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The Impact of International Remittances on Poverty: Evidence From The Southern and Eastern Mediterranean Countries

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Abstract

Workers Remittances represent an important source of financing for recipient countries to the extent that it exceeds sometimes foreign direct investment (FDI) flows (Sirkeci, Ratha, Cohen, 2012). International remittances flowing into developing economies has gained an increasing importance regarding the volume of these flows, their importance for the financial sector as well as their overall impact at the economic and social levels. Based upon a review of theoretical and empirical literature, this paper uses an econometric model based on the basic growth poverty model suggested by (Ravallion, 1997) and (Ravallion & Chen, 1997) accompanied by the frameworks postulated by (Adams & Page, 2005) to assess the impact of remittances in terms of reducing the level of poverty. It is based on panel data of eight Southern and Eastern Mediterranean countries (SEMEC) (Algeria, Egypt, Jordan, Lebanon, Morocco, Tunisia, Turkey and West bank and Gaza) over the period 2000-2018. In most of these countries, remittances represent the largest foreign exchange earnings and represent an average of 8% of GDP. The results suggest that remittances have a positive impact on growth and therefore contribute through income to poverty reduction. This impact becomes significant as the level of remittances relative to GDP increases.

Keywords: Growth; Mediterranean; Migration; Poverty; Remittances; Southern and Eastern Mediterranean Countries

Introduction

The subject of remittances has recently gained an ever-increasing consideration in the context of developing countries, not only as a core subject of public policy but also as a topic for research on development.

Remittances are financial resource flows arising from the cross-border movement of nationals of a country (Kapur, 2004). It encompasses the transfers of money and/or goods by migrants back to their home countries. It a very complex subject to apprehend as it involves various economic and social dimensions. Remittances are believed to be a major and stable source of

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external funding for developing countries. The recent decades have seen the volumes of remittances grow steadily both in absolute and relative values; the latter was measured against financial aid extended to developing countries by foreign governments and international organizations. Remittances sent back home by hard working employed emigrants, making a substantial difference in the developing countries. As currently estimated, the overall volume of remittances directed to the developing countries exceeds twice the Official Development Assistance (ODA) and almost amounts to the value of Foreign Direct Investments (FDI) and other capital revenues, if not higher in some countries (Sirkeci, Ratha, Cohen, 2012).

Looking at the southern Mediterranean region as an important corridor of international migration. This position finds its root in the geography of the region itself and the uninterrupted interaction between both shores of the Mediterranean.

The surge of migration from the region was intensified as a result of economic and social policies failure that have fueled the region with massive flows of migrants, especially since December 2010 in the aftermath of the so-called "Arab Spring", that has dramatically destabilized several South East Mediterranean countries. Indeed, the Southern and Eastern Mediterranean region witnessed a rise in political and social instability due essentially to inefficient governance systems, weak economic prospects and the worsening of inequalities at various levels (high unemployment especially among youth, weak access to basic public services, education, health…) (ETF, 2014).

Poverty, considered as only one of many causes of this "Arab Spring", has not been given the same emphasis in Southern Mediterranean countries during the last decades, compared to other regions of the developing and emerging world (Berenger & Bresson, 2013).

Based on the literature review, most of the studies on the impact of international remittances on poverty had covered mostly regions or countries from Latin America[3], South Asia (Yoshino, Taghizadeh-Hesary & Otsuka.,2017), Africa[4] or some MENA countries neglecting the Southern and Eastern Mediterranean countries (SEMEC) as a specific and a whole region which explains that there is a need for further exploration[5].

The following section highlights the trends in growth, poverty and remittances flows in southern and eastern Mediterranean countries. The second section provides a review of literature on remittances and poverty from theoretical and empirical perspectives, the third section presents the econometric model used to estimate the impact of remittances on poverty in selected countries using panel data of 8 countries (Algeria, Egypt, Jordan, Lebanon, Morocco, Tunisia, Turkey and West bank and Gaza) over the period 2000-2018. Libya and Syria were not included, first, because of Libya's status as migrant recipient country; second, Syria lacks Data for certain variables such as remittances, GDP & GINI index.

[3] See literature review

[4] See literature review

[5] The only research available on the region in relation with remittances is the working paper of Miotti,L.,& Mouhoud , E., Oudinet, J (2010). Determinants and Uses of Remittances to Southern and Eastern Mediterranean Countries: Insights from a New Survey, centro studi luca d'agliano.

The last section draws some policy recommendations that may contribute to enhance the impact of remittances in terms of improving socioeconomic conditions in the above-mentioned countries.

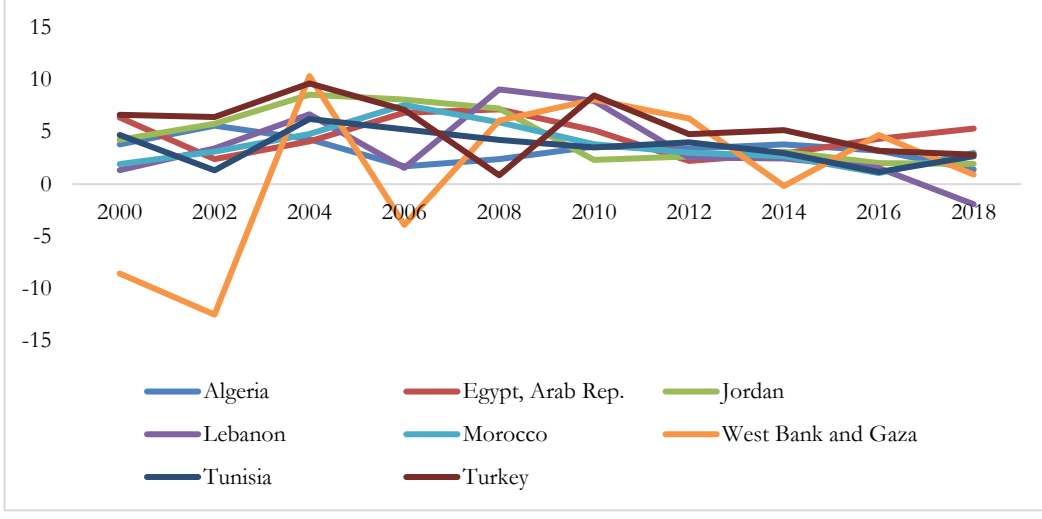
1. Overview on Growth, Poverty and Remittances in Southern and Eastern Mediterranean countries

1.1. Growth and Poverty Trends in Southern and Easter Mediterranean countries

For a long time, Southern and Eastern Mediterranean countries struggled with serious socio-economic challenges and dysfunctional economic systems and policies. In the 2010s their macroeconomic performances further deteriorated due to the global and European financial crises, the decline of commodity prices, and the "failure" of the Arab Spring, which triggered a new wave of intra-regional conflicts and added to the already high geopolitical and security risks. Conclusively, the critically needed economic and governance reforms evolve at a time-consuming pace (Dabrowsky, 2018).

Although the rate of GDP growth remains positive, it markedly slowed down in the 2010s (Figure n°1). In per-capita terms, it is close to stagnation (Algeria and Tunisia) or even negative (Jordan and Lebanon) given rapid population growth in the region (Dabrowsky, 2018). That is, it is insufficient to generate enough jobs for the rapidly growing labor force and to eradicate poverty.

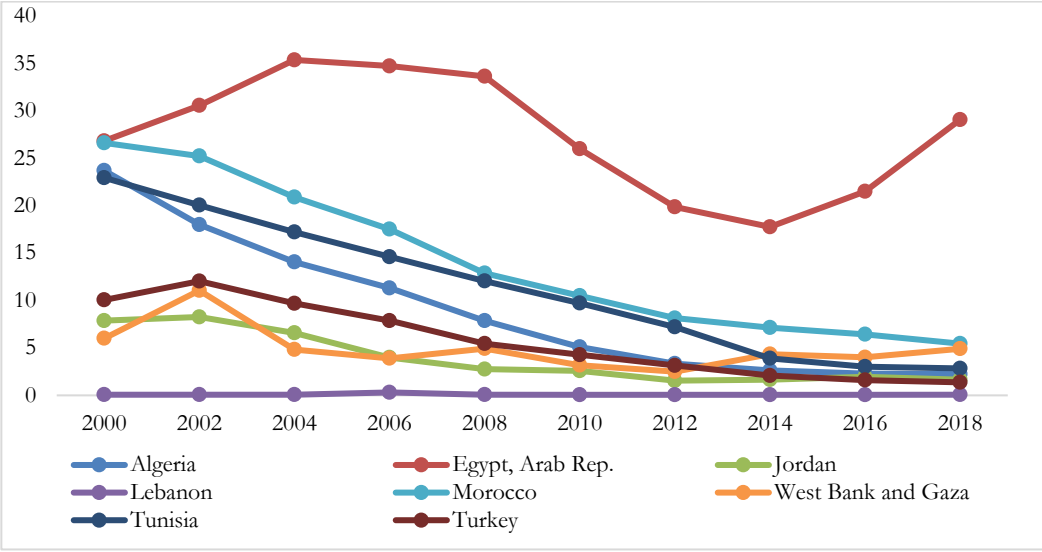
Figure n°1. SEMEC annual growth of GDP% (constant 2010 US $), 2000-2018



Source: Authors based on World Bank data (2021)

From 2000 to 2018, all the SEMEC experienced significant poverty reduction due to the positive growth combined with various reforms and the continuous remittances flows that have impacted the level of poverty as it is shown in the following figure.

Figure n°2. Poverty headcount rate in SEMEC, %, 2000-2018



Source: Authors based on World Bank data (2021) using the lower middle-income poverty line (3.20 $ PPP)

Algeria strengthened its strategy/policy to reduce poverty and social development policy at the end of the 1990s, which facilitated progression in the standard of living among the Algerian population (Unites Nations, 2006). High level of unemployment is one of the largest causes of poverty in Algeria. Using the lower middle-income poverty line (3.20 $ PPP), poverty in *Algeria* has decreased from 23,68 in 2000 to in 2013 poverty fell to 2,24% in 2018, while in Jordan, the poverty has fell to 1,66% in 2018 as the Government of Jordan has put in place since 2002 adopted its first Poverty Alleviation Strategy in 2002 recognizing poverty as a key development problem. Series of social programs aimed at increasing employment opportunities, curbing unemployment, combating poverty and offering in-kind and cash assistance for the poor and marginalized groups within Jordanian society (UNDP, 2020). Poverty in *Lebanon* has long existed but increased following the crisis in Syria in 2011 (Denning, 2017). According to the consultative center of studies and documentation in Beyrouth, 36% of households were living in poverty in 2015 and were unable to meet their basic needs (Khalifeh, 2019). However, the World Bank database used in this paper does not reflect this reality as the numbers provided are low comparatively to other sources.

Using the lower middle-income poverty line (3.20 $ PPP), poverty in *Morocco* fell from 26,60 in 2000 % to 7.7% in 2013. Although the poverty rate was further reduced to 7,14 % in 2014, over 18 % of Morocco's rural population still live in poverty or were considered vulnerable (World Bank, 2016).

In the case of *Egypt*, a much higher share of the population lives on less than US$3.20 per day, in 2017-18, the poverty rate at US$3.20 was estimated to be 26.1%, up from 16.1 % in 2015 (World Bank, 2020). Egypt has the highest rate of poverty among the selected countries with 29,05% in 2018.

Between 2005 and 2015, *Tunisia* experienced significant poverty reduction. Official poverty measured with the national poverty line declined significantly from 23.1 % in 2005 to 20.5 in

2010, dropping to 15.2 % in 2015 (World Bank, 2022). Likewise, when measured with 3.2 $ PPP the decline is similarly sharp. Poverty fell to 3.02% in 2016 from 9.72 % in 2010 and 22,92% in 2000.

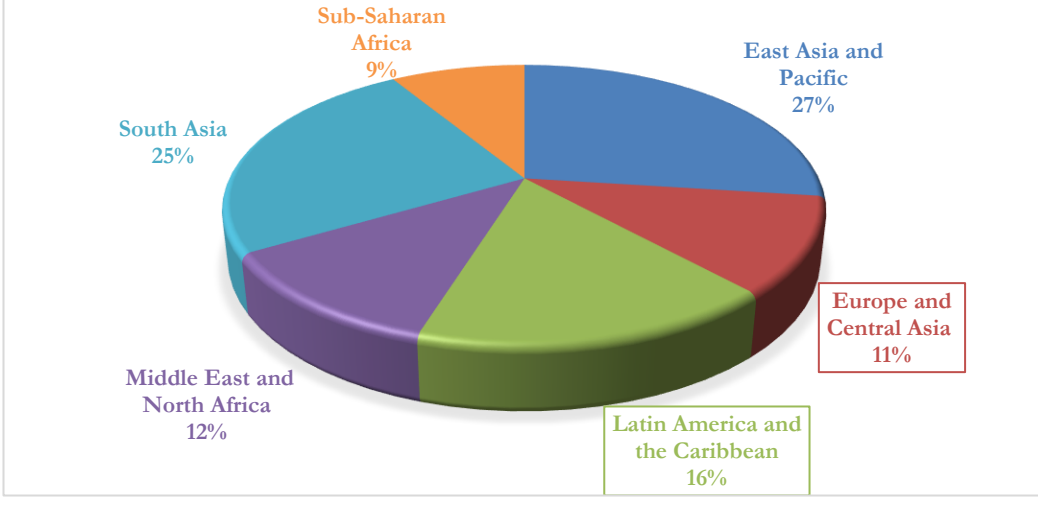
Turkey witnessed nearly uninterrupted poverty reduction since the early 2000s despite the influx of millions of Syrian refugees that exacerbated poverty (Cuevas & Rodriguez-Chamussy, 2016). Following the increase in GDP per capita of 158% during 2000-2015, poverty incidence decreased from 44% to 18% between 2002 and 2014 (Del Carpio & Wagner, 2015). In the same period, incidence of extreme poverty declined from 13% to 3% of the population (Cuevas & Rodriguez-Chamussy, 2016). Using the lower middle-income poverty line (3.20 $ PPP), poverty in *Turkey* fell from 10,05 in 2000 % to 1,37% in 2018.

Poverty in the *West Bank and Gaza* increased from 25.8 to 29.2 % between 2011 and 2016/2017 at the official national poverty line. However, the overall trend hides a sharp divergence between the *West Bank and Gaza*. While there was an improvement in the West Bank, where poverty declined from 17.8 to 13.9%, poverty in *Gaza* rose from 38.8 to 53.0 %. The decline in remittances accounted for most of the increase in poverty in *Gaza* and outweighed the positive contribution of labor earnings over this period (World Bank, 2022). Using the lower middle-income poverty line (3.20 $ PPP), poverty in *West Bank and Gaza* fell from 6,01% in 2000 % to 4,91% in 2018.

1.2. Remittances in Southern and Easter Mediterranean countries

According to the World Bank (global development indicators, 2019), global remittances totaled $689 billion in 2018, up from $633 billion in 2017. Of that total, $529 billion flowed into low and middle-income economies (figure n°3). The rise in remittances was driven by oil prices increase and the improvement of economic situation in developed economies, mainly the United States.

Figure 3. Global Flows of International Migrant Remittances (US$ billion)



Source: World Bank (2019)

Recent available data on the global remittances reveal that, during 2018, the total remittances inflow to all SEMEC was evaluated at $53,16 billion as it is shown in figure 4 which represents

7,71% from the total amount of the global remittances in the same year. More than 50% is captured by Egypt then Lebanon and Morocco with respectively $6,98 billion and $6,92 billion. The demographic weight of Egypt largely explains the gap in terms of remittances flows compared to other countries. With Lebanon, this discrepancy is justified by the pioneering nature of the Lebanese emigration, which dates back to the early 19th century, and the nature of integration into the host countries of this emigration largely made up of business persons with a high level of attachment to their countries of origin (Ismaili Idrissi, 2020). However, looking at its weight in term of GDP, West bank and Gaza is ahead with 19,29% of GDP.

Figure n°4: Remittances to SEMEC Countries in 2018 (in US$ million)

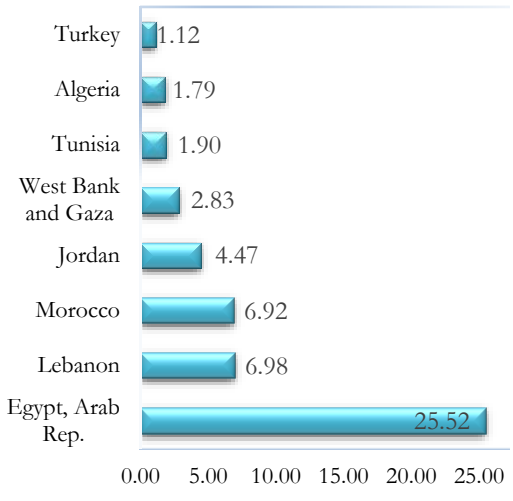
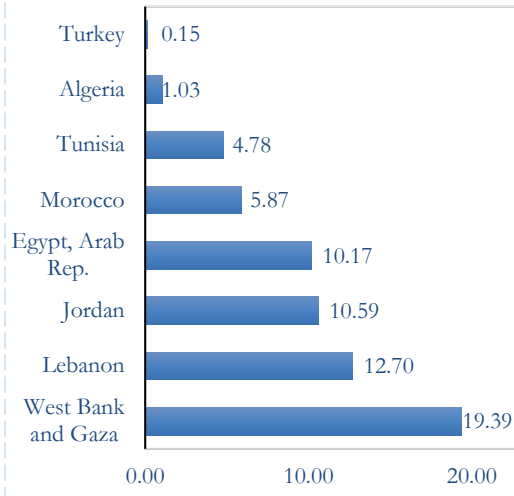


Figure n°5: Remittances to SEMEC Recipient Countries in 2018 (% of GDP)



Source: World Bank

2. Theoretical and empirical literature on remittances to poverty reduction

2.1. Theoretical literature

The concept of poverty means generally insufficient or lack of necessities such as food, shelter, clothing and so. The "dollar a day" poverty line was first introduced in the world development report 1990 to measure absolute or extreme poverty by the standards of the world's poorest countries. It is the proportion of population living on less than 1.5 US $ per day measured at purchasing power parity (PPP) for international comparisons and aggregation (World Bank, 2010). Due to recent inflations around the world and considering the PPP (Purchasing Power Parity) the World Bank reset it to $1.90 a day as it is the updated World Poverty Line (World Bank, 2015). Since 2017, the World Bank has also been tracking poverty at $3.20 a day, the typical line for lower-middle-income countries, and $5.50 a day, typical for upper-middle-income countries. Therefore, $3.20 will be the poverty line in this study. This number is controversial; therefore, each nation has its own threshold for absolute poverty line.

Looking to the relationship between poverty and remittances, there has been an increasing interest from researchers, academics and policy-makers around the world. Existing evidence has shown that remittances receiving households have higher incomes and expenditure relative to similar households that do not receive remittances. Remittance inflows have grown rapidly and become an increasingly key factor to the objective of poverty alleviation in situations of low income in developing countries. Thus, the linkages between remittances and poverty in developing countries has drawn attention recently

Many economists, even before the advent of the New Economics of Labor Migration (NELM)[6], acknowledged that family ties in the form of mutual caring are probably a prime motivation for remitting. The earliest studies on remittances explain that remittances are used for *altruistic purposes* (Johnson & Whitelaw, 1974). In line with this implication, Lucas & Stark (1985) postulate that "Certainly the most obvious motive for remitting is pure altruism—the care of a migrant for those left behind". Indeed, this appears to be the single notion underlying much of the remittance literature. Recent theories on the relationship between remittances on poverty have also focused on the idea that there can be *self-interest reasons* for remitting. These self-interest approaches of remittances are built on the family because they consider the family as a business or as a nexus of contracts that permits the members to enter Pareto-improving arrangements (Chami et al. 2003). Self-interest theories of remittances date back to the pioneering study of (Lucas & Stark, 1985) suggest that migrants may have investments that need to be tended while they are away, so they will use other family members as their agents. The remittances sent by the migrant are used to care for the migrant's interests, but they also contain some compensation for the agents.

Remittance inflows can reduce poverty by increasing consumption and this importantly helps recipients of remittances to improve their living conditions. Additionally, remittances also assist in the creation of new social assets, services, and community physical infrastructure, including schools, roads, health, and other community projects which will indirectly contribute to poverty reduction (Ghosh, 2006; Sorensen & Pedersen, 2002).

2.2. Empirical literature

Most of the empirical studies have shown that there is a negative relationship between migrants' remittances and poverty. The impact of remittances on the reduction of poverty can be understood from both the micro and macro perspectives. However, to capture this impact, there is no formal framework (Chimhowu et al., 2005). But it is evident and it is reasonable to assume that the amount of transfer done by the migrants to the family members back home do have some overall impact in reducing the poverty.

Adams (1991) as one of the pioneers in this field found that in rural Egypt, the number of poor households declined by 9.8 percent when household income includes international remittances, and that remittances account for 14.7 percent of total income of poor households. Adams and Page (2003) concluded in one of their studies based on 74 low- and middle-income developing countries, that international remittances -- defined as the share of remittances in country GDP – has a strong, statistical impact on reducing poverty. On average, a 10 percent increase in the share of international remittances in a country's GDP

[6] Developed in 1980's by the primary theorists Oded Stark & David Bloom and presented in their seminal text 'The New Economics of Labor Migration' **(1985**).

will lead to a 1.6 percent decline in the share of people living in poverty. Another study of the same authors Adams and Page (2005) strongly associated remittances with poverty reduction, using a 71-country multi-variate data set, arguing that a 10 percent increase in international remittances from each individual migrant will lead to a 3.5 percent decline in the proportion of people living in poverty, such that remittances are said to significantly reduce the level, depth and severity of poverty in developing countries. This result is also corroborated in a separate analysis for 101 countries over the period 1970 – 2003 reported in the IMF's 2005 World Economic Outlook.

Employing the same econometric method, Jongwanich (2007) examined the impact of workers' remittances on growth and poverty reduction in developing Asia-Pacific countries using panel data over the period 1993- 2003. The result showed that, while remittances do have a significant impact on poverty reduction through increasing income, smoothing consumption and easing capital constraints of the poor, they have only a marginal impact on growth operating through domestic investment and human capital development. In the same way, (Imai et al., 2014) confirm that remittances contribute to poverty reduction in 24 Asian and Pacific countries over the period 1980-2009 by controlling the endogeneity of remittances and other variables. Their finding is supported by (Silva & Sugiyarto, 2009), who uses annual data of Asia to examine the effects of remittances on growth and poverty. They reveal that remittances reduce poverty and spur economic growth. Then again, this position is in line with Acosta et al. (2007), who propose that remittances have statistically significant poverty reduction effects of the remittances receiving countries in Latin America.

Based on 33 African countries' panel data (1990-2005), Anyanwu and Erhijakpor (2010) postulated that a 10 percent increase in official international remittances as a share of GDP leads to a 2.9 percent decline in the poverty headcount. The point estimates for the poverty gap and squared poverty gap suggest that a 10 percent increase in the share of international remittances will lead to a 2.9 percent and 2.8 percent decline respectively in the depth and severity of poverty in African countries.

A similar study by Taylor et al. (2005) used the data of 1782 household from 2003 survey of rural Mexico to show the impact of international remittances on poverty. The study estimates that poverty headcount and poverty gap indices would decline by 0.77 and 0.53 respectively with 10 per cent increase in international remittances.

Based on the research conducted by the World Bank in 2006, International Migration and Development Research Program shows that: (a) International remittances reduce the level and depth of poverty. For example, a 10 percent increase in international remittances from each individual migrant will lead to a 3.5 percent decline in the share of people living in poverty; (b) While remittances reduce poverty, countries with higher levels of poverty are not necessarily receiving more remittances. Countries with the highest level of poverty such as those in Sub-Saharan Africa do not produce many international migrants and therefore receive fewer remittances; and (c) In general the largest effect of remittances on poverty is observed in countries located close to major labor–receiving areas. Developing countries close to the United States or Europe tend to receive more remittances which are usually spread evenly among the population.

The results of the empirical research conducted by Huay & Bani (2017) has shown that remittances have significantly decreased the level, depth and severity of poverty in developing

countries. The impact of remittances on poverty is negative and statistically significant on each of the three poverty measures: headcount, poverty gap, and squared poverty gap. The coefficient estimates of remittances suggest that a 1 percent increase in remittances will decrease poverty headcount by 0.41 percent. This finding was considered by the same authors consistent with recent literature on the negative effects of remittances on poverty (Adams & Page 2005; Imai et al., 2004).

3. The model and data: impact of remittances on poverty in South East Mediterranean

3.1 The empirical model

The basic growth poverty model suggested Ravallion (1997) and Ravallion and Chen (1997) accompanied by the frameworks postulated by Adams & Page (2005) to evaluate the effect of remittances on poverty, poverty is taken as a function of per capita income, some measure of income distribution, and the remittances to GDP ratio. The baseline specification is:

$$\text{Log (POVit)} = \alpha i + \beta 1 \log(GINI_{it}) + \beta 2 \log(GDP_{it}) + \beta 3 \log(REMIT_{it}) + \beta 4 \log(X_{it}) + \varepsilon it$$

(Where, i = 1.....N, t = 1....Ti), (1)

When POVit is poverty measures in country I at the time t;

αi is a fixed effect reflecting time difference between countries;

β1 is the elasticity of poverty with respect to income inequality given by the Gini coefficient;

β2 the PPP GDP is gross domestic product converted to international dollars using purchasing power parity rates;

β3 is the elasticity of poverty with respect remittances as % of GDP;

β4 is the control variables X, including level of inflation trade openness and illiteracy;

εit is an error term that includes errors in the poverty measure.

To measure poverty, three indicators are used poverty headcount ratio at 3.20$ a day (PPP) percentage of population; poverty gap at 3.20$ a day (PPP); the severity of poverty.

- The poverty headcount measure is considerably the most commonly calculated poverty measure;
- The poverty gap or the poverty depth indicates how far below the poverty line the average poor household's income falls, and is measured by the poverty gap ratio which is defined as the total income shortfall, expressed in proportion to the poverty line, of families with income below the poverty threshold, divided by the total number of families;
- The severity of poverty is the poverty measurement that is more sensitive to the income distribution among the poor. The measure used for the severity of poverty is the squared poverty gap ratio which is the total of the squared income shortfall, expressed in proportion to the poverty line, of families with income below the poverty threshold, divided by the total number of families. The severity of poverty

defines how many families are located far below the poverty line. These people are labeled as the "poorest of the poor;"

- Gini coefficient is used as a measure of inequality;
- GDP variable used is PPP GDP in constant 2011 US dollars;
- Remittances variable used is personal remittances received in % of GDP
- Inflation is the annual percentage change in the consumer price index;
- Trade openness measured by trade to GDP ratio represents openness of the economy;
- Illiteracy is illiteracy rate in adult total (percentage of people aged 15 and above).
- The second equation estimated is remittances (REM) as a function of poverty (POV), PPP GDP, Per capita GDP, trade openness (Trade to GDP ratio), Illiteracy Rate, Inflation Rate and lagged remittances (Remt-1) for capture the dynamic impact.

$$\text{Log (REMit)} = \alpha i + \alpha 1 \log (\text{POVit}) + \alpha 2 \log(\text{GDP}_{it}) + \alpha 3 \log(\text{TRADE}_{it}) + \alpha 4 \log(\text{Illiteracy}_{it}) \alpha 5 \log(\text{INF}_{it}) + \alpha 6 \log (\text{REMITit-1}) + \varepsilon it \quad (2)$$

(Where, i = 1.....N, t = 1....Ti),

The log transformation of all the variables allows interpretation of the coefficients as elasticities.

3.1.1. The data

To estimate the impact of remittances on poverty in southern and eastern Mediterranean, this paper uses relevant panel data for 8 selected countries for the period 2000 to 2018 which are: Algeria, Egypt, Jordan, Lebanon, Morocco, Tunisia, Turkey, and West bank and Gaza.

Justification of variables

The poverty and personal remittances received data variables were used as the dependent and independent variable, respectively Gini index, PPP GDP, inflation, trade openness and illiteracy rate were used as control variables in the current study.

According to Shahidur (2012), inflation lowers the value of people's liquid assets, their real income and the purchasing power of their money, thus subjecting them to increased levels of poverty. However, the United Nations report (2010) argued that inflation lowers real wages, thereby increasing employment levels due to reduced labor costs. It raises also the possibility for workers to be able to generate income and generate projects for themselves, thus contributing to the reduction of poverty levels. In the current study, therefore, inflation is expected to influence poverty positively or negatively.

Pradhan and Mahesh (2014) showed that trade openness has a negative effect on poverty in developing countries. Trade openness creates new international markets for locally manufactured goods and services while injecting new goods and services manufactured abroad into the local market. Local producers benefit as they now have easy access to foreign inputs for use in their production processes, and consumers benefit from greater variety and

cheaper products, which increases national income and triggers poverty reduction. In the current study, trade openness influence poverty negatively.

Afzal et al (2010) argue that lack of quality education is a source of child labor, perpetuating poverty. It is in this context that the current study predicts a positive or negative impact on poverty reduction. Anyanwu (1998, 2005) shows that education increases the stock of human capital, which in turn increases labor productivity and wages. Thus, while an increase in illiteracy decreases opportunity of the poor to generate income, the coefficient associated with illiteracy is expected to be negative.

Descriptive statistics

Table 1 and 2 provide detailed descriptions of the raw dataset. Before proceeding to the regression analysis, it is instructive to present bivariate relationships between poverty indicators and all the other variables, for example Table 2 show clear negative relationship between remittances and all measures of the poverty in SEMEC.

Table 1. Descriptive Statistics of Regression Variables

Variable	Obs	Mean	Std. Dev.	Min	Max	Median	Range
Poverty Headcount	152	9.56	9.40	0.06	35.34	6.19	35.28
Poverty Gap	152	2.19	2.23	0.00	8.15	1.28	8.15
Severity of Poverty	152	0.86	0.75	0.01	2.75	0.72	2.74
Gini Index	152	34.78	2.98	27.62	42.85	34.78	15.24
PPP GDP	152	39810969851 0.34	51828214623 6.61	104435208 64.38	23312689013 03.35	12585451247 3.93	2320825380 438.96
Remittances to GDP	152	8.22	6.97	0.06	26.42	6.31	26.36
Inflation Rate	152	5.80	7.81	-3.75	54.92	4.19	58.66
Trade openness	152	76.06	24.42	30.25	144.88	73.99	114.63
Illiteracy Rate	152	14.94	7.59	1.77	47.69	14.94	45.92

Note: These are the variables before the log transformation

Table 2. Bivariate Correlations of Regression Variables

Variable	Poverty Headcount	Poverty Gap	Severity of Poverty	Gini Index	Per Capita GDP	Remittances to GDP	Inflation Rate	Trade openness	Illiteracy Rate
Poverty Headcount	1.0000								
Poverty Gap	0.988**	1.00							
Severity of Poverty	0.896**	0.933**	1.00						
Gini Index	0.12	0.13	0.03	1.00					
PPP GDP	0.13	0.10	-0.01	0.573**	1.00				
Remittances to GDP	-0.333**	-0.345**	-0.231**	-0.340**	-0.554**	1.00			
Inflation Rate	0.14	0.12	0.07	0.188*	0.449**	-0.242**	1.00		
Trade Openness	-0.384**	-0.359**	-0.334**	-0.181*	-0.616**	0.560**	-0.326**	1.00	
Illiteracy Rate	0.387**	0.381**	0.375**	-0.13	-0.11	-0.15	0.00	-0.07	1.00

Note: ** Significant at 5% level; * Significant at 10% level.

Source: Authors' Calculations

3.1.2. Empirical results

Table 3. Ordinary Least Squares

Variable	Poverty headcount	Poverty Gap	Severity of poverty
Gini Index	0.645**	0.191***	0.0555**
	(0.275)	(0.0648)	(0.0220)
PPP GDP	-5.74***	-1.76***	-7.16***
	(2.13)	(5.02)	(1.71)
Remittances to GDP	-0.183	-0.0601***	-0.00893
	(0.121)	(0.0285)	(0.00969)
Inflation Rate	0.0898	0.0212	0.00627
	(0.0924)	(0.0218)	(0.00739)
Trade Openness	-0.162***	-0.0378***	-0.0157***
	(0.0370)	(0.00872)	(0.00296)
	0.408***	0.0914***	0.0297***
Illiteracy Rate	(0.0885)	(0.0208)	(0.00708)
	-3.402	-1.867	-0.00146
Constant	(9.326)	(2.195)	(0.746)
R-Squared	0.3273	0.3369	0.3213
N	152	152	152

Note: The numbers in parentheses are t-values. *** Significant at 1 % level; ** Significant at 5% level; * Significant at 10% level.

Table 3 shows the results of the empirical estimations using the ordinary least squares (OLS)[7] of panel data analysis.

The remittances variable has a negative impact on all three of the poverty measures: the poverty headcount, the poverty gap, and severity of poverty.

The results of the OLS test show that a 5% increase the remittances flows as a percentage of the GDP can lead to a decrease in the poverty gap of 6.1%.

Regardless of the measure of poverty used on the dependent variable. Gini index has a positive and significant coefficient for all the poverty measures indicate that greater inequality is associated with higher poverty. A negative and significant coefficient for the PPP GDP for all the poverty measures.

The other explanatory variables show a positive effect of both inflation rate and illiteracy rate. As regards trade openness, the results show that all the poverty measures have a negative and significant impact.

[7] Ordinary least squares (OLS) is a method for estimating the unknown parameters in a linear regression model. This method minimizes the sum of squared vertical distances between the observed responses in the dataset and the responses predicted by the linear approximation.

Table 4. Three Stage Least Squares Estimations

Variables	Dependent variable Poverty Headcount		Dependent variable Poverty Gap		Dependent variable Severity of poverty	
	Poverty headcount	Remittances	Poverty Gap	Remittances	Severity of poverty	Remittances
Gini Index	2.828*** (0.654)		5.771*** (1.395)		0.580 (1.559)	
PPP GDP	-1.948*** (0.0494)	-0.784*** (0.218)	-2.246*** (0.105)	-0.348** (0.138)	-2.071*** (0.118)	-0.310*** (0.111)
Remittances to GDP	-0.149** (0.0619)		-0.135 (0.132)		-0.695*** (0.148)	
Inflation Rate	0.0265 (0.0298)	0.0115 (0.0389)	0.0903 (0.0635)	0.0164 (0.0398)	0.193*** (0.0709)	0.0253 (0.0382)
Trade openness	-0.652*** (0.110)	0.791*** (0.152)	-0.366 (0.234)	1.031*** (0.124)	-0.548** (0.262)	1.067*** (0.109)
Illiteracy Rate	-0.0236 (0.0572)	-0.139* (0.0753)	-0.0889 (0.122)	-0.139* (0.0770)	-0.0792 (0.136)	-0.136* (0.0722)
Poverty		-0.325*** (0.105)		-0.0899* (0.0517)		-0.204*** (0.0431)
Lagged Remittances		0.438*** (0.0734)		0.312*** (0.0585)		0.307*** (0.0537)
Constant	38.63*** (3.019)	24.56*** (5.372)	35.98*** (6.439)	14.01*** (3.468)	47.94*** (7.196)	12.677*** (2.950)
Observations	152	152	152	152	152	152
R-squared	0.982	0.743	0.938	0.731	0.905	0.763

Note: The numbers in parentheses are t-values. *** Significant at 1 % level; ** Significant at 5% level; * Significant at 10% level.

The regression results were conducted using Three Stage Least Squares (3SLS)[8] because Ordinary least squares (OLS) estimates are likely to be biased when any right-side variable is endogenous. It can argue that the relationship between poverty and remittances is unlikely to be unidirectional. To tackle this issue a system estimation technique that allows for both poverty and remittances to be determined simultaneously is adopted. Three stage least squares is often described as the system equivalent of a two-stage least squares.

The advantage is that estimating a system of equations where both poverty and remittances are endogenously determined allows us to observe not just the effect of remittances on poverty, but also the reverse effect of poverty of remittances.

All regression coefficients representing the relationship the variables among are shown in Table 4.

The results suggest that the model is globally satisfactory in this two-equation system with a coefficient of determination (R-squared) which amounts to 0.98 for the poverty headcount, 0.94 for the poverty gap, and 0.91 for the severity of poverty. In other words, the model can explain 98%, 94% and 91% of the variability of the impact of remittances on poverty in SEMEC countries, when poverty is endogenously modeled.

Then reading of t-statistics shows that most of the coefficients of the variables selected are significant at the 1%, 5%, and 10%, in this two-equation system.

[8] The three-stage least squares technique involves simultaneously generating two-stage least squares estimate of all the equations in the system. The technique allows for nonzero contemporaneous correlations between the disturbances in different equations. If the disturbances are uncorrelated, the three-stage least squares technique reduces to a two-stage least squares.

The main finding is the impact of remittances on poverty. As expected, the analysis results from three stage least squares estimations show the negative relationship between remittances and poverty and this impact are significant for the poverty headcount and severity of poverty when poverty is endogenously modeled, an increase in remittances can directly lead to poverty reduction in the long run. This may be due to the fact that remittances directly increase the income of poor people, smooth household consumption and ease capital constraint, and also this negative effect might be due to the transaction cost associated with migration.

Regardless of the measure of poverty used as the dependent variable. Gini index has a positive and significant coefficient for the poverty headcount and the poverty gap. This positive relation indicates that at a given rate of economic growth, poverty reduces more in low inequality countries.

PPP GDP is a consistently negative and significant determinant of remittances in this two-equation system at 1%.

The inflation rate has a positive impact in this two-equation system, this can be explained by the fact that inflation can be a factor that accelerates poverty by expanding the gap between the rich and the poor. High income people benefit from a wage hike due to increasing in inflation, while poor people who tend to experience difficulties in finding job opportunities, cannot enjoy such a benefit. These results confirmed also that remittance inflows lead to upward pressure on inflation in SEMEC.

As regards the results show that Trade openness has a positive and significant coefficient at the 1% when remittances are endogenously modeled and has a negative significant coefficient when poverty is endogenously modeled, it can be interpreted that trade openness may worsen the income distribution by accelerating the skill-biased technical change in response to the increased competition with foreign countries. However, trade liberalization may not necessarily contribute to poverty reduction unless if per capita income growth and overall economic growth are seriously observed.

Finally, the lagged remittances are significant and positive predictors of remittances, implying that countries with higher remittances in the initial year, perhaps indicating a higher stock of migrants, have higher remittances.

4. Conclusions and policy recommendations

The present paper investigated the impact of remittances on poverty in eight SEMEC through an analysis based on poverty profiles, a method that is applied in several studies on the subject. These countries are known for their historical and recent background on migration which has intensified because of the increasing pressures on their political situation fueled by a decline in their socio-economic situation.

The results that emerge from this research converge to a large extent with a number of studies on the subject in other countries and region of the world. It has shown that remittances significantly reduce poverty in SEMEC, 5% increase in remittances flows as a percentage of the GDP can lead to a decrease in the poverty headcount ratio of (0.75%), and 1% increase in remittances flows as a percentage of GDP can lead to decrease in the severity of poverty of (0.70%).

Some important recommendations and conclusions need to be considered based on these findings. It is widely admitted that the scope of economic and financial benefits of the remittances on recipient countries has a significant social dimension. They have shown resilience in times of crisis as they are weakly sensitive to the decline in activity in the host countries. Based on this important fact, recipient countries need to set up policies toward encouraging more remittances flows as they are less volatile resource compared to foreign direct investment and foreign aid and due to their important role in alleviating poverty.

The implementation of appropriate financial infrastructures by encouraging competition among financial institutions sector may reduce costs and delays that enable households to conduct their financial transactions more easily through formal channels. Despite efforts that have been made to reduce the transaction costs in some SEMEC, the average transaction cost of sending remittances remains quite high in some countries (appendix1). Lowering remittances transaction costs will help increase the poverty-reduction impact of these remittances as it would increase the disposable income of migrant's families and encourage them to use the official banking, postal services or transfer operators' channels.

SEMEC should develop a set of appropriate policies that extend beyond the focus on remittances. Governments must ensure that remittances have the right impact on human capital. Investments in educational infrastructure and training of teachers must be undertaken, particularly in the communities of migrants' origin. This will enable the local population to use remittances to send their children to school. Improving access to education, for example, can reduce inequality (and hence poverty) both by increasing individual productivity and by facilitating the movement of poor people from low-paying jobs in agriculture to higher-paying jobs in industry and services. More importantly, public spending on education (as well as on health and other human capability, when targeted towards the poor, can produce a double dividend, reducing inequality and poverty in the short run and increasing the chances for poor children to access formal jobs and thus break free from the intergenerational poverty trap. Increasing educational levels and its quality should be accompanied by a strong investment climate to ensure that productive jobs are created for the new graduated.

Last but not least, the role of remittances is one of the key factors that has contributed efficiently to lower poverty in SEMEC. However, and as argued by Dabrowski, (2018), "unless economic and governance reforms are accelerated, SEMEC have little chance to get out of a low growth trap and address their socio-economic problems – such as high youth unemployment, low female labor-market participation, poverty, low-quality education, underdeveloped infrastructure, and poor business and investment climate". SEMEC should continue reinforcing their policies to mitigate the adverse poverty consequences of trade reforms. Improving safety nets and labor-market policies and institutions, investing in roads to improve access by the poor to markets, improving business climate can also reduce the adverse poverty changes that may result from trade liberalization. Finally, implementing suitable strategies must be able to trigger sustainable regional growth in order to create balanced, long-term development for the countries.

Appendix Table 1: Description of Variables

Variable	Source
Remittances (sum of receipts of worker remittances. employee compensation. migrant transfers) (as % of GDP)	World Development Indicators | DataBank (worldbank.org)
Poverty indicators	PovcalNet database (accessed on 2021 available at http://iresearch.worldbank.org/PovcalNet/jsp/index.jsp.)
Gini index	World Development Indicators | DataBank (worldbank.org)
PPP GDP (constant 2011 US dollar)	World Development Indicators | DataBank (worldbank.org)
Adult Illiteracy Rate	
Trade openness ((imports + exports)/GDP)	World Development Indicators
Inflation (annual percentage change in CPI)	World Development Indicators | DataBank (worldbank.org)
	World Development Indicators | DataBank (worldbank.org)

Appendix 1: Average transaction cost of sending remittances to a specific country (%)

Average transaction cost of sending remittance to a specific country is the average of the total transaction cost in percentage of the amount sent for sending USD 200 charged by each single remittance service provider (RSP) included in the Remittance Prices Worldwide (RPW) database to a specific country.

Year	Algeria	Egypt. Arab Rep	Jordan	Lebanon	Morocco	Tunisia	Turkey
2011	14.08	4.15	5.31	13.57	8.47	8.79	8.76
2012	12.99	4.28	4.37	11.44	8.31	8.78	7.75
2013	13.06	3.85	5.00	10.86	8.05	8.80	7.95
2014	10.12	4.46	5.95	11.85	7.49	8.95	6.91
2015	11.89	5.67	5.78	13.13	6.99	6.09	6.95
2016	8.10	4.97	5.49	11.99	6.84	8.58	7.40
2017	8.26	5.30	5.70	11.66	6.78	8.48	6.84

References

Adams, R H. Jr. (1991). The effects of international remittances on poverty, inequality, and development in rural Egypt. Research reports 86, International Food Policy Research Institute (IFPRI).

Adams, R. H.Jr., & Page, J. (2005). *Do international migration and remittances reduce poverty in developing countries?* World Development, 33(10), 1645–1669.

Adams, R.H.Jr, & Page, J. (2003). International Migration, Remittances and Poverty in Developing Countries. World Bank Policy Research Working Paper 3179, Washington.

Adams, R.H.Jr., & Page, J. (2006). *Do International Migration and Remittances Reduce Poverty in Developing Countries?*. Migration, Remittances and Development, Éditions OCDE, Paris.

Afzal et al. (2010). Relationship between school education and economic growth in Pakistan: ARDL bounds testing approach to co-integration. *Pakistan Economic and Social Review*, 1(48) 39-60.

Anyanwu, J.C., Erhijakpor, A.E.O. (2010). Do international remittances affect poverty in Africa ?, *African Development Review*, 22(1), 2010, pp. 51-91

Berenger, V., Bresson, F (2013). Poverty and Social Exclusion around the Mediterranean Sea. Springer, pp.373, 2013. ⟨halshs-00727229⟩.

Campos,R.R., & Lardé de Palomo, A., (2002). "Invirtamos en Educación para Desafiar el Crecimiento Económico y la Pobreza," Fundación Salvadoreña para el Desarrollo Económico y Social, San Salvador.

Chami, R., Fullenkamp, C., & Jahjah, S (2003). Are Immigrant Remittance Flows a Source of Capital for Development?. *International Monetary Fund (IMF)* Working Paper 03/189. Washington, DC.

Chimhowu, (2005). *Socio-Economic Impact of Remittances on Poverty Reduction* in book: Remittances. Development Impact and Future Prospects, Edition: 1, Chapter: 3, Publisher: The World Bank, Editors: Maimbo, S.M. and Ratha, D.

Cuevas, F, and Rodriguez-Chamussy, L. (2016). Poverty, Shared Prosperity and Inequality in Turkey: What is Behind the Trends?. Working Paper, World Bank, Washington, DC. 2016.

Dabrowski, M. (2018, December 11). Economic policy challenges in Southern and Eastern Mediterranean. https://www.bruegel.org/blog-post/economic-policy-challenges-southern-and-eastern-mediterranean.

Del Carpio, X and Wagner, M. (2015). The Impact of Syrian Refugees on the Turkish Labor Market. Policy Research Working Paper Series 7402, World Bank, Washington, DC.

Denning, S. (2017, July 10). Poverty in Lebanon: the Ramifications and How to Decrease Them. *Borgen Magazine*. https://www.borgenmagazine.com/poverty-in-lebanon/

European Training Foundation. (2014). Southern and Eastern Mediterranean, ETF 2014 operations: context and activities. https://www.etf.europa.eu/sites/default/files/m/24EEF230D29E2218C1257D9600549760_02%20SEMED%20briefing_March%202014.pdf

Ghosh, B. (2006). Migrant's Remittances and Developments: Myths, Rhetoric and Realities, International Organization for Migration, Geneva.

Gupta, S., Pattillo, C., & Wagh, S. (2007). Impact of Remittances on Poverty and Financial Development in Sub-Saharan Africa.Working Paper 07/38. International Monetary Fund, Washington, DC.

Huay, C, S., & Bani, Y. (2018). "Remittances, poverty and human capital: Evidence from developing countries". *International Journal of Social Economics* 45: 1227–35.

Huay, C. S., & Bani, Y. (2017). Does Remittances Reduce Poverty? An Empirical Evidence in Selected Developing Countries. *Journal of Islamic, Social, Economics and Development* (JISED), 2(6), 92 - 101.

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.

Ismaili Idrissi, B (2020). Transferts de fonds des Marocains résident à l'étranger : contexte, évolution et perspectives de renforcement, Nations Unies, Commission Economique pour l'Afrique, p 13.

Johnson, G. E., and Whitelaw, W. E. (1974). Urban-Rural Income Transfers in Kenya: An Estimated-Remittances Function. *Economic Development and Cultural Change*, Vol. 22, pp. 473–79.

Jongwanich, J. (2007). Workers' Remittances, Economic Growth and Poverty in Developing Asia and the Pacific Countries, 1–20.

Khalifeh, P. (2019, February 18). Pauvreté, crise économique et malaise social, le Liban à l'épreuve.*RFI*. https://www.rfi.fr/fr/moyen-orient/20190218-liban-pauvrete-crise-economique-perspectives-changement

Lucas, R.E.B., & Stark, O. (1985). Motivations to Remit: Evidence from Botswana. *Journal of Political Economy*, Vol. 93, pp. 901–18.

Maimbo, S.M., & Ratha D., (2005). Remittances: Development Impact and Future Prospects. Washington DC, the World Bank.

Mamun, K.A., Nath, H. K., (2010).Workers'Migration and Remittances in Bangladesh. [online]. *Journal of Business Strategies*. 2010, Vol. 27, No. 1 [cit. 5. 11. 2018].

Miotti,L.,& Mouhoud , E., Oudinet, J (2010). Determinants and Uses of Remittances to Southern and Eastern Mediterranean Countries: Insights from a New Survey, centro studi luca d'agliano.

Pradhan,B.K., Mahesh, M. (2014). Impact of trade openness on poverty: A panel data analysis of a set of developing countries. *Economics Bulletin* 34(4):2208-2219.

Ratha, D., (2003).Workers' Remittances: An Important and Stable Source of External Development Finance", Global Development Finance 2003, Striving for Development Finance. The World Bank, Washington, DC.

Shahidur, R., Talukdar, M. (2012). The Effect of Inflation on Poverty in Developing Countries: A Panel Data Analysis. Thesis of Texas Tech University.

Silva, V.C., Jha, S., & Sugiyarto, G., (2009). Remittances in Asia: Implications for the Fight against Poverty and the Pursuit of Economic Growth, ADB Economics working Paper Series N°. 182 (Manila: Asian development Bank).

Sirkeci, I., Cohen, J. H., & Ratha, D. (Eds.). (2012). Migration and remittances during the global financial crisis and beyond. Washington DC: World Bank Publications.

Sorensen, N., & Pedersen, P. (2002). The Migration and Development Nexus: Evidence and Policy Options, Policy Study, Center for Development research (CDR), Copenhagen.

UNDP, (2020). Jordan Poverty Reduction Strategy. https://www.undp.org/arab-states/publications/jordan-poverty-reduction-strategy.

United Nations. Economic Commission for Africa (2017-03). Country profile Algeria 2016. Addis Ababa. https://hdl.handle.net/10855/23696

World Bank (2020), Poverty and Equity brief Middle East and North Africa Arab Republic of Egypt. https://povertydata.worldbank.org/poverty/country/EGY.

World Bank, (2006). Global Economic Prospects 2006: Economic Implications of Remittances and Migration. Washington, DC: The International Bank for Reconstruction and Development / The World Bank.

World Bank, (2016). Poverty has Fallen in the Maghreb, but Inequality Persists. https://www.worldbank.org/en/news/feature/2016/10/17/poverty-has-fallen-in-the-maghreb-but-inequality-persists.

World Bank, (2022). Poverty and Equity brief Middle East and North Africa Arab Tunisia. https://databankfiles.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global_POVEQ_TUN.pdf

World Bank, (2022). Poverty and Equity brief Middle East and North Africa West Bank and Gazza. https://databankfiles.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global_POVEQ_PSE.pdf.

World Bank, (2022). Poverty and Equity brief Middle East and North Africa Turkey. databankfiles.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global_POVEQ_TUR.pdf.

Yoshino, N., Taghizadeh-Hesary , F., & . Otsuka., M. (2017). International Remittances and Poverty Reduction: Evidence from Asian Developing Countries. ADBI Working Paper 759. Tokyo: Asian Development Bank Institute. Available: https://www.adb.org/publications/international-remittances-and-poverty-reduction.