Inequality and Economic and Political Change

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Abstract

This paper was prepared for the United Nations Research Institute on Social Development. It describes the broad evolution of inequality in the world economy over the past four decades, and summarizes the relationship between inequality, economic development, political regimes and the functional distribution of income. The evidence on inequality comes from a series of data sets built by the University of Texas Inequality Project, freshly updated through 2003, showing a decline in global inequality after 2000. Data on the related factors is developed in background papers by Hyunsub Kum, Sara Hsu and Olivier Giovannoni, to be published shortly in the UTIP working paper series.

1. Introduction

As a matter of definition, economic inequality is associated with poverty: other things equal, distributions with fat tails have more people at the lower end. But, are other things equal? Are highly unequal countries generally richer than egalitarian countries, or are they generally poorer? Does inequality tend to rise or fall with rising income, or is there some complicated non-linear pattern in this relationship? Can inequality be justified, in a word, by its contribution to growth? Or do high-income countries whose civil societies are dominated by very rich people–such as the United States--also tend to have many poor?

Further, to what extent are countries "free to choose" a political regime that will reduce inequality and poverty even at low levels of income? What political regime types–if any–seem to have succeeded best at this objective? Does economic policy matter, and how much? What is the relationship between the functional distribution of income – the shares of wages and profits in total output – and the personal or household distribution?

Finally, what are we to make of changing patterns of inequality within and between countries in an age of globalization? Is there a common global pattern and if so, what does this fact tell us about global governance? And, in an interdependent age, can the policies and strategies of one country spill over onto the distributional and poverty outcomes of another? Particularly, if that country happens to be China?

These are empirical questions and they require empirical answers. For this purpose, widely-used global data sets on economic inequality are inadequate, for reasons described in Galbraith (2009) and Atkinson and Brandolini (2001). This paper takes a different approach, integrating the global, regional and national data sets on economic inequality of the University of Texas Inequality Project into the project of inquiry. These data sets bring a unique resource to bear, in the form of dense, consistent and reliable measures of inequality in the structure of pay and earnings, for a large number of countries during the period from the early 1960s through to the early years of the new century. While far from perfect, the UTIP measures permit the recognition of patterns and relationships, broadly between economic inequality and structural change, that might otherwise remain obscure.

2. Sources of Data.

UTIP's inequality measures are computed as the between-groups component of a Theil T statistic, a very general procedure that can be applied to many sources of data, including harmonized transnational industrial data sets (such as UNIDO's Industrial Statistics), regional data sources (such as Eurostat's REGIO) and national data sources subdivided by province, economic sector, industry, or any combination of these at practically any level of disaggregation. The method does not require recourse to micro data sets derived from sample surveys, and the result is a plethora of new measures of the evolution of economic inequality, capturing many different aspects of the phenomenon and revealing the complexity of the story to be told. As Galbraith and Kum (2003, 2005) have established, the resulting

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measures are often comparable both through time and across countries.

The fundamental method is summarized in Conceição, Galbraith and Bradford (2001), and is based on the work of Theil (1972), who argued that an inequality measure computed from grouped data provides a consistent lower-bound estimate of inequality for the entire population. Of course the lower bound is very low, since if the number of groups is small relative to the population, practically all inequality will be located within groups rather than between them. Nevertheless. Conceição *et al.* demonstrated that for a wide range of commonly available, hierarchical data sets, such as industrial classification schemes, relatively coarse disaggregation is sufficient to capture the major movements of inequality in the whole distribution.

The reasons for this lie partly in the mathematics: income distributions are approximate statistical fractals, self-similar at different scales and from different points of observation, so that observation of the entire distribution, or even of a statistically representative portion of it, is not necessary in order to observe change with reasonable accuracy most of the time. All that is required, is to observe an important part of the distribution (say, the manufacturing sector) *on a consistent basis over time*. Since this part is linked organically to other parts that may not be observed, such as agriculture and services, movements in the observed part are usually--not always, but usually--representative of movements in the shape of the entire distribution.

The rest of the explanation lies in the economics: changes in the structure of incomes often occur because of changes in the relative positions of major industrial groupings (a rise of industry over agriculture, for instance, or of finance over industry) or in the relative position of different geographic areas, differentially affected by demographic change, climate or war. Thus after a certain point, further disaggregation adds little useful information, and to discern the movement of inequality *grosso modo* it is rarely useful, and practically never necessary, to work from micro-level data sets.

The UTIP inequality measures are also broadly consistent with conventional, survey-based income inequality measures, or can be made so by statistical adjustment, after allowing for conceptual differences between pay and income, and for the many different kinds of inequality that are reported in the survey-based literature (e.g., income, expenditure, gross or net of tax, household or personal) (Galbraith and Kum 2003). The advantage is that data of the type used in the UTIP procedure are nearly ubiquitous, and coverage in terms of countries and years is far greater than can be achieved with surveys. The UTIP method thus permits the formation, at trivial cost, of nearly balanced annual panel data sets covering several hundred countries over three or four decades, and therefore new investigations into the relationship between economic inequality and other variables. Measures of inequality may also be calculated both within and between regions inside many countries. In some countries, inequality measures can be computed on a monthly basis, permitting the use of this statistic as a high-frequency macroeconomic indicator.

The present study thus starts with the formidable advantage of having in hand a reliable, consistent, well-studied set of inequality measures: international, regional, national and provincial. The international data have now been updated, in the work of Kum (2008), using the most recently available source material. Kum's work also provides ancillary measures of structural change, in the sense of changing sectoral patterns of employment through the course of development, industrialization, and the emergence in parts of the world of post-industrial society. The difficulty going forward lies in the need to develop consistent and useful measures of other relevant phenomena, such as political regime type and the functional distribution of income. Hsu (2008) and Giovannoni (2008) provide discussions of issues associated with developing broad transnational data sets on these issues.

3. Inequality, Structural Change and the Global Inter-Sectoral Terms of Trade

Kuznets (1955) identified the transition from agriculture to industry as the prime mover of a process of increasing inequality in the early stages of economic development, simply because towns and cities are always richer on average than the countryside around them. (In supposing that this transition raises inequality, this argument tends to ignore the wealth of landlords. We shall offer an observation later on, respecting the supposedly egalitarian qualities of agrarian societies in general.) However, Kuznets also saw that as economic development matured, the weight of agriculture in the whole economy would shrink, and ultimately urban phenomena would come to dominate the evolution of inequality. At that point, he argued, the dynamics of factory life including the rise of labor unions and

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democratic politics would cause inequality again to decline.

Thus the Kuznets curve–an inverted "U" relationship between inequality and income–describes a process of inter-sectoral transition specific to the history of economic development in the United States, the UK, much of Europe and Japan. The process has repeated elsewhere – but not everywhere. In countries with unbalanced sectoral compositions of output– among those dominated by extractive industries, or in post-industrial societies dominated by technology and finance–different patterns should be expected. Kuznets' enduring message is not that a single curve should be found in the history of all countries in all periods, but that the essence of understanding inequality lies in understanding the inter-sectoral transitions, or "structural change," that produce it.

Galbraith (2009) offers a schematic of an "augmented Kuznets curve," reproduced here as Figure 1, whose essential features were first discussed by Conceição (2001). For large agrarian societies in the process of industrialization, of which China is the leading example today, urbanization still drives the rise in inequality. (In India, where over sixty percent of the population remains in agriculture, the process of urbanization is, by comparison at least, barely underway.) In only a few other industrializing countries does the agrarian population remain sufficiently large for the inter-sectoral transition out of agriculture to so dominate the picture; most developing countries, especially outside Africa, are over the hump of the inverted U (if the hump exists) and on the downward-sloping portion of the curve. Kum (2008) presents details on the share of employment by sector for a selection of developed

and developing countries.

Among the highest-income countries, notably the US, UK and Japan, a different dynamic takes over, as described in Galbraith (1989, 1998). The most advanced powers have pro-cyclical movements of inequality, because their highest-income sectors, in technology and in finance, enjoy their greatest income growth in boom times, whether driven by domestic investment or by exports. This is also true of small economies dominated by finance and real-estate, of which Hong Kong is a prominent modern example. Meanwhile the world is flecked with monoline producers (as of oil), whose very high levels of average income and inequality relate to the peculiar characteristics of an extractive economy; these are characterized by high per capita income, a low-wage (often immigrant) menial workforce, and high inequality.

Figure One about here.

The importance of inter-sectoral transitions– in agriculture, industry, technology and finance – to the evolution of inequality signals that we should expect the global terms of trade between these sectors to play an important role in determining movements of inequality inside countries, even where internal structural change is not a dominant factor. Thus a commodities boom will tend to reduce inequality in a country with an important agricultural sector, simply because it tends to raise the relative income of farmers. A cartel action on the oil price gives producers resources to redistribute (notably into construction);

meanwhile it deprives industrial workers in consuming countries of their employment and income, squeezing the middle class in rich countries. A technology bubble raises incomes at the top. High interest rates are, generally speaking, bad for debtors and good for creditors, they thus increase inequality since the latter are almost invariably richer than the former.

These effects are global: in a world of globalized financial and commodity markets, they should show up everywhere (or almost everywhere) at once. As Galbraith and Kum (2003) demonstrated, they do: there is a common time pattern of the movement of inequality within-countries in the world economy from the early 1960s onward. This moves in four phases, as illustrated in Figure 2. The first is a phase of relative stability, with no common movement in the inequality measures, which dates from the first observed year (1963) until around 1971. The second is a period of moderately declining inequality, in much of the world, from 1972 until around 1980. This period coincided with the collapse of the global financial framework of the Bretton Woods era, and the subsequent inflationary boom, abetted by large-scale commercial bank lending at negative real interest rates.

Figure Two about here.

The third phase is of sharply rising inequality. It began around 1982 and continued through to the end of the century, and is associated with the calamity of the global debt crisis, initially most severe in Latin America and Africa, followed by the collapse of the communist governments of central and eastern Europe, and finally by the wave of deregulation and

liberalization in Asia in the 1990s. The specific experience of countries and regions varies, but with much in common: collapsing imports, a collapsing fiscal base and therefore public sector, trade liberalization, deindustrialization and the simultaneous decline of both the civil service and the industrial working class. Meanwhile globalization in many cases eventually brought financial investment from the West and the rise of new sectors-- real estate, insurance, and banking, notably-- with global pay scales and speculative characteristics. The overall pattern resembles almost exactly that found by Milanovic (2007) for a measure of inequality between-countries, unweighted by population. This is not, or should not be, surprising: events which raise the gap between rich and poor people within countries should also, in principle, raise the gap between rich and poor countries, since the latter are just unbalanced collections of the former.

The pattern has exceptions, because there are exceptions to globalization. Notably, India and China avoided the global rise in inequality in the 1980s, arguably *because* they had held themselves aloof from the commercial lending going on everywhere else and were therefore unaffected by the debt crisis. China's rise of inequality dates from the crisis of 1989, while India's starts with the reforms of 1992 (Galbraith, Roychowdhury and Shrivastava, 2004). The exceptions help to confirm the hypothesis: a major force driving the movement of inequality in the age of globalization was not idiosyncratic national policies nor even structural change within countries, but global forces affecting the inter-sectoral terms of trade. The fourth phase, beginning in 2001, is again one of declining inequality. It coincides with the marked relaxation of credit conditions that followed the attacks of September 11,

2001 in the United States, and the repudiation of Washington Consensus policies that followed the Asian crisis of 1997, the Russian crisis of 1998, and the Argentine crisis in 2002. These changes appear to have permitted both higher growth and some abatement of the extreme increases in inequality that had afflicted the developing world for the previous twenty years.

Galbraith and Kum (2003) calculate that if the global element in rising inequality in the 1980s and 1990s were removed, there would have been no increase in economic inequality on average around the world; indeed given the Kuznets forces affecting inequality in the process of economic development, inequality in most countries and on average would have declined. Figure Three illustrates this calculation, separating out OECD and non-OECD countries to show that the global effect holds separately for both groups.

Figure Three about here.

The figure also illustrates a core fact: the high-income industrialized countries enjoy markedly more equality, on average, than low-income and developing countries. The reasons for this are, of course, not far to seek. The very essence of development lies in industrialization, which is to say the emergence of a stable, middle-class working population, paid at rates which vary only by the range of skills in the workforce and the permissible extent of monopoly power in an urbanized, technologically sophisticated, and possibly democratic society. Correspondingly, the very essence of underdevelopment is not poverty

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per se. It is rather the gap between an extractive or plantation sector serving a small rentier and landlord elite, and a large peasant population that exists on the margins of the monetary economy.

The high inequality of most low-income agrarian societies raises a question: was Kuznets right about agriculture? I would answer that if he was, it was because he was examining exceptional historical cases, such as the UK and 19th century North America-- north of the Mason-Dixon line– where small freeholds predominated. Most agriculture (especially in the tropics) is highly unequal, being descended directly from feudal land tenure and from slavery. Low income agrarian economies with egalitarian pay structures are rare, and in the modern world they tend to emerge only after violent revolution, as in China (1949) and Cuba (1959), as well as Vietnam. It is in these cases, practically alone, that we observe rising inequality as economic development proceeds. Whether apart from them the inverted U-Curve would have a low-income upward-sloping component at all, in modern times, is doubtful. Figure Four, drawing on data described in Kum (2008) presents the relationship between the share of agriculture in total employment and the UTIP-UNIDO Theil for manufacturing pay, for a selection of developed and developing countries. The positive relationship is strong and consistent: the more farmers you have, the more inequality. Only Poland features as an outlier in this selection of countries, suggesting that political regime matters--but not very often.

Figure Four about here.

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Taken together, these considerations paint a complex picture, yet one with regular features. For any given country, the movement of inequality can be said to depend on (a) the position of the country on an augmented Kuznets curve, (b) the direction of income change and associated structural change, and (c) the impinging external force of changes in the inter-sectoral terms of trade (which may shift the position of the curve).

Overall, to summarize the argument above, structural change in the process of economic development *in most cases* tends to reduce inequality. Exceptions exist, and two among them are (a) low-income post-revolutionary agrarian societies in the process of urbanization, industrialization, and transition to market capitalism, and (b) high-income post-industrial societies as they move toward economies dominated by technological innovation and high finance. Likewise, crises and shocks that periodically disrupt the processes of economic development tend to raise inequality. However, the first process (of structural change in the course of economic development) is relatively slow-acting, while the second, though quick-acting and highly visible in the data, is relatively rare.

For this reason, it is changes in the relative prices (terms of trade) between high- and low-income sectors that tend to dominate the actual movement of economic inequality in modern times. Commodity booms, in general, tend to benefit lower-income developing countries; financial bubbles and interest-rate shocks, in general, benefit high-income financialized economies and the high-income people within them, at least in relative terms. Since oil and grain prices and interest rates are set in global markets, it should therefore be expected that

the movement of economic inequality should be largely a common global phenomenon, operating in much the same way (though not symmetrically) in most of the world. And this is what we observe in the data.

4. Inequality and Structural Change: Selected Cases.

In this section, we review the experience of a number of specific countries in view of the general framework outlined above.

China is a canonical case of the evolution of inequality dominated by internal structural change, at least until very recently. The country was largely insulated from external relative price changes in the 1980s and 1990s, and though as of today the country is well-integrated into international food and fuel markets, it still enjoys an internal price level for most labor-intensive wage goods that is far lower than the external prices of those same goods. Rapid growth from a post-revolutionary agrarian starting point implied rising inequality, and an accelerating dynamic of urbanization as greater urban-rural differentials generated greater migration from the countryside to the cities. This dynamic constitutes China's greatest social challenge, and the authorities are locked in a perpetual effort to balance control over internal migration with a construction program sufficiently vast to accommodate the inflows that cannot be prevented.

In very recent years, the Chinese picture has been complicated by large inflows of

speculative capital, some of it moving through the current account in the train of an enormous export boom, which has in turn fueled an epic real estate boom in Beijing, Shanghai and a few other locations. All this considerably exacerbates the urban-rural inequality differentials. Figure Five, taken from Galbraith, Hsu and Zhang (2008), illustrates the changing contribution to Chinese inequality of the different provinces within China, through 2005. The figure is constructed by stacking the elements of a Theil statistic: each segment of each bar represents the contribution to overall inequality of a particular province in a particular year. Those with incomes above the national average show positive values, those with incomes below national average show negative values. The figure provides a succinct measure of the rise and fall in relative terms of Chinese provinces in relation to each other. Of particular note is the fact that the relative contribution of Beijing–which is not a coastal city nor a primary center for the production of goods for export–continued to rise even after the diffusion of economic growth caused the relative shares of Guangdong and Shanghai to tail off in the later 1990s and early 2000s. This is, almost undoubtedly, a phenomenon of the construction boom attendant on the 2008 Olympics, and it illustrates the extent to which financial forces may be coming to dominate and to destabilize the pattern of relative incomes inside China.

Figure Five about here.

In most of Latin America, by contrast, large-scale urbanization, globalization, and specifically the internationalization of finance occurred decades back. In the 1980s and

1990s, countries found themselves afflicted by the (closely related) twin scourges of negative growth and adverse terms-of-trade shocks, above all the debt crisis. Thus they moved up a downward-sloping Kuznets relationship even as the relationship itself shifted out. In Mexico and Brazil, as Calmon *et al.* (2000) showed, the debt crisis and resulting industrial slumps were associated with large rises in inequality, as the collapse of import-substituting industries diminished the unionized working class. Mexico and Brazil in this period also clearly illustrated the simple relationship between pay inequality in industry and the rate of economic growth. Where economic growth was sufficiently rapid to absorb the natural rise in the labor force (say, above three or four percent per annum), inequality in pay structures tended to be stable or to decline. When growth fell short of that threshold, inequality tended to increase. Figure Six illustrates this relationship with annual data for the two countries. For countries in this situation, coping with rising inequality is plainly, in large part, a matter of restoring stable internal growth, permitting the absorption of the growing labor force. But it must also be, in part, a matter of more stable global financial governance, so long as such countries remain exposed to external financial shocks.

Figure Six about here.

The experience of Mexico in the peso crisis of 1995 also illustrates an important connection between external finance and economic inequality for many developing countries. A position on the periphery necessarily implies important trading relations with countries much richer than oneself, and therefore a duality in the productive economy at

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home, between those who sell to the external market and those who sell to domestic consumers. The former tend to be better paid than the latter, simply because industries with rich customers can afford to pay a premium for labor. But they are also much better insulated against a currency crisis. When the shock hit in 1995, Mexico's export sectors were able, for the most part, simply to translate their dollar earnings into peso wages at the new exchange rate. Those who sold into the domestic economy, as manufacturers or as service providers, could not do this, and their relative wages fell instantly as the peso collapsed. And then, in addition, their markets dried up, as consumers found themselves forced to divert income to imported staples (such as corn) which were now available only at a dramatically higher peso price. Figure Seven shows the immediate impact of the 1995 peso crisis on measured inequality in pay in the Mexican manufacturing sector.

Figure Seven about here.

In highly-industrialized Central and Eastern Europe, the combination of a large manufacturing sector and communist political regimes (see the analysis in the next section) produced low inequality until the system collapsed in 1989. It is worth noting, though, that as a matter of history the collapse of the communist regimes in Poland, Yugoslavia, Hungary and the Soviet Union itself was not unrelated to economic pressure: all were deeply indebted to the West at a time of depressed prices for primary goods and exceptionally high real interest rates. These exacerbated the underlying inefficiencies of the communist systems, prompting efforts at reform that eventually opened the door to regime change. At that point

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deindustrialization and price liberalization– a very rapid move toward world prices and

therefore conformity with world norms respecting relative prices--combined to drive

inequality up as dramatically as anywhere in the UTIP data universe.

The case of the Russian Federation was closely analyzed via a data set for the years 1990-

2000 developed by Krytynskaia from original sources in Goskomstat and reported on in

Galbraith, Krytynskaia and Wang (2004). The dramatic increase comes in 1992, with the

implementation of shock therapy, led by price liberalization. It results in a massive collapse

of the relative position both of agricultural and of manufacturing workers, as well as of the

non-commercial sectors, such as health and education, previously supported by the state. In

their place rise the leading sectors of the new Russia: energy and finance, and the city of

Moscow as a world city in a country otherwise mired in post-communist stagnation. This

situation became so extreme that by the end of the century, the lightly-populated West

Siberian oil-and-gas regions of Tiumen and Khanty-Mansy had become major sources of the

inequality of Russian incomes generally, while the conflict regions of the southern Caucasus

had fallen far below the rest of the country in reported relative income. Figure Eight

provides a schematic view of the inter-provincial shifts in Russia during the disastrous

transition decade. It is however a reasonable conjecture that with the radical improvement of

the country's terms of trade and competitiveness in the years following the crisis of 1998,

the situation must have improved.

Figure Eight about here.

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Even though rising inequality is characteristic of the period under discussion, it is not observed everywhere. In Northern Europe, notably in Scandinavia, where inequality was historically among the lowest in the world, the UTIP measures of inequality were maintained steady through the 1980s and at least through the early 1990s. The Scandinavian experience relates no doubt in part to the strong tradition of unionization, centralized pay bargaining, and (in the case of Norway) the collective management of resources gleaned from the oil boom. Meanwhile in parts of southern Asia, especially Singapore and Indonesia, inequality appears to have declined through the early 1990s, though data are not yet in to show the full consequences of the crisis of 1997. In parts of Latin America, notably Brazil and Argentina, inequality appears to have peaked with the crises of 1993 and 2002 respectively, and to have declined with the stabilizing growth experience of subsequent years (Galbraith, Pinto and Spagnolo, 2007). We return to this experience in a discussion of policy regimes, below.

In the United States, meanwhile, inequality rose under the demand shock of tight monetary policy and a high dollar in the early 1980s – a classic backward movement on a downward sloping Kuznets curve. This movement was repeated in the recession of the late 1980s. Inequality in pay, particularly in manufacturing, then declined through much of the following decade, as the economy recovered and moved toward and eventually reached full employment. Figure Nine illustrates the close relationship between inequality in the structure of manufacturing pay, in the United States, and the rate of open unemployment.

Figure Nine about here.

In the last few years of the decade, rapid growth driven by the technology bubble produced increasing inequality – a move up an upward-sloping segment of the Kuznets curve, onto which the U.S. had stumbled in the transition from an industrial economy to one largely centered on technology and finance. (Galbraith 1989, 1998). The effect of this increase on the inequality of household incomes was greatly exacerbated by the effect of exploding capital asset valuations on reported income of a very small number of very rich people. Galbraith and Hale (2008) demonstrate that if the effects of rising income in just five counties – New York (Manhattan), NY, Santa Clara, San Francisco and San Mateo, CA, and King County WA – are removed from the data, about half of the rise in between-county inequality in household incomes in the U.S. in the last years of the 1990s would not have occurred. (Removing the income growth of just 15 counties neutralizes the entire increase in inequality between counties.) Figure Ten illustrates this finding, and shows the rise (and occasional decline) in income inequality in the U.S. is substantially due to changing valuations on the stock market, specifically the technology-rich NASDAQ. This finding corroborates the observations of econophysicists, who have argued that the U.S. income distribution is best understood as characterized by a Boltzmann distribution for the bottom 95 percent, and a power law, for the top five percent, whose parameters depend on the flux of the stock market. (Chatterjee *et al.*, 2005).

Figure Ten about here.

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While the UTIP papers on Latin America, Russia and China during the era of neoliberal reform in the 1980s and 1990s make no effort to separate global from national factors, they do illustrate what appears to be a widespread phenomenon relating inequality to the effects of neoliberal policy. This is a strong mobilization of economic power in the hands of sectors capable of exercising such power, especially finance, transportation and utilities (e.g., energy and media) – the traditional loci of monopoly control. Correspondingly neoliberal reforms tended to favor the relative position of the national financial and political centers (Buenos Aires, Sao Paulo, Shanghai and Beijing, Moscow) at the expense of the hinterlands. In the wake of financial crisis and stabilization policies, such as Brazil's Real Plan, however, the share of the financial sector in particular tends to shrink and overall inequality between sectors and regions tends to fall.

Figure Eleven illustrates this pattern for the case of Brazil, which at the peak of neoliberal power channeled an extraordinary share of income into the financial sector. Notwithstanding the small absolute size of the sector, it would be reasonable to call the diversion into banking a principal motor of total income inequality in Brazil. Figure Twelve illustrates, with monthly data for the case of Argentina, the effect of the financial crisis of 2002 in starting the process whereby inequality– at least within the formal sector– was reduced in that country in the post-crisis years. Argentina's largest social problem, of course, remains those excluded from the formal sector, and therefore not captured in this data set.

Figures Eleven and Twelve about here.

From the foregoing discussion, we can infer how differing metrics of structural change, measured at the national level, should be associated *a priori* and in general with changing inequality. A declining share of agricultural employment, for instance, may be associated with rising or declining inequality at first but either way should resolve into declining inequality later. However, if a large decline in rural employment share spans the hump of a Kuznets curve, it is possible that no effect will be found, even though it plainly exists on each segment taken separately. Correspondingly, a rise in the urban population share may or may not be associated with rising inequality at first and but should resolve into falling inequality later, with diminished or even no effect if the measures span a Kuznets hump.

Once a country is over the hump of the inverted U–as most are during the period of study–a rising share of manufacturing employment in total employment (or population) should generally be associated with falling inequality. The manufacturing share is largest after the transition from agriculture is largely complete, and before the transition to a post-industrial, finance-and-technology dominated society, both of which are associated with passage across a Kuznets trough, and onto subsequent upward-sloping Kuznets curves. Similarly, a rise in the share of post-industrial labor, particularly in technology and finance, should usually be associated with rising inequality. The number of countries for which the technology sector is a dominant influence on aggregate income is necessarily small, though as Wang (2007) has recently demonstrated, such effects can be found even outside the OECD, notably in the highly informationalized economy of Taiwan. The role of finance in driving inequality is

more widespread, and can be identified clearly almost everywhere, including Russia, China and with remarkable effect in Argentina and Brazil.

5. Inequality and Political Regimes.

The political systems of the world in the final third of the twentieth century can be classed in groups ranging from communist states, to social democracies, to capitalist (and in some cases, explicitly Christian) democracies, to authoritarian regimes and dictatorships of the right and the extreme right, including military governments and states actively torn by civil war. The 1960s and 1970s were a time of polarization, with a spread of military governments in Latin America, Africa and Asia in strong opposition to communism and to the communist governments of the Soviet Union, Eastern Europe, China, North Korea, Vietnam and Cuba. However in the final years of the century there has been a convergence toward capitalist democracy, often within a neoliberal policy framework. Thus world history in these decades provides a rich field in which to search for systematic relationships between political regime and the level and change of inequality over time.

Political scientists in recent years have worked to develop a number of classification schemes of regime type, surveyed in Hsu (2008). These differ in method, but they tend to share a methodological quirk: they treat political regimes as existing on a continuum from "authoritarian" to "democratic." Democracy is therefore conceptualized as an extreme outcome–the opposite of dictatorship–rather than as an ideological middle ground, while

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communist, fascist, and military dictatorships are grouped together as authoritarian.

Underlying this are implicit preoccupations with human rights and the rule of law, and

perhaps an implicit teleology: the notion that representative democracy represents a high

point of human political achievement. But, given the extreme differences of ideology

between communist and anti-communist authoritarians on matters related specifically to

economic inequality, scales constructed in this way are ill-suited to discriminating between

the effects of regime type on inequality. It is therefore not surprising that the empirical

results obtained so far in this area are weak. The commonly-heard question, "does

democracy reduce inequality?" is ill-posed, for it does not clearly define the alternative: "in

comparison to what?"

An alternative approach would refrain from placing regime types on any scale *a priori*,

simply allow the data to determine whether mean inequality measures for different regime

types differ significantly from the general mean, after controlling for ostensibly independent

characteristics such as the level of national income. Hsu (2008) has developed a

comprehensive qualitative data set of regime type and regime change for the countries in the

UTIP inequality data universe. This data set permits us to classify practically all countries

according to their place in the group structure discussed above, and to evaluate movements

of inequality associated with changes of regime type.

Hsu (2008) introduces a battery of control variables, ostensibly independent of regime type.

Of these, four survive a step-wise process of elimination: the rate of urban population

growth, log per capita GDP, the share of manufacturing employment in total population, and openness measured by exports plus imports as a share of GDP. In good Kuznets fashion the signs of the coefficients on these variables accord with theoretical prediction: higher population growth and openness are associated with greater inequality (protectionism protects), but higher per capita income and greater manufacturing share both tend to drive inequality down. In addition, Hsu finds positive time effects for the years from 1993 through 2000, indicating a general increase in worldwide inequality independent of both controls and regime type. It is in the context of these controls, that she proceeds to address the role of political regime type.

Of the seven regime types introduced (including one for war-time situations), four prove to have significant effects on inequality as measured in the UTIP-UNIDO data set. The communist regimes and Islamic republics both enjoy(ed) significantly lower inequality than would be predicted by their income level, demographic structure and degree of industrialization. Social democracy similarly is associated with reduced inequality, though by a slightly smaller amount, and finally, current European colonies enjoy less inequality than other developing regions with similar economic and social characteristics.

For other regime types, notably right-wing dictatorships, the tests indicate that political regime does not independently influence the inequality measure. This does not, of course, mean that there are no significant differences in inequality between such regimes; on the

contrary, mean inequality measures for right-wing dictatorships are markedly higher, as Hsu shows in a baseline regression. Rather, the finding implies that if there is a causal relationship between these regime types and the inequality of economic outcomes, it cannot be disentangled from the effects of political regime on industrialization, development and population growth, and vice versa. In other words, if dictatorships foster inequality, it is because dictatorships impede productivity growth, lower per capita income, open a country to external trade and competition, and generate the social insecurity that leads to large family sizes. These characteristics in turn lead toward inegalitarian social structures and economic results.

6. Inequality and Policy Regimes.

Given the relative ineffectiveness of political regime types in predicting levels of inequality once economic and demographic factors are controlled for, it would be surprising if the ordinary back-and-forth of partisan competition within one or two regime types – multiparty democracy whether conservative or social democratic – made a large difference to national inequality measures. Since political parties are often numerous and their names idiosyncratic (Japan's Liberal Democratic Party, for instance) the task of making a systematic appraisal of the effect of changes in government is exceptionally arduous, even where, as with UTIP, annual inequality data are available.

Nevertheless, some work has been done in this area. Galbraith and Garza-Cantu (2001)

categorized Latin American governments from the 1960s through the 1990s by the extent of their commitment to a populist agenda, and were able to show that populist governments throughout the region were frequently able to bring measures of inequality down during those years. Given their support for unionization, for food subsidies, and for higher minimum wages, this effect should not be surprising. Nor should the flouting of the external constraint that populism usually entailed make it a surprise that populist policy regimes never lasted very long.   Figure Seven, taken from Calmon *et al.* (2000) illustrates the movement of pay inequality in Mexico, based on monthly data, for the long period from 1968 through 1999. Lines indicate the change of presidency at regular six year intervals, and major events are noted on the chart.   It seems clear that the populist moments in modern Mexican history – the government of Echeverria and that of Lopes Portillo after the discovery of oil in 1979 – were associated with strong growth and declining inequality, for which the price was paid in IMF programs and in the debt crisis only a little bit later on.

Many populist episodes ended violently. Galbraith and Purcell (2001) analyzed the consequences for inequality of 27 coups d'état throughout the developing world (including in Greece in 1967), and were able to show two important if unsurprising facts. First, coups tended to follow periods of "abnormal" decline in inequality – the signature of the preceding populist regimes, and second, coups tended to be followed by long periods of rising inequality, as the social forces unleashed by populism were repressed. Thus the cycle of inequality, reform, violence and repression that characterized those years. .

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Since the return of multiparty democracy in all of Latin America and much of the rest of the world in the modern period, two general observations may be made. First, the new democracies lack the redistributionist commitments of their democratic predecessors; either the left has mellowed or the neoliberal policy order constrains choices in ways that the previous system did not. Thus the initial conditions of much higher inequality than were observed before the dark years of military repression have not been fully reversed; nor is it likely that they will be. Second, nevertheless, some progress has been made, particularly since the high water mark of the neoliberal ascendancy passed in the mid-1990s.

Figure Thirteen shows the monthly movement of inequality in manufacturing pay in Brazil from 1976 through 1996, as reported in Calmon *et al.* (2000). The darker line represents a twelve-month moving average of the monthly data, and presents the underlying trend. The figure covers the periods of 1980s heterodox stabilization in Brazil – the Cruzado Plans, the Summer Plan, and the 1993 crisis and introduction of the Real. It is apparent that hyperinflation induced wild volatility in the inequality measures (partly a data artifact but partly because some parts of the population were better protected from hyperinflation than others). The stabilization plans, by freezing inflation, both stabilized and improved earnings inequality, however briefly. When they failed, or when a new crisis hit (as in the Collor period), inequality would again rise. The success of the Real Plan is therefore two-fold, in stabilizing inequality in the short run and in inaugurating a longer-term decline in inequality, whose continuation is documented in Galbraith, Pinto and Spagnolo (2008). However, a decline in inequality does not necessarily mean a direct improvement in the lot of the lower

orders: for most of the present decade, real wages in Brazil stagnated; the decline in inequality stems wholly from a larger relative decline at the very top. However this was accompanied by some increase in the expenditure share of the public sector, which presumably does entail the greater provision of public goods to the population at large.

Figure Thirteen about here.

Of course, some governments have more policy leverage than others. The remarkable rise, and then decline, of inequality in Cuba in the Special Period and after has been documented by Galbraith, Munevar and Spagnolo (2008), based on data from Cuban national statistics. The Cuban pattern is quite unique, in that it consists in the first instance of the government's explicit effort to raise the whole economy by increasing expenditure in the social welfare sphere, filling the gap between the collapse of agriculture, industry and construction when the protected markets and subsidies from the Soviet Union disappeared, and the rise of a new Cuban economy based on tourism, the export of health care services and the special relationship that presently exists between Havana and Caracas. Figure Fourteen illustrates the movement of inequality across sectors in Cuba in this period. Cuban official data are quite complete, since most people work in the public sector; however an important qualification is the lack of good information on cash incomes paid in foreign currency, especially in the tourist sector.

Figure Fourteen about here.

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In general, the effect of economic policy on inequality in multiparty democracies appears to be as one would expect: as compared to changes of political regime type, the effects are (a) smaller and (b) more transient, subject to reversal when crisis hits or political fortunes change. Politicians in multiparty democracies rarely build for the ages. They operate, rather, within time horizons governed by their electoral mandates and the need to seek renewed authority from their constituencies and from the general public. Movements of inequality in response to changing flavors of government and the exigencies of particular economic situations can be observed in the data, but they do not amount to large-scale or enduring change, generally speaking, in either direction. Revolution, counter-revolution, external shocks, coups and war are much larger and more enduring forces on social structure, for better or for worse.

7. Inequality and the Functional Distribution of Income

Giovannnoni (2008) provides a treatment of the relationship between structural change, personal income distribution and the functional distribution of income, which is defined as the labor (and conversely, capital) share of income in total GDP. Unfortunately, despite the central importance of this theme to the history of political economy, usable data for cross-country and time-series comparison are remarkably rare, and for practical purposes restricted to member states of the OECD. Nevertheless, several interesting points emerge.

Giovannnoni finds that the wage share in the Eurozone has been declining slowly since a peak

in the early 1980s, and has fallen approximately ten percentage points in the intervening quarter-century, with noticeably sharp declines in some countries in the wake of the Maastricht Treaty. The wage share in the United States, though initially lower, has remained approximately constant during the same period, and is now higher than in the Eurozone. While coverage of developing countries is not a strength of the OECD data, the information for Mexico and Turkey indicates that for these countries, labor shares in total GDP are much lower and much more volatile than in the richer countries, and prone to decline sharply in times of economic crisis, as in Mexico after 1982 or Turkey after 1991 and 1999.

These results suggest that in at least some circumstances the functional shares and the structure of earnings distributions are closely related, and that both are quite closely related to macroeconomic conditions. Economic crises tend to raise unemployment, shift the share of income toward capital, and worsen the distribution of pay. In a final analysis, this cannot be greatly surprising. A financial shock, such as an international move to high interest rates, is a tax on debtors for the benefit of creditors. It will deplete effective demand, curtail employment, and also cut hours worked disproportionately for those at the bottom of the pay scale. All these adverse phenomena should move together, and evidently they do. Conversely in boom times employment, the wage share and distribution of earnings all improve. In this context, it is worth noting again that while US income inequality rose sharply in the late 1990s, this is not true for inequalities in the structure of American pay, which declined as the economy moved toward full employment. Most generally, Giovannnoni's findings underscore the importance of economic policy to the functional

distribution, and they illustrate the role of geographic proximity – neighborhood effects –
whose presence in inequality data we take up next.

8. Neighborhood Effects in the Movement of Inequality

A major virtue of the UTIP data– as shown in Figure Two– lies in the ability to trace the
movement of inequality across and between countries to common sources in the
international economic environment. In numerous recent papers we have established the
existence of common global trends, associated particularly with the change in global
financial regime: especially the collapse of Bretton Woods in the early 1970s and the onset
of the debt crisis and the era of high real interest rates in 1981. Further, the data have
permitted an analysis in detail of the effect of external financial shocks – especially
exchange rate shocks – on inequality in a range of developing countries in Latin America,
Asia and Africa.

There is however a level of interdependence that lies between the common response to
worldwide changes (say in commodity prices or financial conditions), and the idiosyncracies
of national political and policy change. This is the level of the regional neighborhood, the
common influence of a country's condition on that of its neighbors, and also the tendency of
the international financial community to treat developing countries as large groups (Latin
America, Asia, and so forth), so that the reputation of any member of a set is influenced by
the conduct of its neighbors.

Outside of Africa, the UTIP data are sufficiently rich and deep to permit evaluation of

regional patterns, especially from the early 1970s onward, and it is convenient to present the

results as a series of color coded maps.   Each map represents a six-year period, with the

starting and ending points actually represented by centered three-year average values for the

country in question, so as to minimize the number of blank spots on any given map. Shades

from pink to brown represent increasing rates of decline in inequality over the six-year

period; shades from light to dark blue represent increasing rates of increase. The original

data set is the UTIP-UNIDO data on inter-sectoral inequality in the manufacturing sector, a

data base with the virtue of consistency and accuracy and the disadvantage of partial and in

some cases non-representative coverage (particularly, again, in sub-Saharan Africa).

Nevertheless, the tale told in these maps appears to capture in a broad way some of the most

important historical changes in the world economy over the period under review.

Figure 15a presents the period from 1970 through 1976: the time of the first major oil

shock and commodity boom, encompassing the breakdown of the Bretton Woods system in

1971-73. There is a striking regional pattern: the major oil-consuming countries, from

North America to Europe to India, all show the effects of the supply shock and subsequent

recession as generating increasing inequality; meanwhile inequality is falling in the booming

oil producing economies of North Africa and the Middle East. In Latin America, the

recycling of petro-dollars to the (military-governed) Brazil and Argentina produced a

secondary boom environment and, again, declining inequality for those countries at that time.

Figure 15b shows how this picture changed with the onset of the global debt crisis in the early 1980s. Inequality continues to rise in the OECD countries, by and large, mired as they are in industrial recession. But now the most rapid rise in inequality as measured by UTIP-UNIDO is in the southern cone of Latin America and (to the extent the data permit us to observe) sub-Saharan Africa– ground zero of the debt calamity. Significant exceptions occur, on the other hand, in Asia: in China, which was financially autarkic at this time, in India, which largely restricted its international lending to the long-term concessional facilities of the International Development Association, and in revolutionary Iran. As the pivot of world inequality in the 1970s appears to have been the price of oil, in the 1980s it was the price of money.

Figure 15c extends the analysis into the 1990s, spanning the collapse of the Soviet Union and its satellite governments in Eastern Europe. Now, although again in this period inequality is rising throughout most of the world, the region of greatest relative increase shifts a third time –to the formerly communist lands. Inequality also rises very rapidly at this moment in China, where the government embarked on policies of market liberalization and decentralization, leading to large relative gains especially for the exporting province of Guangdong, for the financial center at Shanghai, and for the national capital at Beijing. Again, the world exhibits one area of significant exception: Southeast Asia, where a boom driven by foreign direct investment permitted inequalities to fall until the Asian crisis of 1997 supervened.

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Figures 15a-c about here.

The strong evidence of regional and neighborhood effects underlines the power of global
financial markets, of commodity price regimes and of changing political systems to
influence and indeed to dominate the movement of economic inequality as experienced by
most of the world's population, most of the time in recent years. It suggests that,
particularly for small countries, independent policy options are an extremely limited and
weak source of countermeasures to these phenomena. The age when most countries could
insulate themselves entirely from the forces of global capitalism appear to be largely in the
past. All this therefore suggests that the issue of economic inequality, both within and
between countries, needs to be considered as an issue of global economic governance,
strongly influenced by structures of regulation of financial and commodity markets and by
the conduct of monetary and financial policy in the rich and powerful countries. Though the
evidence is far from complete, there is reason to suspect that for some years following 2001
the developing world experienced a relatively benign financial climate, permitting relatively
strong growth and some resumption of social progress in many places. Uncontrolled
speculation in energy and food could easily ruin this, driving a wedge between countries in a
position to profit from high commodity prices and those who find their basic requirements
for food and fuel unaffordable.

9. A Few Observations on Inequality and Poverty

Occasionally voices are heard to argue that inequality *per se* should be of little or no social concern, that so long as poverty is minimized there should be no principled objection to the untrammeled gains of the very rich. And in some hands this argument becomes one of active advocacy: that the concentration of wealth should be fostered, in order to generate savings, investment, and the geese who lay golden eggs.   Forbes (2000) provides an example of this type of argument, dressed in modern econometric garb.

Yet the fact that poor countries usually experience higher levels of inequality suggests that argument isn't tenable as a general rule. Rather, the evidence points toward a two-way causal relationship. On one side, underdevelopment is inegalitarian. The plantation was and is a harsh place, and people live on a dollar a day or less when they are pushed to the margins of arable land by the appropriation of the fertile soils to feed cities and other distant cash markets. The deepest poverty, from Appalachia to Tibet, is always remote.

But on the other side, equality fuels efficiency. A society that systematically reduces the dispersion in its structures of pay forces the pace at which technological change is absorbed by business enterprise, and therefore tends to move up the scale of available productivity levels, raising per capita incomes faster than the global average. This is the Meidner-Rehn mechanism that underpinned the rise of Scandinavia, where political commitment to egalitarian economic outcomes preceded the advance of the region from the middle to the

top of the European (and world) income scales. (Meidner and Rehn, 1951.) Similar effects applied to the United States in the New Deal and the Golden Age of economic growth.

It is intuitively obvious that higher levels of economic inequality make it more difficult to reduce poverty through growth. Where growth is isolated and incomes are concentrated, those who are not directly involved do not benefit. On the contrary, growth necessarily entails environmental degradation and waste, and it on the poor and the excluded that these burdens necessarily fall. Only when the fruits of growth are distributed, as income or by the provision of infrastructure and other public goods, does the statistical fact of a rising gross domestic product come to be experienced as an improvement in mass living conditions.

Extreme inequality also makes the process of growth much harder to manage successfully. Dualistic economies emerge when "hot spots" that operate to international standards are put down in otherwise underdeveloped territory; these enclaves then become magnets for the population around them. If the process is strictly controlled, an apartheid economy emerges. If it is not controlled, then the enclave turns into a slum. Either way, the essence of managing the process effectively lies in reducing the migration incentive, and that can only be achieved by policies of regional decentralization and income transfer, raising living standards in the remote places. The final elimination of absolute poverty is always a managed process; some combination of reducing the numbers of the poor (through wage standards) and reducing the hardships of those who remain poor (with public goods and income support).

10. Conclusions.

This chapter has attempted to provide a systematic summary of evidence on the evolution of economic inequality in the world economy, as developed over a decade under the auspices of the University of Texas Inequality Project.   The results are broadly consistent with the insights of Simon Kuznets, but after taking into account both the great complexity of economic relationships in the modern world, and the increasing predominance of regional and global factors. Broadly, the evidence supports the proposition that economic inequality is primarily a matter of inter-sectoral differentials, influenced in the long run by structural change and in the short run by changing inter-sectoral terms of trade. It is the abrupt movements of the latter – including oil prices and interest rates – that has most fundamentally reversed the fortunes of poor people around the world over the past generation. This suggests that governance of world financial and commodity markets and the conduct of global monetary policy are critical, and perhaps under-acknowledged, issues in the struggle to build a fair, tolerable and sustainable world.

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Figure 1. Stylized augmented Kuznets curve, with selected countries in illustrative positions.
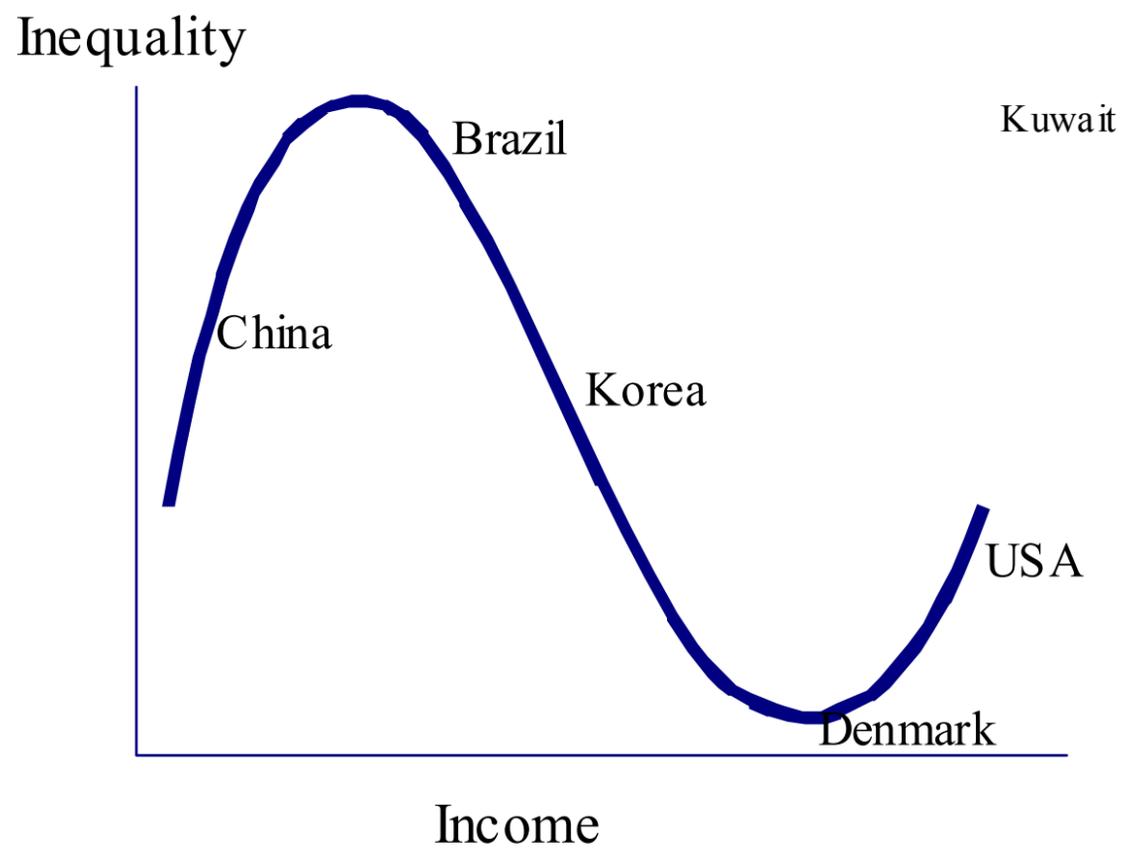
Source: Galbraith 2009.

Figure 2. Global Time Effect in Two-Way Fixed Effects Panel Regression on Inequality, 1963-2003.
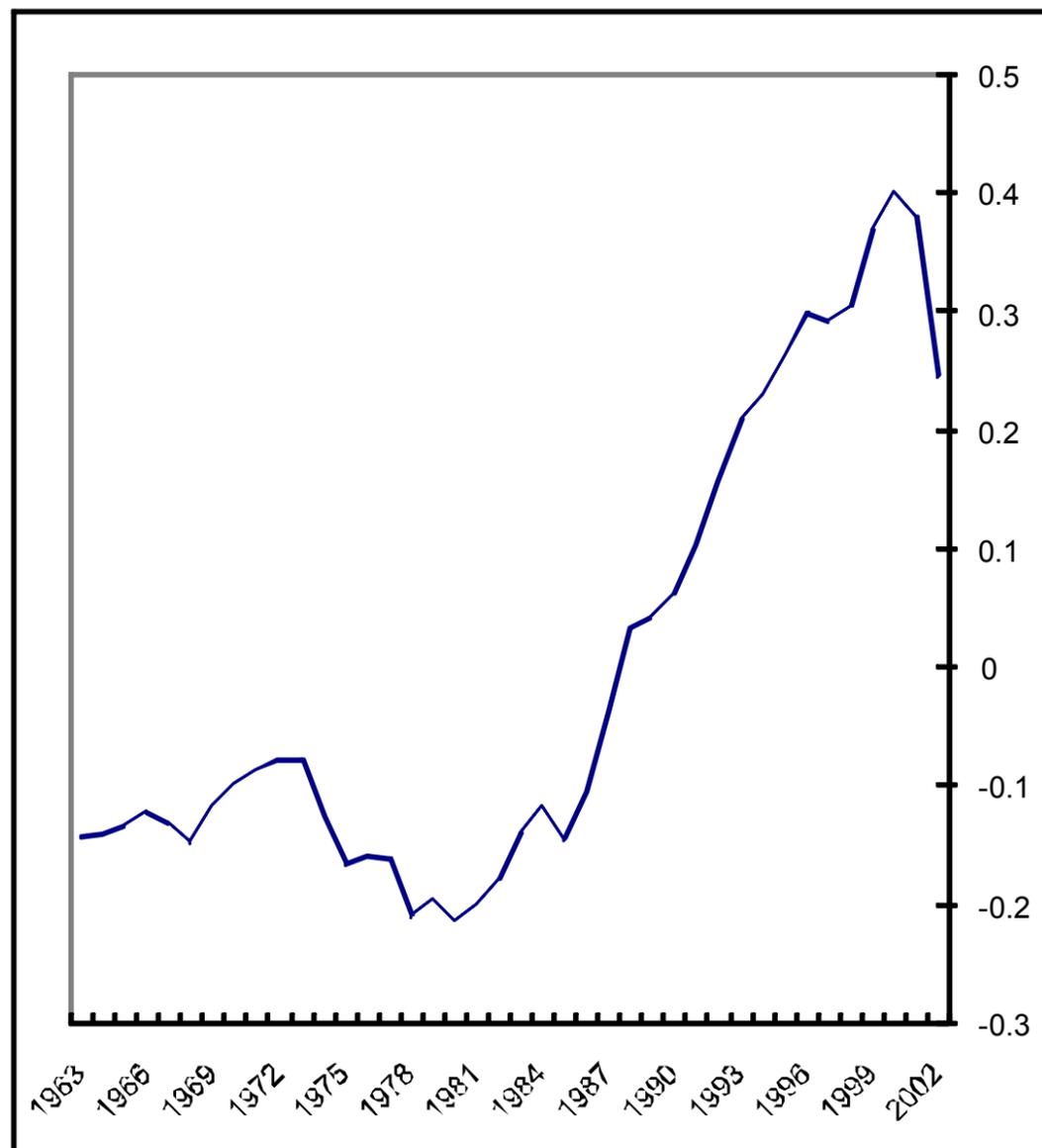
Source: Kum 2008.

Figure 3. Inequality within countries, with and without the global effect.


(Actual Values)   (After Global Effect Removed)
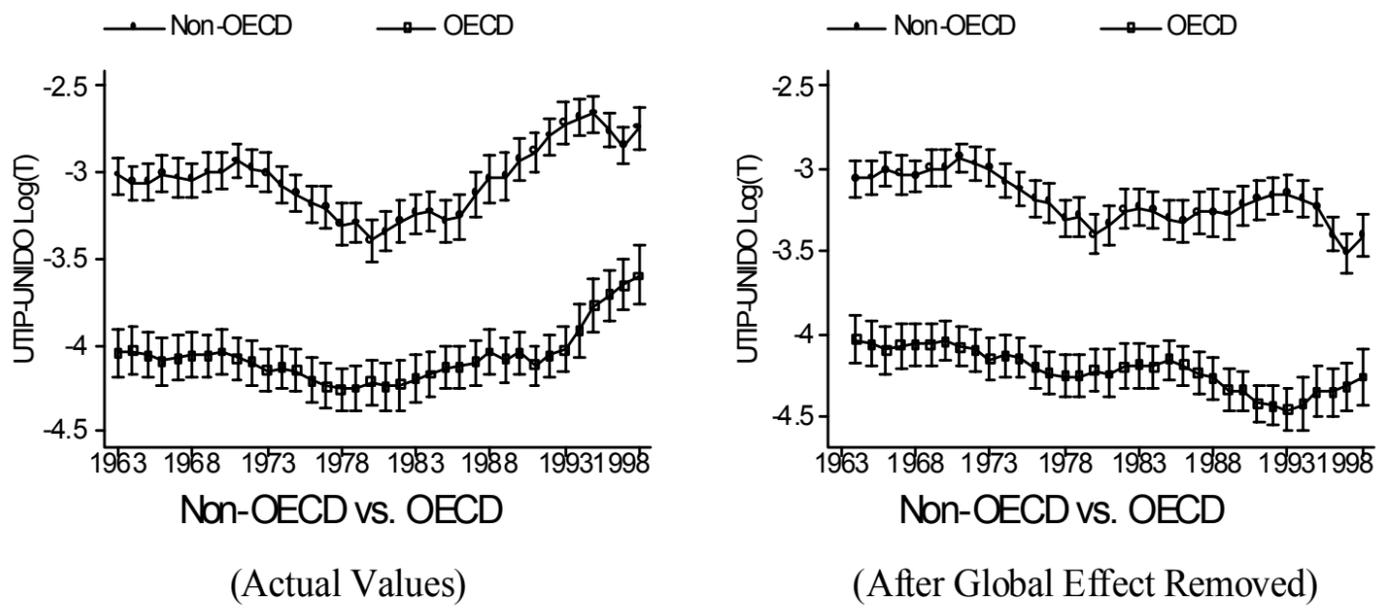
Source: Galbraith and Kum, 2003.

Figure 4. Inequality in Manufacturing Pay and the Share of Agriculture in Employment in

Selected Countries, 1979-2003
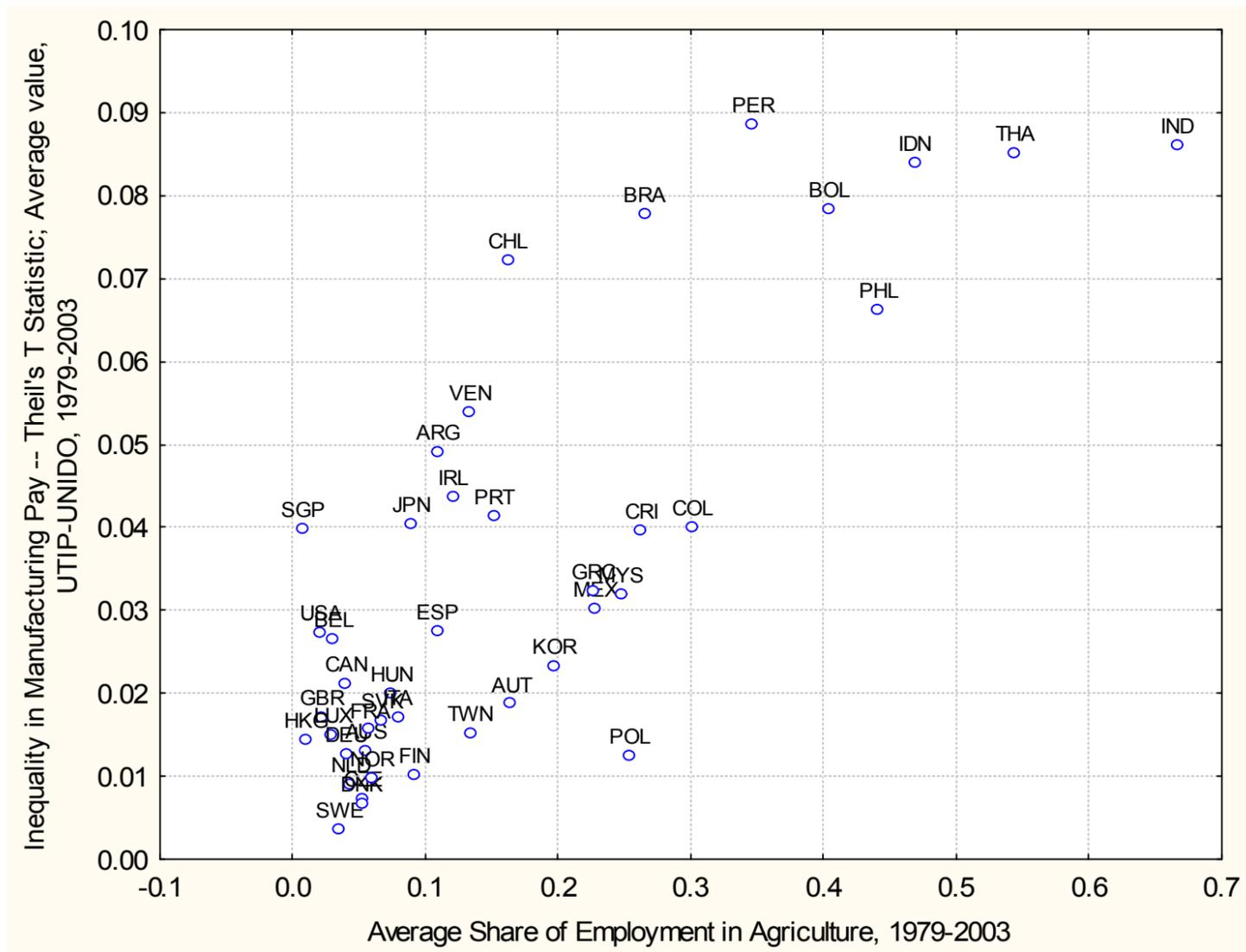
Source: Author's calculations from data in Kum (2008)

Figure 5. Contribution of provinces to inter-provincial inequality in China, 1987-2006.
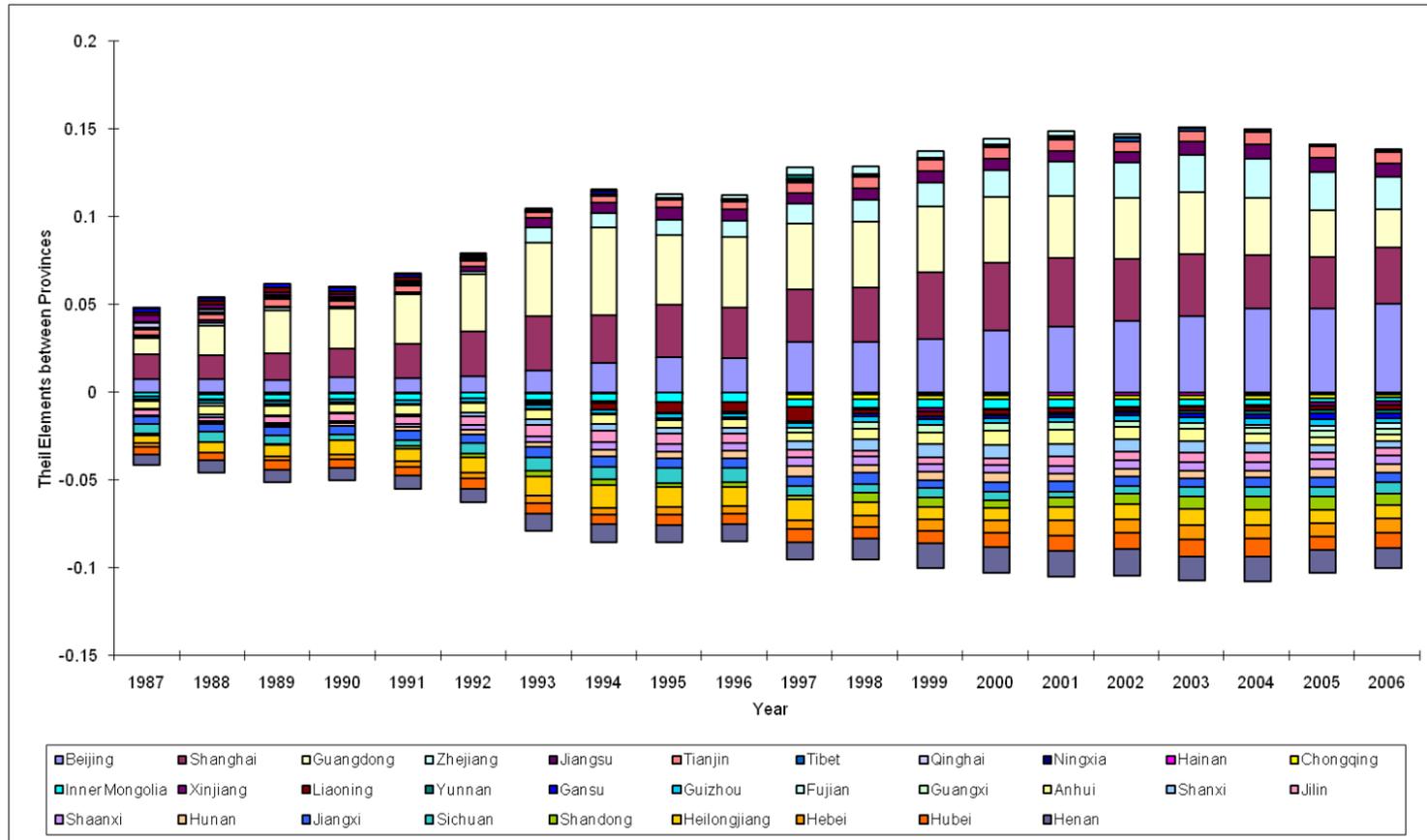
Source: Galbraith, Hsu and Zhang, 2008

Figure 6. Changes in Pay Inequality and Economic Growth in Mexico and Brazil

Change in Theil Inequality Index for Brazil (Percent)

Change in Theil Inequality Index for Mexico (Percent)
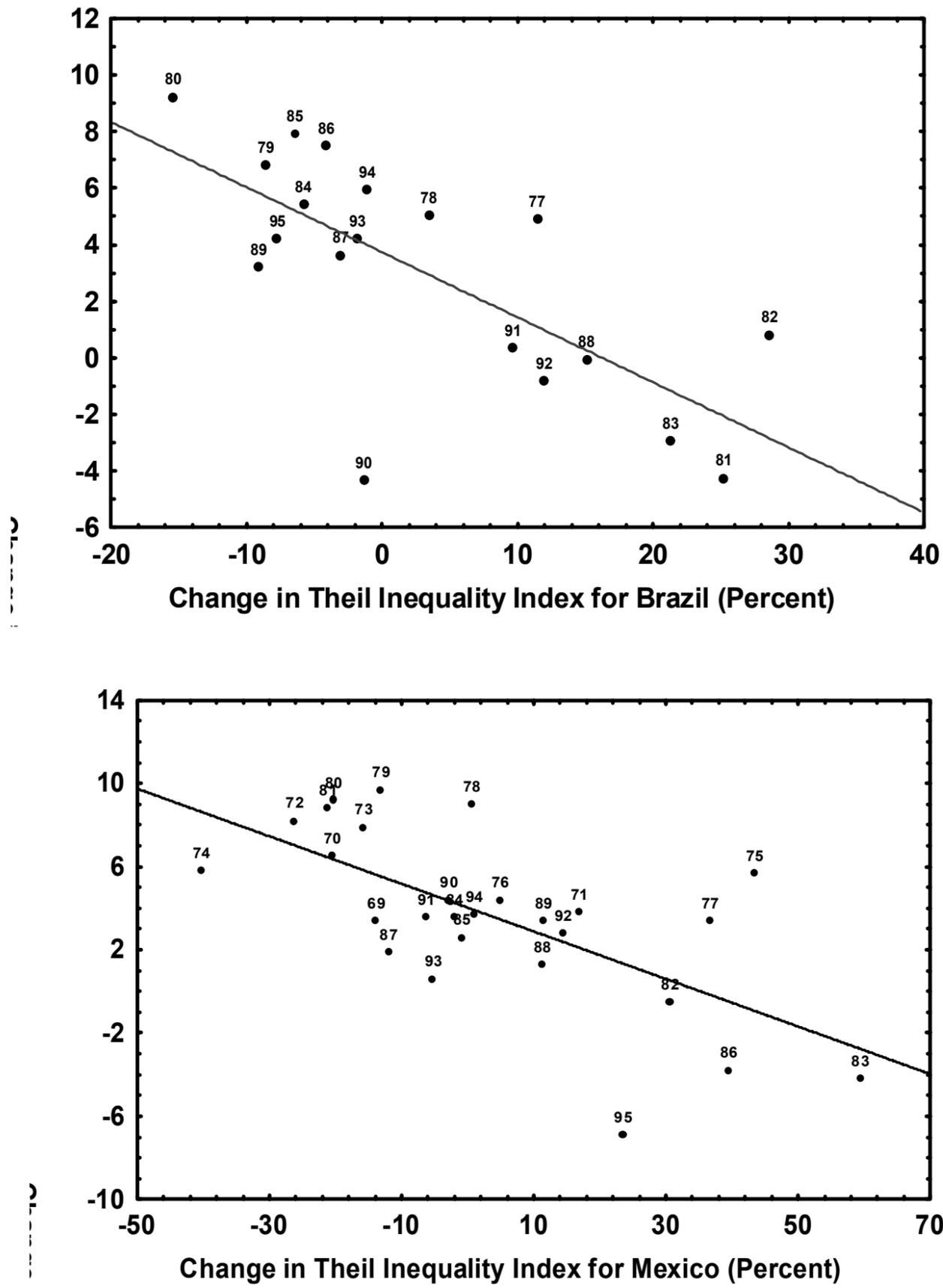
Source: Calmon et al. 2000.

Figure 7. Monthly and annual change in Pay Inequality in Mexico, 1968-1999.
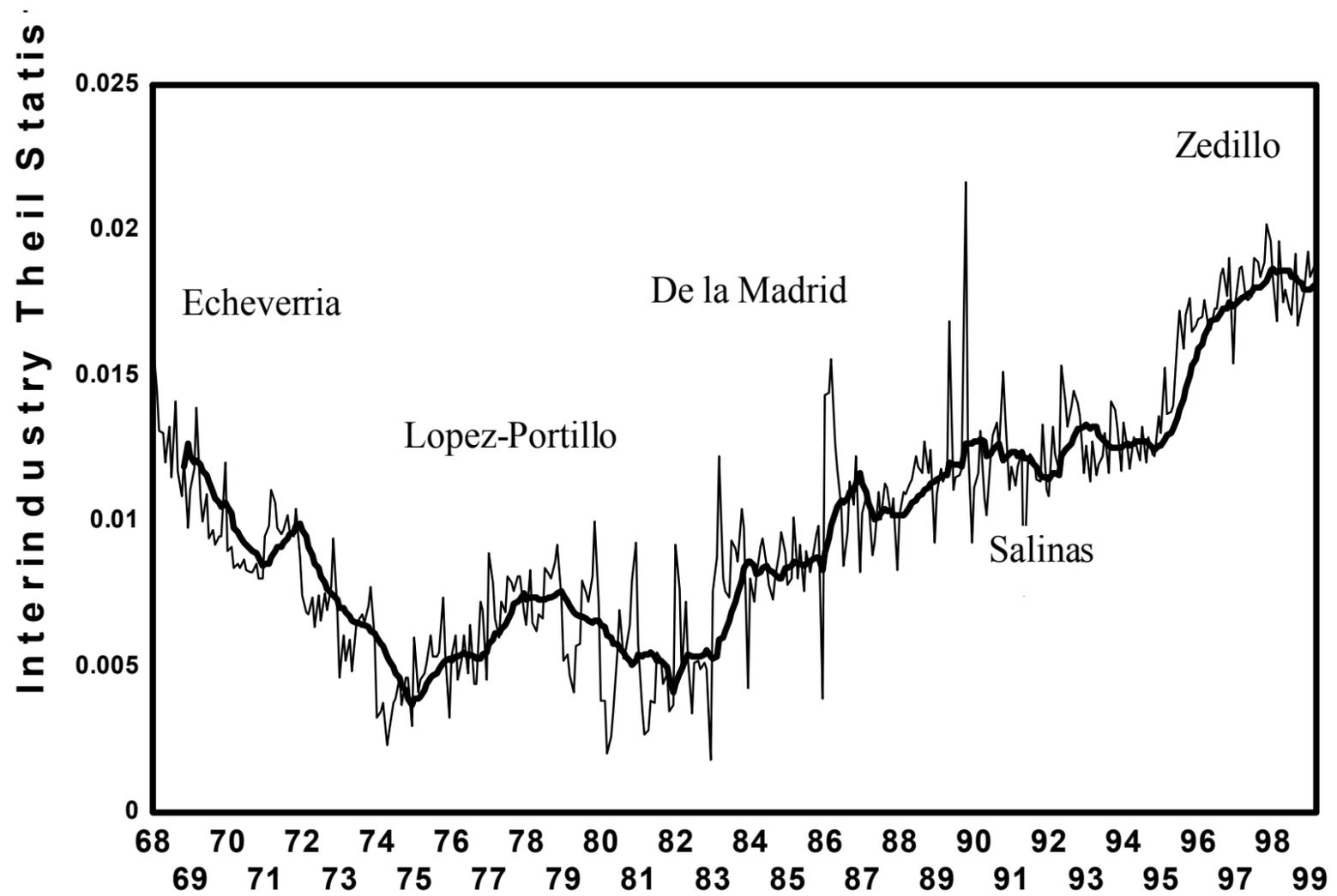
Source: Calmon et al. 2000.

Figure 8. Contributions of each province to interprovincial inequality in Russia, 1990-2000.
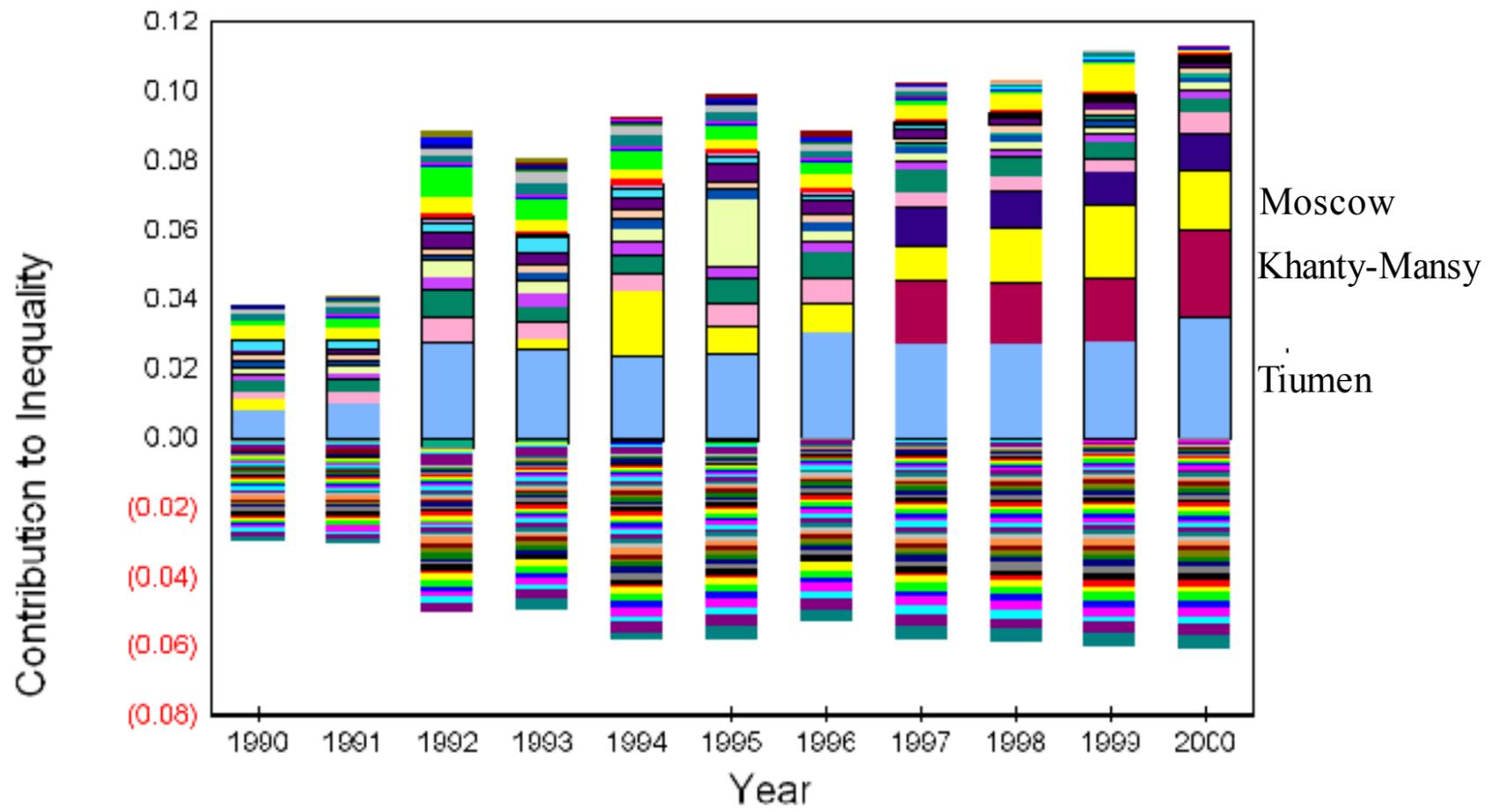

Source: Galbraith, Krytynskaia and Wang (2004).

Figure 9. Monthly Manufacturing Pay Inequality and Unemployment in the United States, 1953-2005.
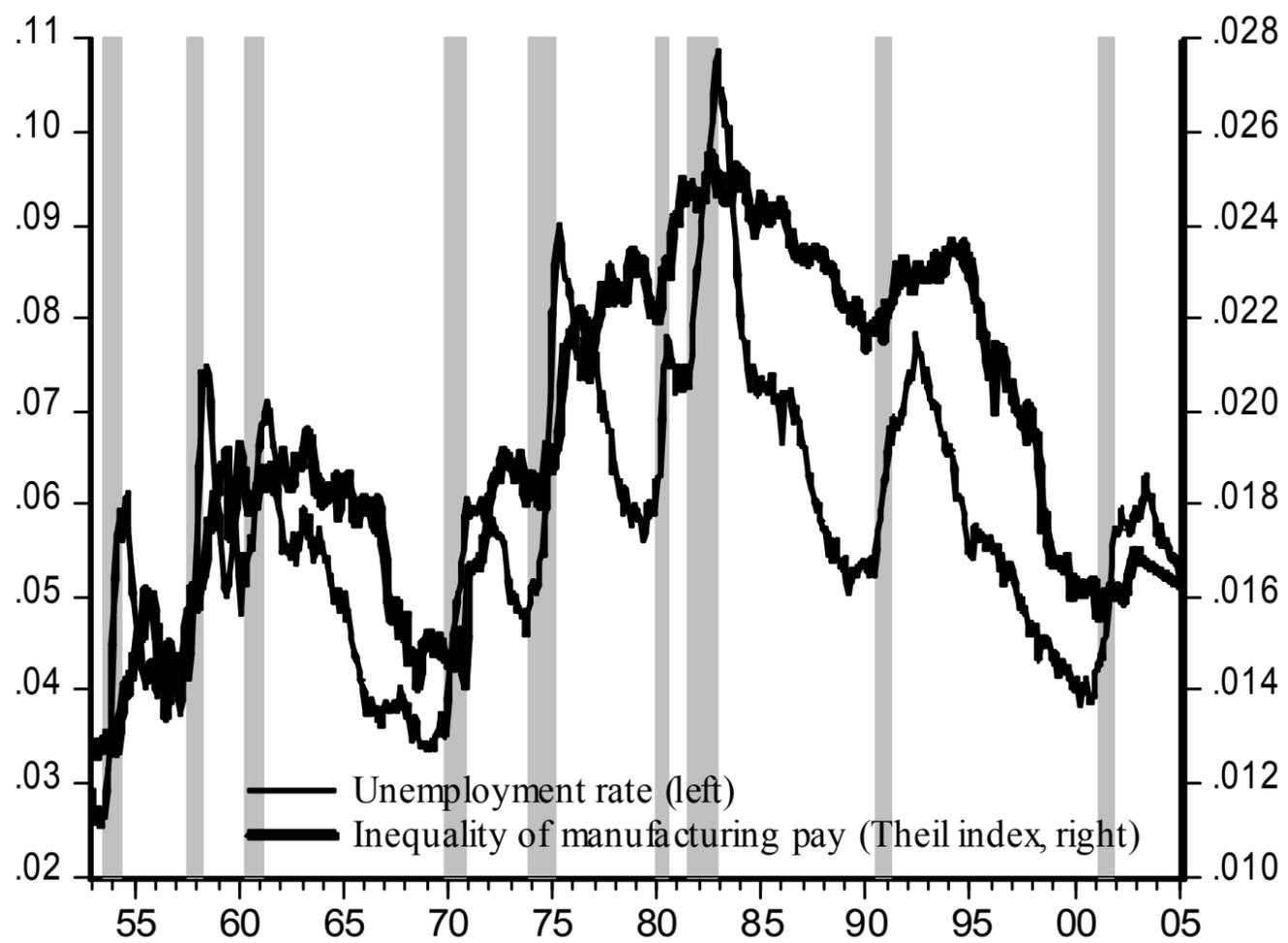
Recessions indicated by grey lines.

Source: Galbraith 2009.

Figure 10. Between-county measure of income inequality and the log of the NASDAQ stock index, United States, 1969-2005
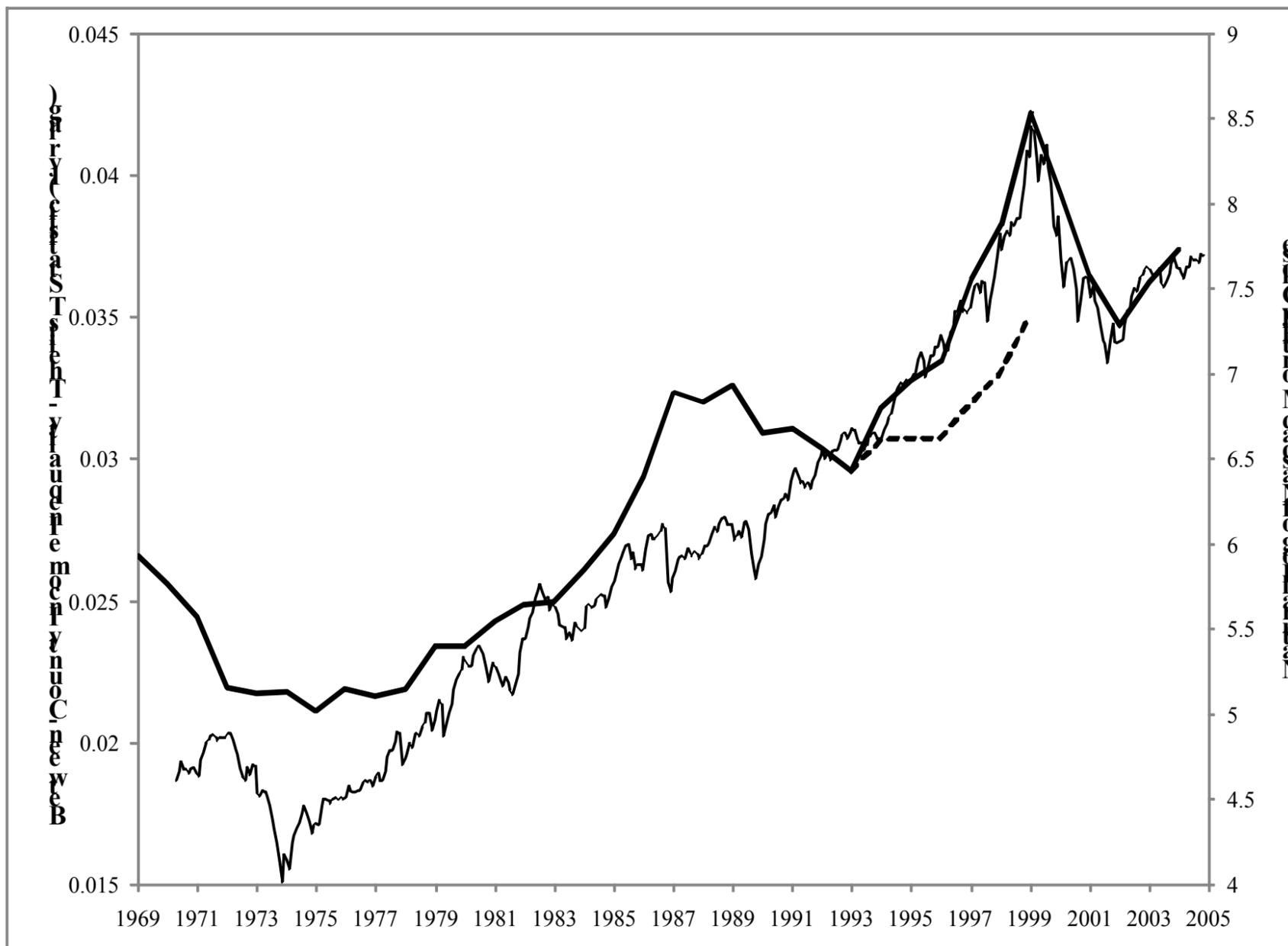
Dotted line indicates hypothetical change in inequality 1993-1999 under the counterfactual of average national income growth in five counties: New York NY, Santa Clara, San Mateo and San Francisco CA, and King WA.

Source: Galbraith and Hale, 2008

Figure 11. Contribution of Sectors to Economic Inequality in Brazil, 1996-2003.


Legend:
- Financial Intermediation
- Mfg. Industries
- Utilities
- Mining
- Fishing
- Agric.
- Construction
- Real Estate
- Civil Service, Defense and Social Security
- Education
- Transport, Storage and Communications
- International and Extraterritorial Organizations
- Health and Social Services
- Other Collective, Social and Personal Services
- Hotels & Restaurants
- Wholesale & Retail Trade
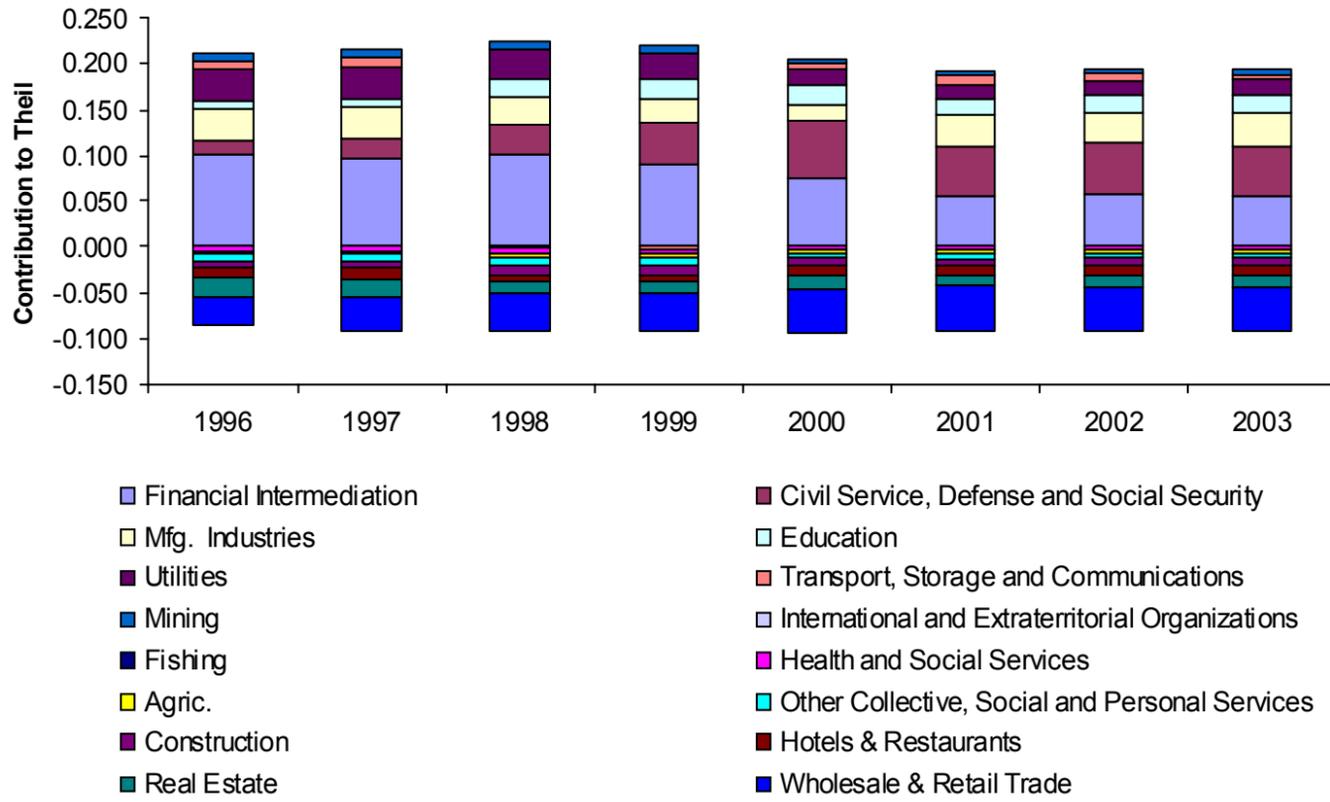
Source: Galbraith, Pinto and Spagnolo 2007.

Figure 12. Monthly measure of Inter-provincial inequality in Argentina, 1994-2006

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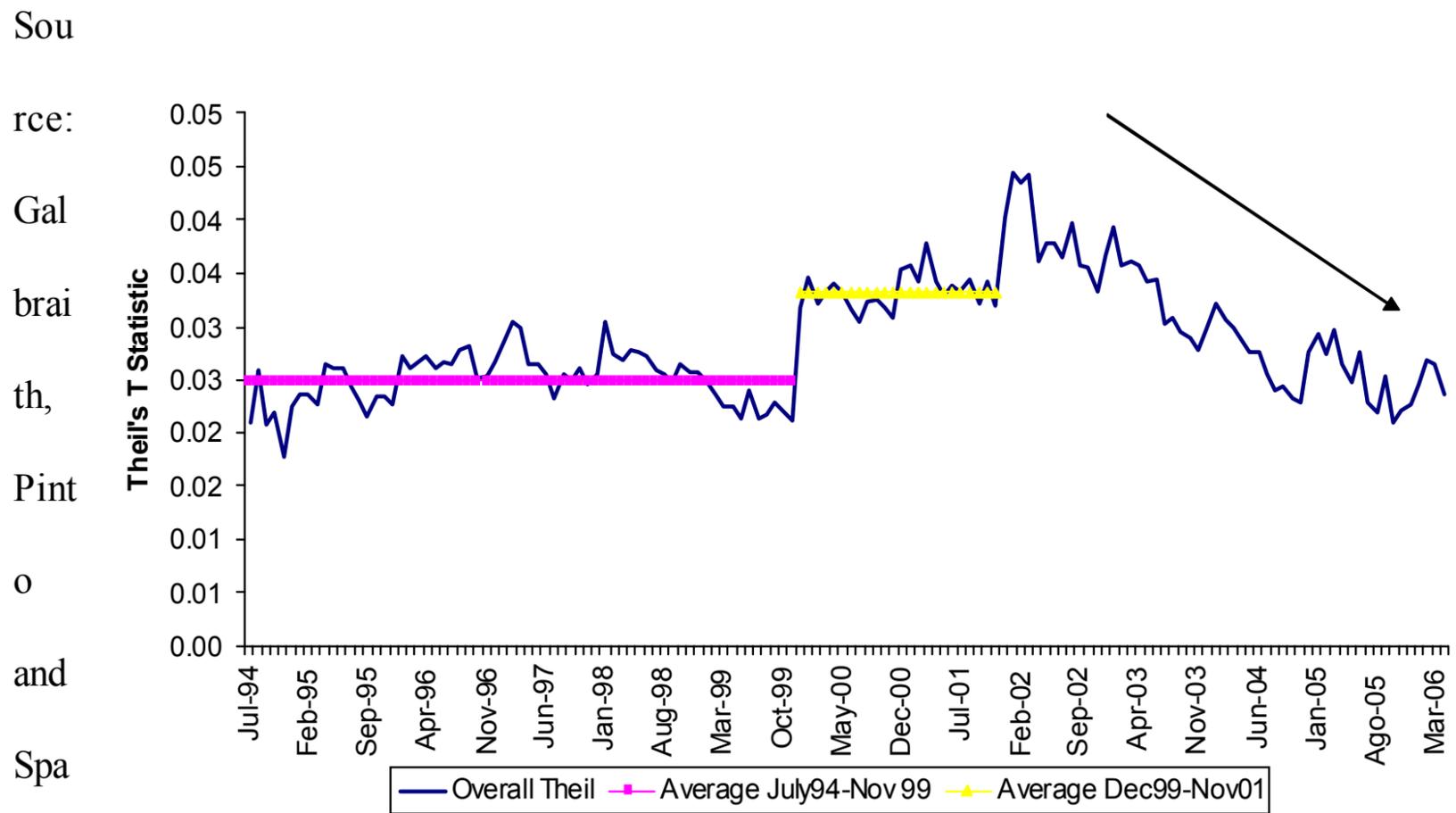
lo, 2007.

Figure 13. Monthly and annual pay inequality in Brazil, 1976-1996.
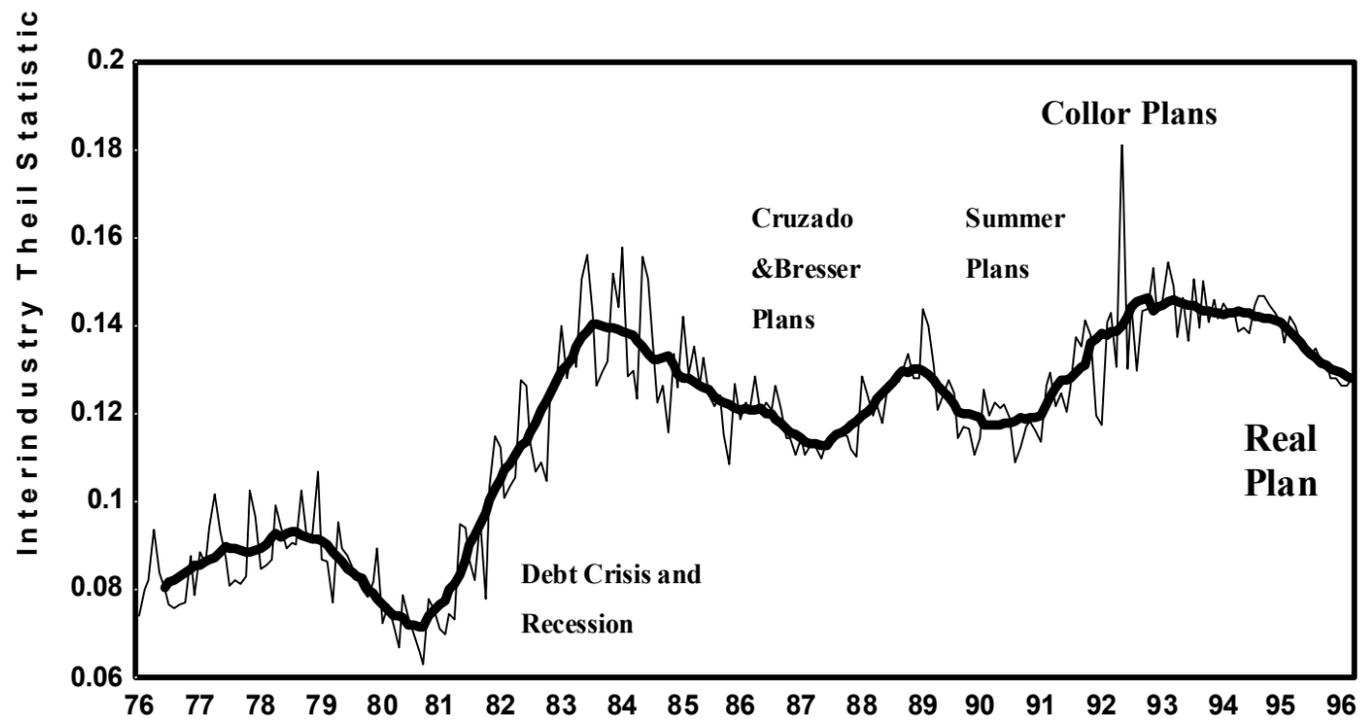

Source: Calmon et al. 2000.

Figure 14. Contributions of economic sectors to pay inequality in Cuba, 1991-2004, along with an overall measure of inequality (sum of the contributions)
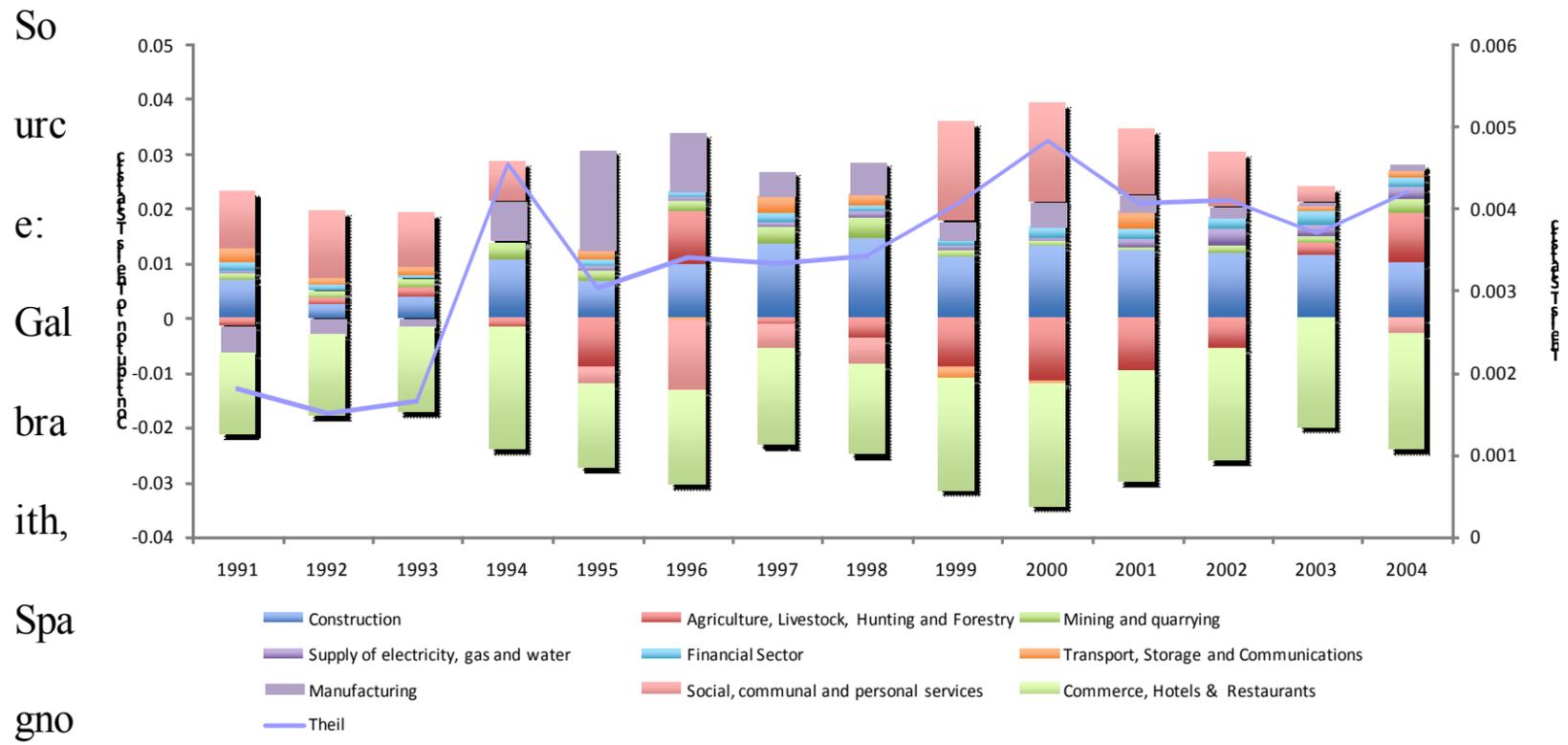
Figure 15a. Changes in industrial pay inequality, UTIP-UNIDO 1970-1976.

1970 to 1976

The oil boom: inequality declines in the producing states, but rises in the industrial oil-consuming countries, led by the United States.
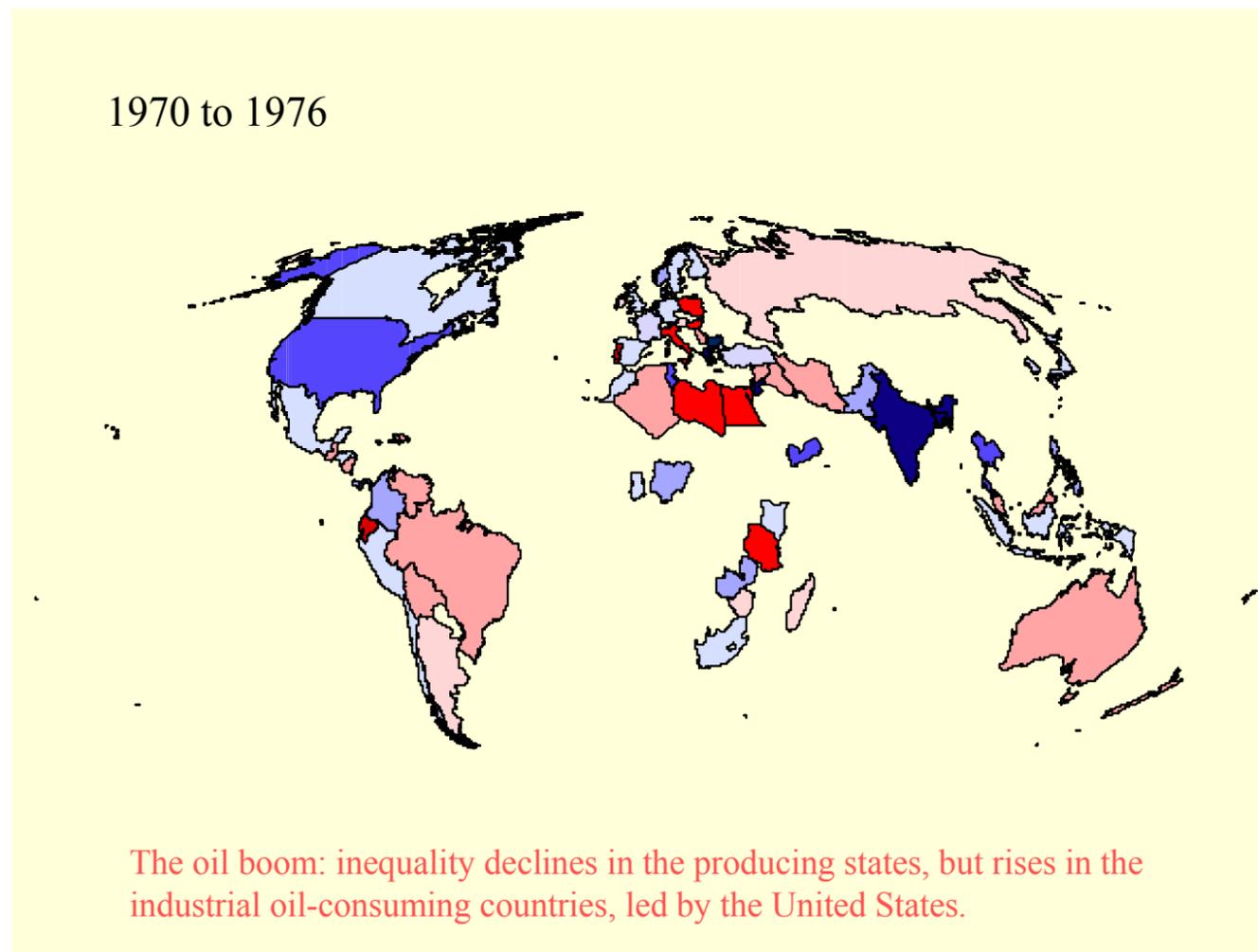
The Scale

Brown: Very large decreases in inequality; more than 8 percent per year.

Red Moderate decreases in inequality.

Pink: Slight Decreases.

Light Blue: No Change or Slight increases

Medium Blue: Large Increases -- Greater than 3 percent per year.

Dark Blue: Very Large Increases -- Greater than 20 percent per year. h

Source: Galbraith 2007

Figure 15b. Changes in industrial pay inequality, UTIP-UNIDO data set, 1981-1987

1981 to 1987

… the Age of Debt

Note the exceptions to rising inequality are mainly India and China,
neither affected by the debt crisis…
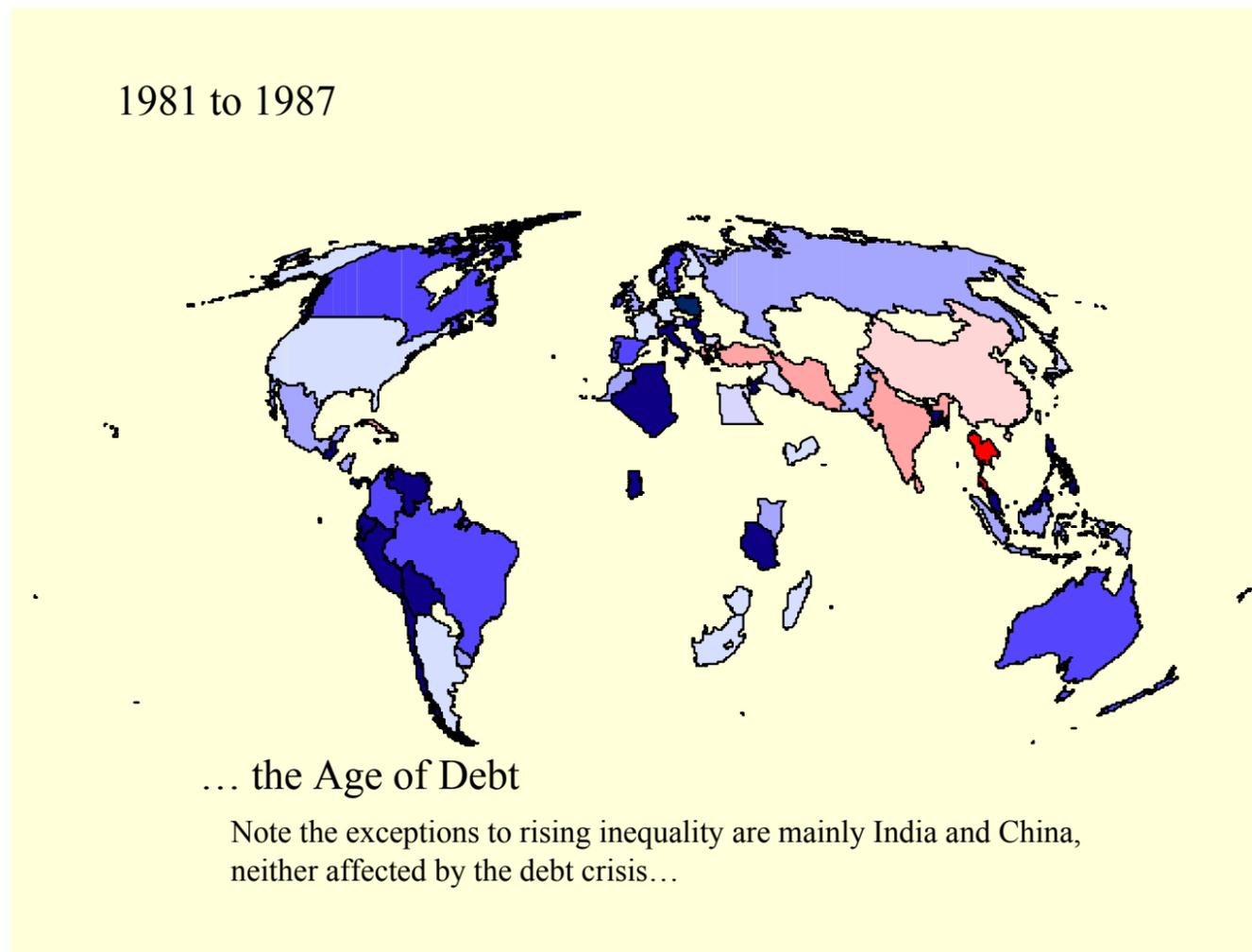
Source: Galbraith 2007

Figure 15c. Changes in industrial pay inequality, UTIP-UNIDO data set, 1988-1994.

1988 to 1994

The age of globalization…

Now the largest increases in inequality in are the post-communist states;
an exception is in booming Southeast Asia, before 1997…
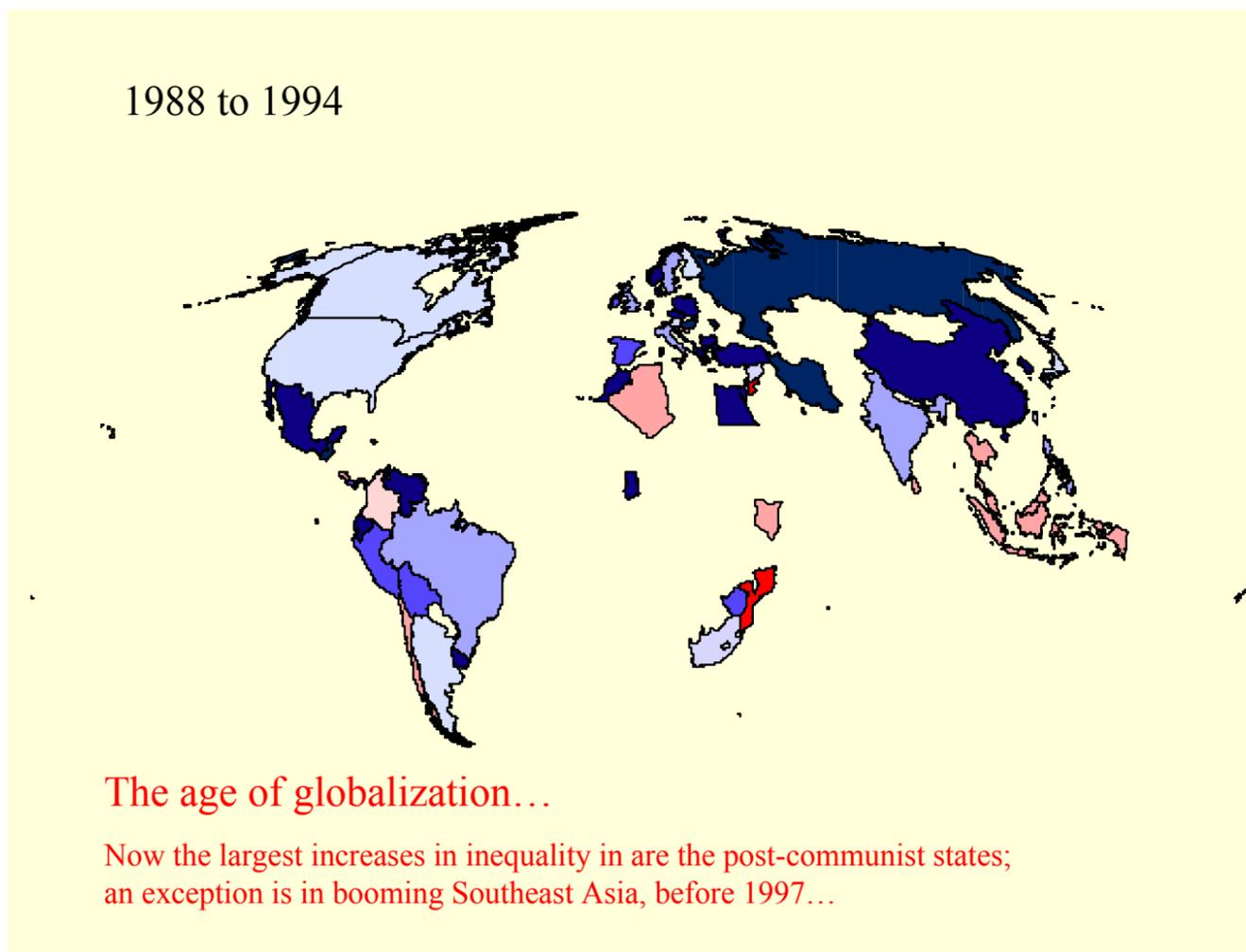
Source: Galbraith 2007

Appendix. Categorizing Structural Change

The work of Kum (2008) suggests the possibility of using changing shares of employment in agriculture, manufacturing and services as an index of structural change in the economy. However, obstacles in both conceptualization and data foreclosed the possibility of placing such an analysis at the foundation of the present paper. In the first place, comprehensive and comparable data on employment shares by major sector were found for only 42 countries, not including China or the Russian Federation. Second, within these countries, measures of change in the employment shares of agriculture, manufacturing and services were not strongly correlated: countries with the largest changes in (say) the agricultural sector did not necessarily also have the largest changes in the other two. It seemed therefore unpromising to define a general category of "structural change" without specifying whether one was referring to the transition out of agriculture or that from manufacturing to services.

Having said that, Kum's work does bring to mind some useful generalizations. Figure Four demonstrated that the share of agriculture predicts very well the inequality in the structure of manufacturing pay; the correlation coefficient is 0.79. Figure A1 shows that a similar relationship holds for the share of manufacturing. Countries with larger manufacturing shares tend to have lower inequality. The correlation coefficient between the average manufacturing share and manufacturing pay inequality is -0.64; that between average share of employment in services and manufacturing pay inequality is a similar -0.66, though the visual relationship appears to be considerably less linear in that case.

Figure A1 about here.

It is interesting that the heavily-industrialized countries of eastern Europe, such as the Czech Republic, Slovakia and Hungary (in a data interval that spans the collapse of the Iron Curtain) do not appear to be off the line. They have low dispersions in manufacturing pay that appear to be commensurate with their very high shares of manufacturing employment. It is, rather, the social democracies of Northern Europe (and, interestingly, the United States as well as Canada) which have inequality scores noticeably lower than one might otherwise expect from their manufacturing shares.

It is worth noting that the *standard deviation* of the inequality measure – the UTIP-UNIDO Theil statistic -- is significantly correlated with the *average share* of all three major sectors: positively (0.58) in the case of agriculture and negatively in the cases of both manufacturing (-0.41) and services (-0.53). Thus, the higher the agricultural share on average, the more volatile pay inequality in manufacturing. But the higher the shares of either manufacturing or services, the less volatile inequality is likely to be. This is certainly compatible with two features of the argument in the spirit of Kuznets offered here: first that the major transition in economic development is out of agriculture, and second that those countries with high employment shares in agriculture remain disproportionately vulnerable to external shocks originating in world commodity markets and affecting diverse aspects of their internal distributions of earnings and income.

These observations trigger a final thought. If a single measure of structural change is needed, encapsulating both changes in employment share and in the intersectoral terms of trade, perhaps that measure might best be taken from the measure of inequality itself. This notion can be summarized in a final figure, taken from Kum and presented here as Figure A2. The figure shows the mean and standard deviations of the UTIP-UNIDO Theil measures of inequality in pay, ranked by standard deviation. The figure plainly suggests the existence of three groups of countries: a high-change group, on the right, represented here by Thailand, Ireland, Venezuela, Indonesia and Peru; a low-change group, on the left, represented by a selection of North European and North American countries, and a mid-range group represented by Spain, Korea, Italy, Hong Kong, Mexico, Korea and Poland, among others. The first group (except for Ireland) is comprised of developing countries with specialized economies highly vulnerable to external shocks. The second is comprised of advanced countries with hard currencies, and strong welfare states, having successfully completed the developmental transition and largely buffered from external calamity. The third comprises the broad range of developing and some developed countries, in the throes of industrial change but not entirely at its mercy.

Whether this classification scheme would hold up with more comprehensive data, and whether it will prove useful for any practical analytical purposes, are matters for further research.

Figure A1. Employment Share in Manufacturing and Inequality in Manufacturing Pay, Selected

Countries, 1979-2003
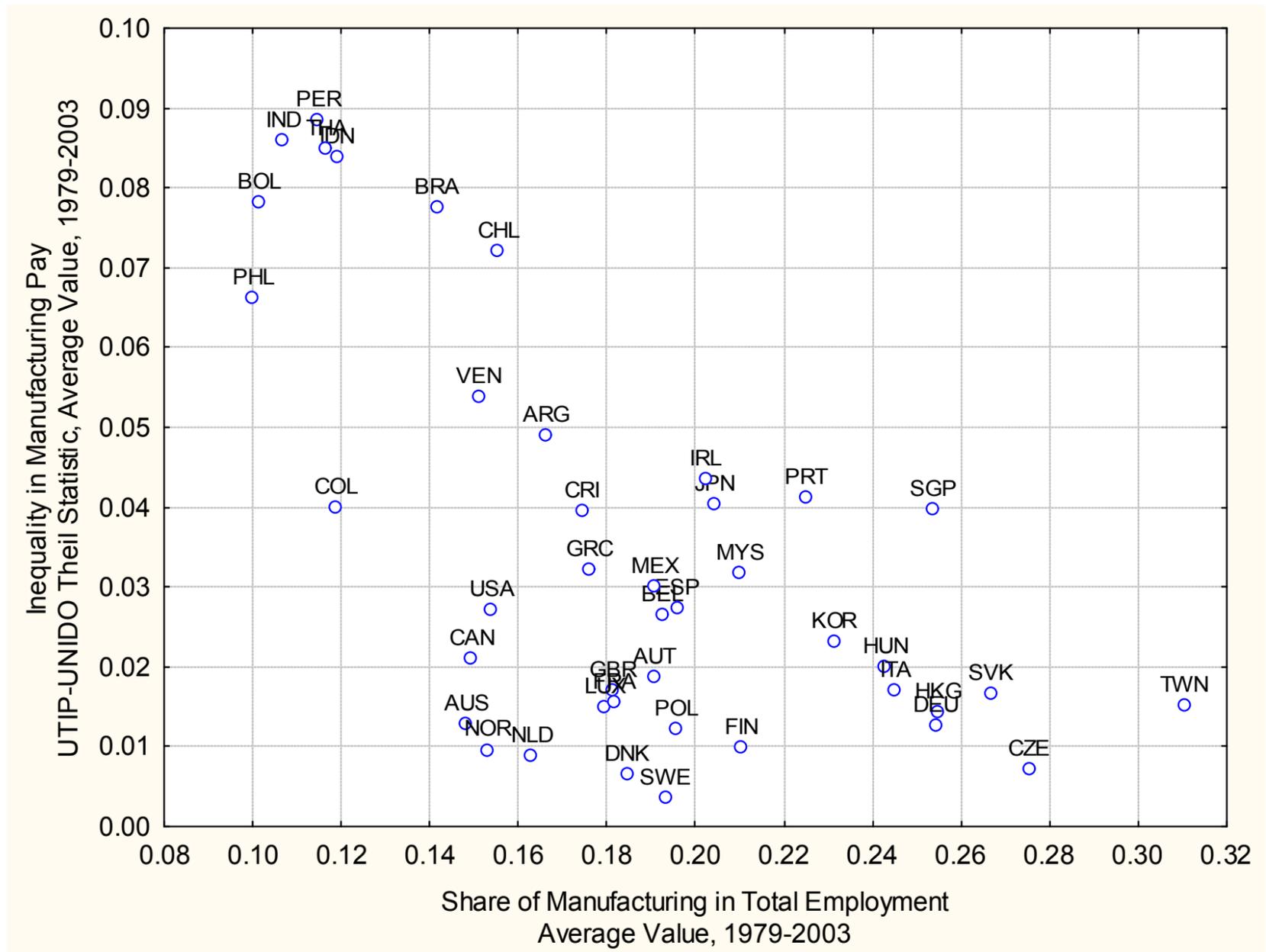
Source: author's calculations.

Figure A2. Mean and standard deviations of inequality measures, selected countries, 1979-2003.

Source: Kum (2008)