Backwardness and the Role of Banking in Nineteenth-Century European Industrialization

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Notes

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Industrialization

Alexander Gerschenkron's research on industrialization in Europe suggests that both the timing and character of growth may have conditioned the institutional structure of nineteenth-century industrializers. He argues that:

. . . the more backward a country's economy, the greater was the part played by specialized institutional factors designed to increase the supply of capital to nascent industries and, in addition, to provide them with less decentralized and better informed entrepreneurial guidance; the more backward the country, the more pronounced was the coerciveness and comprehensiveness of those factors.[1]

The pressures for a more centralized institutional response are grounded in the "specific conditions of a relatively backward economy." These conditions are a scarcity and diffusion of capital, a widespread distrust of industrial activity, greater pressure for large scale plant and high capital output ratio industries, and a scarcity of entrepreneurial talent.[2]

A systematic test of this institutional component of the Gerschenkron hypothesis has not been attempted. Steven Barsby in a recent article examined "the three more readily testable propositions" of Gerschenkron but did not treat the role of institutional factors.[3] Rondo Cameron and others have given some attention to the Gerschenkron hypothesis in their valuable series of comparative studies on the role of banking in the early stages of industrialization.[4] These analyses supply highly useful data but are not an explicit attempt to make the proposition operational

[1] Alexander Gerschenkron, *Economic Backwardness in Historical Perspective* (New York: Praeger, 1965), p. 354.
[2] Gerschenkron, *Backwardness*, p. 14.
[3] Steven Barsby, "Economic Backwardness and the Characteristics of Development," THE JOURNAL OF ECONOMIC HISTORY, XXIX (September 1969), 449-50. Barsby tested the relationship between the degree of backwardness and these three characteristics of the spurt: the rate of manufacturing growth, the stress on producers' goods, and the rate of growth in agricultural labor productivity.
[4] Rondo Cameron (ed.), *Banking and Economic Development* (New York: Oxford, 1972), esp. pp. 9-25, and Rondo Cameron *et al.*, *Banking in the Early Stages of Industrialization* (New York: Oxford, 1967), esp. pp. 151 and 306.

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and to provide a systematic test of its validity. My note makes such a test by focusing on the relative importance of one institutional type, the banks, during the great spurt of these late eighteenth- and nineteenth-century industrializers: England, Belgium, France, Germany, Denmark, Sweden, Russia and Italy.[5]

The test is framed using the stage constructs outlined by Gerschenkron.[6] Countries on the scale of backwardness are divided into three groups: advanced areas, areas of moderate backwardness, and extremely backward areas. The stages represent periods in each country's industrialization, where Stage I is the great spurt and Stages II and III are later periods of industrial growth. In advanced areas such as England, the conditions of backwardness were absent, so the industrial spurt began with capital supply and entrepreneurial input internally generated at the firm and industry level. Under conditions of moderate backwardness, as in Germany, an aggressive banking system provided a more centralized response to capital and entrepreneurial deficiencies—a more decentralized mechanism came only after the spurt was complete. In the areas of extreme backwardness such as Russia, the deficiencies were so severe that only the coercive power of the state was capable of initiating the great spurt. The banking system directed capital flows and entrepreneurial activity in Stage II, while a completely decentralized institutional mechanism would have been expected in the later stages of industrialization.[7]

Based on this analysis, the role of the banks in the spurt ought to have been relatively small in both advanced and extremely backward countries and relatively large in countries exhibiting moderate levels of backwardness. A test of this prediction requires operational measures of two variables—relative backwardness and the importance of the banking sector. As a measure of relative backwardness, Barsby used the lateness of the great spurt—the later the year of the spurt, the more backward the country. He found that rankings of six countries according to lateness were highly correlated with rankings based on coefficients of backwardness which he had computed from data on income per capita and labor force shares in the agricultural sector.[8] As measures of relative backwardness, Barsby's datings of the spurt for France, Germany, Denmark, Sweden, Italy and Russia, and Rostow's take-off dates for England and Belgium have been adopted.[9]

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[5] Non-European countries have been excluded in the test since Gerschenkron conceived his work as "an approach to European industrialization." See Gerschenkron, *Backwardness*, p. 353. Other European countries could have been included in the sample but were not either because the spurt concept did not apply (for example, for Austria see Cameron, *Development,* p. 16) or because data were very crude (for example, for Scotland see Cameron, *Industrialization,* pp. 60-5).

[6] Gerschenkron, *Backwardness*, p. 355.

[7] The Russian Revolution, of course, interrupted this process and a completely centralized mechanism was eventually introduced in the new Communist state.

[8] Barsby, "Characteristics," pp. 455-57.

[9] Barsby, "Characteristics," p. 452, and W. W. Rostow, *The Stages of Economic Growth* (New York: Cambridge, 1967), p. 38. Although the spurt and the take-off are not identical concepts, Barsby's spurt dates are similar enough to Rostow's take-off dates that Rostow's dates are acceptable approximations.

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AND THE DEGREE OF BACKWARDNESS

Stage of Industrial Development	Advanced Area	Area of Moderate Backwardness	Area of Extreme Backwardness
Stage I	Factory	Banks	State
Stage II		Factory	Banks
Stage III			Factory

The simplest and most comprehensive quantitative measure of the role of the banking sector in any economy is the ratio of bank assets to gross national product.[10] In the context of the Gerschenkron framework this measure of the banking sector can have two alternative formulations: the absolute size of the ratio at the end of the spurt or the rate of growth in the ratio during the spurt. For Gerschenkron's proposition to be valid a concave downward functional relationship should exist between the degree of backwardness and the two measures of banking importance for the eight country sample. The rate of increase in the asset/GNP ratio during the great spurt or its absolute size at the end of the spurt, should be relatively low in advanced areas, relatively high for countries in the middle range of backwardness, while falling off again in countries of extreme backwardness.[11]

The data compiled in Table 1 give sharply contradictory results. If the importance of the banking sector is measured as the annual rate of growth in the asset/GNP ratio during the great spurt, then Greschenkron's proposition receives support. The moderately backward countries typified by Germany experienced much more rapid rates of growth in the ratio than did early industrializer England and the late nineteenth-century industrializers such as Russia. The only exception is France, which shows an annual rate of growth slightly lower than that of England and roughly the same as the countries under conditions of extreme backwardness.

When importance of the banking sector is defined as the absolute size of the bank asset/GNP ratio attained at the end of the great spurt, the Gerschenkron proposition is not confirmed. The data show that moderately backward countries, instead of having the largest ratios at the end of the spurt, had lower ratios than both early industrializer England and the extremely backward countries of the late nineteenth century. The importance of the banks is least evident precisely in those moderately backward countries where the greatest banking weight is expected.

To clear up the ambiguity of the empirical evidence, two alternative

[10] For an encyclopedic comparative study of financial structure using this and other measures, see Raymond Goldsmith, *Financial Structure and Development* (New Haven: Yale, 1969).

[11] Barsby used the technique of rank correlation to test the relationship between backwardness and three characteristics of the spurt. The correlation technique is inappropriate here since the functional relationship between backwardness and the role of banks, unlike the relationships tested by Barsby, is not monotonic.

TABLE 1
THE ROLE OF BANKING INSTITUTIONS[a] DURING
THE INDUSTRIAL SPURTS OF EIGHT
EUROPEAN COUNTRIES
(Bank Asset/GNP Ratio[b])

Country and Degree of Backwardness	Year of Spurt (1)	At Start of Spurt (2)	At Spurt + 20 years (3)	Annual Rate of Growth During the Spurt (percent) (4)
Advanced				
England	1783	.18	.30	2.4
Moderate				
France	1829	.06	.09	2.0
Belgium	1833	.06	.16	4.8
Germany	1850	.05	.16	6.3
Extreme				
Denmark	1870	.30	.37	1.1
Sweden	1880	.49	.74	2.0
Russia	1884	.18	.23	1.3
Italy	1896	.22	.35	2.5

[a] The banking institutions relevant to the Gerschenkron hypothesis are those dealing in industrial finance: commercial banks and investment banks, both deposit and note-issuing. Savings banks, mortgage banks and co-operative banks have been excluded.

[b] In most cases the years for which financial asset and GNP data are available do not correspond to the years of the industrial spurt. Data were gathered for a period as close to the spurt and spurt + 20 years as possible. From these data annual growth rates were estimated and rounded to the nearest tenth. With these growth rates the available asset/GNP ratio data were extrapolated backward or forward for an estimate of the ratio in the initial and ending spurt years. These estimates have been rounded to the nearest hundredth.

Sources: *Col. 1:* For England and Belgium the spurt years are the take-off years designated in W. W. Rostow, *The Stages of Economic Growth* (New York: Cambridge, 1967), p. 38. For the remaining countries the spurt years are taken from Steven Barsby, "Economic Backwardness and the Characteristics of Development," THE JOURNAL OF ECONOMIC HISTORY, XXIX (September 1969), 449-50.

Bank/Asset GNP Ratios: England: Banks defined as the country banks, the London banks and the Bank of England. Data are available for 1775 and 1800 in Rondo Cameron *et al., Banking in the Early Stages of Industrialization* (New York: Oxford, 1967), p. 35. The ratios represent estimates for 1783 and 1803; *France:* Banks defined as the private banks and the joint-stock banks (including the Bank of France). Data are available for 1830 and 1850 from Cameron *et al., Industrialization,* p. 301. The ratios represent estimates for 1829 and 1849. *Belgium:* Banks defined as the joint-stock banks, including the Bank of Belgium. Data are available for the spurt period, 1830-1850, in Cameron *et al., Industrialization,* p. 301; *Germany:* Banks defined as credit banks and banks of issue. Data are available for 1852 and 1870 in Walther G. Hoffman, *Das Wachstum der Deutschen Wirtschaft seit der Mitte des 19. Jahrhunderts* (Berlin: Springer, 1965), pp. 748-49, 751-2 and 825. The ratio for 1850 is an estimate; *Denmark:* Banks defined as the National Bank and commercial banks. Data are available for 1880 and 1900 in Raymond Goldsmith, *Financial Structure and Development* (New Haven: Yale, 1967), Tables D-6 and E-1. The

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interpretations of the Gerschenkron hypothesis on banking and industrialization must be examined. The data are not favorable if the hypothesis means that banking institutions emerged suddenly from a small base to guide industrialization in follower countries.[12]

Table 1 shows that the relative rankings of the eight countries according to the absolute size of asset/GNP ratios were roughly the same both at the beginning and at the end of the spurt. Only in moderately backward countries did the pattern of a sudden emergence of banking institutions prevail. Moderately backward countries began their spurts with banking sectors of substantially lower size than did either early industrializers or extremely backward countries. From this low financial base the rapid rate of growth in the asset/GNP ratio during the spurt conforms to the pattern of a sudden emergence of the banks. In extremely backward areas, on the other hand, a backlog of banking institutions had evolved prior to the spurt. Growth in the asset/GNP ratio during the spurt occurred on an already well-developed financial base and does not represent a sudden emergence.

A picture of European banking growth in which countries gradually assimilated banking technology throughout the nineteenth century is consistent with the above data. The relatively high ratio for England indicates that industrialization began here after a prior buildup of banking institutions. In the case of the first Continental followers, banking technology evolved in conjunction with the industrial revolution. This explains the relatively low ratios at the start of the spurts in these areas. Banking institutions spread to extremely backward areas with no apparent relationship to economic growth. When the impulses of the industrial revolution finally did touch these areas and the spurt began, a substantial backlog of financial technology—as reflected in the high bank asset/GNP ratios in these regions—had developed.[13]

[12] The banks should have emerged during the spurt in moderately backward countries and after the spurt (Stage II) in extremely backward countries.

[13] Barsby made a similar argument in his discussion of Gerschenkron's proposition on the role of producers' goods industries in the spurt. Rather than borrowing modern technology during the spurt "there appears to have been a gradual assimilation of technology in the form of producers' goods by the later countries before they experienced rapid industrialization." See Barsby, "Characteristics," p. 461.

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ratios for 1870 and 1890 represent estimates; *Sweden:* Banks defined as the Riksbank and the deposit banks. Data are available for the spurt period, 1880-1900, in Goldsmith, *Structure,* Tables D-29 and E-1; *Russia:* Banks defined as joint-stock banks and the State Bank. Asset data are available for 1881 and 1900 in Cameron et al., *Industrialization,* pp. 191 and 193. GNP for 1881 and 1900 was estimated by extrapolating 1914 GNP (in Cameron et al., *Industrialization,* p. 232) backward with growth rates derived from agricultural and industrial production indices in Raymond Goldsmith, "The Economic Growth of Tzarist Russia, 1860-1913" *Economic Development and Cultural Change,* IX (April 1961), 446-7 and 462-3. Asset/GNP ratios for 1884 and 1904 were estimated as described in footnote b, above; *Italy:* Banks defined as banks of issue and banks, large and private. Data are available for 1900 and 1913 in Goldsmith, *Structure,* Tables D-14 and E-1. The ratios represent estimates for 1896 and 1916.

Other data tend to confirm this assimilation model of banking growth. In 1913 the asset ratios for the eight countries investigated show a similarity even though the sample is characterized by widely differing levels of economic development at this date.[14]

In the context of this assimilation model, the sudden emergence of the banks and their rapid growth during the spurt in moderately backward countries need not reflect a crucial banking role, but the timing of industrialization in these areas. The rapid growth may have been a catching up of the banking sector due to the strains put on a weak capital market by the demands of an industrial revolution. The data therefore do not support an interpretation of the Gerschenkron hypothesis in which the banking institutions of late-comers emerge suddenly and reach a position of substantial quantitative size in the early stages of industrialization.

An alternative interpretation is, however, consistent with the observed patterns. When Gerschenkron speaks of "specialized institutional factors" he may have in mind qualitative not quantitative elements. In particular, the contributions of banks in the entrepreneurial sphere may be a qualitative factor whose role could be substantial regardless of the quantitative size of the banking sector in the economy. Since the growth rate data for the bank asset/GNP ratios do tend to confirm the Gerschenkron proposition when examined alone, they may be rough proxies for this qualitative phenomenon. The growth of the ratio in the spurt was rapid in moderately backward areas precisely where bank execution of the entrepreneurial function is expected. Growth rates were relatively low in the spurt of England where bank guidance was unnecessary and low in extremely backward areas where bank guidance was insufficient to engineer a spurt. The data therefore are consistent with the Gerschenkron hypothesis if it is given this qualitative interpretation. A full test of this interpretation demands a more direct assault on the character and institutional locus of the entrepreneurial function in the countries on the continuum of backwardness.

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[14] The bank asset/GNP ratios in 1913 were as follows—early industrializer: England (.46); moderately backward countries: France (.56), Belgium (.64) and Germany (.42); extremely backward countries: Denmark (.58), Sweden (.84), Russia (.52) and Italy (.32). From Goldsmith, *Structure*, Tables D-3, D-6, D-8, D-9, D-10, D-14, D-26, D-29 and E-1.