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Understanding the Great Changes: A Comment

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The Great Change at the core of Ned Phelps's essay is the reversal of the relative performance of continental Europe and the United States between, on the one hand, the period from the late 1950's into the 1970's and, on the other, the period since about 1990.

The earlier period saw the productivity slowdown in the United States with relatively high unemployment. In the same period, the U.S. ran a current account surplus and was consequently a capital exporter. For Europe this was the period of the "economic miracle" with rapid productivity growth and low unemployment accompanied by current account deficits financed by capital imports.

In the later period, the roles have been dramatically exchanged. Productivity has increased rapidly in the U.S. and unemployment has been lower than in continental Europe. At the same time, current account deficits have grown to enormous magnitude sucking in capital from all over the rest of the world. Europe, in contrast, is widely seen as in the grip of "eurosclerosis" with productivity increases and growth lagging, high unemployment, current account surpluses and capital exports.

Phelps provides a theoretical explanation of why rapid productivity growth, good employment performance, and current account deficits tend to go together. There are two strands to it. One is an application of Phelps's well-known theory of the firm's offer of employment as an investment decision. In the present context, it explains why an increase in the rate of productivity growth relative to the world interest rate raises the demand price for labor and thus employment.

The second concerns the relationship between the wealth of residents and the value of productive assets in a country or region. The speed-up in productivity in one region causes it to invest more than it saves. This drives up the world interest rate and causes other regions to do the opposite. In the net creditor regions, there is less productive capacity than would have been the case had all domestic wealth been invested internally. Labor productivity and real wages are correspondingly lower and so is employment.

This is a coherent story which certainly aids our understanding of the Great Change. I have some reservations, however, concerning the discussion of the variable that drives the model – the rate of productivity growth. For the most productive economy, it is treated as exogenous and for the laggard as a matter of the rate at which "best practices" are copied from the leader. During the US productivity slowdown, Europe seemed to be "catching up" due to rapid transfer of "best practices." Subsequently, the productivity gap has been growing as technological progress in the US rose considerably faster than the rate at which "best practice" was being imitated in continental Europe.

The conceptual frame for all of this is neoclassical growth accounting which attributes some 40 percent of output growth to additional inputs of labor and capital and leaves the rest as an unexplained "Solow-residual," habitually referred to as

"technological progress." As has often been remarked, however, this is but a label for our ignorance.

An alternative – and I believe more useful – way to think about the relationship between growth and productivity stems from the older classical theory which focuses on Adam Smith's "division of labor." We may think of it also as a theory of what is behind the Solow residual. From this perspective, however, the theoretical focus is on the innovations which increase the functional differentiation of the agents and artifacts engaged in production.[1] At each step the increasing specialization exploits new economies of scale and these economies are reflected in the aggregate measures of the productivity of labor and of capital. Technological changes are secondary phenomena in this conception, incidental to the increasing division of labor. Just as the specific tasks carried out by agents have to change, so also do the functions of machines and other artifacts engaged in production have to be adapted as the articulation of the division of labor proceeds.

As functions are more and more differentiated, the network of agents and artifacts cooperating in the production of any one good – or in the provisioning of any one consumer – becomes more complex as it accumulates more nodes. In general it also extends further in space and may do so also in temporal duration. Consider it from the standpoint of the ultimate consumer. A "representative European" of a thousand year's ago would be a peasant serf in a village someplace. The people who contributed 99% (say) of the value added in everything he consumed would all be close to him in geographical and thus in social space: he himself, his family, the members of his village ... and hardly anyone else. A representative European today is an urban dweller who *every day* directly or indirectly draws on the value added of innumerable agents and artifacts scattered all over the globe. To take a concrete example: The *Independent* some years ago set a couple of its reporters to track down how a pair of jeans, sold in London, had been manufactured. They found, as I recall, that facilities in 13 countries had been directly involved and that the materials had been transported a combined distance equaling some six times around the world at the equator. The inquiry was not pressed beyond that point but it is easily realized how it would mushroom in all directions if one tried to track down the production of the sewing machines used in the production and the ships and trucks used in the transportation of the jeans.

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[1]For a fuller exposition, cf., e.g. Leijonhufvud, "Capitalism and the Factory System," in Richard Langlois, ed., **Economics as a Process: Essays in the New Institutional Economics**, Cambridge: Cambridge University Press, 1986 and "The Individual, the Market, and the Industrial Division of Labor," in Carlo Mongardini, ed., **L'individuo e il mercato,** Rome: Bulzoni editore, 1995.

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Globalization has been in progress since Columbus and increasing division of labor in the theretofore "known world" since long before the discovery of the Americas. We are helped not a bit to understand this process by the theory which attributes growth, on the one hand, to increases in the inputs of labor and capital in a constant returns to scale production function and, on the other, to technological change shifting this function. It gives us no insight into why the structure of production should change and the patterns of cooperation constantly evolve in the growth process or, for that matter, into why growth might often strain the "social fabric" in ways that make large segments of a society oppose it.

The notion of a "best practice" to be copied by laggards also seems somewhat doubtful to me from this perspective. The reorganization of production which brings increased productivity and thus growth is seldom a matter of copying practices from elsewhere. It requires solving a complex of problems that are quite specific to their time and place and involves restructuring relationships with suppliers, with employees and with customers. This is why invention is not by itself innovation. If "best practice" could be defined independently of context, central planning would have worked a good deal better than it ever did.

For the last twelve years, I have spent several months a year at the University of Trento. Fifty years ago, the province of Trentino was very poor – historically one of the regions from which Italians went abroad in great numbers. Today, it is prosperous. The transformation of its agriculture has been an important part of the story. Traditionally, the farms were small and producing staples for their own needs and for local markets. The "economic miracle" of this sector entailed specialization in high-value crops for distant markets organized by farmers' cooperatives which store the crops, do the marketing, and monitor the quality. A wide mountain valley, Val di Non, is covered by square miles of apple trees and its brand-named apples sell at a premium all over Europe. The wine industry is bigger still and all the wines are now long since D.O.C. Surrounding these industries all sorts of new occupations in marketing and among suppliers have come into being. Naturally, the people in these organizations keep abreast of developments elsewhere and are quick to adapt new ideas to local conditions. But it is misleading to think of them as looking to the currently most rapidly growing economy for "best practices" to imitate. One should not make too much of a single and particular example. But this local "economic miracle" is nonetheless a small counterexample to Phelps's generalization that this "...rapid injection of new technologies .... was so extensive that it could not have been primarily the result of one or more original innovations on the Continent. It largely depended on *technology transfer* from overseas."

"The Division of Labor is Limited by the Extent of the Market."[2] Improving productivity in the face of stagnant demand is an uphill battle. When the market is growing, the opportunities for further articulating the division of labor virtually "present themselves" to the entrepreneur. So growth of demand begets improved productivity. Although Phelps repeatedly marks his distance from fashionable supply-sider positions, it is nonetheless the case that the line of causation stressed in his essay operates altogether on the supply side: technological opportunity, when grasped, improves productivity which leads to increased output and (one infers) supply creates its own demand.

It will not do, however, simply to oppose a demand-side hypothesis to a supply-side one. The division-of-labor theory of growth is one of reciprocal causation. A growing market begets increased productivity which begets higher real incomes which begets a still larger market. Allyn Young[3], who was the foremost proponent of this theory in the 20th century, considered the use of supply and demand analysis in growth theory to be inappropriate for this reason. The growth of firms is seldom just a passive adaptation to increased demand. Growing a market means expanding a network of distributors and ultimate customers and this requires a number of investment decisions quite analogous to Phelps's employment decision.

I should also grant that, when a new general purpose technology begins to mature, as did the information technologies in the 1990's, there is good reason to give primacy to the line of causation that starts from exogenous technological opportunities as does Phelps in this essay. But a balanced perspective is lost when demand is completely neglected (and it is never mentioned here). Surely, the strength of the boom in the U.S. is due in no small measure to the American consumer (and his government) spending "like there's no tomorrow"! American households are very close to consuming all of U.S. GNP. Phelps's model explains why investment will run ahead of saving in the regions with highest productivity growth. But when the realization dawns on the consumer that there is indeed a tomorrow, American growth can be expected to weaken.

The point goes a bit further. The reciprocal causation between increased division of labor, on the one hand, and the growing extent of the market, on the other, will give rise to a cumulative growth process. In a largely closed system, this process

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[2]Good examples are often trivial. I remember being stuck in Los Angeles traffic beside a sizeable tank truck engaged in the specialized and apparently somewhat capital intensive business of collecting the used cooking oil from restaurants. In smaller towns such trucks are not likely to be encountered.

[3]The *locus classicus* is Allyn A. Young, "Increasing Returns and Economic Progress," **Economic Journal**, 38, 1928. The most famous of Young's students was Nicholas Kaldor and we now know more about Young's views on economic growth thanks to Roger J. Sandlilands, ed., "Nicholas Kaldor's Notes on Allyn Young's LSE Lectures, 1927-29," **Journal of Economic Studies**, 17: 3-4, 1990.

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can be sustained for a considerable time if not derailed, for example, by malinvestments on a large scale, or by lack of investment finance, or by policies that constrain aggregate demand. While it lasts, the cumulative process will give every impression that the economy in question is "dynamic." But a loss of markets or restrictive macro-policies can easily put an end to the virtuous circle and leave the same economy looking stagnant. Over the last several years, the U.S. boom has been sustained not just by the consumers and by the fiscal deficits of the government, but also by a monetary policy that has flooded the world with dollar-denominated liquidity. It is a unique historical conjuncture that has allowed this to happen so far without significant inflation. Obviously, no European country has been in a comparable situation.

Phelps contrasts the "dynamism" of the United States (and China) to the stagnant continental Europe and lays the blame on Europe's legacy of "corporatist" institutions. Anyone who has spent a substantial amount of time in Europe will have strong impressions of numerous institutional inefficiencies and obstacles. Nonetheless, we should retain some skepticism about these institutional hypotheses. It stands to reason that these institutional problems matter. But the truth is that we have no reliable measures of how much they matter. And it is well to remember also that during the U.S. productivity slowdown, many economists speculated on the possible institutional advantages of continental Europe.

Moreover, it is not obvious what the appropriate geographical unit is for these comparisons. America looks more dynamic in Silicon Valley than in Detroit. But the institutions are the same. Similarly, some regions of Europe are doing better than others. In drawing his comparisons between the United States and Europe, Phelps sets aside the Scandinavian countries which happen to have done rather well in the last fifteen years.[4] But the picture on the continent is not uniform either. Fifteen years have not sufficed to fully assimilate the old East Germany, but German exports are back in gear showing, I think, that the pessimism with which Germany has been discussed in the United States has been exaggerated. Some of Italy's "industrial districts" of small and medium size manufacturing firms have been studied as successful examples of regional specialization where, as in the case of Trentino agriculture mentioned above, economies of scale are collectively realized. Some areas of the country have done well but Italy as a whole now has serious problems. The geographical unit chosen for analysis matters.

[4]This is consistent with his insistence that it is the corporatist institutions of the major continental countries rather than their social welfare programs that inhibit growth. But it is also true that Swedish competitiveness was restored by its very hefty devaluation almost fifteen years ago and that Sweden has stayed out of the euro-zone because of the widespread realization that it had been saved by exercising this option. Italy today is stuck with a strong euro, likely to get stronger still.

The theory which Phelps has fashioned for his comparisons of post-World War II U.S. and Europe does not really fit the other two cases he considers, namely, Eastern Europe and China. In the former case, which I see as the core of his analysis, rapid productivity growth, low unemployment and current account deficits are shown to go together in one region with the slow productivity, relatively high unemployment and surpluses in the other. The growth rates of Eastern Europe while less than spectacular have still been considerably higher than in the continental core. However, labor force participation rates remain abysmally low and unemployment terribly high. It is no doubt true that the transition to functioning capitalist institutions and the adaptation of the population to new institutions are both incomplete. But it is also the case that the "virtuous circle" – of growing markets furthering more specialization, realizing new economies of scale, producing higher real incomes and thus expanding markets further – has not really taken hold. The weak link in this loop of causation is domestic demand for domestic output. Markets are not large enough to support a highly articulated division of labor.

In the case of China, it is the fantastically high rate of saving and the equally amazing current account surplus that are out of line with the model that Phelps has applied to Europe and the United States. Given this savings rate, the aggregate growth of the Chinese economy is not so surprising; in fact, as several observers have pointed out, it raises questions about the overall productivity of investments. "The challenge now," as Phelps points out, "is to improve radically ... the quality of financiership that serves (or tries) to separate worthy investments from unworthy ones." Progress in this area has been slow. The savings of ordinary Chinese citizens, who do not have the entrepreneurial option of channeling them directly into investments, are piling up in the banking system. On the other side of the banks' balance sheet, however, looms a mass of non-performing loans. The central government has repeatedly used large portions of its fiscal surplus to "clean up" the mess in the banking system, but the problem insists on growing back. Behind it lurks the large remains of the old state industries and the business interests of local governments – powerful borrowers who can neither be refused and nor be forced to repay. The performance of its export sectors is stupendous but all is not well in China.

Phelps offers a tentative rationale for the high rate of saving and the export of capital, namely, that the Chinese consumer has yet to get used to all the new consumer goods and that the excess saving is stored in overseas assets until it can be profitably invested (or consumed). This strikes me as too clever. Isn't it more likely that the ordinary Chinese are saving so much because they do not have the traditional number of children to provide for them in their old age and are constrained to put their trust in the banks whether they like it or not? Meanwhile, their government continues an extreme strategy of export-led growth (and investing in dollar assets on which they

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are bound eventually to take a large capital loss) because export demand really is their main dependable growth engine.[5]

To sum up: We are living in a time when a veritable torrent of innovations based on a new general purpose technology is producing very large productivity gains. Phelps is of course right in putting these developments at center stage. But his story needs the complementary perspective of a theory of production that puts much more emphasis on specialization, functional differentiation, and the realization of economies of scale. The complementary perspective is needed, in particular, because it brings into clearer focus the crucial role of demand in the growth process.

[5]I do not understand Phelps's dismissal of the resumed current account surplus in Germany: "...more exports do not translate into growth." Good for China, but not for Germany?