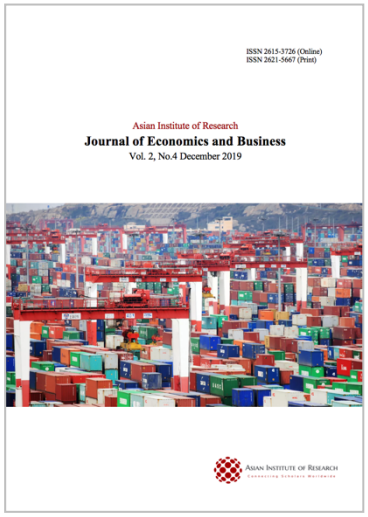

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The Effects of Central transfers on Local Own-Revenue: The Case of Morocco

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Abstract
The purpose of this work is to evaluate the effects of transferred central revenues on local own revenues. The nature of these effects remains ambiguous according to theoretical and empirical literature review, especially for developing countries. Indeed, these effects are analyzed in the context of a behavior's imbalance that can be caused by decentralization between local expenditures and their coverage by local own revenues. We are interested in Morocco for the period 2002-2014, taking into consideration all the Moroccan territorial communities grouped by the 16 regions. The effects are analyzed for total own revenue and then for each type of own-revenues and taking into account the endogeneity effect of transfers as a key issue. It is concluded that an increase in transferred central revenues does not necessarily encourage local own revenues in Morocco. This unfavorable effect is more important for the poorest regions than for non-poorest ones.

Keywords: Fiscal Decentralization, Central Transfers, Local Own-Revenue, Morocco

1. Introduction

While Morocco, like several developing countries, has embarked on the process of decentralization, the main issue is provision of sufficient resources by local and regional authorities to enable provision of basic public goods and services. In fact, decentralization should improve informational asymmetries, increase the political accountability of decision-makers and thus improve the efficiency in allocation of public goods and services through the two mechanisms of proximity (Hayek, 1948; Seabright, 1996 ..) and competition (Tiebout, 1956; Oates, 1972; Salmon, 1987; Besley and Case, 1995). For developing countries, decentralization represents an opportunity for the upgrading of public governance and reduction of poverty and populations' isolation.

These basic services, such as household equipment, health, primary education and infrastructure, require substantial revenues. However, generally in developing countries, there is a structural imbalance between the capacity of local and regional authorities to mobilize these resources and the responsibilities delegated by central government.

In this context, the transferred revenues remain an important lever to meet expenditure and are crucial for success or otherwise of decentralization in a country. Intergovernmental transfers modify the behaviors of local and regional authorities, which have been highlighted in several theoretical and empirical studies. Most stipulate that

any increase in transfers entails a higher local public spending, which is equivalent to an increase in own revenues (Hines and Thaler, 1995). However, these transfers can be seen as a kind of exceptional resource, which may reduce the willingness of local authorities to improve their taxation. This ambiguity has also been proved by various results of empirical studies. Some have demonstrated the positive incentive for transfers on the local authorities' own revenues, while others have shown the des-incentive effect.[1]

In this perspective we analyze, in this paper, the relationship between transfers and local own-revenues in Morocco as a developing country. The aim is to highlight the theoretical ambiguity about the incentive effect of unconditional transfers on own local revenues in an environment arched by rigorous budgetary constraints of Moroccan local authorities. This own revenues relate to revenues generated by local taxation (taxes managed by local authorities and taxes managed by the state on behalf of local and regional authorities). Based on data from the territorial authorities (regions, provinces, prefectures, communes) grouped by regions (16 Moroccan regions), a Panel analysis is carried out for the period 2002-2014.

In our analysis, the effects of transfers on the total own revenues (Taxes managed by the CTs and taxes managed by central government) are taken into consideration at first, and then the effect on each type of tax revenue is noted. Then, we consider the endogeneity effect of transfers as a key question. We then proceed by two types of analysis: static basic model (MCO) and dynamic model (GMM system). Then we check this effect by distinguishing between the regions according to their wealth (the very poor regions and the non-poor regions) and by distinguishing according to political affiliation of presidents of territorial collectivities.

2. Literature review

According to the theory of fiscal federalism, first and second generation (Oates, 2005), the effects of decentralization are classified according to the three branches of public economics defined by Musgrave (1959): resource allocation, income redistribution and economic stabilization. The expected effects of decentralization are a better allocation of public goods and services and greater efficiency in their production. These effects result from two major mechanisms, namely proximity and competition.

Because the political objective of macroeconomic stability is pursued at the national level, the enhancing of efficiency through the distribution of grant resources is a consideration of the distribution of intergovernmental transfers. These transfers aim to improve efficiency and ensure a more equitable distribution of resources by redistributing public resources through the intergovernmental grant system (Boex and Matinez-vazquez, 2005). Likewise, intergovernmental transfers modify the behaviors of local and regional authorities, which have been highlighted in several theoretical and empirical studies. Most stipulate that any increase in transfers entails a higher local public spending, which is equivalent to an increase in own revenues (Hines and Thaler, 1995). However, these transfers can be seen as a kind of exceptional resource, which may reduce the willingness of local authorities to improve their taxation. This ambiguity has also been proved by various results of empirical studies. Some have demonstrated the positive incentive for transfers on the local authorities' own revenues, while others have shown the des-incentive effect.[2]

A microeconomic analysis approved that transfers can encourage local own revenue if the marginal utility of local public spending increases in local own revenue. The variation in this marginal utility of public spending in local self-generated revenues is explained by economies of scale in the provision of local public goods (eg access to drinking water, sewage system), individual preferences in public consumption (eg primary education, basic health care) or efficiencies of local administration in tax collection (Caldeira, 2014).

[1] See Mogues and Benin (2012) for Ghana, Shah (1990), Rajaraman and Vasishtha (2000) and Panda (2009) for Brazil and India and Caldeira and Rota-Graziosi (2014) for Benin

[2] See Mogues and Benin (2012) for Ghana, Shah (1990), Rajaraman and Vasishtha (2000) and Panda (2009) for Brazil and India and Caldeira and Rota-Graziosi (2014) for Benin

Zhuravskaya (2000) has shown that local governments have almost no incentive to exert additional efforts to generate local own revenues when transfers increase in Russia. Buettner and Wildasin (2006) find in the United States a reduction in the generation of own revenues when external transfers increase. They examined all the interrelationships between various local variables in public finances. While Dahlberg et al. (2007) find neither a crowding-in nor a crowding-out effect of intergovernmental transfers on local tax rates nor on local tax revenues. These results are similar to that of Mogues and Benin (2012) study in Ghana which show that transfers discourage local self-government revenues in Ghana. Also, Shah (1990), Rajaraman and Vasishtha (2000) and Panda (2009) for India highlighted the unfavorable impact of transfers on local own revenues.

While Skidmore's (1999) study of US state and local governments identifies a positive effect of higher government support to local governments on locally generated revenues. This, like several empirical studies, especially those of developed countries, where there is a favorable effect of the increase of transferred revenue on own revenues, following an unknown quality of transfers by reducing the budgetary constraints on decentralization efficiency and the risk of excessive borrowing. However, Caldeira and Rota-Graziosi (2014) proved the same in a developing and African country that is Benin.

Transfers generally take two aspects: conditional ones that are selective and unconditional ones that are flat. In practice, the mechanisms for subsidies and transfers vary from one country to another, combining these two aspects. The common option is that unconditional transfers provide low incentives for local governments' own financing. To mitigate this trend, some countries have developed equalization schemes in which transfers depend on capacity and needs, especially in rich and federal countries. Some developing and emerging countries have also introduced tax performance criteria in their distributive formulas of these grants (Martínez-Vázquez and Boex, 2005).

In Morocco, these transfers relate, on the one hand, to the part transferred from VAT (value added tax), IS (corporation tax) and IR (revenue tax), which form part of the first section of the budget (operating revenue) of Moroccan local and regional authorities and which accounts for a large part of the latter's revenues. While, on the other hand, there is an exceptional grant granted to cover the investments and which forms part of the second section of these Moroccan communities budget. Our analysis then focuses on impact of unconditional transferred revenues on own revenues because the investment grants are exceptional and are only granted if necessary according to communities' investments.

These transferred revenues (30% VAT and 1% IS and 1% IR according to the previous regime before the adoption of the organic laws of 2015) represent a significant part of local and regional authorities' budgets. They include an equalization mechanism to reduce inequalities between regions, accounting for 60% of total revenues of local and regional authorities. These transfers amounted to 20 billion dirhams in 2014 compared to 7.8 in 2002, representing an average annual growth rate of 8.2%. These revenues consist of transfers of 30% VAT (89%), 1% of SI and IR (3,8%) and competition funds (7,6%). In addition, corporate tax and revenue tax revenues (1% of the national revenue of SI and IR) amounted to 757 million Dirhams in 2014, compared with 353 million Dirhams in 2005, representing a significant annual growth rate of 8.9%. This evolution is result of structural change in tax revenues in favor of direct taxes, particularly corporate tax.

3. Econometric framework

3.1. Database used

For this analysis we use the financial and budgetary details of Moroccan territorial authorities from 2002 to 2014 provided by the General Treasury of the Kingdom which is under the Ministry of Economy and Finance. This was crucial for drawing the key endogenous and exogenous variables from our analysis.

However, the regional population density variable was based on data of the High Commission for Planning in relation to regional population. Next, there was talk of using regional activity rate variable obtained from the same

source. The regional GDP from 2002 to 2014 in millions of Dhs and at the 2007 price is provided by the Directorate of Studies and Financial Forecast DEPF, which is under the Ministry of Economy and Finance.
For the second analysis, which concerns the heterogeneity effect of revenues transferred from central government on own revenue by taking wealth into account. We calculated for the Moroccan regions the "Wealth Index". In fact, because of the abundance of data on household habitat conditions[3] and the significant measurement error of bias associated with reported revenue or consumption, a substantial body of literature has developed a measure of wealth based on assets. Filmer and Pritchett (2001) conclude that the Demographic and Health Surveys (DHS) wealth index has actually outperformed the consumption or traditional spending index in explaining differences in economic status.

This Wealth Index was calculated according to principal component analytical method PCA, whether for the year 2004 or 2014. We have respected all the steps for this analysis using the KMO test (Kaiser and Kayen) that showed us the families of components that have to be eliminated from the models so that we have significant results. Then, the components selected for each construct of variables were the subject of calculations leading to development of a composite index reflecting the weighting between information content provided by the selected components. After that, results allowed us to make a score in order to rank the regions according to this index. It ranges from -0.75 to 1.0669 in 2004 and from -1.0142 to 1.8147 in 2014.

1.2. **Econometric models**

The objective of our study is to study the causal effect of revenues transferred from central government to local authorities on own revenue. Our analysis is devoted to studying this for all regional and local authorities grouped by regions. Thus, the study is done for 16 Moroccan regions for the period 2002-2014. Initially, the analysis focuses on the correlation between transfers on total own revenues (taxes managed in favor of CTs and taxes managed by the State): Model (1). Then analyze for each category of tax revenues (Models (2) and (3)). We then analyze by distinguishing regions according to their wealth (Models (4), (5) and (6)).

$$\boldsymbol{RPr_{it} = \beta_0 + \beta_1 Tr_{it} + \beta_2 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (1)}$$

$$\boldsymbol{TC_{it} = \beta_0 + \beta_1 Tr_{it} + \beta_2 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (2)}$$

$$\boldsymbol{TE_{it} = \beta_0 + \beta_1 Tr_{it} + \beta_2 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (3)}$$

$\boldsymbol{RPr_{it}}$ **:** Represents own revenue of local authorities per inhabitant by region i and which is the total revenue from taxes managed by collectivities and taxes managed by central government.
$\boldsymbol{TC_{it}}$ **:** Represents revenues from local taxes and products managed by the local authority and $\boldsymbol{TE_{it}}$ **:** Represents the revenues from taxes administered by state for the benefit of local and regional authorities, which are: professional taxes, municipal services taxes and housing tax. The three variables are per capita considering the impact of population on own revenue especially with the existence of economies of scale in the collection of local taxes.
$\boldsymbol{Tr_{it}}$: are the revenues transferred by central government to the benefit of local and regional authorities per capita and region, which comes from the endowments coming from state VAT, IS and IR revenues.
$\boldsymbol{X_{it}}$ Is a set of control variables for the robustness of the results. $\boldsymbol{TA_{it}}$ represents the activity rate by region to control the local economic conditions which determines the total transfers and the level of own revenues. Next, we consider population density by region $\boldsymbol{D_{it}}$ in order to grasp some potential economies of scale in the provision of public goods. We also take into account the effect of competition induced by the principle of fiscal decentralization "yeardstick competition" which are spill-overs between regions $\boldsymbol{revenuej_{it}}$. Transfers by encouraging the increase of the local authorities' own revenues induce an increase in the neighboring communities. This variable is calculated by the vector of average of per capita own revenues of communities of neighboring regions j $\boldsymbol{revenuej_{it} = \sum wRPr_{jt}}$.While w is a matrix which takes value 1 if the two regions share the same

[3] We used several variables : household equipment, cooking method, mode of disposal of household waste, sewage disposal method, basic housing equipment, oldness of housing, occupancy status and housing type.

boundaries and value 0 otherwise. We also add the other transferred revenue $\boldsymbol{ATr_{it}}$ which are the investment grants. The regional GDP is also added $\boldsymbol{PIB_{it}}$.

Secondly, we are interested in the heterogeneity of this effect between regions by taking wealth into account. For this we will use the Wealth Index previously calculated. Thus the equations of our estimates are following:

$$\boldsymbol{RPr_{it} = \beta_0 + \beta_1(Tr_{it} * QP) + \beta_2(Tr_{it} * QNP) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (4)}$$

$$\boldsymbol{TC_{it} = \beta_0 + \beta_1(Tr_{it} * QP) + \beta_2(Tr_{it} * QNP) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (5)}$$

$$\boldsymbol{TE_{it} = \beta_0 + \beta_1(Tr_{it} * QP) + \beta_2(Tr_{it} * QNP) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (6)}$$

Thus, we can distinguish the poorest quintile $QPt_{i,t}$where the region is poor this variable takes value 1 and 0 otherwise. The quintile of the non-poor regions $QNPt_{i,t}$where the region is poor, the variable takes the value 0 and 1 otherwise.

Third, attention is paid to the heterogeneity of this effect across regions, taking into account political affiliation. For this purpose we will use a dummy variable which takes the value 1 if the political affiliation of the majority of territorial communities presidents elected by region is represented in the government $POt_{i,t}$and the value 0 otherwise $NPOt_{i,t}$. Thus the equations of our estimates are following:

$$\boldsymbol{RPr_{it} = \beta_0 + \beta_1(Tr_{it} * PO) + \beta_2(Tr_{it} * NPO) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (7)}$$

$$\boldsymbol{TC_{it} = \beta_0 + \beta_1(Tr_{it} * PO) + \beta_2(Tr_{it} * NPO) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (8)}$$

$$\boldsymbol{TE_{it} = \beta_0 + \beta_1(Tr_{it} * PO) + \beta_2(Tr_{it} * NPO) + \beta_3 X_{it} + \varepsilon_{i,t}} \quad \textbf{Model (9)}$$

Then we make a second dynamic econometric estimation where we introduce the delayed dependent variable of order 1 $\boldsymbol{RPr_{it-1}}$or $\boldsymbol{TC_{it-1}}$or $\boldsymbol{TE_{it-1}}$or $\boldsymbol{RPr_{it-2}}$or $\boldsymbol{TC_{it-2}TE_{it-2}}$by the GMM System.

4. Results

Table 2 presents the results of static estimates of equations according to the fixed and random effects (ordinary least squares). For the static model, the results show a significant and positive correlation between transfers and own revenues, revenues from taxes managed by the CTs and revenues from taxes managed by State for the benefit of TCs. The coefficients are 0.28 for own revenue, 0.12 for taxes managed by the CTs and 0.14 for taxes managed by the State in favor of the CTs, all significant at 1%.

Taking into account heterogeneity of this effect according to the level of wealth of regions, it can be seen that transfers to poorest regions have favorable effects only on local taxes managed directly by the TCs with a coefficient of 0.119. While the effect of transfers on the three types of revenue (own, taxes managed by the CTs and government-administered taxes) is significant and positive for non-poor regions.

Then, taking into account heterogeneity of this effect according to political affiliation of majority presidents of TCs of the region with central government. It can be seen that the regions with political affiliation increase their own revenues and tax revenues managed by the CTs while the effect of transfers on the revenues of taxes managed by the State for the CTs shows no heterogeneity according to political affiliation.

However, if one takes into consideration the dynamic version and one proceeds by robustness estimate of GMM system the results are completely different. We assume a potential endogeneity of control variables and a strict exogeneity of independent variables and temporal dummies. Lagged variables are used as instruments in level regressions as in regressions of differences. Table 3 presents results of estimates of lagged dynamic model of order 1. The structure tests (Sargan Hansen AR (2) test) are used to estimate a second-order lagged dynamic model for identifying the indirect effect of endogenous variable on the exogenous one. Table 4 presents results of estimates for the lagged dynamic model of order 2 (with lag 2).

Consequently, the results show a negative and significant correlation between transfers and own revenues and those resulting from taxes managed by State for benefit of CTs.. The coefficients are respectively -0.10 and -0.15. Only correlation between transfers and local tax revenues managed directly by TCs is positive and significant with a low coefficient of 0.0046. Thus, it can be said that the effect of transfers on local tax revenues managed directly by the TCs is favorable. While the effect is unfavorable for the three taxes managed by State in favor of the CT (professional, housing and communal services taxes).

If we consider the heterogeneity effect according to the wealth, we find here also results which differ completely from the estimates according to the static model (all of which are positive). The results show that the effect of transfers on own revenues, whether for poor or non-poor regions, is unfavorable. For tax revenues managed by TCs the correlation is not proved and for taxes managed by State in favor of TCs the effect is unfavorable. Thus, it can be noted that the adverse effect of transfers on own revenue of CTs is greater for poor regions than for non-poor ones.

If we consider the heterogeneity effect according to political affiliation, we can see that the effect of heterogeneity is not observed because results do not differ much for regions with and without political affiliation of the first estimates.

Thus, in summary, an increase in transfers by 1 point has an unfavorable effect of -0.10 on own revenue and -0.15 on own revenues from taxes administered by State in favor of TCs. However, this effect is more important for poor regions than for non-poor ones. A 1 percentage point increase in transfers has an adverse effect on poor regions' own revenues of -0.22 compared to -0.10 for non-poor ones and on local taxes revenues administered to the TCs of poor regions of -0.234 against -0.149 for non-poor ones. While the effect of transfers on local taxes revenues managed by the CTs is positive, the effect of heterogeneity according to the wealth has not been proved in this effect.

With regard to control variables, we can see that for the variable $\boldsymbol{revenue\ j_{it}}$;it which takes into consideration the competition effect; is always significant at 1% and positive (for the static and dynamic model). This highlights the literature that stipulates the strategic complementarity between local tax policies (Brueckner, 1998 Caldeira et al., 2012). For density variable, the effect is also significant and positive. Thus the demographic effect is positive and present on own revenues, which is justified by the economies of scale in the provision of public goods and services. For the variable of activity rate, the effect is not significant for static model and using GMM system the variable has a significant but negative effect.

Table 1 : Summary Descriptive statistics of the variables.

	OWN_REVENUES	R_TRANSFEREES	R_TRANSFEREES_2	REVENUE_J	T_ACT	PIB_REG	DENSITE	TAXES_GEREES_PAR_L_ETAT	TAXES_GEREES_PAR_CT
Mean	263.1759	470.1775	565.4662	234.4290	0.495875	43607.59	234.6447	104.9331	158.2428
Median	219.9578	364.4233	456.4760	211.7838	0.481000	37319.29	86.06979	83.83850	141.0887
Maximum	1704.212	3792.801	3957.959	1242.710	0.637000	163917.9	2644.582	656.0155	1170.492
Minimum	11.30681	59.82633	59.82633	14.65308	0.405000	1883.578	0.000000	0.000000	11.11903
Std. Dev.	185.4901	400.8893	459.9764	116.9381	0.058812	31952.44	554.4370	112.7478	106.5453
Skewness	3.537576	3.883241	3.000126	4.332708	0.547638	1.419442	3.502608	2.183098	4.870495
Kurtosis	23.29691	27.02442	17.72861	33.34090	2.198474	5.596006	13.65309	8.110610	42.65497
Jarque-Bera	3965.693	5471.799	2171.024	8380.137	15.96464	128.2537	1408.866	387.8122	14311.88
Probability	0.000000	0.000000	0.000000	0.000000	0.000341	0.000000	0.000000	0.000000	0.000000
Sum	54214.23	96856.56	116486.0	47354.66	103.1420	9070378.	48806.09	21616.21	32598.02
Sum Sq. Dev.	7053349.	32946007	43373557	2748578.	0.715993	2.11E+11	63631870	2605973.	2327139.
Observations	206	206	206	202	208	208	208	206	206

Sources : Results estimates from E-Views 9

Table 2 : Estimation results for static models.

Dependents variables / Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**	**(9)**
	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}
Transferred revenue, Tr_{it}	**0.28*** (0.073)**	**0.127*** (0.037)**	**0.14*** (0.053)**						
$Tr_{it} * QP$ ou $(Tr_{it} * PO)$				**0.15 (0.10)**	**0.119** (0.053)**	**0.036 (0.07)**	**0.17** (0.07**	**0.10*** (0.04)**	**0.065 (0.052)**
$Tr_{it} * QNP$ ou $Tr_{it} * NPO$				**0.21*** (0.07)**	**0.10*** (0.036)**	**0.11** (0.05)**	**0.11 (0.08)**	**0.10** (0.04)**	**0.01 (0.06)**
Density, D_{it}	0.13*** (0.035)	0.014 (0.10)	0.111*** (0.021)	0.18*** (0.029)	0.042** (0.017)	0.13*** (0.017)	0.19*** (0.03)	0.04*** (0.015)	0.14*** (0.02)
Revenue j, $revenue\ j_{it}$	0.76*** (0.08)	0.45*** (0.04)	0.358*** (0.057)	0.86*** (0.075)	0.46*** (0.039)	0.42*** (0.054)	0.85*** (0.07)	0.45*** (0.038)	0.39*** (0.05)
Others revenues transferred,ATr_{it}	-0.082 (0.061)	-0.008 (0.032)	-0.098** (0.044)	-0.046 (0.06)	0.02 (0.031)	-0.075** (0.043)	0.02 (0.06)	0.023 (0.034)	-0.01 (0.05)
GDP, PIB_{it}	0.0012** (0.0004)	0.0009*** (0.0003)	0.00067** (0.00032)						
Activity Rate, TA_{it}	4.28 (185.15)	46.90 (119.05)	68.99 (124.63)	-63.88 (183.90)	-138.31 (97.34)	77.82 (128.76)	-135.32 (185.16)	-145 (95.6)	3.62 (129.27)
C	-88.86	-69.09	-83.38	-18.30	45.41	-63.35	8.644	50.9	-37.52
Number of observations	**201**	**201**	**201**	**201**	**201**	**201**	**201**	**201**	**201**
Adjusted R2	**0.75**	**0.87**	**0.53**	**0.74**	**0.79**	**0.53**	**0.75**	**0.79**	**0.54**
R-squared	**0.76**	**0.89**	**0.55**	**0.75**	**0.80**	**0.54**	**0.76**	**0.80**	**0.55**
F-statistic (prob)	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**
HaussmanTest	**0.0095**	**0.0611**	**0.0001**	**0.0018**	**0.0083**	**0.0005**	**0.0062**	**0.0017**	**0.0019**
Radom Effect	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Fixed Effect	**No**	**Yes**	**No**	**No**	**No**	**No**	**No**	**No**	**No**

Source : Results from the E-Views 9 estimates.

Note: Robust standard errors are between parentheses. ***, **, and * indicate that the index is statistically significant at 1, 5 and 10% respectively

Table 3 : Estimation results for dynamic models (with 1 lag)

Dependents variables / Model	**Model (1)**	**Model (2)**	**Model (3)**	**Model (4)**	**Model (5)**	**Model (6)**	**Model (7)**	**Model (8)**	**Model (9)**
	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}
Transferred revenue, Tr_{it}	**-0.12**** **(0.05)**	**-0.05*** **(0.029)**	**-0.11***** **(0.035)**						
$Tr_{it} * QP$ ou $(Tr_{it} * PO)$				**-0.22***** **(0.056)**	**-0.08**** **(0.0336)**	**-0.179***** **(0.04)**	**-0.134***** **(0.05)**	**-0.056*** **(0.029)**	**-0.11***** **(0.036)**
$Tr_{it} * QNP$ ou $Tr_{it} * NPO$				**-0.12**** **(0.046)**	**-0.05*** **(0.029)**	**-0.11***** **(0.035)**	**-0.14***** **(0.054)**	**-0.063*** **(0.032)**	**-0.11***** **(0.039)**
Density, D_{it}	0.128*** (0.007)	0.024*** (0.004)	0.097*** (0.006)	0.123*** (0.008)	0.023*** (0.004)	0.094*** (0.006)	0.128*** (0.0079)	0.025*** (0.0041)	0.097*** (0.006)
Revenue j, $revenue\ j_{it}$	0.47*** (0.049)	0.23*** (0.028)	0.225*** (0.036)	0.52*** (0.051)	0.249*** (0.029)	0.262*** (0.037)	0.48*** (0.052)	0.244*** (0.03)	0.22*** (0.038)
Others revenues transferred, ATr_{it}	0.071* (0.039)	0.087*** (0.022)	0.0048 (0.028)	0.069* (0.039)	0.087*** (0.022)	0.001 (0.028)	0.08** (0.041)	0.093*** (0.023)	0.002 (0.03)
Activity Rate, TA_{it}	-454.3*** (75.03)	-181.7*** (42.18)	-252.5*** (55.006)	-281.3*** (89.27)	-131.9** (51.44)	-132.0** (65.06)	-452.1*** (74.88)	-182.6*** (42.85)	-249.23*** (54.98)
Dependents variables lagged (lag1), RPr_{it-1} or TC_{it-1} or TE_{it-1}	0.20*** (0.022)	0.27*** (0.024)	0.226*** (0.03)	0.202*** (0.022)	0.279*** (0.024)	0.216*** (0.03)	0.204*** (0.023)	0.274*** (0.025)	0.23*** (0.031)
Number of observations	**192**	**192**	**192**	**192**	**192**	**192**	**192**	**192**	**192**
Hansen test : p-value	**0.70**	**0.635**	**1.000**	**0.946**	**0.955**	**1.000**	**0.935**	**0.953**	**1.000**
AR (2): p-value	**0.60**	**0.82**	**0.83**	**0.55**	**0.72**	**0.82**	**0.71**	**2.16****	**0.79**
AR (1) : p-value	**-4.62**	**-2.95*****	**-5.68*****	**-5.74*****	**-3.06*****	**-5.79*****	**-7.47*****	**-6.07*****	**-7.90*****

Source : Results from the STATA estimates.

Note: Robust standard errors are between parentheses. ***, **, and * indicate that the index is statistically significant at 1, 5 and 10% respectively.

Table 4 : Estimation results for dynamic models (with 2 lag)

Dependents variables / Model	**Model (1)**	**Model (2)**	**Model (3)**	**Model (4)**	**Model (5)**	**Model (6)**	**Model (7)**	**Model (8)**	**Model (9)**
	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}	RPr_{it}	TC_{it}	TE_{it}
Transferred revenue, Tr_{it}	**-0.10*** (0.049)**	**0.0046 (0.026)**	**-0.15*** (0.034)**						
$Tr_{it} * QP$ ou $(Tr_{it} * PO)$				**-0.22*** (0.056)**	**-0.031 (0.03)**	**-0.234*** (0.039)**	**-0.10** (-0.50)**	**0.002 (0.26)**	**-0.14*** (0.035)**
$Tr_{it} * QNP$ ou $Tr_{it} * NPO$				**-0.10** (0.056)**	**0.004 (0.026)**	**-0.149*** (0.034)**	**-0.119** (0.052)**	**-0.01 (0.028)**	**-0.14*** (0.037)**
Density, D_{it}	0.14*** (0.007)	0.031*** (0.0035)	0.10*** (0.0057)	0.134*** (0.007)	0.029*** (0.003)	0.097*** (0.005)	0.14*** (0.007)	0.032*** (0.0035)	0.10*** (0.006)
Revenue j, $revenue\ j_{it}$	0.465*** (0.048)	0.234*** (0.025)	0.226*** (0.034)	0.519*** (0.049)	0.249*** (0.026)	0.263*** (0.035)	0.47*** (0.051)	0.25*** (0.027)	0.213*** (0.037)
Others revenues transferred, ATr_{it}	0.05 (0.038)	0.058*** (0.02)	0.018 (0.027)	0.046 (0.038)	0.057*** (0.02)	0.014 (0.027)	0.057 (0.039)	0.065*** (0.02)	0.013 (0.028)
Activity Rate, TA_{it}	-470.13*** (71.49)	-162.5*** (37.77)	-276.5*** (51.39)	-239.7*** (87.10)	-93.7** (46.35)	-112.3* (62.21)	-469.8*** (71.39)	-165*** (37.73)	-272*** (51.34)
Dependents variables lagged (lag2), RPr_{it-2} or TC_{it-2} or TE_{it-2}	0.146*** (0.02)	0.207*** (0.019)	0.19*** (0.027)	0.145*** (0.021)	0.21*** (0.019)	0.182*** (0.028)	0.144*** (0.021)	0.19*** (0.02)	0.195*** (0.028)
Number of observations	**176**	**176**	**176**	**176**	**176**	**176**	**176**	**176**	**176**
Hansen test : p-value	**0.032**	**0.009**	**0.935**	**0.239**	**0.084**	**0.998**	**0.159**	**0.069**	**0.994**
AR (2): p-value	**-1.82***	**-2.59****	**-1.76***	**-1.29**	**-2.41****	**-1.15**	**-1.18**	**.**	**-0.62**

Source : Results from the STATA estimates.

Note: Robust standard errors are between parentheses. ***, **, and * indicate that the index is statistically significant at 1, 5 and 10% respectively.

5. Discussion

In summary, taking into account the endogeneity effect of transfers, it can be said that, in the case of Morocco, the latter have an adverse effect on own revenues and on revenues from taxes administered by State in profit of TCs (housing taxes, municipal and professional services). This unfavorable effect is more important for the poorest regions than for the non-poor ones. However, our results indicate that unfavorable effect in Morocco does not seem to be influenced by political affiliation of local and regional authorities' presidents. The political affiliation does not seem to affect tax effort and mobilization of own revenues as a result of the increase in revenues transferred.

These results are similar to that of Mogues and Benin (2012) study in Ghana which show that transfers discourage local self-government revenues in Ghana. However, these authors also took into account the question of endogeneity, which is not the case for other studies such as those of Shah (1990), Rajaraman and Vasishtha (2000) and Panda (2009) India. However, they also highlighted the unfavorable impact of transfers on local own revenues.

This, unlike several empirical studies, especially those of developed countries, where there is a favorable effect of the increase of transferred revenue on own revenues, following an unknown quality of transfers by reducing the budgetary constraints on decentralization efficiency and the risk of excessive borrowing. However, Caldeira and Rota-Graziosi (2014) proved the same in a developing and African country that is Benin. Caldeira et al. (2014) conclude its work with an inquiry into its outcome which seems to contradict the literature on this subject for developing countries. They question whether Benin is a simple counterexample or whether the result is more general in developing countries. Our study then reinforces the findings of literature review in developing countries and the result of Caldeira et al. (2014) seems lonely.

6. Conclusion

We can conclude that in Morocco, local authorities, even with more revenue from transfers, have fewer incentives to increase their own revenues. This shows the inefficiency of the increase in revenues transferred on fiscal effort that seems to decrease. Local and regional authorities provide less effort in collecting their own revenues in the presence of transferred revenues, contrary to what they can provide in event of borrowing, for example. In this case, they will be obliged to increase their own revenues in order to ensure a balanced budget after reimbursement of annual installments. However, a detailed analysis of the two components of own revenues, ie local taxes managed directly by the TCs and local taxes managed by the State for the benefit of the TCs, shows that the effect is more unfavorable with regard to the taxes managed by the State for the benefit of the TCs (housing taxes, municipal and professional services). This shows very little effort in the area of collection of these three taxes by the concerned departments including Ministry of Finance and which weigh heavily on budgets especially of urban communes.

In this sense, we can also add the risk of corruption that lurks on Moroccan territorial communities, thus influencing the virtues of decentralization. Thus, the revenues transferred seem to give more revenue that is not used effectively or objectively. Rajaraman and Vasishtha (2000) conclude the same with the case of India and points out that corruption will lead the post-subsidy structure to a greater regressivity in the panchayat tax.

Our results confirm the initial hypothesis resulting from the literature review in the case of developing countries which stipulates that flat-rate transfers reduce the tax effort and are unfavorable to the local authorities' own revenues derived from local taxes. The revenue transferred does not seem to encourage the fiscal autonomy of local and regional authorities in developing countries, contrary to favorable effects in the developed ones.

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