Setting the Stage for a National Currency in the West Bank and Gaza: The Choice of Exchange Rate Regime

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Abstract

This Working Paper should not be reported as representing the views of the IMF. The views expressed in this Working Paper are those of the author(s) and do not necessarily represent those of the IMF or IMF policy. Working Papers describe research in progress by the author(s) and are published to elicit comments and to further debate.

This paper sheds light on the quantitative behavioral responses of key economic variables in the Palestinian economy in the face of major economic shocks and draws implications for the choice of an exchange rate regime should a decision be taken to introduce a national currency. Time-series regression analysis shows that (i) wages and prices are flexible in the face of various shocks; (ii) the real wage appears rigid in the face of various shocks and increases despite higher unemployment; (iii) an appreciation of the new Israeli Sheqalim real effective exchange rate decreases exports and imports; and (iv) money demand appears stable in the face of exchange rate shocks. Although a fixed exchange rate system may initially be desirable to establish credibility of the new currency, some flexibility of the exchange rate is desirable over time.

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I. INTRODUCTION

The analysis of this paper sheds light on the quantitative behavioral responses of key economic variables in the Palestinian economy in the face of major economic shocks and draws implications for the choice of an exchange rate regime should a decision be taken to introduce a national currency. The paper does not debate whether introducing a currency is the right course of action. Rather it is assumed that this would be a political decision. The paper's objective is to show econometrically the responsiveness of the economy to shocks and to infer the optimal choice of the exchange rate regime for the newly introduced currency.

The nexus of the credibility of the currency and the regime choice, given the changing environment (following separation from Israel) and since all currencies currently circulating are convertible and stable, has been examined in previous papers. To summarize,[2] the successful introduction of the new currency in the West Bank and Gaza (WBG) will hinge on four factors: (i) organization of the foreign exchange market, including the choice of exchange rate regime, (ii) development of institutions to handle distribution of the new currency and ensure smooth transition given existing contracts, (iii) assigning the central bank the responsibility to vary the quantity supplied in line with the objectives of monetary policy, and (iv) coordination with the Israeli and Jordanian authorities to ensure smooth redemption of sheqalim and dinar in circulation.

Previous studies suggest that a currency board anchored on one of the world's main currencies (rather than a basket) would ensure the highest credibility and lowest cost of the process and, hence, provide the most suitable monetary and exchange framework.[3] They argue that the introduction of a local currency is a complex process, involving institutional changes and a range of economic choices. They suggest that the guiding principle in the process should be to ensure that the benefits associated with the current situation will be maintained, while the costs of setting up the new regime will be minimized. This would appear to require actions in at least three areas: (i) a macroeconomic policy framework consistent with monetary stability; that is, a prudent budgetary policy and an efficient, market-oriented monetary policy framework; (2) the choice of an exchange rate regime that maximizes credibility, while minimizing costs and potential disruptions associated with the new currency; and (3) supporting structural policies in the areas of banking, financial markets, and labor markets.

These recommendations were not based on quantitative analysis of the economic implications of alternative regimes. Rather they hinge upon what is deemed to receive the highest public

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[2] The summary is based on analysis of conditions surrounding the introduction of a new currency (examples are Afghanistan, Iraq, Lebanon, and the former Soviet Union). For details of policy, institutional, and technical issues, see, for example, Abrams and Cortes-Douglas (1993).

[3] See de la Piedra and Gulde (1999) and Valdivieso (2001).

confidence and credibility—perhaps the most important issue. However, this paper considers that any exchange rate regime will require considerable institutional change and credibility buildup. Therefore, it focuses on estimating the responses of key variables to shocks.

The merits of the choice of the exchange rate regime depend on the nature of the shocks that buffet the economy. When shocks emanate from the domestic money market (e.g., an increase in money demand), the central bank intervenes to accommodate these shocks in order to maintain the stability of the exchange rate under a fixed regime. Money supply will increase as the monetary authority buys foreign reserves to prevent the appreciation of the local currency. In the absence of the central bank's intervention (e.g., under a flexible exchange rate regime), an increase in money demand increases the interest rate, adversely affecting the real economy. This is an argument in favor of fixed rate regimes in order to isolate the real economy from fluctuations in money demand.

When shocks are mostly real, floats are, in theory, the more effective choice. When domestic prices are sticky, and thus change at best slowly in response to shocks, a depreciation of the exchange rate is necessary in the face of a negative real shock. A depreciation of the exchange rate reduces the price of tradable goods at precisely the moment that demand for them has fallen and, therefore, partially offsets the effect of the negative shock. Thus, the exchange rate acts as an automatic stabilizer in flexible rate regimes.

The paper is organized as follows: Section II discusses the choice of the exchange rate regime in light of the key characteristics of the Palestinian economy, while Section III elaborates the technical approach and estimation results, with a focus on susceptibility to shocks. Section IV draws conclusions.

II. Choice of Exchange Rate Regime and Characteristics of Palestinian Economy

In choosing an exchange rate regime, countries have to trade off the advantages of stability against flexibility. Having said that, economists differ in their assessment of how regimes perform under various exchange rate arrangements. Important characteristics of the economy would favor more stability or flexibility of the exchange rate.[4]

The classical view is that there are three main advantages to fixing the exchange rate. First, is to reduce transaction costs and exchange rate risk.[5] The more dependent the money demand

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[4] To simplify, Ghosh, Gulde, and Wolf (1995) suggest hard pegs work best, while Strurzengger and Levy-Yeyati (2001) suggest floats do. Reinhart and Rogoff (2002) suggest limited flexibility performs best.

[5] The latter is a particular concern in low income countries, where missing markets may prevent affordable hedging, discouraging trade and investment. Hedging cuts the premium between

(continued…)

function on exchange rate fluctuations, the higher the risk of exchange rate flexibility. Fixing the exchange rate increases confidence in domestic currency and stabilizes money demand. Second, in economies that are highly dependent on imports, exchange rate flexibility increases the risk of inflation. Fixing the exchange rate increases price stability and anchors inflationary expectations. Third, fixing the exchange rate provides a credible nominal anchor for monetary policy.

Notwithstanding the advantages of stability in the face of nominal shocks, fixing the exchange rate may be costly on export competitiveness and real growth. In the absence of exchange rate flexibility, adjustments in relative prices and real wages are necessary to mitigate the effects of external shocks and domestic real shocks on economic growth. Absent these adjustments, fixing the exchange rate may result in loss of competitiveness and exacerbate the effects of real shocks on output growth. A floating regime enhances a country's (automatic) ability to absorb (external and real) shocks (i.e., depreciating the currency vis-à-vis trading partners). Moreover, there are several increasingly important advantages to floating the exchange rate. First, is the ability to pursue an independent monetary policy.[6] Second, due to the more limited rationale for holding reserves, the country is able to utilize these reserves domestically.[7]

The Palestinian economy has a number of characteristics that are relevant for the introduction of a national currency and the determination of the appropriate exchange rate regime. The importance of each of these characteristics and the nature of the real or external shocks may change over time. Some obvious shocks include the regional effect of oil price changes, regional political developments, regional trade agreements and shifting trade patterns, and movements in labor remittances and grants from official donors. Some favor a fixed regime, while others favor flexibility.

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borrowing and lending and thus is critical in countries where investment has been sub-optimally low and is needed to boost growth. For details, see Rose (2000).

[6] A considerable level of skill is needed for an independent monetary policy. Monetary policy, in a floating regime, can be used in the short run to affect the exchange rate in line with the objectives of monetary policy.

[7] See McKinnon (2000) on the costly holding of reserves. Nonetheless, some countries with de facto floats are holding historically very high reserves. While countries may be able to generate interest on foreign reserves, the domestic economy does not see the benefits of these reserves. The opportunity cost of holding reserves increases if domestic growth is slow and/or there is a need to diversify the economy.

A. Characteristics Impacting the Real Economy

Flexibility of factor markets

Descriptive statistics suggest that average wages have remained remarkably stable in spite of persistent unemployment rates.[8] In Gaza, where the unemployment rate rose above 30 percent in recent years, nominal wages have been virtually constant. Since inflation has been very low in Gaza, real wages have changed very little.[9] This is not the case in the West Bank, where average wages are higher than in Gaza. In the West Bank, while nominal wages have also remained fairly stable, real wages declined as a result of higher inflation rates in the West Bank (relative to Gaza) during the last few years (see Table 1).[10] Overall, fluctuations in the real wage over time indicate some downward rigidity during the recessionary conditions surrounding the *Intifada* period (Figure 1). Notwithstanding the rigidity of the real wage, the large increase in unemployment suggests that labor markets were adversely affected by the slowdown in the economy attributed to political instability. Despite lower average real wage in Gaza relative to the West Bank, unemployment remains very high (Table 5). While additional flexibility of the real wage may be necessary in the face of excess supply of labor and high unemployment, such flexibility may not be sufficient absent policy measures to revive aggregate economic conditions. The degree of the flexibility of wages is estimated in the Section III.

Although labor is relatively mobile, it is highly dependent on the Israeli labor market, where wages are relatively high compared to neighboring countries.[11] The Israeli labor market has been a very important source of employment and income for many Palestinians (Table 5) and net factor income from abroad rose fairly steadily during 1996–99 reaching 21 percent of GDP. These "internal" remittances from Palestinians working in Israel are a significant component of aggregate income and fuel domestic demand since a large share of that income is spent on goods and services produced in the WBG. Annual labor income from Israel amounted to more than 16 percent of Gross National Income (GNI) in 1999.

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[8] Wages are bid up by the inflows and by opportunities for working abroad.

[9] Between 1998/Q2 and 2004/Q4, average quarterly price inflation in Gaza is 0.63 percent while average quarterly wage inflation is 1 percent.

[10] Between 1998/Q2 and 2004/Q4, average quarterly price inflation in the West Bank is 0.95 percent while average quarterly wage inflation is 1.3 percent.

[11] Between 1998/Q2 and 2004/Q4, average quarterly nominal wage inflation in Israel is 1.3 percent.

Table 1. Developments in Real Average Daily Wages, 2000–Q2/2004

	2000			2001				2002				2003				2004	
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
In NIS *(base: Q2 2000)*																	
West Bank	69.4	70.3	68.5	69.4	69.8	63.9	64.8	61.5	61.3	69.0	64.7	63.8	62.7	65.1	62.9	61.9	63.5
Gaza	54.3	51.6	58.0	55.5	55.0	54.6	57.1	53.4	55.1	57.6	54.3	53.0	50.2	51.2	53.5	52.5	56.5

Figure 1. Developments in Average Wages, 1998/Q1–2004/Q2
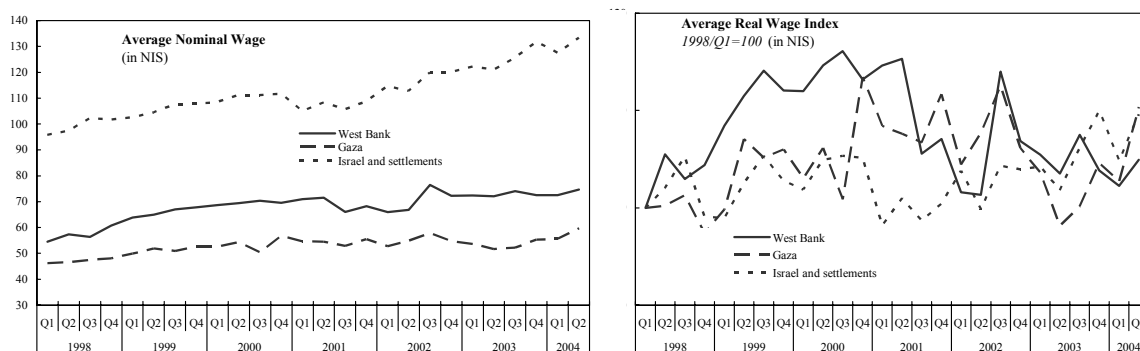
Sources: Palestinian Central Bureau of Statistics, and IMF Staff estimates

Measured in terms of the new Israeli sheqalim (NIS), the common currency for most cash and retail transactions and wage payments, Palestinian and Israeli inflation rates are very closely related overall.[12] Depreciation of the NIS triggers higher inflation in Palestine and Israel. The behavior of both inflation rates closely follows the fortunes of the NIS against the U.S. dollar— at least up to the second quarter of 2003, when the WBG inflation differed from Israel's (Figure 2). This may be attributed to a more recent emphasis of monetary policy in Israel on inflation targeting. Since over two thirds of all goods imported by WBG are imported from Israel, Israeli imports, therefore, have a very high share in the Palestinian consumption basket. Any change in Israeli prices is directly transmitted to the WBG through this channel. In addition, transportation costs in WBG have risen sharply since the beginning of the Intifada (Figure 2). In the West Bank this has more than offset the depressing effect of lower economic activity on price inflation.[13] The degree of the flexibility of prices is estimated in the Section III.

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[12] Between 1998/Q2 and 2004/Q4, average quarterly price inflation in Israel is 0.63 percent. Correlation coefficient is large, 0.87, between price inflation in Gaza and in the West Bank. Price inflation in Israel correlates positively with inflation in Gaza and in the West Bank with coefficients 0.34, and 0.54, respectively.

[13] To illustrate, the correlation coefficients are negative, -0.35 and -0.37, between the rate of inflation in transportation cost and real growth in GNI and GDP in WBG. This indicates the

Figure 2. Price and Exchange Rate, 1998/Q1–2004/Q2

Inflation in Israel and WBG, Q1/1998-Q2/2004
12-month change in percent

CPI index, Sept 2000-Q2/2004

NIS per US$: 12-month change in percent, Q1/1998-Q2/2004

CPI and transportation price index, Sept 2000-Q2/2004
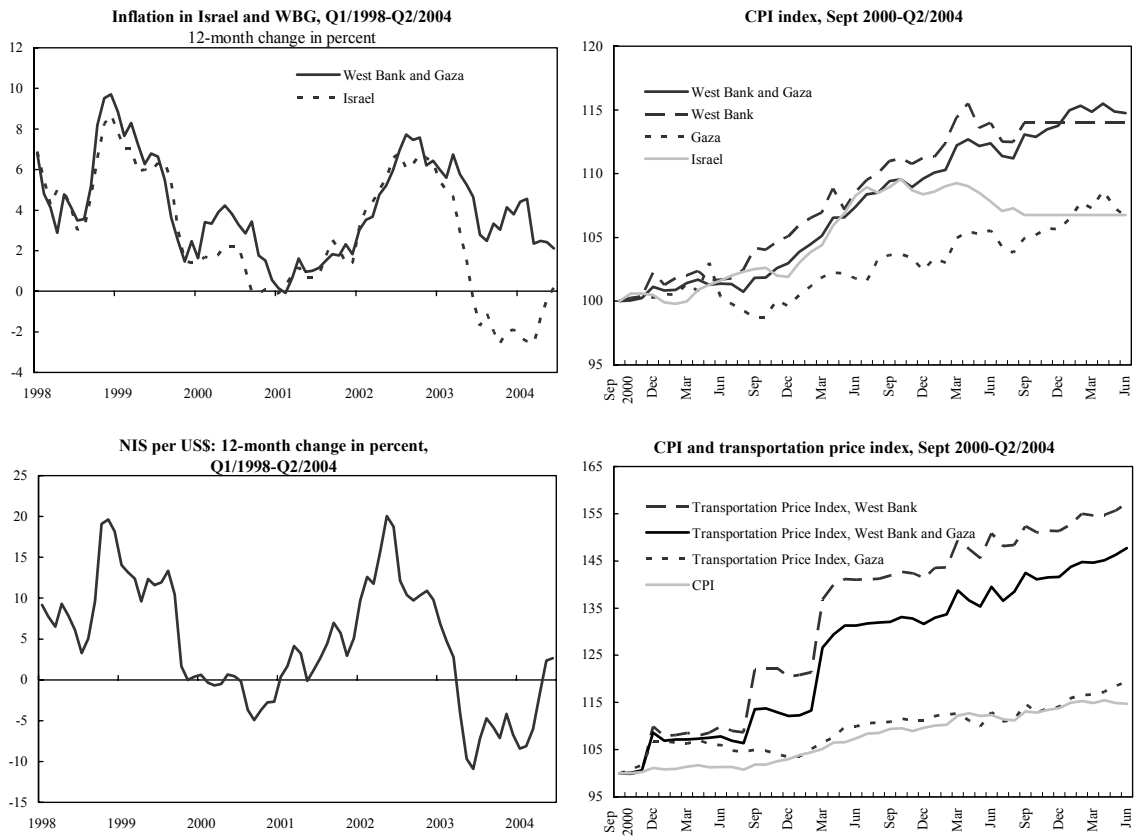
Sources: Palestinian Central Bureau of Statistics, and IMF Staff estimates

The choice of the exchange rate system is likely to be shaped around relative flexibility of wages and prices and subsequent effects on real wages. The more flexible real wages are the less the impact of exchange rate rigidity on the real economy. While labor mobility is an important factor, the downward rigidity of the real wage signals concerns about potential recovery under a fixed exchange rate system.

effect of external closures in raising price inflation and slowing real growth. For more details of the factors impacting economic performance recently see IMF forthcoming (Chptr II).

Trade pattern and denomination

The economy is small and open and the direction of trade is uncertain.[14] The economy is small and open in the sense that it does not influence world prices of its exports and imports and has a small population (of over 3.6 million) and economy (of about US$3.5 billion—which has contracted—as a consequence of the *Intifada* from US$4.5 billion in 1999). The sum of both exports and imports was over 100 percent of GDP in 1999, a high level by international standards. Clearly, the *Intifada* impacted negatively on openness (Table 2). Imports dominate while exports are well below their potential (see below). Other balance of payments flows, composed of net factor income from workers in Israel, official transfers and remittances from expatriate Palestinians, were 30 percent of GDP in 1999 rising to 50 percent in 2003. In terms of trade restrictiveness, there are no restrictions on current or capital transactions and given the customs union with Israel, with a common low tariff rate set by Israel, the economy is unrestrictive. However, the trade regime is complex and suffers from non-tariff barriers imposed by Israel (due to cumbersome trade and transport restrictions for security concerns).[15] More recently internal closures, prevention of usage of the Gaza airport and no safe passage between Gaza and the West Bank also hamper trade.

Table 2. Fiscal and Balance of Payments Developments, 1998–2004

	1998	1999	2000	2001	2002	2003	2004
	(In percent of GDP)						
Fiscal operations							
Revenue	20.3	22.1	21.4	7.4	9.4	21.5	24.4
Total expenditures	26.1	27.7	32.3	35.5	39.4	38.3	40.9
Current balance	0.5	1.2	-5.5	-22.3	-22.8	-8.6	-9.3
Overall balance	-5.9	-5.6	-10.9	-28.1	-30.0	-16.8	-16.5
Current account (including transfers)							
Exports and imports of goods and non factor services	99	104	96	88	96	92	92
Net factor income and net transfers	31	30	32	49	59	50	48

Sources: Palestinian Central Bureau of Statistics and IMF Staff estimates.

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[14] For a more complete description of the trade regime and its openness see IMF 2001 (Chptrs IV and VI) and de Melo *et al* (2003).

[15] Jaime de Melo *et al* 2003.

The current trade pattern is dominated by trade with Israel, accounting for more than 95 percent of Palestinian exports. It appears that a large part of these are re-exported to other countries but presently there are no data to indicate the final destination or the currency denomination.[16]

The choice of the exchange rate system is likely to be shaped around the vulnerability of trade (exports and imports) to changes in various exchange rates. High dependency on imports may provide support to a fixed exchange rate system to minimize the effects of exchange rate shocks on inflation (historically, inflation has not been a major concern). Nonetheless, exchange rate flexibility may be a necessary ingredient to boost export competitiveness.

B. Characteristics Impacting the Nominal Economy

Degree of currency substitution

There has been no Palestinian currency for over fifty years and three foreign currencies circulate freely: the Israeli sheqalim,[17] the Jordanian dinar,[18] and the U.S. dollar. By far the largest share of currency denomination, in both deposits and lending, is in terms of U.S. dollars (see Figure 3 and Table 3).[19] This is a little surprising given that all fiscal operations are in sheqalim and most donor aid is in euros. Nonetheless, this phenomenon has been fairly stable for deposits over the years, while the share of U.S. dollars in bank loans, by contrast, has continued to increase.

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[16] There is considerable scope for Palestinian trade expansion with the rest of the world without reducing trade with Israel (see results of the gravity model in Chapter IV of IMF 2001). Among others, a likely destination is the EU, given the latter's free trade agreement with many southern Mediterranean countries. This may imply a shift from sheqalim/dollar denominated trade to euro denominated. Further, given that most aid flows are in euro (and given that trade is also likely to be so), the euro is a strong candidate for some sort of benchmark rate (see, e.g., Rose (2000)).

[17] The goal of monetary policy in Israel is price stability, targeting inflation annually between 1-3 percent over the next 12-24 months. In 2003, the sheqalim appreciated sharply against the US dollar (by and large, reflecting the weakness in the latter). Monetary easing, with lower interest rates, has been taking place in the first half of 2004.

[18] The Jordanian dinar is pegged to the US dollar, and has experienced real and nominal depreciations.

[19] For a more complete description of the financial system see Chptr III of IMF forthcoming.

Figure 3. Currency Composition of Total Deposits, 1999–2004
(in millions of US dollars)
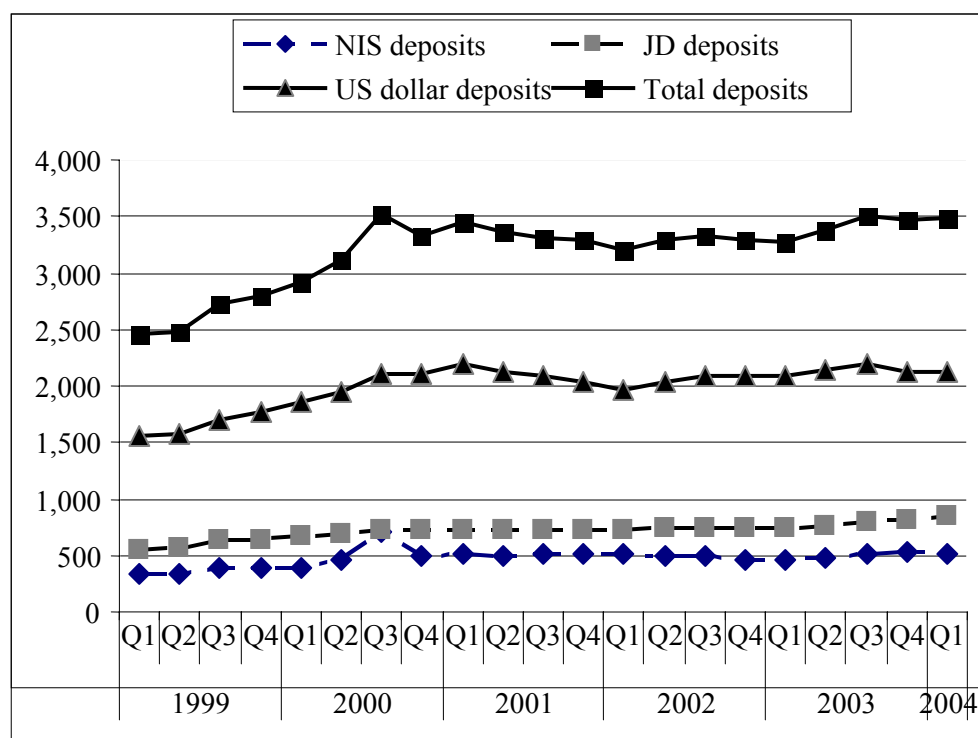
Table 3. Currency Composition of Private Deposits, 1998–2004

	1998	1999	2000	2001	2002	2003	2003	2004Q2
Private deposits at commercial banks 1/								
New Israeli Sheqalim	14.3	13.6	15.3	15.4	12.8	15.6	14.3	14.7
Jordan dinar	24.2	22.2	20.7	22.1	22.3	22.8	23.5	24.1
U.S. dollars	60.7	63.1	62.1	60.5	62.4	59.5	59.7	57.6
Other 2/	0.8	1.1	1.9	1.9	2.5	2.1	2.5	3.6

Source: Palestinian Monetary Authority
1/ Residents only.
2/ Predominately Euros

The choice of the exchange rate system is likely to be shaped around changes in money demand in response to changes in various interest and exchange rates, and thus is estimated in Section III. However, even if money demand is found to be stable in the face of shocks, a key challenge for a newly introduced currency would be to gain market share at the expense of the three other circulating currencies voluntarily and over time. This is likely to hinge upon confidence in the

currency and its stability—which will be monitored by economic agents and thus transparency in exchange rate management will be critical.

C. Other Characteristics

Capital account and transfers

The degree of WBG's involvement in international capital markets is very small and international reserves are believed to be low.[20] The economy is dependent on "external" remittances, through large net current transfers and net factor income (Table 2).[21] The two items together generated a fairly constant income flow equal to around 30 percent of GDP during 1994–2000. Net current transfers and net factor income are large, offsetting the large deficit in the Palestinian trade balance. The inflow of foreign reserves is likely to serve as a security buffer to sustain the stability of the exchange rate after the introduction of national currency. Nonetheless, a strong international reserves position should be in place under a fixed exchange rate system. Foreign reserve losses could be large should the need to defend the currency against speculative attacks arise. However, capital outflows are expected to be small since most flows are expected to be long term direct investment—assuming stability and peace prevail for reconstruction. In addition, the inflow of remittances and foreign aid may strengthen the ability of the monetary authority to defend the peg, but cyclical disturbances in these flows and the risk of outflows should increase vulnerability under a fixed exchange rate system.

Institutional considerations

The Palestinian Monetary Authority (PMA) is a nascent institution with no experience in exchange rate management. It supervises and regulates the banking system; this role in effect is limited to the Palestinian banks without being able to offer these banks a lender-of-last-resort (LOLR) facility. Prudential ratios are generally consistent with the Basle I. Nonetheless, there is a need for a LOLR facility, which neither the Jordanians nor the Israelis have been willing to offer. The authorities have had no recent experience with any form of exchange rate management. On the positive side, there has been no recent history of high inflation to counter against.[22]

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[20] At end of the second quarter of 2004, the PMA held over US $440 million in foreign assets on their balance sheet, over 70 percent of which was held in cash.

[21] Data are not available to quantify the currency component. It is expected, however, that a large component of these remittances is in dollar denomination given the large share of dollar deposits in the banking system.

[22] Unlike the former Soviet Union States in the ruble area (Odling-Smee, 2001), or more recent cases, such as Ecuador, in Latin America.

In terms of fiscal discipline, the authorities' commitment has not been put to the test yet, with revenues predominately emanating from the customs union with Israel and expenditure and arrears pressures building up (Table 2).[23] [24] The lack of seigniorage adds to the fiscal tightness. Fiscal discipline is necessary for financial and nominal stability, regardless of the exchange rate regime. The success of a fixed exchange rate regime would highly depend on fiscal discipline in the face of potentially huge shocks and lack of institutional capacity to design and implement necessary reforms.

III. Empirical Results

A. Data and Measurement Issues

The econometric work in this paper is based on quarterly data from the Fund's Economic Data Sharing System (EDSS), the Palestinian Central Bureau of Statistics (PCBS) and the WBG's Desk's estimation from 1998 to 2004.[25] Given non-stationarity, the logarithm of each variable and the first difference were taken. The method of estimation was ordinary least squares (OLS), unless endogeneity was found then the model was reconfigured using instrumental variables, with the lags of the same explanatory variables from the OLS model as instruments. If serial correlation was found, it was corrected using heteroscedasticity consistent standard errors (t-HACSE).[26]

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[23] For a description of the fiscal sector, see IMF forthcoming (Chptrs IV and V).

[24] The future of the customs union is being considered in the context of the unilateral Israeli pull out from the Gaza Strip, otherwise known as the disengagement plan.

[25] Quarterly data increase available observations to derive the implications on long-term trend and cyclical fluctuations given the limited sample period. The number of quarterly observations is 26, except for the sheqalim/euro exchange rate, which is available starting the 1st quarter of 1999, limiting the number of observations to 21. Four series are not available quarterly, exports, imports, GNI and GDP. Quarterly data are constructed using 7 annual observations starting 1998, resulting in 28 quarterly observations. The database was constructed in GiveWin and the regressions were carried out in PcGive. See Appendix I for a full list of variables, definitions, frequency and data sources.

[26] With thanks to Jean Salvati for assistance with the HACSE correction feature in PcGive.

Table 4. Statistics of Average Daily Wages, by Region,
1998–2004

(In new Israeli sheqalim)	Mean	Standard Deviation
West Bank	67.97	5.65
Gaza	52.84	3.34
Palestinian workers in Israel	112.28	10.15

Source: Palestinian Central Bureau of Statistics, and IMF Staff estimates.

In addition to aggregate data (Appendix I), available data differentiate wages by region: wages in Gaza, wages in West Bank, and wages for Palestinians working in Israel and settlements. Table 4 contains a summary of average daily wages.

B. Estimation Results

As aforementioned, the choice of the exchange rate system is likely to be shaped around three factors: relative flexibility of wages and prices and subsequent effects on real wages, the vulnerability of trade to changes in various exchange rates, and changes in money demand in response to changes in various interest and exchange rates. The more flexible real wages are the less the impact of exchange rate rigidity on the real economy; an argument in favor of a fixed exchange rate system. High dependency on imports may provide further support to a fixed exchange rate system to minimize the effects of exchange rate shocks on inflation. On the other hand, exchange rate flexibility may be necessary to boost export competitiveness. Instability of money demand in response to exchange rate fluctuations would signal the need for a fixed exchange rate to anchor expectations.

The Palestinian economy has been subject to a composite of real and nominal shocks that are likely to continue to pose a threat on stability and economic performance in the period ahead. The choice of the exchange rate should aim at balancing out the risks in the face of these shocks. While the flexibility of the exchange rate may compound the risk of inflation and unstable money demand in the face of nominal shocks, fixing the exchange rate may lead to a loss of competitiveness and exacerbate the effects of real shocks absent flexibility to adjust real wages and relative prices in factor and product markets. The empirical evidence will aim at establishing evidence on the potential risk surrounding choices of the exchange rate regime.

To measure the degree of wage and price flexibility, we follow a sequence of empirical tests. First, we measure the degree by which wages vary in close relation to prices in the long-run. Second, we determine the effects of national income, transportation cost, the exchange rate, GDP in Israel, and global conditions (GDP in the U.S.) on cyclical fluctuations in wages and prices. The results identify factors that determine relative cyclicality in wages and prices and, in turn, impact on real wages.

To illustrate cyclical fluctuations in the trade sector, we estimate empirical models that explain exports and imports as a function of domestic price relative to price in Israel, the real effective exchange rate in Israel, real GDP or GNI in WBG, and GDP in Israel.

To measure the stability of money demand, we estimate an empirical model that explains total deposits in three currencies as a function of the interest rates on deposits, relative exchange rates, and GNI in WBG.[27]

Flexibility of nominal wages, prices, and real wages

As indicated above, flexibility of real wages and relative prices would reduce the risk of a fixed exchange rate on the real economy. There are two dimensions to judge this flexibility: (i) how close is movement in wages and prices in the long and short-run, and (ii) the relative cyclicality of wages and prices in the face of various shocks.

First, we test the evidence of co-integration between the nominal wage and price in each of the West Bank, and Gaza. Following evidence of co-integration, we test close adjustments of wages and prices in the short-run. There is evidence of co-integration (long-run association) between the nominal wage and price in the West Bank. Similarly, wages and prices for Gaza are co-integrated. Evidence of co-integration establishes co-movements between wages and prices and, therefore, the stability of the real wage in the long-run.[28]

Imbalances in the labor market are attributed to specific shocks (domestic and external) impinging on the Palestinian economy. It is important to evaluate the relative flexibility of wages and prices in the face of specific shocks. Table 6A presents the evidence of determinants of the cyclical behavior of wages and prices in each of the West Bank and Gaza. In equilibrium, the nominal wage is determined by demand and supply factors. On the demand side, the empirical model captures three factors: real GNI in WBG, GDP in Israel (a major source of employment and remittances), and GDP in the U.S. (a proxy for global conditions). Wages and prices are expected to increase in response to a higher demand. On the supply side, two factors are likely to determine wage and price inflation: a transportation price index, and the sheqalim price of the U.S. dollar (an increase indicates depreciation). Both factors are likely to increase the cost of output, forcing higher inflation of wages and prices.

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[27] In separate experiments, we introduced oil price inflation, a proxy for regional shocks, as an explanatory variable in the empirical models in Tables 6 and 7. Oil price inflation was not found to be significant in determining wage and price inflation or trade fluctuations in WBG.

[28] Following evidence of cointegration, we test close adjustments of wages and prices in the short-run using an error correction model. The results (available upon request) indicate significant negative coefficient of the error correction term. Significance indicates closeness of cyclical fluctuations of wages and prices in the short-run, implying real wage rigidity. Moreover, the negative coefficient of the error correction term indicates fast reversal of the cycle, i.e., speedy adjustment towards long-run equilibrium.

Each of nominal wage inflation, price inflation, and real wage growth is regressed on its own lag, and the current and first lagged values of each of transportation price inflation, growth of real national income in the WBG, the change in the sheqalim price of the US dollar, growth of domestic demand in Israel, and growth of GDP in the U.S. Accordingly, the empirical models are specified as follows, where $D(L.)$ is the first-difference of the logarithmic value:

$$DLW_t = F(DLW_{t-1}, DLTransCPI_t, DLTransCPI_{t-1}, DLRGNI_t, DLRGNI_{t-1},$$
$$DLNIS\$EX_t, DLNIS\$EX_{t-1}, DLGDPI_t, DLGDPI_{t-1}, DLGDPUS_t, DLGDPUS_{t-1}) \quad (1)$$

$$DLCPI_t = F(DLCPI_{t-1}, DLTransCPI_t, DLTransCPI_{t-1}, DLRGNI_t, DLRGNI_{t-1},$$
$$DLNIS\$EX_t, DLNIS\$EX_{t-1}, DLGDPI_t, DLGDPI_{t-1}, DLGDPUS_t, DLGDPUS_{t-1}) \quad (2)$$

$$DLRW_t = F(DLRW_{t-1}, DLTransCPI_t, DLTransCPI_{t-1}, DLRGNI_t, DLRGNI_{t-1},$$
$$DLNIS\$EX_t, DLNIS\$EX_{t-1}, DLGDPI_t, DLGDPI_{t-1}, DLGDPUS_t, DLGDPUS_{t-1}) \quad (3)$$

Table 6A demonstrates the cyclicality of nominal wage inflation, price inflation, and real wage growth in the West Bank. The negative and significant response of nominal wage inflation to its lag indicates lack of persistence in cyclical fluctuations. Following a cyclical shock, wages revert quickly to their long-run equilibrium. Several factors have contributed positively to higher nominal wage inflation in the West Bank: higher inflation of transportation price lagged, depreciation of the sheqalim relative to the dollar, and higher domestic demand in Israel lagged.

In panel A, a one percent increase in transportation price inflation (lagged) leads to 1.5 percent increase in wage inflation in the West Bank. Transportation cost increased in the wake of higher security constraints and significant closures, forcing an increase in the wage cost. A one percent depreciation of the sheqalim relative to the dollar leads to 0.6 percent increase in nominal wage inflation in the West Bank. The sheqalim depreciation increases the cost of imports, forcing an increase in the cost of living and, in turn, wages in the West Bank. A one percent increase in GDP in Israel increases wage inflation in the West Bank by 1.3 percent. Higher demand in Israel has a positive spillover effect on economic activity, increasing labor demand in the West Bank.

In panel B, only sheqalim depreciation is relevant to price inflation in the West Bank. A one percent depreciation of the sheqalim relative to the dollar increases price inflation in the West Bank by 0.2 percent. Sheqalim depreciation increases the cost of imports through Israel and, therefore, price inflation.

Since prices are relatively more rigid, compared to nominal wages, the real wage, in panel C, increases significantly in the face of aggregate demand in Israel. A one percent increase in aggregate demand in Israel increases the real wage by 0.9 percent in the West Bank. Higher real wages may have contributed to the severity of unemployment among Palestinians in the West Bank (23.6 percent in 2004/Q2, see Table 5).

Table 6A, presents the results of estimating the model explaining nominal wage inflation in Gaza. In panel D, cyclical fluctuations lack persistence, as evident by the negative and statistically significant response of wage inflation to its lag. Two major factors have fueled wage inflation in Gaza: higher growth of real national income (including remittances and transfers) lagged, and the depreciation of the sheqalim relative to the dollar.

A 1 percent growth in real GNI results in 0.6 percent increase in nominal wage inflation in Gaza. The impact of remittances and transfers appears, therefore, more evident on wages in Gaza compared to the West Bank. A one percent depreciation of the sheqalim relative to the dollar increases the cost of imports through Israel and results in 0.6 percent increase in nominal wage inflation in Gaza. In contrast, improved demand in Israel (higher GDP) has depressing effects on wages in Gaza. A 1 percent growth in demand in Israel results in a cumulative reduction in nominal wage inflation that equals 1.32 percent in the current and lagged quarter. Higher demand in Israel transfers economic activity and increases workers' mobility, decreasing the demand for labor in Gaza.

Table 6A illustrates the effects of cyclical factors on price inflation in Gaza in panel E. In contrast to the positive effects on wage inflation (evidence of nominal wage flexibility), price inflation decreases significantly in the face of higher growth of real national income, signaling price rigidity. A 1 percent growth in real GNI correlates with a 0.3 percent reduction in price inflation in Gaza—supply-side factors may be more dominant on price inflation. In contrast, improved global conditions, as approximated by higher growth in US GDP, raise price inflation in Gaza. A 1 percent growth in GDP in the U.S. increases price inflation in Gaza by 2.2 percent. Given the small volume of trade, the effect of global conditions is likely to be transmitted through the inflow of foreign aid to Gaza.

Despite differences in cyclical adjustments in wages and prices, cyclical fluctuations of the real wage, in panel F, are insignificant in the face of various factors in Gaza. This is evident by the insignificant cyclical response of the real wage to various factors. Lack of cyclicality in the real wage signals concerns about potential failure to insulate the real sector from external shocks under a fixed exchange rate system, given the high unemployment rate in Gaza (39.7 percent in 2004/Q2, see Table 5). Overall, the thorough analysis produces robust results that reject wage and price persistence and illustrate flexibility in the face of various shocks. Cyclical fluctuations appear to be of short duration in wages and prices.[29] A number of cyclical factors have affected

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[29] The evidence of cyclical fluctuations provides confidence in the quality of quarterly data that demonstrates such short-term cyclicality. In a separate experiment, we regress each of nominal wage inflation, price inflation and real wage growth on four of its lags. There is no evidence of persistence in series adjustments to its lags, except for price inflation in the West Bank, which relates positively and significantly to its first lag. In contrast, the negative and significant response of wages (both nominal and real) and prices to their lags indicates a high degree of flexibility that produces erratic adjustments over time.

wages and/or prices significantly in the short-run.[30] Nonetheless, the behavior of the real wage appears, in general, rigid in the face of various shocks. More importantly, the real wage does not vary significantly with fluctuations in the sheqalim/dollar exchange rate. Given that the sheqalim has been fluctuating lately and wages are earned in sheqalim, the real wage does not appear to be flexible in the face of external shocks. Absent flexible adjustments of the real wage, the effect of the various shocks could have a serious long-lasting effect on the real economy in the WBG under a fixed exchange rate system.

Next, we study the specifics of the labor market in the WBG a bit closer. It has been argued that wages for workers in Israel and settlements push up wages in Gaza and the West Bank,[31] and may have contributed to the rigidity of the real wage, despite high unemployment rates. To illustrate, Table 6B shows the results of regressing nominal wage inflation on the change in unemployment and wage inflation for Palestinians working in Israel and settlements.

In panel G, wage inflation in the West Bank does not vary significantly with unemployment. A 1 percent wage inflation for Palestinians working in Israel and settlements results in a 0.92 percent wage inflation with a two-quarter lag, in the West Bank.

In panel H, wage inflation in Gaza increases despite higher unemployment. A 1 percent increase in unemployment correlates with 0.26 percent increase in nominal wage inflation in Gaza. The latter, however, does not vary significantly with wage inflation for Palestinians working in Israel and settlements.

The significant share of employment for the Palestinian Authority (PA) may have contributed to sustaining nominal wage inflation, despite higher unemployment. However, this is not deemed to be the major source since, as shown in Table 5, the share of employment for the PA was 28 percent in 2002/Q4, and more recently is 22 percent in 2004/Q2.

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[30] A thorough analysis of the distributed lagged response of nominal wage inflation in the WBG to current and four lagged shocks is as follows. Wage inflation in the West Bank increases by 0.6 percent, 0.07 percent, 0.04 percent, 0.6 percent, 1.2 percent, and 0.8 percent in response to a 1 percent increase in each of transportation price inflation, unemployment, sheqalim/dollar depreciation, GDP in Israel, GDP in the U.S. and wages for Palestinians in Israel and settlements. Wage inflation in Gaza increases by 0.2 percent in response to a 1 percent increase in each of unemployment and wages for Palestinians in Israel and settlements.

[31] In Table 5, employment in Israel and settlement accounts for 9 percent of total employment in 2004/Q2. Correlation coefficients are 0.23 and 0.31 between wage inflation for Palestinians working in Israel and wage inflation in West Bank and in Gaza, respectively. Wage inflation in West Bank and in Gaza is positively correlated with a coefficient, 0.33.

To further illustrate the rigidity of the real wage, Table 6B illustrates the results of regressing real wage growth on distributed lags of unemployment in WBG. In panel I, real wage growth in the West Bank does not vary significantly with the unemployment rate. In panel J, real wage growth in Gaza increases significantly despite a higher unemployment rate. A 1 percent increase in unemployment correlates with 0.25 percent concurrent quarterly increase in the real wage in Gaza.

The apparent rigidity of the real wage may have exacerbated the real effects of economic slowdown and the severity of unemployment among Palestinians in the WBG. The downward rigidity of the real wage supports the need for a flexible exchange rate to moderate the effects of external shocks on the real economy.[32]

Determinants of fluctuations in trade balance

How dependent are exports and imports on exchange rate fluctuations in the WBG? Given the high share of imports to GDP, high fluctuations of imports in the face of exchange rate fluctuations would support stability under a fixed exchange rate regime. In contrast, high fluctuations of exports in the face of exchange rate fluctuations would support exchange rate flexibility to boost competitiveness. The WBG has been running a large trade deficit. Imports are likely to support growth in the absence of domestic substitutes. It is, therefore, necessary to have an export-oriented strategy in evaluating options for exchange rate regimes.

We estimate an empirical model that explains cyclical fluctuations in exports, and imports.[33] Each dependent variable is regressed on its lag, current and lagged value of domestic price relative to price in Israel, real GDP in Israel, real GDP or real GNI in WBG,[34] and the real

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[32] As noted above, descriptive statistics indicate that average wages have remained remarkably stable despite persistent unemployment rates. The relatively more downward rigidity of the real wage in Gaza, compared to the West Bank (see Table 1), has resulted in higher unemployment (above 30 percent). Correlation coefficients are small between real wage growth in each of the West Bank and Gaza and real GDP growth: 0.13, and 0.21, respectively. The small correlation signals wage rigidity where a slowdown in GDP growth does not yield significant reduction in the growth of real wages.

[33] Data for exports and imports are only available annually with no additional information available from Israel's Central Bureau of Statistics. We fit a symmetric quarterly distribution by interpolating between annual points. Fitted data are likely to understate cyclical fluctuations in the dependent variable. Despite this caveat, the evidence demonstrates interesting cyclical patterns for our analysis without any evidence of serial correlation. Upon availability of quarterly data, these models should be re-estimated and the implications further analyzed.

[34] Given significant flows of transfers and remittances, we use GNI to explain imports.

effective exchange rate in Israel.[35] On the demand side, exports may decrease in response to a higher real effective exchange rate of the sheqalim and a higher relative domestic price. Exports may increase in response to a higher real GDP in Israel. On the supply side, exports may increase with domestic real GDP. On the demand side, imports my increase in response to a higher real GNI and decrease in response to a higher real effective exchange rate of the sheqalim. Imports may decrease in response to a higher relative domestic price as imported substitutes become cheaper. Alternatively, higher price may decrease real standard of living and make imports less affordable. On the supply side, imports (primarily from Israel) may increase with higher real GDP in Israel. Given non-stationarity, the empirical models are specified in first-difference form, as follows:

$$
\begin{aligned}
DLE_t = F(DLE_{t-1}, DLPr\,WBG/Isr_t, DL\Pr WBG/Isr_{t-1}, DL\Pr WBG/Isr_{t-2}, \\
DLREERIsr_t, DLREER_{t-1}, DLRGDPWBG_t, DLRGDPWBG_{t-1}, \\
DLRGDPI_t, DLRGDPI_{t-1})
\end{aligned}
\tag{4}
$$

$$
\begin{aligned}
DLI_t = F(DLI_{t-1}, DL\Pr WBG/Isr_t, DL\Pr WBG/Isr_{t-1}, DL\Pr WBG/Isr_{t-2}, \\
DLREERIsr_t, DLREERIsr_{t-1}, DLRGNIWBG_t, DLRGNIWBG_{t-1}, \\
DLRGDPI_t, DLRGDPI_{t-1})
\end{aligned}
\tag{5}
$$

Table 7 summarizes the results. In panel A, exports grow with higher real GDP growth in Israel. A 1 percent growth of real GDP in Israel results in 2 percent growth of exports in the current and lagged quarter. An appreciation of the real effective exchange rate in Israel decreases competitiveness for exports of WBG. A 1 percent appreciation of the real effective exchange rate leads to 0.67 percent reduction in export growth in the current and lagged quarter. A 1 percent higher relative inflation results in a cumulative increase in export value that equals 0.94 percent in the current and lagged quarter. This pattern is reversed in the second lagged quarter: An increase in relative price inflation by one percent decreases export growth by 1.97 percent. A 1 percent growth in real GDP in the WBG results in 1.7 percent growth in exports.[36]

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[35] Given the high share of trade through Israel, the real effective exchange rate in Israel captures competitiveness relative to other major trading partners.

[36] Upon deflating the export value by the CPI index, real exports increase significantly with an increase in real GDP growth in West Bank and Gaza, and real GDP growth in Israel, with coefficients 0.77 and 1.72, respectively. Real exports increase initially in response to lagged relative price inflation with a coefficient that equals 1. This pattern is reversed (real exports decrease with a coefficient -1.2) in response to two lagged relative price inflation. Real exports decrease in response to lagged appreciation of the real effective exchange rate with a coefficient -0.25. Results are available upon request.

In panel B, a 1 percent appreciation in the sheqalim real effective exchange rate leads to 0.69 percent reduction in import growth in the current and lagged quarter. Sheqalim appreciation increases the cost of imports from Israel. A 1 percent growth in real GNI in WBG results in 1.5 percent increase in imports. An increase in relative price inflation by one percent results in a cumulative 2.7 percent reduction in imports in the current and two lagged quarters. Real purchasing power declines in response to a higher relative domestic inflation.[37]

Overall, the evidence supports the need for exchange rate flexibility. An appreciation of the sheqalim real effective exchange rate decreases exports. Fixing the exchange rate against the sheqalim could adversely affect competitiveness if the sheqalim appreciates relative to the dollar or the euro. On the other hand, the negative dependency of imports on sheqalim appreciation indicates the adverse effects on stability should a decision is reached to fix the exchange rate against the dollar or the euro. Fixing against a basket of currencies would require identifying the weights of individual currencies to mitigate the adverse effects of fluctuations against individual currencies on trade.[38]

Determinants of fluctuations in money demand

Nominal shocks could pose a serious threat to the stability of the money demand function under a flexible exchange rate system. Currently, three currencies are accepted as legal tender in the Palestinian economy. Is there any evidence of stable money demand in the face of exchange rate fluctuations?

The model in Table 8 explains the growth of total deposits (in US dollars, Israeli sheqalim, and Jordanian dinar) as a function of its lag, the change in the interest rate on each currency, the change in the sheqalim-dollar exchange rate, and the change in the sheqalim-euro exchange rate, as follows:[39]

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[37] Upon deflating the import value by the CPI index, real imports decrease significantly in response to an increase in domestic price inflation relative to Israel's inflation with a cumulative coefficient that equals -2.0 in the current and two lagged quarters. An appreciation of the sheqalim real effective exchange rate decreases real imports with a coefficient that equals -0.27 in the current and lagged quarter. Real imports increase significantly in response to higher growth of real GNI, with a coefficient that equals 1.

[38] In separate experiments, the results indicate that depreciation of the sheqalim relative to the dollar does not boost export competitiveness. To the contrary, sheqalim depreciation relative to the dollar increases the cost of imported inputs and decreases import growth. In contrast, lagged depreciation in the sheqalim relative to the euro increases competitiveness and export growth.

[39] Deposits in various currencies are recorded in dollars in the monetary survey. Total deposits are the dollar equivalent of deposits in three currency denomination.

$$DLD_t = F(DLD_{t-1}, DLRJDD_t, DLRJDD_{t-1}, DLR\$D_t, DLR\$D_{t-1}, DLRNISD_t,$$
$$DLRNISD_{t-1}, DLNIS\$EX_t, DLNIS\$EX_{t-1}, DLNISEuroEX_t, DLNISEuroEX_{t-1})$$

(6)

All coefficients in the empirical model are statistically insignificant. Money demand appears stable in the face of various shocks to the exchange rate and the interest rate.[40] Also Figure 3 above illustrates developments in total deposits and deposits in each of the three currency denominations. In general, deposits appear to be stable over time, except for sheqalim deposits in 2000, which marked the start of the second *Intifada*. As agents were panicking, they perceived deposits in sheqalim as the easiest to access cash transactions, which are predominantly in sheqalim. This phenomenon was temporary as the peak lasted during the second and third quarters of 2000. It is likely that the economy would remain dollarized even if a new currency is introduced. The credibility of the new currency would require initially flexibility to exchange the three existing legal tenders for the new currency at a fixed rate. Absent evidence of unstable money demand in the face of exchange rate shocks, exchange rate flexibility may not adversely affect the stability of the money demand function. More importantly is to gradually develop confidence in underlying economic fundamentals and prudent policies that support credibility of the new currency and reduce incentives for dollarization.

IV. CONCLUSIONS

The analysis in the paper has provided fresh empirical evidence that sheds light on the characteristics of the Palestinian economy and unveils interesting implications for the choice of the exchange rate regime following the introduction of a national currency. Previous studies have argued in favor of a currency board arrangement on the grounds that this would be the only arrangement that would bestow the new currency with the needed credibility for the Palestinian public to accept it quickly. Nonetheless, the risk of misalignment of the exchange rate under such an arrangement poses a real threat. Would a fixed rate be consistent with the structure of the Palestinian economy and the likely shocks to which it would be subject? Our analysis has evaluated the evidence of potential risk against the advantages of fixing the exchange rate.

We found that several characteristics suggest that the Palestinian economy would benefit more from exchange rate stability (rigidity) than from monetary independence. In introducing a new currency, the primary objective is to establish its credibility, so that people will hold it willingly. Stability in the exchange rate is an important contributor to credibility; hence the advantages of a fixed exchange rate. Moreover, a fixed exchange rate regime would provide an anchor for

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[40] In separate experiments, we analyze fluctuations in deposits in each currency denomination. These deposits are generally stable, with the exception of deposits in U.S. dollars (the dominant share of total deposits), which increase in response to a higher dollar interest rate relative to the interest rate on the Jordanian dinar. The dinar is pegged to the dollar. As money deposits are transferred from Palestinians' relatives in Jordan, currency denomination is determined by the relative interest rate.

monetary policy and inflationary expectations. Since the economy is open, with a high share of imports in the Palestinian consumption basket, exchange rate stability would clearly be an option for achieving price stability.

Institutional capacity for both fiscal and monetary policy argues for simpler and stricter choices of exchange rate rigidity such as a transparent peg. The PMA has struggled to exert its influence and has yet to establish a solid reputation and build up sufficient capacity to fully supervise the banking sector. Accordingly, the PMA's autonomy is questionable as it remains, for the time being, under the control of the budget-constrained Palestinian Authority (PA).

The high level of dollarization of deposits in the banking system may signal the need for a fixed exchange rate of the new currency relative to the dollar to maintain stability of money demand and reduce pressure on the limited international reserves. However, in order for the PMA to assume a LOLR role, foreign exchange reserves would need to be in excess of the monetary aggregates backed. Given the current level of dollarization or transactions in sheqalim, adopting either currency might seem attractive. However, neither offers seigniorage or LOLR facilities.

Despite plausible arguments in favor of a fixed exchange rate regime, key characteristics of the Palestinian economy may favor exchange rate flexibility. First is the issue of fiscal discipline. Credibility cannot be maintained without fiscal discipline, which is necessary for financial and nominal stability regardless of the exchange rate regime. Nonetheless, the PA has a limited track record, and it is by no means assured that it will continue to adhere to this; particularly if foreign assistance to finance the budget continues to fall behind or if the transfer of revenues collected by Israel is threatened (by a change in the customs union agreement with Israel). Failure to maintain fiscal discipline under potential structural shocks that lie ahead would increase the risk of misalignment under a fixed exchange rate system. Moreover, under a flexible exchange rate system, the fiscal imbalance will be transparent; in contrast, it might be disguised under a fixed exchange rate system absent market signals and adequate information on the level of international reserves. Such transparency would increase pressure on the PA to maintain fiscal discipline and increase confidence in the stability of the new currency under a flexible exchange rate system.

Second, a question would remain as to which foreign currency the domestic currency should be pegged, the U.S. dollar or the currency of one or more neighboring countries (probably the sheqalim or the euro, since the dinar is less important and is pegged to the dollar). Only limited information is available regarding the composition and direction of trade. Further, trade through Israel dominates the current trade pattern, with a large part of exports is re-exported to other countries and a large part of imports is from outside Israel. Fixing the exchange rate against the U.S. dollar may result in a real appreciation over time against neighboring countries (particularly in the euro area), adversely affecting export competitiveness. Fixing against the currencies of neighboring countries (i.e., the sheqalim or the euro) could adversely affect stability—since the sheqalim has fluctuated a great deal over the last few years. Imports are highly dependent on the sheqalim real effective exchange rate, and domestic substitutes are not available for imported inputs. Consistently, there is evidence that export growth is adversely affected in the face of an appreciation in the sheqalim real effective exchange rate. Fixing

against a basket of currencies would imply that the national currency would still move against individual currencies, losing the stability and simplicity of a peg against a single currency.

Third, the economy will likely undergo large structural changes should reconstruction take hold after more than 50 years of conflict. On the one hand, this would be accompanied by large foreign exchange inflows, from both donors and repatriation of funds by Palestinians, which may cause the real exchange rate to appreciate. On the other hand, given political instability, capital outflows, may pose a serious risk of real depreciation. At the present time, it would be very difficult to form any firm idea as to what the appropriate exchange rate level would be in a fixed regime.

Fourth, the vulnerability of the banking system to incipient runs could increase should the PMA not fully assume the role of LOLR. This risk would be larger in a country such as the WBG with weak banking supervision. The fragility of the banking system along with the limits and vulnerability of international reserves call for flexibility. Foreign exchange reserve losses could be large should the need to defend the currency against speculative attacks arise. While the inflow of remittances and foreign aid may strengthen the ability of the PMA to defend the peg, cyclical disturbances in these flows and the risk of outflows may threaten the sustainability of the peg.

Fifth, the economy is very vulnerable to shocks, both external and domestic. These shocks include inter alia trade and labor market shocks and political instability. Under a fixed regime, labor and products markets would need to have a high degree of flexibility to absorb such shocks. While the evidence indicates some short-term flexibility in nominal magnitudes, it is unclear whether product and labor markets have sufficient degrees of flexibility to absorb the potentially very large shocks and structural changes in the ensuing period. Moreover, a substantial degree of downward wage rigidity persists. The real wage, in general, is rigid in the face of a variety of domestic and external shocks, and average wages have remained remarkably stable despite soaring unemployment rates. Persistent unemployment would benefit from some exchange rate flexibility.

On balance, the current economic conditions appear to favor a floating exchange rate regime over time. In the near term, however, the credibility arguments should dominate the choice of the exchange rate for a new currency. Therefore, a fixed exchange rate (maybe even a hard peg) is a good way to start off. All four currencies-the U.S. dollar, sheqalim, dinar as well as a newly introduced national currency-could, in principle, circulate for a predetermined interim period until all of them, bar the national currency, are redeemed. Such redemption should develop voluntarily over time as the public becomes increasingly confident in the credibility of the new currency. The authorities would have to announce a redemption commitment while adhering to a fixed exchange rate system to avoid speculative attacks. Monetary policy may be used in the short run to keep the exchange rate in line with the objectives of gaining credibility for the newly introduced national currency.

However, several major issues would need to be addressed before a move to a fixed-type regime could be made: the authorities would first need to have (i) a track record of fiscal discipline, (ii)

a better understanding of the appropriate anchor currency and the exchange rate level, (iii) a strong international reserve position, and (iv) demonstrated ability of the monetary authority to supervise and regulate the banking sector.

Once the credibility of the national currency is established and the economy has undergone structural changes inherent in the resettlement and reconstruction process, the choice of the exchange rate system can be revisited. A move toward more flexibility should be preceded by a thorough evaluation of the adequacy of the institutional capacity to manage an independent monetary policy. With technical assistance, countries have managed to build up capacity relatively quickly in order to manage a quantified monetary program and to set up foreign exchange auctions.

Table 5. Palestinian Labor Market Developments, 2000–2004

	2000 Q1	2000 Q2	2000 Q3	2000 Q4	2001 Q1	2001 Q2	2001 Q3	2001 Q4	2002 Q1	2002 Q2	2002 Q3	2002 Q4	2003 Q1	2003 Q2	2003 Q3	2003 Q4	2004 Q1	2004 Q2
	(In thousands)																	
Labor force	672	707	735	668	669	675	678	702	705	680	703	742	745	792	817	815	816	831
Unemployment	74	62	74	189	179	160	172	184	204	229	251	202	226	192	193	198	214	238
in percent of labor force	11.0	8.8	10.1	28.3	26.8	23.7	25.4	26.2	28.9	33.7	35.7	27.2	30.4	24.3	23.6	24.3	26.3	28.6
in the West Bank	9.0	6.4	7.5	26.3	23.8	19.1	22.7	22.2	25.6	29.6	31.1	26.9	31.3	22.4	21.6	20.7	24.6	23.6
in Gaza	15.0	13.8	15.7	33.5	33.8	34.8	32.0	35.5	36.4	41.7	46.4	28.0	28.5	28.4	27.9	32.1	29.8	39.7
Total employment /1	598	645	661	479	490	515	506	518	501	451	452	540	519	600	624	617	602	593
Employment in Israel and the settlements	132	144	146	43	72	74	63	68	59	33	53	56	49	54	67	58	56	48
Employment in the West Bank and Gaza	466	501	515	436	418	441	443	450	442	418	399	484	470	546	557	559	545	545
PA employment /2	107	110	113	115	117	119	119	122	123	124	123	125	128	130	127	130	131	131
Private sector /3	359	391	402	321	301	322	324	328	319	294	276	359	342	416	430	429	414	414
Agriculture	62	70	71	79	54	58	52	57	62	71	48	90	73	102	86	91	84	86
Construction	55	64	62	32	34	43	43	38	30	27	32	43	37	48	59	60	48	43
Manufacturing	71	76	78	54	60	59	58	63	63	50	47	59	59	65	67	66	72	69
Commerce	84	87	92	84	81	87	87	93	94	78	85	92	97	107	115	113	108	109
Other services (excl. PA employment)	87	95	99	72	72	75	84	77	70	68	64	75	76	94	103	99	103	107
	(In percent of total employment)																	
Employment in Israel and the settlements			22	9	15	14	12	13	12	7	12	10	9	9	11	9	9	8
Employment in the West Bank and Gaza			78	91	85	86	88	87	88	93	88	90	91	91	89	91	91	92
PA employment /2			17	24	24	23	24	24	25	28	27	23	25	22	20	21	22	22
Private sector /3			61	67	61	63	64	63	64	65	61	67	66	69	69	70	69	70
Agriculture			11	17	11	11	10	11	12	16	11	17	14	17	14	15	14	15
Construction			9	7	7	8	8	7	6	6	7	8	7	8	9	10	8	7
Manufacturing			12	11	12	11	11	12	13	11	10	11	11	11	11	11	12	12
Commerce			14	18	17	17	17	18	19	17	19	17	19	18	18	18	18	18
Other services (excl. PA employment)			15	15	15	15	17	15	14	15	14	14	15	16	17	16	17	18
	(change from previous quarter, in thousands)																	
Total employment /1			16	-182	11	25	-9	12	-17	-50	1	88	-21	81	24	-7	-15	-9
Employment in Israel and the settlements			2	-103	29	2	-11	5	-9	-26	20	3	-7	5	13	-9	-2	-8
Employment in the West Bank and Gaza			14	-79	-18	23	2	7	-8	-24	-19	85	-14	76	12	1	-13	0
PA employment /2			3	2	2	2	0	3	1	1	-1	1	3	2	-3	2	1	0
Private sector /3			11	-81	-20	21	2	4	-9	-25	-18	84	-18	74	14	-1	-15	0

Sources: Palestinian Central Bureau of Statistics and IMF staff estimates.

1/ Includes employment in Israel and the settlements as well as those considered underemployed.
2/ Central government only.
3/ Includes employment in local authorities and public enterprises.

Table 6A. Cyclicality of Wages and Prices in the Face of Various Shocks

Panel A. Wages in the West Bank

Explanatory Variable	Coefficient	t-value
Constant	-0.07	-1.77
DLWWB_1	-0.58	-2.65**
DLTranCPI	0.02	0.08
DLTranCPI_1	1.48	3.74*
DLRGNI	-0.02	-0.06
DLRGNI_1	0.59	1.59
DLNIS$EX	0.59	2.84**
DLNIS$EX_1	0.17	0.87
DLGDPI	0.62	2.63**
DLGDPI_1	0.72	2.44**
DLGDPUS	-2.6	-1.55
DLGDPUS_1	-0.13	-0.09
R^2	0.97	

Spec test: Chi^2(5) = 12.721 [0.0261]*
Endogeneity of RGNI rejected
No evidence of serial correlation

Panel D. Wages in Gaza

Explanatory Variable	Coefficient	t-value
Constant	-0.07	2.14**
DLWG_1	-0.56	-3.52*
DLTranCPI	0.03	0.14
DLTranCPI_1	1.45	4.77*
DLRGNI	-0.02	-0.06
DLRGNI_1	0.56	2.12**
DLNIS$EX	0.59	3.32*
DLNIS$EX_1	0.16	0.98
DLGDPI	-0.63	-3.03*
DLGDPI_1	-0.69	-3.28*
DLGDPUS	-2.49	-1.89
DLGDPUS_1	-0.18	-0.13
	0.98	

Spec test: Chi^2(5) = 15.591 [0.0081]**
Endogeneity of RGNI rejected
No evidence of serial correlation

Panel B. Prices in the West Bank

	Coefficient	t-value
Constant	0.00	-0.15
DLCPIWB_1	0.06	0.20
DLTranCPI	-0.06	-0.37
DLTranCPI_1	0.06	0.37
DLRGNI	-0.14	-1.14
DLRGNI_1	0.12	0.82
DLNIS$EX	0.19	2.39*
DLNIS$EX_1	0.13	1.4
DLGDPI	-0.09	-0.82
DLGDPI_1	0.2	0.19
DLGDPUS	0.77	1.07
DLGDPUS_1	0.05	0.06
R^2	0.70	

Spec test: Chi^2(5) = 15.285 [0.0092]**
Endogeneity of RGNI rejected
No evidence of serial correlation

Panel E. Prices in Gaza

	Coefficient	t-value
Constant	-0.03	-1.29
DLCPIG_1	-0.06	-0.19
DLTranCPI	-0.11	-0.63
DLTranCPI_1	-0.01	-0.04
DLRGNI	-0.29	-1.95**
DLRGNI_1	0.13	0.68
DLNIS$EX	0.12	1.24
DLNIS$EX_1	0.15	1.34
DLGDPI	-0.2	-1.64
DLGDPI_1	-0.05	-0.42
DLGDPUS	2.18	2.50*
DLGDPUS_1	0.72	0.67
	0.73	

Spec test: Chi^2(5) = 11.379 [0.0444]*
Endogeneity of RGNI rejected
No evidence of serial correlation

Table 6A. Cyclicality of Wages and Prices in the Face of Various Shocks (cont'd)

Panel C. Real wages in the West Bank			Panel F. Real wages in Gaza		
Explanatory Variable	Coefficient	t-value	Explanatory Variable	Coefficient	t-value
Constant	-0.03	-0.59	Constant	0.02	0.22
DLRWWB_1	-0.3	-1.38	DLRWG_1	-0.38	-0.9
DLTranCPI	-0.67	-1.37	DLTranCPI	0.53	0.65
DLTranCPI_1	0.7	1.29	DLTranCPI_1	0.33	0.89
DLRGNI	-0.37	-0.66	DLRGNI	-0.05	-0.08
DLRGNI_1	0.70	1.44	DLRGNI_1	0.22	0.26
DLNIS$EX	-0.32	-1.1	DLNIS$EX	-0.38	-0.85
DLNIS$EX_1	0.38	1.21	DLNIS$EX_1	-0.93	-0.20
DLGDPI	0.85	2.05**	DLGDPI	0.26	0.42
DLGDPI_1	0.16	0.48	DLGDPI_1	0.4	0.72
DLGDPUS	0.78	0.35	DLGDPUS	0.63	0.15
DLGDPUS_1	-2.93	-1.19	DLGDPUS_1	-4.28	-1.13
R^2	0.70			0.48	

Spec test: $Chi^2(5)$ = 6.8604 [0.2312]   Spec test: $Chi^2(5)$ = 16.236 [0.0062]**
Endogeneity of RGNI accepted   Endogeneity of RGNI accepted
No evidence of serial correlation   No evidence of serial correlation

** 10 percent significance
* 5 percent significance

Method of estimation is OLS unless endogeneity was found then instrumental variables/two-staged least squares estimation results are reported.

Variable key:

DL	DL before each variable is the first difference of the log of that variable
DLWWB	nominal average daily wages in the West Bank in NIS
DLWG	nominal average daily wages in the Gaza Strip in NIS
DLRWWB	real average daily wages in the West Bank in NIS
DLRWG	real average daily wages in the Gaza Strip in NIS
DLCPIWB	CPI for West Bank
DLCPIG	CPI for the Gaza Strip
DLTranCPI	transportation price index, a component of CPI, for the West Bank and Gaza
DLRGNI	real gross national income (includes transfers and remittances) for the West Bank and Gaza
DLNIS$EX	Israeli sheqalim to US Dollar exchange rate
DLGDPI	nominal gross domestic product of Israel
DLGDPUS	nominal gross domestic product of the USA

Table 6B. Variation in Wages in WBG with Unemployment and Wages in Israel

Panel G. The Effects of Unemployment and Wages in Israel on Wages in the West Bank			Panel H. The Effects of Unemployment and Wages in Israel on Wages in Gaza		
Explanatory variable	Coefficient	t-value	Explanatory variable	Coefficient	t-value
Constant	-0.01	-0.73	Constant	-0.02	-1.03
DLWBUnempl	-0.03	-0.41	*DLGazUnempl*	0.26	2.57*
DLWBUnempl_1	0.03	1.05	*DLGazUnempl_1*	0.03	0.38
DLWTI	0.30	1.03	*DLWTI*	0.48	1.15
DLWTI_1	-0.22	-0.82	*DLWTI_1*	0.37	0.77
DLWTI_2	0.92	3.27*			
R^2	0.63		R^2	0.43	

Spec test: $Chi^2(2) = 0.09$ [0.95]   Spec test: $Chi^2(2) = 2.27$ [0.32]

Endogeneity of WBUnempl accepted   Endogeneity of GazUnempl accepted

No evidence of serial correlation   No evidence of serial correlation

Panel I. The Effects of Unemployment on Real Wages in the West Bank			Panel J. The Effects of Unemployment on Real Wages in Gaza		
Constant	-0.14	-0.28	Constant	-0.02	-1.07
DLWBUnempl	0.89	-0.28	*DLGazUnempl*	0.25	1.79**
DLWBUnempl_1	0.07	0.20	*DLGazUnempl_1*	0.01	0.07
DLWBUnempl_2	0.43	0.29	*DLGazUnempl_2*	0.07	1.08
DLWBUnempl_3	-0.05	-0.20	*DLGazUnempl_3*	0.03	0.43
DLWBUnempl_4	0.31	0.29	*DLGazUnempl_4*	0.01	0.19
R^2	0.32		R^2	0.45	

Spec test: $Chi^2(1) = 0.01$ [0.91]   Spec test: $Chi^2(1) = 2.2$ [0.14]

Endogeneity of WBUnempl accepted   Endogeneity of GazUnempl accepted

No evidence of serial correlation   No evidence of serial correlation

Method of estimation is OLS unless endogeneity was found then instrumental variables/two-stage least squares estimation results are reported.

DLWTI	nominal average daily wages of Palestinian workers in Israel and settlements in NIS
DLWBUnempl	unemployment in the West Bank
DLGazUnempl	unemployment in Gaza

Table 7. Determinants of Fluctuations in the Trade Balance

Panel A. Exports			**Panel B. Imports**		
Explanatory Variable	Coefficient	t-value	Explanatory Variable	Coefficient	t-value
Constant	-0.03	-2.28*	Constant	0.01	1.83**
DLPrWBG/Isr	0.14	0.16	*DLRelPrWBG/Isr*	-0.7	-1.69
DLPrWBG/Isr_1	0.82	1.16	*DLRelPrWBG/Isr_1*	-0.36	-1.07
DLPrWBG/Isr_2	-1.97	-2.13*	*DLRelPrWBG/Isr_2*	-1.08	2.98*
DLREERIsr	-0.27	-1.30	*DLREERIsr*	-0.23	2.86*
DLREERIsr_1	-0.41	-1.91**	*DLREERIsr_1*	-0.39	-3.89*
DLRGDPWBG	1.72	2.83*	*DLRGNIWBG*	0.97	6.36*
DLRGDPWBG_1	-0.81	-1.65	*DLRGNIWBG_1*	0.05	0.30
DLRGDPI	0.84	2.43*	*DLRGDPI*	0.19	1.04
DLRGDPI_1	1.17	3.08*	*DLRGDPI_1*	-0.03	-0.17

Spec test: Chi^2(4) = 1.17 [0.88]	Spec test: Chi^2(4) = 3.2 [0.53]
Endogeneity of RGDPWBG accepted	Endogeneity of RGNIWBG accepted
No evidence of serial correlation	No evidence of serial correlation

** 10 percent significance
* 5 percent significance

Method of estimation is 2SLS using instrumental variables, since endogeneity was found for one variable using OLS.

Variable Key:
DL	*DL* before each variable is the first difference of the log of that variable
DLPrWBG/Isr	CPI of WBG over CPI of Israel
DLREERIsr	real effective exchange rate of Israel
DLRGDPWBG	real gross domestic product of WBG
DLRGDPI	nominal gross domestic product of Israel
DLRGNIWBG	real gross national income of WBG
DLE	nominal total exports
DLI	nominal total imports

Table 8. Determinants of Fluctuations in Money Demand

Explanatory Variable	Coefficient	t-Value
Constant	10.09	1.75
DLD_1	0.01	3.27*
DLRJDD	1.31	0.14
DLRJDD_1	-8.33	-0.77
DLR$D	-1.17	-0.34
DLR$D_1	2.08	0.68
DLRNISD	0.82	0.44
DLRNISD_1	-2.19	-1.19
DLNIS$EX	-18.76	-1.50
DLNIS$EX_1	-11.04	-0.43
DLNIS€EX	9.00	1.20
DLNIS€EX_1	-4.13	-0.27
R^2	0.84	

Serial correlation was found and corrected

**10 percent significance
*5 percent significance

Method of estimation is OLS. Serial correlation is corrected using heteroscedasticity consistent standard errors.

Variable Key:
DL	*DL* before each variable is the first difference of the log of that variable
DLD	total deposits as valued in US$ by the Palestinian Monetary Authority and composed of Israeli sheqalim, Jordanian dinar and US dollar deposits
DLNIS$EX	Israeli sheqalim to US Dollar exchange rate
DLNIS€EX	Israeli sheqalim to the euro exchange rate
DLRJDD	nominal interest rate on deposits in JD
DLR$D	nominal interest rate on deposits in US dollar
DLRNISD	nominal interest rate on deposits in NIS

APPENDIX I

APPENDIX
Data Description and Source

Variables	Definition		Frequency		Source
DL	*DL before each variable is the first difference of the log of that variable*				
DLWWB	nominal average daily wages in the West Bank in NIS	Monthly average to quarterly	Quarterly		PCBS
DLWG	nominal average daily wages in the Gaza Strip in NIS		Quarterly		PCBS
DLWTI	nominal average daily wages of Palestinian workers in Israel and settlements in NIS		Quarterly		PCBS
DLCPIWB	CPI for West Bank		Quarterly		PCBS
DLCPIG	CPI for the Gaza Strip		Quarterly		PCBS
DLCPITI	CPI in Israel		Quarterly		Bank of Israel
DLNIS$EX	Israeli sheqalim to US Dollar exchange rate		Quarterly		Bank of Israel
DLNIS$€	Israeli sheqalim to the euro exchange rate				
DLGDPI	nominal gross domestic product of Israel		Quarterly		EDSS
DLGDPUS	nominal gross domestic product of the USA		Quarterly		EDSS
DLE	nominal total exports		Annual	1/	Desk estimates
DLI	nominal total imports		Annual	1/	Desk estimates
DLD$	nominal private deposits denominated in US dollars held at commercial banks in the West Bank and Gaza		Quarterly		PMA
DLNR$/NIS	nominal relative interest rate differential on deposits in US dollar to NIS		2/ Quarterly	3/	EDSS
DLNR$/JD	nominal relative interest rate differential on deposits in US dollar to JD		2/ Quarterly	3/	EDSS
DLDNIS	nominal private deposits denominated in NIS held at commercial banks in the West Bank and Gaza		Quarterly	3/	PMA
DLNRNIS/$	nominal relative interest rate differential on deposits in NIS to US dollar		2/ Quarterly	3/	EDSS
DLNRNIS/JD	nominal relative interest rate differential on deposits in NIS to JD		2/ Quarterly	3/	EDSS
DLDJD	nominal private deposits denominated in JD dollars held at commercial banks in the West Bank and Gaza		Quarterly	3/	PMA
DLNRJD/$	nominal relative interest rate differential on deposits in JD to US dollar		2/ Quarterly	3/	EDSS
DLNRJD/NIS	nominal relative interest rate differential on deposits in JD to NIS		2/ Quarterly	3/	EDSS
ECT_1	error correction term				
NIS	New Israeli Sheqalim				
JD	Jordanian Dinar				
PCBS	Palestinian Central Bureau of Statistics				
PMA	Palestinian Monetary Authority				

1/ The annual level was quarterlized smoothly across quarters assuming no seasonality.

2/ The deposit interest rates of each of the US, JD and INS are their own respective country rates since these data are unavailable from the West Bank and Gaza.

3/ Calculated as the different (i.e. one minus the other) between the two.

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