

## Quantitative research in economic history in Europe after 1945

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# Part 1: Concepts

Jos Delbeke, Herman Van der Wee

## Quantitative Research in Economic History in Europe after 1945\*

The study of quantitative economic history, building on the substantial base that was laid by economic historians such as Simiand and Labrousse in the 1930's, greatly expanded after 1945. The most important contributory factor for this phenomenon was undoubtedly the increasing interest of economists for the empirical testing of their theories, which, since the methodological conflicts of the 1880's, had been largely based on an ahistorical, deductive method. Then, too, more tools became available for the conduct of such research: more and more statistical techniques were developed that could be applied directly to economic research, and the evolution of computer sciences made their application practicable. Finally, the general expansion of the science of economy began to attract attention from other disciplines. Among those who felt this attraction were historians.

Our purpose here is to present the major trends of this intensified European research in economic history. We will concentrate on the fields of research that have occupied the attentions of the majority of the economic historians in specific periods. However, since complete bibliographies are readily available, we will make no attempt to provide an exhaustive list of the relevant publications.

The interest of economic historians has closely paralleled the contemporary problems confronting the science of economics. Between the two World Wars and shortly after World War II, economic movements attracted a great deal of attention. The great economic crises of the thirties and their aftermath were decisive. Historians set out to determine whether economic fluctuations had occurred in the past and, if so, in what manner. In so doing, they laid the foundations for the present quantitative economic history.

In the 1950's and 1960's, interest shifted more and more toward sectoral and macro-economic growth and toward the institutional factors associated with this growth. This was a period of decolonization, and the problem of development loomed large for the new nations though not less for the "old" nations. And with the ongoing crisis of the 1970's, the problem of discordant and unbalanced economic growth again came to the fore.

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\* We want to express our sincere thanks to Drs. E. Aerts for his valuable remarks.

Thus, our concern here is with the major trends in quantitative economic history as manifested in the work of European economic historians from 1945–1980. In addition, we will only treat the 1945–1980 period insofar as it is part of a larger whole. One final restriction: we will be interpreting this historical work in the strict economic sense: studies dealing primarily with demographical, social, political, and other analogous variables will not be taken into consideration. For them, we would refer the reader to more broadly conceived works.<sup>1</sup>

### I. The Study of Economic Movements

The world depression of the 1930's stimulated economists and historians to take up the study of the fluctuations in economic development and of business cycles. This interest led to the establishment of the "International Scientific Committee on Price History" in 1931 under the chairmanship of Lord Beveridge. This association provided the first significant impulse to quantitative economic historical research in Europe. The interest was primarily on fluctuations in prices and wages, and numerous studies appeared in France,<sup>2</sup> Germany,<sup>3</sup> Austria,<sup>4</sup> the United Kingdom,<sup>5</sup> Italy,<sup>6</sup> Poland,<sup>7</sup> and Spain.<sup>8</sup>

1. Baudet, H., Van Der Meulen, H., (eds.), *Kernproblemen der economische geschiedenis*, Groningen 1978.  
Bläsing, J. F. E., *Inleiding tot de elementaire economische geschiedenis*, Groningen 1980.  
Kula, W., *Problemi e metodi di storia economica*, Milano 1972.  
Geurts, P. A. M., Messing, F. A. M., *Theoretische en methodologische aspecten van de economische en sociale geschiedenis*, in: *Geschiedenis in veelvoud 7/8*, Den Haag 1979.  
Marczewski, J., *Introduction à l'histoire quantitative*, Genève 1965.  
Slicher van Bath, B. H., *Theorie en Praktijk in de economische en sociale geschiedenis*, in: A. A. G. Bijdragen, nr. 14, Wageningen 1967, pp. 105–228.  
Van der Wee, H., Klep, P. M. M., *Quantitative economic history in Europe since the Second World War: Survey, Evaluation and Prospects*, in: *Recherches Economiques de Louvain*, 41 (1975), pp. 195–218.
2. Hauser, H., *Recherches et documents sur l'histoire des prix en France de 1500 à 1800*, Paris 1933.  
Labrousse, C. E., *Esquisse du mouvement des prix et des revenus en France au XVIIIe siècle*, Paris 1933.
3. Elsas, M. J., *Umriss einer geschichte der Preise und Löhne in Deutschland*, Leiden 1936–49.  
Jacobs, A., Richter, H., *Die Großhandelspreise in Deutschland von 1792 bis 1934*, Berlin 1935.
4. Pribram, A. F., *Materialen zur Geschichte der Preise und Löhne in Oesterreich*, XV–XVIII Jahrhundert, Vienna 1938.
5. Beveridge, W., *Prices and Wages from the Twelfth to the Nineteenth Century. Vol. 1. Price Tables: Mercantile Era*, London 1939.  
Gilboy, E. W., *Wages in Eighteenth Century England*, London 1934.
6. Parenti, G., *Prime ricerche sulla Rivoluzione dei prezzi in Firenze*, Florence 1939.  
Fanfani, A., *Indagini sulla "Rivoluzione dei prezzi"*, Milano 1940.  
Parenti, G., *Prezzi e mercato del grano a Siena, 1546–1756*, Florence 1942.
7. Several price publications appeared in the series "Badania z Dziejow Spoznyck i Gospodarzczyck" pod redahcja Prof. Fr. Bujak. The editors were Adamczyk, A., Furtak, T., Gorkiewicz, M., Hoszowski, S., Mika, M., Pelc, J., Siegel, S., Tomaszewski, E.

This trend continued after World War II, and new research projects were set up in various countries. Under the impetus provided by E. Labrousse and J. Meuvret in France, an enormous project was begun with the objective of editing and publishing official French price lists from the 16th century on.<sup>9</sup> Similar work was commenced in almost every European country: Italy,<sup>10</sup> the Netherlands,<sup>11</sup> Belgium (where the "Interuniversity Centre for the History of Prices and Wages" was established in 1953),<sup>12</sup>

8. Hamilton, E. J., *American Treasure and the Price Revolution in Spain, 1501-1650*, Cambridge, Mass. 1934.  
Hamilton, E. J., *Money, Prices and Wages in Valencia, Aragon and Navarra, 1351-1500*, Cambridge, Mass. 1936.  
Hamilton, E. J., *War and Prices in Spain, 1651-1800*, Cambridge, Mass. 1947.
9. Baulant, M., Meuvret, J., *Prix des céréales extraits de la mercuriale de Paris, 1520-1698*, Paris 1960.  
Baulant, M., *Le prix du blé à Paris, 1450-1789*, in: *Annales E. S. C.*, 23(1968), pp. 520-540.  
Baulant, M., *Le salaire des ouvriers du bâtiment à Paris de 1400 à 1726*, in: *Annales E. S. C.*, 26(1971), pp. 436-483.  
Romano, R., *Commerce et prix du blé à Marseille au XVIIIe siècle*, Paris 1956.  
Frêche, G. & G., *Les prix des grains, des vins et des légumes à Toulouse, 1486-1868*, Paris 1967.  
Labrousse, E., Romano, R., Dreyfus, F. G., *Le prix du froment en France au temps de la monnaie stable, 1726-1913*, Paris 1930.  
Dupaquier, J., Lachiver, M., Meuvret, J., *Mercuriales du pays de France et du Vexin français, 1640-1792*, Paris 1968.
10. De Maddalena, A., *Prezzi e aspetti di mercato in Milano durante il secolo XVII*, Milano 1950.  
Romano, R., *Prezzi, salari e servizi a Napoli nel secolo XVIII, 1734-1806*, Milano 1965.  
De Maddalena, A., *Prezzi e mercedi a Milano dal 1701 al 1860*, Milano, 1974.  
Also several publications in: Cipolla, C. M., (ed.), *Archivio Economico dell' Unificazione Italiana*, 1956.  
Sella, D., *Salari e lavoro nell'edifizia lombarda durante il secolo XVII*, Pavia 1968.  
Basini, G. L., *L'uomo e il pane. Ricorse, consumi e carenze della popolazione modenese nel Cinque e Seicento*, Milano 1970.  
Vigo, G., *Real Wages of the Working Class in Italy: Building Workers' Wages, fourteenth to eighteenth century*, in: *The Journal of European Economic History*, 3(1974), pp. 378-399.
11. Posthumus, N. W., *Nederlandsche Prijsgeschiedenis*, Leiden 1943.  
Posthumus, N. W., Ketner, F., *Nederlandsche Prijsgeschiedenis*, Leiden 1964.
12. Verlinden, C., a.o., *Dokumenten voor de geschiedenis van prijzen en lonen in Vlaanderen en Brabant*, Bruges 1959-73.  
Van der Wee, H., *The Growth of the Antwerp Market and the European Economy, fourteenth-sixteenth centuries*, vol. 1: Statistics, The Hague 1963.  
Ruwet, J., Hélin, E., Ladrier, F., Van Buyten, L., *Marché des céréales à Ruremonde, Luxembourg, Namur et Diest aux 17e et 18e siècles*, Louvain 1966.  
Génicot, L., Bouchat-Dupont, M. S., Delvaux, B., *La crise agricole du Bas Moyen Age dans le Namurois*, Louvain 1970.  
Fanchamps, M. L., *Recherches statistiques sur le problème annonaire dans la principauté de Liège de 1475 à la fin du 16e siècle*, Liège 1970.  
Tits-Dieuaide, M. J., *La formation des prix céréaliers: l'exemple flamand et brabançon au 15e siècle*, Brussels 1975.  
Several articles are published in the "Bijdragen tot de Prijsgeschiedenis/Contributions à l'histoire des prix".  
In the 1970s, a series "Lonen en Prijzen", is being published under the direction of E. Scholliers (Brussels).

Denmark,<sup>13</sup> the United Kingdom,<sup>14</sup> Portugal,<sup>15</sup> Sweden,<sup>16</sup> the USSR,<sup>17</sup> Poland,<sup>18</sup> Spain,<sup>19</sup> West Germany,<sup>20</sup> and Turkey and the Middle East.<sup>21</sup>

These price and wage studies primarily constituted the first phase of quantitative economic historical research: the construction of a data bank. The data were very

13. Friis, A., Glamann, Kr., *A History of Prices and Wages in Denmark, 1660-1800*, London 1958.
14. Postan, M. M., Titow, J., *Heriots and Prices on Winchester Manors*, in: *The Economic History Review*, 11(1958-'59), pp. 392-417.  
Farmer, D. L., *Some Grain Price Movements in Thirteenth-Century England*, in: *The Economic History Review*, 10(1957-'58), pp. 207-220.  
Farmer, D. L., *Some Livestock Price Movements in Thirteenth Century England*, in: *The Economic History Review*, 22(1969-'70), pp. 1-16.  
Brenner, Y. S., *The Inflation of Prices in Early Sixteenth Century England*, in: *The Economic History Review*, 14(1960-'61), pp. 225-239.  
Brenner, Y. S., *The Inflation of Prices in England, 1551-1650*, in: *The Economic History Review*, 15(1962-'63), pp. 266-284.  
Bowden, P., *Agricultural Prices, Farm Profits and Rents*, in: J. Thirsk (ed.), *The Agrarian History of England and Wales*, vol. IV: 1500-1640, Cambridge 1967, pp. 593-695.  
Hoskins, W. G., *Harvest Fluctuations and English Economic History, 1480-1619*, in: *Agricultural History Review*, 12(1964), pp. 18-46.  
Hoskins, W. G., *Harvest Fluctuations and English Economic History, 1620-1759*, in: *Agricultural History Review*, 16(1968), pp. 15-31.  
Chapman, A., Knight, R., *Wages and Salaries in the United Kingdom, 1920-1938*, London 1953.
15. Magelhaes Godinho, V., *Prix et Monnaies au Portugal, 1750-1850*, Paris 1955.
16. Hammarström, I., *The Price Revolution of the Sixteenth Century: Some Swedish Evidence*, in: *The Scandinavian Economic History Review*, 5(1957), pp. 118-154.  
Jörberg, L., *The Development of Real Wages for Agricultural Workers in Sweden During the Eighteenth and Nineteenth Centuries*, in: *Economy and Theory*, 15(1972), pp. 41-57.
17. Mankov, A. G., *Le mouvement des prix dans l'état russe du 16e siècle*, Paris 1957.
18. Hoszowski, St., *Les prix à Lwów, 16e-17e siècles*, Paris 1954.
19. Eiras Roel, A., Uzero Gonzales, R., *Los Precios de los granos de Santiago de Compostella: siglo 18*, in: *Jornadas de Metodología aplicada de las Ciencias Historicas*, 24-27 Abril 1973, Ponencias y Comunicaciones, vol. 2, pp. 20.  
García Lombardero, J., *Analisis estadístico de los precios de los productos agrícolas en la Galicia del siglo 18*, in: *Jornadas de metodología aplicada de las Ciencias Historicas*, 24-27 Abril 1973, Ponencias y Comunicaciones, vol. 2, pp. 12.
20. Abel, W., *Agrarkrisen und Agrarkonjunktur. Eine Geschichte der Land- und Ernährungswirtschaft Mitteleuropas seit dem hohen Mittelalter*, Hamburg, Berlin 1935.  
Abel, W., *Massenarmut und Hungerkrisen im vorindustriellen Europa*, Hamburg, Berlin 1974.  
Achilles, W., *Getreidepreise und Getreidehandelsbeziehungen europäischer Räume im 16. und 17. Jahrhundert*, in: *Zeitschrift für Agrargeschichte und Agrarsoziologie*, 7(1959), pp. 32-55.  
Schmidt, H. J., *Faktoren der Preisbildung für Getreide und Wein in der Zeit von 800 bis 1350*, Stuttgart 1968.
21. Barkan, O., *XV. asrın sonunda bazı büyük schirlerde esya ve yiyecek fiyatları*, Istanbul 1942.  
Barkan, O., *Les mouvements des prix en Turquie entre 1490 et 1655*, in: *Mélanges en l'honneur de F. Braudel*, Vol I: *Histoire économique du monde méditerranéen, 1450-1650*, Toulouse 1973, pp. 65-79.  
Ashtor, E., *Histoire des prix et des salaires dans l'Orient Médiéval*, Paris 1969.

precisely classified and made homogeneous, but very few statistical analyses were carried out. The publication of primary sources continues unabated today, which is necessary for further research. Now, however, most publications include more extensive statistical analyses.

Also during the 1930's, some economists became fascinated by the successive periods of growth and decline that seemed to occur in the various economic sectors, and they began to subject these phenomena to detailed historical and statistical analysis, which the increasing availability of numerical material made possible.

The Russian economist, N. D. Kondratieff, was the first to test and integrate the existing speculative theories on the long waves scientifically.<sup>22</sup> The influence of his work was great, and, together with the outbreak of the Great Depression, it inspired a number of important studies that often extended into the pre-industrial period: in France by F. Simiand and E. Labrousse,<sup>23</sup> in Belgium by L. H. Dupriez and his colleagues,<sup>24</sup> and in the Netherlands by S. De Wolff.<sup>25</sup> In Germany, numerous interesting studies were published.<sup>26</sup> After World War II, the study

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22. The idea of long waves was first suggested in 1913 by the Dutch economist Van Gelderen, who wrote under the name of J. Fedder. In the twenties, Kondratieff developed the notion of long waves systematically.  
Kondratieff, N. D., *Die langen Wellen der Konjunktur*, in: *Archiv für Sozialwissenschaft und Sozialpolitik*, 56(1926), pp. 573–609.  
Kondratieff, N. D., *Die Preisdynamik der industriellen und landwirtschaftlichen Waren*, in: *Archiv für Sozialwissenschaft und Sozialpolitik* 60(1929), pp. 1–85.
23. Simiand, Fr., *Le salaire, l'évolution sociale et la monnaie. Essai de théorie expérimentale du salaire*, Paris 1932.  
Simiand, Fr., *Recherches anciennes et nouvelles sur le mouvement général des prix du 16e au 19e siècle*, Paris 1932.  
Simiand, Fr., *Inflations et stabilizations alternées: le développement économique des Etats-Unis*, Paris 1934.  
Labrousse, C. E., *Esquisse du mouvement des prix et des revenus en France au 18e siècle*, Paris 1932.  
Labrousse, C. E., *La crise de l'économie française à la fin de l'Ancien Régime et au début de la Révolution*, Paris 1944.
24. Dupriez, L. H., *Einwirkungen der langen Wellen auf die Entwicklung der Wirtschaft seit 1800*, in: *Weltwirtschaftliches Archiv*, 37(1935), pp. 1–12.  
Dupriez, L. H., *Des mouvements économiques généraux*, Louvain 1947.  
Dupriez, L. H., *Philosophie des conjonctures économiques*, Louvain 1959. The very interesting sectoral research of Dupriez and his colleagues was published in *Recherches Economiques de Louvain*, formerly *Bulletin de l'Institut des Sciences Economiques*, founded in 1929.
25. de Wolff, S., *Prosperitäts- und Depressionsperioden*, in: *Der lebendige Marxismus. Festgabe zum 70. Geburtstag von K. Kautsky*, Jena 1924.  
de Wolff, S., *Het Economisch Getij*, Amsterdam 1929.  
As noticed in footnote 22, Van Gelderen (pen-named J. Fedder) first suggested the idea of the long wave, already before the first world war.  
Van Gelderen, J., *Springvloed: beschouwingen over industriële ontwikkeling en prijsbeweging*, in: *De Nieuwe Tijd*, 1913, pp. 253–277, 369–384, 445–464.
26. Abel, W., *Agrarkrisen und Agrarkonjunktur. Eine Geschichte der Land- und Ernährungswirtschaft Mitteleuropas seit dem hohen Mittelalter*, Hamburg, Berlin 1935.  
Cassel, G., *Theoretische Sozialökonomie*, Leipzig 1932.

of the long waves was enriched by the integration of the study of short-term fluctuations.<sup>27</sup>

The most influential of the authors who dealt with long wave theories was undoubtedly J. A. Schumpeter.<sup>28</sup> His works are milestones in economic historiography, and they continue to exercise much influence on economic thought. The dating of his analytical schema was carried out by Simon Kuznets.<sup>29</sup>

Notwithstanding the interest in the long waves, research concerning short-term fluctuations continued to be very active. In France, these studies were dominated by Labrousse's concept of "crise d'ancien type" or "crise de subsistance".<sup>30</sup> The interest in England was focused more on the business cycles in the 18th and 19th centuries. Some of these studies were the result of broad and fruitful Anglo-American cooperation,<sup>31</sup> and others were published as shorter monographs<sup>32</sup> or as articles.<sup>33</sup>

## II. The Study of Economic Growth

In the postwar period, the successes achieved in the reconstruction of wage and price data were rapidly extended to the areas of agrarian, industrial, commercial, and monetary statistics. Indeed, the economic movement theories had shown how usefully diverse quantitative information could be combined in such a way that more profound analyses could be carried out than were possible using traditional qualitative historiography.

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- von Ciriacy-Wantrup, S., *Agrarkrisen und Stockungsspannen zur Frage der langen Wellen in der wirtschaftlichen Entwicklung*, Berlin 1936.
- Däbritz, W., *Die typischen Bewegungen im Konjunkturverlauf*, Leipzig 1929.
- Wagemann, E., *Struktur und Rhythmus der Weltwirtschaft*, Berlin 1931.
- Wagemann, E., *Menschenzahl und Völkerschicksal*, Berlin 1948.
- Woytinski-Lorenz, W., *Das Rätsel der langen Wellen*, in: Schmoller's Jahrbuch (1931), pp. 1-42.
27. Akerman, J., *Structures et Cycles Economiques*, Paris 1957.
- Imbert, G., *Des mouvements de longue durée Kondratieff*, Aix-en-Provence 1959.
- Parry Lewis, J., *Building Cycles and Economic Growth*, London 1965.
- Thomas, B., *Migration and Economic Growth*, Cambridge 1954.
- Weinstock, U., *Das Problem der Kondratieff-zyklen*, Berlin, München 1964.
- For the pre-industrial period can also be mentioned:
- Braudel, F., Spooner, F. C., *Prices in Europe from 1450 to 1750*, in: The Cambridge Economic History of Europe, vol. IV, Cambridge 1957, pp. 374-486.
- Van der Wee, H., *Typologie des crises et changements de structures au Pays-Bas, 15e-16e siècles*, in: *Annales E.S.C.*, 18(1963), pp. 209-225.
28. Schumpeter, J. A., *Business-Cycles. A theoretical, historical and statistical analysis of the capitalist process*, New York 1939.
29. Kuznets, S., *Schumpeter's Business Cycles*, in: *Economic Change*, New York 1953.
30. Meuvret, J., *Etudes d'histoire économique. Recueil d'articles*, Paris 1971.
- Chabert, A., *Essai sur le mouvement des revenus et de l'activité économique en France de 1798 à 1820*, Paris 1945-'49.
31. Gayer, A., Rostow, W. W., Schwartz, A. J., *The Growth and Fluctuations of the British Economy, 1790-1850*, Oxford 1953.
32. Ashton, T. S., *Economic Fluctuations in England, 1700-1800*, Oxford 1958.
33. Phelps-Brown, E. H., Handfield-Jones, S. J., *The Climacteric of the 1890's: A study in the Expanding Economy*, in: *Oxford Economic Papers*, 4 (1952) pp. 266-307.

Initially, the major effort was devoted to the construction of reliable data bases, and statistical analyses were limited. The researchers evidently hoped that more integrated analyses could be performed afterwards, and as time went by they tried more and more to test the existing theories for their truth value.

The most significant analyses, nevertheless, were those that provided fundamental contributions to the formulation of new economic theories on the basis of history. The long-wave theoreticians and historians had been the pioneers in this regard because they had illustrated how fruitful a laboratory history could be for the human sciences, to which economics continues to belong in spite of its use of methods derived from the positive sciences.

And in the 1950's and 1960's, there was a great need for new theory formation. Many economists, confronted with the problems of the developing countries and the questions concerning further progress in a world that had recovered from the war, felt the limitations of the ahistorical marginalist approach. Therefore, they took up the study of history from their own scientific points of view in order to analyze the variables of economic development, which had been considered externally up till then. The pioneers of this evolution were Kuznets, Gerschenkron, and Rostow in the United States, Lewis in the United Kingdom, and Perroux in France.<sup>34</sup> More and more historians joined this evolution and schooled themselves in economic theories and quantitative analysis, instruments that had matured in the science of economics. These historians fruitfully emphasized the social changes that economic growth seemed to imply.

Interest in commercial statistics had long been keen, doubtless because of the emphasis that classic economic theory had placed on commercial liberalization for the development of the capitalist world economy. Several important publications were devoted to maritime statistics. N. Ellinger Bang published the *Sont* registers, that is, statistical material on the Baltic and North Sea trade. These data were computerized by Johansson.<sup>35</sup> P. Chaunu and H. Chaunu compiled the first statistics concerning the trade between Europe and the West Indies.<sup>36</sup> For England, global statistics on the overseas trade were assembled with a high degree of reliability and "cover", that is, for the Middle Ages,<sup>37</sup> the 17th century,<sup>38</sup> and for the later period.<sup>39</sup> For the other

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34. Kuznets, S., *Modern Economic Growth: Rate, Structure and Spread*, New Haven, Conn. 1966.  
Gerschenkron, A., *Continuity in History and other Essays*, Cambridge, Mass. 1968.

Rostow, W. W., *The Stages of Economic Growth*, Cambridge, Mass. 1966.

Lewis, W. A., *Economic Development with unlimited Supplies of Labour*, in: Manchester School of Economic and Social Studies, 12(1954).

Perroux, F., *La coexistence pacifique*, Paris 1958.

35. Ellinger Bang, N., Korst, Kn., *Tabeller over Skibsfart og Varetransport gennem Øresund, 1497-1660*, Copenhagen 1906-1923.

Ellinger Bang, N., Korst, Kn., *Tabeller over Skibsfart og Varetransport gennem Øresund, 1661-1783 og gennem Storebaelt, 1701-1748*, Copenhagen 1930-1953.

36. Chaunu, P. & H., *Séville et l'Atlantique, 1504-1650. Statistique du trafic entre l'Espagne et le Nouveau Monde*, Paris 1953-1960.

37. Carus-Wilson, E. M., Coleman, O., *England's Export Trade, 1275-1547*, Oxford 1963.

38. Davis, R., *English Overseas Trade, 1500-1700*, London 1973.

39. Schumpeter, E. B., *English Overseas Trade Statistics, 1697-1808*, Oxford 1960.

Schlote, W., *British Overseas Trade from 1700 to the 1930's*, Oxford 1952.



European countries, analogous global or national statistical information concerning the Ancien Régime was not available, although several studies appeared with more specific commercial statistics concerning particular harbors, forms of trade, or toll revenues.

The innovational works began increasingly to apply the international trade theories to the historical data that had become available: F. Mauro developed a model for the European colonial expansion of the Modern Period;<sup>40</sup> H. Van der Wee proposed a dual development model as the explanation of the trend in European trade in the late Middle Ages and in the Modern Period;<sup>41</sup> K. Veraghtert applied advanced statistical techniques to new sources concerning the Port of Antwerp in the 19th century;<sup>42</sup> and other European economic historians studied the role of international trade in industrial development (see below). Thus, C. Wilson investigated the relationship between the growth of British overseas trade and the development of European industry,<sup>43</sup> and P. Bairoch contributed to the comparison of foreign trade and economic development in Europe during the 19th and 20th centuries.<sup>44</sup>

Most economic historians seem to have been fascinated primarily by the study of macro-economic growth, and major works were published on this subject, though many of them were still descriptive in nature. Regional studies, mainly on the Ancien Régime, were very popular on the continent. The general influence of the French "Annales" school and the specific influence of F. Braudel's geo-history and his "Longue Durée" are obvious.<sup>45</sup> For France, it is possible to point to an entire series of important regional studies for the period from the Late Middle Ages to the 19th century.<sup>46</sup> Outside of France, the influence of the "Annales" school was strongly felt in Italy, Spain, Belgium, and the Netherlands.<sup>47</sup>

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40. Mauro, F., *Towards an Intercontinental Model: European Overseas Expansion between 1500 and 1800*, in: *The Economic History Review*, 15(1961), pp. 1-17.

41. Van der Wee, H., Peeters, Th., *Un modèle dynamique de croissance interseculaire du commerce mondiale, 12e-18e siècles*, in: *Annales E.S.C.*, 25(1970), pp. 100-126.

42. Veraghtert, K., *De havenbeweging te Antwerpen tijdens de 19e eeuw. Een kwantitatieve benadering*, Leuven 1977.

43. Wilson, Ch., *The Growth of Overseas Commerce and European Manufacture*, in: *New Cambridge Modern History*, 1957.

44. Bairoch, P., *Commerce internationale et genèse de la révolution industrielle anglaise*, in: *Annales E.S.C.*, 28(1973), pp. 541-571.

Bairoch, P., *European Foreign Trade in the XIXth Century. The Development of the Value and Volume of Exports*, in: *The Journal of European Economic History*, 2(1973), pp. 3-56.

Bairoch, P., *Geographical Structure and Trade Balance of European Foreign Trade from 1800 to 1970*, in: *The Journal of European Economic History*, 3(1974), pp. 557-608.

45. Braudel, F., *La Méditerranée et le monde méditerranéen à l'époque de Philippe II*, Paris 1949.

46. Le Roy Ladurie, E., *Les Paysans de Languedoc*, Paris 1966.

Goubert, P., *Beauvais et le Beauvaisis de 1600 à 1730*, Paris 1960.

Léon, P., *La naissance de la grande industrie en Dauphiné, fin du 17e siècle-1869*, Paris 1954.

Baehrel, R., *Une croissance: la Basse-Provence rurale, fin du 16e siècle-1789*, Paris 1961.

Neveux, H., *Les grains du Cambrésis, fin du 14e-début du 17e siècles. Vie et déclin d'une structure économique*, Lille 1974.

47. Vilar, P., *La Catalogne dans l'Espagne moderne*, Paris 1962.

In Great Britain, numerous major studies were published on the industrial revolution by such scholars as T. S. Ashton, P. Deane, R. M. Hartwell, P. Mathias, and P. Mantoux.<sup>48</sup> This research was soon followed on the continent by P. Lebrun and H. Van der Wee in Belgium, W. G. Hoffmann in Germany, J. A. De Jonghe and R. T. Griffiths in the Netherlands, and F. Crouzet, P. Léon, M. Lévy-Leboyer, and J. Marczewski in France.<sup>49</sup> The Take-Off and Great Spurt Hypotheses of W. W. Rostow and A. Gerschenkron, respectively, attracted a great deal of interest. Later on, however, more and more studies were devoted to the long-term development of industrial capitalism in Western Europe<sup>50</sup> for which extensive statistical material was assembled and made homogeneous.<sup>51</sup>

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- Van der Wee, H., *The Growth of the Antwerp Market and the European Economy, fourteenth-sixteenth centuries*, The Hague 1963.
- Slicher van Bath, B. H., *Een samenleving onder spanning. Geschiedenis van het platteland in Overijssel*, Assen 1957.
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- Faber, J. A., *Drie eeuwen Friesland. Economische en sociale ontwikkelingen van 1500 tot 1800*, in: A.A.G.-Bijdragen, nr. 17, Wageningen 1972.
48. Ashton, T. S., *The Industrial Revolution, 1760-1830*, London 1948.
- Deane, Ph., *The First Industrial Revolution*, Cambridge 1965.
- Hartwell, R. M. (ed.), *The Causes of the Industrial Revolution in England*, London 1967.
- Mathias, P., *The First Industrial Nation*, London 1969.
- Mantoux, P., *La révolution industrielle au 18e siècle*, London 1960.
49. Lebrun, P., *La Rivoluzione Industriale in Belgio. Strutturazione e destrutturazione delle economie regionali*, in: Studi Storici, 2(1961), pp. 448-558.
- Lebrun, P., Bruwier, M., Dhondt, J., Hansotte, G., *Essai sur la révolution industrielle en Belgique, 1770-1847*, Brussel 1979.
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- Léon, P., Crouzet, F., Gascon, R., *L'industrialisation en Europe au 19e siècle. Cartographie et Typologie*, Lyon 7-10 Octobre 1970, Paris 1972.
- Lévy-Leboyer, M., *Les banques européennes et l'industrialisation internationale dans la première moitié du 19e siècle*, Paris 1964.
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50. Deane, P., Cole, W. A., *British Economic Growth, 1688-1959. Trends and Structure*, Cambridge 1962.
- Landes, D. S., *The Unbound Prometheus. Technological Change and Industrial Development from 1750 to the present*, Cambridge 1969.
- Milward, A. S., Saul, S. B., *The Economic Development of Continental Europe, 1780-1870*, London 1973.
- Milward, A. S., Saul, S. B., *The Development of the Economies of Continental Europe, 1850-1914*, London 1977.

In the analysis of the determinants of economic growth, capital formation in Great Britain received considerable attention, particularly since the pioneering study of A. K. Cairncross.<sup>52</sup> On the continent, too, research in this area increased: in France under the direction of F. Crouzet and in the Scandinavian countries.<sup>53</sup>

Inspired by the New Economic History in the United States, the effect on economic growth of investment in the railroad sector attracted the attention of a number of scholars such as F. Caron in France, G. R. Hawke in England, and R. Fremdling in Germany.<sup>54</sup> Others studied more explicitly the role of technological innovations

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- Gadisseur, J., *Le produit physique de l'économie belge, 1831-1913. Présentation critique des données statistiques*, Liège 1980.
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51. Mitchell, B. R., Deane, P., *Abstract of British Historical Statistics*, Cambridge 1962.
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52. Cairncross, A. K., *Home and Foreign Investment, 1870-1913*, Cambridge 1953.
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- Pollard, S., *The Growth and Distribution of Capital in Great Britain, 1770-1870*, in: *Third International Conference of Economic History, München 1965*, vol. 1, 1968.
53. Crouzet, Fr. (ed.), *Capital Formation in the Industrial Revolution*, London 1972.
- Lundberg, L., *Kapitalbildningen i Sverige, 1861-1965*, Upsala 1969.
- Martinus, S., *Agrar Kapitalbildning och finansiering, 1833-1892*, Göthenborg 1970.
- Krust, O. A., Bjerke, J., *Real Capital and Economic Growth in Norway, 1900-1956*, in: *Income and Wealth, Series 8*, London, 1959.
54. Caron, Fr., *Histoire de l'exploitation d'un grand réseau: la Compagnie du Chemie de Fer du Nord, 1846-1937*, Paris 1973.
- Hawke, G. R., *Railways and Economic Growth in England and Wales, 1840-1870*, Oxford 1970.
- Mitchell, B. R., *The Coming of the Railway Age and United Kingdom Economic Growth*, in: *Journal of Economic History*, 24(1964), pp. 315-336.

and their diffusion. The research of H. J. Habakkuk was very significant in this area.<sup>55</sup> In Britain, several studies were undertaken in order to measure labor and capital productivity on the national, regional, and sectoral levels. A. Maddison, P. O'Brien, and others compared the evolution of labor productivity internationally.<sup>56</sup> In this connection, the brilliant study of E. H. Phelps-Brown and M. H. Browne, "A Century of Pay", must also be mentioned here.<sup>57</sup>

In France, Germany, and Belgium, particular attention was devoted to the influence of financial intermediation on economic development.<sup>58</sup> A more recent de-

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Vamplew, W., *Railways and the Transformation in the Scottish Economy*, in: *The Economic History Review*, 24(1971), pp. 37-54.

Vamplew, W., *Railways and the Iron Industry in Scotland*, in: Reed, M. C. (ed.), *Railways in the Victorian Economy*, Newton Abbot 1969.

Fremdling, R., *Eisenbahnen und deutsches Wirtschaftswachstum, 1840-1879. Ein Beitrag zur Entwicklungstheorie und zur Theorie des Infrastruktur*, Dortmund 1975.

Fenoaltea, S., *Railroads and Italian Industrial Growth, 1861-1913*, in: *Explorations in Economic History*, 9(1972), pp. 325-352.

55. Habakkuk, H. J., *American and British Technology in the 19th Century: the Search for Labour-Saving Inventions*, Cambridge 1962.

56. Maddison, A., *Economic Growth in the West: Comparative Experience in Europe and North America*, New York 1964.

O'Brien, P. K., Keyder, C., *Economic Growth in Britain and France, 1780-1914: Two Paths to the 20th Century*, London 1978.

Blaug, M., *The Productivity of Capital in the Lancashire Cotton Industry during the Nineteenth Century*, in: *The Economic History Review*, 13(1960-1961), pp. 358-381.

Floud, R., *Changes in the Productivity of Labour in the British Machine Tool Industry, 1856-1900*, in: McCloskey, D. N. (ed.), *Essays on a Mature Economy*, Princeton 1971, pp. 313-337.

Hunt, E. H., *Labour Productivity in English Agriculture, 1850-1914*, in: *The Economic History Review*, 20(1967), pp. 281-292.

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Lomax, K. S., *Production and Productivity Movements in the United Kingdom since 1900*, in: *Journal of the Royal Statistical Society* (1959).

Rostas, L., *Comparative Productivity in British and American Industry*, Cambridge 1948.

Saul, S. B. (ed.), *Technological Change: the United States and Britain in the Nineteenth Century*, London 1970.

Tann, J., *Fuel Savings in the Process Industries during the Industrial Revolution: A Study in Technological Diffusion*, in: *Business History*, 15(1973), pp. 149-159.

Taylor, A. J., *Labour Productivity and Technological Innovation in the British Coal Industry, 1850-1914*, in: *The Economic History Review*, 16(1961-1962), pp. 48-70.

Walters, R., *Labour Productivity in the South Wales Steam-Coal Industry, 1870-1914*, in: *The Economic History Review*, 28(1975), pp. 280-303.

57. Phelps Brown, E. H., Browne, M. H., *A Century of Pay. The Course of Pay and Production in France, Germany, Sweden, the United Kingdom and the United States of America, 1860-1960*, London, New York 1968.

58. Bouvier, J., *Le Crédit Lyonnais de 1863 à 1882. Les années de la formation d'une banque de dépôts*, Paris 1961.

Bouvier, J., *Les Rothschild*, Paris 1967.

Lévy-Leboyer, M., *Les banques européennes et l'industrialisation internationale dans la première moitié du 19e siècle*, Paris 1964.

velopment in Europe is the application of quantitative methods in business history. In 1970, during the first Anglo-American MSSB conference at Harvard, K. Trace and P. H. Lindert used cost-benefit analysis in order to estimate the effect of entrepreneurial decision making in the chemical industry on the Victorian economy.<sup>59</sup> Both J. Kocka and R. Tilly have conducted quantitative studies on the relation between industrialization, bureaucratization, and the capital markets in Germany during the second half of the 19th century.<sup>60</sup> Both of these German studies, however, were more statistical than econometrical history. More econometrical was H. Daems' research on the strategy of the large Belgian holding companies. This study developed a mathematical theory of corporate control, measured the impact of the financial institution on Belgian economic growth, and estimated the financial performance.<sup>61</sup>

A true macro-economic approach was applied in the massive effort to reconstruct the national accounts. The greatest influence in this regard came undoubtedly from Simon Kuznets and from the International Association for Research in Income and Wealth, which not only renovated the research in the field but also supported it financially.<sup>62</sup> In England, the National Institute of Economic and Social Research and the Department of Applied Economics of Cambridge University were very active; in France the Institut des Sciences Economiques Appliquées (ISEA); and in Germany the Institut für Weltwirtschaft in Kiel and the Deutsche Forschungsgemeinschaft. The first useable results became available in the 1960's published under the direction of P. Deane and W. A. Cole in Great Britain, J. Marczewski in France, and W. Hoffman in Germany.<sup>63</sup>

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Eistert, E., *Die Beeinflussung des Wirtschaftswachstums in Deutschland von 1883 bis 1913 durch das Bankensystem*, Berlin 1970.

59. Lindert, P. H., Trace, K., *Yardsticks for Victorian Entrepreneurs*, in: McCloskey, D. N. (ed.), *Essays on a Mature Economy*, Princeton 1971, pp. 239-274.  
See also: Buxton, N. K., *Entrepreneurial Efficiency in the British Coal Industry between the Wars*, in: *The Economic History Review*, 23(1971), pp. 476-497.
60. Kocka, J., *Unternehmensverwaltung und Angestelltenschaft am Beispiel Siemens, 1847-1914. Zum Verhältnis von Kapitalismus und Bürokratie in der deutschen Industrialisierung*, Stuttgart 1969.  
Tilly, R., *Zur Entwicklung des Kapitalmarktes und Industrialisierung im 19. Jahrhundert unter besonderer Berücksichtigung Deutschlands*, in: *Vierteljahrsschrift für Sozial- und Wirtschaftsgeschichte*, 60(1973), pp. 145-165.
61. Daems, H., *The Holding Company and Corporate Control*, Leiden, Boston 1978.
62. The first results of this research project were published in Kuznets, S. (ed.), *Income and Wealth*, vol. 2, 3, and 5, London, 1952, 1953 and 1955.  
Summaries by Kuznets, S., *Quantitative Aspects of the Economic Growth of Nations*, in: *Economic Development and Cultural Change*, 1956 and following years.
63. Deane, P., Cole, W. A., *British Economic Growth, 1688-1959. Trends and Structure*, Cambridge 1969.  
Jeffreys, J. B., Walters, D., *National Income and Expenditure of the United Kingdom, 1870-1952*, in: *Income and Wealth*, Series V, London, 1956.  
Mitchell, B. R., Deane, P., *Abstract of British Historical Statistics*, Cambridge 1962.  
O'Brien, P. K., *British Income and Property in the Early Nineteenth Century*, in: *The Economic History Review*, 12(1959-1960), pp. 255-267.

The publication of these national accounts was not very well received by most economic historians.<sup>64</sup> Indeed, the authors of these studies were severely criticized by their fellow historians for relying uncritically on the historical sources, for unwisely inter- and extrapolating to fill up data gaps, and for ignoring significant cycles by using decennial averages. Some experts in more traditional historiography such as P. Chaunu completely denounced the idea of aggregation and fiercely argued for the “histoire sérielle”.<sup>65</sup> Other historians, however, accepted the principle of aggregation but called for more careful application of this principle and for special attention to the reliability of the historical source while calculating time series. Adopting this more careful approach, F. Crouzet and M. Lévy-Leboyer recalculated French annual industrial production and annual agrarian income during the 19th century.<sup>66</sup> Under the direction of P. Léon in Lyons, new calculations were made on a regional basis with the objective of constructing more homogeneous regional amalgamations.<sup>67</sup> P. Deane and C. H. Feinstein also recalculated the series for Great Britain.<sup>68</sup>

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Earlier publications were:

Prest, A. R., *National Income of the United Kingdom, 1870-1946*, in: *The Economic Journal*, 58(1948), pp. 31-62.

Wright, J. F., *An Index of the Output of British Industry since 1700*, in: *Journal of Economic History*, 16(1956), pp. 356-364.

Marczewski, J., (ed.), *Histoire quantitative de l'économie française*, in: *Cahiers de l'I.S.E.A.*, Paris 1961-1969, 11 vol. Most of the research has been done and published by T. J. Markovitch and J. Toutain.

Hoffmann, W. G., *Das Wachstum der deutschen Wirtschaft seit der Mitte des 19. Jahrhunderts*, Berlin 1965.

64. For a survey of this criticism:

Crouzet, Fr., Chaloner, W. H., Stern, W. M., (eds.), *Essays in European Economic History, 1789-1914*, London 1969.

Richet, D., *Historia Kwantytatywna zcy ekonometria retrospekywna? Proba bilansu*, in: Leskiewicz, J., Kowalska-Glikman, S., (eds.), *Historia i Nowoczesnosc*, Warsaw 1974, pp. 107-120.

The review on Hoffmann's book in: *Journal of Economic History*, 26(1966), p. 256.

Le Roy Ladurie, E., *Les comptes fantastiques de Gregory King*, in: *Annales E.S.C.*, 23(1968), pp. 1086-1102.

65. Chaunu, P., *Histoire quantitative ou histoire sérielle*, in: *Cahiers Vilfredo Pareto*, 3(1964), pp. 165-176.

Chaunu, P., *L'histoire sérielle. Bilan et perspectives*, in: *Revue Historique*, 494(1970), pp. 297-320.

66. Lévy-Leboyer, M., *La croissance économique en France au 19e siècle. Résultats préliminaires*, in: *Annales E.S.C.*, 23(1968), pp. 788-807.

Crouzet, Fr., *Essai de construction d'un indice annuel de la production industrielle française au 19e siècle*, in: *Annales E.S.C.*, 25(1970), pp. 56-99.

67. Léon, P., *The Study of Economy and Society at the Centre d'Histoire Economique et Sociale de la Région Lyonnaise*, in: *The Journal of European Economic History*, 3(1974), pp. 485-491.

68. Deane, Ph., *New Estimates of Gross National Product for the United Kingdom, 1830-1914*, in: Kuznets, S. (ed.), *Income and Wealth*, 1968.

Feinstein, C. H., *National Income, Expenditures and Output in the United Kingdom, 1855-1965*, Cambridge 1972.

In spite of the climate of distrust toward the construction of aggregated economic series, scholars began to reconstruct series of national accounts in several other European nations, including Norway, Denmark, Finland, Sweden, Italy, the Netherlands, Hungary, Poland, and Belgium.<sup>69</sup> In general, the scholars in these countries tried to avoid the drawbacks found in the pioneering work in the United Kingdom, France, and Germany. Most of the attention went to the construction of reliable series of agrarian and industrial production, foreign trade, and investment in infrastructure. An interesting example of this concern for statistical reliability may be found in P. Lebrun and J. Gadisseur's research on the Belgian economy in the 19th century.<sup>70</sup>

The macro-approach became more and more geographically restricted as regional growth disparities drew more attention. C. H. Lee and E. H. Hunt contributed much to a better understanding of regional development in the U. K.<sup>71</sup> L. H. Klaassen, P. W. Klein, and J. H. Paelinck of the Netherlands proposed a model for the very long term evolution of a system of regions at the Copenhagen Conference in 1974.<sup>72</sup>

69. Bjerke, J., *Langtidslinger i Norsk Økonomi, 1865-1960*, Oslo 1966.

Bjerke, J., *The National Product of Denmark, 1870-1952*, in: *Income and Wealth, Series V*, London 1955.

Pikkala, E., *Finland's Foreign Trade, 1860-1917*, Helsinki 1969.

Johansson, Ö., *The Gross Domestic Product of Sweden and its Composition, 1861-1955*, 1967.

Fridlitzins, S., *Sweden's Exports, 1850-1960. A study in perspective*, in: *Economy and History*, 6(1963), pp. 3-10.

A good survey of historical statistics on the Scandinavian countries in:

Schiller, B., Öden, B., *Statistik für Historiker*, Stockholm 1970, pp. 231-300.

Fua, G., (ed.), *Lo sviluppo economico in Italia. Storia dell'economia italiana negli ultimi cento anni*, Milan 1969.

Caracciolo, A., (ed.), *La formazione dell'Italia industriale*, Bari 1969.

Teyl, J., *Nationaal inkomen van Nederland in de periode 1850-1900*, in: *Economisch-Historisch Jaarboek*, 34(1971), pp. 234-262.

Eckstein, A., *National Income and Capital Formation in Hungary, 1900-1950*, in: *Income and Wealth, Series V*, London 1956.

Lukasiewicz, J., *Indeks produkcji przemysłowej na ziemiach polskich w latach, 1870-1913*, in: *Leskiewicz, J., Kowalska-Glikman S., (eds.), Historia i Nowoczesność*, Warsaw 1974, pp. 277-290.

Lebrun, P., Gadisseur, J., Pirard, J., Degrevè, D., Desama, Cl., *L'industrialisation en Belgique au 19e siècle. Première approche et premiers résultats*, in: Léon, P., Crouzet, Fr., Gascon, R., (eds.), *L'industrialisation en Europe au 19e siècle. Cartographie et Typologie*, Lyon, 7-10 oct. 1970, Paris 1972, pp. 141-186.

Gadisseur, J., *Le produit physique de l'économie belge. Présentation critique des années statistiques, 1831-1913*, Liège 1980.

70. Gadisseur, J., *La production industrielle au 19e siècle de Belgique: construction de l'indice*, in: *Archief- en Bibliotheekwezen in België*, 10(1973), pp. 79-96.

71. Lee, C. H., *Regional Economic Growth in the United Kingdom since the 1880s*, London 1971.

Hunt, E. H., *Regional Wage Variations in England and Wales*, 1974.

72. Klaassen, L. A., Klein, P. W., Paelinck, J. H. P., *Very long Term Evolution of a System of Regions*, in: *Glamann, Kr., a. o. (eds.), Sixth International Congress on Economic History*, Copenhagen 1974, pp. 93-108.

This model, however, has yet to be adequately tested. G. De Brabander has investigated the regional and sectoral specialization in Belgium and has tested the effect of this specialization on regional growth disparities.<sup>73</sup>

Even though the vast majority of economic historians seemed to prefer the industrial sector and the macro-economic approach, considerable interest continued for the agricultural sector.<sup>74</sup> This may be explained partially because such study could contribute to the macro-approach, and partially because of the success of Malthusian development theories, which strongly stressed the importance of the agrarian sector. In the 1970's, more attention was paid to the shift from the agrarian to the industrial economy and particularly to the stage of development between the two, namely, proto-industrialization.<sup>75</sup> In Belgium, P. Klep developed a two-sector model, analyzing this transition and the dual character of the Brabantine economy in the 18th and 19th centuries.<sup>76</sup>

As a conclusion for the period during which economic growth was the major topic of research in Western Europe, we may state that the American New Economic His-

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73. De Brabander, G. L., *Regional Specialization, Employment and Economic Growth in Belgium between 1846 and 1970*, New York 1981.
74. Goy, J., Le Roy Ladurie, E., (eds.), *Les Fluctuations du produit de la dîme. Conjoncture décennale et domaniale de la fin du Moyen Age au 18e siècle*, Paris, The Hague 1972.
- Kakh, J., Milov, L., Selunskaya, N., Tarvel, E., *Quantitative Methods of the Inner structure of the Peasant and Landlord Household in Russia in the Period from the 17th to the Beginning of the 20th Century*, in: Sixth International Congress on Economic History, Copenhagen, 12-23 August, 1974.
- Kakh, J., Ligi, H., Tarvel, E., *Beiträge zur Marxistischen Agrargeschichte Estlands der Feudalzeit*, Tallinn 1974.
- Kula, W., *Théorie économique du système féodal. Pour un modèle de l'économie polonaise, 16e-18e siècles*, Paris, The Hague 1970.
- Lunden, K., *Some Causes of Change in a Peasant Economy: Interactions between Cultivated Area, Farming Population, Climate, Taxation and Technology. A Theoretical Analysis of the Norwegian Peasant Economy, c. 800-1600*, in: The Scandinavian Economic History Review, 22(1974), pp. 117-135.
- O'Grada, C., *Supply Responsiveness in Irish Agriculture during the Nineteenth Century*, in: The Economic History Review, 28(1975), pp. 312-317.
- Slicher van Bath, B. H., *Yield Ratios, 1810-1820*, in: A.A.G.-Bijdragen nr. 10, Wageningen 1963.
- Wyczanski, A., Topolski, J., *Peasant Economy before and during the First Stage of Industrialisation. General Report*, in: Glamann, Kr., a. o. (ed.) Sixth International Congress on Economic History: 5 Themes, Copenhagen 1974, pp. 11-31.
75. Mendels, F. F., *Protoindustrialisation: The First Phase of the Industrialisation Process*, in: Journal of Economic History, 32(1972), pp. 241-261.
- Kriedte, P., Medick, H., Schlumbohm, J., *Industrialisierung vor der Industrialisierung. Gewerbliche Warenproduktion auf dem Land in der Formationsperiode des Kapitalismus*, Göttingen 1977. This work is translated by Shempp, B., *Industrialisation before Industrialisation. Rural Industry in the Genesis of Capitalism*, Cambridge 1981.
- Very interesting articles on protoindustrialisation can also be found in two special issues of *Revue du Nord*, 61, 240(1979) and 63, 248(1981).
76. Klep, P. M. M., *Bevolking en Arbeid in transformatie: Brabant, 1700-1900. Een analyse van ongelijktijdige ontwikkelingen in een maatschappij op weg naar moderne economische groei*, Leuven 1978.



tory had an important but not overwhelming influence, and that thereby the depth of economic-historical analyses clearly increased. Not being bound to the neoclassical paradigm seems to have left room for the testing of, and contributing to, economic theory. This approach, which was paired with more precise data reconstruction, seems to have augmented significantly the scientific character of the study of economic growth.

### III. Again Crisis Concepts

Since the middle of the 1970's, after decades of intensive research on economic growth, a clear shift has been perceptible in economic historical research, particularly with regard to the contemporary period. The reason for this was the realization that the ongoing economic crisis of the 1970's and early 1980's was not so much conjunctural as structural. This crisis has shocked the Keynesian optimism with regard to the avoidance of economic regression and the neoclassical faith in steady real growth. Economic historians started again to study the industrial crises of the 19th and 20th centuries and began to see unbalanced growth as the rule instead of balanced growth. The long wave theories were again studied intensively and brought up-to-date. Significant in this regard were the empirical testing of Schumpeter's innovation theory by G. Mensch and W. W. Rostow's book, *The World Economy*.<sup>77</sup>

Primarily in Europe, long wave research was progressing well by the end of the 1970's. J. J. Van Duijn of the Netherlands took up the old tradition of his country, and an interdisciplinary working group has been established in Amsterdam by G. Van Roon for the study of the long wave theory.<sup>78</sup> Two significant congresses have been held in Bochum (BRD), and an interesting long wave reader with contributions from all over Europe is being published.<sup>79</sup> In Britain, C. Freeman has dedicated a thematic number of the futurological journal, *Futures*, to innovation and long waves.<sup>80</sup> In Belgium, L. H. Dupriez has actualized his theory, while E. Mandel has developed a Marxian scheme in which the rate of profit is the crucial variable.<sup>81</sup> In Leuven, J. Delbeke is developing model based on a revised long wave concept integrating the real, monetary and financial sectors of the economy.<sup>82</sup> And at the economic history congress to be held in Budapest in 1982, a B-section, under the direction of J. Bouvier, has been set aside for the study of long waves.

77. Mensch, G., *Das technologische Patt: Innovationen überwinden die Depression*, Frankfurt a/Main 1975.

Rostow, W. W., *The World Economy. History and Prospect*, New York 1978.

78. Van Duijn, J. J., *De lange golf in de economie*, Assen 1979.

Van Duijn, J. J., *The long wave in economic life*, in: *De Economist*, 125(1977), pp. 544-576. Interfacultaire Werkgroep "Lange Golven", *Interim-rapport 1980*, Amsterdam 1980.

79. Potzina, D., Van Roon, G., (eds.), *Konjunktur, Krise, Gesellschaft. Wirtschaftliche Wechselagen und soziale Entwicklung im 19. und 20. Jahrhundert*, Stuttgart 1981.

80. Freeman, C. (ed.), *Technical Innovation and Long Waves in World Economic Development*, in: *Futures*, 13(1981), 238-338.

81. Dupriez, L. H., *De actuele betekenis van de lange golfbeweging*, in: *Tijdschrift voor Economie en Management*, 23(1978), pp. 21-29.

Mandel, E., *Het laatkapitalisme*, Amsterdam, 1970.

82. Delbeke, J., *Recent Long Wave Theories: A Critical Survey*, in: *Futures*, 13(1981), pp. 246-257.

The increased interest in the long waves, however, seems to have proceeded in a rather confused manner. On the theoretical level, many researchers tend to ascribe to monocausal explanations, which was the case with the majority of the analyses of the 1930's and 1940's. The renewal, however, seems to lie more on the integrative level. Furthermore, the importance of social and institutional changes has also been largely underestimated.<sup>83</sup> On the empirical level, the number of publications appearing is increasing rapidly. After an abundant presentation of long-term series in which movements can be distinguished, model-oriented approaches have also been undertaken.<sup>84</sup> Nevertheless, in our opinion, the solution lies more in the use of basic statistical techniques rather than in empirical model construction, because long wave research presumes fundamental "variable parameters".

Moreover, we are convinced that a purely macro approach is not correct. New entrepreneurial activity and technological and institutional innovations seem to be crucial, but their origins can only be studied on a very disaggregated level. Therefore, long wave research has to be performed on the macro, the meso, and the micro level.

It must be admitted, however, that the quantitative material is scarce. Within the context of modern industrial civilization, we have only had three and a half long waves. Therefore, it is not clear whether the past experiences, i. e. the periods of up- and downswing, will repeat themselves in the future. Forrester and other futurologists claim that we are entering a post-industrial society.<sup>85</sup> Others, such as Van Duijn, Kleinknecht, Mensch, and Rostow, are more convinced of the repetitive nature of the long wave.<sup>86</sup> It seems to be an open question whether the uneven growth of the past centuries has to be described as a long "cycle" (i. e. a regular and continued upward and downward movement) or as a long "wave", which does not involve such narrow constraints. Given the widespread skepticism vis-à-vis the existence of a long wave

83. Akerman, J., *Structures et Cycles Economiques*, Paris 1957.

Chandler, A. D., *The Beginnings of Big Business in American Industry*, in: *Business History Review*, 33(1959), pp. 1-31.

84. Broersma, T., *De lange golf in het economisch leven: empirische en theoretische onderzoekingen*, Groningen 1978.

Metz, R., *Theoretische Aspekte der statistischen Analyse langfristiger Konjunkturschwankungen*, in: Petzina, D., Van Roon, G., (eds.), *Konjunktur, Krise, Gesellschaft*. Stuttgart 1981.

Schulte, H., *Ein neuer statistischer Ansatz zur Identifizierung von Wellenbewegungen in der langfristigen Wirtschaftsentwicklung*, in: Petzina, D., Van Roon, G., (eds.), *Konjunktur, Krise, Gesellschaft*. Stuttgart 1981.

Stier, W., *Zur Rolle und Funktion statistischer Verfahren in der empirischen Wirtschaftsforschung und der Wirtschaftsgeschichte*, in: Petzina, D., Van Roon, G., (eds.), *Konjunktur, Krise, Gesellschaft*. Stuttgart 1981.

85. Forrester, J. W., *Business Structure, Economic Cycles and National Policy*. in: *Futures*, 8(1976), pp. 195-214.

Forrester, J. W., *Growth Cycles*, in: *De Economist*, 125(1977), pp. 525-543.

86. Van Duijn, J. J., *De lange golf in de economie*, Assen 1979.

Kleinknecht, A., *Basisinnovationen und Wachstumsschübe: das Beispiel der westdeutschen Industrie*, in: *Konjunkturpolitik*, 25(1979), pp. 320-343.

Mensch, G., *Das technologische Patt: Innovationen überwinden die Depression*, Frankfurt a/Main 1975.

Rostow, W. W., *The World Economy. History and Prospect*, New York 1978.

regularity, which has been interpreted by R. Spree, we think that the fundamental question of this research is whether or not our industrial society is behaving along a life cycle.<sup>87</sup> The answer to this question is crucial enough to give the research the importance it needs.

### *Conclusion*

The interests of Western European economic historians have flexibly adapted in response to the economic problems of their time. First, interest shifted to the study of economic growth after having been concentrated on economic movements. At the end of the euphoric 1960's, the stress shifted back again to the study of long waves.

While a large part of the quantitative economic research was concentrated on the formation of a data base, important empirical studies have been undertaken that have had repercussions on economic theory. The New Economic History, an American phenomenon, thus has not had too large an effect in Europe, the reasons for which have been thoroughly analyzed elsewhere.

Nevertheless, another and more important observation must be made. The Western European economic historians not only constructed more accurate data bases, they also brought about significant changes in economic theory. It is in these changes that their value must be sought. They have had the virtue of not being compelled to force each economic historical phenomenon into a neoclassical strait jacket. It is to be expected that, with more extensive use of statistical economic methods, they will proceed further in this direction.

In addition, it can also be stated that the national accounts that were constructed will have to be thoroughly revised, even though they were milestones in postwar research. The constant growth averages that appear in them will have to be amended.

Finally, we think that the productivity project that is now being conducted can play an important role from both the empirical and the theoretical viewpoints. We are convinced that more attention in long wave research must be given to the crucial components of economic progress, namely, the process of factor substitution and factor use, and to comparisons between countries and sectors, the objective being to discover specific leads and lags.

The discussions of this symposium promise to be particularly useful in this regard.

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87. Spree, R., *Wachstumstrends und Konjunkturzyklen in der deutschen Wirtschaft von 1820 bis 1913*, Göttingen 1978.

## Zusammenfassung:

### Der Stand der europäischen Wirtschaftshistoriographie nach 1945

Das Forschungsinteresse westeuropäischer Wirtschaftshistoriker hat sich den jeweiligen ökonomischen Problemen der Zeit flexibel angepaßt. Nachdem es sich zunächst auf die Wirtschaftskonjunkturen gerichtet hatte, verlagerte es sich auf das Wirtschaftswachstum. Gegen Ende der euphorischen 1960er Jahre widmete man sich allerdings erneut der Untersuchung langer Wellen.

Zu einem großen Teil befaßte sich die quantitative Wirtschaftsgeschichte mit der Erstellung einer Datenbasis. Daneben gab es bedeutende empirische Untersuchungen, die Auswirkungen auf die Wirtschaftstheorie ausübten. Die aus Amerika stammende New Economic History School zeigte keine allzu lang anhaltende Wirkung in Westeuropa. Gründe dafür wurden ausführlich an anderer Stelle dargelegt.

Wichtiger ist allerdings wohl, daß westeuropäische Wirtschaftshistoriker neben dem Aufbau stärker abgesicherter Datensammlungen bedeutsame Änderungen in der Wirtschaftstheorie herbeiführten. Mit diesen wichtigen Änderungen der Theorie ist der Historiker aus der Zwangslage befreit, nun jedes wirtschaftshistorische Phänomen dem neoklassischen Rahmen einfügen zu müssen. Bei stärkerem Einsatz statistisch-ökonomischer Methoden werden die Wirtschaftshistoriker noch weiteren Einfluß auf die Wirtschaftstheorie nehmen können.

So müßten die volkswirtschaftlichen Gesamtrechnungen, die bisher aufgestellt wurden, gründlich überprüft werden, selbst wenn sie einst in der Nachkriegszeit einen Meilenstein der Forschung darstellten. Die konstanten durchschnittlichen Wachstumsraten, die in diese volkswirtschaftlichen Gesamtrechnungen eingingen, müssen abgeändert werden.

Man kann erwarten, daß das Forschungsprojekt zur Produktivitätsentwicklung, an dem jetzt gearbeitet wird, einen wichtigen Beitrag sowohl zu empirischen als auch zu theoretischen Aspekten zu leisten vermag. Bei der Forschung über die langen Wellen muß sicher mehr Gewicht auf die entscheidenden Komponenten des wirtschaftlichen Fortschritts gelegt werden, nämlich auf Vorgänge der Faktorsubstitution und der Faktorverwendung. Größere Aufmerksamkeit sollte auch den Länder- und Sektorenvergleichen zukommen, mit denen man jeweils ein Führen oder Nachhinken ("leads" und "lags") aufspüren könnte.