  

# CONVERGENCE FOR WHAT?

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## I. Introduction

Much work has been devoted to measuring the extent of regional income convergence (or divergence) in various countries of the world. The outcome of these efforts suggests a mixed picture in which some countries have moved fairly steadily in the modern period toward convergence, others have diverged and several have moved first one direction and then another.[1] In much of this work it is implicitly assumed that achieving inter-regional convergence is a normatively attractive goal. However, it is our basic premise that the normative underpinnings of convergence theory are in a rather sorry state. Indeed one might ask: "Convergence for what?" The purpose of this paper is to clarify and critique the possible normative justifications for convergence. While theory may play a role here, many of the questions are fundamentally empirical in nature.

It seems intuitive that as regions move closer together the national level of inequality should fall considerably. If this were generally the case it would provide a ready normative argument for convergence. However, our paper begins from a basic factual observation: in many empirically relevant situations convergence of regional incomes doesn't imply significant direct declines in national inequality. This proposition is developed in some detail in the second section of the paper. Moreover, it motivates the search for other normative arguments supporting the attractiveness of convergence. In the third section we go on to consider the possibility that convergence reduces national inequality through reducing intra-regional inequality. In this case the study of convergence must be extended to include the underlying processes that bring convergence about. Since convergence theories are generally less than precise about their implications for intra-regional inequality, we make a first effort here to address this import question. The fourth section goes on to a similar exercise for the issue of population movements. Since many convergence theories involve hypotheses about migration, we must attempt to gauge the implications of such movements for inequality. Thus sections two, three and four consider the effects of convergence on national inequality in

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[1] The classic article on regional convergence is Williamson (1965). For a more recent review see Richardson (1979).

terms of the direct reduction of inter-regional differences, the changes in intra-regional inequality and the changing regional population distribution. Each of these effects can be evaluated with respect to standard measures of inequality or social welfare functions. In the fifth section we take up various interpretations of "place prosperity." These are often vague in nature, but most of them are concerned with long-run social efficiency. As such they too can be interpreted as influencing conventional notions of social welfare. At times, however, they can take on a more metaphysical quality. In the sixth section we look at what we suspect has been the most common argument for convergence, the reduction of absolute poverty. Here though we have to be careful not to confuse convergence with growth. We must take account of the losses produced by convergence as well as the gains. In the last section we summarize our results and clarify their implications for the formulation of regional policy.

## II. Disaggregating Inequality

In this and the next section, equity will be defined in terms of the value of symmetric and anonymous measures of inequality, such as the Gini coefficient, the variance of the logarithm of income and so forth. We postpone to section V any normative concepts that involve distinguishing among individuals on the basis of region or origin or other personal characteristics.

Now what we wish to know is how these inequality indexes will change when regional per capita or family incomes converge. In the process of convergence three types of changes can occur, affecting the national inequality index. The most obvious one, and hence the one we label a direct change, results from the changing values of regional mean incomes. However, this is not necessarily the end of the story. In addition to mean changes, a process of regional convergence may be accompanied by both population shifts and changes in intra-regional income inequality. We leave our discussion of these indirect effects for section III and IV. Here we consider only the effects of bringing regional mean incomes closer together.

As suggested above the primary issue here is an impirical one. We wish to determine the extent to which the observed inequality is associated with inter-regional differences. In looking for an answer to this apparently straight forward question the mathematics of inequality indexes can be quite frustrating. It is now well understood that most of these indexes do not lend themselves to simple disaggregation such as we are taught for variance[2] (see Bourguignon). These difficulties in disaggregation can lead to uncomfortable paradoxes such as the situation in which the reduction of inter-regional dispersion increases overall inequality.[3] Under the circumstances there has

[2] See Bourguignon (1979), Shorrocks (1980) and Nugard and Sandstrom (1981), Chapter 9.

[3] See Tam and Persky (1982) for an example where further convergence of the Southern U.S. and the rest of the country will actually increase the Gini coefficient for the nation as a whole.

been considerable confusion in empirical work as to the appropriate way in which to measure the direct contribution of inter-regional differences to inequality. Of course these issues are further complicated by the extent to which any researcher attempts to "control" for factors other than region. Despite these problems we would suggest that for most developed countries and for many underdeveloped ones the direct effects of inter-regional convergence on national inequality will be small.

For developed countries inter-regional differences are just not large enough to generate much inequality. For example, our own work on the North-South difference in the United States suggests that completing the convergence between these two broad regions, wiping out the 8% difference remaining in 1980, would reduce national inequality by less than 1% for all commonly used indexes.[4] If we go back to 1953 when mean non-Southern family income was 37% greater than the mean Southern family income, we find that complete convergence would have reduced overall inequality as measured by the Gini coefficient from .362 to .359 (See Tam and Persky, 1982).

Similar results on inter-regional differences have been found in other developed countries. For example, in Canada a study by Roger Love (1979) showed that equalization of inter-provincial family income in 1970 would have reduced the national Gini coefficient from .418 to .414. The mean log deviation would have fallen from .336 to .330.

We should note here that in addition to the disaggregation approach used above, there have been numerous studies that use analysis of variance with a multi-factor design. In these studies regions are one dimension and must "compete" against other, potentially colinear, sources of variation. Regional variables are often significant in such studies, but they contribute only modestly to the overall variance of the logarithm of income. For example, this approach is used with very fine geographic detail (some 341 regions in the United States) in the work of Eric Hanushek (see Hanushek, 1973). Considering only full time employed white males and stratifying into those who attended college and those who didn't, Hanushek found that only 5-8% of the variance of log of earnings was a between-region effect. These results are consistent with other human capital type models that include regional terms.

When we look at less developed countries the range of inter-regional differences becomes considerably larger than what we observe in the more developed world. As one would expect this implies a large absolute contribution to national inequality. However, in many of these countries, intra-regional inequality is also larger, so the relative contribution of inter-regional differences doesn't rise as much as one might expect. For these countries

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[4] Persky and Tam (1985). The basic methodology for this study is to maintain intra-regional shares, adjusting each household by a scalar for its regions. The resulting national distribution represents the effects of convergence without altering intra-regional distributions. A similar approach was followed by R. Love (1979) for Canada. See discussion in text.

results are particularly sensitive to the techniques of measurement and control used.

In a study of Columbia, Fields and Schultz (1980) found that about 11% of the variance of the logarithm of male earnings could be explained by a twenty-three region disaggregation. Fields, in his survey of income distribution in less developed countries, concludes that "without exception the result emerges that variations within sectors or regions are far more important in accounting for inequality than variation between sectors." He goes on to suggest that regional variables explain 5-15% of national inequality in l.d.c.'s.[5] This is reasonable when other characteristics, such as education are included in the analysis. Thus Fishlow (1972) in a study of Brazil found that regions accounted for 5% of the inequality in that country when using a Theil index and including education, and sector in the decomposition. However, when these additional variables are excluded from the analysis many countries will show a somewhat larger regional effect. For example, data from Mexico for 1977 suggest that an eleven region disaggregation will account for 23% of the variance of logarithms in family income.[6]

The weight of the evidence hardly supports the common normative judgement concerning regional convergence. For most developed countries convergence will have minimal direct effects on national inequality. Among less developed countries there are important cases where inter-regional differences are large enough to account for considerable inequality. These cases are fewer than one might first imagine. And the between region effects do not seem to range over 25% of national inequality. We can contrast these relatively modest results for inter-regional convergence with comparable statistics for international convergence. A recent study by Berry, Bourguignon and Morrison (1983) suggests that wiping out international differences in mean income would reduce the world mean log deviation from 1.04 to 0.29 while the between-nation term of the Theil index accounts for more than two thirds of the world Theil index of 0.92. On a world scale the difference between developed and underdeveloped countries is the prime fact of inequality. However, the analogy at the regional level seems to fail. These observations suggest that for most countries convergence policies can be only weakly justified on the basis of their direct effects on the income distribution. However, it is possible that more indirect casual links exist between such policies and the reduction of intra-regional inequality. It is to this possibility we now turn.

[5] Quotation from Fields (1980), p. 115. The 5-15% estimate is made on p. 251.

[6] Calculations based on regional data for 1977 presented in Diez-Canads and Vera (1982).

## III. Inter-Regional Convergence and Intra-Regional Inequality

We are now clear that in most countries a process of convergence that left both population shares and intra-regional inequality unaffected would not reduce overall inequality by a sizable percentage. But is it possible that inter-regional convergence would produce indirect effects on intra-regional inequality that might be of significance? There seem to be an informal hypothesis in regional studies that this is just the case. In particular many researchers seem to think that regional convergence will tend to reduce intra-regional inequality.

Despite the widespread currency of this hypothesis, none of the theories of regional convergence are specific about what is likely to happen to intra-regional inequality.[7] In the context of the standard neo-classical model of regional convergence we might have reason to expect the convergence process to reduce inequality in the poorer region. In this region wages are presumably rising while returns to capital are falling. This might lead to a presumption of reduced inequality. However, differences between workers and owners of capital do not account in themselves for the bulk of intra-regional inequality. Rather it is inequality in earnings themselves that are most important. If one reworks the neo-classical model to emphasize regional differences in labor skills or education, the result is more persuasive. Thus the lower income region may well reduce its level of inequality because in convergence the demand for unskilled labor rises relative to the demand for more skilled labor. But notice what direction the neo-classical approach suggests in the richer region. Here wages fall as returns to capital rise. Or in a two tier labor model unskilled wages will tend to fall while skilled wages will move up. Thus we might expect that inequality will rise in the richer region as convergence proceeds. Hence in this crude interpretation of the neo-classical model of convergence effects on intra-regional inequality will tend to cancel out.

A similar conclusion is likely to emerge from most non-neo-classical treatments. For example, models that emphasize the role of surplus labor in a region's agricultural sector are likely to eventually show a reduction in the inequality of the poorer region once the absorption of the labor surplus begins in earnest. However, such models often suggest a considerable increase in unskilled labor in richer regions. Indeed the richer region may move to a situation of stagnation that works hardest on its lower income residents and increases inequality. Again the result may be for movements in intra-regional inequality to be off-setting.

[7] There have been several efforts to more formally connect economic development models to theories of income distribution. See Fei, Ranis and Kuo (1979) and Fields (1980). Our approach in the text is closest to that of Fields since it is based on regional/sectoral disaggregations and not sources of income.

We should not conclude that this is a necessary result. The range of theoretical possibilities is considerable given the complexity of the determinants of the personal income distribution. Factors such as government transfers, public education, unionization and property ownership may change in diverse ways in response to convergence having unpredictable effects on intra-regional inequality. While we think the most likely effect of convergence will be off-setting movements in intra-regional inequality, it is important here to consult the empirical record.

The reader should keep in mind that the data on changes in intra-regional inequality reflect a host of forces that interact with any ongoing process of convergence. Thus we must be careful not to overstate a case. There have been several studies of U.S. regions that bear on the issues addressed here.

The results of the earlier work tended to show significant reductions in intra-regional inequality over time. See for example Al-Samarie and Miller (1967). However, more recent studies by Sale (1974) and Smith and Jennings (1976) indicate that there is now a contrary tendency in the more prosperous states. In our opinion data from the 1970's are the most relevant to the theoretical issues being discussed here, since that was a period in which convergence proceeded with only slight natural growth. Little of this data has yet appeared in published work. However, reports from the Consumer Population Survey, suggest that the off-setting pattern discernable in the changes from the 60's has gained strength in the 70's. We would tentatively conclude that convergence, when separated from system wide growth, is likely to improve inequality in poorer regions while exascerbating it in more prosperous areas. On net there is little reason to expect a strong reduction in national equality from these largely offsetting movements.

## IV. Inequality and Population Movements

Even if convergence doesn't work on intra-regional distributions it could be closely associated with regional population movements that affect overall inequality. In many models of convergence, migration from lower income to higher income regions plays an important role. As demonstrated by Robinson, (1976), this type of movement will eventually lead to a reduction of inequality as almost everyone crosses over to the higher income sector. The question is how empirically significant such phenomena are. First we can note that actual migration flows are far more complicated than those predicted by simple neo-classical or dualistic models. Moreover differences in natural increase may work for a long time to slow down effects on population shares. For example, in the United States the convergence of Southern and non-Southern incomes in the post-World War II period has been accompanied by an increase in the Southern population share. In other countries the process of development doesn't seem to be accompanied by large inter-regional population shifts, except for the situation where there is one dominant primary city. In this case the actual shift is likely to work against equality. The primary city is unlikely to rise to more than a third of the national population. In such a situation the increase from say 10% to 30% population concentration in the center will generally increase, not reduce inequality. Only in city-states or quite small countries is a much larger share in the primary city plausible. It is thus quite doubtful that any considerable reduction in inequality can be attributed to population shifts. Again we find little to motivate the common connection between convergence and gains in national equity. This pushes us into an even more speculative activity in the next section. That is the consideration of social welfare functions that involve information beyond just a person's income.

## V. Place Prosperity Again

There is a long standing debate in regional economics concerning the relative importance of "place prosperity" and "people prosperity." Up to this point we have clearly viewed the welfare issues in terms of people prosperity. However, there is a recurring normative argument for introducing group mean incomes into social welfare functions.[8] Often these arguments have been based on a compensatory calculus. For example, many would agree that we should attach special importance to the mean income of black families in light of the discrimination to which they have been exposed. While not explicit, this approach may also implicitly assume that much of the intra-group inequality with race groups, sex groups or geographic areas is in some vague sense "natural." The poor are always with us in this view, but there is something wrong if they are disproportionately black, female or Southern. Put in a more positive light, the income distribution lottery should not differ for an individual based on "irrelevant" personal characteristics such as race, sex or region.

Now it is clear that this type of normative position applied to regions would necessarily place a high value on inter-regional convergence irrespective of its effects on overall inequality. The question is whether a convincing case can be made for such an emphasis on regional mean incomes.

In many countries there is a historical record of uneasy economic and political relations among regions. Often there is one region, the metropolis, that is perceived from the other more peripheral regions as an exploiter. In Great Britain the historical friction between England and her reluctant junior partners falls into this category, while in the United States many Southerners have considered their region as a colonial dependency of the North. In some cases the national fabric itself is insufficient to repress the regional conflict and we observe the disintegration of the state as in Pakistan. Of course these regional differences take on a greater meaning if underscored by ethnic or religious conflicts.

In each of these cases and in a score of other countries a legitimate argument can be made that one region's economic development was hampered, even severely hampered, by perverse economic institutions. If nothing else, the less developed region lacked the ability to set its own trade policy. Of course, in all these cases it would be virtually impossible to make even a crude estimate of the relative importance of this dependency.

[8] See for example Thurow (1978).

Our new view of this matter is that these types of issues should be primarily treated not as questions of equity, but rather as issues in efficiency. The fundamental argument here is that this or that region is capable of a higher level of production. If that can be demonstrted then surely it should be a matter of national policy to achieve that gain. However, it seems difficult to justify the direct inclusion of regional identity in a social welfare function or an inequality index.

Of course it is no easy matter in any given situation to determine whether policies to promote regional convergence will be advancing national efficiency. As Richardson has suggested there is often a long-run efficiency argument for many regional programs that seem redistributory in the short run.[9] Nevertheless, it would seem that no easy generalities are possible. Each case must be judged on its merits. In analyzing the historical record or projecting policy the relation between convergence and efficiency must be established and can hardly be taken for granted.

## VI. Absolute Poverty

Many researchers are more interested in the lower tail of the income distribution than in the upper tail. As such their concern with regional convergence is not with inclusive indexes of inequality, but rather with absolute proverty. Does convergence do better with respect to absolute proverty than with respect to relative inequality? There are many studies of underdeveloped and developed countries that link growth to the reduction of absolute poverty. And there have been several cross-regional models that establish a similar result.[10] The most important effect of convergence on absolute poverty is probably through its influence on regional growth rates. Here there are two issues to consider. If the convergence process represents an efficiency gain the national system as a whole is growing faster than it would in the absence of convergence. If there is an efficiency loss associated with convergence then the system is growing more slowly. This could work to keep absolute poverty higher than it otherwise would be.

Apart from the effect on national growth rates, convergence necessarily implies an improvement in the less developed regions relative to the more developed regions. Since the former are absolutely poorer, this effect would tend to work in favor of reducing absolute poverty. Obviously convergence will have a stronger effect on absolute poverty if the lower income regions have a high share of the impoverished. If, however, the "poverty line" is high enough

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9 Richardson (1979) pp. 180-81. Richardson goes on to suggest that the real problem is to make sure that regional development policies promote intra-regional equity.

10 For a review of the development literature see Fields (1980) Chapter 5. The cross-regional models are well characterized by the early work of Thurow (1969).

to include a large number of those in the richer regions then in the process of convergence increases in this number will work to offset reduction in the poor regions.

As an empirical matter how much of a reduction in absolute poverty can be expected from convergence? With respect to inequality the effect of convergence was relatively small either because the between term was small or because the within term was large. In the case of absolute poverty a small between term will still mean little overall effect. However, where the between term is large, convergence may well make an appreciable reduction in absolute poverty. In this case the large within term has little bearing on the matter as long as convergence pulls a considerable share of the population through the absolute poverty point.

In light of this discussion it is not surprising that regional convergence in the United States has contributed little to the reduction of absolute poverty. In the post World War II period we know that the distance between regions has been small. Thus our expectation is that complete convergence would have only a small effect on absolute poverty. Again take the case of the South and the rest of the country in 1953. In that year there were about 8 million families in the nation with incomes less than $2,000. Of these 4 million were in the South and 4 million were in the non-South. We again let these two broad regions converge, with no growth in the national mean and holding the income shares within each region constant. The upward movement of the South would have brought 786,000 families out of poverty, while the downward movement of the rest of the country would put 423,000 families into poverty. Thus on net, complete convergence in 1953 would have reduced the number of families in poverty by only 4½%.

Of course we recognize that in countries with greater inter-regional income differentials absolute poverty is likely to be a good deal more responsive to convergence. Nevertheless, each case should be carefully analyzed. Convergence is probably an inefficient mechanism to deal with absolute poverty. So much of the inter-regional redistribution accrues to the non-poor, it seems difficult to defend this approach. Only in the presence of particularly rigid political constraints would a convergence strategy be justifiable.

## VII. Conclusions

For a relatively short paper we have covered considerable ground. We hardly do justice to the subtlety of many of the topics and the range of possibilities. The theoretical formulations considered here are only a few among many alternatives. This is an area rich in potential development. But we shouldn't be too overawed by these opportunities. Without discouraging such future theoretical efforts, we clearly see the major questions as empirical. And in each case considered, the empirical range of reality suggests only a limited contribution that convergence can make to the reduction of national inequality. Converging regional means add only modestly to overall equality, convergence promotes off-setting effects on intra-regional inequality, and population movements that accompany convergence are hardly significant enough to improve equity. While for each of these there may be countries that prove exceptions, we strongly suspect that they will be exceptions that prove the rule.

None of this is meant to argue against programs of regional development that can be justified on efficiency grounds as making a contribution to national growth. Such initiatives don't require a normative defense in terms of interregional disparities. However, when such a defense is mounted it is likely to be imperfect. The basic conclusion is that regional convergence is a poor approach to reducing inequality. Equity is better served by programs that directly address the distribution of income.

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