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**Currency competition and the denomination of wages  
in the Palestinian territories**

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## **Abstract**

The Palestinian territories are a rare case of competing currencies and a dollarized economy. Mainly three currencies are used in parallel; the Jordanian Dinar, the Israeli Shekel and the US-Dollar. Through interviews with representatives from different organisations and institutions, this essay intends to shed light on one important node in this monetary setting, namely the currency used for wages.

Some sectors that are dominated by certain currencies are identified and the common feature is the correlation of the main source of income and the denomination of currency in the wage contract. Another important factor determining the currency of the wage is the change in the exchange rate relative to the currency mainly used as medium of exchange. Employees with rare skills are more likely to adjust their wages in accordance to the fluctuations. Employers with market power or societal objectives are keener on allowing such a change.

*Keywords:* Palestinian economy, currency competition, dollarization, hysteresis, network effect

## **Preface**

This essay has been possible through financial help from SIDA through the Minor Field Study scholarship (MFS). I am really grateful for this support. The academic assistance from my supervisor, Associate Professor Klas Fregert, and my local contact person, Professor Mahmoud El-Jafari from Al-Quds University, is greatly appreciated. Muath Quran at the PMA has given me much good advice and interesting conversation and helped me with the data. I would also like to thank all the interviewees for their participation. Without them, this essay would not have been possible. Thanks also to all my friends who have helped me with valuable advice after reading my drafts.

I hope that this essay sparks some new ideas and that it will be helpful for future studies of the complex use of money. I look forward to the result of Professor El-Jafari's initiative to engage some of his master's students in further investigation of the intriguing monetary setting of the Palestinian territories. I also wish that the Palestinian central bureau of statistics will be able to provide the data on currencies used for wages, collected through the labour force survey, for external use. This will be helpful for future decisions made by the Palestinian national authority and the Palestinian monetary authority, as well as for general research on the demand for and use of different currencies.

## TABLE OF CONTENTS

<b>ABBREVIATIONS.....</b>	<b>1</b>
<b>1 INTRODUCTION .....</b>	<b>2</b>
<b>2 DOLLARIZATION AND CURRENCY SUBSTITUTION.....</b>	<b>3</b>
2.1 The real return differential and avoidance of currency mismatch.....	3
2.2 Network effects .....	5
2.3 Personal preferences.....	6
2.4 Dollarization as inflow of foreign currency .....	6
<b>3 BACKGROUND.....</b>	<b>7</b>
3.1 Currencies in the Palestinian territories: 1967 and onwards .....	7
3.2 Legal tenders in the Palestinian territories .....	9
3.3 Deposits and loans and capitalisation in foreign currencies .....	11
<b>4 THEORETICAL FRAMEWORK .....</b>	<b>13</b>
4.1 The model .....	13
4.2 Divergence of utility in the negotiation of salary .....	15
4.3 Using the framework .....	16
<b>5 METHOD .....</b>	<b>16</b>
5.1 Interviews with representatives of different institutions .....	17
5.2 Interviews with financial managers .....	18
<b>6 RESULTS FROM THE INTERVIEWS.....</b>	<b>19</b>
6.1 Interviews with the institutional representatives.....	19

6.1.1	Description of the use and spread of different currencies .....	20
6.1.2	The negotiation of wages and the choice of currency.....	20
<b>6.2</b>	<b>Interviews with the financial managers.....</b>	<b>21</b>
<b>7</b>	<b>ANALYSIS.....</b>	<b>22</b>
7.1	Common features of employers using the same currency .....	23
7.2	Change of currency in the wage contract .....	24
7.3	The power to change the currency in the wage contract.....	25
7.4	The hysteresis effect from a different perspective .....	26
<b>8</b>	<b>CONCLUSION.....</b>	<b>27</b>
	<b>APPENDIX 1: QUESTIONS FOR THE SCHOOL INTERVIEWS .....</b>	<b>28</b>
	<b>APPENDIX 2: SUMMARY OF THE ANSWERS FROM INSTITUTIONAL REPRESENTATIVE.....</b>	<b>30</b>
	<b>REFERENCES.....</b>	<b>30</b>

## **Abbreviations**

IMF	International Monetary Fund
NGO	Non-Governmental Organisation
NIS	New Israeli Shekel
JOD	Jordanian Dinars
PMA	Palestinian Monetary Authority
PNA	Palestinian National Authority
PT	Palestinian Territories
USD	US-Dollar

## 1 Introduction

The Palestinian territories (PT) have a rather unique monetary setting. Without the right of issuing its own currency, the government is left to rely on foreign currencies as money. This has caused a situation of mainly three competing currencies: the US-dollar (USD), the Israeli Shekel (NIS) and the Jordanian Dinar (JOD). The situation can be rather confusing as it is partly a result of constant institutional and political changes. The PT has two legal tenders, on which the Palestinian national authority (PNA) has no influence, instead of one formal domestic currency. Informally, NIS can be regarded as a domestic currency, as it is used for most daily economic transactions. Through an inflated Israeli currency (main medium of exchange), other currencies are used as store of value. With these characteristics, the Palestinian case has many similarities to other dollarized economies. The economy also has characteristics of dollarization hysteresis. Prices in NIS have stabilised and thus the exchange rate to the USD<sup>1</sup>. Despite this, the use of foreign currency is still substantial in the PT.

Recent research has shown that earlier studies of dollarization relying primarily on data reported from banks on deposits and loans are insufficient for making good estimates of the level of foreign currency used and the behaviour determining it. Most studies on competing currencies are concerned with the private demand side of the currency market, but not with the sources of inflow of foreign currency into the economy. This essay will focus on one of the main sources, namely wages. Why are different currencies being used for wages in the Palestinian territories?

Studies of the Palestinian monetary economy have focused more on the future of a viable independent domestic currency than the actual situation. Competing currencies is only treated as a background fact<sup>2</sup>. However, an unexpected change in the exchange rate can cause unforeseen distortions because of the currency denomination of long-term contracts, e.g. wage contracts. Inflation, as lost purchasing power, will be worse for an individual with a salary in a currency other than that for daily prices if the exchange rate

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<sup>1</sup> For more information on the monetary development in Israel after the hyperinflation in the mid-1980s, I recommend Bufman G. and L. Leiderman. (2001) Surprises on Israel's Road to Exchange Rate Flexibility, IMF conference paper

<sup>2</sup> See for example Samya Beidas and Magda Kandil (2005) *Setting the stage for a national currency in the West Bank and Gaza* or David Cobham (2003) *Alternative currency arrangement for Palestine*

depreciates (PMAa, 2011, p. 22f). Prices in the PT are mainly in NIS. The inflation in 2010 was 3.7 %, but the exchange rate of USD to NIS depreciated by 5.1 % causing people with salaries in USD to lose 8.8 % in purchasing power (PMAb, 2011, p. 13). Hence the use of different currencies for income is of great importance. By targeting the causality behind the currency denomination of wages, this essay focuses on one piece of the bigger puzzle that is difficult to analyse only with aggregated financial data.

## **2 Dollarization and currency substitution**

There is slight confusion in the terminology used within the field of dollarization that we initially need to address. The terms currency substitution and dollarization are sometimes used as synonyms and sometimes not. Currency substitution is the substitution of domestic cash by foreign cash as a medium of exchange, while dollarization is the replacement of money as cash but also as deposits and loans. So if we see a transfer where a person deposits USD and withdraws domestic currency, it would be a decline in foreign currency substitution, but not a change in dollarization (Sahay – Vegh, 1995, p. 5). Despite the name dollarization, it is not necessarily a replacement of the domestic currency by USD, but by any other foreign currency, e.g. JOD. Dollarization can be observed in different levels of the economy, for example in loans and deposits. This kind of dollarization is called financial dollarization and is normally used as a proxy for the level of dollarization in general, i.e. the ratio of all foreign currency deposits to the total domestic money supply (ibid. p. 6).

If the process of dollarization is driven by high inflation, a monetary stabilisation should lead to de-dollarization. However, this is not always the case. Many countries in South America have experienced what is called dollarization hysteresis. This means that foreign currency keeps on being used despite lower and stable depreciation rates of the domestic currency (Calvo – Vegh, 1992, p. 12f).

### **2.1 *The real return differential and avoidance of currency mismatch***

The phenomenon of a foreign currency replacing a domestic currency is well known. As many restrictions were lifted on trade in foreign currencies in Latin America in the 1970s, a successive process of dollarization started. The foreign currency initially



replaced domestic money as store of value and unit of account, but continued thereafter by replacing it as medium of exchange. The opportunity cost of holding domestic currencies rises in the event of very high inflation. The real return differential caused by different real interest rates, in combination with risk aversion, drives this process, and not the nominal interest rate (Sahay – Vegh, 1995, p. 1).

Sahay and Vegh base their paper on transition economies in Eastern Europe and Mongolia on experiences from Latin America. What they encounter is a high cash-to-deposits ratio in all countries. This is a sign of low confidence in the banking sector and that a majority of the financial intermediation is informally organised. The countries experience high inflation rates as a result of the relief from regulation and end of communist rule. As disinflation policies are conducted, price-levels are stabilised. Some countries manage to reverse the dollarization of the economy, but many experience a hysteresis effect (ibid. p.14). The authors see dollarization as a portfolio investment, and this is the key to understanding this effect. Only when real interest rates on domestic deposits and cash are higher than the foreign ones will a reverse process take place (ibid. p. 15f). The level of dollarization also affects the effectiveness of the disinflation policies. A decrease in the domestic money supply will have a weaker effect on the economy as a whole. Thus the process is also dependent on, apart from interest rates, the effectiveness of the institutions governing the money supply and the confidence in the political rule (ibid. p. 22).

Neanides and Savva (2009) search for the short-run determinants of financial dollarization of both loans and deposits in a selection of transition economies. The correlation is rather high between loans and deposits, as banks try to balance their assets and liabilities not to be biased towards one currency. This results in higher volatility caused by eventual exchange rate fluctuations. The authors try to determine differences between less and more dollarized countries, but find no strong evidence for such a difference (p. 1861). Inflation is just weakly linked to the demand for foreign deposits in the short-run. Instead a change in exchange rate and in the size of the monetary base has a stronger impact. The tendency to use foreign currency for portfolio purposes is not observed among savers. The speed of adjustment for balancing the balance sheets is significant and shows a strong link between depositing and lending (ibid. p. 1863). The same forces, exchange rate and monetary supply, on the other hand, drive lending oppositely compared to deposits. Additionally, nominal interest rates differences

between domestic and foreign deposits and loans play an important role. Banks use this to achieve balance in currency denomination of liabilities and assets. If banks have access to the international financial market, they show a less balanced balance sheet in regard of currency denomination. The international market is instead used to hedge for the biased willingness to deposit but not to lend in the foreign currency (ibid. p. 1867).

## **2.2 Network effects**

Money has the characteristics of a network good, which means that the value of a product increases with the number of users. This increased value can be called a network effect (Stenkula. p. 13). A dollarization ratio above 60 % is irreversible because of the network effect. That means that the benefits of many users using the same foreign currency are greater than the benefits of changing back to the domestic currency (Feige – Dean p. 21).

Uribe (1997) explains dollarization and the hysteresis effect with *dollarization capital*. This capital is formed by the experience of using other currencies than the domestic for transactions and savings. Acquiring this experience is associated with a cost and will normally restrain people from using other currencies. However, if inflation rises too high, the benefits of using a foreign currency will outweigh. If the inflation decreases and is stabilised, this dollarization capital will gradually decrease among people (p. 186, 192f). People who are used to parallel currencies have systems for payments and an overview of the changes in exchange rates.

Dowd and Greenaway (1993) also use the network effect to explain the phenomenon, but their main point is not to explain the mechanisms behind it. Instead, they simply use the number of users of a currency as an exogenous factor. They assume the network effect to be increasing, but the marginal utility effect to be diminishing with each additional user (p. 1181). The network effect is one factor in the proposed individual utility function determining the desired currency. Besides the network effect, there are the non-network costs and benefits such as the inconvenience of holding money or a gold standard. The change of currency is associated with a switching cost, which has to be outweighed by the benefits of a greater network (p. 1184f).

Neven Valev (2010) analyses the monetary economy of Bulgaria, which had a very unstable domestic currency (Lev) and the economy began dollarizing as the constraints

of the currency market were relieved in the early 90s. Even though the Lev later was stabilised, the USD and the Euro were still kept in circulation (p. 227f). He tests the two main theories, highest real return (or high domestic depreciation) and the network effect (ibid. p. 225). He shows that the network effect had a strong influence, while the expected risk of depreciation was less supported (ibid. p. 230).

### **2.3 Personal preferences**

It is normally assumed that money is neutral and only used for valuing and to postpone consumption. Therefore, currencies are supposed to progress into completely exchangeable intermediaries, causing transaction costs to decrease. Deviations from this tendency would be caused by market failures such as bad monetary policies or hoarding. Money as such is often supposed to be free from the social and cultural context (Seyfang, 2000, p. 231). Theories of the mechanisms behind the emergence, development and choice of currency are rather poorly developed. Despite the fundamental role of money in economic thought, it has been treated with less interest than many other issues (Stenkula, 2003, p. 3).

Most of the studies on dollarization and the hysteresis effect look at aggregated data for whole nations. There are some exceptions that use a more individualised approach though. Jonung and Vlachos (2007) analyse the Swedish referendum on the introduction of the Euro 2003. When looking at the preceding debate, economists tend to analyse the costs and benefits on an aggregated national level while the campaigners were focusing more on a distributional level (p. 16, 20f). People tend to vote according to the campaigners' argument and to their own expected costs and benefits. For example, people in areas with high export exposure were more negative towards the Euro than others. The authors assumed that people, even though they had much international dependence, preferred the possibility of a depreciation of the currency to improve the international competitiveness (p. 72f). This concludes that different agents might have different incentives to use different currencies.

### **2.4 Dollarization as inflow of foreign currency**

Most theories deal with the individual demand side of the dollarization process. Melvin

and Ladman (1991) are an exception with their study of Bolivia. The inflow of foreign currency into the monetary market is related to the illegal market on coca. USD-denominated loans from local lenders increase during harvest time for coca and this is associated with an increase in the inflow of money from abroad. This can also be of importance to other countries with an important informal sector (p. 762). Another study of the inflow of foreign currency as a driver of dollarization is Brown et al (2010). They compare bank loans in foreign currency with domestic and see that both the inflow and demand affect the market for money. The lending is partly driven by the amount of foreign currency deposits and by lenders scepticism about the local currency (p. 33). A main factor determining the firms demand for loans in foreign currency is the main currency for income. This shows that demand is partly dependent on the inflow of foreign currency to the company (p. 23).

### **3 Background**

I will not present a complete historical review of the contemporary history of the PT. Instead I will try to give a picture of the Palestinian monetary economy. Initially it is necessary to define the geographic area for this study. Most articles and the reports from the Palestinian Monetary Authority define it as the land that once belonged to Jordan and Egypt (i. e. Gaza and the West Bank), but was lost in the war of 1967. Most data though does not cover the Israeli settlers in this area. Hence, this essay will deal mainly with the situation in the areas governed by the PNA.

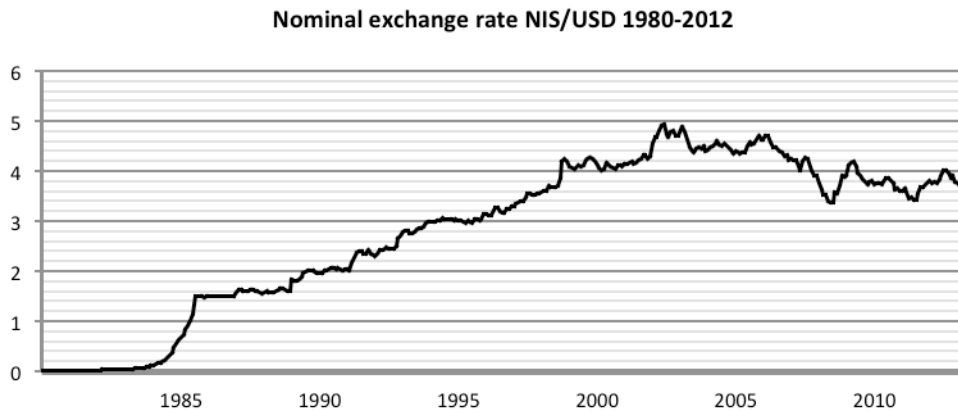
#### **3.1 Currencies in the Palestinian territories: 1967 and onwards**

Historical data from 1967 to 1987, according to *The Palestinian economy (1997)*, are not very well documented. The Palestinians did not have an independent central bank during that time and could not issue domestic money. Thus no data on money supply or nominal interest rates is available. The financial system was underdeveloped and most of the money was held in cash. The Israeli currency<sup>3</sup> was used for most transactions, as trade and incomes were associated with Israel. The JOD was more reliable than the

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<sup>3</sup> The Israeli currency was renamed several times after 1967. The present name, New Israeli Shekel (NIS), was established in 1985

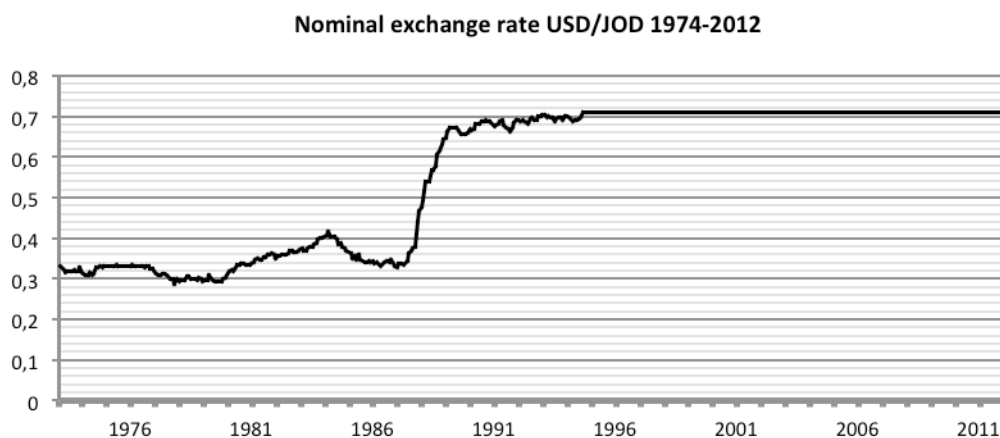
Israeli currency and thus used as a store of value. Both currencies were pegged to the USD (Arnon, 1997, p. 138-142). The Israeli currency went from a depreciation of 2% per year in 1967 to 500% in 1984. This hyperinflation was met by political action in 1985-1986 and stabilised in the years after (Fischer, 1987, p. 275, 278). The fixed exchange rate regime was then replaced by an inflation targeting monetary policy. Figure 1 shows the dramatic impact that the inflation had on the exchange rate in the mid-1980s.



**Figure 1**

*Source: Bank of Israel*

Figure 2 shows the exchange rate of the JOD from the mid-1970s until today. The fairly stable exchange rate to the USD until the end of the 1980s made it a good store of value for Palestinians. The great shift in 1989-1991, caused by the central bank in Jordan devaluing the currency, meant a loss for Palestinians holding their savings in that currency (Bennett et al, 2003, p. 48). The JOD has successively lost its importance as a store of value to USD since the financial markets in the PT were opened up from the



**Figure 2**

*Source: Central bank of Jordan*

mid-1980s and after the devaluation (Bennett et al, 2003, p. 48). The economic influences from abroad increased in the mid-1990s as a result of the increased Palestinian independence and emigration. Foreign aid was given mainly in Euros or USD and remittances were sent mainly in USD. NIS was still the main medium of exchange, while USD was used more and more for rents and real estates (Beidas – Kandil, 2005, p. 10, 12).

Different currencies are used and thus dollarization capital exists in the PT. People have long been used to dealing with different currencies and to switching between those. It is important to have a reliable institution of issuing money to build trust in a currency. If this is not the case, deregulation of the financial market allows for an increased use of foreign currencies.

### ***3.2 Legal tenders in the Palestinian territories***

An important thing to bear in mind when studying currencies in the PT is the status of the JOD and NIS as legal tenders. This means that at least two currencies have to be accepted by the PNA as payment of fees and taxes, but also for transactions with banks. In the year 1994 two agreements were signed, one with Israel and one with Jordan. The Jordanian agreement was signed in January and stated JOD as the legal tender of the PT:

The Jordanian dinar ["JD"] will remain a currency, besides other currencies used in the PNA territory and as legal tender of payment for all purposes including official transactions. The PNA, its establishments, local authorities and banks accept the JD as a legal tender of payment in any transaction.

Agreement with Jordan (1995)

The agreement signed with Israel in April has a similar paragraph that allows NIS as legal tender next to other circulating currencies in the PT until another agreement is made:

The New Israeli Sheqel (NIS) will be one of the circulating currencies in the Areas and will legally serve there as means of payment for all purposes including official transactions. Any circulating currency, including the NIS, will be accepted by the Palestinian Authority and by all its institutions, local authorities and banks, when offered as a means of payment for any transaction.

Gaza-Jericho protocol “Paris Protocol” (1994)

These agreements state that the two currencies are legal tenders besides any other currency used. The agreements do not directly force any individual to use these currencies, but imply that the PNA are obliged to accept payments made in JOD and NIS. The Paris Protocol also denies the PNA the right of issuing an independent currency, unless agreed upon with Israel. Taxes collected by the PNA can thus be paid in either of the two currencies. However the income to the government from taxes is only partly collected within the borders of the PT. The Israeli authorities collect income taxes from Palestinian workers in the Israeli territories, though only in NIS. This tax goes partly to the PNA. Table 1 shows the income and expenditures of the PNA. Taxes are not shown explicitly, but the table clearly shows that around 65 % of all incomes are in NIS. The expenditures are also dominated by NIS, but USD, JOD and even other currencies are used.

<b>Public sector; revenues and expenditures 2010 sorted by currency</b>					
	<b>Revenues</b>		<b>Expenditures</b>		
	Value in thousand		Value in thousand		
	\$	Percentage	\$	Percentage	
<b>NIS</b>	2147.7	64.9	2444.7	86.8	
<b>USD</b>	220.6	6.7	126.7	4.5	
<b>JOD</b>	18	0.5	210.5	7.5	
<b>Euro</b>	635.9	19.2	19.2	0.7	
<b>British Pound</b>	277.7	8.4	11.9	0.4	
<b>Egyptian</b>					
<b>Pound</b>	8.1	0.2	3.5	0.1	
<b>Other</b>	0	0	0	0	

Table 1

Source: Ministry of finance Palestine

A monetary authority was established through the Paris Protocol. The Palestinian Monetary Authority (PMA) was supposed to build up an institution able to shoulder the role of a central bank in the future. This authority was set to supervise all banks in the

PT, local as well as foreign (Arnon, 1997, p. 144-146). However, it is important to keep in mind that even if there is no formal domestic currency, the NIS is dominating in the PT. With an inflation targeting monetary policy and a close tie between inflation in Israel and the PT, the Bank of Israel has to take the money demand of the Palestinians into account. The difference to a domestic currency is that neither the PNA nor the PMA can reap the fruits of the seigniorage (ibid. p. 156, 162).

### 3.3 Deposits and loans and capitalisation in foreign currencies

The PMA collects data on deposits and loans for both the banking and non-banking sector, i.e. private and governmental. Figure 3 shows non-banking sector data.

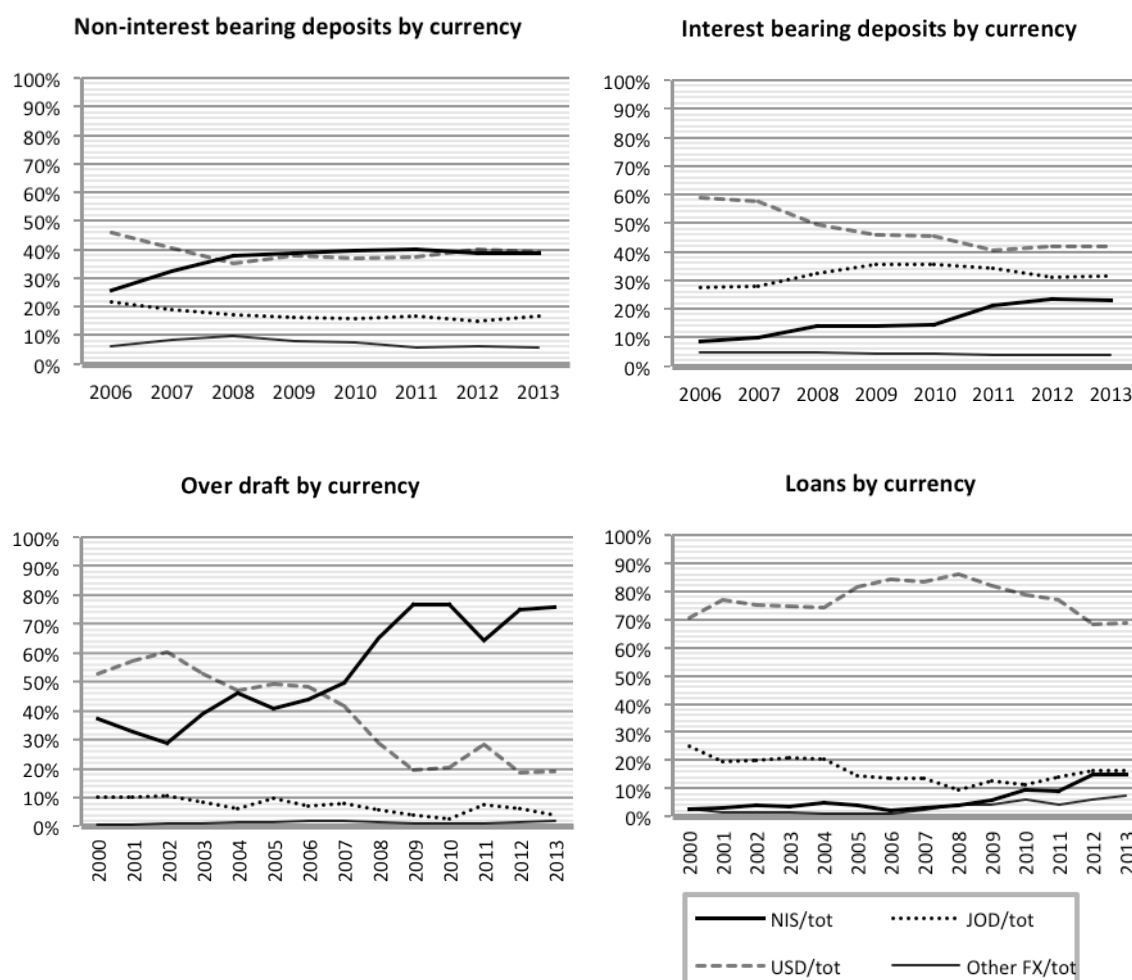


Figure 3

Source: Palestinian Monetary Authority

Deposits are divided between interest and non-interest bearing accounts, while credits



are divided between overdraft and loans<sup>4</sup>. Some conclusions can be drawn from the figure. Financial dollarization is evident in the PT and thus confirms that there are users of different currencies and dollarization capital. USD and JOD are dominating as currencies for savings shown by the interest-bearing deposits, which confirm that these currencies are used as store of value. An increasing tendency to use NIS compared to USD is observable when looking at overdrafts and non-interest bearing deposits. As these accounts are used mainly for daily transactions, this indicates that NIS is used increasingly as a medium of exchange. The increase might also indicate that the use of NIS for incomes is increasing. Comparing the currency ratio for loans and interest bearing deposits shows a mismatch. In accordance to earlier studies, this indicates that banks in the PT are using the global financial market to compensate for the currency bias between saving and borrowing.

Most of the loans are in USD and can be explained by the nominal interest rates shown in figure 4. The interest rate on loans in USD is lower than NIS and JOD during the entire time period. However, this is not observable for deposits. Most of the deposits in interest bearing accounts are denominated in USD, even though the USD generally has a lower nominal interest. This indicates that there are different mechanisms for dollarization of deposits compared to loans.

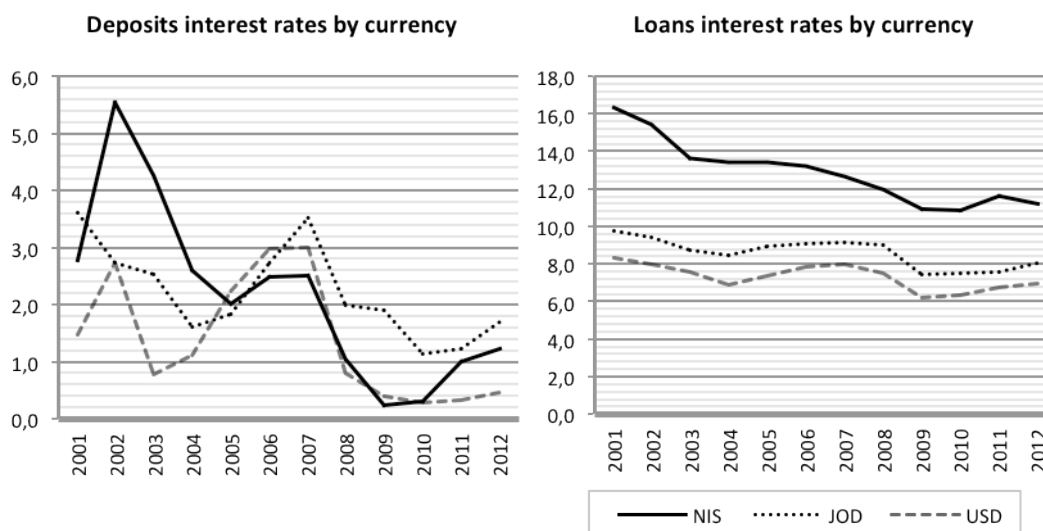


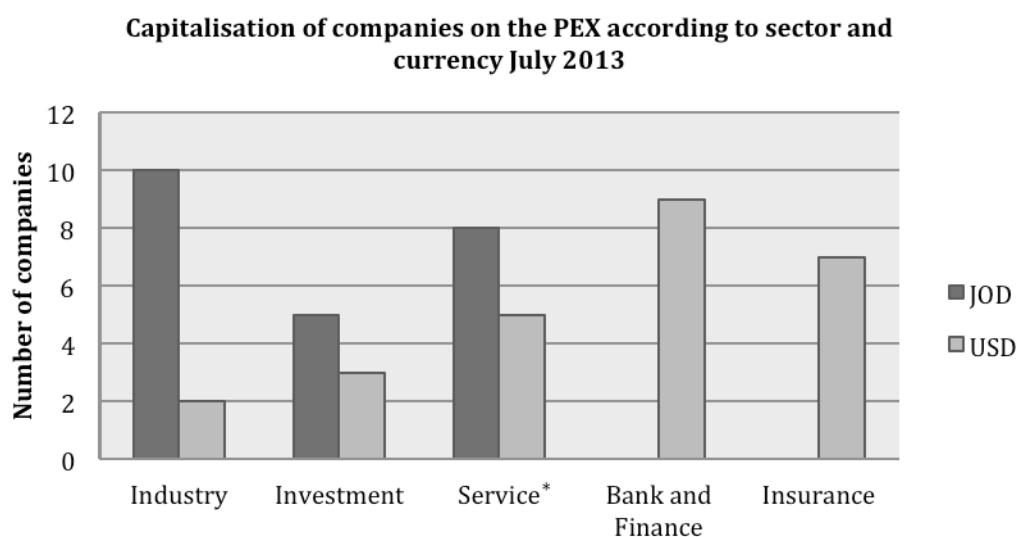
Figure 4

Source: Palestinian Monetary Authority

Enterprises registered on the Palestinian exchange are shown in figure 5. The

<sup>4</sup>Note the different time span for the deposits and loans; credits have been recorded since 2000 but deposits only from 2006 by different currencies.

companies are divided between sectors and currencies. JOD and USD are the main currencies for loans and store of value, and thus the capitalisation of the companies shows the same pattern. All registered companies at the Palestinian exchange are capitalised in one of these currencies.



**Diagram 5**

Source: Palestine Exchange (PEX)

\* The service sector includes real estate owners, telecom and electricity companies

## 4 Theoretical framework

Previous studies are the foundation of the theoretical framework. Dollarization, currency substitution and the hysteresis effect have often been explained by analysing the general demand for different currencies. However, as shown in the study by Brown et al, Melvin and Ladman, Jonung and Vlachos, different agents and seasons will affect the demand and inflow of foreign currency. Studying wages is an attempt to shed light on one of the nodes in the circulation of money and an important source of money inflow into the monetary market. As this is a new approach to the study of dollarization, there are no standard analytic tools. Thus a summary of the reviewed theories from chapter two will be used to examine the Palestinian case.

### 4.1 The model

The theoretical framework is based on the theory presented by Stenkula (2003). His model in its original form has two currencies, A and B. It is assumed that one individual

can only choose one currency at a time. In reality, especially in the PT, people use more than one currency simultaneously. However, wages are normally not paid in different currencies unless the person has more than one job. The model is extended to cover more than one currency. Each individual,  $i$ , has a utility function for each currency  $k$ ,

$$U_{ki} = k_i + f(N_k).$$

$k_i$  is the individual parameter that takes the personal preference for currency  $k$  into account.  $N$  is the total number of users of currency  $k$ . The function  $f(N_k)$  increases with every additional user, but has a diminishing marginal effect. It responds to the network effect of money and the utility it gives to the individual (p. 15). If the utility of using currency  $j$  is equal to the use of another currency  $k$ , the individual is indifferent to the choice between these currencies. If the utility of using currency  $j$  exceeds the utility of using any other  $k$  currency,  $U_j^i > U_k^i \ j \neq k$ , this currency will be preferred.

The main benefit of this model is the individual parameter. Earlier contributions to the model assumed it to be negative because of the inconvenience of storing and handling money. Stenkula extends it to be either positive or negative depending on the personal preferences (p. 16). If preferences are highly heterogeneous and the value of the network effect is not strong enough to keep all individuals using one currency, a state with parallel currencies would emerge (p. 20). The parameter  $k_i$  can be defined as:

$$k_i = \alpha_k + \beta x_k + \gamma_k z_i + \delta_k w_{ik}$$

$\alpha_k$  is an intercept for each currency.  $\beta$  is a generic coefficient with a variable  $x_k$  that changes according to the choice but not to individual, i.e. alternative specific variable.  $\gamma_k$  and  $\delta_k$  are coefficients dependent on the choice of currency. These are different in their associated variables.  $z_i$  is a variable that changes with the individual, i.e. individual specific variable.  $w_{ik}$  is dependent on the choice of currency, i.e. choice specific variable. This definition of the personal preferences enables a multinomial logit analysis (Croissant, 2012, p.7f) (Greene, 2002, p. 719f). The distinction of variables

enables a separation between those affecting all agents in a similar way, e.g. the business cycle, individuals differently, e.g. main currencies for income, or variables that are the same across individuals but may affect each individual differently, e.g. exchange rate.

## **4.2 Divergence of utility in the negotiation of salary**

The decision of the currency denomination for wages is made in the negotiation of salary. Two categories of individuals have to make a compromise, the employer and the employee. Each agent will have different utility of different currency denominations. The choice of currency is, according to chapter 2.1, partly dependent on the highest real return. The highest real return depends in this case on the exchange rate, but also on the use of different currencies by other agents, i.e. the network effect from chapter 2.2. Thus agents have three main concerns when it comes to the choice of currency; maximise real income, minimise money exchange costs and reduce the risk of a negative currency mismatch between income and expenditure. Total income valued in currency  $k$  for individual  $i$  can be defined as:

$$Y_i = \sum_{j=1}^k (Y_j \cdot S_{j/k})$$

$Y$  is income and  $S$  is the exchange rate.

Total expenditure will depend on the value of total income but also on the mismatch between the currencies for income and expenditures, which causes a cost of money exchange. If expenditures are fixed, there is also a risk that the income will be insufficient to cover the expenditures. This risk is similar to the one observed by Neanides and Savva and the banks behaviour in the short run. The budgetary balance,  $m$ , can be defined as:

$$m = Y_i - C_i - T_i = \sum_{j=1}^k ((Y_j - C_j) \cdot S_{j/k}) - \sum_{j=1}^k (|Y_j - C_j| \cdot T_j)$$

$C$  is expenditure and  $T$  is the transaction cost of money exchange caused by the mismatch between income and expenditures. All agents will try to maximise this balance in the negotiation but at the same time try to reduce the risk of a negative mismatch. Hence, depending on the currency for income, expenditures and the need of money exchange, the exchange rate might not affect all individuals equally. The dispersion between the employer and the employee is evident though. If the exchange rate of the currency used in the wage contract appreciates, it will benefit the employee but not the employer and vice versa.

### **4.3 Using the framework**

The utility function in chapter 4.1 is a formalization of the total decision of the individual concerning preferred currency. Total income and budgetary balance from chapter 4.2 describe the highest real return and the risk of deficit or surplus caused by a mismatch in income and expenditures. These factors are just parts of the total decision, though the most important factors according to earlier research. The introduced models are supposed to highlight the difference in utility of different individuals reflecting the findings presented in chapter 2.3. The outcome of the wage negotiation will also be dependent on the market power of the negotiating parts, the possibility of compensating excessive expenditure caused by a negative currency mismatch or the ideology of the employer. This determines who controls the inflow of foreign currency into the economy and keeps it in circulation.

## **5 Method**

Financial dollarization is often used to measure total dollarization, for example by the IMF (Feige – Dean, 2002, p. 6). If the ratio of foreign cash in circulation is small or the ratio in circulating cash is similar to the ratio in foreign currency deposits, the measurement would be fairly good. However, it appears that financial dollarization underestimates the level of dollarization compared to their studies of transition economies (ibid. p. 13). Hence, there is a need for measuring the foreign currency in circulation differently than by using foreign currency deposits (ibid. p. 8). Instead of financial dollarization, data from the Federal Reserve on registered flows of USD

between USA and the observed countries is better (ibid. p. 9) (see also Kamin – Ericsson, 2003, p. 190). The financial intermediaries and institution in the PT are, as in many other developing countries, underdeveloped and the use of financial dollarization is not a suitable proxy. The financial sector has improved since foreign and Palestinian banks were allowed in the PT. Even the establishment of the PMA, through the Paris protocol, has improved the banking sector (PMAa, 2011, p. 37). But still, the rate of cash to deposits is higher than in developed countries, which might indicate distrust in the banking sector and unattractiveness caused by low yields for depositing money in the bank (PMAc, 2011, p.13).

Data on currency flows from the Federal Reserve is unfortunately not available for the PT. There is also a lack of data on the use of different currencies for wages in the PT that can be used externally, though collected by the Palestinian central bureau of statistics. Thus this study relies on interviews of two different kinds: interviews with representatives from different institutions in the society and financial managers from four different schools. There is no intention to test the models econometrically here as there is just a small amount of data.

### ***5.1 Interviews with representatives of different institutions***

Representatives from different institutions and umbrella organisations are chosen to answer questions regarding the use of different currencies for wages and affiliated concerns. The representatives are selected in order to cover a broad spectrum of different perspectives and backgrounds. The interviews are carried out in person and not by phone or e-mail. The interviewees are normally met at their working places. The questions are listed in table 2.

<b>Questions for the interview of representatives of different institutions</b>
A. How common are wages in different currencies?
B. Is a fixed exchange rate common in wage contracts? Is this negotiated?
C. Which sectors are dominated by which currency?
D. Are workers/employers worried about the development of exchange rates and the use of different currencies for paying wages?
E. How has the use of different currencies developed historically?

**Table 2**

Questions A and C examine the spread of foreign currency use in the society and among sectors. This determines if the wages in certain currencies are more common in sectors with the same currency as main income. This corresponds to minimising money exchange costs and reducing the currency mismatch risk. This also shows if these are sectors with more high skilled labour and thus with stronger market power of the employees. Questions B and E examine when and how a change of denomination takes place. This corresponds to reactions towards fluctuations in the exchange rate and who will be the stronger to determine the reaction to the exchange rate. Question D examines which agents are concerned by the issue of different currencies and if this corresponds to being the weaker part in negotiating.

The interviews are presented by comparing the most common answers in order to see the general pattern. Deviating answers are presented as contrasts to the general tendency. The interviewer records the interviews by summarised notes. The interviews have a semi-structured character that enables comparison but also allows for more detailed answers. Using face-to-face interviews is necessary in a cultural context where the personal meeting is very important. No matter if the questions are of a sensitive nature, the interviewee might be restrictive in answering questions by phone from an unknown interviewer. The language barrier is also avoided or reduced by a personal meeting.

## ***5.2 Interviews with financial managers***

A minor comparison of a selection of similar institutions is also used to complement the picture given by the interviewees and to illustrate the different solutions to the currency denomination issue. The institutions are four private schools in the same area in Bethlehem and they are surveyed according to the questionnaire presented in appendix 1. The questions mainly concern the use of different currencies for income, expenditure and wages. The reasons for choosing private schools are their tendency of using foreign currency for salaries in different ways, and their organisational similarities. The accountant or financial manager at the institution is surveyed in order to examine the currency denomination of the wage contracts and how it relates to other factors like main income currency.

## 6 Results from the interviews

The interviews with the six representatives and their organisations are presented first. The selection covers smaller industries, workers, bigger companies, NGOs and farmers. Their replies are thereafter summarized in two main categories; description of sectors and the spread of different currencies, and the negotiation and fixing of the exchange rate. The answers are summarised for each individual in appendix 2. Then the interviews from the schools are summarized. Financial managers or accountants from four private schools have been interviewed according to the questionnaire in appendix 1.

### 6.1 Interviews with the institutional representatives

The selection of interviewees covers a broad spectrum of the Palestinian society. Most of the interviewees show a high grade of accordancy with each other. Table 3 shows the interviewees and their respective organisation with a short description for a better overview.

Overview of the interviewees			
Name	Organisation	Position	Short description
Mahmoud Aboudeh	Palestine general federation of trade unions (PGFTU)	Member of the executive committee and secretary of the legal department	The PGFTU is the major trade union in the PT and organises all categories of workers.
Dr. Odeh Al-Zaghmouri	Palestinian federation of industries (PFI)	Secretary general	The PFI is a federation of producers from, among others: food, stone, chemicals, metal and textile industry
Dawood Hammoudeh	Palestinian Farmers union (PAFU)	Executive director	The PAFU gathers mainly land and cattle owners and some food processors
Jumana Khoury	Palestinian international business forum (PIBF)	Main representative	The PIBF is a network for improving the private sector and the enforcement of international trade contacts.
Fida Musleh/Azar	Palestine exchange (PEX)	Manager of the representative office	The PEX is the stock exchange in the PT with the major big companies in the PT registered.
Issa Smeirat	National institutions office and Applied research institute Jerusalem (ARIJ)	Affiliated worker	The National institutions office is a public organisation for supervision of NGOs in the PT and the ARIJ is an independent research institute.

Table 3



### **6.1.1 Description of the use and spread of different currencies**

The public sector and workers in the Israeli settlements and agriculture are all paid in NIS according to all informants. Even some industrial sectors like the stone quarries pay in NIS according to Smeirat. Most of the informants agree that the use of other currencies than NIS is common within certain sectors. Banks, universities, insurance and investment companies, and bigger firms use JOD. Sectors using USD are similar to those using JOD; banks, some private universities (Bethlehem and the American university in Jenin), bigger firms and NGOs, both international and national.

Two informants deviate from the others when it comes to the spread of using different currencies. Aboudeh and Khoury do not share the view that the use of different currencies is widely spread, though their answers not only deviate from the others but also from each other. Aboudeh claims that NIS is used to 99% for all wages while Khoury says that the main currency is USD and sometimes JOD. Al-Zaghmouri says that just a few firms are using other currencies than NIS. The firms using USD or JOD are those firms that have their main income in one of these currencies. Smeirat shares this view when he exemplifies with the stone quarries. He says that the reason why they pay their salaries in NIS is because they have their main export of stone to Israel. Other sectors, only mentioned by a few, are the ICT-sector, travel agents and some hotels.

Hammoudeh claims that prices on land and cattle are normally set in JOD, while workers in the cattle farms are not paid in JOD but NIS. He adds that even if JOD is used for pricing, the actual transaction is often made in NIS. One reason for this is the psychological factor that prices will look smaller if they are denominated in JOD or USD instead of NIS. He says that this is the case with many contracts that are denominated in JOD or USD, though paid in NIS. Musleh/Azar explains that the companies registered in the stock exchange are either capitalised in USD or JOD. The PEX was previously valued in JOD, but has recently changed to USD. This means that USD and JOD are used for buying and selling stocks and paying dividends.

### **6.1.2 The negotiation of wages and the choice of currency**

It was beneficial for the employees to receive their salary in USD or JOD before the depreciation of the USD in the mid-2000s. In the end of 2007 people started to get worried and put pressure on the employers to fix the exchange rate to NIS in the wage

contracts. All interviewees agree that the employer makes the final decision of the denomination or fixing of the exchange rate. Al- Zaghmouri says that fixing the exchange rate is never a decision wanted by the employer as the fix only protects from depreciation but not from appreciation<sup>5</sup>. It should be viewed as leverage to benefit the employees. Smeirat says that the fixed exchange rate could come from the initiative of the employer, but it is more common that the initiative comes from trade unions or independent employees. Khoury says that exchange rate fixes are rather uncommon in the sectors where she has insight. Generally the employer makes the final decision after pressure from the employees. If the employees do not ask for a change, this will not happen.

There were strikes among workers in the hotel management sector, according to Aboudeh, in order to fix the exchange rate. Workers with low wages have been very worried as they see their income decrease each month. However, Aboudeh says, most workers receive their salaries in NIS and they have oral agreements. Oral agreements are hard to negotiate and can be changed more often. The industries using a fixed exchange rate, says Al-Zaghmouri, try to remove this fix and make a one time wage increase to compensate for this. Only Aboudeh and Al-Zaghmouri mention that workers/employers are worried about the existence and the fluctuations in exchange rates. All other interviewees claim that most people are not worried about this issue. According to Hammoudeh, only bigger companies are involved in the trade and hedging of different currencies, especially those with market power. This is partly caused by the strong financial ties to the Jordanian economy and the possibility of funding in JOD. Low skilled workers will have more problems in introducing a change in the wage contract. Smaller enterprises will be more concerned with fixing the exchange rate than bigger companies.

## **6.2 Interviews with the financial managers**

The schools represented in the interviews are of different size but all with strong ties to other organisations abroad. SIRA-school is a special education school with funding from Sweden. Talitha Kumi is a German school, reaching from kindergarten to high

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<sup>5</sup> The fixed exchange rate is typically a lower bound. If the real exchange rate depreciates below this, the fixed exchange rate is used, but not the opposite.

school. The Good Shepard school is a part of a Swedish association with ties to the Swedish church. The Latin schools are two schools that belong to the Catholic Church. The results of the interviews are presented in table 4. Only a selection of answered questions is reviewed.

	<b>SIRA-school</b>	<b>Talitha Kumi</b>	<b>Good Shepard</b>	<b>Latin schools</b>
<b>Number of employees</b>	20	>100	45	70
<b>Currency for wages</b>	USD	NIS (wage contract in Euro)	NIS (USD ten years ago)	NIS (JOD three years ago)
<b>Main currency for income</b>	USD (school fees in NIS)	Euro (but also NIS through school fees)	USD (school fees in NIS)	NIS (in the past JOD)
<b>Main currency for expenditure</b>	NIS (except for wages)	NIS	NIS	NIS
<b>Bank accounts</b>	NIS, USD	NIS, USD, JOD, €	NIS, USD	NIS, USD, JOD, €
<b>The fix was introduced</b>	Approximately five years ago	They didn't know when	Maybe ten years ago	Six years ago
<b>Comments</b>	The fix was introduced in order not to lose competent staff	Salaries can be paid in Euro, but then without the fixed exchange rate	Donation from abroad will be transferred in NIS starting from next year	The transition from JOD to USD was decided centrally through a cost-benefit analysis concerning employees as well as the school

**Table 4**

Three characteristics can be distinguished. First, the main currency for income and the currency for wage payment have been the same until some years ago. Second, in the aftermath of the stabilised NIS and the depreciating USD (and thereby the JOD), the wage is either fixed or changed into NIS by these schools. Third, the currency denomination in the wage contract must not be the same as the currency of payment. These interviews illustrate that all schools are reacting to the depreciation of the USD in accordance to the replies from the institutional representatives. The solutions, though, are set at different times and in slightly different ways.

## **7 Analysis**

The analyse is built upon three parts: comparing sectors using the same currency for

wages, external forces and internal forces driving the change of currency denomination of the wage contract. The fourth chapter tries to point out a complementary approach to the dollarization hysteresis.

### **7.1 Common features of employers using the same currency**

The main common feature of the sectors using different currencies for wage payments is their main currency of income. Employers that are using NIS for wages are: the public sector, agriculture, small enterprises and stone quarries. These are all firms and organisations that are mainly producing for the domestic market or Israel and are thus being paid in NIS. The revenues and expenditures of the public sector are shown in table 1 chapter 3.2. The table clearly shows that the main currency for income is NIS.

Employers using JOD or USD show the same pattern. Universities state their tuition fees in either JOD or USD. Banks and other financial institutions receive their revenues either from lending or investing. Figure 3 in chapter 3.3 shows that the vast majority of the lending is in USD and to a smaller extent JOD. This means that the banks' income from interest is in USD or JOD. The pattern is also confirmed by the interviews with the financial managers at the different schools. The main income currency and denomination of wages were the same, at least before 2008. The capitalisation on the Palestinian exchange, shown in figure 5 in chapter 3.3, correlates with the information given by the interviewees; bigger companies, banks, insurance and investment tend to use JOD or USD for wage contracts. Investment, insurance and other big companies invest their money in financial assets like stocks. The dividends, and thus the incomes, are paid in JOD or USD. International and national NGOs are assumed to pay their salaries in USD and sometimes Euro. This can be exemplified with the case of the Palestinian farmers union (PAFU). The PAFU was using USD until recently when they changed to Euro. The main reason, according to Hammoudeh, is the increase in funding from the EU. This in turn changes the currency of denomination for wages.

The two deviating answers, from Aboudeh and Khoury, might be explained by the perspectives and the experience of the organisations they represent. Aboudeh is primarily concerned with the situation of low-income workers, who tend to receive their income in NIS. This explains why he says that wages in other currencies than NIS are very uncommon. The opposite would be the case for Khoury. She works as a consultant

for NGOs and bigger companies. Her experience reflects the dominating use of USD and JOD in these sectors.

The first conclusion we can draw is that companies try to match the revenues with the expenditures to reduce the risk of a mismatch caused by the fluctuations in exchange rates. Many companies are settling contracts for longer terms and a mismatch could be devastating if the exchange rates change in an unpredicted way. Hence, the main currency for income is likely to be positively correlated with the choice of currency for wages. The variable is individual specific as it differs among employers.

## **7.2 Change of currency in the wage contract**

A wage contract is normally fixed for a period of time, for example one year. If the currency of the wage contract is depreciating, this means that the real wage is decreasing, assuming that prices are in another currency. Figure 1 in chapter 3.1 shows the fluctuation in the exchange rate. It was beneficial for the employees to receive their income in USD or JOD before the depreciation of the USD that started around 2006. The interviews, both with the representatives of the institutions and the financial managers of the schools, indicate that a change in the denomination of currency has and is taking place. Many employees made demands to change or fix the exchange rate and some employers fixed the exchange rate or switched completely to NIS. The interviews show clearly that the exchange rate has an impact on the denomination of the wage contract, as a majority of them mention the changes and the following fix of the exchange rate. The depreciation has to reach a certain level before a switch will prevail. However, the depreciation is beneficial for the employers, especially if their main income is in NIS; none of the interviewed indicated that employers have switched from NIS to USD.

The second conclusion is that depreciation in the currency used for wage payment will reduce the budget of the employee, which will create an incentive to change the currency denomination. At the same time, a change to NIS, either formally or informally<sup>6</sup>, would raise the employer's risk of a negative mismatch in income and expenditure if the main currency of income were USD or JOD. This will create an

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<sup>6</sup> The wage will, in real terms, respond to a fixed nominal value in NIS by fixing the exchange rate but keeping the denomination

incentive to keep the denomination. Hence, the exchange rate is a case specific variable but the marginal utility will have different signs depending on whether the individual is an employer or an employee.

### ***7.3 The power to change the currency in the wage contract***

Which party is the stronger in the wage negotiation is of importance. Sectors where the wages were paid in USD or JOD before the mid-2000s, and afterwards introduced a fixed exchange rate, are most likely different from sectors where this did not happen. If an employer agrees on a less beneficial arrangement in both of the scenarios, it indicates that either the employees are stronger or the employer is driven by something other than only profit maximisation.

The sectors using JOD and USD are mainly sectors with high skilled workers, e.g. banks and universities. This means that the employees might have market power as they possess unique or rare human capital. This is shown by the easy process going from USD to NIS mentioned by Musleh/Azar and the reasoning mentioned by the financial manager of SIRA-school. If the workers' skills are less rare, as in the case of the hotel workers, referred to by Aboudeh, the process will be more difficult. The workers will then need to unite and strike in order to gain market power and push for a change.

Another interesting part is the position and values of the employer. Many of the organisations are either companies with market power or NGOs. The telecom and electricity companies have their main income in NIS as phone and electricity bills are paid in NIS. Still they pay in JOD according to the interviewees. The explanation, mentioned by Hammoudeh, is that these are companies with strong market power. This gives them the possibility of compensating for the fixed exchange rate by raising the price. This means that they are keener to accept salaries in a less beneficial currency. However, an arrangement with a fixed exchange rate in smaller companies with smaller margins might be more troublesome. As Al-Zaghmouri says, many of these smaller industries try to remove the fixed exchange rate. Other employers like most NGOs are not primarily profit maximising, but more ideologically driven. This is seen among the school interviews where all of them have another purpose, e.g. special education like the SIRA-school. Many of these organisations are funded by donations and foreign aid and are probably more likely to agree to the demand of the employees. Khoury says that

fixed exchange rates are uncommon. This might reflect that the fixed exchange rate is not used in all sectors where the wages are paid in other currencies than NIS.

A third conclusion is thus that the market power of the employees caused by rare human capital will be important. This creates a need for the employer to meet up with the needs of the employees, in order not to lose their competence. The same will be the case if the employers' main intention is to help the society; then the incentive is greater to agree with the demands of the employees. Companies with high market power might also be keener to agree with the employees as they have the possibility of raising the prices. Therefore, the employee's education and experience and the generosity and market power of the company will be individual specific variables. These variables will be positively correlated with the probability of a change in currency denomination of contracts according to the fluctuations in the exchange rate.

#### ***7.4 The hysteresis effect from a different perspective***

The hysteresis effect can be viewed in a different light from the findings of this essay. Sources of income of the employer and the possibility of putting pressure on the negotiating process will be important factors affecting whether the currency inflow will change according to the fluctuations in the exchange rates. The earlier contributions are mainly focused on aggregated theories where all individuals are the same. In reality, few individuals are identical and this might be one cause of the hysteresis effect. The school interviews also show that the reaction does not necessarily have to be a change in the payment, but only the fixing of an exchange rate from USD or JOD to NIS. However, the opposite is also possible; that the denomination is kept with a fixed exchange rate, but with payments in NIS. In this way, the foreign currency is kept as a unit of account, but will not be used as a medium of exchange. Thus, it will not affect the inflow of foreign currency into the monetary market but still affect the purchasing power of the employee.

In a scenario of competing currencies, many forces beside the exchange rate are working. NIS, JOD and USD are all well-established currencies and the network effect is probably strong enough to keep people using them. The diminishing marginal effect makes a minor change of the number of users less influential. There are some indications that the Euro is gaining more influence in the Palestinian society. The reason

for that is not an unstable domestic currency, but the benefits of single organisations and individuals. The network effect might hold back the introduction of a fourth currency into the market of competing currencies. However, with every user or organisation taking the step of using the Euro, the more well established it would be. This might increase the utility of using this currency and bring others to use this currency as well and thus start an accelerating process.

## **8 Conclusion**

The standard theories for analysing dollarized economies are too broad and are mainly based on assumptions of identical individuals. In order to answer the question of what determines the use of a certain currency for wage payments, we need another approach. Individuals might benefit from the use of different currencies. The view of the employer and the employee will differ and in the centre is the negotiation of the wage and through that the choice of currency denomination in the contract.

This essay shows that the fluctuations in the exchange rate are the primary driving force of the preferred currency for wage payment. The high depreciation in USD to NIS in the mid-2000s caused many employers to change the denomination either to NIS or to fix the exchange rate with a lower bound to the NIS. However, employers do not normally benefit from this change, and the way that the employees can bring on this change is through the use of market power. This is done either because of rare working skills or by organisation of the working force. Other factors that might contribute to a change are the market structure in the sector where the employer is working or the ideology of the employer. If the employer has the possibility of setting prices, changing the prices can cover the cost caused by compensating for the exchange rate fluctuations. If the employer is funded by donations and foreign aid, he might be keener on leveraging the decrease in real income caused by the fluctuations of the exchange rate.

Another important factor is the main income currency of the employing organisation. It is more probable that the main currency for income is the same as the currency for wage payment. This is explained by the lower risk of a negative mismatch in income and expenditure caused by the use of different currencies. A mismatch is more severe for a company with many long-term contracts than for employees that might be able to compensate for smaller fluctuations with a changed daily consumption or saving ratio.



## Appendix 1: Questions for the school interviews

### Competing currencies in Palestine: Employer survey

**Introduction:** My name is Linus Ekman and I'm from Sweden. I'm an economist and I am making a study on currencies in cooperation with Al-Quds University. As you probably already know, Palestinians use three currencies at the same time. This is rather uncommon. It is important to analyse the behaviour of people when they have to choose among three foreign currencies. This study is the first try to analyse this in Palestine and I would be very glad if you would take your time and answer this questionnaire. Your valuable insights will give science a better understanding of why people are not using one currency in this situation. If you have any thoughts about this or the questionnaire, please tell me.

<b>1. Year of establishment</b>				
<b>2. Number of employed</b>				
<b>3. Workers are mainly</b>	<input type="checkbox"/> Low skilled	<input type="checkbox"/> High skilled	<input type="checkbox"/> Don't know	
	<b>NIS</b>	<b>JOD</b>	<b>USD</b>	<b>Other</b>
<b>4. Main currency for wage payment?</b>				
<b>5. Main currency of income?</b>				
<b>6. Main currency of expenditure?</b>				
<b>7. Which currency would be most beneficial for your organisation?</b>				
<b>8. Which currency do you use for your accounting?</b>				
<b>9. In what currencies do you have bank accounts?</b>				
<b>10. Who has been deciding the denomination of currency for wage payment?</b>				
<input type="checkbox"/> The employer <input type="checkbox"/> The employees <input type="checkbox"/> Central agreement <input type="checkbox"/> Other				
<b>11. For how long has this currency been used for wage payment?</b>				
Number of years: <input type="text"/> <input type="checkbox"/> Don't know				
<b>12. Is there a compensation for changes in the exchange rates in the wage contract?</b>				
<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Don't know				
<b>13. If yes; Which exchange rate is compensated?</b>				
<input type="checkbox"/> NIS to USD <input type="checkbox"/> NIS to JOD    Other: <input type="text"/>				

Thank you for your participation. You are helping our understanding of the role of different driving forces in a situation of competing currencies.

## Appendix 2: Summary of the answers from institutional representative

Name	Issa Smeirat	Dr. Odeh Al-Zaghmouri	Mahmoud Aboudeh	Jumana Khoury	Dawood Hammoudeh	Fida Musleh/Azar
<b>Organisation</b>	National Institutions office	Palestinian Federation of Industries (PFI)	Palestine General Federation of Trade Unions (PGFTU)	Palestinian International Business Forum (PIBF)	Palestinian Farmers Union (PAFU)	Palestine Exchange (PEX)
<b>Short description of the organisation</b>	Public institution supervising NGOs.	Federation of pharmaceutical, food, stone, marble, paper and plastic industries.	The main umbrella organisation for trade unions in the Palestinian territories.	Until recently an organization mainly for big companies for promoting more international trade	The union for land and cattle owners	The Palestinian stock exchange
<b>A. How common is the use of different currencies for wage payment?</b>	Quite common, especially among some employers like foreign NGOs, banks and universities.	It is very common in international organisations, some local NGOs, and banks. Currency for labourers is only NIS. Just a few companies are using foreign currency because employers will prefer to pay the salary in the currency for incomes. This explains why some employers use foreign currency.	Not very common, 99 % of the incomes are in NIS.	Not very common, most companies are using USD or sometimes JOD	It's common within some sectors like bigger companies and NGOs	Very common
<b>B. How is a fixed exchange rate established?</b>	It depends finally on the employer. Sometimes the employer establishes this on his or her own initiative, but often it is done either through the pressure from the labour union or from the employees themselves.	This comes through the initiative of the employees; the employers don't want to have a fixed exchange rate.	Many have protested and stopped working in order to fix the exchange rate. Workers at the hotel Intercontinental strike in order to change the currency denomination.	From personal experience, this is not very common	Most of the employees in agricultural sector receive their wage in NIS, but prices for cattle, at least red meat, are in JOD. The workers are still paid in NIS. For companies like Jawaal that are using a fixed exchange rate, wages are paid in shekel even if the contract is in JOD. A reason to use other currencies can be psychological reasons. A price in JOD looks smaller than in NIS. Companies prefer to set prices as to reflect the expenditures of buying intermediate goods.	At the PEX the fix was introduced after the collapse of the US-economy in 2008. The change was requested by employees but decided by the board.
<b>C. Which sectors are dominated by each currency?</b>	USD/JOD: banks, foreign NGOs, universities (some use dollar, but normally dinars) NIS: Public sector, workers in Israel and in the settlements, many smaller companies who mainly export to Israel (for example quarries)	JOD: banks, Jawaal (and other bigger companies), insurance companies, universities USD: international organisations, local NGOs NIS: the rest	JOD: Jerusalem Electricity USD: Intercontinental and other hotels, the Arab society [a hospital funded by foreign donations]	JOD: Banking, insurance USD: companies working in ICT, investment banks, consultants, hotels (sometimes even Euro), travel agents NIS: agriculture, tourism (not hotels), local and smaller enterprises	JOD: Land itself USD: Medium to big enterprises (sometimes JOD) ICT-sector (even the ICT-sector in Israel use USD), consultants and organizations working with certifications, NGOs (some are now starting to use Euro) NIS: agricultural sector, public sector	JOD/USD: The PEX used to value the total trade in JOD, but changed recently to USD. 50/50 of the companies on the exchange are capitalized in JOD resp. USD
<b>D. Are workers or employers worried about the situation?</b>	The fixed exchange rate makes it hard for the employers. Many employers try to cancel the fixed exchange rate by raising the salary to the compensated level, and then remove the compensation.	The fixed exchange rate makes it hard for the employers. Many employers try to cancel the fixed exchange rate by raising the salary to the compensated level, and then remove the compensation.	Yes, for those with income in foreign exchange, and as prices are in shekel and most people use shekel, it has been very difficult as the wages are very low. Wages are not according to legal standards. Salaries are not connected to CPI.	There is an on-going discussion among both. Workers are more worried about their situation, while employers worry about the demands that could be raised by the workers	There are few worries among farmers about the situation of different currencies. As the JOD is only for pricing, this can easily be changed. Bigger companies are more involved in these issues in order to gain from the exchange rate changes and to hedge from mismatch. Especially bigger monopolies are trying to gain as they have control of the market, but also strong ties to Jordan.	It is not an issue at the PEX right now, but exchange rates are always a theme that concerns people as they have loans and rents in other currencies.
<b>E. In retrospective, how have wages in foreign currencies developed?</b>	Only Israeli banks were allowed since 1967. This changed in the 1980s and other banks were allowed. Foreign currency that had been used as store of value abroad was transferred back into the economy. Foreign currency continued to be used. JOD, USD; both of these were seen as stable currencies and were preferred for wages, as well as for durable goods.	USD is fairly new to be used for salaries, only the last ten years. Before that, NIS and JOD were the currencies used for wages.	Many laws, like minimum wage, have been declared by the authorities but not implemented. Most people still have oral agreements where the conditions are not very clear.	No big change the last ten years in the denomination. During the second intifada, many were fired which made people accept any conditions in order to keep the job.	USD and JOD have been used to make amounts sound less, and shekels for making from USD to euro as they had most of their incomes in euro. Therefore they are also demanding the bigger invoices to be denominated in Euro.	Before 2008, it was preferable to have USD or JOD for salaries. JOD was the most common a long time ago. Now many fix the exchange rates, but only for protection against depreciation.

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