*Do We Have a Typology for the Study of European Industrialization in the XIXth Century?**

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"It is of the highest importance to understand that everything factual is already a theory" Goethe.

1. The Diffusion of Technology and The British Paradigmn

Comparative economic history is predicated upon the assumption that international comparisons might add to or qualify the corpus of generalizations related to Europe's industrial progress from 1789 to 1914.[1] For this purpose the economic history of relatively backward parts of the continent are potentially as illuminating as the history of countries ahead of them in the race towards mass prosperity. Indeed the comprehension of rapid development requires an understanding of retardation. Furthermore, to study the history of a single state is a limited exercise, not simply because all European economies became increasingly open to influences, communicated through foreign trade and factor flows, but because concentration on one country fails to communicate what is unique or general in its progress.[2] Difficulties arise, not in the acceptance

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[1] W.H. Sewell, "*Marc Bloch and the Logic of Comparative History*", *in History and Theory*, 2 (1967); M. Bloch, "Towards a Comparative History of European Societies" in F.C. Lane and J.C. Riemersma (eds.), *Enterprise and Secular Change* (Homewood, 1953).

[2] E.H. Tuma, *Economic History and the Social Sciences: Problems of Methodology* (Berkeley, 1971).

of these commonplace injunctions, but in carrying the subject forward in order to produce a readable, memorable, and debatable economic history of Europe within which increasingly sophisticated national histories might be placed and better understood.

Of course a European frame of reference has been employed for several generations now. In the 'thirties, 'forties, and 'fifties British and American students were introduced to varieties of "continental" experience (usually French and German) and "Europeans" could hardly avoid the First Industrial Revolution. But read today the texts of that period appear to lack structure and seem impossible to assimilate.[3] They parade scholarship country by country, language by language. Their readers are left to impose order, to build bridges across frontiers and to "induct" whatever generalizations they can from the immense variety of national, regional and sectoral histories set down on hundreds of printed pages. In their wisdom the scholars of yesteryear (as well as those who continue to write in this way) leave us with an impression of a European economy that is almost as uniquely local and multifarious as the languages, cultures and peoples of our complex continent.[4]

Shortly after mid-century, when the causes of the wealth of nations emerged to dominate the agenda for economic history, that approach seemed conservative, and historians began to formulate and to use models and typologies in order to make more sense of Europe's modern industrial development. Perhaps the most accessible heuristic device available at that time was to refer

[3] S.B. CLOUGH and C.W. COLE, *Economic History of Europe* (Boston, 1952); J.H. CLAPMAN, *Economic Development of France and Germany* (Cambridge, 1936); H. HEATON, *Economic History of Europe* (New York, 1948); W.O. HENDERSON, *The Industrial Revolution on the Continent: Germany, France and Russia 1800-1914* (London, 1961); W. BOWDEN, M. KARPOVITCH and A.P. USHER, *An Economic History of Europe* (New York, 1937) and L.C. KNOWLES, *Economic Development in the 19th Century: France, Germany, Russia and United States of America* (London, 1932).

[4] It is difficult to discern the questions which these books implicitly raise, or the intentions of their authors except (to quote Clough) "to show the relationship of economic activity to the human drama as it has unfolded through time" or their broad conclusions except (to cite Clapham) "that things got better over time".

continental industrialization to a paradigmn case, the British Industrial Revolution, as it was perceived to have proceeded from the 1750's to the 1840's. On the assumption that Britain's lead could be ascribed to superior industrial technology it followed that the economic history of Europe could be understood as the spread of techniques of production and new forms of industrial and commercial organization from the first industrial nation to more backward economies on the mainland. In this perspective, British methods constituted not merely initial but best practice with almost universal application; diffusion then became a major concept and the central problem for European economic history, at least for the XIXth century, was to explain Britain's early start and the rate at which other economies adopted British ways.[5]

European statesmen, businessmen and other contemporary observers of the economic scene rarely perceived of their national goals in terms of a race to catch up with Britain. Indeed a majority of European travellers to Victorian England expressed grave doubts about the "British way". European historians, while accepting the potential for illumination embodied in the idea of diffusion seldom allowed their accounts of industrialization to be dominated by a model, inspired largely by North American perceptions and experience.[6] And today few economic historians are prepared to accept the notion that for several decades after 1783 there was an observable and optimal path to higher levels of

[5] The classic study is D. LANDES, "Technological Change and Developments in Western Europe 1750-1914" in H.J. HABAKUK and M. POSTAN (eds.), *The Cambridge Economic History of Europe* Vol. VI, Part II (Cambridge, 1966); later published as *The Unbound Prometheus* (Cambridge, 1970). But see also S. LILLEY, "Technological Progress and the Industrial Revolution 1700-1914 in C. CIPOLLA (ed.), *The Fontana Economic History of Europe*, Vol. 3 (London, 1973); J. HUGHES, *Industrialization and Economic History* (New York, 1970) and T. KEMP, *Industrialization in nineteenth century Europe* (London, 1969) and W.W. ROSTOW, *How It All Began: Origins of the Modern Economy* (New York, 1975).

[6] A. MILWARD and S.B. SAUL, *The Economic Development of Continental Europe 1780-1870* and *The Development of the Economies of Continental Europe* (London, 1973 and 1977); P.K. O'BRIEN and C. KEYDER, *Economic Growth in Britain and France 1780-1914* (London, 1978) and M. LEVY-LEBOYER, *Les Banques Europeennes et l'Industrialization Internationale* (Paris, 1964).

industrial output which could be identified with stylized versions of the First Industrial Revolution as outlined by several historians of continental Europe writing in the 'sixties and 'seventies.[7]

For a start, diffusion is now perceived as complex process of creative adaptation rather than a synonym for emulation. The transfer of technology only succeeds if and when a whole matrix of related capacities into which machinery can fit has been built up and is receptive to change.[8] Once in place, new firms and technologies spawn their own problems, solutions and trajectories for future innovation.[9]

Furthermore, recent historical writing has restored traditional perceptions of the First Industrial Revolution as a drawn-out process in which the accelerations of the late XVIIIth century remain visible but are scarcely "discontinuities" let alone "take offs", when measured either in terms of national income or total industrial production.[10] For that period the "new" technology, emerges in modern research, as less novel, diffused slowly and eventually succeeded because it rested upon the prior spread of a market economy throughout the British Empire over several gen-

[7] The conspicuous exception is S. POLLARD, *Peaceful Conquest: The Industrialization of Europe 1760-1970* (Oxford, 1981); But the coup de grace to this particular approach may have been delivered by R. CAMERON's "A New View of European Industrialization" in *Economic History Review*, February, 1985.

[8] L. PASINETTI, *Structural Change and Economic Growth* (Cambridge, 1981); N. ROSENBERG, *Inside the Black Box: Technology and Economics* (Cambridge, 1982), and H. FREUDENBERGER, "Transfer of Technology" *Journal of Economic History*, March, 1977.

[9] For two excellent studies of diffusion at the industry level see D.R. JEREMY, *Transatlantic Industrial Revolution: The Diffusion of Textile Technologies between Britain and America 1790-1830s* (Oxford, 1981) and R. FREMDLING, "The Development of the Iron Industry in Western Europe: A Comparative View on the Adoption of Coke Smelting and Pudling in Belgium, France and Germany in L. JÖRBERG and N. ROSENBERG, (eds.), *Technical Change, Employment and Investment* (Lund, 1982).

[10] N.F.R. CRAFTS, *British Economic Growth during the Industrial Revolution* (Oxford, 1985) and C.K. HARLEY, "British Industrialization before 1841: Evidence of Slower Growth during the Industrial Revolution" in *Journal of Economic History*, June, 1982.

erations before the American War of Independence.[11] If there is a British paradigmn it cannot be encapsulated in breakthroughs in industrial technology over a mere four or five decades after 1783.[12]

Finally, quantitative historical research on several European economies has reinforced the impression of important facets and foundations of Britain's early start which now appear as more or less specific to that well-endowed offshore island.[13] For example, the relatively high level of energy consumed per capita and per worker, obviously reflected abundant and accessible supplies of cheap coal available to the economy.[14] Located at the hub of a rapidly growing Atlantic economy, when water-borne transport was the cheapest way to conduct commerce, a small island was more likely to reap larger gains from oceanic trade than continental powers.[15] That locational advantage was, moreover, safe-guarded and enlarged upon by persistently high levels of public investment

[11] A.E. Musson, *The Growth of British Industry* (London, 1978) and C.H. Lee, "The Industrial Revolution and the Beginnings of Modern Economic Growth" (unpublished paper, Department of Economic History, University of Aberdeen).

[12] Rostow disagrees, see: W.W. Rostow, "The Beginnings of Modern Growth in Europe" in *Journal of Economic History*, September, 1973; N.F.R. Crafts, "Industrial Revolution in Britain and France: Some Thoughts on the Question 'Why Was England First?'", *Economic History Review*, August, 1977; J. Gaski, "The Course of the Industrial Revolution: a Brief Single Factor Argument" in *Jorunal of European Economic History*, Spring, 1973; I. Inkster, "Technology as the Cause of the Industrial Revolution: Some Comments", in *Journal of European Economic History*, Winter, 1983; F. Geary, "The Cause of the Industrial Revolution and Single Factor Arguments: An Assessment" in *Journal of European Economic History*, Spring, 1984.

[13] I. Adelman and C.T. Morris, "Patterns of Industrialization in the Nineteenth and Early Twentieth Centuries", *Research in Economic History*, 5 (1980) and "Institutional Influences on Poverty in the Nineteenth Century: A Quantitative Comparative Study' in *Journal of Economic History*, March, 1983; N.F.R. Crafts, "Patterns of Development in Nineteenth Century Europe" in *Oxford Economic Papers*, 36 (1984); G. Tortella and L. Prados, "The Pattern of Economic Modernization in Southern Europe" (unpublished paper, Department of Economic History, Universidad de Alcala de Henares).

[14] Cheap energy is beginning to reapper as Britain's most significant comparative advantage — see R.N. Adams, *Paradoxical Harvest: Energy, and Explanation in British History, 1870-1914* (Cambridge, 1982) and Cameron's "New View" op. cit. places great emphasis on coal.

[15] A.S. Guha, *An Evolutionary View of Economic Growth* (Oxford, 1981).

in sea power which over the long run lowered transaction costs for British merchants, provided favoured access to imperial and to foreign markets and weakened the economies of their Iberian, Dutch and French rivals.[16] Writing long after Trafalgar (where the Royal Navy finally won the centuries old battle for the Atlantic) and sanctified by an ideology of liberalism, British historians tended to overlook the role of the Royal Navy in securing for British business "disproportionate" shares of world trade, shipping, shipbuilding and commercial services.[17] European historians, whose economies had suffered at the sharp end of British mercantilism, seem less impressed by those harmonies of national interests provided by free trade and the pax-Britannica and do not need to be reminded of the State behind the First Industrial Revolution.[18]

This "neglected" political element certainly finds reflexion in features of Britain's economic growth which distinguish it from most other European economies at comparable stages of development. For example, at per capita income levels of $500 (and in marked contrast to the rest of Europe), British exports were far more dominated by manufactured goods and her major industries found large markets overseas.[19] Britain invested a lower percentage of its national income domestically and far higher shares abroad and in national defence than its European rivals.[20] Again,

[16] P.M. KENNEDY, *The Rise and Fall of British Naval Mastery* (Macmillan, 1983) and I. WALLERSTEIN, *The Modern World System*, Vol. III (New York, forthcoming).

[17] P.K. O'BRIEN, "The Impact of the Revolutionary and Napoleonic Wars, 1793-1815, on the Long Run Growth of the British Economy" (unpublished but forthcoming paper delivered to the Davis Center, Princeton University, 1983).

[18] But see R. DAVIS, *The Rise of the Atlantic Economies* (London, 1973) and P. Leon (ed.), *Histoire economique et sociale du monde* (Paris, 1979).

[19] See footnote 13, especially Crafts, "Patterns of Development"; S. KUZNETS, "Levels and Structure of Foreign Trade" in *Economic Development and Foreign Trade*, 15 (1967) and P. BAIROCH, *Commerce exterieur et developpment économique de l'Europe au XIX^e siecle* (Paris, 1976).

[20] M. EDELSTEIN, *Overseas Investment in the Age of High Imperialism* (1982) and L.E. DAVIS and R. HUTTENBACK, "The Political Economy of British Imperialism" in *Journal of Economic History*, 42, 1982 and their *Mammon and the Pursuit of Empire* (forthcoming).

and compared with its neighbours at similar levels of development, Britain's economy was more urbanized, retained a far lower share of its workforce in agriculture and other forms of primary production and derived a significantly higher share of its GNP from manufacturing industry and construction that the rest of Europe.[21]

To explain familiar (but recently quantified) differences between Britain and the rest of Europe is beyond the bounds of an article, and those contrasts are by no means accounted for in terms of natural resources, a favoured location, or the effective use of naval power to secure "extraordinary" shares of international commerce. Nevertheless they begin to establish the First Industrial Revolution as something of a special and less of a paradigm case for the economic history of Europe.

2. Disaggregation into Regions, Towns and Proto-Industrialization

Industrialization we are repeatedly told was a regional and not a national process. Modern industry certainly did not spread randomly over the map of Europe but "clustered" within defined geographical boundaries.[22] Insights have long been gained by observing the factors and circumstances which prompted industry to locate, grow and decay in some regions rather than others; and in some places before others.[23] Clearly the geographical matrix for the analysis of economic change should be specified in terms of what the historian is trying to explain. For example the rise and decline of regions forms an important component of national economic history. Where and when markets for commodities and factors of production are bounded in space, regional, rather than

[21] See footnote 13 and C. TREBILCOCK, *The Industrialization of the Continental Powers* (London, 1981).

[22] S. POLLARD (ed.), *Region und Industrialisierung* (Gottingen, 1980 with English summaries) N. POUNDS *A Historical Geography of Europe, 1800-1914.*

[23] Historical geography (Cambridge 1985) exemplified by the writings of Pounds has continued to thrive. See N.J.G. POUNDS and W.N. PARKER, *Coal and Steel in Western Europe* (London, 1957); P. LEON et al (eds.), *L'industrialisation en Europe au XIX^e siecle: Cartographie et typologie* (Paris, 1972).

national or multinational economies, constitute obvious units for study. There should be no question that a regional approach is complementary to and not competitive with national or even continental perspectives.[24]

Furthermore, research still proceeding into Europe's regions of proto-industrialization over three centuries before 1800 promises to create the factual basis for a typology which whould help historians explain the long term evolution of major branches of manufacturing (particularly textiles, but also leather goods, finished metal wares, clocks and watches and furniture) into mechanized factory industries over the XIXth century.[25] Although there appears to be no need to construct a single model to account for all or even a majority of the cases that historians have uncovered of tendencies for industries to concentrate geographically, to specialize and to engage in long distance trade.[26]

Obviously the set of initial conditions which contributed to the capacity and willingness of local workers (males, females and children) to turn from dependence upon agriculture to become involved (either part or full-time) in manufacturing for national or international markets differed from region to region. At present the lengthy list of conditions specified by historians of early modern Europe includes: infertile land, inheritance systems, size of farms, communal rights to land, the cost of alternative supplies of food, the productivity of local agriculture, regional specialization and competition within agriculture etc.[27] Populations living close

[24] Yet they are presented as alternative and more realistic approaches to industrial history: see S. POLLARD, "Industrialization and the European Economy", *Economic History Review*, November, 1973.

[25] F. MENDELS, "Proto-Industrialization: Theory and Reality". General Report "A" Themes, Eighth International Economic History Congress, Budapest, 1982; P. KRIEDTE, H. MEDICK and J. SCHLUMBOHN, *Industrialization before Industrialization* (Cambridge, 1981).

[26] D.C. COLEMAN, "Proto-Industrialization: A Concept Too Many", *Economic History Review*, August, 1983.

[27] MENDELS, "Proto-Industrialization Theory and Reality" op. cit., and M. BERG, P. HUDSON and M. SONENSCHER (eds.), *Manufacture in Town and Country before the Factory* (Cambridge, 1983).

to subsistence levels, on relatively small holdings and afflicted by high densities of labour to cultivable land were usually among the first to embrace opportunities to supplement family incomes provided by industrial work, but so did landless and seasonally underemployed labourers from richer and more commercialized agricultural areas.[28]

Elastic supplies of labour within agrarian economies are rarely sufficient to account for the emergence and subsequent growth of regions of industrial concentration. Mercantile organization and capital were also required and both factors usually emanated from towns. Connexions between towns and the long term growth of industry are often mentioned but rarely analysed or measured in either urban or regional history. Historians have long been aware that Europe's towns housed the majority of educated and innovative people; that productive knowledge was more readily diffused across economies where populations were spatially concentrated into "networks" or "hierarchies" of cities and towns, that towns improved the efficiency of labour markets; promoted the commercialization of agriculture; replaced barter with monetary transactions; and that several of Europe's larger cities established imperial outposts overseas which fostered international trade and specialization.[29]

All these manifold connexions and more can be traced in the burgeoning history of towns.[30]. But with some exceptions urban historians seem not to be particularly concerned with the links between their own spatially focussed research and the national economies of which towns formed an integral and possibly very

[28] W. PARKER and E.L. JONES (eds.), *European Peasants and their Markets* (Princeton, 1975) and G.L. GULLICKSON, "Agriculture and Cottage Industry: Redefining the Causes of Proto-industrialization" in *Journal of Economic History*, December, 1983.

[29] D. FRASER and A. STUCLIFFE (eds.), *The Pursuit of Urban History* (London, 1983).

[30] J. MEYER et al, *Etudes sur les villes en Europe occidentale (milieu du XVII^e siecle a la veille de la Revolution Francaise)* (Tomes I and II, Paris, 1983); J DE VRIES, *European Urbanization 1500-1800* (London, 1983).

important part.[31] Indeed one eminent Dutch historian perceives of nations and economies as mere statistical entities and suggests "Middleton and the Industrial Revolution" ought to be substituted by "Middleton in the Industrial Revolution". It is not, he argues, "the micro framework that needs to be adjusted but the macro framework".[32] Under this kind of research programme economic historians are unlikely to find much of relevance in new urban history.

Returning to the long term development of industrial regions from 1500 to 1800, supplies of local labour for proto-manufacturing increased with fragmentation of farms, followed upon enclosure and other institutional changes restricting access to land, and emanated above all from population growth, often stimulated (via earlier marriages) by the availability of alternative sources of income outside agriculture. Labour productivity in these industries improved with specialization and refinements to the division of labour. But "acquired comparative advantages", based upon product differentiation and work experience, could easily be lost through changes in fashion and the rise of new industrial areas endowed with supplies of equally productive but cheaper labour. Europe's industrial history displays no linear progression from proto to factory forms of organization.[33] De-industrialization was common, but despite the laudable determination of recent research to pose well specified questions related to long term development we still lack explanations for success and failure among Europe's proto-industrial regions. Their historians

[31] One exception is P. Bairoch, "Urbanisation and economic development in the western world: some provisional conclusions of an empirical study" in H. Schmal (ed.), *Patterns of European Urbanization since 1500* (London, 1981).

[32] P. Kooy, "Urbanization. What's in a name" in Schmal (ed.), *Patterns of European Urbanization*, op. cit.

[33] Summaries of the literature have been offered by P. Hudson, "Proto-industrialization: the case of the West Riding Wool Textile Industry 1700-1830" in Berg et al (eds.), *Manufacture in Town and Country*, op. cit. and E. Almquist, "Pre-Famine Ireland and the Theory of Euroepan Proto-industrialization: Evidence from the 1841 Census *Journal of Economic History*, Sept 1979 and a special issue of the *Scandinavian Economic Review XXX* (1982).

appreciate they must analyse conditions for growth or decline from the "inside" of these proto industries as a precondition for understanding the transformation into factory based systems of production. Textbook accounts which simply point to losses of comparative advantages to newer, more vigorous or better located regions may be tautological and seem to place undue weight on exogeneous forces — such as that all too familiar "catchall", the shift in locus of world trade from the Mediterranean to the Atlantic — which will certainly not account for the rise, growth and retardation of industrial regions within North-Western Europe or the Baltic.[34]

By the second half of the XVIIIth century the map of Europe can be coloured into fairly well defined regions of proto-industrialization, specialized upon the production of textiles, clothing, boots and shoes, clocks and watches, tools, hand weapons, furniture, household utensils and pottery. Several of these regions had survived and adapted to competition over rather long periods of time. Others had emerged more recently as loci of concentrated production. All these industries faced limits to rises in labour productivity through further refinements to the division of labour or from organizational improvements to the putting-out system. And, in accounting for a fairly ubiquitous tendency for average costs to move upwards over the long run, industrial historians refer to such factors as the proclivity of household units of production to disperse, to problems of quality control, to embezzlement of raw materials, and to backward bending supply curves for rural labour.[35]

By the XIXth century when mechanical innovations came on stream and markets widened through innovations in transport, the historical development of these regions had endowed them with several advantages for potential transition to a factory system. For

[34] C. CIPOLLA, *Before the Industrial Revolution* (London, 1976) and J. DE VRIES, *The Economy of Europe in an Age of Crisis 1600-1750* (Cambridge, 1976).

[35] There is a good summary in P. KRIEDTE, *Peasants, Landlords and Merchant Capitalists* (Warwick, 1983).

example, their sales outlets had been long established; they contained supplies of labour experienced in manufacturing for distant markets; capital and managerial skills were available from urban merchants and all kinds of other external economies flowed from the prior concentrations of industry in the hinterlands of towns. Finally local agricultures had already demonstrated their capacity to respond to the demands of industrial populations for food and raw materials.

Yet despite, and sometimes because of, these historical traditions many advanced regions of proto-industrialization did not move rapidly forward to embrace new techniques of production and modes of organization. In several cases traditions proved to be more of a hindrance than a help or (their historians report) they lacked some essential ingredient such as supplies of cheap energy or engineering skills.[36]

Research into proto-industrialization constitutes a programme with great potential. But it only covers certain sectors of modern industry. Producers goods (iron, steel, ships, transport equipment, bricks, glass and minerals) as well as some important consumers goods, such as flour, beer and soap, were not manufactured under conditions that even approximate to the putting-out system. If the research is to fulfill its promise we need to know rather more about the varieties and adaptabilities of organizational forms that are encompassed under the heading of proto-industrialization and far more about the causes of success and failure both before and *above all* during the transition to the factory system.

Apart from this rediscovery of industry before industrialization, regional history appears to be leading European economic history away from any foreseeable prospects for generalization. A voluminous and scholarly body of publications has not apparently brought to light new elements in the growth process or persuaded economic historians to revise their perceptions of the relative

[36] S. POLLARD, *Peaceful Conquest: The Industrialization of Europe* (Oxford, 1981); D. LANDES, *The Unbound Prometheus*, op. cit.; J. MOKYR, *Industrialization in the Low Countries* (Newhaven, 1976).

importance of familiar inputs and institutions behind the growth of modern industry, although it will please geographers to observe the emphasis accorded by regional historians to cheap energy and raw materials as the primary force behind the growth and concentration of modern industrial activity in XIXth century Europe.[37]

By changing spatial parameters regional history has enlarged the evidence for European economic history but that may turn out to be a mixed blessing. First, and because it is often impossible to quantify inputs and outputs on a local basis, such studies tend to be descriptive in character. Alternatively, the partial indicators available fail to meet the needs of production function analysis, social accounting and macro growth models.[38] For example, regional income is usually impossible to measure and regional balance of payments accounts (which could render Europe's regions such a fertile testing ground for trade theory) cannot alas be constructed. Perhaps the central weakness of this particular research agenda emerges whenever groups of historians co-operate to compile national histories on a regional basis. As recently published books on Belgium and Germany illustrate, reaggregation becomes acutely difficult and the approach simply multiplies descriptions of advanced and backward economies.[39] Although the integration of regions into national and international economies has long been accepted as an integral component of 19th century growth, its significance for a given country is rarely taken up by historians researching within a pre-selected regional framework. All too

[37] S. POLLARD, *Peaceful Conquest* and S. POLLARD, *Region und Industrialisierung*; E.A. WRIGLEY, *Industrial Growth and Pupulation Change* (Cambridge, 1960).

[38] These problems are discussed in C. LEE, *Regional Economic Growth in the U.K. since 1880* (London, 1971) and in R. FREMDLING and R. TILLY (eds.), *Industrialisierung und Raum: Studien zur regionalen Differenzierung im Deutschland im des 19 Jahrhunderts* (Stuttgart, 1979 with English summaries).

[39] F. TIPTON, *Regional Variations in the Economic Development of Germany* (Middletown, 1976); Fremdling and Tilly, *Industrialisierung*, op. cit.; P. LEBRUN et al (eds.), *Histoire quantitative et developpment de la Belgique* Tome II (Brussels, 1979) and J. MOKYRS review of this work "Industrialization in Two Languages" in *Economic History Review*, February, 1981.

often their work suffers from "conceits of time and place" that comparative history seeks to avoid or they sometimes become over-committed to the derogation of central governments and to exaggerating local losses from the formation of wider markets.[40] How enclaves extended themselves outwards, how advanced and backward regions interacted,how, if and when their paths to higher incomes converged would appear to be the interesting questions for historians interested in placing regional history in a wider frame of reference.[41] Unfortunately the concentration on explaining observed locational patterns and the rise and decline of particular regions all too often leaves open the question of the role regions played in the advance of *national* economies and masses of people from 1815 to 1914.

3. Gradations of Backwardness and Stages of Growth

When it first appeared Gerschenkron's typology offered historians a useful framework for the organization of research and teaching in European economic history. Largely because he perceived industrialization to be a process of diversity rather than uniformity, Gerschenkron's enduring contribution has been to focus research upon variations in the *way* European economies passed through a decisive stage of accelerated industrial growth, which he refers to as discontinuity or great spurt. Presumably (although he never elaborated the point) Gerschenkron expected

[40] This affliction seems to beset historians of multinational empires — see W. Ashworth, "Typologies and Evidence: Has Nineteenth Century Europe a Guide to Economic Growth", *Economic History Review*, January, 1977 and J.A. Arnez, *Slovenian Lands and their Economies, 1848-73* (New York, 1983). But not J. Komlos, *The Habsburg Monarchy as Customs Union: Economic Development in Austria, Hungary in the Nineteenth Century* (Princeton, 1983).

[41] Two models would be R. Kumke's unpublished thesis, "The Politiçal Economy of German Economic Unification: Tariffs, Trade and Politics of the Zollverein Era', summarized in *Journal of Economic History*, March, 1978 and V. Zamagni, *Industrializzione Esquilibria Regionali in Italia* (Bologna, 1978). For a theoretical discussion see J.G. Williamson, "Regional Inequality and the Process of National Development" in *Economic Development and Cultural Change*, July 1965.

that the study of carefully delineated contrasts in the methods used to build up modern industry would help historians to explain differences in the time taken by national economies to achieve higher levels of per capita income. In his view Britain has forged ahead because conditions for "spontaneous industrialization" developed early — and the problem for relatively "backward economies" on the mainland was to find effective substitutes for missing (British) pre-requisites. Thus, within Gerschenkron's analytical framework delays exhibited by continental economies in their endeavours to catch up with Britain are implicitly imputable to a range of more or less important "pre-requisites" for successful industrialization available to those who managed the British economy, (but in shorter supply elsewhere in Europe) and also to the time taken by "follower countries" to develop substitutes for their institutional and technological deficiencies.[42]

Gerschenkron (like Rostow before him) tended to neglect the importance of natural endowment and the role of the State for the British Industrial Revolution.[43] Thus when he turned to Europe he concentrated upon other important but still restricted elements of industrialization which he hypothesized would vary systematically, in form and significance, with the timing and degree of backwardness exhibited by different European economies as they passed through a "great spurt" in industrial production. Thus, Gerschenkron predicted that when historians examined the build-up of modern industry in Europe country by country (with exceptions and qualifications) they would observe: the more backward or late the economy when it began that process, the more rapid would be the rate of acceleration in the growth of industrial production; the more pronounced would be the reliance on capital as distinct from consumer goods; among "latecomers" new industrial enterprises would emerge as more technically sophisticated and capital inten-

[42] A. GERSCHENKRON, *Economic Backwardness in Historical Perspective* (Cambridge, 1966) and *Continuity in History and Other Essays* (Cambridge, 1968).

[43] W.W. ROSTOW, *The Stages of Economic Growth* (Cambridge, 1971) and *How It All Began: Origins of the Modern Economy* (New York, 1975).

sive, larger in scale and more prone to monopoly; such enterprises would rely to a great degree upon external sources (banks and the State) for investible funds and entrepreneurial initiatives for their markets and supplies of cheap inputs; they would depend far less than their British counterparts had upon rising productivity in domestic agriculture.

Backwardness or lateness was never clearly defined but statistical tests (based on small samples of European countries) and using income per head, shares of the work force in agriculture and times of arrival at a threshold level of per capita income as proxies for backwardness do not correlate at all well with several dependent elements of the industrialization process singled out by Gerschenkron as symptoms of retardation.[44] Furthermore, recent historical research (often inspired by his hypothesis) has not merely widened the sample to include potentially deviant cases from the Austrian Empire, the Balkans and Scandinavia but has deepened perceptions of British, Dutch, French, Italian and even Russian industrialization in ways that appear inimical to the survival of Gerschenkron's typology as a usable heuristic device.

First (and a fortiori to level the same criticism against Rostow's stages of growth) given the imperfect and less than comprehensive indices of industrial production available for XIXth century Europe, the statistical problems of delineating phases of trend acceleration are formidable. And that point has been ably confirmed by recent attempts to apply classical time series analysis (polynomial functions, decomposition, lagged correlations or residuals etc.) to German data for 1820 to 1913. This research has confirmed the existence of 7 to 10 year Juglar cycles, overlaid with Kuznet's cycles of 16 to 25 years duration, but rejects any suggestion of even longer waves or cycles in German economic history. Once again poorly integrated markets and the mixture of commercial and subsistence activity in the early phases of industrialization

[44] S. Barsby, "Economic Backwardness and Characteristics of Development" *Journal of Economic History*, September, 1969 and Crafts, "Patterns of Development" op. cit.

posed grave difficulties for the analysis of time series.[45] Furthermore, and given that these technically sophisticated exercises revealed only weak and irregular connexions between agricultural progress, population growth, railway investment and monetary expansion on the one side and fluctuations in business activity on the other, it remains unclear what this recently revived interest in cycles will add to our unders tanding of European economic growth.[46] Historians have traditionally seen industrialization as a cyclical process, and Tilly's attempt to distinguish a German "take off" from swings (1843-61, 1861-79) shorter cycles and intermittent booms in railway construction is an elegant example of just how difficult it is to periodize a national record in ways that might reveal causal factors at work.[47]

Indeed, and after extensive discussion, Gerschenkron's notion of a "decisive spurt" and Rostow's "take off" have been abandoned by historians of the Habsburg Empire. In the Bohemian and Moravian provinces of that Empire modern industry emerged early and developed over a long time span from the late XVIIIth century through to the 1870s.[48] For Austria itself the beginnings of modern industrialization have been identified with the period 1826-47; and more or less rapid industrial growth occurred from 1841-54, 1861-71 and 1898-1907.[49] Hungary experienced appreci-

[45] R. Spree, *Die Wachstumszyklen der deutschen Wirtschaft von 1840 bis 1880* (Berlin, 1977); R. Spree, *Wachstumstrends und Konjunkturzyklen in der Deutschen Wirtschaft von 1820 bis 1913*; H. Best and R. Mann (eds.), *Quantitative socialwissenschaftliche Analysen von historischen und prozess produzierten Daten* (Stuttgart, 1977).

[46] W.H. Schroeder and R. Spree (eds.), *Historische Kojunkturforschung* (Stuttgart, 1980).

[47] R. Tilly, "The Take-off in Germany", unpublished paper of Institüt für Wirtschafts — und Sozialgeschichte (Munster, 1980) and R. Tilly, *Kapital Staat und Sozialer Protest in der deutchen Industrialisierung* (Gottingen, 1980). I am indebted to Elizabeth Stockhausen for the translation of German sources.

[48] Ashworth, "Typologies and Evidence", op. cit.

[49] T. Huertas, *Economic Growth and Economic Policy in a Multi-National Setting: The Habsburg Monarchy 1841-65* (New York, 1977); R.L. Rudolph, *Banking and Industrialization in Austria-Hungary* (Cambridge, 1976); J. Komlos, *The Habsburg Monarchy as a Customs Union*, op. cit. and D.F. Good, *The Economic Rise of the Habsburg Empire 1750-1914* (Berkeley, 1984).

able industrial growth from a low initial level but two phases of acceleration (1874-83 and 1906-12) mark the curve and neither phase coincided with the rapid reallocation of the work force from agricultural to industrial employment.[50] Similarly the Norwegian and Dutch economies passed through not one but two periods of extraordinarily rapid industrial growth.[51] Just before the First World War the Balkans (Greece, Serbia, Romania and Bulgaria) also witnessed remarkable growth in the corporate and larger scale sectors of industry but these "stirrings" have been derogated because they "fell short of a sustained spurt".[52] How economies growing rapidly during the international boom from 1899-1914 could have continued to grow in the radically altered conditions after 1914 is however rarely considered in discussion of "spurts that failed".[53] Recently published research on the economic histories of Belgium, Switzerland and Sweden seem disinclined to single out phases or cycles of industrial growth for particular emphasis.[54] Even the industrialization of Tsarist Russia (that paradigm case for discontinuity) now begins to emerge in the wider and longer term perspectives of Blackwell and Crisp as a gradual

[50] J. KOMLOS, "Economic Growth and Industrialization in Hungary 1880-1913" in *Journal of European Economic History*, Spring, 1981 and J. KOMLOS (ed.), *Economic Development in the Habsburg Monarchy in the Nineteenth Century* (Boulder, 1983).

[51] F. HODNE, *An Economic History of Norway 1815-70* (Bergen, 1975); R.T. GRIFFITHS, "Achterlijk Achter of Anders? Aspecten Van De Economische Ontwikkeling Van Nederland in De 19de EEUW" (Vrije Universiteit te Amsterdam, 1980). I am indebted to Professor Griffiths for an English language version of this paper.

[52] J.R. LAMPE, "Varieties of Unsuccessful Industrialization: The Balkan States Before 1914" in *Journal of Economic History*, March, 1975 and J.R. LAMPE and M.R. JACKSON, *Balkan Economic History, 1550-1959* (Bloomington, 1982).

[53] M. PALAIRET, "Land, Labour and Industrial Progress in Bulgaria and Serbia before 1914" and J.R. LAMPE, "Debating Balkan Potential for pre-1914 Development" in *Journal of European Economic History*, Spring, 1983.

[54] P. LEBRUN et al., *Histoire quantitative et développement de la Belgique*, op. cit.; J.F. BERGIER, *Naissance et croissance de la Suisse industrielle* (Berne, 1974); L. JÖRBERG, "Structural Change and Economic Growth: Sweden in the Nineteenth Century" in F. CROUZET et al, eds.), *Essays in European Economic History 1789-1914* (London, 1969) and L. SANDBERG, "Banking and Economic Growth in Sweden Before World War I" in *Journal of Economic History*, September, 1978.

movement on a far broader front than the dramatic breakthroughs posited by Gerschenkron.[55]

As historians turned away from imperfect and partial indices of industrial and national production to investigate the regional and proto-industrial foundations of modern industry, so has the drama of "take offs", "spurts" and "discontinuities" in European economic history faded from the scene. Unwilling to accept the Rostovian notion that after a certain stage growth becomes self-sustaining, they have come to a realization that discussions of "decisive" upswings in industrial production or in national output can degenerate into semantics because they still lack acceptable criteria for ranking particular phases in the growth process.

Gerschenkron expected that Europe's historical records would reveal distinctive national patterns of industrial organization but this element of his typology has not been adequately tested because the main indices required to quantify and systematically compare his predictions as to the prevalence of larger scale, more capital intensive, and monopolistic firms among latecomers is not available. Once again the typology seems designed to juxtapose continental deviations against a somewhat stylized version of British industrialization. Recent studies of British industrial organization reveal variance in scale, capital intensity and departures from competitive norms across industries throughout the Industrial Revolution.[56] Moreover, it might be misleading to posit contrasts across countries when accessible data and the majority of business

[55] W.L. BLACKWELL, *The Beginnings of Russian Industrialization 1800-60* (Princeton, 1968); O. CRISP, *Studies in the Russian Economy Before 1914* (Macmillan, 1976); see also P.R. GREGORY, "Economic Growth and Structural Change in Czarist Russia and the Soviet Union: A Long Term Comparison" in S. ROSEFIELDE (ED.), *Economic Welfare and Economics of Soviet Socialism* (Cambridge, 1981).

[56] P.L. PAYNE, "Industrial Entrepreneurship and Management in Britain" in P. MATHIAS and M. POSTAN (es.), *The Cambridge Economic History of Europe* Vol. VII (Cambridge, 1978); A. BAILEY, "Firm Behaviour and Optimal Growth in the British Cotton Industry 1795-1820" (unpublished paper delivered Oxford Workshop in Economic History 1983-84); V.A. GATTRELL, "Labour Power and the Size of Firms in Lancashire Cotton in the Second Quarter of the Nineteenth Century", *Economic History Review*, February, 1977.

histories are (inevitably but unfortunately) confined to the incorporated sector of industry. Variations in plant size, competitiveness and factor intensity are also unlikely to be systematically correlated to backwardness and are more probably related to legal conditions for incorporation, the development of markets for stocks and shares, changing technology and above all to product mix.[57]

Long term changes in the composition of manufacturing output were discussed before Gerschenkron enunciated the hypothesis that capital goods were likely to predominate over consumer goods in the industrialization of follower countries. His loosely defined hypothesis surprised because Hoffman's statistical investigations into the evolution of industrial economies had led historians to expect industrial growth to proceed as a systematic and explicable process of diversification from consumer goods through intermediate products to capital goods industries.[58] Kuznets certainly exposed the weak empirical foundations behind Hoffman's early atempt to define "stages of industrial growth". Production or employment data covering lengthy spans of industrial history are available for too few countries. Hoffman also worked with estimates of net value added for only 8 sectors of manufacturing: metals, vehicles, machinery, chemicals, processed food, textiles, leather and furniture, which he arbitrarily distinguished into 4 capital and 4 consumer goods industries. But detailed input-output tables are clearly required to allocate outputs for given industries between producers and consumers goods. Postulated trends obviously depend on the size and type of industries excluded from statistical analysis. For example, the inclusion of paper and printing (a consumer goods industry) and wood products (undergoing relative decline in favour of metals) obfuscates

[57] C. Freedman, *Joint Stock Enterprise in France 1807-67* (Chapel Hill, 1979); R. Tilly, "Mergers, External Growth and Finance in the Development of Large Scale Enterprise in Germany' in *Jorunal of Economic History*, September, 1982; M. Palairet, "Land, Labour and Industrial Progress in Bulgaria and Serbia before 1914", op. cit.

[58] W. Hoffmann, *The Growth of Industrial Economies* (Manchester, 1958).

Hoffman's observations. Furthermore the weight of any industry within total product depends upon whether net value added or gross output is selected as the appropriate indicator of significance.[59] Except for Sweden and the United States the long term trends towards capital goods (that Hoffman thought he had discovered from his data set) have not, and probably cannot be, established given the paucity and quality of historical data.[60]

Nevertheless, there are good reasons to expect European industrialization to proceed more or less in the way Hoffman suggested. First and in general terms, his hypothesis accords with historical descriptions of rather orderly transitions from simple to complex processes of manufacturing activity. For example the initial mechanization and standardization of several consumer goods industries tended to be located within well defined regions of specialization, utilizing the investible funds, skilled labour and entrepreneurial talents of a traditional proto-industrial base. Factories emerged on a small scale with relatively low capital-labour ratios to engage in the linear transformation of raw materials into familiar products sold on well established markets. In brief and in many cases resources could apparently be mobilized from within the traditional economy in order to replace imported manufactures or the products of handicraft industry.[61]

Building and construction apart, the manufacture of producers' goods (metals, machines, tools, transport, equipment, steam and hydraulic engines, chemicals, etc.) required more skills, organizational capacity, mobile capital and steady demand than seems to have been available to most European economies in the initial phases of development. But, as manufacturing expanded, as the agricultural sector embarked on mechanization and farmed with chemicals and as transport networks began to cover the terrain,

[59] S. KUZNETS, *Modern Economic Growth* (New Haven, 1966).

[60] Y. SHIONAYA, "Patterns of Industrial Growth in the United States and Sweden", *Hitotsubashi Jornal of Economics*, June, 1964.

[61] MENDELS, "Proto-industrialization: Theory and Reality", op. cit.; Berg et al, *Manufacture in Town and Country Before the Factory*, op. cit.

demand and supply constraints on the expansion of a domestic capital goods sector gradually diminished and at that stage a second wave of industrialization carried the economy forward.[62]

Something approximating to this stylized history of industrial evolution appears in statistical investigations conducted by Chenery and others into patterns of industrial growth for the 1950s and 1960s. Using cross sectional multiple regression techniques on data sets drawn from 53 and 42 countries, these economists have displayed the obvious connextion between levels of per capita income and relative size of national industrial sectors.[63] As well as reflecting this familiar link between income elasticity of demand and levels of industrial output, per capita income also provides a reasonable proxy for supplies of skilled labour, mobile capital, capacity to absorb technology, etc. Turning to more relevant connexions between the composition of industrial output (the dependent variable) with per capita income and the overall size of the industrial sector, (as independent variables) the regressions picked up industries which increase their shares of total industrial output as per capita income rises and as the overall size of the industrial sector increases. Industries with conspicuously higher elasticities include: basic metals, metalwares and paper products. Lower but positive coefficients emerged for chemicals and rubber.[64]

Again the difficulties of translating statistical categories into meaningful analogues for historical analysis are formidable. Nevertheless, there is a strong suggestion in these investigations for the mid-XXth century that industrialization proceeds (as Hoffman suspected) through a process of diversification from consumers to producers goods; and that deviations (when and where they

[62] B. Hoselitz, "Some Problems in the Quantitative Studies of Industrialization", *Economic Development and Cultural Change*, April, 1961.

[63] H. Chenery, "Patterns of Industrial Growth", *American Economic Review*, September, 1960; H. Chenery and N. Taylor, "Development Patterns Among Countries and Over Time", *Review of Economics and Statistics*, November, 1968.

[64] United Nations, *A Study of Industrial Growth* (New York, 1963)

occur) are explicable in terms of country size, natural endowments, comparative advantages within an evolving world economy and Government policies.[65]

Gerschenkron's insistence on discontinuities leads to a derogation of industrialization before the "great spurt" and statistical sources for the century before 1914 are nowhere near good enough to test his hypothesis that backward nations forced their way up the ranks of European economies by rather abrupt changes in commodity mix of industrial output. By taking the longer view and a wider focus, recently published analyses of industrial growth (for the Habsburg Empire, Scandinavia, Italy, Portugal, Spain and even for Tsarist Russia) seem disinclined to single out the rise of producers goods as either a sudden or decisive element in the industrialization of latecomers.[66]

Of course at the level of particular industries and commodities and proceeding from low initial levels of domestic output there are examples of dramatic breakthroughs into the manufacture of producers goods, including steel, heavy chemicals, steam engines, agricultural tools, simple machinery etc.[67] But on examination these examples represent the exploitation of natural resources rendered valuable by technical change and investment in transport or emerge as the outcome of direct private foreign investment

[65] H. CHENERY and M. SYRQUIN, *Patterns of Development 1950-70* (Oxford, 1975).

[66] D.F. GOOD, *The Economic Rise of the Habsburg Empire*, op. cit; J. KOMLOS, *The Habsburg Monarchy as a Customs Union*, op. cit; S.A. HANSEN, *Early Industrialization in Denmark* (Copenhagen, 1970); L. JORBERG, "The Nordic Countries 1850-1914" in C. CIPOLLA (ed.), *Fontana Economic History of Europe* Vol. 6 (London, 1973); S. FENOALTEA, "The Industrialization of Italy 1861-1913: A Progress Report" (Research Paper 69, Department of Economics Williams College, 1984); J. REIS, "Portuguese Industry 1870-1913" (unpublished paper Faculty of Economics Universidade Nova de Lisbon, 1984); A. CARRERAS DE ODRIOZOLA, "La produccion industrial espanola 1842-1981" in *Revista de Historia Economica*, 2, 1984; O. CRISP, *Studies in the Russian Economy Before 1914*, op. cit.

[67] C. TREBILCOCK, *The Industrialization of the Great Powers, 1780-1914* (London, 1981); Germany provides classic examples — see R. TILLY, "Capital Formation in Germany in the Nineteenth Century" in P. MATHIAS and M. POSTAN (eds.), *Cambridge Economic History of Europe* Vol. VII part 1, op. cit.

often attracted by subsidies, tariffs and other governmental concessions.[68]

In contradicting Gerschenkron's typology recent economic history suggests that before 1914 relatively backward economies enjoyed no special advantages for the exploitation of strategies for industrialization which were separable from prior internal developments in manufacturing industry, their natural resource base and the opportunities open to them on international or imperial markets. For example, Hungarian industrialization which rested in large part on the processing of grain into flour and spirits can be linked to the soils of the Danubian plain, to its favoured position within the Habsburg customs union and access to German markets.[69] Both the timing and pattern of industrial growth in Sweden from 1860 to 1914 has been related to exports and to natural advantages based on timber and iron ore as well as the prior accumulation of a stock of literate manpower.[70] Norway's two upswings are inseparable from exports of timber in the 1840s and the diffusion of hydro-electricity in the early 1900s.[71] While the failure to expand exports of manufactured goods apparently constrained the upswing in Czech and Austrian production from 1895 to 1914.[72] After Waterloo French industry found its markets in an international economy dominated by Britain by concentrating upon high quality products and the finishing end of manufacturing activity.[73]

There is no need to multiply examples but typologies of European industrialization which pay insufficient attention to geogra-

[68] M. Falkus, *The Industrialization of Russia 1700-1914* (London, 1972); P. Hertner, *Il Capitale Tedesco in Italia Dale' Unita alla Prima Guerra Mondiale* (Bologna, 1984).

[69] Komlos, *The Habsburg Monarchy as a Customs Union*, op. cit.

[70] L.G. Sandberg, "Banking and Economic Growth in Sweden Before World War I" in *Journal of Economic History*, September, 1978 and L.G. Sandberg, "Ignorance Poverty and Economic Backwardness" in *Journal of European Economic History*, Winter, 1982.

[71] Hodne, *Economic History of Norway*, op. cit.

[72] R.L. Rudolph, *Banking and Industrialization in Austro-Hungary*, op. cit.

[73] P.K. O'Brien and C. Keyder, *Economic Growth in Britain and France*, op. cit.

phy and foreign trade neglect essential elements of the process. Europe developed over the XXth century as a continent of large and small political units, with a skewed distribution of natural resources. When possibilities for foreign trade expanded rapidly that promoted very different patterns of industrial growth from country to country. For example, at comparable levels of per capita income very few European economies achieved anything like Britain's comparative advantage in the export of manufactures. And as late as 1913 the shares of "manufactured commodities" to total exports varied from under 10% for Greece, Denmark, Norway, and Portugal to over 75% for Britain, Belgium, Switzerland and Germany with the rest of Europe somewhere in between.[74] Tyszynski's estimates of "revealed comparative advantage" for manufactured exports alone reveals a variety of national patterns. In 1900 Belgium's comparative advantages resided in glass, nonferrous metals, rails, ships, iron and steel while Italy's advantages can be ranked to place wines, tobacco, textiles and fancy goods at the top of the list.[75] Systematic comparisons of trade data across countries and studies of long term trends in the composition of net imports (exports minus imports) for major manufactured commodities seems to offer historians a most promising approach to the statistical delineation and comprehension of the patterns of industrialization undertaken by different European economies before 1914.[76] From textbooks with a European frame of reference they have already been made aware of small and large country patterns.[77] Their students are taught to appreciate the significance

[74] N.F.R. Crafts, "Patterns of Development in Nineteenth Century Europe" op. cit.

[75] H. Tyszinski, "World Trade in Manufactured Commodities 1899-1950", Manchester School 2, 1951.

[76] A point well exemplified by I.T. Berend and G. Ranki, "Foreign Trade and the Industrialization of the European Periphery in the XIXth Century" in *Jornal of European Economic History*, Winter, 1980 and throughout their suggestive study, *The European Periphery and Industrialization 1780-1914* (Cambridge, 1982).

[77] A. Milward and S.B. Saul, *The Development of the Economies of Continental Europe 1850-1914 op cit.* Berend and Ranki, *The European Periphery*, op. cit.

of endowments and location, to understand variations promoted by different tariff regimes and to realize the complexities of forward and backward linkages between trade and industrial development.[78] They also suspect that many of the cycles in production and capital formation so carefully delineated for several European economies can only be properly understood within an international frame of reference. For Britain upswings and downswings have traditionally been analysed within the boundaries of an Atlantic economy. Is it not time to widen the frame of reference for other parts of Europe? Would it not prove illuminating to place the considerable body of knowledge and insights economic history now possesses on trade and growth for individual countries within an international economy in order to observe and analyse trends, cycles and long term changes in comparative advantage before 1914.[79]

Gerschekron suggested that when they built up modern industry Europe's latecomers depended far more on banks and the state for investible funds and entrepreneurial help than, say, British, Belgian or French industrialization at comparable phases of development. This particular hypothesis (and despite an apparent consensus that the availability of investible resources rarely constituted a serious constraint upon capital formation in the XIXth century), inspired more historical research than other elements of his typology put together.[80] For example, Cameron and a team of distinguished collaborators published two seminal volumes on the role of banks and banking in the early stages of industrialization in

[78] C.P. KINDLEBERGER, *Foreign Trade and the National Economy* (New Haven, 1962) and B. BALASSA, *The Newly Industrializing Countries in the World Economy* (Oxford, 1981).

[79] W.A. LEWIS, *Growth and Fluctuations, 1870-1913* (London 1978) and W.W. ROSTOW, *The World Economy* (London, 1978). In analysing long term changes in comparative advantage Nick Crafts is, as usual, ahead of the field: N.F.R. CRAFTS, "Revealed Comparative Advantage in Manufacturing 1899-1950" (unpublished paper delivered to Oxford Workshop in Economic History, 1984).

[80] L. NEAL, "Factoring Out Industrialization" in *Journal of Economic History*, September, 1979.

England, Scotland, Belgium, France, Germany, Russia, Spain, Italy and Austria.[81] More recently the suggestion occupied a central place in studies of Italian, Czech, Hungarian, Austrian, Swedish, Norwegian and Balkan industrialization.[82]

Gerschenkron's rather general propositions about the role of banks are difficult to force into a form that makes them amenable to statistical testing. And no data have yet appeared to measure the relative contributions of financial intermediaries, the state and other classifiable sources of funds for capital invested and credit deployed by various national industrial sectors, as they developed through the XIXth century. Such macro data on flows of funds are unlikely to emerge from financial records, although business history might perhaps come up with "significant" case studies for particular industries.[83]

At the quantitative level some inferences and comparisons can be drawn about potential changes through time in the *availability* of bank loans by using rather dubious indicators such as the numbers of banks per square kilometre of territory and the more relevant ratios of bank assets to GNP now published for a dozen or so European economies.[84] These ratios lend little support to the notion of any systematic connexions across Europe between per

[81] R. CAMERON et al (eds.), *Banking in the Early Stages of Industrialization* (New York, 1967) and *Banking and Development: Some Lessons of History* (New York, 1972).

[82] J. COHEN, *Fiannce and Industrialization in Italy* (New York, 1977); RUDOLPH, *Banking and Industrialization in Austro-Hungary*, op. cit.; J. KOMLOS, "Economic Growth and Industrialization in Hungary 1880-1913" op. cit.; L. SANDBERG, "Banking and Economic Growth in Sweden Before World War I," op. cit.; "The Case of the Impoverished Sophisticate: Human Capital and Swedish Economic Growth Before World War I" in *Journal of Economic History*, March, 1979; I. NYGREN, "Transformation of Bank Structures in the Industrial Period. The Case of Norway 1820-1914", *Journal of European Economic History*, Fall, 1983; A. EGGE, "Transformation of Bank Structures in the Industrial Period. The Case of Sweden 1820-1913", *Journal of European Economic History*, Spring, 1983; J.R. LAMPE, "Varieties of Unsuccessful Industrialization: The Balkan States Before 1914" in *Journal of Economic History*, March, 1975.

[83] P.L. COTTRELL, Industrial Finance 1830-1914 (London, 1980) and S.D. CHAPMAN, "Fixed Capital Formation in the British Cotton Industry 1770-1815" in *Economic History Review*, August, 1970.

[84] R. GOLDSMITH, *Financial Structure and Economic Development* (New Haven, 1969) and R. CAMERON, *Banking in the Early Stages of Industrialization*, op. cit.

capita incomes or industrial output per head on the one side and relative levels of bank assets on the other; a point that prompted Sandberg to describe Sweden in 1850 as an "impoverished sophisticate".[85] Furthermore, no observable threshold levels of bank loans seem to have been observed prior to upswings in industrial production. According to Good's correlations banks neither led nor (with the possible exceptions of Germany and Belgium) followed upon the growth of industrial production.[86] As the national histories illustrate the diffusion of banks and expansion of bank loans proceeded across Europe at rather disparate rates that can be related to a variety of local conditions including: legal regulations, government deficits, literacy and education, the scale of internal and external trade, regional concentration of economic activity, urbanization, social attitudes, (including antipathy to banks) and even (as Gerschenkron once ramarked) to standards of honesty. Unless and until bank assets are broken down between loans to industry and other sectors of the economy such as transport, the state, housebuilding utilities etc., the scale of the contribution made by banks to capital formation in industry cannot be measured.

Modern research on financial intermediation has, however, fruitfully shifted attention away from tenuous macro correlations to the problem of analysing the actual response by banks to industrialization as it proceeded in particular national and regional contexts. Cameron, when summarizing the results of his international comparisons, candidly admitted he lacked criteria to measure their success or efficiency. Although he was prepared to laud

[85] L. SANDBERG, "The Case of the Impoverished Sophisticate" op. cit. and "Banking and Economic Growth in Sweden Before World War I" op. cit. But *vide* Sandberg's debate with Kindleberger in Journal of Economic History, December, 1983, Kindleberger regards banks and bank assets as good proxies for levels of development — C.P. KINDLEBERGER, "Financial Institutions and Economic Development: A Comparison of Great Britain and France in the Eighteenth and Nineteenth Centuries" in *Explorations in Economic History*, 21, 1984.

[86] D.F. GOOD, "Backwardness and the Role of Banking in Nineteenth Century European Industrialization" in *Journal of Economic History*, December, 1973.

the contribution of banks in Scotland and Sweden and deplore their sparesness in France — an economy which managed to achieve respectable levels of per capita income and industrial output without much help from its banks.[87] For Germany, (once the paradigm example for the role of banks), there is now a debated hypothesis that the overpraised Kreditbanken misallocated capital and slowed up overall growth.[88] In the Czech Crownlands (Bohemia, Moravia and Upper Silesia) risk averse banks did little except supply a modicum of working capital.[89] After 1873 Austrian banks "lost most of their interest in industrial enterprises for years to come". For Hungary it was not banks but "unencumbered access to the Austrian capital market" that appears crucial to the beginning of industrialization.[90] Norwegian commercial banks showed little initiative and failed to play any leading role in the process of economic growth.[91] In general it seems difficult to find European cases where banks clearly played the progressive and entrepreneurial role in national industrialization marked out for them by Gerschenkron.

Finally, in his treatment of the state, Gerschenkron tells us that before 1914 government intervention (to supply substitutes for deficiencies in enterprise, private capital markets and household demand) intensified with backwardness. Although the generalization seems plausible and is based upon historical examples (drawn largely from Russia and Eastern Europe) statistically, it remains untestable. What proxies could be designed to measure the scale and intensity of governmental intrusion into the spontaneous

[87] CAMERON, *Banking in the Early Stages of Industrialization*, op. cit.; KINDLEBERGER, "Financial Institutions and Economic Development", op. cit.

[88] H. NEUBERGER and H. STOKES, "German Banks and German Growth 1883-1913" in *Journal of Economic History*, September, 1974; and "German Banks and German Growth: Reply" in *Journal of Economic History*, June, 1976; R. FREMDLING and R. TILLY, "German Banks and German Growth" in *Journal of Economic History*, June, 1976.

[89] RUDOLPH, *Banking and Industrialization in Austro-Hungary*, op. cit.

[90] KOMLOS, "Economic Growth and Industrialization in Hungary", op. cit.

[91] A. EGGE, "Transformation of Bank Structures", op. cit.

(and in Gerschenkron's view normal) process of industrialization? One accessible, but by no means conclusive, macro indicator — the ratio of public consumption to gross national expenditure — did not vary in any systematic way across countries at comparable levels of real per capita incomes.[92] And what general inferences can be drawn from tables which display very disparate percentages of central government revenue to national products for decades before 1914? [93]

To open the way to more systematic comparisons, historians need to develop indicators which measure the significance of governmental funds (local, regional as well as central) for national capital formation before 1914. They might then move on to classify and to compare the potential effects on private industrial investment (domestic and foreign) of the different fiscal, tariff, monetary and exchange rate policies pursued by European governments over the XIXth century. Given its links with political history the literature on economic policy increases rapidly and includes increasingly sophisticated applications of macro economic theory to history. The illuminating debate on Russian monetary policy and its connexion to industrial growth from 1861-1914 is but one excellent example.[94] Other studies have revealed how increasing budget deficits and an inept exchange rate policy created a climate of uncertainty which crowded out and depressed private capital formation in Austria from 1848 to 1866.[95] For Hungary we are now informed that changes in "governmental fiscal policy correlate well with the industrial production index". In the 1870s

[92] CRAFTS, "Patterns of Development", op. cit.

[93] P. FLORA (ed.), *State, Economy and Society in Western Europe 1815-1975* (Macmillan, 2 vols., 1984).

[94] H. BARKAI, "The Macro-Economics of Tsarist Russia in the Industrialization Era", *Journal of Economic History*, June, 1973; I. DRUMMOND, "The Russian Gold Standard, 1899-1914" in *Journal of Economic History*, September, 1976; P. GREGORY and J. SAILORS, Russian Monetary Policy and Industrialization" in *Journal of Economic History*, December, 1976; P. GREGORY, "The Russian Balance of Payments, the Gold Standard and Monetary Policy" in *Journal of Economic History*, June, 1979.

[95] HUETAS, *Economic Growth and Economic Policy in a Multi-National Setting* op. cit.

and 1880s the ability of that government to attract foreign investments shifted the burden of the debt on to foreigners and enabled the state to pursue an active fiscal policy without stifling the private sector through excessive taxation.[96] Apparently, German agriculture "made impressive technological strides" behind the walls of protection it received after 1879 and that the compromises of the Meline tariff helped to create the stable political conditions required for the growth of larger scale industry in France during la belle époque.[97]

Research into connexions between public policy and the industrialization of Europe could soon become sufficient and sophisticated enough to create the basis for generalizations about the scope and effectiveness of government intervention. But to confine investigations into the direct and indirect role of the state, to periods surrounding "discontinuities" (as Gerschenkron did) or even to the entire century before 1914 would derogate its most important function: namely the creation and destruction of institutions and legal rules which sustained or restrained the operation and spread of markets. Economic historians have long been aware that markets for commodities, land, capital and labour operate within a framework of law for the organization and regulation of co-operation and competition among individuals and enterprises.[98] Indeed one of the central traditions of "old economic history" was the study of laws, regulations, property rights and enforcement procedures which moulded and constrained economic behaviour over those long spans of history before the French Revolution when "inefficient" sets of institutions are per-

[96] KOMLOS, "Economic Growth and Industrialization in Hungary", op. cit. and *The Habsburg Monarchy as a Customs Union*, op. cit.

[97] S.B. WEBB, "Agricultural Protection in Wilhemmian Germany" in *Journal of Economic History*, June, 1982; M.S. SMITH, *Tariff Reform in France, 1860-1900: The Politics of Economic Interest* (London, 1980).

[98] R.M. HARTWELL, *The Industrial Revolution and Economic Growth* (London, 1971).

ceived to have held European economies well inside their production possibility boundaries.[99]

Although European economic history cannot take as "given" the institutions which underpinned different national economies after 1815, "the new political economy" which analyses institutional change with the aid of a vocabulary borrowed from modern cost-benefit analysis seems deterministic even naive.[100] Political history, particularly the history of major upheavals effecting legal rules which regulated the distribution of gains from exchange, reveals the mixture of motives among those involved and the economic uncertainties surrounding costs and outcomes. The cost-benefit metaphor seems to carry limited explanatory power when transposed to the history of early modern Europe when the institutional framework for the operation of commodity and factor markets emerged in some societies (Holland and England) long before others (Spain and Russia).[101] The bold attempt by North and Thomas in the "Rise of the West" to account for timing and variety in the historical record appears ad hoc.[102] Its reference back to earlier and prior political traditions which allowed groups to form and change property rights in their favour merely pushes discussion further and further back into history.

Clearly it is important to understand how governments constrained economic growth by defining and enforcing inefficient systems of rules and property rights. For the economic history of modern Europe the general problem resides in comparing legal frameworks for economic competition and co-operation across countries, in analysing alterations to laws and property rights over

[99] F.C. Lane, "The Role of Governments in Economic Growth in Early Modern Times", in *Journal of Economic History*, March, 1975.

[100] D. North, *Structure and Change in Economic History* (New York, 1981).

[101] E.L. Jones, "Institutional Determinism and the Rise of the Western World" in *Economic Inquiry*, 1974 and A.J. Field, "The Problem with Neoclassical Institutional Economics" in *Explorations in Economic History*, 18, 1981.

[102] D.C. North and R.P. Thomas, *The Rise of the Western World: A New Economic History* (London, 1973).

time, and in systematically linking specified variations in law to economic growth. Although this suggestion applies with particular force to the early modern period when states established (or failed to establish) conditions for subsequent specialization and the widening of markets in the XVIIIth and XIXth centuries it applies also to the era of the Second Industrial Revolution which witnessed the rise of "big government" to regulate the operations of corporations, unions and financial intermediaries. Are historians still too far away from any settled taxonomy or ways of generalizing about the role of the state in Europe's industrialization?

4. Towards New Typologies

It is now more than a quarter of a century since three distinguished American scholars (Landes, Rostow and Gerschenkron) offered students and teachers of European economic history concepts, approaches and typologies designed to help them organize and clarify the accumulation of historical knowledge in their rapidly expanding subject. Today and as the First Industrial Revolution re-emerges as something of a special case the potential for histories of European industrialization constructed around the concept of technological diffusion seems diminished, even disabled. From philosophers of the Enlightenment, through Marx to the German historical school historians of European development have found it difficult to organize their thoughts without recourse to stages of growth.[104] Rostow certainly offered them a memorable vocabulary but (after long debate and for familiar reasons) his schema is not considered to be a particularly illuminating way to write Europe's industrial history.[105] Conceptually, the whole notion of

[103] LANDES, *The Unbound Prometheus*, op. cit. But Pollard's *Peaceful Conquest* published in 1981 was organized around the concept of diffusion.

[104] B.F. HOSELITZ (ed.), *Theories of Economic Growth* (Glencoe, 1960).

[105] N.F. CRAFTS, "Industrial Revolution in Britain and France" op. cit. and W.W. ROSTOW, "No Random Walk: A Comment on Why Was England First?" and N.F. CRAFTS, "Entrepreneurship and a Probabilistic View of the British Industrial Revolution" in *Economic History Review*, November 1978. The most recent discussion of

a sharp discontinuity no longer attracts historians of economic growth, inclined to analyse that process with biological rather than aeronautical metaphors and to explain accelerations (if and when they can be measured) as the product of fortuitous political events, or the final outcome of a protracted process of institutional change and the prior accumulation of physical and human capital. Apart from insurmountable problems with statistics, discussion very quickly runs into that hoary old debate on the relative importance of necessary and sufficient conditions.[106] Economists regard the stages as "empty" because they seem impossible to demarcate and add little to understanding of how or why economies progressed from stage to stage.[107] In some countries (Germany perhaps?) jumps in the rate of capital formation and measured feedbacks and spinoffs from leading sectors appear powerful enough to carry the whole economy forward. For the majority of European economies these posited mechanisms for "take off" seem too weak or restricted to explain observed historical changes, which on examination turn out to be altogether more balanced and continuous than the process elaborated by Rostow, even in later and more qualified versions of the Stages of Growth.[108]

Gerschenkron's typology inspired two generations of scholars and still survives as a viable framework for economic historians who are concerned to place their research within those wider and potentially deeper perspectives that are supposed to emanate from international comparisons.[109] But more often than not, its heuristic value seems to reside in supplying explanations and predictions

Rostow's ideas can be found in C.P. KINDLEBERGER and G. DI TELLA (eds.), *Economics in the Long View: Essays in Honour of W.W. Rostow* (3 vols., London, 1982); and B. SUPPLE, "Revisiting Rostow" in *Economic History Review*, February, 1984.

[106] See discussion between Gaski, Inkster and Geary in the *Jornal of European Economic History*, Spring, 1982, Winter, 1983 and Spring, 1984.

[107] A. FISHLOW, "Empty Economic Stages", *Economic Journal*, March, 1965 and W.W. ROSTOW, *The Economics of Take Off into Sustained Growth* (London, 1963).

[108] W.W. ROSTOW, *How It All Began*, op. cit. and *The World Economy, History and Prospect* (London, 1978).

[109] L. SANDBERG, "Ignorance, Poverty and Economic Backwardness", op. cit.

that simply fail to fit the country or case under investigation. Meanwhile, and as research upon economies, regions, towns, sectors and factors of production proliferates no scholar with Gerschenkron's awesome learning and capacity for generalization has emerged to reconstruct an alternative typology which could serve to draw economic history into a European frame of reference. The accumulating body of modern research is so voluminous that no historian could now hope to impose his stamp upon it, which is why two recent attempts to use statistical approaches (multiple regression techniques and principal components analysis) in order to formulate European patterns of development are ostensibly appealing. At present the results of the second approach are not yet on the bookshelf and historians await the Adelman-Morris book, auspiciously entitled "Where Angels Fear to Tread" with some trepidation.[110] Certainly the publication of early results in journals do not inspire confidence that data sets they selected for European economies were carefully chosen.[111] The authors also appear to be quantifying the unquantifiable when they offer (but do not defend) statistical indicators purporting to measure the relative levels of development attained by commodity, labour, capital and land markets in different national economies; indices for relative levels of industrial technology, social overhead capital and agricultural resources; indices for predominant forms of land tenure and the openness of agricultural institutions to improvements; rankings by country for attitudes towards entrepreneurship, for the role of government, for political stability and for the efficiency of political leadership and representative institutions.[112] Substantive critic-

[110] C.T. Morris and I. Adelman, *Where Angels Fear to Tread: Quantitative Studies in History and Development* (Stanford, forthcoming).

[111] I. Adelman and C.T. Morris, "Patterns of Industrialization", op. cit. "Institutional Influences on Poverty" op. cit. and "The Role of Institutional Agricultural Development in the Nineteenth and Early Twentieth Centuries", *Journal of Economic History*, March, 1979.

[112] Adelman and Morris, "Patterns of Industrialization", op. cit.

isms of their statistical methods (when initially applied to a very much larger sample of developing economies) have not deterred Adelman and Morris from transferring large elements of what may prove to be an inappropriate technology into European economic history; where their preliminary results have already been greeted with marked scepticism.[113]

Crafts more realistic statistical exercise seems altogether more promising.[114] Alas the small sample of countries and the lower quality of the statistics he worked with form a far less secure basis for generalization than the data set used by Chenery and others to derive patterns of development from cross sectional analysis for over 100 countries covering the period 1950-70.[115] Chenery's method which is essentially one of observing how major structural parameters for national economies change as their real per capita incomes increase, was applied by Crafts to a basic data set for some 14 European countries (including Russia) for which he has indicators for: crude birth and death rates, shares of the work force in agriculture, the proportion of national income originating in primary production and industry, fractions of populations enrolled in schools, the allocation of gross national expenditure to investment, private consumption and government and deficits on current accounts of international payments.[116] By no means all the numerical values for these indicators are secure. In particular some historians will be unwilling to ignore the considerable index number problems involved in the construction of per capita G.N.P. mea-

[113] P.A. YOTOPOULOS and J.B. NUGENT, *Economics of Development Empirical Observations* (New York, 1976) and I. ADELMAN and C.T. MORRIS, *Society, Politics and Economic Development* (Baltimore, 1967) and see comments by Parker and Williamson upon their "Institutional Influences on Poverty and the Role of Institutional Influences", op. cit. in *Journal of Economic History*, March, 1983 See fn. 13.

[114] CHENERY and SYRQUIN, *Patterns of Development*, op. cit.

[115] Even so Chenery's attempt to derive patterns over time from cross-sectional data has been cogently criticized — see K.P. JAMESON "A Critical Examination of Patterns of Development", *Journal of Development Studies*, October, 1983.

[116] CRAFTS, "Patterns of Development", op. cit.

sured in dollars of 1970 for benchmark years from 1830 to 1910? [117]

But granted this index, observations can be derived of how a restricted list of structural parameters changed as European economies developed from one level of real per capita income to another. Historians will observe parameters varying in both direction and magnitude from parameter to parameter, from stage to stage and country to country. They may or may not find Crafts' attempt to "average" the behaviour of these variables into some kind of "European norm" acceptable. Chenery's sample was large and secure enough to allow him to disaggregate into small and large countries, primary and industrial exporters and to reveal the influence of natural resources upon development. There may be a European pattern (or more likely patterns) of industrialization to be inducted from European statistics and against which, for example, Spanish or French deviations can be exposed but until the data base is more secure it still seems difficult to discern.[118]

Meanwhile, and apart from the unsatisfactory mode of confounding Gerschenkron, the majority of Europe's economic historians continue to pursue their subject within the legal and institutional framework of nation states and to offer their research as a necessary basis for comparative history. Indeed that programme is exemplified by most textbooks in the field which tend to be surveys of foreign scholarship arranged country by country or input by input.[119] Readers of these scholarly and analytically

[117] A.K. Sen, "The Welfare Basis of Real Income Comparisons: A Survey", *Jornal of Economic Literature*, Spring, 1979; D. Usher, The Measurement of Economic Growth (Oxford, 1982); N.F. Crafts, "Gross National Product in Europe, 1870-1910: Some New Estimates" in *Explorations in Economic History*, 20, 1983.

[118] C. Molinas and L. Prados, Was Spain Different? (unpublished paper, Universidad de Alcala Henares, 1985 and Yotopoulos and Nugent, *Economics of Development*, op. cit.

[119] Milward and Saul, *The Economic Development of Continental Europe* and *The Development of the Economies of Continental Europe*, op. cit.) C. Cipolla, *The Fontana Economic History of Europe*, Vols 3 and 4, op. cit.; C. Trebilcock, *The Industrialization of the Continental Powers*, op. cit.; H. Habbakuk and M. Postan and P. Mathias (eds.) *The Cambridge Economic History of Europe*, Vols VI and VII, op. cit.

sophisticated books in European economic history are implicitly asked to make the necessary intellectual leaps from national histories moving through a century or more of industrialization to comparative history unfolding across the continent. Students, not yet scholars, are being left to draw out illuminating comparisons to forge contrasts and to discover missing connexions in the circuits that generated economic progress throughout Europe before 1914. Of course, interesting and potentially significant contrasts are sometimes delineated between agricultural institutions, techniques of production, transport facilities and types of financial intermediation but they are rarely investigated or specified in ways that suggest how variations might be tested for significance.

Perhaps more exciting and certainly more controversial exercises in comparative European history have been published by scholars whose purpose is to validate a theory. Such studies are characterized by some elaboration of theory, succeeded by the presentation of evidence, culled from national histories, but selected to persuade that the theory has real heuristic power. They include several varieties and levels of comparison from the intercontinental perspectives of the *European Miracle*, through the multinational *Rise of the Western World* onto the sectoral approach of *Commerce éxterieur et developpement economique de l'Europe au XIX^e siecle* and right down to a micro level concerned with the role of business elites in the industrialization of Britain, France, Prussia and Russia.[120] The first two examples derive inspiration from theories connecting institutions and the state to long term economic growth. External trade is obviously involved with relations between trade and tariffs and industrialization and the last with the casual significance of entrepreneurship as a factor of production.

[120] E.L. JONES, *The European Miracle* (Cambridge, 1981); NORTH and THOMAS, *The Rise of the Western World*, op. cit.; P. BAIROCH, *Commerce éxterieur et développement économique de l'Europe au XIX^e Siècle* (Paris, 1976); P.H. WILKIN, *Entrepreneurship, a Comparative and Historical Study* (1981).

Such work is exciting to read but comparative economic history of this genre usually ends up in inconclusive debate simply because the theories deployed are too loose, too baggy to be amenable to systematic testing. For example, can North and Thomas specify the differences between British and Spanish systems of property rights in the XVIIth century and connect these differences to changes in their respective levels of real per capita incomes? Are historians really satisfied with Bairoch's correlations between rates of growth and the degrees of tariff protection found across European economies from 1815 to 1914? Are they not left with a suspicion as they emerge from the dazzling light of the European Miracle that almost any hypothesis might be supported from data and history spanning two continents and a time span of five centuries? Can a nation's capacity for entrepreneurship really be detected anywhere other than at the enterprise level where it should, in theory at least, be defined as the distance between the actual and potential efficiency achieved by particular firms?

It way well be brash and it is certainly not difficult for historians lost in the thickets of national scholarship to review the paths marked out by their predecessors and call for new signposts for European economic history. But when they compare textbooks that preceded the Keynesian revolution with more modern histories of European development few historians will doubt that the questions and the national accounts approach derived from that theoretical breakthrough in macro-economics has carried the subject forward from the edge of a wood (from where little was perceived except trees) to the centre of a rather well surveyed territory. Where can we go from here has been the preoccupation of this essay, which has argued (without any intention of being merely critical of negative) that the typologies which have sustained and underpinned the subject for a quarter of a century are now perceived to be unsatisfactory guidelines for future research. Furthermore, my limited survey of the literature has not uncovered great potential for the reformulation or understanding of Europe's economic development on the basis of regional or urban

history, although comparative studies of transitions from proto into factory based production industry by industry remains a very promising line of enquiry, particularly if successful transformations are contrasted with failures.

Three new approaches seem to offer prospects of escape from merely adding to the volume of historical research bounded by Europe's national frontiers. All three call for the continued accumulation and further improvement of national statistics. First there is the task of mapping out and explaining the long term evaluation of revealed comparative advantage country by country from the bodies of trade data at our disposal. Secondly scholars who wish to explore the heuristic power of the inductive methods (pioneered by Chenery) to expose paths or patterns of industrialization among developing economies, need to be supplied with improved and wider sets of data.

Thirdly European economic history might find a way forward if we are prepared to follow the hard road trodden by our colleagues in historical demography. In that field a truly massive assault on parish registers, population censuses and other primary sources over the past three decades makes it possible to systematically compare long run demographic experience across Europe and also with other continents.[121] Demographers have now reached the more difficult stage of a research programme inaugurated by Louis Henry in 1954 and they begin to explain observed and established variations in fertility, nuptiality, mortality and illegitimacy across countries and regions.[122] Their data base excites envy from historians who try to account for economic change within the same continent but with only a fraction of the hard and widely accepted body of statistics demographers now command.

[121] M. FLINN, *The European Demographic System*; C. TILLY (ed.) *Historical Studies in Changing Fertility*, (Princeton, 1978); R.D. LEE (ed.) *Population Patterns in the Past* (New York, 1977).

[122] W.R. LEE (ed.), *European Demography and Economic Growth* (London, 1979); P. LASLETT et al (eds.), *Bastardy and Its Comparative History* (London, 1980).

Since mid-century European economic history has certainly been concerned with the measurement and explanation of differences in levels of per capita income and productivity attained by its constituent national economies from the late XVIIIth century down to the Great War. But the subject is still rather unsure of its ground. Perceptions of advanced and backward economies are shared by most scholars who expect to find Britain at the top of European league tables and Russia towards the botton. In between (and based upon highly imperfect data built up on the basis of questionable concepts which contravene important precepts of index number theory) some kind of rank order among countries has apparently been accepted.[123] But the fact is that economic historians are simply not yet in a position to appreciate the scale of variations among European nations in terms of per capita income and consumption levels: in labour productivities for major industries or for agriculture, in yields per hectare for important field crops or indeed for any of the other indicators of development and relative economic efficiency which constitute standard indicators for economists concerned with the measurement of comparative levels of economic development among European economies since the Second World War.[124] Thus the most urgent task for the subject, and a precondition for building new typologies for European industrialization, is to reconstitute the data now available on

[123] P. BAIROCH, "Europe's Gross National Product 1800-1975" in *Journal of European Economic History*, Fall, 1976; P. BAIROCH, "International Industrialization Levels from 1750-1980" in *Journal of European Economic History*, Spring, 1982; P. BAIROCH and M. LEVY LEBOYER (eds.), *Disparities in Economic Development Since the Industrial Revolution* (London, 1981); A. MADDISON, *Phases of Capitalist Development* (Oxford, 1982); A. MADDISON, "A Comparison of Levels of GDP Per Capita in Developed and Developing Countries" in *Journal of Economic History*, March, 1983 and G. TORTELLA and L. PRADOS, "The Pattern of Economic Modernzation in Southern Europe" op. cit.; SANDBERG, "Ignorance Poverty and Economic Backwardness", op. cit. expresses scepticism about Bairoch's numbers.

[124] A. BOLTHO (ed.), *The European Economy, Growth and Crisis* (Oxford, 1981), J. KENDRICK and B. VACCARA (eds.), *New Developments in Productivity Measurements and Analysis* (Chicago, 1980) and special issue of the *Economic Journal*, March, 1983, on the slowdown in productivity growth.

a national or industry-wide basis into a form that would command respect and facilitate comparisons across countries.

Of course the amount of information available for periods before 1914 will be limited and of questionable quality. The task of data collection must be predicated upon some consensus about the methods to be used and definitions of indicators likely to be accepted as proxies for relative levels of development, consumption and productivity across countries.[125] Statistics are merely a preface to real historical analysis but if an acceptable body of data could be put together then differentials in average living standards among European populations might be located and measured through time. Historians of the century before 1914 could then be in a position to follow standard Kuznetian methods and distinguish the share of that differential attributable to the reallocation of labour from primary production to industry and services from the share imputable to observed gaps in the productivities of labour employed within industry and agriculture.[126] In turn the revealed differentials in labour productivities can be broken down into constituent industries and subsectors of national agricultures.

When the data are in and salient differences between European economies are more or less accepted as "facts" historians of Europe can proceed to analyse contrasts in labour productivities in terms of capital intensity, tehniques and institutions.[127] Obviously they will then proceed to draw from the stack of growth models those theories which seem to account best for the observed patterns and rates of growth over the long run. They can then communicate their findings of how and why the European economy

[125] The writings of I. KRAVIS and his associates, *A System of International Comparisons of Gross Product and Purchasing Power* (2 Vols. Baltimore, 1975 and 1978) will be of immense theoretical assistance to economic historians working in the same field.

[126] S. KUZNETS, *Economic Growth of Nations* (Cambridge, 1971).

[127] Early and tentative papers constructed along the lines outlined above can be read in R. FREMDLING and P.K. O'BRIEN (eds.), *Productivity in the Economies of Europe* (Stuttgart, 1983) and in L. JORBERG and N. ROSENBERG (eds.), *Technical Change, Employment and Investment*, op. cit.

grew over the long run to their colleagues who try to distil from that experience lessons for the Third World today.[128]

Like the continent's wine European economic history displays endless and interesting possibilities. As practised in the late XXth century the craft might be distinguished into three basic varieties: the heavy clarets of scholarly surveys, the bubbly champagne of studies purporting to test grand theories of economic development and the dry whites of an inductive statistical approach. European economic history seems to have reached a stage where it is necessary to allocate more resources to the production of good dry whites. That may be the only way to create conditions for a new typology of Europe's industrialization from 1815 to 1914.

[128] D. Senghaas, *The European Experience, a Historical Critique of Development Theory* (Leamington Spa, 1982).