MEASURING THE WORLD MIDDLE CLASS

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Each discipline has its own way of looking at a social phenomenon and needs its own means of measurement. For economics production is central, and Gross National Product, using market prices as weights, usually divided by population, measures the amount of development. Sociologists see development as people changing their way of life, ceasing to be peasants and becoming farmers, or moving to the city and becoming middle class. When the people undergoing development themselves contemplate development, they see the object of their strivings as becoming literate, moving to the city, getting a job in a factory or, best of all, in an office. If they are beyond the age where change of status is feasible, they have these ambitions for their children. The middle-class way of life at which they aim involves using more and different kinds of food, clothing, housing, transport and recreation, and so money income and expenditures are the means by which the individual attains and maintains the middle-class life.

It is thus useful for some purposes to consider income, production, and expenditures as the means to development, and the modern way of life as the goal. That still leaves income as an indicator of development, but it is one among many. Broadening the statistical base, as this paper proposes, does not make empirical work immediately easier. Problems of finding data, of aggregating it, and of interpreting the resultant aggregation all abound.

The subject is in the condition that national income was in before Kuznets, Stone, and others did the conceptual work required for measurement of GNP and before Keynes developed a theory of the economic cycle that made it important. Yet if concern with attaining the middle-class style of life, for countries as different in other respects as Brazil and the USSR, is the objective of those involved, then we should try to find out how many individuals have attained it, and how many are attaining it each year. This despite difficulties of definition and measurement.

The GNP measures what passes through the market and makes only rough allowance for, or omits altogether, what is produced by the family for its own use. When peasants cease to make their own soap and buy it instead, a transition that has taken place within this century in French Canada and many other parts of the world, then use of soap becomes economically visible and can be entered into the national income accounts; when eating in restaurants increases, the labor of meal preparation acquires economic significance, which it does not have when meals are prepared at home. The GNP notes the raising of children as performed by professionals in day-care centers, but not when done at home. Despite heroic efforts to include all activities that may be called productive, the national accounts have a difficult time with those that do not pass through the market. The work of women in child care and housekeeping must constitute a quarter of total labor in most countries; its more exact valuation would depend on the birth rate and on the quality that could be imputed to such labor. But its concentration on the expanding area of exchange, which after all is an important facet of development, should be seen as the strength rather than the weakness of the national accounts.

A theory of employment that supposes distribution will take care of itself makes its measurement a subordinate objective of the national accounts. But distribution may well be central for development. If an average income of \$4000 per year is the resultant of 1/100 of the population living at \$380,000 per year and the other 99/100 living at \$200 per year, the prognosis for development is very different from everyone having \$4000. As evaluated by individuals in poor countries, some differentiations are more important than others--the jump from \$100 to \$10,000 can be incomparably more important than that from \$10,000 to \$100,000. This sense of a diminishing marginal utility of income is interpretable in terms of diminishing changes in way of life with successive increments of income. Not only does income as perceived by those concerned and their peers apparently have a break at the point where poverty shades into middle class life, when the individual most clearly changes his way of living, but the demand for energy may well have a discontinuity here also.

There is no society in which the individual is the economic unit (the need to raise children prevents this if nothing else does). People everywhere live in families, pool their incomes, and make no record of exchanges of money or of work within the family. Hence individual income is not a measurable concept. The distribution of income among the members of particular families being impossible to ascertain, the distribution of income among the individual inhabitants of a country can have little meaning. It is family incomes and their distribution that count.

But families are of different sizes. How do we interpret distribution when a family can have one or ten members--may consist of a widow, or a couple, or a father and mother and eight children? Simon Kuznets has investigated this and has developed methods for coping with it, always making use of money incomes.

Alternatively we will seek the point where poor shades into middle class, and describe the distribution in terms of this one cut. A man may be the sole earner in a family, but the whole family is poor or else the whole family is middle class. The Social Security Administration makes such a cut at the upper edge of poverty, and it classifies individual families according to where they stand in many different cross classifications. These include family size, age and sex of family head, farm-nonfarm residence, and income. Physical criteria are kept in view; it was judged, for instance, that in the base year 1970 a minimum income of \$3743 was needed in urban areas to meet the nutritional and other needs of a family of four.

Matters would be much easier for the statistician trying to mark the upper bound of the poverty group if agreement could be reached on what constitutes minimum housing, minimum clothing, minimum nourishment. Not only have experts in the several fields little to say about such minima, but the expenditures of the poor themselves imply that their priorities. are very different from those of any experts who would be hardy enough to prescribe for them: they may sacrifice nourishing food in favor of tickets to a baseball game; they may trade the family car for a newer model when what they "need" is medical services.

Yet when all that is said, a degree of uniformity appears in the purchases made at a given income. The couple that begins in middle-class life, or that climbs out of poverty, in any part of the world acquires as soon as possible a standard package of equipment that includes a dwelling with electricity and central heating or air conditioning; a refrigerator; a television set; an automobile. Until this basic equipment is in its possession the couple borrows up to the limits of its capacity, and only when it has obtained these artifacts does it think about saving.

In short, we need to recognize two components of growth. One is higher income in situ--peasants doing better but remaining peasants, laborers receiving higher wages but remaining laborers, rich people increasing their incomes. The other is transition across the poverty line, people going from poor to middle class.

For the United States we know from official sources (U.S. <u>Statistical Ab-</u> <u>stract 1975</u>, p. 400) that the fraction of households below the poverty line was 18.4 per cent in 1959 and 10.7 in 1969. That the mean income of all families rose by 75 per cent in current dollars, or 39 per cent in real dollars, during the same ten years needs to be supplemented by the fact that the fraction poor fell by 40 per cent.

Another measure of welfare is the proportion of income spent on food. According to successive family budget surveys in the United States (<u>Monthly Labor</u> <u>Review</u>, July 1974, 97: 8) this has gone down from 35.4 in 1935-39 to 29.6 in 1952 to 22.4 in 1963. The non-food expenditure for each unit of food has correspondingly risen from 1.82 to 2.38 to 3.46 in the same three surveys.

Corresponding to this on the production side is the number of non-farm workers for each farm worker. That ratio has gone from 51,760,000/7,160,000 = 7.2 in the United States in 1950 to 80,377,000/ 3,171,000 = 25.3 in April of 1975 (Statistical Abstract 1975, p. 343). In a present day poor country it may be as low as 0.5. The number of minutes of factory work required to buy a one-pound loaf of bread is a related indicator.

A conspicuous change in style of life occurs with the acquisition of an automobile. In the very first years of development, before any automobiles are scrapped, production figures indicate the number of individuals making that change; after a few years we want users of automobiles and not buyers. We could take sales less automobiles scrapped, except that scrapping is difficult to measure. We could take first purchases by families that do not have a car, but this again is not easy to ascertain. Most available is private automobile registrations, although one would like to avoid counting families twice if they have two cars. Unfortunately, the number of families with any cars registered is not widely available in national statistics.

Yet if geographical movement is what the automobile is good for, we must take into account that alternatives exist. A middle-class family in Europe is less likely to have a car than one of the same status in the United States, more likely to travel by streetcar, bus, and train. Intertemporal comparisons, say between the United States in 1920 and today, involve the same difficulty as international comparisons. We cannot stop with automobiles in use.

One supplement is homes served with electricity. Where this cannot be obtained, a proxy is the amount of electricity in use, if possible subtracting electricity that goes into industry. Running water and indoor flush toilets constitute measures of the middle class, with characteristic distortions. So also do television sets and school attendance.

Physical appurtenances and activities are not only indexes of a way of life, but they are themselves active agents in the change of mentality that is a part of development. Watching television affects a family's view of the world. Schooling that brings effective literacy is an indicator of the wish to be socially mobile,

TABLE	1	Per cent of family expenditure
		on three groups of items, United
		States, 1935-39 to 1963

	1935-39	1952	1963
Food Transport	35.4 8.2	29.6 11.3	22.4 13.9
Health and recreation	11.7	17.4	19.5

Source: Monthly Labor Review, 97, 7: 8

and in addition the practice of reading generates habits of thought and behavior that conduce to mobility. Thus the number of persons who have completed some level of schooling, say 10 years, might correspond to the number above the poverty line.

Access to medical services is required to support the middle-class attitude towards sickness and death. We have data on physicians country by country that might serve as an indicator of the number of families that enjoy medical services. Unfortunately we have no guide to the quality of services provided, nor to the distribution of services among families. On the one hand the services might be dispersed among the entire population, so that all get some but no one gets enough. More commonly they are available only to people in cities, and especially to those who are well above the poverty line.

Medical services provide an example of the difficulty of comparing money incomes. In the Soviet Union a doctor is said to be paid something on the order of \$135 per month, and the citizen gets medical services without paying for the doctor's time even at this rate. In the United States a physician who failed to earn 20 times as much as his opposite number in the Soviet Union would be badly off, and the patient pays for the doctor's time out of his own pocket. To compare medical services in the two countries by their cost seems less satisfactory than using numbers of physicians, and that is not very good either.

The several middle-class facilities do not come simultaneously but in a sequence; most families on the rise will acquire electricity, then perhaps piped water, then a television set, then an automobile, then a telephone, then write and receive mail at the middle-class average of something like one letter per person per day. The concept of a standard package is not to be taken so literally as to preclude the items being purchased in a sequence. We should be able to use the numbers of the several facilities to see roughly the order in which the appurtenances of middle-class status are acquired. Pending more appropriate data, I have converted total consumption into

persons by multiplying by the United States ratio of consumption per person. For Mexico about the year 1970, we have the following twelve indicators (U.S. <u>Sta-</u> tistical Abstract 1975, pp. 840-860):

> Estimated number of persons (millions)

Homes with electric lighting at 4 persons per home Middle, secondary, or high	19
new generation)	15
Homes with piped water,	
at 4 persons per home	13
Meat consumption at U.S.	
standard of 75 kg per	
person per year	13
People provided with hospital	
beds, at U.S. standard of	
135 people per bed	9
Television sets at U.S. standard	_
of 1.9 persons per set	8
Steel consumption at U.S.	
standard of 0.7 metric tons	_
per person per year	7
Total energy consumption at U.S.	
standard of 12 tons coal equi-	-
valent per person per year	6
Consumption of electricity at	
U.S. standard of 9300 kwh per	
person per year	4
Automobiles at U.S. standard	
of 2.1 persons per automobile	4
Telephones at U.S. standard of	-
1.5 persons per telephone	3
Domestic mail sent at U.S.	
standard of 400 pieces per	-
person per year	3

This display makes no pretence of providing definitive figures, but is rather an occasion for comment on the meaning of the 12 crude indicators shown. Automobiles and telephones may be the least unsatisfactory, though if there is a difference between the United States and Mexico in the proportion for business use, or the proportion of families having two or more, etc., that would make even these figures wrong. Electric lighting and piped water in the home and meat consumption do not by themselves qualify for middle-class status on an intuitive definition; some poor do have access to hospitals, perhaps in Mexico more than in other countries. Steel, total energy consumption and electricity are too high insofar as a larger proportion of these goes into investment and other collective, non-personal uses in Mexico than in the United States. (Investment will produce middleclass people in due course, but it does not directly measure their presence.) School attendance tells something about the status of the younger generation; the way the above number was calculated,

middle-class status was also imputed to parents and grandparents of the pupils. Mail gives too low a number, because few other countries are as thoroughly saturated with commercial mail as the United States.

But the main difficulty of the table is its attempt to make a dichotomy--poor versus middle class--out of what is in most instances a substantially continuous distribution. Some poor people do receive mail, do have television sets, do use automobiles; on the other hand, some rich may not have these things or, more commonly, have more than one. The right way to proceed is to classify individuals according to combinations of items. One would take a sample survey covering the matters of the above table and others, and then try to see to what extent they are scalable, which is to say, come everywhere in the same sequence; and whatever the degree of scalability, one would try to find the point that would effectively discriminate the two groups into which the population could most meaningfully be divided.

The same criterion applies to this display as to early work on the national accounts--the test of success will be its arousing enough criticism, and enough efforts at improvement, to produce better figures.

Having defined the middle-class style of life in physical terms and then estimated its number, one would seek data to draw its energy and other implications. If the person drives 8000 miles per year he consumes about 400 gallons of gasoline, extracted from 20 barrels of oil. If he has a 1500-watt airconditioning unit and uses it 2000 hours during the year, a modest amount of cooling, then he draws 3000 kwh of electricity. His electric lighting may draw 200 watts for an average of three hours per day, or a little over 200 kwh. His refrigerator may draw 1000 kwh. Suppose in all he uses 5000 kwh per year and that 25 kwh are produced by a gallon of oil. Then he adds 200 gallons of diesel or other oil to the 400 gallons of hightest consumed by his car.

In contrast with these expenditures the peasant uses no electricity and perhaps a gallon or two of kerosene for lighting. The increase of income as one goes from peasant to middle-class status could well involve a discontinuity in resource use. Of course peasants of different incomes do have different amounts of consumption, and these have different materials and energy components, but such variations could well be less per dollar of income difference than differences across the poverty line.