics:

$$s_t = 0.00234 + 0.00096 (m_t - m_t^*) + 0.00004 (y_t - y_t^*) - 0.08115 (\pi_t^e - \pi_t^{e*}) \quad (18)$$

(0.80239) (2.51876) (0.23169) (-1.20302)

$$s_t = 0.00193 + 0.00089 (\bar{m}_t - \bar{m}_t^*) + 0.00004 (\bar{y}_t - \bar{y}_t^*) - 0.03656 (\pi_t^e - \pi_t^{e*}) \quad (19)$$

(0.65435) (2.29454) (0.29471) (-0.45060)

- 0.00080 ( $i_t - i_t^*$ )

(-0.98926)

The results of both models need careful interpretation. The variable that represents the differential between the domestic and foreign money supply gave the correct sign and it was significant. That is if there was an increase in the domestic money supply, it results in depreciation in the Jordanian dinar's real exchange rate. That result was consistent with the finding of Civcir (2002).

Regarding the real income, the elasticity of that variable did not give the correct sign and, however, it was insignificant. Nevertheless, the positive sign of the real income coefficient is consistent with what the Mundell-Fleming approach predicts. That is higher (lower) real income, increases (decreases) imports, increases (decreases) the trade deficit, and will require depreciation (appreciation) of the domestic currency in order to restore equilibrium.

What about expected inflation? Theoretically, we expected a positive effect; that is an increase in the expected long-run inflation causes agents to switch from domestic currency to bonds or real estates. This switch from domestic currency means the demand for domestic currency decreases, causing a depreciation of the domestic currency (an increase in  $s_t$ ). However, the results show the opposite sign but it was insignificant. The same result was found by Zhang and Thomas (2005) for the Turkish economy. Finally, the effect of the interest rate was negative (the

expected sign), but the coefficient was insignificant. However, this result again was not unique; it was consistent with the findings of Baillie and Pecchenino (1991) and Zhang and Thomas (2005).

What can we say about these results? In both models,  $B_2$  and  $B_3$  did not give the expected sign and they were insignificant.  $B_1$  was significant and its sign was consistent with the economic theory. Regarding  $B_4$ , it gave the correct sign but it was insignificant. Generally speaking, our results are mixed and Jordanian data do not provide convincing evidence in support of the monetary model of exchange rate determination when using US dollar as the base currency. One way to analyze these results is by looking at the definition of the RER. This variable's main component is the nominal exchange rate which was constant since 1995. Moreover, inflation rate in Jordan was almost stable in the end of 1990s and early 2000s because of the heavily economic and social procedures to stabilize the inflation rate. Both variables resulted in a relatively stable RER that cannot reflect movements in macroeconomic variables.

## 6. CONCLUSION

In this paper, we investigate the monetary exchange rate determinations for the Jordanian economy. This paper presents two theoretical scenarios of monetary model. Specifically; the flexible price model and the sticky price monetary model. The empirical results suggest that when we investigate the monetary determinants of the Jordanian real exchange rate, we are more likely to conclude that the monetary model does not hold for the Jordanian data.

Our estimation results show no concrete evidence of a link between exchange rates and a set of monetary fundamentals except for the money supply variable. Magnitudes of income and expected inflation differential variables are not consistent with the predictions of the monetary model. That tells us something – that there is tremendous uncertainty in the evolution of the exchange rate – but does not necessarily deny the usefulness of these models in understanding the movements of the exchange rates. Therefore, and since the results are mixing, this paper recommend doing more research explaining the nature of the relationship between exchange rate and its determinations.

Finally and regarding future studies, and in order to fully understand the mix results we got about the subject of monetary exchange rate model, more research should be applied. Specifically, more definitions for RER could be calculated and used to test for their relationships with monetary determinations. In addition, future research could be applied on other countries that have similar economic conditions like the Jordanian economy in order to compare the outcomes of every case and end up conclusions on the exchange rate determinations.

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