

The Middle Class and the Development Process:
International Evidence

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1. Introduction

The traditional concern of development policy has been on the poor. The analysis of broader social structures, “social classes” such as the middle class and the rich are more the staple of work by sociologists and political scientists rather than economists. However, this is starting to change and economists are looking at the middle class as a source of entrepreneurship, consumer power and social stability in society. These propositions, of course need empirical verification. It is apparent that as income per capita increases people will leave poverty and enter the pool of what we call the middle class, a source of consumer demand and new savings patterns. In the last two decades or so this process has been taking place in China, India, and some countries in Latin America. The middle class is typically identified with a large range of occupations and professions and includes people holding professional degrees such as academics, lawyers, engineers, doctors as well as clergymen and lower-level occupations different from manual workers. The “lower middle class” (people whose incomes are closer to the poverty line) can be a source of policy concern as it is a segment closer and more vulnerable to fall in poverty. At the same time, individuals in the upper ranges of the middle class can eventually become “rich” propelled by higher education levels, ambition, effort and social connections. The prototype view of the middle class is that of a rather conservative, risk-averse, group that seeks stable jobs and predictable economic fortunes. For that reason the middle class is the typical employee of the state (ministries, the bureaucracy of the state, public enterprises, decentralized agencies, etc). Also the sector of small and medium size enterprises (SME) is often assumed to be a source

of employment and incomes for the middle class. In this paper we explore empirical linkages between government, the SME sector and the middle class. Thus, both the state and the market can originate a middle class segment in society. In this paper we test empirically some of these intuitions. The middle class has also some distinctive expenditure patterns and aspirations. They increasingly demand better quality education, health care, more sophisticated tourist services and new housing. Although neoclassical economic theory assumes that individual's welfare is chiefly dependent on personal income levels (and consumption) there is increasing evidence that people cares also about relative incomes and that social context is important in forming people's aspirations and perception about their quality of life. Authors such as Frank (2007), Layard (2005), and Graham (2007) underscore this point. These ideas are not entirely new, however. Older generation economists such as Thorstein Veblen and James Duesenburry made similar points long ago. In the popular imagination, middle class people is often characterized as individuals concerned with other people's standard of living and relative welfare ("close to the Jones but far from the Smiths")¹.

The recent interest on the middle class comes also from political economy considerations. Policy-makers and international organizations care about the need of mobilizing and sustaining political support for certain

such as finance and economics may have received a boost with economic reforms; in turn, pro-private sector policies could have encouraged entrepreneurship. These various effects underscore the limits of referring to “the” middle class as an homogeneous group. We need to break down the middle class in various segments as lower middle class people may be more akin to the poor while upper middle class resembles more the rich. In this paper we consider a lower middle class and an upper middle class in our empirical analysis.

This new emphasis on the middle class arises from the observation that stable, higher income democracies often have both a strong middle class and relatively low levels of inequality. In contrast, countries with highly unequal patterns of income distribution and stratified social structures often have a weak middle class that may be less influential in shaping political preferences. Polarized and unequal social structures often contribute to social conflict and populist politics (see Solimano (2006) for the Latin American experience).² Thus, a stronger and more stable middle class is often considered as a *stabilizing factor in politics and economics*.³ The empirical evidence is favorable to this hypothesis. In fact, Easterly (2001) has shown, based on cross country and panel econometric regressions, that a higher share of income for the middle class (and lower ethnic polarization) are empirically associated with higher income, higher growth, more education and other favorable development outcomes. It is important to

² Policy reversal toward policies of nationalization is already taking place in the mid-2000s in some Latin American countries (i.e. Venezuela and Bolivia) and is a serious possibility that this and other related policy moves takes hold in other countries as well. Neoliberal policies are often accompanied by the persistence of inequality and a relative neglect of the middle class both as a potential beneficiary of economic reforms. Issues of social equity and distributive justice in policy design are examined in Solimano, Aninat and Birdsall (2000).

³ The traditional channel for instability to be transmitted to growth is through private investment a variable that is very sensitive to instability and political polarization associated with weak middle classes and high inequality of income and wealth.

device education, health, housing and social security policies that consider the demands and specificities of the middle class such as its quest for upward mobility and its role as a stabilizing segment in society.

This paper is organized in four sections besides this Introduction. Section 2 elaborates more on the reasons for a new interest in the middle class and takes up some issues of definition. Section 3 identifies the main economic and political economy variables that are bound to be correlated with the middle class. This refers to the level and inequality of per capita income and net wealth, the size of government, the size of small and medium size enterprises and the degree of democracy in a country and postulates its relation with the size of the middle class. Section 4 assembles a data base for these variables for a sample of 129 countries and studies the empirical correlations between the middle class and a set of determinants for a cross-section of countries grouped by income per capita levels and regions. The paper closes in Section 5 with some conclusions from the analysis.

2. Roles of the Middle Class and Definition Issues

We can distinguish at least three roles performed by the middle class that can be of interest for development economics:

(i) *The middle class as a source of entrepreneurs.* Since the time of the industrial revolution in England, the middle class started to be seen as a source of entrepreneurial capabilities. Middle class people was seen as more devoted to save, accumulate capital and take productive risks in comparison to a landed aristocracy that preferred more leisure than hard work and entrepreneurship (Doepke and Zilibotti, 2007). Recent evidence for low to middle income countries provided by Banerjee and Duflo (2008) tends to reject this view and emphasize that middle class individuals tend to be

“entrepreneurs by necessity”, say owners of small shops and firms that earn modest rates of return and provide an income for living. In that sense they are more similar to the poor than to the successful Schumpeterian entrepreneur that makes big profits out of innovations. However, the generality of these findings may be at question as the sample of that study is mainly referred to poor economies rather than upper middle income and rich countries that have more powerful middle class with a larger sub-component with entrepreneurial inclinations.

(ii) *The middle class as a source of consumer power.* As income per capita rise the size of the middle class, in absolute terms, is bound to increase and so their purchasing power. This can be an important source of aggregate demand and expansion of consumer market in the areas highlighted before such as new services, housing and other. For a sample of mainly low income countries, Banerjee and Duflo (2008) find that as the share devoted to food falls as income increases and middle class people spends more on entertainment, education and health care and domestic in infrastructure.

(iii) *The middle class as a stabilizing segment in society.* Karl Marx saw the proletarians, say people whose only asset was its work-power, as a revolutionary class in capitalist society. A main argument, for identifying the working class as the main engine for social change was its lack of assets – mainly capital. Marx held this view, probably, as he was written in the middle of the XIX century when the working class in advanced capitalist countries had yet little capacity to accumulate assets.⁴ In contrast he portrayed the “*petit bourgeoisie*” – our equivalent of the middle class –

⁴ Nowadays, in many countries the “working class” owns property (mainly housing), hold savings accounts and some financial assets. See Moser (2007) and Solimano (2007).

essentially as a class averse to social change due to their interest in protecting their asset and social position in society, in spite that they are not in the higher echelons of social hierarchy. In a sense this was a insightful perception. However, if the interest is to maintain social and political stability say to promote economic growth and development, then having a large, stable and powerful “*petit bourgeoisie*” may not be ultimately a bad thing. Of course this open a complex debate to what extent the quest for stability may also serve to preserve social inequalities and injustices. Still the “stability for growth” argument would favor having a large and stable middle class to ensure political stability to society. As political stability is important for private investment and growth, the size and stability of the middle class has potentially important economic implications (see Solimano, 2007).

Definitions of the Middle Class

In the literature various definitions of the middle class have been provided. Birdsall, Graham and Pettinato (2000) define the middle class as those between 75 and 125 percent of median per capita income. Easterly (2001) use the definition of per capita consumption covering from the 20th to 80th percentile. Banerjee and Duflo (2008) use the definition of middle class as individuals with per capita consumption in the range of U\$ 2 to U\$ 4 and between U\$ of 6 to U\$ 9 in PPP terms. In this paper we use a relative-income definition that breakdown the middle class in two sub-components besides an aggregate that overlaps with other definitions used in the literature:

- (a) a broad middle class comprising individuals belonging to deciles 3 to 9 of the income distribution,

- (b) a lower middle class, corresponding to deciles 3 to 6, and
- (c) an upper middle class, corresponding to deciles 7 to 9.

In general the lower middle class follows similar patterns to the poor and the upper middle class resembles more the behavior of the rich.

3. Economic Correlates of the Middle Class: Empirical Results

In this section we will investigate some empirical correlations between a set of variables, fundamentally of economic and political economy nature, which we postulate have a relationship with the middle class:

- (a) Development levels and per capita income
- (b) Inequality of income and wealth
- (c) Size of the state.
- (d) Share of small and medium size enterprises in employment and output.
- (e) Democracy

Development levels and income per capita

An empirical regularity of the development process is the expansion of the middle class. In that perspective, we can expect a positive correlation between with the *level of per capita income* of a country and the relative size of its middle class. As mentioned before, economic growth that rises income per capita enables people to leave poverty and go into the middle class, with the ensuing roles that we discussed before (new entrepreneurship, consumer power, and political stabilization). In addition, this leads also to social mobility with individuals moving up (or down) in the income and social status ladders, a healthy symptom of a dynamic economy. In addition, it is

an empirical regularity – confirmed in this paper – that middle and higher per capita income countries have, on average, a larger share of the middle class in real income than poor countries. At this stage, we avoid postulating a causality running from the middle class to growth and income per capita and rather propose a correlation.

Inequality

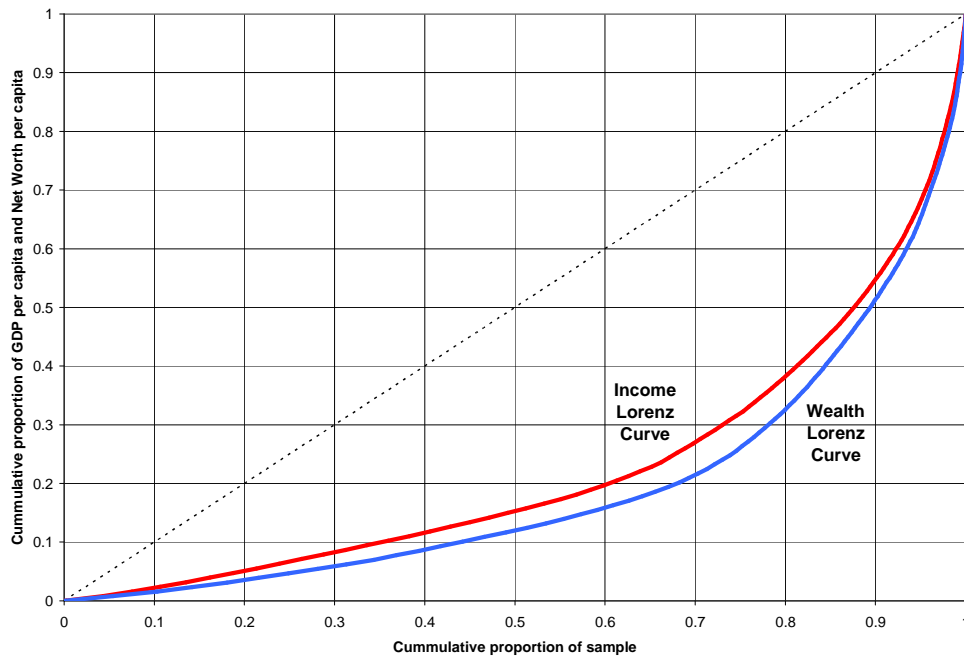
As mentioned before, we expect that countries with lower *inequality* of income and wealth (less concentrated income and wealth distributions) have larger middle classes, as income is distributed more evenly across the population than countries with higher inequality. In general, inequality of income (and wealth) is characterized by a large share of income (wealth) accruing to the rich and a lower share to the middle class and/or the poor.⁵ However, wealth and income concentration are not the same concept, and often wealth is *more concentrated* than primary incomes (see Figure 1 below that compares Lorenz curves of income and wealth for a sample of 129 countries)⁶. The important point is that we expect a *negative* relationship between the degree of concentration in income and wealth distribution and the relative size of the middle class in the economy⁷. Empirically, we will expect that countries with higher (lower) values of the income (and wealth) Gini coefficient have a lower (higher) share of the middle class in the personal distribution of income (or wealth). Again we will investigate empirically this hypothesis.

⁵ See Atkinson (2006).

⁶ We use the data set of *net worth (or net wealth)* variable composed by the sum of physical (housing and shares of capital) and financial assets less debts from Davies (2008).

⁷ Sometimes a high concentration of income and wealth at the top is sometimes referred as polarization, and we should expect an inverse relationship between polarization and the relative size of the middle class.

**Figure 1.- Lorenz Curves for Income and Wealth Distributions
(129 countries, circa year 2000)**



Source: own elaboration based on World Bank's WDI (2007) and Davies et al. (2006) [WIDER-UNU Project on World Wealth Distribution]. See Annex for details.

The Size of the State

In many countries a main employer of the middle class is government (ministries, state-agencies, public enterprises, etc). Then we could expect that the middle class is larger in countries with larger governments. In addition, the middle class will be affected by the incidence of the government expenditure government and the level and composition of taxes.⁸ In this paper we approximate the size of the state by the ratio of government expenditure over GDP but we will look at also the correlations between the composition of public spending – particularly social expenditure – and the middle class (broad definition and lower and upper middle class segments).

⁸ López y Torero (2007). Typically, public spending in tertiary education, pensions and public education and health tends to benefit the (upper) middle class. Also the level of taxes affects the disposable income of different groups in the population.

Small and Medium Size Enterprises (SME)

The SME is also a source of income and jobs for different groups of the population including the middle class. This class besides being identified as a typical employee of the government is also, in many countries, an owner (as well as employee) of micro, small and medium size enterprises. In this sense we can expect a positive relationship between the relative size of the small and medium size sector in the economy (measured in terms of output and/or employment) and the relative importance of the middle class. Recent empirical evidence shows that, (in relative terms), the SME sector is larger in higher income countries than in middle and lower income countries.⁹

Democracy

Political scientists have always emphasized that stable and well consolidated democracies have also larger middle classes. In addition, most stable democracies are located in high-income countries. Thereby, the level of economic development, democracy and larger middle classes are all variables that seem to move together. We shall see these patterns for a large sample in this paper, expecting a positive correlation between democracy (using the data set of the multi-country Polity IV project that works with degree of democracy) and the relative size of the middle class.

Empirical Results

In Table 1 we present the average values of the variables used in this study. Our data set on levels of per capita income, net wealth per person and income distribution (income shares and Gini coefficients for income and

⁹ See Ayyagari, Beck and Demirgüç-Kunt (2005). In turn, the SME sector has also lower productivity levels than medium size and large companies as the capital stock per worker is smaller than for large firms. Accordingly, the real wages paid to the employees in SME tend to be lower than in larger firms, thereby affecting incomes of the poor and lower-middle class individuals.

wealth) covers 129 countries. Data of the ratio of public expenditure over GDP is available for 93 countries, the democracy index for 126 economies, and the shares of small and medium size enterprises in total employment and output is for 72 countries and 35 economies, respectively. We work with three social classes: *the poor, the middle class and the rich*. Our focus is, however, on the middle class. Empirically, the income shares within countries for each class are as follows:

- (i) The poor (bottom 1 and 2 deciles).
- (ii) The middle class. Following our previous definition the “broad middle class” corresponds to deciles 3 to 9, the “lower middle class” covers deciles 3 to 6 and the “upper middle class” is deciles 7 to 9.
- (iii) The rich (approximated by the share of the 10th decile).

It is apparent that the standard of living of a person classified as ‘middle class’ depends on the average level of income of the country. So in a low income country a person considered to be middle class may correspond to the poor in a high-income economy. Overlaps across countries will occur. The focus of this paper is on the middle class *within countries* rather than the world (or global) middle class¹⁰.

¹⁰ The global income distribution intends to reflect the distribution of income among all citizens of the world. The World Bank’s Global Development Prospect (2007) defines the global middle class ranging from US\$ 4,000 to US\$ 17,000, which corresponds, roughly, to the per capita income of Brazil and Italy respectively according to the World Bank. It is clear that for many countries, particularly low income and middle income countries, that the average income of a person belonging to the national middle class is well below the average income of the citizen of the global middle class. In fact, upper income people in lower income economies are bound to be only middle income people according to the global middle class definition. It is estimated that growth of the global middle class in coming years will be concentrated mainly in developing countries and is associated with economy-wide growth, increases in education levels, shifts in income distribution and other factors. This is expected to have effects on international trade in goods and services as well as on domestic demand (see Milanovic, 2006, and The World Bank’s Global Development Prospect, 2007).

Economies are grouped according to their level of per capita income using the definition of the World Bank (Low-Income, Lower-Middle Income, Upper-Middle Income and High-Income) and also by regional grouping of the World Bank.

The average income share of the middle class, (broad definition, MC) for the world economy (129 countries) is close to 62 percent (data circa 2000). This relative size increases with the level of per capita income: the MC share for low-income countries (say countries with a per capita income of less than US\$ 905 in PPP) is 60.4 percent while the share of the middle class in high-income countries (those with GDP per head above US\$ 11,000) is much higher: 66 percent. In turn, we find that the shares of the upper middle class have a narrower range of variation, across countries (from 36 in low income countries to 37.5 percent in high-income economies) than the shares of the lower middle class (the range varies from 24 percent in low-income countries to 29 percent for high income countries, see Table 1).

Table 1.- The Middle Class and Correlates
(selected indicators for 129 countries, circa year 2000)

Country Group	Mean Income per Income Group					Income and Wealth				Other Indicators			
	Poor (Deciles 1 and 2, % of GDP)	Middle Class (Broad definition, Deciles 3 to 9, % of GDP)	Lower Middle Class (Deciles 3 to 6, % of GDP)	Upper Middle Class (Deciles 7 to 9, % of GDP)	Rich (Top Decile, % of GDP)	GDP per capita (PPP adjusted, US\$ year 2000)	Income GINI Index	Net Worth per capita (PPP adjusted, US\$ year 2000)	Net Worth GINI Index	Government Expenses (% of GDP)	Democracy Index (Polity IV)	SME's Employment (% of Total Employment)	SME's Output (% of GDP)
World Bank's Income-based Criterion													
Low-Income Economies	6.04	60.41	24.29	36.12	33.55	1,349.10	0.422	3,960.17	0.709	20.00	0.97	36.19	24.00
Lower-Middle-Income Economies	5.54	59.94	23.62	36.32	34.51	3,982.84	0.438	11,162.62	0.709	21.63	0.65	38.76	29.41
Upper-Middle-Income Economies	5.69	61.21	24.59	36.62	33.10	7,999.65	0.423	20,232.75	0.705	27.22	7.83	51.14	40.79
High-Income Economies	7.47	66.67	29.08	37.59	25.85	23,769.67	0.330	89,192.45	0.665	33.49	9.46	63.93	48.77
World Bank's Regional Criterion													
East Asia & Pacific	6.53	62.75	25.77	36.98	30.72	10,006.21	0.391	45,237.73	0.676	21.25	5.87	67.45	35.97
Europe, Central Asia & North America	7.72	66.67	29.31	37.35	25.61	15,177.41	0.325	48,801.64	0.668	30.70	5.91	49.98	42.91
By OECD Membership													
OECD countries	7.67	67.05	29.57	37.47	25.28	27,461.19	0.320	96,685.34	0.676	36.02	9.94	67.40	53.63
Non-OECD countries	7.75	66.43	29.15	37.28	25.81	6,988.23	0.328	19,080.73	0.664	26.72	3.55	35.06	31.21
By European Union Membership													
EU Members	7.91	67.34	29.98	37.36	24.75	19,773.78	0.313	65,127.29	0.657	36.23	9.46	59.22	48.69
Others	7.50	65.91	28.55	37.35	26.59	9,431.95	0.338	30,249.77	0.682	23.34	2.05	35.21	26.52
Latin America & The Caribbean	3.64	56.81	20.52	36.29	39.54	5,627.84	0.510	16,457.70	0.743	20.72	3.45	55.94	45.34
Middle East & North Africa	6.62	63.64	26.26	37.39	29.71	6,441.90	0.379	19,250.69	0.676	29.49	2.38	--	--
South Asia	7.70	60.21	25.67	34.54	32.12	2,239.84	0.381	7,275.13	0.682	16.76	4.60	--	--
Sub-Saharan Africa	5.10	57.60	21.96	35.63	37.31	1,882.42	0.470	4,615.79	0.729	24.01	0.93	32.66	--
All Countries (Number of Countries included)	6.17 (129)	61.88 (129)	25.27 (129)	36.61 (129)	31.95 (129)	8,596.30 (127)	0.405 (129)	28,874.90 (129)	0.698 (129)	26.26 (93)	4.02 (126)	51.08 (72)	42.14 (35)

Note: Numbers in parenthesis indicate the number of observations available for each variable.

Source: Own elaboration based on World Bank's WDI (2007), Davies et al. (2006) [WIDER-UNU Project on World Wealth Distribution], Marshall and Jagers (2005) [Polity IV Project], and Ayyagari et al. (2005) [SME's Database]. See Annex for details.

An interesting empirical finding is that the increase in the middle class share in higher income countries (HIC) comes along with a *decline* in the average share of the rich. So it is a progressive or redistributive shift away from higher income people (defined as the top 10 percent). In fact, the income share of the rich is smaller in high-income economies (on average 25.8 percent) than the corresponding share in low-income economies (33.5 percent). This confirms our basic hypothesis that high income countries have:

- (i) A smaller share of income going to the rich (top 10 percent).
- (ii) A larger share of income going to the middle classes (deciles 3 to 9) than poor and middle income countries.

A similar conclusion can be drawn using the GINI coefficients of income (calculated by the World Bank) and the GINI coefficient of wealth (computed by UNU-WIDER). In fact, the average (income) GINI for high-income economies is 0.33 compared to 0.42 for low income economies (and close to 0.43 for middle income countries), see Table 1. A higher GINI, of course, means higher inequality.

We verify also that the degree of concentration of wealth is often higher than for income. In fact, the average GINI coefficient for wealth (net worth) is 0.66 for high-income economies and 0.71 for low-income economies. Figure 1 displays Lorenz curves for income and for wealth and the former lies closer to the 45 degree (line of full equality) than the Lorenz curve for wealth, showing that inequality of incomes is less than inequality for wealth using cross country data.

When we consider the regional country groupings we find some interesting contrasts: Latin American and the Caribbean has the lowest average share of the middle class in income (and the highest share of the top

10 percent), followed by Africa. Also Latin America has the highest inequality indicators measured by both GINI of income and GINI of wealth. This confirms, for regions, that inequality and the relative importance of the middle class are inversely correlated. The regions with higher shares of the middle class are Europe, Central Asia and North America, followed by the Middle East and North Africa and East Asia & Pacific.

Regarding other variables we find that the size of government expenditure goes-up with the level of per capita income. Low income and lower middle income countries have a ratio of public spending to GDP in the range of 20-21.5 percent whereas the same ratio fluctuates between 27 percent and 33 percent in upper middle income and high income economies, respectively. Again the higher ratio of public expenditure is associated with larger middle classes in high-income economies. Also we find a substantially higher share of SME in employment in high-income economies (close to 64 percent) compared to around 36 percent for low income countries. Upper middle income countries have a corresponding share of SME in employment of 51 percent and lower middle income near 39 percent. The differences are smaller for the shares of SMEs in output but still the positive correlation with income per capita levels holds.

4. Analysis of Correlations

Levels of per capita Income and per capita Wealth

The coefficient of correlation between the share of the middle class (broad definition) and the levels of per capita income in PPP for a sample of 127 countries is 0.411 (see Table 2). In turn, the correlation of the share of the (broad) middle class with per capita net worth is lower (a coefficient of 0.346). Figure 2 presents a scatter diagram of the income shares of the

middle class (broad definition) at different levels of per capita income. It is apparent a lower average share of the middle class and a greater variability for low income and middle income countries than for high income economies. The relationship between the relative size of the middle class and per capita income levels really “stabilizes” for countries with per capita income levels above US\$ 10,000 or so (high-income economies as defined by the World Bank).

If we use per capita net wealth the shares of the middle class become more stable at a threshold of around US\$ 50,000, see Figure 3. Again the dispersion of MC shares is higher for lower and middle income economies.

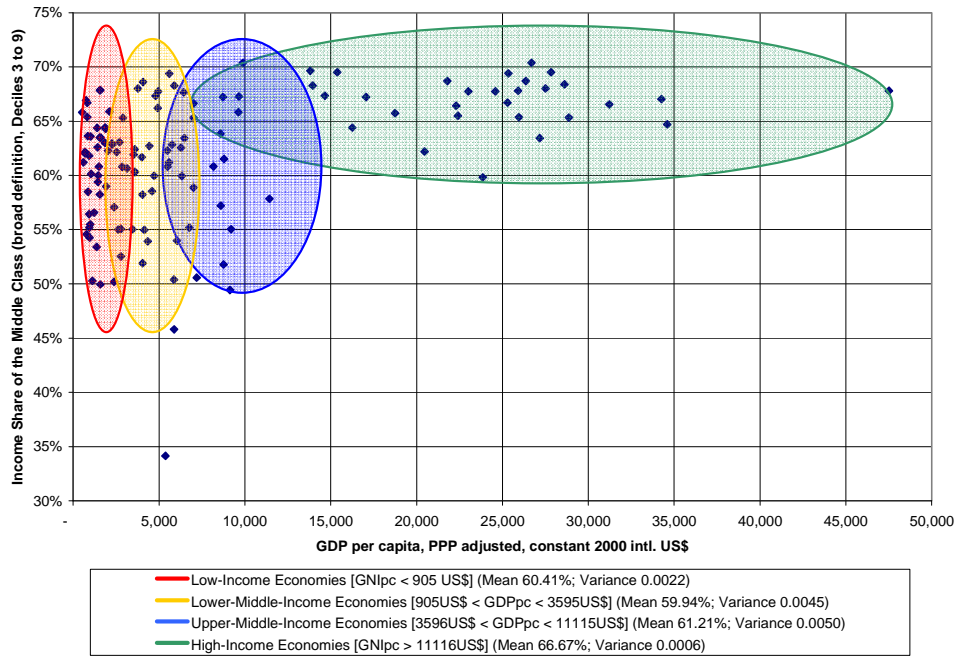
Table 2.- Matrix of Correlations for All Countries
(selected indicators for 129 countries, circa year 2000)

Cross Correlations		Income Groups					Income and Wealth				Other Indicators			
		Poor (Deciles 1 and 2)	Middle Class (Broad definition, Deciles 3 to 9)	Lower Middle Class (Deciles 3 to 6)	Upper Middle Class (Deciles 7 to 9)	Rich (Top Decile)	GDP per capita (PPP adjusted)	Income GINI Index	Net Worth per capita (PPP adjusted)	Net Worth GINI Index	Government Expenses (% of GDP)	Democracy Index (Polity IV)	SME's Employment (% of total employment)	SME's Output (% of GDP)
Income Groups	Poor (Deciles 1 and 2)	1.000 (129)												
	Middle Class (Broad definition, Deciles 3 to 9)	0.807 (129)	1.000 (129)											
	Lower Middle Class (Deciles 3 to 6)	0.927 (129)	0.956 (129)	1.000 (129)										
	Upper Middle Class (Deciles 7 to 9)	0.217 (129)	0.723 (129)	0.489 (129)	1.000 (129)									
	Rich (Top Decile)	-0.891 (129)	-0.987 (129)	-0.986 (129)	-0.615 (129)	1.000 (129)								
Income and Wealth	GDP per capita (PPP adjusted)	0.328 (127)	0.411 (127)	0.421 (127)	0.231 (127)	-0.405 (127)	1.000 (127)							
	Income GINI Index	-0.954 (129)	-0.940 (129)	-0.992 (129)	-0.460 (129)	0.981 (129)	-0.402 (127)	1.000 (129)						
	Net Worth per capita (PPP adjusted)	0.236 (129)	0.346 (129)	0.333 (129)	0.243 (129)	-0.330 (129)	0.912 (127)	-0.316 (129)	1.000 (129)					
	Net Worth GINI Index	-0.655 (129)	-0.676 (129)	-0.697 (129)	-0.368 (129)	0.697 (129)	-0.265 (127)	0.688 (129)	-0.196 (129)	1.000 (129)				
Other Indicators	Government Expenses (% of GDP)	0.295 (93)	0.359 (93)	0.355 (93)	0.217 (93)	-0.354 (93)	0.505 (92)	-0.351 (93)	0.405 (93)	-0.272 (93)	1.000 (93)			
	Democracy Index (Polity IV)	0.054 (126)	0.025 (126)	0.043 (126)	-0.025 (126)	-0.034 (126)	0.253 (124)	-0.045 (126)	0.212 (126)	-0.020 (126)	0.211 (92)	1.000 (126)		
	SME's Employment (% of total employment)	-0.006 (72)	-0.019 (72)	-0.017 (72)	-0.018 (72)	0.016 (72)	0.479 (72)	0.007 (72)	0.420 (72)	-0.029 (72)	0.222 (60)	0.160 (70)	1.000 (72)	
	SME's Output (% of GDP)	-0.031 (35)	0.073 (35)	0.033 (35)	0.187 (35)	-0.043 (35)	0.565 (35)	-0.028 (35)	0.546 (35)	-0.004 (35)	0.188 (31)	-0.076 (34)	0.698 (35)	1.000 (35)

Note: Numbers in parenthesis indicate the number of observations available for estimating each correlation.

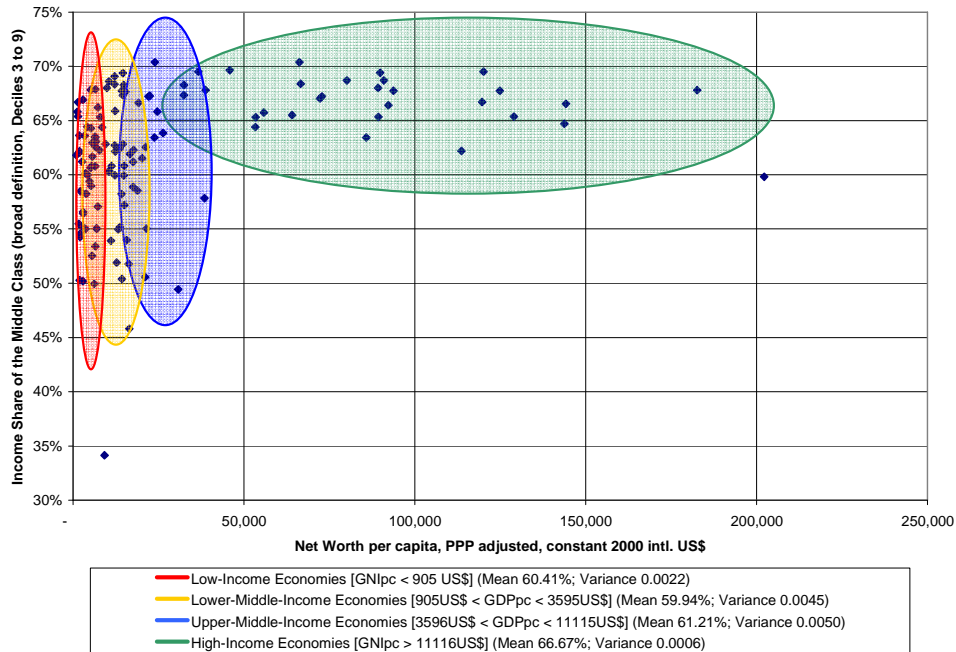
Source: Own elaboration based on World Bank's WDI (2007), Davies et al. (2006) [WIDER-UNU Project on World Wealth Distribution], Marshall and Jagers (2005) [Polity IV Project], and Ayyagari et al. (2005) [SME's Database]. See Annex for details.

**Figure 2.- The Middle Class (broad definition) and GDP per capita
(127 selected countries, circa year 2000)**



Source: own elaboration based on World Bank's WDI (2007). See Annex for details.

**Figure 3.- The Middle Class (broad definition) and Net Worth per capita
(129 selected countries, circa year 2000)**



Source: own elaboration based on World Bank's WDI (2007) and Davies et al. (2006) [WIDER-UNU Project on World Wealth Distribution]. See Annex for details.

When the middle class (full country sample) is broken-down in lower middle and upper middle classes the corresponding relation with per capita income is stronger (higher coefficients of correlation) for the lower middle class (a correlation of 0.42) than for the upper middle class (a correlation of 0.23, see Table 2). This suggests that economic growth should benefit more people whose incomes are closer to poverty than those whose incomes closer to the rich. Growth is, in a sense, pro-lower middle class¹¹. From a political economy perspective we may think in a broader coalition between the poor and the lower middle class (covering from percentile 1 to percentile 60) as their interests are relatively aligned. In terms of number of votes this coalition between the poor and the lower middle class is likely to be a majority of the population; however, in terms of economic power (say income per person) each individual is less empowered as most income distributions are asymmetric and tend to be concentrated towards high income levels.

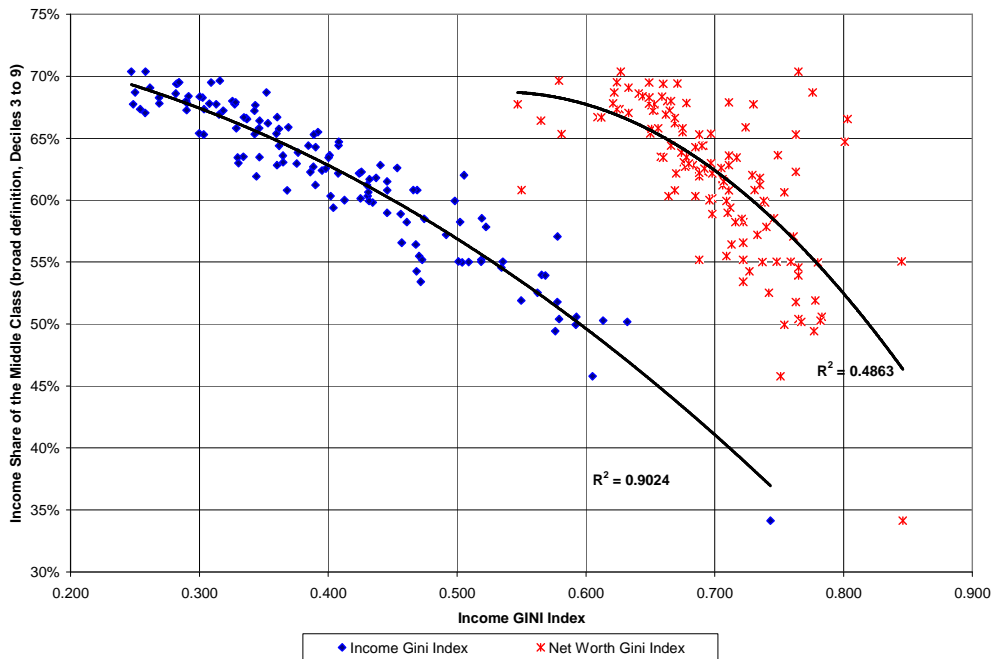
Inequality

Let us turn now to the relationship between the middle class and inequality of income and wealth. The coefficients of correlation between the share of the middle class and the GINI coefficients for income and the GINI of net wealth are negative for the whole sample and for all income groups (see Tables 1 and 2). Furthermore, this negative correlation is higher for the income GINI (a coefficient of minus 0.94) than for the net wealth GINI (a coefficient of minus 0.67), suggesting a tighter inverse relationship between shares of the middle class and the degree of inequality of income than

¹¹ The coefficient of correlation between the broad definition of the middle class and the lower middle class is higher than the corresponding correlation with the upper middle class, see Table 2.

between the share of the middle class and the degree of net wealth inequality.¹² In turn, the latter relationship (between the share of the middle class and wealth inequality) has a larger dispersion than the relationship between the share of the middle class and income inequality (compare the dispersion of both dot clouds in Figure 4). It is also interesting to note that the negative correlation with the GINIs is stronger for the lower middle class than for the upper middle class (see Table 2).

Figure 4.- The Middle Class (broad definition) and Income and Net Worth Gini Index (129 selected countries, circa year 2000)



Source: own elaboration based on World Bank's WDI (2007) and Davies et al. (2006) [WIDER-UNU Project on World Wealth Distribution]. See Annex for details.

These results confirm our presumption that more unequal societies (those with higher GINI for income and net wealth) have smaller middle

¹² There is also a negative correlation between the income share of the rich (top 10 percent) and the level of per capita income of the country for the overall sample.

classes (relatively speaking) than more equal economies (those economies with lower GINIs)¹³.

Unlike the case of the relation between the share of middle class and the level of per capita income the relation between the MC share and the GINI holds robust across all per capita income groups although the correlation between the MC shares and the income and wealth GINIs decline for the high income group¹⁴.

The Middle Class and Government Expenditure

For a sample of 93 countries (see Table 2) we find a correlation of 0.36 between the share of the middle class (broad definition) and the ratio of the level of *total public spending* over GDP, as our proxy to the size of the state. This suggests a not too strong correlation between both variables. Moreover, this correlation is weaker and more unstable for various country groups, even for high income countries. This may reflect our imperfect measure of size of government and/or simply that both variables are not strongly correlated. Further test of the relationship could be made using data on public employment (as share of total employment) and the share of the middle class. When we disaggregate the middle class in lower and upper middle we find a stronger correlation with the public spending to GDP ratio for the lower middle class than for the upper middle class (see Table 2 and Figure 5).

In order to explore the effects of the *composition* of public expenditure using the data from the Government Finance Statistics compiled by the IMF we find for the whole sample (see Table 3) that in general social

¹³ These countries happen to be those with higher per capita income levels.

¹⁴ Tables are available on request from the author.

expenditure is not very progressive. In fact, for example government spending in education has a positive correlation only with the top decile. This is probably influenced by the expenditure in tertiary education that is known not to reach middle and lower income groups in a significant way. Also public expenditure in health has some correlation with the upper middle class and the rich (defined as the top decile). The only item that has some more significant correlation with the non-rich is the category of social protection.

Table 3.- Composition of Public Expenditure and Middle Class
(matrix of correlations for selected indicators, 129 countries, circa year 2000)

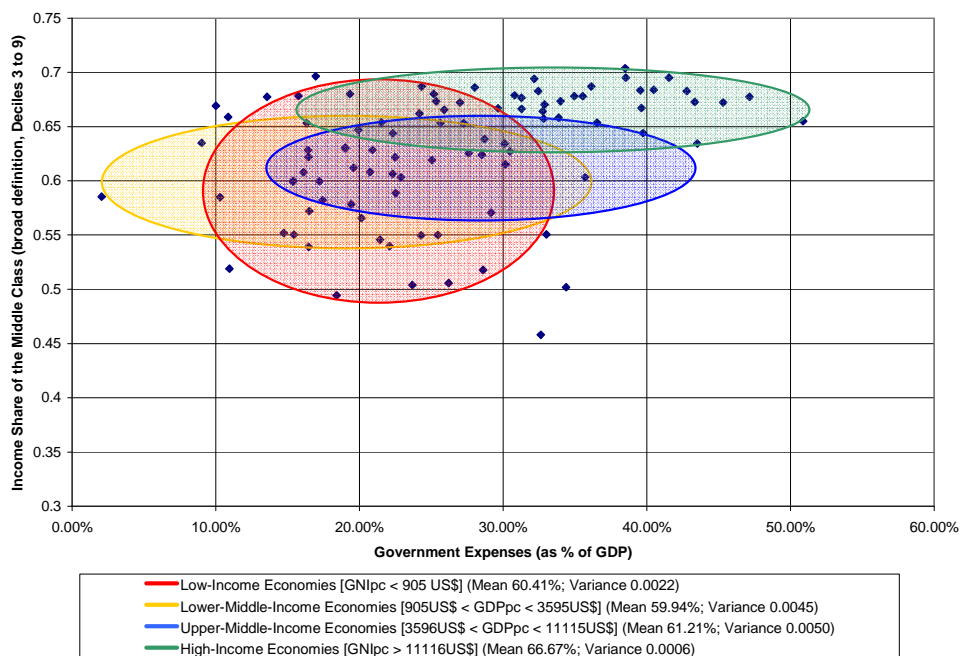
Cross Correlations		Income Groups				
		Poor (Deciles 1 and 2)	Middle Class (Broad Definition, Deciles 3 to 9)	Lower Middle Class (Deciles 3 to 6)	Upper Middle Class (Deciles 7 to 9)	Rich (Top Decile)
Mean Income per Income Group	Poor (Deciles 1 and 2)	1.000 (129)				
	Middle Class (Broad Definition, Deciles 3 to 6)	0.807 (129)	1.000 (129)			
	Lower Middle Class (Deciles 3 to 6)	0.927 (129)	0.956 (129)	1.000 (129)		
	Upper Middle Class (Deciles 7 to 9)	0.217 (129)	0.723 (129)	0.489 (129)	1.000 (129)	
	Rich (Top Decile)	-0.891 (129)	-0.987 (129)	-0.986 (129)	-0.615 (129)	1.000 (129)
	Total Government Outlays	0.137 (84)	0.028 (84)	0.087 (84)	-0.117 (84)	-0.059 (84)
Social Expenditure	Housing and Community Amenities	-0.069 (70)	-0.266 (70)	-0.181 (70)	-0.352 (70)	0.220 (70)
	Health	-0.143 (70)	-0.064 (70)	-0.102 (70)	0.064 (70)	0.090 (70)
	Education	-0.114 (70)	-0.093 (70)	-0.101 (70)	-0.026 (70)	0.102 (70)
	Social Protection	0.364 (70)	0.425 (70)	0.424 (70)	0.222 (70)	-0.424 (70)
Non-Social Expenditure	Public Order and Safety	0.150 (42)	0.058 (42)	0.121 (42)	-0.150 (42)	-0.088 (42)
	Economic Affairs	0.127 (70)	0.000 (70)	0.074 (70)	-0.187 (70)	-0.038 (70)
	Environmental Protection	0.151 (6)	0.051 (6)	0.035 (6)	0.086 (6)	-0.073 (6)
	Recreation, Culture, and Religion	0.290 (69)	0.204 (69)	0.260 (69)	-0.036 (69)	-0.238 (69)
Other Expenditure	General Public Services	0.115 (70)	0.061 (70)	0.087 (70)	-0.037 (70)	-0.079 (70)
	Defense	0.080 (70)	0.057 (70)	0.083 (70)	-0.036 (70)	-0.066 (70)

Note: Numbers in parenthesis indicate the number of observations available for estimating each correlation.

Source: Own elaboration based on World Bank's WDI (2007) and IMF's GFS 2003. See Annex for details.

When the same calculations are done for country groupings according to income levels and regional groupings the incidence does not change in a significant way. On the whole the incidence of social expenditure in education, health and housing is not redistributive neither to the poor nor the lower middle class.

Figure 5.- The Middle Class (broad definition) and Government Expenses (93 selected countries, circa year 2000)

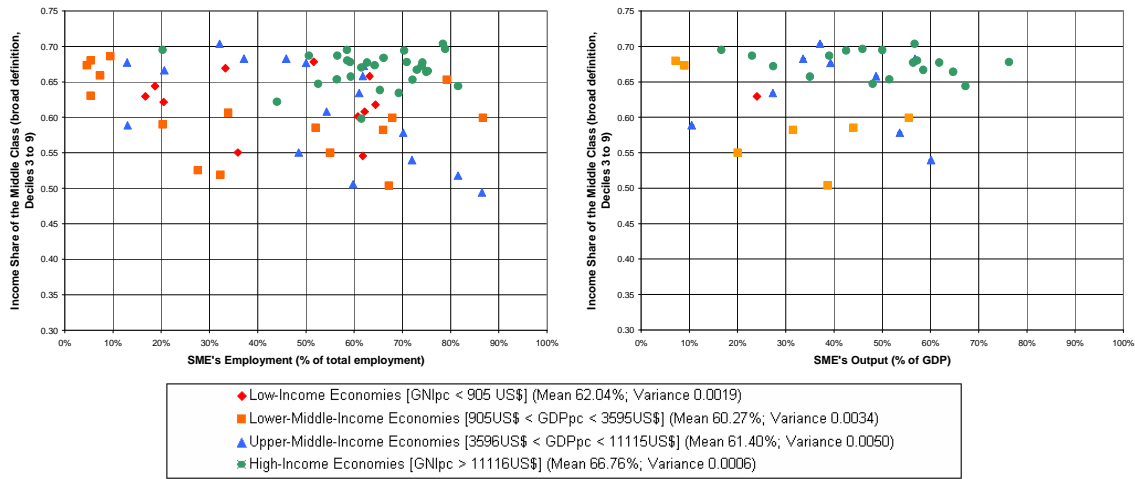


Source: own elaboration based on World Bank's WDI (2007). See Annex for details.

The Small and Medium Size Enterprises and the Middle Class.

Our results show a weak correlation and of the unexpected sign between the shares of Small and Medium-Size Enterprises in employment and output and the share of the middle class using both the broad, upper and lower middle class classifications. This may reflect also our smaller country sample for which SME data is available and/or other factors at work that would require additional research (see both panels in Figure 6).

Figure 6.- The Middle Class (broad definition) and SME's Employment and Output (72 selected countries, circa year 2000)



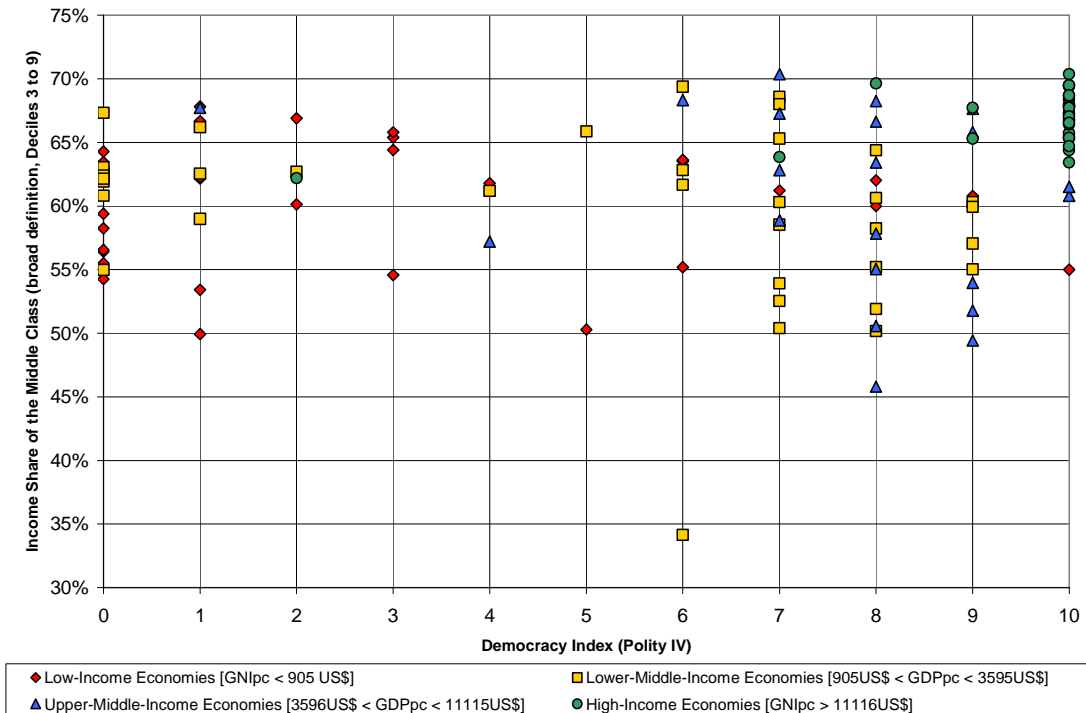
Source: own elaboration based on World Bank's WDI (2007) and Ayyagari et al. (2005) [SME Database]. See Annex for details.

Democracy

To test the relationship between democracy and the share of the middle class we use a democracy index produced by the Polity IV Project (Marshall and Jaggers, 2005). This index – running from 0 to 10 (the higher the index the more democratic is society) – comprises three dimensions: (a) competitiveness of political participation, (b) the openness and competitiveness of executive recruitment and (c) constraints on the chief executive and guarantees on civil liberties for all citizens. Here democracy is considered as a variable that encompasses several degrees of democratic (or undemocratic rule) rather than as a simple dichotomy of, say, between democracy versus autocracy. The average score of the democracy index is low for low-income and lower-middle income countries (an average value below 1), and much higher for upper middle income countries (an average value of 7.8) and for higher-income countries (average of 9.5). For the overall sample the correlation with the share of the middle class (broad

definition) is almost non-existent (0.025, see Table 2). However, for the group of high-income countries there is a positive and relatively high correlation between the share of the middle class and the democracy index. Figure 7 displays the relation between the share of the middle class and the country grouping according to income per capita levels. In general for low to middle income countries there is a wide dispersion in the degree of democratic rule for similar shares of the middle class (the low correlation between the two variables mentioned before); it is only for high income countries that we observe a positive and more stable relation between high shares of the middle class in income and high degrees of democratic rule.

Figure 7.- The Middle Class and Democracy
(123 selected countries, circa year 2000)



Source: own elaboration based on World Bank's WDI (2007) and Marshall and Jagers (2005) [Polity IV Project]. See Annex for details.

5. Concluding remarks

The middle class is interesting development economics again. Its alleged positive effects on growth and development are linked to the middle class as a source of entrepreneurship, consumer power and social and political stability. This paper has investigated some of the main empirical regularities of behavior of the middle class across countries related to these arguments. The potential for entrepreneurship and productive capacities of the middle class is mixed and we find almost no correlation between the relative size of the middle class and the relative importance of the small and medium size sector in output and employment using cross section data. Other studies based on household surveys also find limited entrepreneurial power (in a Schumpeterian sense) of the middle class in low income nations. Our paper suggests that as income per capita levels increase and the level of development rises countries tend to have a larger middle class with the consumer power of the middle class increasing as income per capita rises. On the socio-political stabilization role of the middle class our evidence is indirect in the sense that we find that high income countries with stable democracies and mature economies have also relatively larger middle classes than middle and lower income countries. In fact, our results show that in high income economies the relative size of the middle class (using a broad definition of deciles 3 to 9) is near 6 percentage points higher than the share of the middle class in low income countries, suggesting a *positive* relationship between the level of economic development measured by per capita income levels and the share of the middle class.

In turn, the relationship between the share in income of the middle class and the level of per capita income is non-linear and shows more

dispersion for low and middle income countries with per capita incomes below US\$ 10,000 than for rich economies. The relationship between the share of the middle class and net wealth is also positive but displays more dispersion than the relationship between the middle class shares and income per head.

Interestingly, the income-middle class relation with per capita income is stronger (higher coefficients of correlation) for the lower middle class than for the upper middle class. From a political economy perspective we may think in a broader coalition between the poor and the lower middle class as their economic interests are relatively aligned among them. That coalition would range for individuals from the percentiles 1 to 60.

Our results also show that countries with more unequal income and wealth distribution have smaller middle classes in relative terms, suggesting a *negative* relationship between the degree of inequality of income and wealth and the size of the middle class. The correlation between the share of the middle class and income GINIs is negative and close to 95 percent and the correlation with wealth GINIs is around 67 percent (full sample of 129 countries). The relation between this share and the GINI holds high across all per capita income groups although it is lower for high income economies with per capita incomes above US\$ 11,000 reflecting the fact that rich countries are also less unequal than lower income nations.

The paper also shows that the correlation between the share of the middle class and the overall size of government, in general, is not very strong and varies across countries ordered by income per capita levels. Moreover, the data of composition of public expenditure reveals that categories of social expenditure such as education, health and perhaps

housing are in general not very redistributive reaching in small proportions the lower middle class and the poor. The component whose incidence is more progressive is social protection. Likewise we do not detect any significant correlation between the relative size of the small and medium size enterprises measured both as shares of total employment and total output and the shares of the middle class in real income. Finally, when we correlate an index of democracy and the middle class shares we find little or no correlation between both variables except for the group of high-income economies groups.

Our analysis is cast in terms of correlation rather than causality as it is apparent a two-way interaction between social structures and income distribution on the one hand and economic and political economy variables such as income and wealth per capita levels, inequality, size of government and the SME sector, and degree of democracy on the other. To what extent is the middle class that *leads* the process of economic development or rather it *follows* (or evolve jointly) with it is still an open question for further research.

References

- Atkinson, A. B. (2006). "Concentration among the Rich", *UNU-WIDER*, Research Paper 2006/151.
- Ayyagari, Meghana, Thorsten Beck and Asli Demirgüç-Kunt (2005). "Small and Medium Enterprises across the Globe", draft, March.
- Banerjee, A. V. and E. Duflo (2008). "What is Middle Class about the Middle Class around the World?", *The Journal of Economic Perspectives*, Spring, vol. 22, n. 2, pp. 3-28.
- Birdsall, N., C. Graham and S. Pettinato (2000), "Stuck in the Tunnel: Is Globalization Muddling the Middle Class?", *Center for Social and Economic Dynamics*, Working Paper # 14, August.
- Cashell, B. (2007). "Who are the 'Middle Class'?", *CRS Report for Congress*, Washington DC.
- Daly, M. and D. Wilson (2006). "Keeping Up with Joneses and Staying Ahead of the Smiths: Evidence from Suicide Data", *Federal Reserve Bank of San Francisco*, Working Paper 2006-12, April.
- Davies, James (editor, 2008). *Personal Wealth from a Global Perspective*, Oxford University Press.
- Davies, James, Susanna Sandstrom, Anthony Shorrocks, and Edward N. Wolff (2006). "The World Distribution of Household Wealth", *World Institute for Development Economics Research of the United Nations University (UNU-WIDER) Project on World Wealth Distribution*.
- Doepke, M. and F. Zilibotti, (2007) "Occupational Choice and the Spirit of Capitalism", *NBER Working Paper # 12971*, February.
- Easterly, William (2001) "The Middle Class Consensus and Economic Development", *Journal of Economic Growth*, vol. 6, n. 4, pp. 317-335.
- Frank, Robert H. (2007). *Falling Behind: How Rising Inequality Harms the Middle Class*. The Aaron Wildavsky Forum for Public Policy, University of California Press.
- GFS. Government Finance Statistics (2003). *International Monetary Fund*, Yearbook and CD-ROM.
- Graham, Carol (2007). "What Happiness Research can (and cannot) contribute to Policy Reforms: Lessons from Research on Latin

- America and Beyond”, *The Brookings Institution and University of Maryland*, draft presented at World Bank Workshop “Fiscal Incidence and the Middle Class: Implications for Policy”, June 5.
- Layard, R. (2005). *Happiness: Lessons from a New Science*. New York: Penguin Press.
- López, Ramón and Máximo Torero (2007). “Economic Growth, the Fiscal Sector and Income Distribution”, *University of Maryland and IFPRI*, draft presented at World Bank Workshop “Fiscal Incidence and the Middle Class: Implications for Policy”, June 5.
- Marshall, Monty G. and Keith Jagers (2005). “POLITY IV Project: Political Regime Characteristics and Transitions, 1800-2004”, *Polity IV Project, Center for Global Policy, School of Public Policy, George Mason University*. Data User's Manual and Database.
- Milanovic, Branko (2006). “Global income inequality: what it is and why it matters” *The World Bank*, Policy Research Working Paper Series # 3865.
- Moser, Caroline (editor, 2007). *Reducing Global Poverty. The Asset Approach*. Brookings Institution Press.
- Solimano, Andrés (2005). “Towards New Social Policies in Latin America: Growth, the Middle Class and Social Rights”, *ECLAC Review* # 87, December.
- Solimano, Andrés (2007). “Asset Accumulation by the Middle Class and the Poor in Latin America” in C. Moser editor, *Reducing Global Poverty. The Asset Approach*. Brookings Institution.
- Solimano, Andrés (editor, 1998). *Social Inequality*, University of Michigan Press.
- Solimano, Andrés (editor, 2006). *Vanishing Growth in Latin America. The Late Twentieth Century Experience*, Edward Elgar Publishers, UK and USA.
- Solimano, Andrés, Eduardo Aninat and Nancy Birdsall (editors, 2000). *Distributive Justice and Economic Development: The Case of Chile and Developing Countries*. Ann Arbor: University of Michigan.
- World Bank, The (2007). *Global Development Prospects*.
- World Bank, The (2007). *World Development Indicators*, selected series, countries and years.

Annex: Description of Variables and Country Classification

Note: Data on income distribution gathered is the closest to year 2000 available information. Details on the corresponding date for each country can be found in the database of Annex C.

A.1. Description of Variables

Poor (Deciles 1 and 2): Data on deciles comes from the World Bank's World Development Indicators (WDI), version 2007, for selected years. See the database in Annex C.

Middle Class (Deciles 3 to 9): Data on deciles comes from the World Bank's World Development Indicators (WDI), version 2007, for selected years. See the database in Annex C.

Lower-Middle Class (Deciles 3 to 6): Data on deciles comes from the World Bank's World Development Indicators (WDI), version 2007, for selected years. See the database in Annex C.

Upper-Middle Class (Deciles 7 to 9): Data on deciles comes from the World Bank's World Development Indicators (WDI), version 2007, for selected years. See the database in Annex C.

Rich (Top Decile): Data on deciles comes from the World Bank's World Development Indicators (WDI), version 2007, for selected years. See the database in Annex C.

GDP per capita (PPP adjusted): is the Gross Domestic Product per capita adjusted by the Purchasing Power Parity (PPP) for international US\$ of year 2000. Data comes from the World Bank's World Development Indicators (WDI), version 2007, for selected years. See the database in Annex C.

Income GINI Index: the numerator is the area between the Lorenz Curve of the distribution and the uniform distribution line; the denominator is the area under the uniform distribution line. Data comes from the World Bank's World Development Indicators (WDI), version 2007. See the database in Annex C.

Net Worth per capita (PPP adjusted): is the Wealth per capita adjusted by the Purchasing Power Parity (PPP) for international US\$ of year 2000. Here wealth is defined as Net Worth, v.g. the value of physical and financial assets less liabilities. Data comes from the World Institute for Development Economics Research of the United Nations University (UNU-WIDER) study "The World Distribution of Household Wealth" (Davies et al., 2006). See the database in Annex C.

Net Worth GINI Index: is a measure of wealth inequality. It is defined as a ratio with values between 0 and 1: the numerator is the area between the Lorenz Curve of the net worth distribution and the uniform distribution line; the denominator is the area under the uniform distribution line. Data comes from the World Institute for Development Economics Research of the United Nations University (UNU-

WIDER) study “The World Distribution of Household Wealth” (Davies et al., 2006). See the database in Annex C.

Government Expenses (% of GDP): are cash payments for operating activities of the government in providing goods and services. They include compensation of employees (such as wages and salaries), interest and subsidies, grants, social benefits, and other expenses such as rent and dividends. Data on deciles comes from the World Bank’s World Development Indicators (WDI), version 2007, for selected years. See the database in Annex C.

Democracy Index (Polity IV): corresponds to the Institutionalized Democracy Indicator form Polity IV Project. The indicator of democracy is an additive eleven-point scale (0-10), derived from the codes of the competitiveness of political participation, the openness and competitiveness of executive recruitment, and constraints on the chief executive. Data comes from Polity IV Project (Center for Global Policy, George Mason University) study “Political Regime Characteristics and Transitions, 1800-2004” (Marshall and Jaggers, 2005). See the database in Annex C.

SME’s Employment (% of total employment): is the Small and Medium Enterprises (SME) sector’s share of formal employment using the official country definition of SME. Values are 1990-1999 averages for each country. Data comes from the study “Small and Medium Enterprises across the Globe” (Ayyagari et al., 2005). See the database in Annex C.

SME’s Output (% of GDP): is the SME sector’s contribution to GDP using the official country definition of SME. Values are 1990-1999 averages for each country. Data comes from the study “Small and Medium Enterprises across the Globe” (Ayyagari et al., 2005). See the database in Annex C.

A.2. Country Classification

Income Grouping: countries are grouped according to their Gross National Income per capita (GNIPc) using the World Bank’s criterion:

Low-Income Economies: GNIPc ≤ 905 US\$

Included countries: Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Cote d'Ivoire, Ethiopia, The Gambia, Ghana, Guinea, Guinea-Bissau, Haiti, India, Kenya, Kyrgyz Republic, Lao PDR, Madagascar, Malawi, Mali, Mauritania, Mongolia, Mozambique, Nepal, Niger, Nigeria, Pakistan, Papua New Guinea, Rwanda, Senegal, Tajikistan, Tanzania, Uganda, Uzbekistan, Vietnam, Republic of Yemen, Zambia, Zimbabwe.

Lower-Middle-Income Economies: 906 US\$ ≤ GNIPc ≤ 3,595 US\$

Included countries: Albania, Algeria, Armenia, Azerbaijan, Belarus, Bolivia, Bosnia and Herzegovina, Cameroon, China, Colombia, Dominican Republic, Ecuador, Arab Republic of Egypt, El Salvador, Georgia, Guatemala, Guyana, Honduras, Indonesia, Islamic Republic of Iran, Jamaica, Jordan, Lesotho, Macedonia (FYR), Moldova, Morocco, Namibia, Nicaragua, Paraguay, Peru, Philippines, Sri Lanka, Swaziland, Thailand, Tunisia, Turkmenistan, Ukraine.

Upper-Middle-Income Economies: 3,596 US\$ ≤ GNIPC ≤ 11,115 US\$

Included countries: Argentina, Botswana, Brazil, Bulgaria, Chile, Costa Rica, Croatia, Hungary, Kazakhstan, Latvia, Lithuania, Malaysia, Mexico, Panama, Poland, Romania, Russian Federation, Serbia and Montenegro, Slovak Republic, South Africa, St. Lucia, Turkey, Uruguay, Venezuela (RB).

High-Income Economies: GNIPC ≥ 11,116 US\$

Included countries: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong (China), Ireland, Israel, Italy, Japan, Republic of Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Singapore, Slovenia, Spain, Sweden, Switzerland, Trinidad and Tobago, United Kingdom, United States.

Regional Grouping: countries are grouped according to the World Bank's criterion. We re-group Europe and Central Asia together with North America due to the similarities in organization and economies. We also disaggregate this new region (called Europe, Central Asia and North America) by two different criteria: based on OECD Membership, and based on European Union Membership. The countries included in each region are the following:

East Asia and Pacific:

Australia, Cambodia, China, Hong Kong, China, Indonesia, Japan, Republic of Korea, Lao PDR, Malaysia, Mongolia, New Zealand, Papua New Guinea, Philippines, Singapore, Thailand, Vietnam.

Europe, Central Asia and North America:

By OECD Membership:

OECD Countries:

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

Non-OECD Countries:

Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Canada, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, Macedonia (FYR), Moldova, Poland, Romania, Russian Federation, Serbia and Montenegro, Slovak Republic, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan.

By European Union Membership:

EU Members:

Austria, Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom.

Others:

Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Canada, Croatia, Georgia, Kazakhstan, Kyrgyz Republic, Macedonia (FYR), Moldova,

Norway, Russian Federation, Serbia and Montenegro, Switzerland, Tajikistan, Turkey, Turkmenistan, Ukraine, United States, Uzbekistan.

Latin America and The Caribbean:

Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Lucia, Trinidad and Tobago, Uruguay, Venezuela (RB).

Middle East and North Africa:

Algeria, Arab Republic of Egypt, Islamic Republic of Iran, Israel, Jordan, Morocco, Tunisia, Republic of Yemen.

South Asia:

Bangladesh, India, Nepal, Pakistan, Sri Lanka.

Sub-Saharan Africa:

Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Cote d'Ivoire, Ethiopia, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe.