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A Theory of Economic Growth in
Newly-Settled as Contrasted With
Old-Settled Areas*

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December 15, 1964
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If such a scientia media might be allowed
to men, which is beneath certainty and
above conjecture, such I should call our
persuasion.

Fuller: The Worthies of England

At least the following have been supported as necessary or supplementary causes of economic growth or of its lack: the human resources, natural resources and produced capital, technology, the value system, social organization, and political influences. One can postulate with easy conscience, from the wide range of substantial influences on economic growth, that no one-cause theory (for example, quantity of capital or quality of the work force) can be considered the unique theory of development. The "causes" proposed are, of course, at different levels of significance and may appear at different points of time in the growth process. Fundamental alleged causes can lead to more immediate causes, and causes aggregated in a particular way, as above, can react with each other complexly.

A given theory seizes on, for a given economy at a given time, some one group of causes as strategic and convenient, out of the possible groups as arranged by relevance, inclusiveness, and timing. The variety of development problems, and the implied variety of relevant theory, is indicated by the facts that some low-income countries are unable to provide law and order and reasonably effective administration, yet these are basic requisites of growth; some are torn by separatism and handicapped by traditions of violence, others have deep-rooted patterns of domestic cooperation and consensus that ease the problem of maintaining stable order; some are

*I am indebted for their suggestions to Hans Schmitt, Nyle Spoelstra, Burton Weisbrod, and Jeffrey Williamson.

heavily over-populated compared to their natural resources, others were not; many are tossed by wide price gyrations for their (few) export commodities, some have stable export earnings or are fairly independent of foreign trade. The subtlety of the growth process is exemplified by recurring novelty: economies that were growing can bog down for not very evident causes, or accelerate for not very evident causes, or develop despite substantial blocks to growth.

Effective economic policy turns on (a and b) interaction between our theories or interpretations of the growth process, and evaluation of and application of the theories to the blocks that in their light seem to be significant in a given society at a given time. The application involves strategies for diminishing the blocks, or developing despite them. (c) A number of lines of action will no doubt be chosen as worthwhile: a critical theoretical and practical decision is how far to push effort along each of the lines chosen.

This paper attempts to depict and analyse one fundamental block to economic growth in old-settled, in contrast with new-settled, areas of the world. Part I describes briefly two standard interpretations of growth experience in their application to these areas--investment and trade; parts II and III present evidence that these two interpretations fail as reasonably inclusive explanations of growth; Part IV present a supplementary explanation, which is argued to be of substantial importance.

1. TWO STANDARD INTERPRETATIONS

A conspicuous contrast is offered among the regions to which Europeans have moved during the past several centuries, in that those areas in which there were few indigenous people now have incomes among the highest in the world; and that those areas where indigenous peoples were and remained relatively dense are now low-income, "less-developed" countries. Examples

of the former are the United States, Canada, Australia, New Zealand; perhaps Hawaii and South Africa. Possibly Uruguay and Argentina should also be included. Examples of the latter are India, Pakistan, Ceylon, Indonesia, Burma, Malaya, the Andean countries of South America, the near East, and most of Africa.

To explain this major contrast, a Ricardian economist would think of the ratio of labor, and in the longer run, also of capital, to natural resources. In this tradition Marshall, in his chapter on Economic Progress, postulates that the "field of employment" that any place offers to capital and labor depends first of all on "its natural resources"¹. But he

¹ Principles of Economics, 8th ed., p. 668. Second and third he lists "progress of knowledge and of social and industrial organization," and "access to markets".

deprecates the resources-proportion explanation as the central element, picking out instead trade as "the chief cause of the modern prosperity of new countries"¹. With unusual flatness and contrary to his dictums against

¹ p. 669.

all short statements, he asserts: "The causes that determine the economic progress of nations belong to the study of international trade", and within that heading emphasizes "the markets that the old world offers not for goods delivered on the spot, but for promises to deliver goods at a distant date"¹--that is, capital inflows, which exchange current inflows of goods

¹ pp. 270, 669.

and services against promised future exports (amortization and earnings). And so he joins together the markets, trade, and investment explanations of growth, and forecasts elliptically the analysis developed later by Haberler.-/

-/ Pp. 5 and 6.

Along this same line of thinking, Nurkse wrote in a notable article that: "It was in the newly settled regions, which received two-thirds of the capital exports and practically all the immigrants, that nineteenth century international investment scored its greatest triumphs."-/ The

-/ K. Nurkse: "International Investment Today in the Light of Nineteenth Century Experience," Economic Journal, December 1954, pp. 745ff.

volume of international investment has central place also in Millikan and Rostow's A Proposal, which states the problem of growth in terms of how much investment is needed from high income countries.-/ Several years later

-/ Max F. Millikan and W.W. Rostow: A Proposal: Key to an Effective Foreign Policy, Harper & Brothers, 1957, esp. Ch. 10, pp. 95-109.

Rosenstein-Rodan calculated in detail capital inflow needs, private and public for 85 lower-income countries, assuming fixed capital-output ratios and linear savings functions.-/ Lately studies in and for A.I.D. have

-/ P.N. Rosenstein-Rodan: "International Aid to Underdeveloped Countries," Review of Economics and Statistics, May 1961, pp. 107-137, esp. Tables 4-A and 4-B, pp. 132-135.

concentrated on developing up-dated formulas utilizing import coefficients and export projections, for predicting foreign aid needs and their possible

tapering off as growth progresses and domestic savings rise.

From a concentration on international investment as crucial to growth, it is a short step to focussing on investment in general as the central condition and problem of growth. Rostow's Stages of Economic Growth and Leibenstein's and Nelson's low-income-level equilibrium traps, are in this standard pattern.--/ Sometimes the quantity of investment, and hence

--/ W.W. Rostow: The Stages of Economic Growth, Cambridge, 1960: A necessary but not sufficient condition for "take-off" is given as a rise in the proportion of investment to income of from "5% to over 10%" (p.37). R.R. Nelson: "A Theory of the Low-Level Equilibrium Trap in Underdeveloped Countries", American Economic Review, December 1956. H. Leibenstein: Economic Backwardness and Economic Growth, Wiley, 1957.

maximizing its sources domestic and foreign, is represented as the problem of growth; sometimes investment is more cautiously presented as a convenient numerical way of summarizing the complex of influences on growth.--/

--/ Youngson represents the latter point of view: "(The) approach to the problem of economic progress through the problem of successful investment is of course, artificial. Above all, it distinguishes somewhat too sharply between the conditions necessary for investment successfully to be undertaken, and that wide problem of the working of the system as a whole which represents the absorption by the system of new investment... (But) by stating the problem of sustained economic progress in terms of investment... we realize two great advantages. First of all, we make it more precise. Investment decisions become the focal point of interest, and all the other multifarious factors and considerations that undoubtedly affect economic progress can be examined systematically with reference to this central activity. Secondly, we can hope by this means to develop an analysis leading to policy recommendations." --A.J. Youngson: Possibilities of Economic Progress, Cambridge 1959, pp. 60-61.

The argument for the second advantage seems weak; investment is only one of a number of focal points around which one can organize an analysis leading to policy recommendations.

The argument for trade in general as a powerful "engine of growth" is

formulated more empirically in Nurkse's Wickseil lectures,^{-/} and set up as

^{-/}Ragnar Nurkse: Patterns of Trade and Development, Oxford Press, New York, 1961, p. 14.

a background for United States experience in North's study.^{-/} Haberler's

^{-/}Douglass North: Economic Growth of the United States, Prentice-Hall, 1961. North gives as the framework of his treatment the hypothesis that "the timing and pace of an economy's development has been determined by (1) the success of its export sector, and (2) the characteristics of the export industry and the disposition of income received from the export sector." (p. 1)

Cairo lectures argue for trade as a cause for growth in a dynamic context.

Contrary to Myrdal and Prebisch,^{-/} Haberler finds trade to serve the advantage

^{-/}Gunnar Myrdal: An International Economy, Harper, 1956, esp. pp. 9-13 and 222-298. Myrdal holds that "a quite normal result of unhampered trade between two countries, of which one is unindustrial and the other underdeveloped, is the initiation of a cumulative process toward the impoverishment and stagnation of the latter". Raul Prebisch: The Economic Development of Latin America, United Nations, 1950; and "Commercial Policy in the Underdeveloped Countries," American Economic Review, Papers and Proceedings, May 1959, pp. 251-273 (among other writings). Both these writers are impressed by an alleged deterioration of the terms of trade of low income countries; at least 16 other writers have presented interpretations of the terms of trade pattern, most of them different from that of Prebisch and Myrdal! In Roy Harrod and D.C. Hague, eds: International Trade Theory in a Developing World (International Economic Association conference proceedings), Ch. 3, "Trends in Terms of Trade, etc.", pp. 55-57.

of less developed countries not only through better (static) allocation of resources, but also through providing them with capital goods, machinery and materials; facilitating the flow to them of financial capital; disseminating knowledge and serving as the means for importing skills and talents, and checking monopolistic practices.^{-/}

^{-/}Gottfried Haberler: "International Trade and Economic Development," National Bank of Egypt Fiftieth Anniversary Commemoration Lectures, Cairo, 1959.

II. EVIDENCE ON INVESTMENT AND GROWTH

The rest of this paper discusses briefly the arguments that investment and trade have been the central causes of economic growth in newly-settled areas of the world, and then presents a contrasting hypothesis as candidate for one central cause of that growth.

A - On the issue of the relative weights to be given to physical capital in economic growth generally, and to what is called a bit awkwardly "human capital" --including both the health, energy, and general education of people, and the level of their productive skills--considerable logical and some statistical evidence for the dominant importance of the latter has been developed, mainly out of U.S. and Latin American experience, by Schultz and his fellow investigators. One noteworthy generalization out of recent U.S. experience, is that if half of education costs are considered "consumption", then the economic returns correlated with education expenditures have been about double the returns to investment in non-human capital.-/

-/ But the observed correlation between schooling and earnings is at least partly spurious. Obvious causes of higher earnings--like intelligence, health and energy, emotional stability, good home environment, and good family resources and connections--also are likely to lead to people's spending more years in school. And the legal right to work in some high paying occupations--medicine, dentistry, law--depends formally or in fact on completing given years of schooling. Even if schooling had some net deadening effect on income-earning ability, we should still observe a positive correlation between years of school completed and life income!

Morgan et al. find that "in the United States the level of education clearly affects wage rates. It is impossible to say whether this is a result of education itself, or of differences in the ability and intelligence required for differing levels of education". J.N. Morgan, M.H. David, W.J. Cohen, and H.E. Brazer: Income and Welfare in the United States, McGraw-Hill, 1962, p. 48. They do find a positive effect on earnings of education, when a rough adjustment is made for intelligence.

Kravis emphasizes formal education as a prerequisite for entry into some of the high-income occupations: I.B. Kravis: The Structure of Income?, Pennsylvania, 1962, pp. 85-89.

The generalization in the text is based on H.P. Miller: "Annual and

Lifetime Income in Relation to Education, 1939 - 1959," American Economic Review, December 1960, pp. 962-986. More general materials: T.W. Schultz: "Investment in Human Capital," American Economic Review, March 1961, pp. 1-17; Transforming Traditional Agriculture, Yale, 1964, pp. 175-206. A symposium in the Journal of Political Economy, Supplement, October 1962, works out the implications of this emphasis in various fields.

Schumpeter's growth theory fits in well with the "human resources" emphasis:

"The slow and continuous increase in time of the national supply of productive means and of savings is obviously an important factor in explaining the course of economic history through the centuries, but it is completely overshadowed by the fact that development consists primarily in employing existing resources in a different way, in doing new things with them, irrespective of whether these resources increase or not."

--The Theory of Economic Development, Harvard, 1934, p. 68.

Schumpeter's phrasing suggests the possibility of explosive growth, if only innovation occurs rapidly enough. But since entrepreneurs never appear in abundance, and since the extent to which they can carry out their new combinations turns mainly not so much on their individual qualities as on slow-changing social influences, changes in rates of growth should themselves be slow changing.

From aggregate statistical and econometric studies, similar results have been obtained by Abramovitz and others at the National Bureau of Economic Research, and by Solow and Denison. These studies indicate that in U.S.

-/ M. Abramovitz: "Resource and Output Trends in the U.S. Since 1870," American Economic Review, Papers and Proceedings, May 1956; R. Solow: "Technical Change and the Aggregate Production Function," Review of Economics and Statistics, August 1957; S. Fabricant: Basic Facts on Productivity Change, Occasional Paper 63, National Bureau of Economic Research, New York, 1958; E.F. Denison: The Sources of Economic Growth in the United States, Committee for Economic Development, Supplementary Paper 13, New York, 1962.

experience increased factor inputs "account for" from one-eighth to one-half of increased output, the differing results turning on the time period chosen and the data and definitions used. Physical capital increase by itself explains no more than one-eighth to one-quarter of increased output. "The Residual", or non-measurable inputs then account for from half to seven-

eighths of increased output.

B - The most careful international correlations attempted to date between capital inputs and production increase are those of the Economic Commission for Europe Secretariat, for 22 Western countries in the 1950's. They conclude there is "practically no correlation" between investment ratios and growth rates. For all 22, the correlation coefficient is .2. When, to obtain more homogeneity we select out the 13 most industrialized countries, the correlation is nearly as low. If Norway, an extreme deviant is also omitted, the correlation coefficient rises to .69--still an unimpressive figure, and dropping out awkward cases because they are awkward is hardly fair play.-/

-/The 22 countries include the United States and Canada, also Ireland, and Turkey, and Yugoslavia, but not other East European countries. For each country the investment ratio is the average annual ratio, 1949 - 1959, of gross fixed capital formation (factor prices) to gross domestic product (market prices). Divergences are striking:

	Growth rate	Range of investmndt ratios
Norway, Sweden, Denmark, the U.S.	about 3 1/3%	18% to 33%
Finland, Canada, Portugal	about 4%	15% to 30%
Austria, Greece, Italy, Turkey	about 6%	15% to 23%

Source: United Nations: Some Factors in European Economic Growth during the 1950's, Geneva, 1964, p. 18.

The correlations would have been still lower, and the dispersion in the above table greater, if the investment ratios for the 11 years had not been averaged into one figure.

The study also analyses the relationship between changes in the work force and changes in production. Between these two, correlation is considerably higher-- .71 over the period for the 22 countries. Ibid., p. 13.

Low correlation does not disprove the existence of causation, nor would high correlation prove it. In either case, other influences that are relatively important may be at work. What is proved is that any causation between investment and production was (in these countries and at this time, and granting

that the data are reasonably accurate) relatively unimportant compared to other influences. -/ *

-/ Causation need not exist only from investment to production growth. It might be partly in the opposite direction. Cf. N. Kaldor: "Capital Accumulation and Economic Growth," in International Economic Association: The Theory of Capital, Macmillan, London, 1961.

C - With reference specifically to Europe's historical contribution to the economic growth of overseas lands, relevant data are calculable, over most of the crucial half-century before World War I, for the magnitudes of the value of immigrants and the value of investment to those lands.

Ideal data would consist of evidence on the (discounted) total net product attributable to immigrants, on the one hand, and to the inflow of investment, on the other--assuming in each case that there had been no change in the quantity of the other factor. Products would be calculated net of immigrant remittances and of repayments of capital and capital earnings. We do not have such complete data.

What we do have (Tables I, II, and III) are (1) an approximation to immigrant contribution to product taken as equal to their discounted earnings, without deduction of remittances back to Europe, (2) a crude estimate of the cost to Europe of rearing the immigrants, (3) a crude estimate of the investment contribution to product within a limited time period, discounted and without deduction of repayment and earnings flows back to Europe, and (4) a rather accurate estimate of investment inflow at its current value at the time (but not of its discounted eventual total cost to the overseas lands).

Table I gives these estimates for United Kingdom to United States flow, Table II for Europe to All Overseas, and Table III summary orders of magnitude for the first two tables.

In each of these tables, A1 and B3 measure the value of immigrants and of investment inflow, respectively, in terms of their product in the new lands. A2 and B4 give an alternative but also relevant valuation: immigrants at their replacement cost, or burden, in the Old World; and investment valued at the time of the flow, that is, at the level of its current burden or opportunity cost to the Old World.

Table I. The Value of Immigrants and the Value of Investment Flow into the United States, From the United Kingdom

1870 - 1914, averages per year	(Rounded to the nearest \$10 million)
A - The value of immigrants	
1 - 101,800 immigrants, valued at their 25 years' product, discounted, of \$8,702.....	\$890 million
2 - 101,800 immigrants, valued at the cost of their rearing in the United Kingdom, \$1,306.....	133 million
B - The value of investment inflow	
3 - Investment inflow, valued at its discounted net product.....	150-500 million
4 - Investment inflow, valued at time of flow.....	70 million

Notes on Table I:

1. The number of immigrants are estimated from U.S. Census sources, as presented in Brinley Thomas: Migration and Economic Growth, Cambridge University Press, 1954, Table 78, p. 266. Thomas judges that the American figures are in this period more accurate than United Kingdom estimates, though both "seem to have exaggerated the net flow". (p.p. 54-55). The method is to adjust British-born residents of the United States as reported to the U.S. Census, by age-specific mortality rates; hence allowance is implicitly incorporated for the substantial numbers of migrants back to the United Kingdom. The total number over the 44 years from 1870 to 1914 (fiscal years) is 4,480,000, or 101,800 a year.

Estimates of earnings in the United States: The median age of British-born immigrants appears to have been between age 15 and 29. The median age of Irish immigrants around 1890 was in the 20-25 age group. It is assumed

conservatively that they averaged 25 years of work after arrival--in the United States life expectancy at age 20 was then about 43 years (U.S. Department of Commerce: Historical Statistics of the United States, U.S.G. P.O., 1949, Table C 6-21, p. 45). The median immigrant in this period arrived in 1888, with fairly even distribution of numbers before and after. Average hourly earnings over the next quarter century were 25 cents an hour; and the average work week 58 hours in all industry. (Op. cit., Table D 121-133, p. 67). With an assumed 50 week year earnings are then \$725 a year. Thomas' data suggests that some two-fifths of immigrants were females; we assume that they were half as "economically productive" as males and so reduce the above figure by one-fifth, to obtain a final average economic product a year of \$580. This assumes full employment. Lebergott figures on unemployment for sample 5-year intervals for the 25 years after the typical immigrant arrived in 1890 indicate an average experience of 6.9% of unemployment. (Stanley Lebergott: Manpower in Economic Growth, McGraw-Hill, 1964, Tables 4-3, p. 187; A-3, p. 512; p. 522, A-15). It seems likely that immigrant experience of unemployment averaged more than the average: we assume a 9% figure, to bring the above \$580 down to a net \$528. The value of these average earnings over 25 years, discounted at the average long-term interest rate of 3.5%, is \$8702.

Bias: The estimate of the number of immigrants, Thomas judged, is probably somewhat high. On the other hand, the age distribution of the sample of immigrants for whom we have that information; their probable health, energy, and confidence, and easy adaptation to an English-speaking U.S. environment; and also the favorable distribution of skills from the available tabulated sample from the United Kingdom (around 1890, there were 34% of them classed as professional, "skilled", farmers, and entrepreneurs--Thomas, op. cit., p. 268)--all together indicate that their earnings were probably above the average for all U.S. earners.

2. This approximation is built up from an estimate of the cost of raising a child, related to family earnings, and from an indirect estimate of British family earnings. (1) Dublin and Lotka estimate the "economic" cost of bringing a child to age 16 (U.S. data, for a family of five persons, mainly mid-1930's data, annual family income of \$2,500). (L.I. Dublin and A.J. Lotka: The Money Value of a Man, Ronald, 1946, p. 50). The cost for both males and females is given: the weighted average for them (60% of immigrants being assumed males, in accord with Thomas' data) is \$6,802, or 2.72 times the family income of \$2,500. (2) The U.S. \$1,880 average wage rate (18.8¢ an hour), with a 59 hour week and 50 week year (Historical Statistics of the United States, 1790 - 1945, Series D, 107-110, pp. 66,67) gives \$555. For a bit after the turn of the century, Shadwell estimates U.K. wages at 72% of U.S. wages (Arthur Shadwell: Industrial Efficiency, Longmans, Green, New York, 1906; discussed in John H. Williams: "The Theory of International Trade Reconsidered," originally in the Economic Journal, June 1929, pp. 195-209). To this estimate of average U.K. annual earnings we apply a factor of 1.2, as a best guess, based mainly on U.S. recent data, of the ratio of family earnings to individual earnings. U.K. average family earnings around 1880 are then \$480. (3) The cost of raising a child, from (1) above, is then \$1,306.

Bias: The above assumes that emigrants earned enough to cover their costs beyond age 15. It excludes child care work in the household as "non-economic".

The indirect calculating leaves much room for doubt; but the figures given could be doubled or halved without affecting the cautious conclusions given in the text.

3. This applies the marginal capital-output ratios obtained by Kuznets for the post-War II period, for countries grouped into seven divisions by per capita product. The range for the seven groups, taking product gross, was from 2.35 to 8.09. Ungrouped countries would show wider variations. (S. Kuznets: "Capital Formation Proportions, etc," Economic Development and Cultural Change, July 1960, p. 50. Cf. Boris Pesek's criticism: "Kuznets' Incremental Capital-Output Ratios," op. cit., October 1963, pp. 22ff.). Kuznets' paper reasons that in the past, say before World War I, marginal capital-output ratios for low income countries were probably higher than they have been recently; that is, more capital was then needed for a given rise in output (pp. 66-68).

The Economic Commission for Europe Secretariat found marginal capital-output ratios for 22 western countries 1949 to 1958 or 1959, to vary from 2.6 to 13.7. Most of them ranged from 3.0 to 6.0. United Nations: Some Factors in European Growth during the 1950's, Geneva, 1964, p. 17.

Returns are discounted over a period of 25 years--it is assumed that capital is "maintained" for that period at 3.5%.

4. Based on the critique of earlier estimates by Imlah: Economic Elements in the Pax Britannica, Harvard, 1958, pp. 64-81. In 1870, 24% of total British investments abroad is assumed to be in the United States (interpolating from Jenks' estimate of 26% for 1854--Imlah, p. 68) and 20% in 1913. (Imlah, p. 79); or £ 168 million and £ 800 million respectively. The per year increment of investment is £ 14.7 million or \$71.4 million.

Table II. The value of immigrants and the value of investment flow into all overseas areas, from Europe

	1866 - 1915, averages per year	(Rounded to the nearest \$10 million)
A - The value of immigrants		
1 -	456,000 net immigrants, valued at their 25 years' product discounted, or at \$5,801.....	\$2,650 million
2 -	456,000 net immigrants, valued at the cost of their rearing in Europe, or at \$1,088.....	496 million
B - The value of investment inflow		
3 -	Investment inflow, valued at its discounted net product.....	1,030-3,530 million
4 -	Investment inflow, valued at time of flow.....	500 million

Notes on Table II:

1. In the period 1866-1915, Carr-Saunders' data indicate an average inter-continental migration from Europe of around 760,000 a year (A.M. Carr-Saunders: World Population, Oxford, 1936, Figure 10, p. 51). We have subtracted 40% from this total for those who returned home: "30 percent of those who entered the United States between 1821 and 1924, and 47 percent of those who entered Argentina between 1857 and 1924 are believed to have returned home again"--Ibid., p. 49. Ability to return home was increasing as time went on, but the attractiveness of the new countries was also increasing.

Their earnings are put at two-thirds the U.S. level of earnings as calculated in Table I, or at \$352 a year. Productive life after migration is assumed the same as in the United States, 25 years; and earnings over this period are discounted at 3 1/2% to give a value of their future earnings as of the time of migration of \$5,801.

Bias: The rate of discount of earnings might perhaps be higher for other countries than the United States. The crude "two-thirds of U.S. level of earnings" estimate could well be low, because of several of the favorable influences on earnings listed above, Table I, A-1.

2. Shadwell, op. cit., estimated German wages just after the turn of the century at 57% of U.S. wages. 60% is taken as a rough approximation to the average proportion of European earnings in the countries from which emigrants came, to U.S. earnings. That is, lower wages in other European countries than those earned in Germany, are assumed nearly to offset the higher earnings of the U.K. The ratio of family to individual earnings is taken as in Table I, note 2.

3. Kuznets' range of post World War II capital output coefficients are used, as in Table I.

4. Estimated for the years 1870-1913, from evaluations of a number of earlier efforts by Imlah, op. cit., pp. 64-81, esp. Chart 8, p. 80. 1870 investment by the U.K. abroad is thought to have been £ 700 million, and by 1913, £ 4,000 million. The increment per year was £ 76.7 million, or \$373 million. The Feis estimate for French foreign investment from 1870 to 1914 is approximately fl,300 million in total, or (f29.5 million, @ 19.4¢ =) \$6 million a year. For German foreign investment in those years, his total is Rm 21 billion, or (Rm 477 million @ 25¢ =) \$119 million. French and German investment together, \$125 million, then amounted to 34% of United Kingdom investment abroad 1870-1913. (H. Feis: Europe, The World's Banker, 1870-1914, Yale, 1930; reprinted, Kelly, New York, 1961, pp. 44,71,74). All other European foreign investment is taken as equal to that of France, to give a total for all European countries of (\$373 + 6 + 119 + 6 =) \$504 million. The range of error is less than one might think initially, because the dominant foreign investor, the United Kingdom, has the best data.

The orders of magnitude of these two tables can be summarized:

Table III. Orders of economic magnitudes:
immigrants and investment flows from Europe overseas

	1866 or 1870 to 1914 or 1915	U.K. to U.S.	Europe to All Overseas
A - Value of immigrants			
1 - Valued at product overseas.....	13		5
2 - Valued at cost of rearing in Europe.....	2		1
B - Value of investment			
3 - Valued at product overseas.....	2 - 7		2 - 7
4 - Valued at time of flow.....	1		1

The data are rough, but their relative magnitudes carry a clear impression. The economic value of immigrant flows and investment flows to All Overseas are about equal; but in the flows from the U.K. to the U.S. the value of immigrants bulk about twice as large as the value of investment.

The eventual burden to the people of the U.K. and of Europe from rearing emigrants as compared to exporting investment funds (and goods) depends partly on the relative sizes of return flows of emigrant remittances and of the totals of amortization, interest, and dividends. One would suspect the former is the smaller: the emigrants were not bound by contract but by waning affection. If so, Europe had eventually a greater economic burden from sending out people than from sending out capital.

The greater dominance in our figures of the immigrant contribution to the United States whose long-run performance among the new lands is also the most outstanding, is probably not a matter of chance. In many parts of the world and at many times, the flow of hopeful and able people from regions of less promise to those of more promise has been a major handicap of the former and a major stimulus to the latter.--/

-/ Due to restrictions on international migration in force generally in the world today, the phenomenon is more significant within national boundaries than across them. Between any two areas, the main cost of emigration is doubtless not the cost of rearing the migrants, no matter how calculated, but an opportunity cost, in that the most energetic hopeful, skilled, and able seek opportunities in the attractive regions and flee from unpromising regions. And so Tamils have moved out from India, the Southern U.S. States find able young people moving north and Canada finds them moving south, English scientists are attracted to the United States, Chinese have moved south and east, Jews have migrated everywhere, Scots and Irish descend on London, Latin Americans in training in Europe stay there, and so on.

If the labor flowing into the favored area is of the same quality as that already there, standard theory predicts a fall in marginal product of labor and in wage levels. Parallel reasoning indicates rising wage levels in the area from which the labor emigrates. Net advantages of the two areas will tend to be equalized, and the flow choked off.

But if in fact specially productive labor does the moving, then that fact, coupled with the probably improving economic morale and optimism in the favored area, and its reverse in the area of emigration, can cause divergence of income levels. This is the argument followed above. The effects historically of such movement, one may conjecture, may often have been more compulsive on rates of income growth than the total of causes originating in terms of trade, capital scarcities, import propensities, and the like.

If this equal or greater magnitude of the economic value of emigrant flows as compared to investment flows out of Europe holds for the half century before World War I, as our data indicate, then there is no doubt at all about the relative economic magnitudes of these two flows back in the early nineteenth century and before--which in the United States and in some other regions, were periods more crucial for determining the future of economic growth. Investment was hardly beginning to flow out of Europe before the mid-nineteenth century. The relative economic importance of immigrants in earlier periods must have been far greater.

D - There is some logical and empirical evidence that sizable foreign investment has historically come fairly late in the development process, only when growth is well under way. The logical argument is plausible: a prudent investor should be in no hurry to jump into uncertain waters. He should

wait until they are charted--until the new project seems likely to be successful; that is, until the technical, skills and organization, and market problems seem to be getting solved favorably.-/

-/ In part the same argument holds precisely for immigrants: they are attracted more by existing economic expansion, than by future hopes. But other influences are also strong on the migration of people: plain adventurousness, optimism and animal spirits are causes, whereas capital is a timid creature. In addition migrants are often forced out of their homelands by local economic disaster, or social, political, or religious pressure. That is, mixed forces are at work.

As to the empirical evidence: in the field of European international lending we have considerable material. We know that the British lent little abroad until the middle of the nineteenth century. Until then home investment in the building up of British railways and towns absorbed, Imlah generalizes, nearly all British savings. In the half-century before World War I, lending abroad from the United Kingdom reached its peak only at the end, in 1908-1931, when foreign net credits had grown to 20 times higher than in 1850.-/ Both British and other European investment was heavily

-/ A.H. Imlah: Economic Elements in the Pax Britannica, Harvard, 1956, Chart 8, p. 80. Imlah estimates British foreign lending at a total of £ 10 million in 1815, about £ 100 million in 1825, only £ 200 million in 1850; and a steady growth to £ 4,000 million in 1913.

concentrated in areas already comparatively advanced economically (with qualification for some colonial areas, and for Egypt and China). One-fifth of British investment in public-issued securities was by 1913 placed in the United States, more than in any other single country. Over half of German investment in 1914 was in Europe, including Turkey. Europe was also up to 1914 the "chief field of employment of French capital abroad, only about one-tenth going to the colonies despite favorable legislation and institutions.

British investment after 1870, though spread widely across the world, played a shrinking role in Europe and an increasing role in young and agricultural countries largely peopled by British race".

-/H. Feis: Europe, the World's Banker, Yale, 1930 (reprinted by Augustus Kelley, New York, 1961), p. 19. See pp. 21-25, 51-55, & 74. Also A.K. Cairncross: "The Contribution of Foreign and Domestic Investment to Economic Development," International Journal of Agrarian Affairs, April 1961; reprinted in Factors in Economic Development, Allen and Unwin, London, 1963, pp. 39-45.

Berrill generalizes from his investigation that neither France nor Germany borrowed heavily in the early stages of modern growth; Finland borrowed little at any time; Denmark and Sweden borrowed only late in their growth. All the European countries "except perhaps Norway and Russia, generated within themselves nearly the whole of the savings needed for their industrialization".-/

-/K. Berrill: "Foreign Capital and Take-Off," paper delivered at the Conference of the International Economic Association at Konstanz, September 1960; summarized in Cairncross, op. cit., pp. 41-42.

Such evidence on foreign capital flows fits in well with the hypothesis that capital formation, though necessary to increased output through widening and deepening the structure of production and sometimes required by new techniques, typically comes late in the development process, being useful only when basic favorable changes have taken place in the economy and society. (But evidence from foreign capital flows cannot prove such a hypothesis. There is lack of information on the timing and causation of domestic investment flows).

The logical support for such a view is plausible: that there is a long period in the early stages of economic growth when the crucial problems are

the changes in values, skills, and institutions without which additions to capital will go to waste. Illustrations of such waste are abundant enough-- a tractor rusts in idleness for want of a clean carburetor, a machine tool is idle because an unoiled bearing has burned out, a factory closes for want of transport for its product, another because of corrupt management, a third for want of skilled, regular labor. And whether or not the capital is wasted at the time, it may or may not pass the long-run test: Does it provide a reasonably efficient feedback; that is effective stimulus toward the basic social and economic changes on which further growth depends.

Such a view gives reason for expecting observed capital-output ratios to be highly variable, as in fact they are.[/] It would lead one to expect, also,

[/]P. 13 above.

that there will be meager opportunities for profitable investment in traditional production, as Schultz holds.[/] Similarly, one would expect the World Bank

[/]T.W. Schultz: Transforming Traditional Agriculture, Yale, 1964, pp. 83-101.

to complain, as it does, of a scarcity of justified projects to invest in. In contrast, if one looks to the experience of countries that have raised their incomes to high levels: there must have been "enough" foreign plus domestic investment funds forthcoming to have supported their advance. By hindsight, the demand of investment opportunities must have created its own adequate private supply.

If investment does come late, exploiting opportunities created by earlier basic social and economic changes, then it is a wasteful cart-before-horse policy for government agencies or private scholars to focus attention on

maximizing investment in physical capital as a goal in itself. But emphasis on investment as a lagging requisite of growth is still justified.

Within less developed countries themselves, political pressures and a fallacy-of-composition bias can reinforce the hypothesized error of focussing on physical capital goals. It is an honorable politician indeed, in a less-developed country, who would turn his back on the chance of getting foreign funds, even though he might have his private honest doubts whether in the long-run the project would turn out successful.

III. TRADE AS AN ENGINE OF GROWTH

In the economies, newly-settled or not, that have successfully raised their incomes to high levels, the expansion of trade theory--or more emphatically, the export boom theory--is often plausible. It can have various kinds of emphasis--Nurkse: the engine used to work well, but is running down due to a falling propensity to import in the high income countries, with resulting checking of growth in low income countries unless they industrialize to develop their home markets; Prebisch: the engine always has been transferring part of the gains from technical progress to the high-income countries--prescription for less-developed countries, the same as Nurkse's; Haberler: the engine has worked effectively in the past and works effectively now to the extent it is allowed to work--prescription, (nearly) free trade. Emphasis may be less or more on how trade indirectly facilitates growth, through changing institutions, and values, transferring ideas and practical technology, and facilitating and justifying capital inflows.

But the expansion-of-trade mechanism works imperfectly. Even in its supposed heyday, there was many an export boom--in sugar, tobacco, rum, indigo, jute, tea, coffee, rubber, iron ore, tin, guano, manganese, tungsten, etc.--but only a few countries that developed. And economies have gone on developing--

the large continental areas of the United States and Russia being prime examples--without necessarily having external trade booms. Expansion of trade must be neither a necessary nor sufficient cause of economic growth.

The Chenery cross-section, econometric study of 51 countries in the early 1950's turns the expansion-of-trade hypothesis upside down. The main single explanation of industrial growth, amounting to half the total, is found to be the import substitution--that is, the squeezing out of trade as growth of local production outruns growth of domestic demand.-/ At a certain stage in

-/H.B. Chenery: "Patterns of Industrial Growth," American Economic Review, September 1960, pp. 624-654. "...Leading sectors are likely to be industries in which import substitution becomes profitable as markets expand and capital and skills are acquired. Even in Japan, the most successful of the low-income countries in increasing industrial exports, import substitution accounted for nearly 40 percent of the rise of industry... (between 1914 and 1954) as compared with less than 10% for exports." P. 651.

Import substitution is defined by Chenery as increased share of domestic production in total supply.

their growth, countries become less specialized.

For cases where trade expansion existed but didn't lead to growth, the analyst can set up his explanations. Some kinds of exports conduce to a spread of new techniques, others do not, depending on their demand for locally trained skilled workers, and on their direct and indirect demand for local products.-/ Also there may be more or less resistance inherent

-/R.E. Baldwin: "Patterns of Development in Newly-settled Regions," Manchester School, May 1956, pp. 161-179; "Export Technology and Development from a Subsistence Level," Economic Journal, March 1963, pp. 88-92. In the latter paper, Baldwin generalizes pessimistically that in much of the under-developed world:

"One set of industries [many kinds of agriculture, producing such things as tea, coffee, tobacco, sisal] is well adapted to the existing labor endowment of these areas, but does not provide much of an impetus to eliminating the backwardness of the labor force... The other type of export activity [the mineral industries, in general] provides a ladder for further growth [through demanding a hierarchy of skills varying from

semi-skilled to highly skilled, which local people gradually learn to provide] but the impetus for additional development is confined to only a small part of the economy [that is, little demand for domestic products is generated] ." (p. 92).

in the local society to the inflow of techniques and of new values carried on the back of trade. The first explanation is still in the pattern of economics, the second moves into social-structure-and-values explanations of growth for which Hagen's, Meier's and Sinai's writings present their variations.-/

-/ Everett E. Hagen: On the Theory of Social Change, Doresey Press, 1962; Gerald M. Meier: International Trade and Development, Harper & Row, 1963, esp. pp. 176-185; I.R. Sinai: The Challenge of Modernisation, Chatto and Windus, 1964.

IV. A HYPOTHESIS ON THE ECONOMIC SUCCESS OF NEWLY-SETTLED AREAS

Economists and other specialists from the West who go to work in less-developed economies usually come back vividly impressed by social obstacles to growth. Such judgements of what is important are not subject to quantitative test: they turn on combinations of personal experience and of mental habits and logic. The content of these judgements obviously should be taken seriously.

The usual non-economic emphasis holds that European culture in defined ways encourages economic progress, and that indigenous cultures outside of Europe in general do not. Under this general heading come many sub-explanations of Hebrew-Greek-Roman civilization, the Renaissance and Reformation with their bequest of this-worldliness, "democracy", better social discipline, a higher propensity to save and invest, better technology to be applied to the local production problems, better health and energy from superior knowledge and practice with respect to food, sanitation, and medical care,

and perhaps other causes still. The sub-explanations are variously combined and emphasized.

The European-culture interpretation does not fit very well with the conspicuous fact that individuals and small groups from traditional communities --not necessarily from Europe--have regularly distinguished themselves by their economic progress when they move abroad: Huguenots in England and elsewhere, Jews in many areas, Arabs along the east coast of Africa, Tamils outside of India in South Asia and the Pacific Islands, Chinese in the Philippines, Indonesia, and other parts of the world, and so on.

The European settlers abroad possessed, of course, superior techniques, and probably also superior ability to organize and cooperate together in economically productive activities. These advantages served them well. Many of the migrants were in addition self-selected, as we have reasoned above, for energy, hopefulness, and ambition. But many among them moved by compulsion, as slaves or convicts; or they were forced out of their homelands by personal ill-success or general disaster. (At the time of the U.S. Revolution, roughly two-thirds of immigrants to the Colonies had come as slaves, convicts, or indentured servants.)¹ The net balance on the personal qualities count

¹Cf. Carter Goodrich: "Indenture," in Encyclopedia of the Social Sciences, pp. 645-6.

is doubtless also favorable.

There is further reason, we suggest, for the brilliant economic success of newly-settled as contrasted with old-settled areas. A pioneer society hypothesis is presented below as a supplementary but important cause of the contrasting growth performance of the two areas.

A - Consider the values and objective of people who live in old-settled areas of the world, in comparison, with those who grow up in newly-settled

areas. In other words, what are the sources of status and prestige in one area, as compared with the other?

In every society, the people at the top of the social structure influence value systems, so far as they can, to sustain and reinforce their own prestige. Specifically, in the typical agricultural traditional society the land owners and aristocrats whom the people at large look up to, and who are able to influence the value system the most effectively of all the social groups, have an interest in evolving and maintaining a value system that gives them maximum status.

This interest implies that they will not set up "accomplishment"--physical or mental energy, ability in production or trade, courage or skill in battle, or the like--as criterions of social merit. Only in the remote, more primitive days, when violence was a way of life and more stable social systems were only gradually being evolved, did the criterion of "accomplishment" hold uniquely. A Romulus and Remus, King Arthur, and Charlemagne can hover in tradition as both personally able and as political heads, father-images for the indefinite future.

For the top social group, however, one shaking-up of the social heap in a millennium is quite enough. They cannot support accomplishment and ability in general as the criterion of social merit, neither can they point to exceptional personal merit within their own group as justification for their status, for in every social group and generation exceptional ability of any sort is by definition rare.

Income, of course, everyone wants. The high status people have historically obtained income through land rents, taxes, ransoms, robbery, or regular charges to merchants passing through; or through receiving ceremonial or customary gifts (to the local chieftain or landlord, to the church generally, or to figures in it, such as the Aga Khan). The achievement of high income

is a main bulwark of status.

The search of the top social group in a stable settled society for a justification for their status leads to a last-ditch and in a sense conclusive argument, that one deserves eminence because of who he is. He doesn't have to earn it; he has it. He has his personal rank, or he is a member of a family, all of whom have status: a son, daughter, wife, nephew, uncle, aunt, cousin--and that is sufficient.

Given the tight hold of such a status structure, an able and ambitious individual without initial status can hope to achieve it only by fitting in--one way, for example, produce goods for the king or otherwise serve him, and so share in his status. When this kind of society is losing its grip, there are chinks in the status-armor, and prestige can be obtained in some measure outside the pattern--perhaps by becoming eminent in law or medicine; but especially and above all, by achieving success in politics.

A traditional agrarian society with a folk memory of conquest and predation as the normal route to acquiring status, power, and wealth, encourages energetic young people to seek political success as their way up. The route of politics is a flexible one. In a fairly stable status system, the successful politician assimilates into the existing hierarchy, supplementing and supporting it. Where there is more instability, the promising tack for the ambitious politician is to pledge reform or urge revolution. His aims may turn out in fact, in the power and possibilities of office, to involve making the best of both worlds: in optimum compromise, to assimilate to some extent with the old hierarchy while reforming or supplanting it to some extent.

In the traditional low-income societies of the world, the demonstration effect in its widest senses will continue to foment political instability. As communications improve, there will be increasing awareness of the wide gap in standard of living between the low-and high-income countries. For several

centuries this gap has been widening; 1950's data at the most suggest the rate of widening of the gap may be slowing down. In such societies, if the tensions lead to increased political turbulence rather than to increased economic effort and accomplishment, then economic advance will face added difficulties.

And a vicious circle effect might shift the rate of economic progress still further toward low or negative levels. The canons of status in such societies discourage energetic and creative economic activities--innovatory production and trade, the close calculation of money gain and loss, the business preoccupations and the huckstering--that are associated with the growing production of economically successful areas. In such a society, there is necessarily a poor outlook for economic effort. And so with complete rationality, the ambitious individual will not go into business life, but will instead apply his energies where they are likely to do him more good--which may well be above all in the political area. The maximizing calculus leads away from economic effort: the divergence between private and social marginal product is wide.

In its pure form this logic of ambition in low income societies is illustrated in the student centers of political dissidence and intrigue of Latin American universities, and to some extent in the student strikes and revolts in Near East and South Asian universities.

B - Such reasoning indicates an overwhelming economic advantage for newly-settled parts of the world--North America, Australia, New Zealand, parts of South America--where the native populations were not so large as to submerge the new-comers in the old system, or to enable the new comers to set up a new superior-inferior status system that will discourage economic effort. In a pioneer environment, survival and real income depend on personal qualities of strength, wits, and courage. Since these qualities are valuable,

they are the self-evident basis of status. "Who you are equals who your family is" is no longer relevant. The younger son of a distinguished European family, out in the prairies or in the Rockies of North America, had to pull his own weight, if he was to win the local respect that counted. The acceptance of personal accomplishment as the source of status is invaluable for favoring economic and other progress, lasting for some generations beyond the pioneer environment that gives rise to it.

What about post-pioneer influences on such a value system? A commercial and industrial environment tends to sustain such a personal-accomplishment status system, since energy and (business) ingenuity have their rewards, and indolence and (business) folly their punishments. Hence there will be constant shifting, over the years or a few generations, in the persons and families of the elite. Progressive taxation and effective practical education tend to sustain such a status system. War also offers in its way a stimulus to growth, offsetting a considerable amount of physical destruction, through the advantage given in conflict by strength, wits, and ability to achieve concrete results. The evident survival value of these qualities tends to raise their prestige in all pursuits.

An agricultural environment tends to destroy the status-through-accomplishment system, in that ownership rights, clung to zealously, have sufficed in many places and times to support a fixed group of elite families generation after generation. The modern practice of professional property management also tends to destroy it, by facilitating the continued high incomes and status of people who have no need to be other than unenterprising and unimaginative. (But the professional managers themselves are selected for ability, to that extent offer a small leaven of social mobility to the class structure).

V. CONCLUSION

In conclusion: the orthodox view that investment and trade, separately or together, have been the crucial contributions that Europe has made to the economic growth of newly-settled lands overseas, is less than convincing. The available evidence suggests that the energy and skills immigrants brought with them from Europe, plus perhaps especially the values they developed from being abroad on their own, were more important.

If the present highest-income countries can be taken as models of economic success for the present low-income countries, the implication of the above is that policy-makers should have conspicuously in view the non-investment and non-trade conditions of growth. Investment and trade, including foreign aid, in themselves, (a) become valued in large measure in accord with the extent they operate effectively on the domestic causes of economic growth. These indirect effects may take precedence over any direct effects. (b) They become, in rational planning and economic growth, clues to comparative advantage and indexes to the degree of economic modernisation of an economy.--/ (c) They remain, however, in accord with

--/Kindleberger offers a discussion of the complex relation of trade to growth in his Foreign Trade and the National Economy, Yale, 1964, pp. 177-194.

traditional reasoning, contributors to better factor allocation and increased supply of critically scarce factors.

Policy implications are considerably different, to the extent indirect effects on the economy and society rise in emphasis.--/

--/A case study of the indirect transforming effects of an activity as crucial to economic growth or its absence is given in Nathan Rosenberg: "Technological Change in the Machine Tool Industry," National Bureau of Economic Research, Conference on Research in Income and Wealth, September, 1963.

The above frontier-versus-no-frontier hypothesis takes as the central problem of economic growth the question of how to give prestige to the qualities and habits that are useful to economic production, and so channel the efforts of the able and ambitious in an economic direction. But prestige is a commodity that can be increased for one activity or person only at the cost of diminishing it for others. Existing prestige-holders will not willingly abdicate any large portion of their status. The delicate arts of political compromise, perhaps as suggested in their detailed strategy by Hirschman,^{-/} are requisite, to change by slow degrees the status and power

^{-/}Albert O. Hirschman: Journeys Toward Progress, Twentieth Century Fund, New York, 1963, esp. in Part II, "The Contriving of Reform" and "Models of Reformmongering," pp. 251-197.

Hirschman generalizes: "The roads to reform are narrow and perilous, they appear quite unsafe to the outside observer however sympathetic he may be, but they exist... There are many unsuspected and unorthodox opportunities for maneuver and advance." (p. 275).

structure; or else, a harsher gamble, a sharp and prompt overthrow of the existing power and status pattern in whose debris, under favorable circumstances, the ambitious and able may seek status through economic activities. But the debris following violent change is all too likely to advertise to the ambitious that their best chance lies in repeating the example given them, in seeking success through a new political overthrow.

In the context of our hypothesis above, one hopeful strategy for the would-be reformer is to encourage the growth, in the many specific ways possible, of a pluralistic society. The traditional low-income areas are characterized by deep class and caste divisions, which separate people in every aspect of their lives--in their food, housing, clothing, education, kind of work, recreation, and the like. The ordinary and correct argument

against these deep divisions is to the static economic cost the divisions entail: the varying talents and tastes of people may not fit the kind of work into which class and caste divisions press them, and ambition for self-improvement is stifled. To the extent many kinds of activity and competition can be opened up--many kinds of voluntary as well as official social organizations; more types of recreation, organized and not, including athletics; varied styles and types of art, music, painting, and writing; more kinds of economic activity open to choice; more kinds of practical training and of general education open to young people and to adults; and so on--then deep-cutting class divisions are blurred. There are plural channels to status and sense of personal significance and success: talents and tastes are better suited, and ambition is encouraged.

But the logic of strategy for reforms offers another argument for pluralism. Traditional status-holders may not feel they are losing much through given reforms as new channels to status become accepted and grow more numerous, and status divisions become milder and more complex. They may even feel they are gaining as resentment at their own unearned prestige is softened, as socially useful roads for ambition are opened up, and so the social system becomes more stable.

In the context of opening diverse opportunities, the old status-holders' resistance to needed reforms is therefore likely to be weakened. The threat to their position is, at the worst, more and more indirect and comparative, whereas in the unitary society the threat of reform to them was direct and vital. They may tolerate reforms, or even gain what social approbation they can, through supporting some of them.--/

--/The British are perceptive here, offering status and incentive to the able and energetic through orders, knight-hoods, and titles, assimilating the

front-runners into the Establishment. But such a shrewd policy can prove a long-run disadvantage in the race for progress: the risk is that of smothering the discontents of the able and energetic too quickly with success.

As for the people in general in an increasingly plural society: their personal interests in any proposed reform are likely to be mixed, since they have ties in various directions. And so their situation encourages them to rational analysis in order to sort out the effects. When debate rises to the level of rational analysis, it becomes difficult to neglect indefinitely or deny the relevance of the general public interest to social decisions. And when the public interest enters genuinely and disinterestedly into discussion, social policy achieves a wide step forward.

Multiple channels to status and influence in a society, therefore, encourage rational and relevant, decisions--including economic decisions. They offer in consequence a continuing advantage in the long-run economic race.