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THE GROWING MIDDLE CLASS IN DEVELOPING COUNTRIES AND THE MARKET FOR HIGH-VALUE FOOD PRODUCTS

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ABSTRACT

The central hypothesis of this paper is that the largest global growth opportunity for high-value food products is the emerging middle class in many developing countries. Using data for Lima, Peru, 20 percent of households are classified as middle or upper class based on the prevalence of ownership of major durable goods, such as refrigerators and automobiles. Monthly expenditures by the middle class on more expensive foods, such as fresh fruit and red meat, and especially for high value-added products, such as food away from home, are substantially higher, markedly so in some cases. By extrapolating from these results for Lima, a minimum per capita gross national income (GNI) of $6,000 is required for an emerging middle class lifestyle. Based on World Bank data for GNI and income distribution, the size of the middle class is estimated for eleven low and middle income countries with large populations or high rates of economic growth. In China there are some 290 million people in the emerging middle class, in India 91 million and in Brazil 58 million, for example.

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Introduction

The central hypothesis of this paper is that the largest global growth opportunities for high-value food products are the emerging middle class in many developing countries. A middle class lifestyle is typically associated with the widespread ownership of major household durable goods, such as refrigerators, telephones and automobiles.[1] Peruvian data are utilized to develop a classification methodology for the middle class, based on the prevalence of household durable ownership. Our analysis uses data for Lima, Peru from a May 2000 household survey. The pattern of expenditures for staples, more expensive, and high value-added food products are examined for the Lima households by income (total expenditure) decile and for those classified in the middle and upper classes in comparison to other households. An estimation is then made of the size of the emerging middle class for several key low and middle income countries with either large populations or high rates of economic growth.

It should be made clear that a number of assumptions, which will be described, were required for this analysis. With this in mind, this work should be viewed as an exploratory analysis and an effort to expand knowledge on an important issue, rather than a definitive study.

Peruvian Survey Data

The data used in this study are from the National Living Standards Measurements Survey for Peru collected in May 2000. Only households in Lima, the capital and major metropolitan area,

[1] There is an extensive literature on the concept of middle class and social class in general. Two main concepts of class can be distinguished, that of Marx and of Weber, which serve as the basis for most of the classification systems (Argyle, 1994, Breen and Rothman, 1995 and Scase, 1992). This analysis required a practical definition for the middle class that could be applied empirically with the household data available.

were utilized yielding a sample size of 1,030 households for this analysis. We used total consumption expenditures rather than income, because the former is typically more accurately reported than the latter and may also be considered a better measure of permanent income. The average per capita total annual consumption expenditures for the Lima sample was $2,034, measured in 2000 US dollars, converted using purchasing power parity. Table 1 provides monthly per capita total consumption by decile and household size.

Household Durable Ownership

Table 2 indicates the proportion of households which own various durable goods by decile, using per capita total consumption expenditures to divide the population into tenths rather than income. The ownership of several key durables, which might typically be associated with a middle class lifestyle, increases substantially between the 8^{th} decile and the 9^{th} and 10^{th} deciles. Washing machines, automobiles and computers are particularly significant examples. Moreover, other durables reach a level of very widespread ownership by the top 20 percent of the distribution (deciles 9 and 10), such as color televisions, refrigerators, and telephones.

As a working approximation, the top two deciles (20 percent of Lima households) are classified as middle or upper class given this pattern of durable ownership. The last two rows compare the average rates of ownership of this top 20 percent (deciles 9 and 10) with the other 80 percent of households (deciles 1-8). Levels of ownership, except for radios and black and white televisions, are substantially greater for the top 20 percent, in most cases markedly so. The lower bound or minimum per capita total expenditures for the top 20 percent was estimated at

$224.61 monthly or $2,695 annually, which is the midpoint between the average total expenditures for the 8th and 9th deciles in table 1.[2]

Food Expenditures by Decile

Table 3 provides monthly average per capita expenditures by income decile for food categories separated into staples, more expensive and high value-added foods. We were limited by the Peruvian survey in terms of the food categories that could be included in the analysis. The overall pattern for every category is an increase in expenditures as household total expenditures or income rises. As expected, expenditures on staple foods, two of the most important in Peru being rice and potatoes, increase the least and the increase probably represents an increase in quality more than quantity.

Spending on several of the more expensive and high-value foods increases sharply between the 8th and 9th decile, which we defined as the boundary for the middle class. These categories include, in particular, fresh vegetables, fresh fruit, red meat, poultry, and candy and chocolate. Spending on several of these categories also rises substantially between the 9th and 10th deciles, especially for fresh fruit, red meat, yogurt, butter and cheese, food and drink away from home, prepared foods consumed at home and alcoholic beverages, which include beer and wine. Expenditures on a few categories increase markedly between the 7th and 8th deciles as well, such as red meat and prepared foods, but still at much lower levels of spending than for the highest two deciles.

As was the case in table 2, the bottom two rows compare average expenditures for the 9th and 10th deciles (the middle and upper classes) and deciles 1-8. For the more expensive food

[2] This estimation assumes the total expenditures average for each decile in table 1 can be treated as the midpoint and that the expenditure change between these midpoints is linear so the boundary between two deciles is halfway

categories, spending is markedly higher for the middle and upper classes. The monthly spending is even more dramatically greater for the high value-added categories, such as food and drink away from home which is $3.74 for deciles 1-8 and $17.67 for deciles 9 and 10 per capita, prepared food consumed at home $0.70 compared to $4.44, and alcoholic beverages (including beer and wine) $0.44 and $2.67.

The Emerging Middle Class Globally

The size of the emerging middle class is estimated for several of the most populous or economically fastest growing low and middle-income countries. It was necessary to equate the annual per capita total expenditure level of $2,695 (the cut-off for the middle class for the Lima households) with a level of gross national income (GNI) per capita, which are data supplied by the World Bank for most countries (World Bank, 2002). Average per capita GNI for Peru was $4,660 and average per capita expenditures were $2,034 in the 2000 Survey. Average per capita GNI is 2.29 times greater than average total expenditures, which implies a minimum of per capita total household expenditure of $2,695 equates with a per capita GNI level of $6,172, or approximately $6,000 per capita GNI for the middle class.[3]

The size of the emerging middle class in eleven countries is estimated with a cut-off level of $6,000 using the World Bank data in table 4 for GNI per capita, converted into US dollars using purchasing power parity (PPP) and the percentage shares of income or consumption by quintile and for the top 10 percent of the population. Perhaps the easiest way to explain the methodology used is to provide a specific example. As shown in table 4, the GNI per capita for

between the midpoints.

[3] The World Bank also provides data on total household consumption expenditures for most countries. When these data were used to estimate the size of the middle class in other countries, the results were nonsensical, which may be because of the translation of local currencies into U.S. dollars, or the data may be based on household surveys from

Brazil is $7,300. The highest decile receives 48.0 percent of the income with 10 percent of the population, which yields an average income of $35,040. The highest quintile receives 64.1 percent of the income with 20 percent of the population for an average of $23,396. Likewise, the average income of the 4th quintile is $6,680 and of the 3rd quintile $3,686.

Income at the midpoint of each quintile (or decile) is again assumed to be equal to the average. Therefore, income at the 95th percentile of the population is $35,040 (the midpoint of the highest decile), $23,396 at the 90th percentile (the midpoint of the highest quintile), $6,680 at the 70th percentile, and $3,686 the 50th. The cut-off level of $6,000 for the middle class lies between the 70th and 50th percentiles. With the assumption that the distribution of income can be approximated as being linear, $6,000 would be .227 of the distance between the 70th and the 50th percentile, which would be 4.54 percentile points below the 70th percentile.[4] Therefore, 34.54 percent of the population would be at or above the $6,000 income level by this method.

Table 5 gives the percent of the population and number of people estimated to be in the middle class and upper class in eleven countries. The results show that the emerging middle class in China is huge, some 290 million people, and growing rapidly with high rates of sustained economic growth, as it is in India with over 90 million. With a very unequal income distribution as show in table 4, Brazil still has a substantial middle class. The emerging middle class in Mexico and the Philippines are considerably larger than the authors expected, as is the population estimated to be middle class in Russia. On the other hand, the middle class is estimated as less than 5 percent, probably considerable less, of the population in Nigeria and Pakistan. The average income of the highest decile, assumed to be at the 95th percentile, was less

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various years, or the underlying reliability of the data may be poor.

[4] The 4.54 percentile points was calculated as follows: the difference between $6,000 the middle class cut-off and income at the 70th percentile of $6,680 is $680, the difference between income at the 70th percentile and 50th percentile of $3,686 is $2,994, dividing $680 by $2,994 yields .227.

than the $6,000 cut-off level for the middle class in both countries. Moreover, these estimates also contain the upper class elites in these countries.

Conclusion

Twenty percent of Lima households were classified as in the middle or upper classes, based on a markedly higher ownership of major durables for the 9th and 10th income (total expenditure) deciles. Only 5 percent of households in deciles 1-8 owned an automobile versus 47 for the top 20 percent of households, for example. An examination of average monthly expenditures for various food products showed a general increase going from the first to the tenth deciles. However, the rise in spending was far greater for more expensive products, and particularly for high value-added food categories. A comparison of expenditures by the 9th and 10th deciles (the top 20 percent) and deciles 1-8 highlighted the dramatic differences. Monthly per capita spending on food and drink away from home averaged $17.67 for the middle and upper class and $3.74 for other households, for example.

The minimum per capita total consumption expenditures for Lima households classified as middle or upper class was $2,695 annually, which can by equated with a level of approximately $6,000 for per capita gross national income (GNI). With this cut-off level for GNI, 93 percent of households in the Republic of Korea would be classified as middle class or above, 46 percent in Malaysia and Mexico, 45 percent in Russia, and 35 percent in Brazil. The size of the emerging middle class is estimated to be some 290 million in China, over 90 million in India, and over 57 million in Brazil. However, some very populous low-income countries with poor economic performance have developed very small middle classes, such as Nigeria and Pakistan. Economic growth is crucial to the emergence of a sizable middle class.

This empirical analysis lends strong support to the initial hypothesis that the greatest market growth for high-value foods will be created by the sizable and rapidly growing middle class in many developing countries. However, there are also less sanguine issues concerning the adoption of a high consumption lifestyle by large numbers of the world's people, which deserve to be mentioned. The first is the increasing rate of obesity in many developing countries, even while poverty and hunger persist in many. In addition, there are the environmental consequences in that most durable goods rely either directly on carbon fuels, such as automobiles, or indirectly via the generation of electricity. A dramatic change in technology is almost certainly necessary before a high consumption lifestyle becomes significantly more widespread globally if the world is to avoid irreparable environmental degradation, particularly in terms of global climate change.

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Table 1: Monthly Per Capita Total Consumption Expenditures by Decile in Lima, Peru for 2000. (PPP US Dollars).

Decile Group	Mean Expenditures	Household Size
1	$34.64	8.2
2	$56.11	6.5
3	$71.19	5.7
4	$86.01	5.4
5	$100.98	5.3
6	$119.53	5.0
7	$143.35	4.7
8	$183.05	4.1
9	$266.16	4.4
10	$634.03	3.6

Table 2: Ownership of Major Household Durables (proportion of households owning by decile).

Deciles	Radio	Black and White Television	Color Television	Refrigerator	Videocassettes	Wired Telephone	Cellular Telephone	Washing Machine	Automobile	Computer
1	.91	.63	.29	.31	0	.05	0	.01	.00	.00
2	.95	.53	.53	.47	.03	.18	.03	.01	.01	.00
3	.97	.58	.54	.48	.03	.08	.02	.04	.03	.00
4	.94	.46	.62	.56	.11	.22	.09	.06	.04	.02
5	.97	.47	.66	.67	.16	.33	.03	.11	.06	.02
6	.98	.47	.68	.62	.13	.35	.08	.11	.04	.01
7	.95	.38	.81	.72	.23	.50	.05	.15	.09	.06
8	.99	.38	.83	.76	.32	.53	.14	.20	.17	.09
9	1.00	.37	.91	.83	.50	.73	.23	.46	.36	.20
10	1.00	.21	.90	.91	.64	.70	.32	.62	.57	.47
1-8	.96	.49	.62	.57	.13	.28	.05	.08	.05	.02
9&10	1.00	.29	.91	.87	.57	.71	.28	.54	.47	.34

Table 3: Average Monthly Per Capita Expenditures by Decile (PPP U.S. dollars, Lima, Peru, 2000).

Decile	Staples		More Expensive						High Value-Added			
	Rice	Potatoes	Fresh Vegetables	Fresh Fruit	Red Meat	Poultry	Fish & Seafood	Yogurt, Butter & Cheese	Food and Drink Away from Home	Candy & Chocolate	Prepared Food (Consumed at home)	Alcoholic Beverages
1	3.21	1.05	1.10	0.90	1.15	1.83	0.87	0.28	1.37	0.11	0.37	0.27
2	2.44	0.91	0.80	0.89	0.88	1.99	0.73	0.30	1.23	0.04	0.39	0.24
3	2.84	1.00	1.13	1.19	0.88	2.50	0.93	0.38	1.97	0.04	0.36	0.15
4	3.04	1.57	1.42	1.44	1.58	2.90	1.04	0.72	2.81	0.08	0.66	0.22
5	3.57	1.36	1.46	1.79	1.88	3.67	1.37	0.59	2.92	0.10	0.25	0.34
6	3.77	1.69	1.50	2.14	2.47	3.94	1.01	0.61	4.64	0.10	1.12	0.36
7	3.89	1.47	1.69	2.23	2.47	3.89	1.31	1.00	7.21	0.15	0.72	0.97
8	3.92	1.54	1.92	2.39	3.19	3.93	1.64	0.94	7.73	0.15	1.88	0.98
9	4.69	1.96	3.00	3.72	4.21	5.99	2.14	1.45	10.84	0.57	2.69	0.78
10	4.89	1.86	4.88	6.54	7.27	7.83	3.42	4.02	24.49	1.13	6.18	4.56
1-8	3.32	1.32	1.38	1.61	1.81	3.01	1.12	0.60	3.74	0.10	0.70	0.44
9&10	4.78	1.91	3.94	5.13	5.74	6.91	2.78	2.73	17.67	0.85	4.44	2.67

Table 4: Income per Capita and its Distribution for Key Countries, 2000.

	PPP Gross National Income per Capita	Percentage Share of Income as Consumption					
		Highest 10%	Highest 20%	Fourth 20%	Third 20%	Second 20%	First 20%
Brazil	7,300	48.0	64.1	18.3	10.1	5.4	2.2
China	3,920	43.5	57.1	18.3	12.2	8.0	4.4
India	2,340	33.5	46.1	19.3	15.0	11.6	8.1
Indonesia	2,830	26.7	41.1	21.3	16.1	12.5	9.0
Malaysia	8,330	38.4	54.3	20.3	12.9	8.1	4.4
Mexico	8,790	41.7	57.4	19.7	12.1	7.3	3.5
Nigeria	800	40.8	55.7	19.3	12.5	8.2	4.4
Pakistan	1,860	27.6	41.1	20.5	16.0	12.9	9.5
Republic of Korea	17,300	24.3	39.3	22.9	17.4	12.9	7.5
Philippines	4,220	24.7	39.7	22.6	17.1	12.8	7.8
Russian Federation	8,010	38.7	53.7	20.1	13.3	8.6	4.4

Source: World Bank, *World Development Indicators, 2002*, Washington, DC, April 2002.

Table 5: Size of the Emerging Middle Class in Key Countries, 2000.

	Percent of the Population	Number of People (millions)
Brazil	35	57.9
China	23	290.4
India	9	91.4
Indonesia	10	21.0
Korea, Republic of	93	44.0
Malaysia	46	10.7
Mexico	46	45.1
Nigeria	<5	<6.3
Pakistan	<5	<6.9
Peru	27	6.9
Philippines	25	18.9
Russian Federation	45	65.5

Source: Calculation by the authors; 2000 Population: World Bank, *World Development Indicators, 2002*, Washington, D.C., April 2002.