Remittances And Growth In Tunisia: A Daynamic Panel Analysis From A Sectoral Database

Kouni, Mohamed

Higher Institute of Business Administration: University of Gafsa

2016

Remittances and Growth in Tunisia:
A Dynamic Panel Analysis from a Sectoral Database

Mohamed Kouni

Assistant professor in Economics at the Higher Institute of Business Administration:
University of Gafsa, Tunisia.

Abstract

This paper uses a sectoral data set from Tunisia to analyze how the remittances affect the economic growth during over the period from 1987 to 2012. To achieve this objective we use a sectoral database of remittances allocated to investment, in contrast with the majority of studies which have used all the amount of remittances. We assume that using remittances allocated to investment can generate a direct and more significant effect on growth. Our empirical analysis is based on the dynamic panel approach (GMM method) and conducted on a sample of 3 economic sectors (Agriculture, industry and services). The findings of this paper suggest that remittances have significantly contributed to economic growth. In spite of the amount of remittances allocated to investment is smaller than the one allocated to consumption, remittances enhance the share of the sectoral value added in GDP in the economy. Indeed, 1% increase in remittances allocated to investment would increase the VA/GDP ratio by 1% to 4%. The study also finds that investment and Labor constitute the major contributors of the economic growth in Tunisia. However, the technical efficiency is negative. Further, in the Tunisian context characterized by a high unemployment rate and great regional disparities, remittances can play an important role. Therefore, some policy implications can be proposed such as for example an incentive policy to encourage migrants to remit more funds and to invest in productive fields. This can be achieved by reinforcing social networks, reviewing the current remittances fees, and ameliorating the affairs climate essentially at the regional level.
_____
Keywords: migration, remittances, economic growth, dynamic panel data, GMM method.

INTRODUCTION

Remittances are among the main factors of growth in several developing countries. Indeed, in many countries, remittances constitute a very important source for covering the balance of payments deficits and for both investment and consumption. But also, remittances represent a major foreign source of financial flows for certain economies such as Lebanon, Jordan and Palestinian territory. Glytsos (2002) showed that remittances represent 84% and 41% of merchandise exports in Jordan and Morocco respectively, and they exceed merchandise exports in Egypt. On a world scale, remittances accounted for 2% of GDP in 2004 (Eljafari et al., 2012).

Several studies showed the importance of remittances in poverty reducing and in growth of consumption and investment. Barajas et al. (2009) confirm that remittances become larger than foreign direct investment (FDI) in developing countries.

In spite of remittances have a positive impact on balance of payments, on poverty and on consumption, this effect not very clear on growth. Some works prove a positive relationship between remittances and growth (calderon et al., 2007; Aggarwal et al., 2011; Adams

and Klobodu, 2016; Akobeng, 2015; Tahir et al., 2015). These works showed that remittances can generate an important effect through some channels such as financial development, education and democracy. Other studies obtained a negative effect of remittances on growth. Barajas et al. (2009) find that remittances have contributed little to growth in developing countries. The sending money does not have a significant positive effect on growth in some countries; while it has a negative impact in other countries. Similarly, Ang (2007) concludes that the received money has a weak relationship with labor productivity and agriculture production in Philippines. It was among sources of the reduction of agriculture production because it is not good allocated and becomes unprofitable. Ahoure (2008) showed that remittances have a negative effect on the evolution of GDP.

These studies which analyzed the relationship between remittances and growth have not found a clear effect and have not attained the consensus. The main finding showed that the remittances can improve growth but this depends on some other factors, such as governance, the remittances' share affected to investment, mentalities of investors, the affaires climate, and some other

particularities. In this sense Glytsos (2002) shows that the impact of remittances differs from one country to another owing to the difference in the spending priorities of remittances. He confirms that there are good cases where remittances enhance growth and also, bad cases where remittances have had a negative effect on growth.

It is in this perspective that this article proposes to answer at the following question: What is the impact of remittances affected to investment on sectoral economic growth in Tunisia?

This paper contributes to the existing literature from two main points. First, the majority of studies use all amount of remittances to test their effect on growth. But, this effect remains less clear because remittances are mainly affected to consumption. We use in this paper the remittances' share affected to investment to test their effect on growth. Second, we consider a panel of three Tunisian sectors, while all works that studied the effect of remittances on Tunisian economic growth have tested this effect on all economy.

However, we use a database by sector to test this relationship. Data are provided by some official institutions such as World Bank (World Development indicator), Promotion Agency of Industry and Innovation (APII), National Institute of Statistics (INS), Agricultural Investment Promotion Agency (APIA) and Office of Tunisians Abroad (OTE), and that cover 26 years between 1987 and 2012.

It is important to stress that the finding of this paper can draw attention of both policymakers and searchers. Indeed, there are little works, which have studied the effect of remittances at the sectoral level, rather than, this type of analysis can significantly enrich the literature in this field. But, also the use of fine Data on remittances affected to investment can light the policymakers on the real weight of this remittances share and its important role in a small economy such as Tunisia. Some efficient policies can be adopted based on these results.

The paper is structured as follows. The next section presents a brief literature review. Section three analyzes the evolution of migration, remittances and economic growth in Tunisia. Section four examines the empirical relationship between remittances and economic growth. Section five summarizes and concludes.

LITERATURE REVIEW

Several theoretical and empirical works have studied remittances effect's on macroeconomic variables, such as consumption, investment and growth. In fact, results are varied. Some works showed a positive effect of remittances on growth. Other studies prove that remittances have negative impact on growth and development.

Remittances can improve growth in countries where financial market is not developed, and constitute a fundamental financial source of development (calderon et al., 2007; Aggarwal et al., 2011). Adams and Klobodu (2016) showed in a study which analyzed the impact of remittances on growth through the regime durability, that remittances are significantly correlated to growth when the regime is durable or democrat. Otherwise, their impact is very limited.

On the other hand, Akobeng (2015) in a study concerning 41 Sub-Saharan Africa countries gets a positive effect of remittances on poverty reduction. Further, this effect is important when the financial sector is well functioning. This effect varies according to the measure of poverty. The same idea is confirmed by the study of Giuliano and Ruiz-Arranz (2009) through which authors showed that remittances enhance growth in the countries where the financial sector is less developed.

Jouini (2015) tested the relationship between remittances and economic growth through two channels: investment and financial development for Tunisia. The author concludes that the causality between remittances and growth depends on analysis term. The causality is so bidirectional only in the short-term. In the same sense, Lim and Simmons (2014) showed that there is no a long-run relationship between remittances and growth or investment, but this relationship is proved between remittances and consumption.

Tahir et al. (2015) analyzed the effect of foreign factors: foreign direct investment (FDI), remittances and imports on growth of Pakistan over the period from 1977 to 2013. The main result showed that remittances and FDI have a significant positive impact on long-run growth. Nevertheless, Barguellil and Zaiem (2013) don't get a long-run direct relationship between remittances and growth in the case of Tunisian economy. Authors showed, by against that there is a positive indirect effect of remittances on growth. Indeed, remittances affect growth through education.

Migration and Remittances In Tunisia
More than 10% of the Tunisian population (1,223,213 migrants in 2012, 11.3% of population) lives abroad, mainly in European countries (more than 80% of total migration) and primarily in France (more than half). Since 1990, migration increased rapidly and it had doubled between 1995 and 2008 (Eljafari et al., 2012).
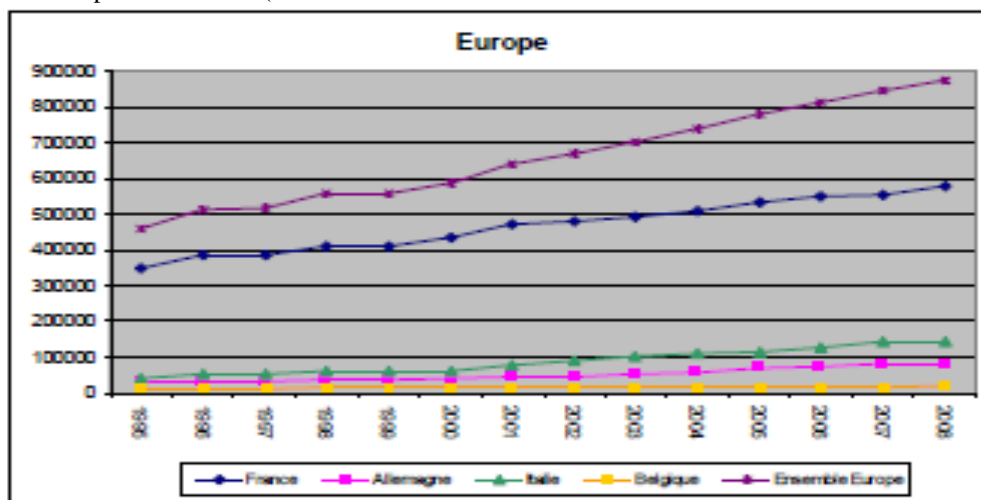

Figure 1: Tunisian migration flows to the main European countries over the period: 1985 - 2008
Source: Eljefari, Boughzala and Kouni (2012)

For many factors such as unemployment and institutional and political conditions, migration becomes an important phenomenon in Tunisia. Indeed, with the rapid evolution of illegal migration to Europe and the greatest demand of visa for skilled migration, mainly to Canada, migration has become a solution for individuals as well as for makers. It is true that by the presence of high unemployment rates (The total unemployment rate stabilized at around 15% since 2013 and the skilled unemployment rate is actually about 20% and 40% for men and women respectively)[1]; migration constitutes a good solution for a great number of unemployed skilled and unskilled workers and an important income source of many families. In fact, about 300,000 households have benefited by the remittances. This number is very near to the number of poor families estimated to 297,000 families in 2010.

Remittances are evaluated to 3538.8 million dinars in 2012. Their share in GDP is equal 4.52% in 2011 and 5.26% in 2012. They exceeded the FDI flows which represent 2.6% of GDP in 2011 and 3.74% in 2012. Then, their importance increases every year whence they grew from 403 million dinars in 1987 to 3538.8 million dinars in 2012. In fact, remittances increased by about 9.07% in average in each year between 1987 and 2012.
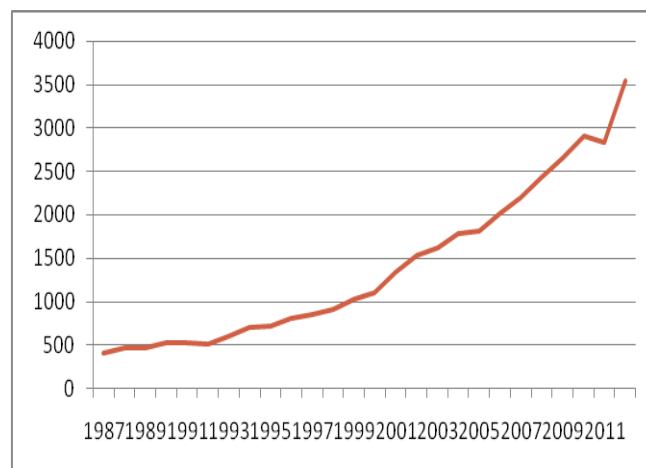

Figure 2: Tunisian remittances flow over the period: 1987 - 2012
Source: Based on data of Central Bank of Tunisia

This means, that remittances are increased rapidly over this period. This can be explained by the rapid growth of migration. It's true that remittances constitute an important financial source for some poor regions, but also, they have significantly contributed as a source for incomes for Tunisia, therefore for poverty reducing.

It is evident that remittances contributed to ameliorate consumption and reduce poverty in Tunisia. Nevertheless, their role in growth remains to be seen.

---

[1] *National Institute of Statistics.*

Economic Growth in Tunisia

Over the period 1987-2012 the Tunisian economy has been changed. Indeed, the economy has increased by about 5% in average during the two latest decades. This growth rate is higher than the rate of the MENA region during the same period. Several factors have contributed to this growth level, among which, the structural adjustment plan adopted at the end of eighties, the openness degree and transfers technology, and the relative decline of growth volatility caused by the progressive decrease of agriculture share in GDP (see table 1) (FEMISE, 2005 and OECD, 2011).

Table I: Growth rate of GDP in Tunisia and MENA region

	1960-1980	1981-1990	1991-2000	2001-2010
Growth rate				
• **Tunisia**	6.60%	3.70%	4.76%	4.21%
• **MENA**	6.80%	2.20%	4.20%	4.8%
Volatility of growth (Standard deviation of the growth rate)				
• **Tunisia**	5.035	2.93	1.89	-
• **MENA**	3.86	2.01	2.15	-

Source: FEMISE (2005) and OECD (2011)[2]

Indeed, the standard deviation of growth decreased from 5.035 over the period 1960-1980 to 2.93 over the period 1981-1990 and 1.89 over the period of 1991-2000 (Central Bank of Tunisia). In the framework of structural adjustment plan, the reforms of enterprises constitute the major factor of growth in order to lead economy to an important increase of total factor productivity. This means that growth did not lead the economy only to stability and high living standard, but also, to more qualitative changes.

Thus, at the level of sectors, this change can be clearly observed. Therefore, the main contribution to growth comes from services and manufacturing sectors. For example, Services sector increased by 3.5% over the period 1980-1990, by 5.8% between 1990 and 2000, and by 6.3% between 2000 and 2005. This sector has been the more dynamic component of the economic system during the three latest decades (FEMISE, 2005).

As it appeared on figure 3 the share of the services on GDP increased from 54.06% in 1987 to 61.41% in 2012. The industry share remains around 30% of GDP

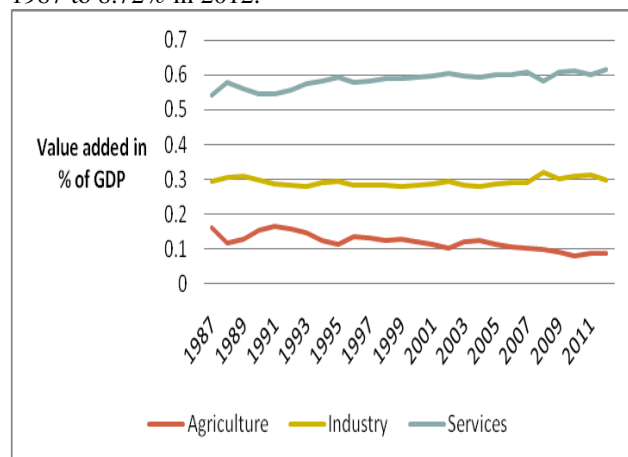and the agricultural share decreased from 16.46% in 1987 to 8.72% in 2012.

Figure 3: The economic structure change in Tunisia between 1987 and 2012
Source: based on WDI data

It is clear that the main change in the economic structure is revealed by the growth in the share of services in response to the significant decline in the share of agriculture in GDP. Several factors can explain this change among which:

✓ The greatest share of investment is attracted by the services. For example, this share increased from 46% in 1987 to 53.3% in 2004 (FEMISE, 2005),

✓ The growth and improvement of education, necessarily the higher education, and

✓ The important volume of Remittances that has been invested in this sector. Indeed, 44.22% of transfers allocated to investment are invested on average in services.
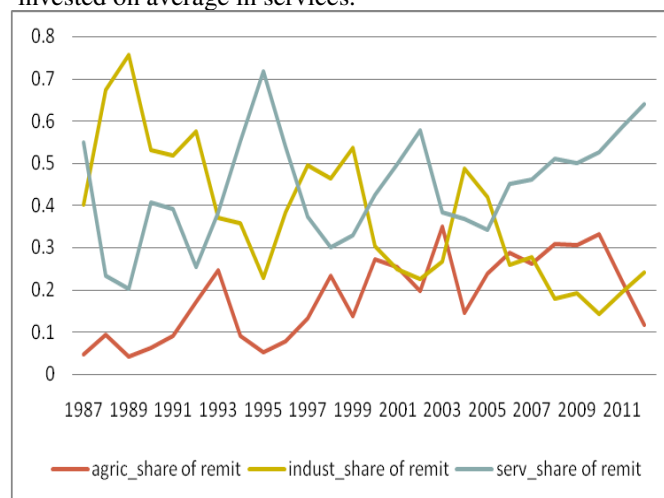

Figure 4: Evolution of the sectoral shares of remittances between 1987 and 2012
Source: based on data of API, APIA and OTE

---

[2] : See O'SULLIVAN, A. REY, M. E. and MENDEZ, J. G. (2011)

In spite of the growth rate increased over the period and the product structure has been changed mainly to services, the development model for Tunisia suffers of several problems. For example, the trade of goods has occupied 2/3 of total trade, while services not exceeded the 1/3. This showed that the Tunisian services are not competitive on the international market; nevertheless, in the world the share of the services is about 2/3 of total trade. Then, the productivity remains very weak and the unemployment rate is very high (FEMISE, 2005).

$$ln\left(\frac{VA_i}{GDP}\right)_{i,t} = c_0 + c_1 \ln\left(\frac{VA_i}{GDP}\right)_{i,t-1} + c_2 lnGFCF_{i,t} + c_3 lnL_{i,t} + c_4 lnREMIT\_Share_{i,t} + c_5 TREND +$$

$$\varepsilon_{i,t}$$

(1)

With , , , $REMIT\_$, 7

and are respectively, the share of the sectoral VA in GDP, the gross fixed capital formation of the sector i, the labor force of the sector i, the share of remittances allocated to investment in sector i on total remittances affected to investment in the economy, the time trend and the error term distributed following the normal law. All the variables are under logarithmic form.

The main works that analyzed the effect of remittances on growth have used all the received amount of remittances and they tested this impact using time series of GDP or other growth indicator for all economy. It is evident that remittances are affected between three economic aggregates: physical investment, education and consumption. In addition, several works showed that the main remittances share is affected to consumption (Adams and Cuecuecha (2010)). It is true that consumption and human or physical investment contribute to growth, but investment contributes more and directly to growth than consumption. For this reason, using a database provided statistics on remittances affected to investment, permits to get more significant results. But also, using a sectoral database in the framework of dynamic panel model can enlarge the number of observations and eliminates the bias and helps to identify the dynamics of growth.

Our aim in this section is to analyze the effect of remittances affected to investment on economic Tunisian growth. We use a sectoral database on the period from 1987 to 2012.

DATA AND METHODOLOGY
Data
The data cover the period 1987-2012 and it draws on several sources: National Institute of Statistics (INS) for

Remittances and their effects on economic growth in Tunisia: Empirical evidence
In this section we estimate a panel of three Tunisian sectors: Agriculture, Industry and Services, from which we test the impact of remittances on the share of VA in GDP of each sector.

Indeed, following works of Jayaraman et al. (2011), Kagochi et al. (2010) Kandil and Mirzaie (2009) and Adams and Klobodu (2016), the following equation is estimated:

GFCF and labor force, World Bank (World Development indicators) for sectoral share of the Value Added in percentage of GDP and Office of Tunisians Abroad (OTE), Promotion Agency of Industry and Innovation (APII) and Agricultural Investment Promotion Agency (APIA) for remittances allocated to investment by sector.

Table II: Data: definitions and sources

Variable	Definitions	Sources
$ln\left(\dfrac{VA_i}{GDP}\right)$	the share of the value added of the sector i in GDP (i = Agriculture, industry, services)	World Bank (World Development indicators)
$lnGFCF_i$	The gross fixed capital formation of the sector i.	National Institute of Statistics (INS)
lnL_i	The labor force employed in the sector i.	National Institute of Statistics (INS)
$lnREMIT\_Sha$	The share of remittances allocated to investment in sector i on total remittances affected to investment in the economy.	Office of Tunisians Abroad (OTE) Promotion Agency of Industry and Innovation (APII) Agricultural Investment Promotion Agency (APIA)

All the variables are expected to have positive impact on the VA share on GDP. The labor force, investment and remittances have both positive effects on economic growth. The effect of time trend on growth can be positive or negative depending on the importance of technical efficiency at the level of each sector. This variable measures the technical change in the economy.

Table 3 is a summary of the variables used in the estimation:

Table III: Descriptive statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
$ln\left(\dfrac{VA_i}{GDP}\right)$	Overall	-1.29607	.6648236	-2.53001	-.4875098	78
	Between		.79604	-2.12519	-.5378633	3
	Within		.1185362	-1.70089	-.9594017	26
$lnGFCF_i$	Overall	7.470513	.8474728	6.2	9.2	78
	Between		.8062472	6.680769	8.292308	3
	Within		.5284182	6.232051	8.632052	26
lnL_i	Overall	6.715385	.3810706	6.2	7.4	78
	Between		.4251174	6.296154	7.146154	3
	Within		.1522066	6.411539	7.011538	26
$lnREMIT\_Share_i$	Overall	-1.26744	.6481368	-3.14922	-.2804079	78
	Between		.5282787	-1.86435	-.8600989	3
	Within		.4812617	-2.55232	-.4520197	26

SOURCE: Author calculations

METHODOLOGY

Our methodological approach consists to estimate the equation (1) by the Generalized Method of Moments (GMM). Indeed, it comes out that the best estimates could be obtained when is applied this method. We use the Arellano and Bond (1991) estimator, and specially the System dynamic panel-data estimation (Arellano-Bover (1995) and Blundell- Bond (1998)). The GMM permits to control the individual and temporal specific effects and palliate the endogeneity bias of variables. For two estimators it assumed that the variables are stationary in level and the residues are not autocorrelated.

In the Arellano and Bond (1991) estimator, the strategy consists to differentiate the equation (1) in level. The first difference eliminates the country specific effect and therefore, the bias of omitted variables. Consequently, the first differences of exogenous variables are instrumented by their lagged values. The simultaneity bias and the bias introduced by the presence of the lagged endogenous variable are reduced.

Nevertheless, the Arellano and Bond method suffers from weaknesses of instruments. Indeed, the lagged values of exogenous variables constitute weak instruments of the first difference of equation. Thus, the difference in level of the equation eliminates the inter-country variations and it considers only the intra-country variations.

However, the System dynamic panel-data estimator removes this limit. This method combines the equation in difference with the one in level. The two equations are simultaneously estimated by GMM method.

Blundell and Bond (1998) showed that the system GMM estimator is more efficient than the differences GMM estimator.

EMPIRICAL RESULTS

The results figure on the Table 4.

The model is statistically significant (chi2 is high and significant at 1% level in all regressions). In addition, as proved in econometric literature, the system dynamic panel data method gives a result more significant than the one given by Arellano and Bond dynamic panel data method (chi2 is higher in all estimations by the system dynamic panel data method). Indeed, the system dynamic panel data method permits to take off the weaknesses of instruments approximated by lagged variables.

The results are clear. Remittances are highly significant. Therefore, they significantly contribute to growth of the VA on GDP in the three sectors in average. The elasticity of the VA/GDP ratio, with respect to remittances varies from about 1% to about 4%. In regression 4 (the most significant regression), remittances contribute to growth by about 1%. In fact, an increasing of remittances by 1% permits to raise the share of the VA on GDP by about 1% to 5%. This means that sending money contributes to economic growth in Tunisia, consistent with an important part of literature. Indeed, the same result is obtained by Kandil and Mirzaie (2009) which showed that remittances increase growth in some MENA countries such as Jordan and Tunisia and by Tahir et al. (2015) who get a positive relationship between remittances and growth in Pakistan. Barguellil and Zaiem (2013) proved the positive indirect effect of Remittances on growth for the Tunisian case.

Table IV: Empirical results: The dependent variable is the share of sectoral value added to GDP ($_{i,T}$)

Variable	(1) A-B	(2) A-B/B-B	(3) A-B/B-B	(4) A-B/B-B	(5) A-B/B-B	(6) A-B/B-B
Constant	-2.4064*** (-8.13)	-4.1472*** (-9.14)	-1.8466*** (-2.63)	-4.1043*** (-4.87)	-3.5287*** (-10.67)	-3.2642*** (-29.67)
$ln\left(\frac{VA_i}{GDP}\right)_{i,t-1}$	.4617*** (6.06)	.5927*** (8.57)	.7271*** (7.16)	.6870*** (9.89)	.6772*** (15.40)	.6972*** (24.92)
$lnREMIT_{Share_{i,t}}$	.0144** (2.13)	.0404*** (4.55)	.0390*** (3.43)	.0092*** (3.23)	-	-
$lnREMIT_{Share_{i,t-1}}$	-	-	-	-	.0155*** (2.87)	-
$lnREMIT_{Share_{i,t-2}}$	-	-	-	-	-	.0050** (2.17)
$lnGFCF_{i,t}$	.1979** (2.02)	.1597*** (2.73)	.2357*** (2.78)	-	.1111*** (2.92)	.1334** (2.22)
$lnL_{i,t}$	.0701 (0.41)	.4085*** (21.80)	-	.5771*** (5.01)	.3733*** (25.34)	.3123*** (4.07)
$TREND$	-.0167*** (-4.76)	-.0200*** (-6.83)	-.0166*** (-3.59)	-.0125*** (-5.79)	-.0157*** (-11.80)	-.0161*** (-10.52)
Wald chi2(2)	263.76	477.60	709.60	54967.52	775.63	786.48
Prob > chi2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
N of observations	72	75	75	75	75	72
N of sectors	3	3	3	3	3	3

t-statistic in parentheses; ***, **, *: significant at 1%, 5% and 10% respectively
A-B: Arellano-Bond dynamic panel-data estimation
A-B/B-B : System dynamic panel-data estimation (Arellano- Bover (1995) and Blundell- Bond (1998))
SOURCE: Author calculations

Nevertheless, several others works showed a negative or weak impact of remittances on growth such as Barajas et al. (2009), Ang (2007), Ahoure (2008), Lim and Simmons (2014), etc.

The highly significant and positive result can be explained by the use of remittances affected to investment rather than all amount of remittances (used by other works). Remittances allocated to investment can generate a direct and immediately effect, therefore they enhance the value added in each sector. Further, in spite of remittances allocated to investment are very small comparing with those allocated to consumption (see table 5) they not cease to generate a significant positive effect on growth in Tunisia.

Table V: The share of remittances allocated to investment in total remittances

	The share of remittances allocated to investment in total remittances
1987	0.0088
1988	0.0197
1989	0.0306
1990	0.0384
1991	0.0648
1992	0.0229
1993	0.0438
1994	0.0383
1995	0.0530
1996	0.0240
1997	0.0184
1998	0.0191
1999	0.0127
2000	0.0134
2001	0.0093
2002	0.0096
2003	0.0117
2004	0.0079
2005	0.0101
2006	0.0097
2007	0.0120
2008	0.0119
2009	0.0141
2010	0.0145
2011	0.0171
2012	0.0259

SOURCE: Author calculations based on data of API, APIA and OTE

We estimate also the effect of lagged remittances (Regressions 5 and 6). The result showed that remittances improve significantly growth by about 1.5% for the lag of one period and by about 0.5% for the lag by two periods.

It is clear that remittances play an important role as a factor of investment and growth in Tunisia, especially in presence of the banking system with inflexible conditions, necessarily for the case of small credits, and an undeveloped financial market. Remittances can be so considered as a substitute of banking financing.

The effect of lagged outcome (VA/GDP) is highly significant and positive. The elasticity of the lagged dependent variable varies from about 46% to 72%. This shows that growth is dynamic.

Furthermore, the classical factors of growth, and as macroeconomic theory shows, boost significantly growth. The VA/GDP ratio depends on the investment, whence the elasticity of the VA/GDP ratio with respect to investment varies from 11% to about 20%. The investment constitutes so, among the main factors of growth in Tunisia between 1987 and 2012.

In the same way, the elasticity of the VA/GDP ratio with respect to labor force is positive and highly significant in all the system dynamic panel data estimations. It varies from 31% to 57%.

The time trend has a negative sign and it is statistically significant. This result indicates that the technical efficiency in Tunisia is negative, and it declined with time at the rate ranging from about 1.25% to 2% per year. The three Tunisian sectors (Agriculture, industry and services) are so technically inefficient. The main source of inefficiency is the inefficient competition framework in the local market. The World Bank (2014) showed that the competition policy is inefficient because it excludes some key markets and continues to control the administrative prices of a large variety of food and non-food goods and services.

CONCLUSION AND POLICY IMPLICATIONS

This paper is interested in examining the relationship between economic growth and remittances in Tunisia during the period from 1987 to 2012. This work contributes to the literature in this subject. To achieve this objective we use a sectoral database of remittances allocated to investment, in contrast with the majority of studies which have used all the amount of remittances. We consider that using remittances allocated to investment can generate a direct and more significant effect on growth. But also, a panel of three sectors can

better show the dynamic of growth. The findings of this paper suggest that the remittances affected to investment have contributed to economic growth. Thus, empirical results showed that remittances have a positive and significant effect on growth.

The study also finds that investment and Labor constitute the major contributors of the economic growth in Tunisia. However, the technical efficiency is negative. It also emerges that remittances contribute significantly to the economic growth. In spite of the amount of remittances allocated to investment is smaller than the one allocated to consumption, remittances enhance the share of the sectoral value added in GDP in the economy. Indeed, 1% increase in remittances would increase the VA/GDP ratio by 1% to 4%.

Further, it is important to stress that Tunisia suffers from two main problems: the high skilled and unskilled unemployment rate (especially, skilled unemployment) and the great regional disparities. Many factors contribute to this situation among which the rigidity of the banking system which offers credits (necessarily in the case of small credits) in inflexible conditions. In this framework, remittances can play an important role.

Therefore, some policy implications can be proposed as follows:

- There is a need for Tunisian policy-makers to adopt an incentive policy to encourage migrants to remit more funds and to invest in productive fields. This can be achieved by adoption a policy that reinforces social networks between migrants and their origin society. Some development programs incite association projects between for example unemployed workers and migrants. This association has two goals. First, it can solve the projects funding difficulty, and second it can promote investment.
- To achieve this goal, government should review the current fees to encourage migrants to remit their funds through formal canals and to deposit their money in the banking system to promote saving and investment.
- Finally, an important work is required, necessarily at the regional level to ameliorate the affairs climate. Some administrative facilitations and regional incentives are required to encourage migrants to invest in development priority regions. By this policy the government can benefit from remittances and considerably reduce unemployment.

While this paper attempts to study the impact of remittances allocated to investment on the economic

growth at the sectoral level, future empirical works could investigate this relationship taking account some points such as the consideration of several sectors (all industrial under-sectors for example), and the comparison between the effect of remittances affected to consumption and the one of remittances allocated to investment. These results can better light policymakers and open new horizons in this research field.

REFERENCES

ADAMS, R. H. and CUECUECHA, A. 2010. Remittances, Household Expenditure and Investment in Guatemala. World Development, doi:10.1016/j.worlddev.2010.03.003.

ADAMS, S. and KLOBODU, E.K.M. 2016. Remittances, regime durability and economic growth in Sub-Saharan Africa (SSA). Economic Analysis and Policy, http://dx.doi.org/10.1016/j.eap.2016.01.002.

AGGARWAL, R. DEMIRGÜç-KUNT, A. and PERÍA, M. S. M. 2011. Do remittances promote financial development?. Journal of Development Economics, 96: 255-264.

AHOURE, A. A. E. 2008. Migrations, Transferts, Gouvernance et Croissance dans les Pays d'Afrique sub-saharienne: Une analyse à partir de données de panel. IMI WORKSHOP, Rabat.

AKOBENG, E. 2015. Out of inequality and poverty: Evidence for the effectiveness of remittances in Sub-Saharan Africa. Quarterly Review of Economics and Finance, http://dx.doi.org/10.1016/j.qref.2015.10.008.

ANG, A. P. 2007. Workers' Remittances and Economic Growth in the Philippines. DEGIT Conference Papers c012_029, DEGIT, Dynamics, Economic Growth, and International Trade.

ARELLANO, M. and BOND, S. 1991. Some Tests of Specification for Panel Data: Monte Carlo Evidence and an Application to Employment Equations. Review of Econmic Studies, 58: 277-297

ARELLANO, M. and BOVER, O. 1995. Another look at the instrumental variable estimation of error-components models. Journal of Econometrics, 68: 29-51

BARAJAS, A. CHAMI, R. FULLENKAMP, C. GAPEN, M. and MONTIEL, P. 2009. Do Workers' Remittances Promote Economic Growth?. IMF, WP/09/153.

BARGUELLIL, A. and ZAIEM, M. E. 2013. The Effect of Migrant Remittances on Economic Growth through Education: The Case of Tunisia. International Journal of Economics and Management Sciences, 2 (8): 33-40.

BLUNDELL, R. and BOND, S. 1998. Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics, 87: 115—143

CALDERON, C. FAJNZYLBER, P. and LOPEZ, H. 2007. Remittances and growth: the role of complementary policies. Lessons from Latin America. Washington, DC: The World Bank; pp. 33–68.

ELJAFARI, M. BOUGHZALA, M. and KOUNI, M. 2012. Determinants and impacts of migration and remittances: the case of Palestine and Tunisia. FEMISE n° FEM33-16.

FEMISE. 2005. Profil Pays : Tunisie. www.femise.org. GIULIANO, P. and RUIZ-ARRANZ, M. 2009. Remittances, financial development, and growth. Journal of Development Economics, 90: 144-152.

GLYTSOS, N. P. 2002. Dynamic Effects of Migrant Remittances on Growth: An Econometric Model with an Application to Mediterranean Countries. Centre of Planning and Economic Research, 74.

JAYARAMAN, T. K. CHOONG, C.-K. and KUMAR, R. 2011. Role of remittances in small Pacific Island economies: An Empirical Study of Fiji. Int. J. of Economics and Business Research, 3 (5): 526 - 542.

JOUINI, J. 2015. Economic growth and remittances in Tunisia: bi-directional causal links. Journal of Policy Modeling, http://dx.doi.org/10.1016/j.jpolmod.2015.01.015.

KAGOCHI, M. J. KEBEDE, E. and SUMMERS, D. 2010. Are Remittances a Source of Development Capital? The Case of Sub Saharan Africa. International Research Journal of Finance and Economics, Issue 47: 114-122.

KANDIL, M. and MIRZAIE, I. 2009. The impact of capital and remittances flows on economic performance in MENA countries. World Economics, 10(3): 159-192.

LIM, S. and SIMMONS, W. O. 2015. Do remittances promote economic growth in the Caribbean Community and Common Market?. Journal of Economics and Business, 77: 42-59.

O'SULLIVAN, A. REY, M. E. and MENDEZ, J. G. 2011. Opportunities and Challenges in the MENA Region. OCDE, www.oecd.org.

TAHIR, M. KHAN, I. and SHAH, A. M. 2015. Foreign Remittances, Foreign Direct Investment, Foreign Imports and Economic Growth in Pakistan: A Time Series Analysis. ARAB ECONOMICS AND BUSINESS JOURNAL, 10: 82–89.

WORLD BANK. 2014. La Révolution Inachevée : Créer des opportunités, des emplois de qualité et de la richesse pour tous les Tunisiens. Rapport No. 86179-TN, www.banquemondiale.org.