

Remittances Impact on Economic Growth, Domestic Savings and Domestic Capital at the Presence of ODA and FDI in selected MENA Countries

Mahmoud Mohammed Sabra

Assistant Prof. of Economics, Economic Department, Faculty of Economics and
Administrative Sciences, Al Azhar University Gaza, Palestine
Email: mmsabra@gmail.com

To Link this Article: <http://dx.doi.org/10.6007/IJAREMS/v5-i1/2135>

DOI:10.6007/IJAREMS/v5-i1/2135

Published Online: 09 January 2016

Abstract

This article investigates the impact of remittances on economic growth, investment and domestic savings in selected MENA labor exporting countries. The estimations have been done in the presence of other international capital inflow, which are foreign aid and foreign direct investment. A multiple equations model estimated simultaneously using different techniques. We found a positive impact of remittances on both growth and investment, meanwhile a negative impact on domestic savings. Aid impacts negatively on both growth and savings where it finance consumption instead of investment and enhance rent seeking behavior. Government expenditure and FDI are important source of growth. We recommended that policies for encouraging final use of productive investment of remittances. In addition, enhancing more project of migrant in home country that may facilitate their trade with host countries. Finally, more efficient allocation of aid is requires, and attracting more FDI.

Keywords: Remittances, Foreign Aid, Domestic Savings, Economic Growth, Foreign Direct Investment, Gross Capital Formation and MENA countries.

Introduction

Remittances are one of the most important international capital flow besides foreign aid and foreign direct investment. In addition, remittances can be the most stable flow comparing to the other international flows. These remittances left implications on both sending and receiving countries in the economic, social and political terms. Remittances received recorded increased from 325 in 2010 to 511 billion US\$ in 2014, WB, (2012); WDI Tables.

In fact, remittances expected to have significant macroeconomic impacts, which can participate in alleviating poverty in receiving countries, where remittances increases expenditure of recipients on consumption, education, housing and health from a side, and simulates more investment, small businesses and creates more self job opportunities. On the other hand, home countries loss labor and skilled labor or brain drain, which hamper

development, but anyway remittances considered a main source of capital, investment, trade, positive impacts on balance of payments, technology transfer, knowledge and may encourage more investment in human capital in home countries. In addition, remittances can improve sender access to financial services, which increases the social and financial inclusion.

In fact, the motive of remittances can be disaggregated into two main channels, which are altruism and self interested. Pure altruism motivations, which mentioned earlier by Johnson and Whitelaw (1974), where the utility function of migrant family is a part of the migrant utility function. In other words, migrant's utility function includes the consumptions of the other members of the household left behind. These remittances normally served various purposes of migrant family such as basic needs and facing income shocks through diversifying income sources. Self interest theory indicates that remittances are still base on the family, which are business agents for migrant investment at home and this enables family members to enter into Pareto improving arrangements and acquiring some compensations as an agents. In addition, remittances may include loan repayment of finance migration through family and bequest motives from migrant to his or her family at home.

A limited work focused on remittances impact on growth, savings and investment, this also is true for the MENA area.

Our goal is to derive a model of remittances on a macro level to be estimated using simultaneously and multiple equation models that detect whether remittances impacts positively or negatively on growth, savings and investment. In other words, what is the relationship between remittances and economic growth, domestic savings and capital at the presence of other international capital flow, which are FDI and foreign aid. This would suggest the economic purpose that remittances are serving, and whether remittances are altruistic or self interest behavior.

Literature Review

A widespread debate related to remittances and migration impact on development, this debate has pointed out the motives and types of remittances and in addition, the way in which spending remittances by migrants' family left behind. The behavior of both migrants and households has a significant impact on development of home economies.

The motives of remittances in literature are either "pure altruism", which is driven in order to care of migrants families in the home country or "self seeking or interest", which is driven by purely migrants selfish reasons, (Lucas and Stark, 1985).

Pure altruism motive is the most intuitive, tested and well known presumption where remittances mainly used for supporting family consumption (food, clothing...), where the family utility function is a part of migrants utility, or type of repayment of debts for family that financed the migration trip of the migrant, (Lucas and Stark, 1985; Chami et al., 2003). These kinds of expenditures tend to have little positive impact on growth and development. The early works on remittances in the 70s until the late 80s, the economic literature has not found a positive relationship between remittances and development, (Baldé, 2011).

The second motive is driven by the self-interested, and migrant may remit for non-productive investments that may improve social position of family in home country, which includes investing in assets holding such a land, farms, cattle or construct residential building to enhance prestige, and increase influence in their social environment, (Lucas and Stark, 1985).

In addition, migrants may remit when intent to return to their home country or for inheritance back to their home countries or buy services to maintain their assets, Lucas and Stark, (1985), (Chami et al., 2003).

Imai et al (2014) provides an evidence from Asian countries that confirm that remittance has positive impact on economic growth, it also found a positive impact of remittance on poverty alleviation.

In fact, remittances are more stable and less affected by shocks comparing to other capital inflow, (Salomone, 2006). Furthermore, remittances that transferred for consumption would be less volatile than those transferred for investment. In addition, remittances tend to increase in the hard economic times to save standards living of migrants families especially at the low level income. In general, remittances are significantly higher in low and lower middle income countries, such as MENA countries, than in the other developing countries, (Salomone, 2006).

Remittances impact positively on poverty alleviation where level of disposable income increases since remittances go directly to family or third party such as friends. This affects either poverty headcount ration, level of poverty depth (poverty gap ratio) or poverty severity (square of poverty gap ratio), (RAY, 1998; Salomone, 2006).

On the other hand, impacts on income inequality depends on distribution between different groups in society that takes U-shape relationship between remittances and inequality. In addition, this depends, according the World Bank, on three factors, first, initial level of inequality, where if its high cause negative relationship as poor people can't migrate, secondly, level of immigration costs, i.e. when its high that reduces probability of poor people to migrate, and finally, what called the trickle effect, which is how the reduction in migration costs increases migration flow that includes poor people, (RAY, 1998; DOCQUIER, and RAPOPORT, 2003; Salomone, 2006).

Whatever, the impact of remittances on income depends on how households spend remittances either on consumption, savings or investment. Remittances are an important source of income for low and middle income households and the way in using remittances affect positively households welfare and sometimes in an opposite way. Consumption tendency would improve welfare and consumption smoothing, especially in low and middle income households, meanwhile it can enhance more future consumption tendency including increasing exports, which impacts negatively on households ability to save. In addition, it may increase the aggregate demand and cause inflation, (Salomone, 2006).

In regard to this context, remittances has an effect on income, and a related impact on labor supply. Remittances generally tend to increase the reservation wage of recipients (migrants household or third part), which declines labor supply and increases wages, which increases consequently, production costs, Acosta et. al (2009) thus could decrease growth and savings.

On the other hand, if remittances spend on investment, which could improve capital accumulation, human capital, attract technology, enhance entrepreneurship and economic growth, furthermore, relaxing liquidity constrains would enhance physical and human capital formation, (Salomone, 2006).

Finally, this research investigates the macroeconomic impact of remittances on economic growth, capital accumulation and domestic savings, in the presence of both foreign aid and

foreign direct investment. This allows to know the effectiveness of remittances and other international capital inflows on the macroeconomic variables. Work that compare remittances, FDI and ODA is work has to be done as indicated in Salomone, (2006). We don't find studies measure the relationship between these variables simultaneously, especially in the MENA region.

Empirical Model

As we mentioned before, there is no studies measure the impact of remittances on growth, saving and capital simultaneously. We measure this impact in the presence of other international inflows, which are official development assistance and foreign direct investment. This may show the real role of remittances in the economy. Therefore, we intend to measure the impact on growth proxied by GDP per capita, and domestic capital proxied by gross capital formation and finally, domestic savings. This formulated the three equation estimated simultaneously, three dependant variable and include the other main determinants, following the previous literature.

Model Determinants

Remittances¹ are transfer of money by migrant workers to their home country. Remittances are one of the important international capital flows, especially in our country sample, which are labor exporting countries. Remittances to individuals in home country induce more consumption and enhance aggregate demand, which increase economic growth, and this may depend on the degree of dependency on remittances, thus if its high that may reduce savings at low and middle income levels. This is truly expected under the high stability of remittances comparing to the other international flows.

These remittances are pure altruistic or selfish that would increase either consumption or investment respectively, which expected to impact positively on both domestic capital and economic growth. The impact on growth is similar to previous work such as John et al. (2015). On the other hand, increasing individuals consumption would boosts more consumption in the future from one side, and these remittances representing reservation² wages that cause decreasing labor supply, which all can decrease saving. In addition, Edwards (1995) concludes domestic and foreign savings are substitutable, i. e. remittances crowds out domestic savings, similarly to other capital inflow such as aid. So, we can expect a negative impact of remittances on domestic savings.

Foreign aid is defined as a Total Official Flows on a disbursement basis, which includes both ODA and OOF³. Foreign aid flows in MENA countries mainly used in services and non-tradable

¹Remittances are defined by IMF as the sum of workers' remittances, compensation of employees and migrants' transfer.

²Reservation wages decreases probability to find acceptable jobs for workers.

³Official Development Assistance (ODA) which include grants, loans, and technical co-operation, and Other Official Flows (OOF) which includes grants to developing countries for representational or essentially commercial purposes; official bilateral transactions intended to promote development but having a grant element of less than 25%; official bilateral transactions, whatever their grant element, that are primarily export-facilitating in purpose; the net acquisition by governments and central monetary institutions of securities issued by multilateral development banks at market terms; subsidies or grants to the private

sectors. This enhance consumption, which creates aid dependency from a side, and causes the Dutch disease from other side. Here, negative impacts of foreign aid on both growth and savings are expected, Sabra and Sartawi, (2015), Griffin, (1970). Edwards (1995) concludes domestic and foreign savings are substitutable, i. e. foreign aid crowds out domestic savings.

Foreign direct investment (FDI) is a direct investment involving a strategic long-term relationship and reflecting a lasting interest of a resident entity in one economy (direct investor) in an entity (direct investment enterprise) resident in an economy other than of the investor. An increase in FDI accelerate economic growth due to the influx of capital, employing labor, improve technology, increase market access, improve managerial skills of local firms and increased tax revenue for the host country. Improving physical and social infrastructure is intended by the host country to attract more FDI and to boost development. Therefore, we expect a positive impact of FDI on both growth and domestic capital, (Gruben and Mcleod, 1998).

Openness indicates the outward or inward orientation of the local economy. Outward orientation indicates several advantages realized from opportunities from more trade and exports or attracting more investment and capital flow. In addition, openness has been considered one of the main determinants of economic growth. The growth of exports causes output and economic growth, which known in the literature of export-led growth. This postulates that exports consists the principal channel through which the liberalization process can affect the output level and eventually the rate of economic growth. Openness impacts positively and directly on growth through investment and increasing both net exports and international capital inflow such as FDI.

Domestic savings are GDP minus final consumption expenditure are an important determinant for domestic capital or investment. The theoretical underpinnings of the relationship between savings and investment well-known in the literature that an increase in the saving level simulate the national investment level, (Schmidt, 2003; Katircioglu & Naraliyeva, 2006). We expect a positive relationship between savings and domestic capital.

Government consumption is general government final expenditure, which includes all government current expenditures for purchases of goods and services and most expenditure on national defense and security. The government expenditure is an important explanatory variable of economic growth, furthermore, it's a source of economic growth as in Barro model, Barro, (1990); Ferreira & Simoes (2013); Adams, & Atsu, (2014); Collier & Dollar, (2002) and Basnet, (2013). The government expenditure is expected to affect growth positively.

Multiple Equation Model

Estimation of economic growth, domestic capital and domestic savings equations individually might endure simultaneous equations bias due to some of the explanatory variables might not be truly exogenous. Consequently, we estimate the equations of economic growth, domestic capital and domestic savings equations simultaneously. Equations 1, 2 and 3 are estimated in the simultaneous analysis.

sector to soften its credits to developing countries; and finally funds in support of private investment.

Model aims to measure the impact of remittances on economic growth, domestic capital and gross domestic savings at the presence of other international capital inflows, which are ODA and FDI. In fact, this shows the developmental impact of remittances on macroeconomic indicators and show whether remittances first enhance growth and second induce investment or not, and finally whether remittances complementing domestic savings or crowding it out.

Our model is shown below in equations 1, 2 and 3. We run different methods, which are seemingly unrelated equations (SURE), two stages least squares (2SLS) and three stages least squares (3SLS).

$$\ln \text{GDPc} = \beta_0 + \beta_1 \ln \text{ODA} + \beta_2 \ln \text{GE} + \beta_3 \ln \text{OPEN} + \beta_4 \ln \text{Rem} + \beta_5 \ln \text{FDI} + \epsilon$$

Equation 1

$$\ln \text{GCF} = \beta_0 + \beta_1 \ln \text{SAV} + \beta_2 \ln \text{Rem} + \beta_3 \ln \text{FDI} + \mu \quad \text{Equation 2}$$

$$\ln \text{SAV} = \beta_0 + \beta_1 \ln \text{ODA} + \beta_2 \ln \text{Rem} + \beta_3 \ln \text{OPEN} + \beta_4 \ln \text{GCF} + \nu \quad \text{Equation 3}$$

Where: GDPc is GDP per capita, which is GDP in constant prices, this is the proxy of economic growth, John et al. (2015), Basnet, (2013) and Ekanayake, & Chatrna, (2010). ODA is total official development flow in constant prices. SAV is the gross domestic saving. OPEN is the trade openness measured by the sum of exports at constant prices plus imports in constant prices as a share of real GDP. GCF is the gross capital formation in constant prices, which is the most common variable in studies of endogenous growth as a proxy of investment, Mallick, & Moore, (2008) and McKinley, (2009). GE is the general government final consumption expenditure in constant prices, and ϵ , μ and ν are error terms.

The parameters β_1 , β_2 , β_3 and β_4 represent the elasticities of dependent variable with respect to independent variables. β_0 is the constant term.

Data

This article uses panel data of selected MENA countries, which are Algeria, Egypt, Jordan, Lebanon, Morocco, Palestine, Syria, and Tunisia. The data is for the period from 1977 to 2014, according to the availability of data of each country. We use foreign aid, openness, government expenditure, remittances, foreign direct investment, domestic savings, domestic capital and economic growth variables. Trade openness, namely the sum of exports and imports as a share of GDP. Government expenditure is the general final government expenditure to GDP. GDP per capita growth is the proxy of economic growth. Remittances are transfer of money by migrant workers to their home country where its impact is our main interest in this work. Foreign direct investment is measured in stock term. This is to avoid lags and because FDI does not react immediately to the economy under the presence of adjustment cost, such as investment plans and capacity constraints, (Camarero and Cecilio, 2003). In other words, FDI needs long time to produce, which require using time lags that can

be avoided through using stocks, (Barrios et al., 2005). Gross Capital Formation (GCF⁴), which is a proxy of investment.

These proxies of previous variables are widely used in the previous literature. We use each of GCF, savings and economic growth as dependant variables as shown in the model before. The variables raw data were collected from World Bank database, and UNCTAD database. All variables are taken in logarithm. We use the variables in logarithm to get elasticities, guarantee linearity and reducing any potential multicollinearity.

Econometric Methodology

The Multiple Equation Models are well known econometric techniques, include Two-Stage Least Squares (2SLS), Three Stages Least Squares (3SLS) and Seemingly Unrelated Equations (SURE). These methods are widely used in the literature. In fact, they used to estimate the parameters of a simultaneous equations when errors across the equations are not correlated and the equations concerned are over-identified or exactly identified, Mishra, (2008). Estimation of economic growth, domestic capital and domestic savings equations individually might endure simultaneous equations bias due to some of the explanatory variables might not be truly exogenous. Consequently, we estimate the three equations simultaneously. Remittances seem to be an endogenous variable that requires using multiple equation models techniques, Imai et al (2014), including SURE, 2SLS and 3SLS. This is for ensuring the true relationship between the variables instead of using one technique.

Hence, we examines economic growth according econometric theory within equation systems using two different methods, which are Simultaneous Equation Systems, and Seemingly Unrelated Regressions, (Sumer, 2012). Furthermore, Seemingly Unrelated Regression models are a system of equation that fulfilling the assumptions of the normal classical linear models of each regression equation appearing within the system, (Zellner 1962).

Empirical Results

The following tables show the estimation results of the previous model using the different mentioned methods. The results of the different techniques are compatible.

⁴ Gross capital formation (formerly indicated in WB database as "gross domestic investment") consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories. Fixed assets include land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. Inventories are stocks of goods held by firms to meet temporary or unexpected fluctuations in production or sales, and "work in progress." According to the 1993 SNA, net acquisitions of valuables are also considered capital formation. From WB database definition.

Table 1

Multiple Equations Analysis, SURE

	Estimation 1		
	GDPc	Capital	Savings
Constant	5.18 (0.9)	8.5 (.46)	-10.4 (1.3)
ODA	-.22 (.03)	-	-.19 (.04)
Remittances	.08 (.02)	.14 (.02)	-.24 (.03)
FDI	.17 (.02)	.05 (.02)	-
GE	.18 (.04)	-	-
OPEN	.58 (.07)	-	-.39 (.11)
SAV	-	.51 (.02)	-
GCF	-	-	1.78 (.06)
Chi2	507.6	1101	1265
RMSE	0.247	0.341	.581
R ²	0.76	0.83	0.84
Obs.	146	146	146

Figures in parentheses are standard error. All values are significant at 1% significance level. All variables are taken in logarithm.

Table 2

Two Stages Least Squares regression

	Estimation 2		
	GDPc	Capital	Savings
Constant	4.3 (.94)	8.9 (.53)	-4.9 (1.9)
ODA	-.18 (.03)	-	-.44 (.06)
Remittances	.08 (.02)	.15 (.02)	-.24 (.04)
FDI	.16 (.02)	.08 (.02)	-
GE	.19 (.03)	-	-
OPEN	.64 (.08)	-	-.71 (.17)
SAV	-	.48 (.02)	-
GCF	-	-	1.76

			(.08)
F-Stat	91	242	211
RMSE	0.251	0.336	0.55
R²	0.76	0.84	0.86
Obs.	146	146	146

Figures in parentheses are standard error. All values are significant at 1% significance level. All variables are taken in logarithm.

Table 3

Three Stages Least Squares regression

	Estimation 2		
	GDPc	Capital	Savings
Constant	5.4 (.9)	8.9 (.52)	-13.02 (1.3)
ODA	-.22 (.03)	-	-.16 (.03)
Remittances	.08 (.02)	.15 (.02)	-.27 (.03)
FDI	.16 (.02)	.03** (.01)	-
GE	.17 (.04)	-	-
OPEN	.58 (.07)	-	-.29 (.03)
SAV	-	.49 (.02)	-
GCF	-	-	1.9 (.07)
Chi2	500.5	745.5	982.6
RMSE	0.247	0.338	0.61
R²	0.76	0.84	0.83
Obs.	146	146	146

Figures in parentheses are standard error. All values are significant at 1% significance level. Symbol ** indicates significance at 5% level. All variables are taken in logarithm.

The previous three estimations shown in table 1, 2 and 3 show a robust models. It shows highly and significant F-statistics, Chi2 and low root mean square errors RMSE, which presents models validity. In addition, they show a high considerable R² that equal to or above 67%, and reaches to 86%. The estimations show a very close parameters with identical relationships to each others, from one side, and identical to the predicted signs provided by the literature. The variables are all highly significant in the different estimations.

Remittances impacts positively on both economic growth and domestic capital where 10% increase in remittances increases growth and capital by 0.8% and around 1.5% respectively. This indicates that remittances participate in increasing income, consumption, demand, investment and capital formation through both altruistic and selfish motives. In addition, the

individuals receive remittances are using it in an efficient way and an essential part of these remittances are directed for investment. In fact, this cause a direct positive impact on growth through supporting family and alleviating poverty, and an indirect way where remittances enhance growth through increasing investment, that may include employing some family members. This may includes the stability of remittances and non permanent migration of workers, i. e. they intend or have to go back to their home countries. In addition, Aizenman et al. (2007) indicates that on average 90% of the stock of capital in developing countries is self-financed, which explain the significant impact of remittances on capital formation.

On the other hand, remittances impacts negatively on domestic savings. In fact, in the lower middle income labor exporting countries a significant part of remittances spend on consumption with high import content that enhance more consumption in the future, which increases demand and imports and decreases savings, Brown, (1995). Furthermore, migrants savings depends on economic position (resources) of his family that would increase unproductive personal investment such as housing, land and increase family social level, Osili, (2007); Brown (1995), that tends to reduce savings. In addition, remittances play a reservation wage⁵ role of family members at home country, which reduce their participation in labor market and eroding work habits, Brown, (1995), besides, other cultural factors. a high level of personal consumption related to high level of personal transfer is believed to weaken savings motive, (Fairbairn, 1991a; 1991b; Brown, 1995). An essential part of our sample migrants work in Gulf countries, which are not permanent migration, Merkle and Zimmermann (1992) found that return intentions significantly affect migrants' remittances but do not influence their savings behavior at host country. Precautionary motive for saving, is lower for skilled migrants that expect higher future income, i.e. they have less need to accumulate savings at home country and have lower level of savings, Osili, (2007). On the other hand, interest rate can deterred savings under the limited access to banking facilities because of difficulties in the formal sector savings accounts. In addition migrants use informal and unofficial means of transferring remittances or carried personally by the migrants visits, (Connell & Conway, 2000). This is beside the nature of family, self financed and informal, small-scale business where a wide informal economy exists. This allows to deter and non capture savings in these countries.

Many literature found negative impact of remittances on domestic savings, a World Bank report indicates that remittances and official grant inflows, which enhance consumption, resulted in negative gross domestic savings (World Bank, 1993; Connell & Conway, 2000). In the Philippines, Abella (1992) notes that aggregate savings rate declined from approximately 24 percent in the mid-seventies to 15 per cent in the mid-eighties: a period during which recorded remittances have been observed to rise significantly, Brown, (1995). Remittances and aid flows are perceived to cause what he called "dis-saving", which is a negative gross domestic savings, this indicated in two different reports of the Australian government's International Development Assistance Bureau (AIDAB), (Fairbairn, 1991a; 1991b).

ODA in the three different estimations impacts negatively on the growth, which contradicted between .18 to .22 % for each 1% increase in aid. On the other hand, aid crowds out domestic savings from .16 to .44% for each 1% increase in aid. The dominant relationship between aid

⁵ Reservation wages decreases probability to find acceptable jobs for workers.

and savings in most studies is negative, (Odhiambo, 2009; Edwards, 1995; Reinhart and Talvi, 1998; Khan et al., 1992; Shabbir and Mahmood, 1992; Hachicha, 2003; Sabra & Sartawi, 2015). If aid generates sufficient savings and investment that would generate a self-sustained growth, which in turn free the country from the need of more aid. On the other hand, if aid consumed that would create more consumption in the future and decrease savings again, and generate more aid dependency. This case could be as a result of tied aid or ineffective use of aid as a result of commodity aid such as foods, or that aid redirected to support the government current expenditures. Furthermore, foreign aid showed more use effectiveness in middle income level than lower middle income level countries such as our sample countries.

In addition, other literature discuss the relationship between the level of aid and its incremental impact on growth that takes the form of an inverted-U shape, Feeny, & de Silva, (2012). Each country or region has an absorption capacity that expresses the country ability to effectively and productively using capital. As well as not all aid provided to utilize the profitable investment opportunities, therefore, there is a limit for using aid in efficient way, Feeny, & de Silva, (2012). These limits or constrains has many types, which are policy and institutional, capital constraints, manner to deliver aid and social, cultural constraints Feeny, & de Silva, (2012); Feeny and McGillivray, (2011) and intra allocation of aid between sectors that one of the strongest constraints in the region. Any relaxing of these constraints can extend the aid contribution to growth and increase the absorption capacity, as presented in figure 1, this calls for aid environment improvement in the region.

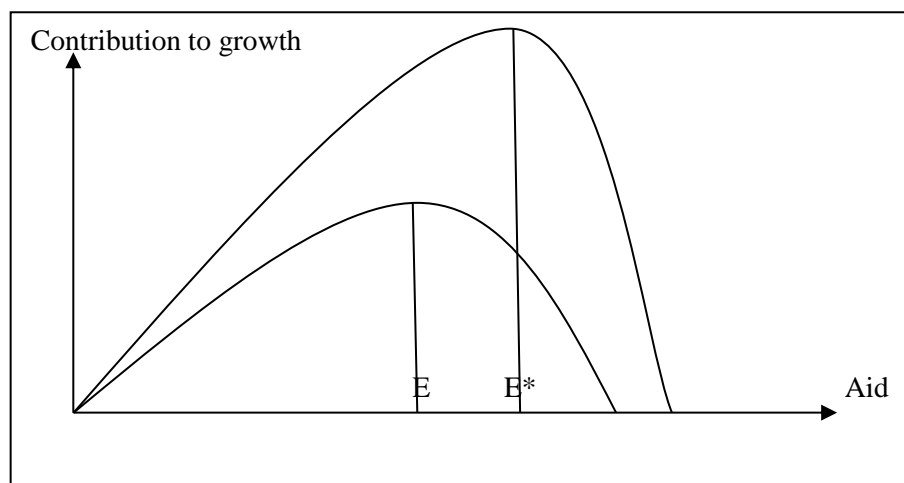


Figure 1: shows the relationship between aid and economic growth. Modified from Feeny and McGillivray, (2011).

FDI in the three different estimations impacts positively on both growth and capital, which both increase between .16 to .17 % and .03 to .08 respectively, for each 1% increase in FDI. A widespread literature show the significant positive impact growth and capital accumulation.

Openness shows, the three different estimations, a positive impacts on growth, which increases between .58 to .64 % for each 1% increase in openness. On the other hand, openness impacts negatively domestic savings from .29 to .71 for each 1% increase in openness. This indicates that the region has a competitive advantage in integrating in the world economy, which increases net exports and attracting more FDI, especially export-

oriented FDI and remittances through more exports of labor services. On the other hand, increasing openness and so imports through more consumption resulting from easy resources such as foreign aid and altruistic base remittances that lately decreases savings, which explains the negative association between openness and savings.

Gross capital formation in the three different estimations impacts strongly positively on the savings, which increases between 1.76 to 1.9 % for each 1% increase in GCF. This indicates that one of the main sources of savings is the expansion in investments and accumulating physical capital that increases retained profits and increases savings and investment. In addition, more investment and capital accumulation increases employment and income, which creates more savings.

Government expenditure increase of 1% in simulates and increases growth from 0.17 to 0.19 %. The government expenditure is a promoter of growth in the region that simulate aggregate demand. In fact, this level of expenditure (Government Size) should not be the government optimal level, which depends on the country size also, Sabra, (2016a). In addition, widespread studies that show a negative impact of aid on growth and found a positive impact of government expenditure on growth, Ferreira & Simoes (2013); Bjerg, et al. (2011); Doucouliagos and Paldam, (2008); Hansen, and Tarp, (2001) and Sabra and Eltalla (2016b), which has an evidence from MENA countries. If the government current expenditure financed partially by foreign aid that may increase imports, which can crowd out growth that enhanced by government partially.

Conclusions and Recommendations

In this paper, we have developed a model for examining the impact of workers' remittances on economic growth, capital formation and savings, using panel data for eight selected MENA countries. This is taking into consideration the presence of other international capital inflows, which are foreign aid and FDI. For remittances, we found a positive significant impact on growth, and strong significant impact on capital accumulation. Hence, we conclude that remittances have more potential contribution to economic development in these labor exporting countries through enhancing demand and growth and alleviating poverty, and increasing capital accumulation of these countries. In fact, these developmental impact depends on final use of remittances flow. This use can impact positively on growth through supporting family consumption that enhance more future consumption and may increase imports, which decreases savings under the low levels of income. On the other hand, using remittances for productive investment purposes should enhance demand, employment, capital accumulation and growth. Therefore, enhancing consumption can realize temporary growth, which crowds out the sustainable growth induced through investment and capital accumulation. Problems are facing transfer remittances such as the limited access to banking facilities because of difficulties in the formal sector savings accounts and the use of informal and unofficial means of transferring, which deter savings and directed investing remittances in the informal sector through self financing of small-scale projects. Public regulations should be formulated to face these problems. Anyway, capital accumulation is still strongly supported by remittances, in addition, it is also an important source of saving and expansion of investment through for example, retained profits.

Aid has a negative impact on growth and savings where aid enhance high consumption level and government current expenditure that enhance consumption misallocation through fungibility and rent seeking behavior for these easy resources⁶, i.e. (foreign aid).

Government expenditure is an important source of growth as theory indicates where impacts positively on growth. Furthermore, FDI is an important sources of growth especially with the degree of openness that indicates the integration within the world economy and it also indicates the trade policy, which attracts in specific exports oriented FDI, and FDI generally. Therefore, it requires formulating policies to encourage micro projects of migrants, instead of encouraging donation by workers in Diaspora. In addition, Organizing the informal economy and means of money transfers from abroad and facilitate it. Finally, it requires organizing consumption and imports to deter leaks in savings.

Finally, remittances can be used to harness the full potential entrepreneurial and development goals. Therefore, policy makers should adopt policies that would encourage using remittances in physical and human capital investments. A deliberate policy to encourage migrants to remit and invest in home countries, which can contribute efficiently in growth of domestic economies.

Limitations and Future work

The micro data for our sample country is not available that limit extending work to micro level. In addition, we didn't find a sectorial distribution of remittances.

Formal surveys gathering data about remittances final destination can examine the developmental impact of remittances. This suggests investigating impacts on different sectors, remittances motive and type of expenditure.

References

- Abella, M. I. (1992). International Migration and Development, in G. Battistella and A. Paganoni (eds.) *Philippine Labor Migration, Impact and Policy*, 1992, pp.22-37.
- Acosta, P. A., Lartey, E. K., & Mandelman, F. S. (2009). Remittances and the Dutch disease. *Journal of international economics*, 79(1), 102-116.
<http://dx.doi.org/10.1016/j.jinteco.2009.06.007>
- Adams, S., & Atsu, F. (2014). Aid dependence and economic growth in Ghana. *Economic Analysis and Policy*, 44(2), 233-242. <http://dx.doi.org/10.1016/j.eap.2014.05.001>
- Aizenman, J., Pinto, B., & Radziwill, A. (2007). Sources for financing domestic capital—is foreign saving a viable option for developing countries?. *Journal of International Money and Finance*, 26(5), 682-702. <http://dx.doi.org/10.1016/j.jimonfin.2007.04.009>
- Baldé, Y. (2011). The Impact of Remittances and Foreign Aid on Savings/Investment in Sub-Saharan Africa*. *African Development Review*, 23(2), 247-262.
<http://dx.doi.org/10.1111/j.1467-8268.2011.00284.x>
- Barrios, S., Görg, H., & Strobl, E. (2005). Foreign direct investment, competition and industrial development in the host country. *European Economic Review*, 49(7), 1761-1784.
<http://dx.doi.org/10.1016/j.eurocorev.2004.05.005>

⁶ Bureaucratic seeks to increase their wealth share without creating new wealth that reduces economic efficiency through poor allocation of resources, reduces actual wealth creation, lost government revenue (taxes), increased income inequality and decrease national potentiality.

- Barro, R. J. (1990). Government Spending in a Simple Model of Endogenous Growth. *Journal of Political Economy*, 98(5 pt 2). <http://dx.doi.org/10.1086/261726>
- Basnet, H. C. (2013). Foreign aid, domestic savings, and economic growth in South Asia. *International Business & Economics Research Journal (IBER)*, 12(11), 1389-1394. <http://dx.doi.org/10.19030/iber.v12i11.8176>
- Bjerg, C., Bjørnskov, C., & Holm, A. (2011). Growth, debt burdens and alleviating effects of foreign aid in least developed countries. *European Journal of Political Economy*, 27(1), 143-153. <http://dx.doi.org/10.1016/j.ejpoleco.2010.08.003>
- Brown, R. P. (1995). Consumption and investments from migrants' remittances in the South Pacific (No. 2).
- Camarero M. and Cecilio T. (2003). Estimating exports and imports demand for manufactured goods: the role of FDI, Jaume I University. March 2003.
- Chami, R., Fullenkamp, C., & Jahjah, S. (2003). Are immigrant remittance flows a source of capital for development?.
- Collier, P., & Dollar, D. (2002). Aid allocation and poverty reduction. *European Economic Review*, 46(8), 1475-1500. [http://dx.doi.org/10.1016/S0014-2921\(01\)00187-8](http://dx.doi.org/10.1016/S0014-2921(01)00187-8)
- Connell, J., & Conway, D. (2000). Migration and remittances in island microstates: a comparative perspective on the South Pacific and the Caribbean. *International journal of urban and regional research*, 24(1), 52-78. <http://dx.doi.org/10.1111/1468-2427.00235>
- DOCQUIER, F. and RAPOPORT, H. , (2003). Remittances and inequality: a dynamic migration model. Bar-Ilan Department of Economics Working Paper, June, pp. 1-30
- Doucoulagos, H., & Paldam, M. (2008). Aid effectiveness on growth: A meta study. *European journal of political economy*, 24(1), 1-24. <http://dx.doi.org/10.1016/j.ejpoleco.2007.06.002>
- Edwards, S. (1995). Why are saving rates so different across countries?: An international comparative analysis (No. w5097). National Bureau of Economic Research. <http://dx.doi.org/10.3386/w5097>
- FERREIRA, I. A., & SIMÕES, M. C. (2013). Aid And Growth: A Comparative Study Between Sub-Saharan Africa And Asia. *Applied Econometrics and International Development*, 13(1), 113-132.
- Gruben, W. C., & McLeod, D. (1998). Capital flows, savings, and growth in the 1990s. *The Quarterly Review of Economics and Finance*
- Hachicha, N. (2003). Capital inflows-national savings dynamics in Tunisia: Evidence from cointegration, weak exogeneity and simultaneous error-correction model. *International Economic Journal*, 17(4), 43-60. <http://dx.doi.org/10.1080/751248071>
- Khan, A., Hasan, L., & Malik, A. (1992). Dependency ratio, foreign capital inflows and the rate of savings in Pakistan. *Pakistan Development Review*, 3(4), 843-856.
- Fairbairn, T. I. J. (1991a) *The Western Samoan Economy: Prospects for Recovery and Long-term Growth*. AIDAB, International Development Issues No.17, Canberra: Australian Government Publishing Service.
- Fairbairn, T. I. J. (1991b) *The Tongan Economy: Setting the Stage for Accelerated Growth*. AIDAB, International Development Issues No.22, Canberra: Australian Government Publishing Service.
- Feeny, S., McGillivray, M., (2011). Scaling-up foreign aid: will the 'big push' work? *The World Economy* 34 (1), 54-73. <http://dx.doi.org/10.1111/j.1467-9701.2010.01291.x>

- Feeny, S., & de Silva, A. (2012). Measuring absorptive capacity constraints to foreign aid. *Economic Modelling*, 29(3), 725-733.
<http://dx.doi.org/10.1016/j.econmod.2012.01.013>
- Fonta, W. M., Ayuk, E. T., Chukwu, J. O., Onyukwu, O. E., Agu, C. C., & Umenwa, I. O. (2015). Dynamics of remittance utilization by Nigerian households. *Progress in Development Studies*, 15(4), 343-357. <http://dx.doi.org/10.1177/1464993415592742>
- FERREIRA, I. A., & SIMÕES, M. C. (2013). Aid And Growth: A Comparative Study Between Sub-Saharan Africa And Asia. *Applied Econometrics and International Development*, 13(1), 113-132.
- Giuliano, P., & Ruiz-Arranz, M. (2009). Remittances, financial development, and growth. *Journal of Development Economics*, 90(1), 144-152.
<http://dx.doi.org/10.1016/j.jdeveco.2008.10.005>
- Hansen, H., and Tarp, F. (2001). Aid and Growth Regressions. *Journal of Development Economics* 64: 547–70. [http://dx.doi.org/10.1016/S0304-3878\(00\)00150-4](http://dx.doi.org/10.1016/S0304-3878(00)00150-4)
- Imai, K. S., Gaiha, R., Ali, A., & Kaicker, N. (2014). Remittances, growth and poverty: New evidence from Asian countries. *Journal of Policy Modeling*, 36(3), 524-538.
<http://dx.doi.org/10.1016/j.jpolmod.2014.01.009>
- John, B. E., Lawal, M. T., Yaw, O., Danso-Mireku, O., & Mahesh, M. (2015). Remittance and economic growth; evidence from West Africa. *EXCEL International Journal of Multidisciplinary Management Studies*, 5(5), 73-83.
- Johnson, G. E., & Whitelaw, W. E. (1974). Urban-rural income transfers in Kenya: an estimated-remittances function. *Economic Development and Cultural Change*, 22(3), 473-479. <http://dx.doi.org/10.1086/450731>
- Katircioglu, S. T., & Naraliyeva, A. (2006). Foreign direct investment, domestic savings and economic growth in Kazakhstan: Evidence from co-integration and causality tests. *Investment Management and Financial Innovations*, 3(2), 34-45.
- Lucas, R. E., & Stark, O. (1985). Motivations to remit: Evidence from Botswana. *The Journal of Political Economy*, 901-918.
- Mallick, S., & Moore, T. (2008). Foreign capital in a growth model. *Review of Development Economics*, 12(1), 143-159. <http://dx.doi.org/10.1111/j.1467-9361.2008.00437.x>
- McKinley, T. (2009). Why Is 'The Dutch Disease' Always a Disease?, *The Macroeconomic Consequences of Scaling Up ODA*. In *Economic Alternatives for Growth, Employment and Poverty Reduction* (pp. 85-99). Palgrave Macmillan UK.
<http://dx.doi.org/10.1057/9780230250635>
- Merkle, L., & Zimmermann, K. F. (1992). Savings, remittances, and return migration. *Economics Letters*, 38(1), 77-81. [http://dx.doi.org/10.1016/0165-1765\(92\)90165-U](http://dx.doi.org/10.1016/0165-1765(92)90165-U)
- Mishra, S. K. (2008). ROBUST TWO-STAGE LEAST SQUARES: SOME MONTE CARLO EXPERIMENTS. *Journal of Applied Economic Sciences (JAES)*, (6), 434-443.
<http://dx.doi.org/10.2139/ssrn.1178642>
- Odhiambo, N. M. (2009). Savings and economic growth in South Africa: A multivariate causality test. *Journal of policy Modeling*, 31(5), 708-718.
<http://dx.doi.org/10.1016/j.jpolmod.2009.04.001>
- Osili, U. O. (2007). Remittances and savings from international migration: Theory and evidence using a matched sample. *Journal of Development Economics*, 83(2), 446-465.
<http://dx.doi.org/10.1016/j.jdeveco.2006.06.003>
- RAY, D. (1998). *Development Economics*, Princeton University Press, Princeton, New Jersey,

- Reinhart, C., & Talvi, E. (1998). Capital flows and savings in Latin America and Asia: A reinterpretation. *Journal of Development Economics*, 45–66. [http://dx.doi.org/10.1016/S0304-3878\(98\)00077-7](http://dx.doi.org/10.1016/S0304-3878(98)00077-7)
- Sabra M. (2016a). Government size, country size, openness and economic growth in selected MENA countries. *International Journal of Business and Economic Sciences Applied Research*, 9(1).
- Sabra, M. M., & Sartawi, S. (2015). Development Impacts of Foreign Aid on Economic Growth, Domestic Savings and Dutch Disease Presence in Palestine. *International Journal of Economics and Empirical Research*, 3(11), 532-542.
- Sabra, M. M., & Eltalla, A. (2016b). Foreign Aid, Domestic Savings and Economic Growth in Selected MENA Countries. *Business and Economic Research*, 6(1), 352-362. <http://dx.doi.org/10.5296/ber.v6i1.9204>
- Salomone, S. (2006). Remittances. Overview of the existing literature. European University Institute, available online, accessed at, 8.
- Shabbir, T., & Mahmood, A. (1992). The effect of foreign private investment on economic growth in Pakistan. *The Pakistan Development Review*, 31(4), 831–841.
- Shera, A., & Meyer, D. (2013). Remittances and their impact on Economic Growth. *Periodica Polytechnica. Social and Management Sciences*, 21(1), 3. <http://dx.doi.org/10.3311/PPso.2152>
- Sumer, K. (2012). Testing The Validity Of Economic Growth Theories With Seemingly Unrelated Regression Models: Application To Turkey In 1980-2010. *Applied Econometrics and International Development*, 12(1).
- Schmidt, M.B. (2003). Savings and investment in Australia, *Applied Economics*, 35, pp. 99-106. <http://dx.doi.org/10.1080/0003684022000015928>
- World Bank. (1993) Pacific island economies: toward efficient and sustainable growth, vol. 6. The World Bank, Washington, DC. World Bank data, 2012 World economic report. <http://wdi.worldbank.org/table/6.13>
- Zellner, A. (1962). An efficient method of estimating seemingly unrelated regressions and tests for aggregation bias. *Journal of the American statistical Association*, 57(298), 348-368. <http://dx.doi.org/10.1080/01621459.1962.10480664>