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A global macroeconomics – yes, macroeconomics, dammit – of inequality and income distribution

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According to an approximate count, there are 848 sub-categories in the classification codes of the *Journal of Economic Literature*. Of these, five relate to income inequality. Two are classed under Microeconomics: D31 ‘Personal Income, Wealth and Their Distribution’ and D33 ‘Factor Income Distribution.’ Two are classed under ‘Health, Education and Welfare’: I14 ‘Health and Inequality’ and I24 ‘Education and Inequality.’ One is classed under Labor: J31 ‘Wage Level and Structure/Wage Differentials.’

Under Macroeconomics there is nothing, unless you count E25 ‘Aggregate Factor Income Distribution,’ which surely means the analysis of factor shares – Wages, Profits, Rent – also known as the functional distribution. Under International Economics there is no reference to inequality at all. Nor under Development Economics. Simon Kuznets, whose immortal 1955 presidential lecture predates – I believe – the JEL classification scheme, is spinning in his grave.

So if your interest is in the *global macroeconomics of inequality* – in the personal or household distribution or pay structures considered over time and across continents and countries, you are what is known in the technical literature as shit-out-of-luck. From a formal standpoint. So far as the American Economic Association is concerned, affecting the structure of journals and the assignment of referees, you have nowhere to publish, no place to go. It is, therefore, nice to be here.

There are perhaps two main reasons why the study of economic inequality has been ghettoized in this way: the theory and the data. From a theoretical standpoint distribution is the essence of micro, of market relations and of supply-and-demand. The discipline exists, largely, to explain factor returns. If it doesn’t explain – I don’t say ‘justify’ – the pay of the worker and the return to capital, then the rest of what it does would not sustain it.

The data element stems from the preference of empirical microeconomists for sample surveys, focused on the characteristics of persons or households, amenable to econometric estimations, capable of addressing venerable preoccupations with race, gender, age, and education. Against these advantages, applied economists sell their souls. They sacrifice control over their research agenda to the designers of surveys. They cannot ask questions about matters not already covered – or at least implicit – in the survey instruments. Which, very often, they did not design and cannot control.

And by considering that surveys are all there is, economists limit the reach of their research to those places and times where surveys were actually taken. This is a problem because surveys are expensive. The survey record in much of the world is therefore sparse, and where surveys do exist they were often taken for differing situations by different teams with differing concepts and methods and research agendas. This makes comparative and historical work difficult and results often inconsistent, even on the most basic issues, such as the definition of income or the nature of the survey unit, especially if the unit is something so malleable and socially constructed as the household.

Wynne Godley correctly insisted that economic models should respect the rules of accounting and the laws of arithmetic. In particular, he urged that the parts should add up and that changes in stocks should be consistent with flows. These maxims are not entirely unrelated to the idea, advanced by Robert Lucas, that there should be a consistent relationship between micro and macro observations.

Let me stand with Lucas on this point. The division of our subject between micro and macroeconomics is a political compromise that originates with the 'neoclassical synthesis.' It exists to permit the coexistence of mortally opposed and inconsistent worldviews within academic economics. It cannot be defended. It is a source of intellectual embarrassment, as well as of bewilderment for students. Christmas exists, as economists know, only so the more discerning and therefore troubled undergraduates can forget the first semester before moving on to the second.

But having made a correct point about the folly of teaching two incompatible subjects, both as received truths, within the same discipline, Lucas made the wrong choice. He decreed that micro *takes precedence* – that the house is built on microfoundations. Godley did not have patience for this. Surely the house is better built on solid steel-and-concrete pilings, on macrofoundations, with micro-shingles on the roof? To switch metaphors, perhaps the tree has macro-roots and micro-leaves?

Ping Chen showed years ago that if the underlying micro-units – the households of the neoclassical imagination – are truly independent in their preferences and their actions, then the law of large numbers precludes fluctuations in aggregate GDP on the scale observed. Indeed if households had independent preferences as micro-theory insists, changes in aggregate behavior would be several orders of magnitude smaller than what we observe. Animal spirits, herd behavior, are indispensable to understanding our world as it actually exists.

But if investors, consumers, and governments run in herds, if they are guided by habits and institutions, then it follows immediately that disaggregation past a certain point is pointless. No additional information is gained, by going to the micro level, while time and effort and computational power are wasted. Cut a salami as fine as you like, each slice is still a slice of salami. You don't learn anything more about how it is made.

Let me therefore advance a Godley-like proposition about inequality. The first and second moments of a distribution are not actually independent. The study of one should be consistent with the study of the other. The growth of the whole, when it occurs, is usually driven by the differential growth of certain parts, and therefore entails changes in inequality. In general, a small number of macro- or meso- economic forces should be sufficient to explain changes in both the average level and the dispersion of a distribution. Given sufficient data, a search for macrofoundations can proceed.

Obviously for reasons already given the data cannot come from surveys. Nor can they come from tax records. Apart from the occasional virtue of separating capital from labor income, for comparative purposes tax records are in some ways worse than surveys. Tax records of income are dependent on tax law definitions of income,

and on the effective enforcement of the tax code. In these matters only a handful of countries have reliable data and many have no data at all, and those with good data sometimes change their legal definitions so that the meaning of top-share statistics changes over time. And while tax havens should be suppressed for many reasons, the key one from a research standpoint is that they are a data black hole.

Is there a substitute? Is there anything else? Actually there is: a plentiful, abundant substitute lying in plain sight. Administrative data on payrolls and employment by industry and sector, as well as on incomes and populations of political jurisdictions at all geographic levels, are ubiquitous. They are the routine work-product of functioning governments for at least a half-century and often more. And while the observational frame is necessarily limited – just as a window allows only a sliver of the sky to be seen – the fractal or self-similar character of income and pay distributions means that often – not always, but often – what you see when you measure inequality across these accounting categories is a faithful simulacrum of the evolution through time of the entire distribution.

The core properties of self-similarity and macrofoundations have underpinned the research of the University of Texas Inequality Project for several decades. We have demonstrated the capacity of even relatively coarse category schemes to generate inequality measures that effectively track available survey measures of inequality. We have demonstrated the capacity of harmonized industrial classification schemes to generate inequality measures that effectively track the relative levels of inequality across countries – so far as these can be measured by surveys – almost everywhere in the world. We have demonstrated the capacity of the elements of a Theil statistic to illustrate the sources – whether geographic entities or industries or sectors – of a rise or decline of inequality through time. Most important, we have demonstrated the capacity of these data sources to fill in the historical record left uncovered by survey instruments.

There is another advantage: cost and speed. I note that Professor Piketty, along with a hundred colleagues, has just released a World Inequality Report, with sections on the evolution of global income and nine chapters giving details on – nine, just nine – particular countries and regions. Overall this work now covers up to sixty countries, as against about 150 in the UTIP data sets, from 1963 forward. Among the great findings, we read: ‘most countries saw rising inequalities in the 1980s.’ Oh wait. That sentence isn’t actually from Piketty in 2018, although something similar – ‘At the global level, inequality has risen sharply since 1980’ – can be found there. The first sentence is from *Inequality and Industrial Change*, edited by James Galbraith and Maureen Berner, published by Cambridge University Press in 2001. Seventeen years ago, if I calculate correctly. Similarly for findings of declining inequalities in Latin America after 2000; similarly for the first measures showing declining inequality after the mid 2000s in China; similarly for Russia. Survey takers and tax records get there eventually; my students and I got there first.

Jim Tobin was the American Keynesian mainstream macroeconomist who came closest to appreciating that Keynes was above all a monetary theorist. Tobin fought a valiant but losing battle against the rise of monetarism, against rational expectations and structure-free macroeconomic data exercises of the vector-autoregressive type. He insisted on the diversity of monetary and financial instruments and the centrality of portfolio theory. He was not a fan of the neutrality of money and encouraged my early work on the House Banking Committee in developing quasi-coercive or at least effectively annoying congressional oversight of the Federal Reserve. I think that Jim would have appreciated the answer to which our work now points: that

financial power, financial policy, and financial dispositions are the driving force behind the rise of inequalities the world around.

Here are the key findings of our work.

1. There are global turning points in the path of pay inequality. They occur around 1971, around 1980, and around 2000. These correspond in each case to major shifts in the worldwide financial regime: to the breakdown of Bretton Woods, to the outbreak of the global debt crisis, and to return to low interest rates and rising commodity prices that followed the NASDAQ slump and the 9/11 attacks, along with the rise of China in world trade. Inequality as a global trend fell after the first turning point, rose sharply for two decades after the second, and stabilized or declined slightly after the third. From these facts, we know that global forces, and not idiosyncratic national forces dependent on the whims of national policymakers, are mainly driving the movement of inequalities around the world.
2. We know also that there are regional patterns, corresponding to patterns of economic integration, so that again the national or the local market unit is not the correct one with which to analyse inequalities.
3. There is a close correspondence between pay inequality measured across industrial sectors and income inequalities measured across households, for most countries for which both types of information exist. The advantage of pay inequality measures is that one can compute many more of them, filling in the global coverage and the historical record. No doubt, tax records can supplement this information for top earners, but for broad international comparisons they aren't available, while the varying coverage of tax filers and definitions of income and of households makes comparative information from tax files problematic.
4. Institutions and political changes and wars and revolutions affect the timing and abruptness of changes in inequalities, largely dictated by outside pressure.
5. We have learned that there are advantages to maintaining relatively low and stable inequalities over time. Countries with more compressed pay and income structures have consistently better unemployment performance than those with higher inequalities – contrary to the mainstream call for 'labor market flexibility' and for the obvious reason, among others, that high inequalities provoke inefficient job searches; people leave the bad jobs in the hopes of landing one of the good ones. Further, countries with *lower* pay inequalities may enjoy *higher* rates of productivity growth over time, as their economic climate is more favorable to advanced technologies and less tolerant of low-end businesses that require low-end labor. This is the Scandinavian model.
6. We have learned that inequality rose primarily from 1980 through 2000 with some stabilization thereafter. The patterns correspond to the debt crisis, the collapse of communism and the Asian crisis, in sequence. And as inequalities rose, sector and geographic data point almost everywhere, including in Russia and China, to the dominant role of finance. The rising share of income appropriated by the financial sector corresponds closely to the rising relative incomes of financial capitals, such as New York, London, Paris, Moscow, or Shanghai.
7. The existence of common global and regional patterns, corresponding to major financial developments on the world scale, establishes that in the relative scale of things, local labor market phenomena are, for practical purposes, nearly negligible; their weight in inequality changes is essentially nil; they are a distraction. There is no 'race between education and technology' that plays a meaningful role in the structure of wages.

8. We have learned that pay inequalities and the degree of industrialization together largely determine the inequalities of income between households, as measured by surveys. There are some further factors and forces at work, such as capital incomes and the changing structure of households over time. But if you know the structure of industrial pay and the degree of industrialization, you can calculate the survey-based measures of gross household income inequality for most developed and transitional economies, and for many developing economies as well, to within a few Gini points.
9. As for what determines the movement of pay inequalities? We have found, finally, that the movement of exchange rates, usually if not invariably against the dollar, is a major determinant of the movement of pay inequalities – which as I've just said is a major determinant of the movement of measured household income inequalities. The line of causation, here, is unambiguous. It flows from the international capital markets to pay inequalities to household income inequalities – and so strongly confirms that the movement of inequalities is, indeed, a global, macroeconomic, and precisely Keynesian phenomenon, a matter of speculative developments having real – and often very harsh – effects.

In closing, let me say a few words about how we came to these conclusions. We did not start from any fixed theoretical view. My students in the early days were trained in physics, operations research, accounting, and political science. None had a strong theoretical training in economics. Instead we set out in Chinese fashion, to 'seek truth from facts.' A fortuitous background, on my part, in exploratory data analysis and numerical taxonomy helped set the path. A colleague at the LBJ School introduced me to Theil and his statistics. Only when the patterns emerged from the data did the truth – as we have come to understand it – emerge from the facts. Godley was right. Tobin was right. Keynes, Minsky, and John Kenneth Galbraith were right. Those are facts; our work serves to document those facts, and that is quite enough.

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