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Middle class in Africa: Determinants and Consequences

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Abstract

This study complements the inclusive growth literature by examining the determinants and consequences of the middle class in a continent where economic growth has been relatively high. The empirical evidence is based on a sample of 33 African countries for a 2010 cross-sectional study. OLS, 2SLS, 3SLS and SUR estimation techniques are employed to regress a plethora of middle class indicators, notably, the: floating, middle-class with floating, middle-class without floating, lower-middle-income and upper-middle-income categories. Results can be classified into two main strands. First, results on determinants broadly show that GDP per capita and education positively affect all middle class dependent variables. However, we have seen a negative nexus for the effect of ethnic fragmentation, political stability in general and partially for economic vulnerability. Simple positive correlations have been observed for: the size of the informal sector, openness and democracy. Second, on the consequences, the middle class enables the accumulation of human and infrastructural capital, while its effect is null on political stability and democracy in the short-run but positive for governance and modernisation. Policy implications are discussed.

1. Introduction

'*Output may be growing, and yet the mass of the people may be becoming poorer*' (Lewis, 1955). Piketty (2014) has recently joint the stream of authors and shown in his '*capital in the 21st century*' that the Kuznets (1955, 1971) conjectures are invalid in developed economies. Africa's burgeoning growth relative to the rest of the world has been accompanied with concerns of 'immiserizing growth'[1]. A lot has been documented on the need for inclusive development and the imperative of understanding inequality in the poverty-growth nexus (Kalwij & Verschoor, 2007; Thorbecke, 2013). The narratives have included: the employment of instruments associated with growth elasticity (Adam, 2004), the relevance of inequality in the fight against poverty (Datt & Ravallion, 1992; Kakwani, 1993; Ali & Thorbecke, 2000; Elu, 2013; Mthuli et al., 2014) and the role of income distribution in the effect of growth on poverty (Ravallion, 1997; Easterly, 2000; Fosu, 2014).

The above narratives have been substantiated in both developing countries (Fosu, 2010a) and samples of African (Fosu, 2008, 2009, 2010b, 2010c) economies. The works are broadly consistent with Lewis (1955) on the need for growth to be inclusive. On more specific notes: "*The responsiveness of poverty to income is a decreasing function of inequality, and the inequality elasticity of poverty is actually larger than the income elasticity of poverty*" (Fosu, 2010a, p. 1432); "*In general, high initial levels of inequality limit the effectiveness of growth in reducing poverty while growing inequality increases poverty directly for a given level of growth*" (Fosu, 2011, p. 11) and; "*The study finds that the responsiveness of poverty to income is a decreasing function of inequality*" (Fosu, 2010c, p. 818). These conclusions support an evolving stream of literature on inclusive development and success in post-2015 goals[2].

In light of the above, numerous proposals on development models have been documented recently. Among them, is the Moyo conjecture that is essentially based on an evolving middle-class. According to Moyo (2013), the middle class is necessary to implement the Washington consensus (WC) which she defines as '*private capitalism, liberal democracy*

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[1] First put forward by Bhagwati (1958), the concept is one that summarises a situation in which economic growth is accompanied by negative externalities.

[2] See, inter alia: Ozgur et al. (2009), Timmons et al. (2009), Bagnara (2012), Monika & Bobbin (2012), Miller (2014) & Singh (2014).

and priority in political rights'. According to the author, such a middle class can be easily achieved with the Beijing Model (BM), which is defined as '*state capitalism, deemphasised democracy and priority in economic rights'*. Hence, while the WC is a model of the long-run, the BM is more appropriate in the short-term to deliver a middle class that would sustainably demand political rights. The intuition behind the conjecture is that, a sustainable middle class is needed to demand political rights in a sustainable manner (Asongu, 2014a; Asongu & Aminkeng, 2014). There is a growing body of literature documenting the Moyo conjecture (Asongu, 2014a; Asongu & Aminkeng, 2014). It should also be noted that this conjecture has already been partially verified in developing (Lalountas et al., 2011) and African (Asongu, 2014b) countries.

But why is the focus on Africa particularly important? In accordance with recent narratives, while overall growth experienced between 1990-2010 has moved hand-in-glove with growing inequality and poverty, some recent works demonstrate that Africa has done relatively better (Young, 2012), especially in reducing inequality (Fosu, 2014) and is on time in Millennium Development poverty reduction targets (Pinkivskiy & Sala-i-Martin, 2014). In line with Asongu (2014c), whereas South Asian and Latin American countries experienced slow and considerable inequality reduction between 1980-2010, the Organisation for Economic Co-operation & Development (OECD), South East Asian and the Middle East & North Africa (MENA) nations have witnessed rising inequality during the same lapse of time. Hence, Africa is a good candidate on which to investigate determinants and consequences of the middle class.

Graph 1 below illustrates the evolving relationship between of the middle class and income inequalities in Africa. This graph provided by Ncube & Shimeles (2013) from *Demographic and Health Surveys* (DHS) micro-data shows that inequality has been rising in the past few years. This recent tendency could be translated by many as the fruits of economic prosperity not trickling down to the poor segments of the population. Conversely, there has been a consistent growth in middle-class income since the year 2000. According to the narrative, most countries that have experienced a substantial growth in the middle-income class have also witnessed burgeoning economic growth in the same periods.

Graph 1: Evolution of Middle class and Inequality
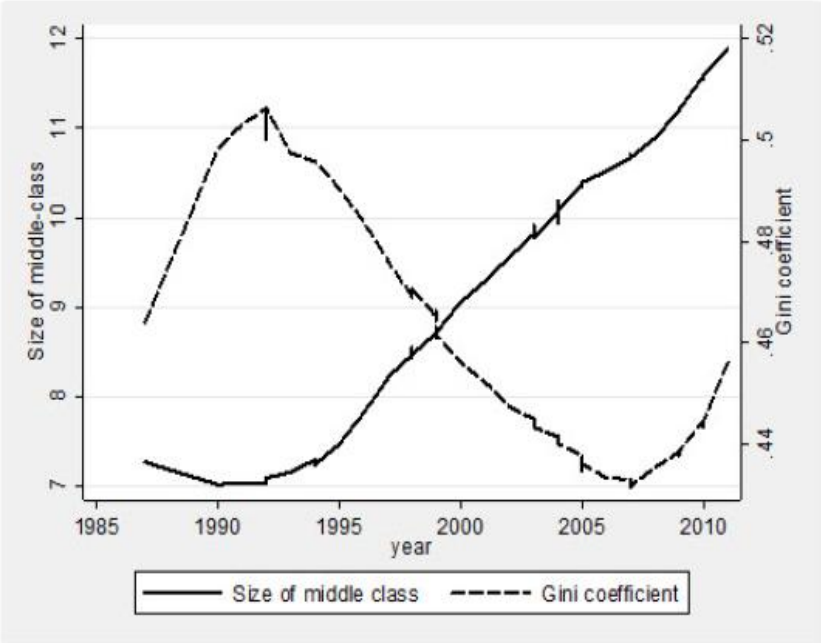
Source : Ncube & Shimeles (2013)

In 2010, the middle class had increased to 34% of the African population -representing about 350 million inhabitants. The statistics stand at 27% or 126 million in 1980; 27% in 1990 and; 27% or 220 million in the year 2000. This represents an increasing rate in the middle class population of 3.1% between 1980 and 2010. Within this span, the population of the continent increased by 2.6%. Results from the International Comparison Program (ICP) for the year 2005 show that per capita expenditure among the middle class in Africa increased about twofold relative to increases witnessed in other regional economies of developed countries. Annual consumer spending in Africa, principally from the middle class was estimated at $680 billion in 2008. This amount represents about a quarter of African GDP assuming Purchasing Power Parity (PPP) with base year 2008.

Consistent with various studies that have emphasised the importance of the middle class, the above variations are expected to wheel changes in Africa from various angles. For example Adelman & Morris (1997) and Landes (1998) have provided a historic proof to substantiate that, up till the 19th century the middle was a major driving force in the development of Europe and North America. Recent discussions have also underlined the important role of the middle class in, inter alia: social progress (Sridharan, 2004), institutional reforms (Loyza et al., 2012), democratic promotion (Petterson, 2007), inclusive development

(Birdsall, 2010), fight against poverty (Dyan, 1997) and innovation & entrepreneurship (Banerjee & Duflo, 2009).

The purpose of this empirical study is to understand the socioeconomic determinants and consequences of the middle class in Africa. This assessment is important in the perspective that it enriches the literature on middle class determinants as well as its characteristics or consequences. The second interest of this study is the employment of original middle class indicators, ad hoc measurements put forward by the African Development Bank (AfDB).

The rest of the study is organised as follows. Section 2 discusses the data while the empirical results are presented in Section 3. We conclude with Section 4.

2. Data

2.1 Data description

2.1.1 Middle class

Generally, the middle class could be understood either in absolute or in relative terms. First, in absolute terms, Bhalla (2009) attributes an annual income of 3900 USD in PPP to the attainment of a middle class. A different view is provided by Banerjee & Duflo (2008). According to them, per capita daily expenditure of in-between 6 and 10 USD attributes a middle-class status. While Ravallion (2009) and Wheary (2009) have proposed between 2-3 USD per/day, Kohut (2009) an average expenditure of 10 USD, Kharas (2010) has gone much further in proposing a daily expenditure scale of 10 to 100 USD. Second, in relative terms, the middle class can be defined as any household that is situated between 20 and 80e percentile of the consumption distribution (Easterly, 2001) or between 0.75 and 1.25 times the median revenue of the inhabitant in the zone under consideration (Birdsall et al., 2000).

Since estimations for Africa are not very apparent, we use those proposed by Ncube et al. (2011) from the AfDB. They have considered per capita daily consumption of between 2 to 10 USD in 2005 PPP. Hence, they have been more methodical in establishing three sub-categories.

The first category is the Floating class (FC) with a daily per capita expenditure in the threshold of between 2 to 4 USD. Its floating character is derived from the fact that it is in-between the poor class and the lower-middle class. Hence, we infer that it is vulnerable and

unstable. However, according to the authors this category has the advantage of reflecting changes in population structure over time. This justification is consistent with López-Calva & Ortiz-Juarez (2011) who have concluded that inflows into and outflows from the middle class are frequent. In accordance with the AfDB (Ncube & Shimeles, 2013), about 60% of the African middle class (representing about 180 million inhabitants) are still within this category. This fraction can easily slide into the poverty class because of negative economic shocks. The second sub-category qualified as Lower-middle-class has per capita daily expenditure fluctuating between 4 and 10 USD. This entails households that are in the economy of substance and hence could consume non-essential goods. The third sub-category is the Upper-middle-class (UC) with an estimated per capita daily expenditure of between 10 and 20 USD. In addition to the discussed three sub-categories, we add two more for robustness purposes, notably: (1) a middle-class without the floating class (MCWFC) and; (2) a middle-class with the floating class (MCWtFC).

The study has made use of the Beta approach in estimating different points on the Lorenz curve showing the proportion of the population and their corresponding portion of national income (Kakwani, 1980). The equality line represents the situation of perfect equality in a society. The extreme case is one where an individual monopolises all the wealth in the world while the rest of the world is left with no wealth. The Lorenz curve is fundamentally used to represent inequality in income distribution within a population. The distance from the equality line is proportional to the degree of inequality in a given society.

Graph 2 : Lorenz curve
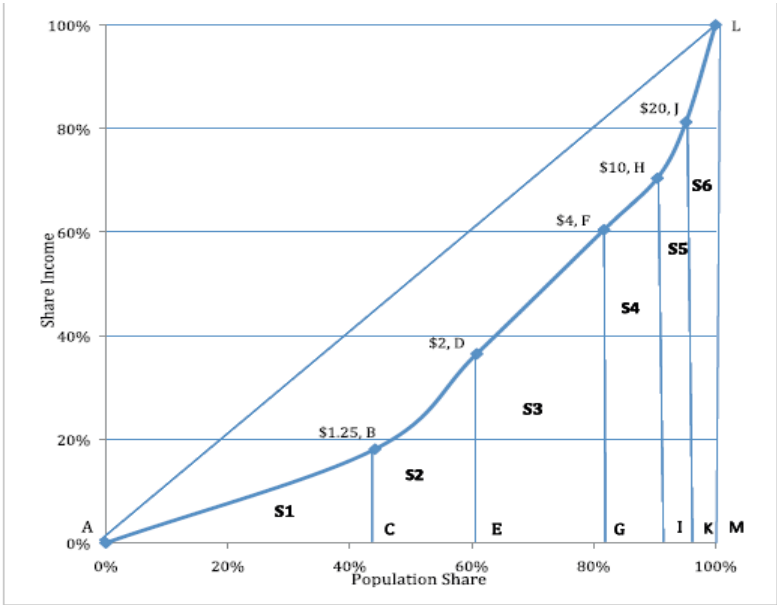
Source : Ncube et al. (2011)

In order to determine the three unique values (4\$, 10\$ & 20\$) susceptible of generating the Lorenz curve in Africa (Graph 2), the authors have proceeded in two steps.

In the first-step, the authors estimate the Gini coefficient from a hypothesis of linear tendency between two observations because data on inequality (e.g the Gini index) is scarce. Hence, the Gini coefficient which measures the level of inequality can be written in function of the Lorenz curve as follows:

$$Gini = 1 - 2 \sum_{i=1}^{6} S_i \qquad (1)$$

Where S_i is the trapezium area under the Lorenz curve. The Gini coefficient represents the proportion of the zone situated between the equality line & the Lorenz curve and the total surface above & below the Lorenz curve.

A system of equations is used in the second-step to estimate a number of points. In the equations presented below, for every African country and for every year, the system of equation enables the estimation of points F, H & J which respectively correspond to the daily per capita expenditure of 4\$, 10\$ & 20\$, that constitute the Gini coefficient. These three values represent the proportions of the population associated with daily per capita income. These represent the Floating class, Lower-middle-income and Upper-middle income respectively. This system enables us to identify the position of three points such that the desired first equation (Eq. (1)) is satisfied. The six equations below each represent an area in the form of a trapezium under the Lorenz curve for a series of coordinates. The system is presented as follows:

$$S_1 = \int_C^A f(x)\,dx$$

$$S_2 = \int_E^C f(x)\,dx$$

$$S_3 = \int_G^E f(x)\,dx$$

$$S_4 = \int_I^G f(x)\,dx$$

$$S_5 = \int_K^I f(x)\,dx$$

$$S_6 = \int_M^K f(x)\,dx$$

$$S_1 = \frac{(AC * BC)}{2}; S_1 \; est \; donnée$$

$$S_2 = CE * \frac{(BC + DE)}{2}; S_2 \; est \; donnée$$

$$S_3 = EG * \frac{(DE + FG)}{2}$$

$$S_4 = GI * \frac{(FG + HI)}{2}$$

$$S_5 = IK * \frac{(HI + JK)}{2}$$

$$S_6 = KM * \frac{(JK + LM)}{2}$$

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Where f(x) is the Lorenz curve. AC and AE represent the proportion of the population associated with the first and second poverty lines respectively. Similarly BC and DE denote parts of income associated to people whose income is below the first and second lines of poverty.

After identifying the three points for each country in the sample, the results are aggregated at the African level using a double weighing approach: the proportion of population of the country in the whole sample and the part of revenue of the sampled country to total income.

Values estimated for the year 2010 have been calculated using tendencies on the bases the last-two values of the Gini coefficient corresponding to the household survey from PovCalNet of the World Bank which provides detailed income distributions or household spending on consumption in different percentiles based on real household survey data. Moreover, PovCalNet provides information on average household, the level of per capita consumption or income in 2005 USD PPP.

2.1.2 Determining factors

Many variables have been documented in the literature to potentially affect the middle class. However, we retain only some of these owing to data availability constraints. The retained variables are as follows.

Openness, population, agriculture and the level of development (lgdpcap) are obtained from World Development Indicators (WDI) of the World Bank. While the population variable is in logarithm, openness is the sum of imports to exports as a percentage of GDP. Agriculture (*agricultur*) is measured by considering the added value of agriculture to GDP. The level of development is measured by the logarithm of GDP per capita. Ethnic fragmentation is obtained from Alesina et al. (2003). It measures the probability that two generic individuals are not individuals of the same ethnic group for every country. Legal origin (*legor*) proposed by La Porta et al. (1999) is a dummy variable taking the value of 1 for English Common law countries and 0 otherwise. Democracy (*demo*) is also a binary variable with 1 when the country is democratic and 0 otherwise. This classification is consistent with Cheibub et al. (2010). Education (*duremoyenn*) is approximated by the average number of schooling years, in line with Barro & Lee (2010). Political stability/no violence (*Polstabsenv*) are indicators of political stability obtained from the World Bank, compiled by Kaufman, Kraay & Mastruzzy.

Economic vulnerability (*Vulnerabilit*) is appreciated by the index proposed by Guillaumont (2008) and updated by Cariolle & Goujon (2013). The informal economy is estimated by a dynamic approach. This indicator which represents the weight of this sector on GDP is obtained from Schneider et al. (2010).

2.1.3 Variables of consequence

Openness (*open*), agriculture, the level of development (*lgdpcap*) and urbanisation are obtained from WDI. While the first-three are the same as discussed above, urbanisation is measured by *urban population* as a proportion of *total population*. The measurements of Ethic fragmentation, legal origin, democracy, education, political stability/no violence and vulnerability are in accordance with the discussion in the previous section.

Other variables like governance, health, social protection, budget management and education indices are obtained from the Mo Ibrahim Foundation. These indices vary between 0 and 100, in increasing order for the best results. These are composite indicators.

For example, the health indicator is represented by the infant & maternal mortality rates, illness (malaria, cholera & tuberculosis), vaccines (DTP, Measles) and antiretroviral treatments. The social protection variable is based on: the social protection regime, employment policies and social protection, access to water and respect for the environment. The indicator measuring infrastructure is based on: access to electricity, highways, air and railway, telephone & information technology infrastructure and numerical coverage. The education indicator entails: the quality of education, the number of teachers in the primary school, primary school completion rate, transition to secondary school and registration at the tertiary level.

Economic diversification was measured by the diversification index proposed by the AfDB and the Organisation for Economic Co-operation & Development (OECD). This evaluation ranges from 0 to 100, with the higher values representing better results. This indicator which is based on some symmetry of the Herfindahl index from four-figure exports, appreciates the diversification of exports. The inflation variable is obtained from the International Monetary Fund (IMF) and measures the annual consumer price inflation. The *doingbusiness* indicators from the World Bank are used to appreciate the ease of doing business.

2.1.4 Statistical Analysis

Table 1 below presents the descriptive statistics of the sampled countries. Based on the measures of central tendency, we notice the variables are quite comparable (means) and also vary significantly (standard deviations) for us to expect that reasonable estimations would emerge.

Table 1. Summary Statistics

Variables	Obs	Mean	Standard deviation	Min	Max
MCWtFC	44	12.34	9.96	1.9	45.6
MCWFC	44	31.45	22.34	4.8	89.5
FC	44	19.12	13.74	2.4	57.3
LM	44	7.75	6.25	1.2	29
UM	31	4.83	4.50	.7	20
Informal	38	40.32	8.02	22.4	62
Vulnerability	53	39.06	11.55	17.61	66.54
Agriculture	40	22.07	14.41	2.47	57.30
Duremoyenn	52	4.73	2.11	1.2	9.4
Open	53	80.55	39.64	1.99	190.71
Population	53	5.56	5.23	.37	30.74
Lgdpcap	52	7.72	1.01	5.90	10.04
Demo	50	.26	.44	0	1
Polstabsenv	53	-.62	.90	-2.48	.89
Elf	52	.61	.27	.03	.92
legor_fr	53	.64	.48	0	1
Infrastructure	53	31.38	19.00	.84	81.29
Governance	53	50.45	13.79	7.86	82.46
Economic diversification	53	9.30	11.724	1.1	59.60
Social protection	53	52.32	16.29	3.57	88.68
Education	53	50.71	19.45	0	95.85
Health	53	65.55	17.45	26.67	99.38
Budget management	52	60.82	21.41	0	100
Inflation	52	6.267	6.15	-2.41	34.7
Urbanisation	53	39.50	17.17	9.60	86
legor_uk	53	.36	.484	0	1
Ease of doing business	51	136.82	42.99	24	185

FC: Floating Class. MCWtFC: Middle class with Floating Class (FC). MCWFC: Middle class without FC. LM: Lower middle income. UM: Upper middle income. Informal: Informal economy. Duremoyen: Average schooling years. Open: Openness. Lgdpcap: economic development. Demo: Democracy. Polstabsenv: Political stability/no voilence. Elf: Ethnic fractionalisation. Legor_fr: French civil law. Legor_uk: English common law. Obs: Observations. Min: Minimum. Max: Maximum.

3. Empirical results

3.1 Middle class determinants

The basic results are presented in Table 2 below are based on Ordinary Least Squares (OLS). Estimations in the first-two columns are based on the Middle class without the Floating class (MCWtFC). While regressions in the first column are not corrected for heterosedasticity, those in the second column are corrected for the problem, detected with the Breusch-Pagan test. Hence, only results of the second column are taken into account. From a general perspective, though the nexus is not significant, we notice the positive relationship between the dependent variable and the size of the informal sector. Economic vulnerability has a negative effect on MCWtFC. The sign of this effect is logical since vulnerable economies offer fewer opportunities for the growth of this class. Accordingly, such economies are easily affected by exogenous and endogenous shocks. Moreover, what is interesting in this from a theoretical viewpoint is the fact that this variable does not fundamentally alter results of the economic growth indicator. This contravenes the notion that less wealthy economies are more vulnerable. Accordingly, its rare employment in past studies represents a variable omission bias.

Political stability and ethnic fragmentation also fall in the category of estimated coefficients with a negative relationship with the dependent variable. As concerns the former, no major comment is worthwhile because it is not consistently significant across specifications. This is not the case of the latter for which, with a 95% confidence level, ethnic fragmentation is the highest estimated coefficient in terms of magnitude. This result is consistent with a plethora of studies, notably: Ncube & Shimeles (2013) for African data, Easterly (2001) for cross-sectional data and the Asian Development Bank (ADB, 2010) for Asia.

The sign of the agricultural variable is positive, albeit insignificant. The same conclusion can be drawn of the following coefficients: openness, population and French civil law countries. The insignificance of openness is consistent with Chun et al. (2011) and the ADB (2010). These past studies considered the population factor for various reasons. For instance Banerjee & Duflo (2008) have noticed that the Middle class tends to have fewer children. Consistent with Murphy et al. (2011), its incorporation enables us to measure the size of the internal market. Accordingly, Yuan et al. (2011) have found that industrialisation and market development have substantially contributed to the development of the middle

class in China. Like in Chun et al. (2011), we have not been able to confirm the Yuan et al. (2011) conclusion.

It is also important to underline that the effect of English common law has not been incorporated to mitigate issues of multicollinearity. It is surprising to notice that the sign associated to French civil law is positive. This is because the studies of La Porta et al. (1998, 1999, 2008) provide English common law countries with an edge in development. This sign is also inconsistent with the estimation of Chun et al. (2011) and recent African studies (Agbor, 2011; Asongu, 2012ab). This contradiction cannot be over emphasised because the sign of the estimated coefficient in the comparative study is not statistically significant.

Education, democracy and development (proxied with per capita GDP) have the expected positive signs. Substantial human capital is necessary to belong to the middle class. This is consistent with Bledstein (1978) who has confirmed the intuition from the American experience. Moreover, these estimations appear to sustain the positive role of democracy on the constitution and evolution of the middle class. The positive relationship between these two variables is explained from the potential advantages that a democratic system offers. The nexus between the middle class and level of development had earlier been strongly established by Easterly (2001). A substantial body of the literature following Easterly's work has confirmed the direction of this relationship. Our results are consistent with the mainstream narrative. Accordingly, a one standard deviation increase of the underlying variable leads to a rise in the dependent variable by 10.9.

Findings of the third and fourth columns (on MCWFC) are consistent with the first-two. Like in the former narrative, only the fourth is of econometric relevance to us because it corrects the problem of heteroscedasiticity observed in the third column. Significant results from the third column are in line with those of MCWtFC. Meanwhile, we notice that all coefficients corresponding to significant variables have almost doubled. This change justifies our use of alternative dependent variables.

Columns 5 and 6 are concerned with effects on the floating class (FC). Hence, we can confirm that this social category has is significant in influencing how a number of our independent variables behave towards them. Here, we notice two fundamental changes: democracy is no longer significant while openness benefits this class. The positive role of openness on FC is in accordance with the findings of Dollar & Kraay (2004). In effect, it should not be forgotten that this social class is closest to the poor. The insignificance of democracy is surprising.

As we proceed to columns 7-10, the results present a different configuration. Column 8 on the Lower-middle income (LM) has findings that are consistent with those of the second column, with the exception of two aspects. First, the education variable no longer significantly affects the dependent variable. Second, political stability negatively affects this sub-category of the middle class. While the finding is consistent with the ADB (2010), it is surprising to notice that this variable is only significant for LM.

For the last-two columns on Upper-middle class (UM), the following could be established relative to the first-two columns. The insignificant effect of the informal sector on the middle class is no longer significant in the UM. Here the nexus is positively significant. This finding is inconsistent with the negative effect reported by Rossi et al. (2011). The African informal sector appears to offer more opportunities than the formal sector in the perspective that it is easier to progress in the latter. This is justified by the ease of doing business while avoiding taxes (Johnson et al., 1998). However, it is quite interesting to notice that the positive effect only appears in the UM. Economic vulnerability no longer has a significant effect on this variable. This is logical because as income increases one is less associated with negative economic shocks. The same logic could be extended to the insignificant effects of political stability and democracy.

Table 2 : Basic results

	MCWtFC	MCWtFC	MCWFC	MCWFC	FC	FC	LM	LM	UM	UM
Informal	**.290**	.2989778	.1014277	.1014277	-.1971828	-.1971828	.1548194	.1548194	.1403694	**.1403694**
	(0.090)	(0.115)	(0.752)	(0.774)	(0.452)	(0.460)	(0.194)	(0.248)	(0.176)	**(0.097)**
Vulnerabilit	**-.240**	**-.2397717**	**-.6191081**	**-.6191081**	**-.3798097**	**-.3798097**	**-.1969287**	**-.1969287**	-.0405845	-.0405845
	(0.080)	**(0.049)**	**(0.020)**	**(0.007)**	**(0.071)**	**(0.041)**	**(0.039)**	**(0.043)**	(0.606)	(0.606)
Agricultur	.238	.2375271	.2801813	.2801813	.0400855	.0400855	.1207865	.1207865	.1193753	.1193753
	(0.124)	(0.100)	(0.327)	(0.149)	(0.861)	(0.747)	(0.248)	(0.170)	(0.190)	(0.107)
Duremoyenn	**2.029806**	**2.029806**	2.409729	2.409729	.3659509	.3659509	**1.059917**	1.059917	**.9760631**	**.9760631**
	(0.028)	**(0.021)**	(0.152)	(0.125)	(0.784)	(0.772)	**(0.087)**	(0.113)	**(0.070)**	**(0.094)**
Open	.0143355	.0143355	**.1238221**	**.1238221**	**.1094302**	**.1094302**	.0198541	.0198541	-.0053494	-.0053494
	(0.687)	(0.697)	**(0.074)**	**(0.070)**	**(0.054)**	**(0.031)**	(0.417)	(0.342)	(0.800)	(0.793)
Population	.0070668	.0070668	.1269818	.1269818	.120617	.120617	.0805272	.0805272	-.0714455	-.0714455
	(0.980)	(0.973)	(0.814)	(0.772)	(0.783)	(0.740)	(0.682)	(0.536)	(0.675)	(0.592)
lgdpcap2005	**10.79783**	**10.79783**	**19.98226**	**19.98226**	**9.156926**	**9.156926**	**6.415557**	**6.415557**	**4.393715**	**4.393715**
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.022)**	**(0.002)**	**(0.001)**	**(0.000)**	**(0.006)**	**(0.000)**
Demo	2.785435	**2.785435**	5.970155	**5.970155**	3.168566	3.168566	**3.132332**	**3.132332**	-.3440317	-.3440317
	(0.258)	**(0.093)**	(0.200)	**(0.079)**	(0.397)	(0.254)	**(0.070)**	**(0.026)**	(0.812)	(0.762)
Polstabsenv	-1.828347	-1.828347	-3.255155	-3.255155	-1.411887	-1.411887	**-1.789243**	**-1.789243**	-.0406914	-.0406914
	(0.206)	(0.136)	(0.230)	(0.186)	(0.517)	(0.485)	**(0.076)**	**(0.043)**	(0.961)	(0.950)
Elf	**-8.856901**	**-8.856901**	**-17.33965**	**-17.33965**	-8.499412	-8.499412	**-4.960058**	**-4.960058**	-3.940712	**-3.940712**
	(0.040)	**(0.041)**	**(0.033)**	**(0.022)**	(0.183)	(0.162)	**(0.087)**	**(0.095)**	(0.116)	**(0.046)**
legor_fr	3.215177	3.215177	5.398297	5.398297	-2.196867	-2.196867	1.76897	1.76897	1.444189	1.444189
	(0.262)	(0.239)	(0.315)	(0.290)	(0.612)	(0.555)	(0.365)	(0.366)	(0.394)	(0.194)
Cons	**-87.06037**	**-87.06037**	**-125.1175**	**-125.1175**	**-37.69897**	**-37.69897**	**-49.37451**	**-49.37451**	**-37.79953**	**-37.79953**
	(0.005)	**(0.004)**	**(0.026)**	**(0.012)**	(0.383)	(0.219)	**(0.017)**	**(0.014)**	**(0.032)**	**(0.008)**
Adjusted R²	0.7685	0.7685	0.8134	0.8134	0.6500	0.6500	0.7263	0.7263	0.5698	0.5698
F de Fischer	10.66***	10.38***	13.68***	23.74***	6.40***	8.53***	8.72***	11.14***	4.85***	5.85***
Breusch-Pagan test	0.0031		0.0139		0.0084		0.0042		0.0025	
Observations	33	33	33	33	33	33	33	33	33	33

Note : All regressions have been corrected for heterescedasticity with in the White manner. P values in brackets. FC: Floating Class. MCWtFC : Middle class with Floating Class (FC). MCWFC: Middle class without FC. LM: Lower middle income. UM: Upper middle income. Informal: Informal economy. Duremoyen: Average schooling years. Open: Openness. Lgdpcap: economic development. Demo: Democracy. Polstabsenv: Political stability/no voilence. Elf: Ethnic fractionalisation. Legor_fr : French civil law. Legor_uk: English common law.

Table 3 presents instrumental variable findings based on Two-Stage Least Squares (TSLS) in order to tackle the issue of reverse causality. In effect, up till now, the findings have been based on correlations which are subject to simultaneity bias and circular relations. Hence, we have variables with a certain degree of significance in the preceding estimations which are susceptible of endogeneity bias for the regressions in the following table.

More precisely, Table 3 consists of five estimation blocks, notably for: GDP per capita, education, vulnerability, political stability and democracy. Each estimation uses the same variables as above. Those with some significance become the variables of interest. In order to avoid integrating variables that are not of much relevance, we have only reported variables of interest[3]. The first block is focused on verifying the causality of GDP per capita. A plethora of studies in empirical literature have attempted to assess this concern, following the works of Easterly (2001). Accordingly, the problem is evident because while theoretically the level of development has an effect on the middle class, the opposite effect cannot be ruled-out. In essence, the literature has documented a relationship flowing from the size of the middle class to economic growth and poverty reduction (Ravallion, 2009).

In order to tackle this concern, GDP per capita has been instrumented with petroleum exports and tropical location. These two variables are borrowed from the literature. Accordingly, Bloom & Sachs (1998) and Sachs & Warner (1997) have shown that, enclavement and location in the tropics are serious impediments to development. Sachs & Warner (1995) have also been followed by an abundant literature documenting the inconvenient effects of natural resource abundance, notably petroleum (Frankel, 2012; Van der Ploeg, 2011).

The first instrument is a binary variable which takes the value of 1 if the country is a petroleum exporter and 0 otherwise. While a dummy on commodity has been instead employed by Easterly (2001) for the first instrument, the second instrument is in accordance with him. It is also a binary variable which takes the value of 1 if the latitude of the country is higher than 23 and 0 otherwise. From a practical standpoint, the instruments are valid based on result from the Sargan and Hausman tests. Hence, we can confirm that the positive link from GDP per capita to the middle class is causal and not essentially exploratory. This positive nexus in Africa is consistent with Easterly (2001). We also notice that the importance of GDP per capita varies across social categories. Apparently, this importance is either of polynomial or quadratic form.

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[3] Other variables can be provided upon request.

The second block concerns education-related estimations. This variable is instrumented with historical IQ (Intellectual Quotient) and colonial types, notably: English Common law and French civil law countries. Historical IQ is the mean IQ of every country from Lynn (2012). This indicator has already been employed in many studies (Daniele, 2013; Kodila-Tedika & Cinyabuguma, 2014). Our hypothesis is a transgenerational type such that the accumulation of human capital depends on the past (t, t_{N-1}). Hence, heritage of educational institutions of the present are influenced by intellectuals of the past. As concerns the other instrument, there are a plethora of studies that have established a significant difference in human capital when former colonies of English common law countries are distinguished from their French civil law counterparts (Cogneau, 2003, 2012; Cogneau & Moradi, 2013; Huillery, 2009). The Sargan overidentification restrictions (OIR) test confirms the validity of this instrument. Like for per capita GDP, the importance of education varies. Accordingly, it is more important for the FC but decreases for MCWtFC and further decreases for the UM.

In the third block on economic vulnerability, the same logic used in the choice of instruments for economic development applies. However, the results are different from those in Table 3. In fact, we notice that but for the nexus between the LM and vulnerability, the relationships were correlations. These findings are somewhat ambiguous because we expected the vulnerability to first affect the FC before affecting other categories of the middle class. A possible explanation could be limited activities in the FC which gives the impression that this layer of the middle class becomes immune as vulnerability increases. In other words, channels via which vulnerability affects categories in the middle class differ.

Table 3. Estimations with instrumental variables

	MCWtFC (VI)	MCWFC (VI)	FC (VI)	LM (VI)	UM (VI)
lgdpcap2005	**13.66756**	**25.93842**	**12.24949**	**9.415696**	**4.280107**
	(0.005)	**(0.002)**	**(0.060)**	**(0.008)**	**(0.069)**
Adj R²	0.7529	0.7982	0.6383	0.6835	0.5697
F de Fischer	9.94	32.06	9.63	11.04	6.40
Sargan N*R-sq test	0.6061	0.9807	0.7554	0.3574	0.7793
Hausmann test	0.6869	0.9850	0.8081	0.4679	0.8271
Observations	33	33	33	33	33
Duremoyenn	**4.096515**	**10.21961**	**6.11996**	**2.540851**	**1.571306**
	(0.075)	**(0.029)**	**(0.074)**	**(0.058)**	**(0.219)**
Adj R²	0.6927	0.6001	0.3261	0.6303	0.5235
F de Fischer	6.91***	18.92***	9.60***	8.15***	4.88***
Sargan N*R-sq test	0.4140	0.4543	0.5278	0.7521	0.2969
Hausmann test	0.5916	0.6270	0.6877	0.8495	0.4775
Observations	32	32	32	32	32
Vulnerabilit	-.6876785	-1.373655	-.6877188	**-.6944518**	
	(0.227)	(0.095)	(0.434)	**(0.065)**	
Adj R²	0.6393	0.7367	0.6235	0.3243	
F de Fischer	11.46***	27.07***	7.33***	11.04***	
Sargan N*R-sq test	0.9943	0.7932	0.7077	0.9006	
Hausmann test	0.9956	0.8381	0.7699	0.9225	
Observations	33	33	33	33	
Polstabsenv	**-4.100428**	**-10.86753**	**-6.7665**	**-4.0788**	-.0640
	(0.051)	**(0.022)**	**(0.076)**	**(0.017)**	(0.958)
Adj R²	0.7350	0.7270	0.5262	0.6366	0.5911
F de Fischer	7.25***	19.81***	8.11***	7.37***	8.18***
Sargan N*R-sq test	0.3288	0.0265	0.0152	0.4160	0.1053
Hausmann test	0.5104	0.0713	0.0413	0.5934	0.3023
Observations	32	32	32	32	32
Demo	10.419	57.36622	46.87706	12.8238	-2.180655
	(0.359)	(0.332)	(0.367)	(0.304)	(0.774)
Adj R²	0.6613	0.0880		0.2344	0.5427
F de Fischer	0.7288***	7.15***	2.40**	3.00**	7.18***
Sargan N*R-sq test	0.2009	0.5809	0.7292	0.4173	0.5687
Hausmann test	0.3666	0.7288	0.8342	0.5946	0.7196
Observations	32	32	32	32	32
Instruments	Latitude, mécénat USA, mécenaturss, Etat neutre				

All regressions involve a constant and are corrected for heteroscedasticity in accordance with White. A constant is included in all specifications. P-values in brackets (). Lgdpcap2005: economic development. Duremoyenn: average schooling years. Vulnerabilit : economic vulnerability. Polstabsenv : Political stability. Demo : Democracy.

As concerns political stability, we have used latitudes and types of sponsorships or help from the superpowers during the Cold war. The 'type of sponsorship' has recently been documented as an instrument of institutions by Kodila-Tedika &Tcheta-Bampa (2014). These authors assert that the Cold war has influenced a certain institutional status quo. Accordingly, the specific context of the Cold war has enabled the persistence of colonial institutions for the

following reasons. By virtue of their power, the United States (US) was looking for external markets for its products and thus collaborated with past colonial powers which already had some experience in Africa. In return, European industries had to conserve most of their extractive industries. For the accord with the US to be effective, the US had to support non-democratic elites in countries that experienced natural resource booms during the period of colonisation. The same logic applies for the former USSR (Union of Soviet Socialist Republics). These supports have considerably diminished institutional constraints and politics on African presidents. These circumstances imply the African elite have been confronted with a fundamental arbitrage between weak and strong private property institutions. Hence, the leading elite of states that inherited these extractive institutions are more inclined to weakening property rights if rents from natural resources are substantial. This argument implies the Cold war and corresponding sponsorships by world powers of government elite in the wake of independence, have curtailed the development of private property institutions. Hence, the initial situations in which African states found themselves have been sustained over the years. Moreover, from a statistical viewpoint, these instruments are not quite useful for the UM, LM and MCWtFC sub-categories of the middle class.

Very surprisingly, after correction for potential biases in endogeneity, political stability appears to be significant for all the dependent variables, with the exception of UM. In other words, for a middle class to exist there is need for a certain political consensus to enable the emergence of such a class. This political stability guarantees the existence and survival of this class. This inference is correct given some recent studies by North et al. (2010) in which the dominant elite (or insiders) regulate violence in order to gain power which enables them to become wealthy while promoting the cooperation with different actors that can break the political equilibrium or stability of social order. As suggested in the estimations, at a certain level, the middle class can do without a political consensus. This threshold appears to be that of the UM, most probably because those belonging to the class must have protection mechanisms.

As concerns democracy, we exploit the same instruments as for political stability. These instruments are valid from a statistical viewpoint. Hence, one can consider democracy in Africa as major driver of the middle class.

3.2 Consequences of the middle class

We borrow from Easterly (2001) in the procedure of estimating consequences of the middle class. We estimate the following system of equations:

$$Middleclass_i = \gamma_0 + \gamma_{1i}(instruments)_i + \beta_i X_i + \upsilon_i \quad (2)$$

$$Y_i = \lambda_0 + \lambda_1(Middleclass)_i + \sigma_i X_i + \mu_i \quad (3)$$

Where, Y represents a set of variables to be explained. In the first equation, the endogenous components of the middle class are instrumented with legal origins (English common law and French civil law). X is the set of control variables. In order to avoid a cumbersome exercise, we only report coefficients corresponding to the middle class.

3 .2.1 Infrastructure and human capital accumulation in the face of the middle class

Banerjee & Duflo (2008) have underlined that in many countries the middle class has the following characteristics, inter alia: consume expensive goods; are susceptible to live in more expensive houses and have pipe borne water, latrine & electricity in their houses. They are also very likely to substantially invest in human capital, to send their children to school and hence allocate a substantial portion of their wealth to the education of their children and good health service for their families. Kharas (2010) has emphasised on the important role of the world's middle class in consumption. On the other hand, Loayza et al. (2012) have linked the size of the middle class to more social policies.

From a broad perspective of accumulation, the effects are uniform. Accordingly, the size of the middle class positively affects our indicators of accumulation. We consistently notice a significant relationship at the 99% confidence level. Hence, an increasing middle class positively affects infrastructure, health, education and social protection. An interesting point worth noting is the magnitude of the coefficients. The effects appear to increase with categories in the middle-class. In essence, as the middle class level increases, its effect on the variables increases concurrently.

Table 4: Effect of the middle class on infrastructure and human capital

	MCWtFC	MCWFC	FC	LM	UM	Obs	Method
Infrastructure	.619372	1.560301	1.005685	2.609758	3.838819	41	3SLS
	(0.000)	(0.002)	(0.001)	(0.006)	(0.001)		
	.4637494	.972417	.7326681	1.367563	2.359546	41	SUR
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Health	.4585445	1.166653	.736214	1.95659	2.84097	41	3SLS
	(0.002)	(0.003)	(0.004)	(0.006)	(0.005)		
	.3540659	.7889153	.5357255	1.192066	1.74705	41	SUR
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Education	.4825966	1.236491	.7580215	2.059029	2.981836	41	3SLS
	(0.001)	(0.001)	(0.006)	(0.001)	(0.003)		
	.4771552	1.143892	.6860127	1.816461	.4729788	41	SUR
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
Social protection	.4463489	1.142831	.7103854	1.909596	2.782222	41	3SLS
	(0.002)	(0.002)	(0.005)	(0.005)	(0.005)		
	.3584981	.8240379	.5306968	1.255198	1.801687	41	SUR
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		

FC: Floating Class. MCWtFC: Middle class with Floating Class (FC). MCWFC: Middle class without FC. LM: Lower middle income. UM: Upper middle income. P-values in brackets. 3SLS: Three-Stage-Least Squares. SUR: Seemingly Unrelated Regressions. Obs: Observations.

On a whole, irrespective of the econometrics method employed, the results broadly support the hypothesis that an increase in the middle class is associated with higher human capital and infrastructural accumulation.

3.2.2 Entrepreneurship and the middle class

According to Senauer & Goetz (2003), the emergence of the middle class creates a lot of opportunities worldwide for consumer commodities. This tendency stimulates diversification to a certain extent. Barnerjee & Duflo (2008) have underlined the nexus between innovation and the middle class on the one hand and, entrepreneurship and the middle class on the other hand.

The emergence of a middle class is positively associated with economic diversification. While this nexus is weak under Seemingly Unrelated Regressions (SUR) estimations, it is not the case with Three-Stage-Least Squares (TSLS). This suggests the need for prudence in estimation techniques when assessing the incidence of middle class. This correlation is weak (strong) when the TSLS (SUR) method is considered. Moreover, the middle class has a negative relationship with weak places in the classification of ease in doing business indicators. In other words, an increase would dynamically increase the climate of doing business. However, like for economic diversification, results are not consistently significant for the two estimation techniques. Hence, prudence is needed.

Table 5: Effect of middle class on entrepreneurship

	MCWtFC	MCWFC	FC	LM	UM	Obs	Method
Economic diversification	.1880782 (0.196)	.4597552 (0.209)	.3025981 (0.215)	.7709078 (0.215)	1.090422 (0.236)	41	3SLS
	.2249155 (0.008)	**.4868843 (0.010)**	**.3506158 (0.012)**	**.799625 (0.007)**	**.9595511 (0.032)**	41	SUR
Doing business	-.4808 (0.323)	-1.344244 (0.260)	-.695163 (0.399)	-2.141 (0.300)	-3.459995 (0.233)	41	3SLS
	-.494812 (0.084)	**-1.326246 (0.031)**	**-.6396874 (0.177)**	**-1.93107 (0.049)**	**-3.147468 (0.026)**	41	SUR

FC: Floating Class. MCWtFC : Middle class with Floating Class (FC). MCWFC: Middle class without FC. LM: Lower middle income. UM: Upper middle income. P-values in brackets. 3SLS: Three-Stage-Least Squares. SUR: Seemingly Unrelated Regressions. Obs: Observations.

3.2.3 Governance, democracy, political stability and the middle class

Devarajan et al. (2011) have noted that after control for some variables, governance is positively associated with the middle class. Moreover, Loayza et al. (2012) have linked the middle class size to improvements in government quality and reforms (with effect more robust than improvement in GDP per capita). The findings of Table 6 support the positions of these authors. While the results are a little counter-intuitive in that the effect increases from LM to UM, the overall element of consolation is that one should expect governance standards in African countries to improve with an evolving middle class.

Table 6 : Effect of middle class on governance, democracy and political stability

	MCWtFC	MCWFC	FC	LM	UM	Obs	Method
Governance	**.6286603 (0.058)**	**.2396095 (0.061)**	**.3752104 (0.082)**	**1.030485 (0.081)**	**1.583246 (0.050)**	41	3SLS
	.4137896 (0.011)	**.186054 (0.012)**	**.2824 (0.020)**	**.5792294 (0.026)**	**1.016148 (0.006)**	41	SUR
Political Stability	.0285518 (0.274)	.0108704 (0.290)	.0172179 (0.314)	.0461626 (0.316)	.0744507 (0.227)	41	3SLS
	.0155725 (0.234)	.0073657 (0.218)	.0115702 (0.233)	.0155022 (0.454)	**.0512721 (0.083)**	41	SUR
Democracy	-.0198634 (0.156)	-.0081187 (0.138)	-.0136878 (0.135)	-.0342 (0.172)	-.0476109 (0.151)	41	3SLS
	-.0097851 (0.144)	**-.0050829 (0.096)**	**-.0084788 (0.087)**	-.012834 (0.226)	**-.0253502 (0.098)**	41	SUR

FC: Floating Class. MCWtFC: Middle class with Floating Class (FC). MCWFC: Middle class without FC. LM: Lower middle income. UM: Upper middle income. 3SLS: Three-Stage-Least Squares. SUR: Seemingly Unrelated Regressions. Obs: Observations.

Thurow (1984) had earlier affirmed that a good middle class is necessary in a democracy because social agitations have the tendency to increase when people and income are polarised. Barro (1999) later substantiated this thesis by asserting that there is higher

susceptibility for democratic regimes with evolution towards a middle class. As to what concerns Africa, Severino & Ray (2011) have demonstrated a strong expectation for this scenario in the continent. While the case of Kenya is consistent with this conjecture (Maupeu, 2012), an important concern arising is to know whether such a scenario can be generalised.

In the short-term, our findings may not adequately and consistently validate the significant effect of the middle class on democracy and political stability in Africa. Moreover, it is very surprising to notice a negative sign flowing from the middle class to democracy. This unexpected findings support the position of Jacquemot (2012, p. 26) in which the African middle class may have some political apathy.

3.2.4 Middle class and Macroeconomics

Political choice can also be determined by the social or middle class. According to Palma (2011) they affect domestic policies. Sound macroeconomic policies influence the constitution of this class, the author does not refute a reverse effect. While societies with a middle class consensus would device policies that facilitate economic prosperity, those polarised by classes and ethnic groups would opt for redistribution policies.

Table 7 below shows the macroeconomic effects of the middle class and ethnic diversity, notably, on: budget management, inflation, economic vulnerability and openness. While good budget management is associated with an increase in the size of the middle class, the nexus is not significant with SUR estimations. We find that inflation is negatively linked to the middle class, consistent with Easterly (2001). This linkage has no statistical significance. We also notice a positive effect of the middle class on openness, which is significant only for MCWFC and FC. The middle class negatively affects economic vulnerability, with an increasing magnitude of negativity. Overall, the middle class is not uniform across macroeconomic variables.

Table 7: Macroeconomic effects of the middle class

	MCWtFC	MCWFC	FC	LM	UM	Obs	Méthode
Budget management	.7049376 (0.194)	.2732118 (0.204)	.4281133 (0.236)	1.138846 (0.234)	1.798745 (0.163)	41	3SLS
	.596075 **(0.033)**	**.268357** **(0.034)**	**.4096161** **(0.048)**	**.7809122** **(0.082)**	**1.590023** **0.011)**	41	SUR
Economic vulnerability	**-.6074903** **(0.051)**	**-.259241** **(0.035)**	**-.4304453** **(0.042)**	**-1.03723** **(0.050)**	**-1.399786** **(0.082)**	41	3SLS
	-.6560804 **(0.000)**	**-.2983751** **(0.000)**	**-.4596444** **(0.000)**	**-1.0578** **(0.000)**	**-1.326682** **(0.001)**	41	SUR
Openness	2.066416 (0.108)	**.8179868** **(0.085)**	**1.359089** **(0.078)**	3.536422 (0.113)	5.042648 (0.117)	41	3SLS
	.6627201 (0.233)	**.4194226** **(0.097)**	**.7703876** **(0.060)**	1.012856 (0.247)	1.395236 (0.274)	41	SUR
Inflation	-.073655 (0.301)	-.0463717 (0.401)	-.0785383 (0.394)	-.1908762 (0.419)	-.2510282 (0.462)	41	3SLS
	-.0545314 (0.452)	-.0405829 (0.211)	-.0651459 (0.216)	-.1404483 (0.208)	-.1540813 (0.348)	41	SUR

FC: Floating Class. MCWtFC : Middle class with Floating Class (FC). MCWFC: Middle class without FC. LM: Lower middle income. UM: Upper middle income. 3SLS: Three-Stage-Least Squares. SUR: Seemingly Unrelated Regressions. Obs: Observations.

3.2.5 Development, modernisation and the middle class

It has been proven that, until the 19th century, the middle class constituted a major driving force to economic development in Europe and North America (Adelman & Morris, 1997; Landes, 1998). This thesis has been confirmed by Yuan et al. (2011) in relation to urbanisation/industrialisation in China. More developed societies have a tendency to move from agriculture towards the industry and services (Kongsamut et al., 1997). A hypothesis confirmed by Easterly (2001) on the linkage between agriculture and the middle class. In other words, the middle class leads to economic sophistication.

Table 8: Effects of the middle class on modernisation and development

	MCWtFC	MCWFC	FC	LM	UM	Obs	Méthode
Urbanisation	**1.637772**	**.67532**	**1.120003**	**2.790327**	**3.891**	41	3SLS
	(0.000)	**(0.000)**	**(0.000)**	**(0.001)**	**(0.001)**		
	1.338075	**.6170233**	**.9573743**	**2.03079**	**2.937125**	41	SUR
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**		
GDP per capita	**.0494469**	**.1239365**	**.0810715**	**.2106782**	**.2989799**	41	3SLS
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**		
	.0343191	**.0743927**	**.0528068**	**.1117256**	**.1652237**	41	SUR
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**		
Agriculture	6.151248	1.205251	1.483655	7.635407	39.77254	41	3SLS
	(0.906)	(0.825)	(0.791)	(0.885)	(0.963)		
	-1.248646	**-.599431**	**-.959978**	**-1.883644**	**-2.782417**	41	SUR
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**		

FC: Floating Class. MCWtFC : Middle class with Floating Class (FC). MCWFC: Middle class without FC. LM: Lower middle income. UM: Upper middle income. 3SLS: Three-Stage-Least Squares. SUR: Seemingly Unrelated Regressions. Obs: Observations.

From Table 8 above, the middle class positively affects urbanisation and GDP per capita. These findings are consistently significant across specifications and estimation techniques. This is not the case with the effect on the 'value added by agriculture on GDP' in which with the SUR method, it is negatively affected by the middle class. The sign is positively insignificant with 3SLS, which could reflect some lack of robustness. Accordingly, the idea of a virtuous cycle between urbanisation and the middle class is not limited to only theory: an increasing middle class is translated by growth in the number of consumers. This has a positive effect on market size, a boom in the housing market and formalisation of the banking system in the economy. High mobility that follows increases economic activity which in turn enables cities to attract more ideas, growth of a certain class and profit associated with the rising class.

4. Conclusion

From our estimations, it could be established that GDP per capita and education affect all the middle class dependent variables. However, we have seen a negative nexus for the effect of ethnic fragmentation, political stability in general and partially for economic vulnerability. Simple positive correlations have been observed for the size of the informal sector, openness and democracy.

We have also attempted to understand the consequences of an emerging middle class in the African social dynamic. We followed Easterly (2001) by using the 3SLS and SUR estimation techniques for this purpose. Our findings have shown that the middle class enables the

accumulation of human (health, education and social protection) and infrastructural capital. While its effect appears to be null on democracy and political stability in the short-term, it nonetheless enhances modernisation and better governance. In the absence of robustness, it is probable that increasing the middle class can substantially improve economic diversification and ease of doing business. At the macroeconomic level, economic vulnerability reduces with the growth of the middle class. While the nexus is not robust, its effect on budget management is positive. We have also noticed positive relations between the middle class and openness, though the nexus is very unstable. Middle class is negatively linked to inflation, albeit not significant.

The advantages above justify the policy interest of stimulating the middle class. Hence, in light of our findings, such policies should target above all, GDP per capita growth and education. These policies should also be tailored such that, the most is reaped from ethnic fragmentation, especially that which curtails its probability of negative incidence. Moreover, policies that directly target the mitigation of economic vulnerability are worthwhile. Lastly, the ongoing democratisation process in Africa offers opportunities for the growth of the middle class.

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