Colonialism and Industrialization: Empirical Results

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Abstract

This paper presents theory and evidence to show that imperialism was a major factor impeding the spread of the industrial revolution during the century ending in the 1950s. Two empirical results stand out. First, analysis of historical evidence shows that most sovereign countries were implementing active industrial policies during the nineteenth century, while policies in dependent countries were biased in the opposite direction. Second, when allowance is made for economic determinants, industrialization in dependent countries in 1960 is found to be significantly lower than in sovereign countries. This result is shown to be quite robust to changes in data, sample size, functional forms, and specifications of the estimating equations. In particular, the basic results are not affected by the inclusion of a dummy for Sub-Saharan Africa.

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1. Introduction[1]

The limited diffusion of the industrial revolution across the globe constitutes one of the central economic problems of our epoch. It is also a conundrum for the social sciences.

Although world manufacturing output increased 24-fold between 1750 and 1953, this growth was concentrated in a small number of developed countries. In 1953, less than a tenth of the world's population in the developed countries accounted for 57 percent of world manufacturing output. At the other end, developing countries containing some two-thirds of the world's population, contributed a mere six to seven percent of this output. The *per capita* gap in manufacturing output between developed and developing countries in 1953 was of the order of 27 to 1. Although this gap has narrowed since then, it was still 20 to 1 in 1980.[2]

At least three sets of explanations for the unequal spread of industrialization have been proposed. For a long time, it was maintained that barriers to the spread of industrialization were cultural. Some societies simply did not possess those attitudes to work, savings, risk-taking or cooperation which are necessary for the efficient operation of markets and modern industries. Since the 1950s, the emphasis has shifted to economic obstacles, including narrow markets, poor infrastructure, weak financial institutions, falling terms of trade, and rapid population growth. A third set of radical theories seeks to explain backwardness as the result of disequalizing tendencies emanating from world capitalism.[3]

This paper proposes an approach which has affinity with radical theories, but qualifies them in important ways. It accepts the neo-Marxist premise about disequalizing effects of world capitalism, but argues that these effects are not the same across all lagging countries, nor are they constant over time.[4]

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[1] I wish to thank Professors John Adams, Christopher Clague, Keith Griffin, D. Gale Johnson, David M. Landes and Robert M. Solow for their comments on an earlier version of this paper. All remaining inadequacies in the paper are still my own.

[2] Bairoch (1982: 275, 303 and 307).

[3] Boeke (1953) was a leading exponent of the cultural approach during the 1950s; more recently, it has been revived by Clark (1987). The most complete recent statement of how the small size of markets can become obstacles to industrialization may be found in Lewis (1977). For a review of the radical theories, see Griffin and Gurley (1985).

[4] Countries are defined as lagging or advanced in relation to their stage of capitalist development. The stage of capitalist development is evaluated in terms of the development of a country's capital and labor markets and the relative power of manufacturing capital.

The disequalizing effects of world capitalism in any lagging country depends on the degree to which its political autonomy has been circumscribed by advanced countries. Thus, it is not enough to study the action of *market* forces on the manner in which lagging countries are integrated into world markets: the impact of imperialism—of unequal power relations among countries—must also be incorporated into our analysis. Following this logic, we propose to examine the links between imperialism and the uneven spread of industrialization over the century ending in the 1950s.

These links are explored at three different levels. At the theoretical level, imperialism is shown to generate several powerful effects that are inimical to industrialization in lagging countries.[5] Some historical evidence is then marshaled, drawing attention to a direct relation between policies supportive of industrialization and the degree of political independence enjoyed by a lagging country. These discussions suggest an important testable proposition: they lead us to expect that the cumulative effects of imperialist policies reduced the output and employment shares of manufacturing in dependent countries below those in sovereign countries, *ceteris paribus*. Empirical tests for 1960, the earliest year for which data becomes available for a large number of lagging countries, bear out this expectation. A concluding section presents a summary of the results and some thoughts on the significance of these results.

2. Imperialism and Industrialization: Theory

Neo-Marxists often maintain that economic backwardness results from the integration of lagging countries into the economies of advanced countries. The political forms under which this integration occurs are not deemed important and, hence, receive little attention.[6] Because of this neglect, neo-Marxists cannot adequately explain the significant disparities in levels of development across lagging countries.

Historically, Latin America has been more integrated into the world economy than India, China, Thailand, Egypt, Iran or Turkey, whether we examine this integration in terms of commodity or capital flows.[7] This would suggest, *a la* many neo-Marxists, greater economic development and industrialization in the latter regions. Yet Argentina, Brazil and Mexico

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[5] This section borrows from the analysis of the economic impact of imperialism in Alam (1994).
[6] See Palma (1978) for a review of this literature.
[7] Kenwood and Lougheed (1971: 40-43) and O'Connor (1970: 133).

enjoyed substantially higher levels of economic development and industrialization during the first half of this century than any of the latter countries. This suggests that integration *per se* was not the problem. Why, then, did integration work for some countries and not for others? It is our thesis that integration worked better for countries with greater domestic control over their social and economic policies.

Alam (1994: 236-8) has shown how capital, labor and governments in advanced countries use coercive means to pursue their economic goals in lagging countries. Over the century and a half ending in the 1950s, these goals may be examined under three heads: *trade-creation,* aimed at converting lagging countries to primary production; *factor-deployment,* seeking to create and monopolize investment and employment opportunities in lagging countries; and *rent-capture,* or appropriation of existing and new forms of rents in lagging countries. Success in pursuing these goals depended on the degree of imperialist control exercised over social and economic policies of lagging countries. Industrialization is expected to be weakest in the colonies, gaining ground as we move to quasi-colonies, dependencies and sovereign countries.[8]

The industrial revolution in Britain, *a la* Lewis (1977: 7), offered two options to the rest of the world: they could imitate Britain's example, or trade their primary products for Britain's manufactures. The first option was available only to countries that were free to promote and protect their manufacturing sectors. Most countries in Asia and Africa had this ability taken away-they became colonies, quasi-colonies or dependencies – before they could exercise this choice.[9] In the event, they took the latter route and proceeded to trade their primary exports against manufactures from advanced countries.

Of course, there were sovereign countries, mostly in South America, which chose-because this served their dominant landed interests-to convert to primary production, but their primary orientation was rarely pushed quite as far as in the dependent countries: defined here to include colonies, quasi-colonies and dependencies. There were at least three reasons

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[8] Colonies are countries with governments run by expatriates. Quasi-colonies have indigenous governments with policy autonomy limited by forced treaties. Dependencies have indigenous governments whose policy autonomy is constrained by the dominance of foreign factors and/or foreign powers. Sovereign countries have indigenous governments that are generally free from externally imposed constraints.

[9] One sovereign lagging country, Egypt, which had made substantial investments in modern manufacturing-some$1-2 million by 1838-was forced to dismantle its industries following defeat by the British and French in 1840. See Issawi (1961: 5).

for this. Instead of imposing direct taxes on their own incomes, the land-owning elites in the sovereign countries preferred to raise revenues by taxing imports, thereby offering substantial levels of protection to many of their manufactures. Some manufacturing active ties were preserved for security reasons. Others managed to survive by virtue of their social ties to the ruling elites. Clearly, these mitigating factors were either missing or operated weakly in most dependent countries.

Conversion to primary production *per se* need not have led to a dead end. Sustained growth in the primary sector can raise incomes, creating new infrastructure, a middle class, and putting in place a network of international contacts: changes which can gradually *shift a* lagging country's comparative advantage and the balance of its social forces towards manufacturing activities. At some point in this transformation, *re*industrialization can begin *via* import substitution or the processing of raw materials for export, and, once underway, this transformation can be stimulated by supportive government policies.

Historical record shows, however, that such *induced* industrialization-stimulated by growth of the primary sector-was confined to sovereign countries. In contrast, most dependent lagging countries which traveled the same route, had only tiny fractions of their labor force in modern manufacturing even as late as the 1950s. This failure of dependent countries to make the transition from primary production to manufactures is due in large measure to a combination of slow growth and income leakages, consequences which flowed from their dependent status. The causal mechanisms which produced these results require some clarification.

Economic growth in dependent countries was stymied primarily through policies affecting their subsistence sector, in most cases the dominant sector in their economies. Colonial powers cemented their control over dependent countries through alliances with tribal leaders and the largest land-owners, while displacing indigenous traders, bankers, manufacturers and officials from their activities. These alliances generally worked against progressive actions-relating to production technologies, land tenure, banking, local government, education, extension services, and the status of women—which might generate economic growth but also threatened to reduce the political and economic control of the landed elites over the peasantry. There were also strong economic forces pitted against the subsistence sector. Imperialist policies often resulted in the dominance of foreign capital in the exchange sectors of dependent countries. Since unskilled wages paid by foreign capital were linked to labor prod-

uctivity in food, this promoted a studied neglect of food productivity in the colonies, a policy which also depressed the terms of trade for primary products.[10] Although there is evidence of government support for technical change in raw materials in the colonies, government interest in promoting food productivity was uncommon.[11]

Imperialist policies in dependent countries also worked to concentrate gains from export growth in the hands of foreign factors.[12] Incomes accruing to foreign factors were mostly repatriated; another part was spent on luxury imports.[13] In either case, the concentration of income gains in the hands of foreign factors led to large income leakages from dependent countries. These leakages, together with the low real incomes caused by adverse primary terms of trade, limited the growth of mass markets for simple consumer non-durables in the dependent countries, thereby weakening the incentives for industrialization *via* import substitution.

These adverse influences notwithstanding, over time, a growing number of dependent countries came to possess markets that were sufficiently large to permit import substitution in at least the basic consumer goods. By the end of the 1920s, this stage had been reached in most lagging countries, including some countries in Sub-Saharan African.[14] The governments in dependent countries did very little to capture these markets for their own industries; perhaps worse, in some cases official policies directly obstructed such import substitution activities. On the contrary, sovereign countries that chose primary production were led by degrees towards policies that were increasingly supportive of industrialization. These differences in policies towards induced industrialization are directly traceable to a simple yet fundamental difference in the politics of sovereign and dependent primary-producing countries. Economic policies in sovereign countries were formulated *by domestic* land-owning elites; in the dependent countries this role was played by foreign capital.

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[10] Lewis (1977).

[11] Yudelman (1975).

[12] The policies in question included official discrimination against domestic entrepreneurs vis-a-vis entry into trade, industry, and mining; land grants to foreign companies at throw-away prices; preferential employment of expatriates; etc. For evidence on the percentage of national income received by whites in Belgian Congo, see Peemans (1975:181); for similar evidence on Indonesia, see Maddison (1990: 361-63).

[13] The repatriation of incomes by foreign factors created persistent and, often, large surpluses in the trade accounts of several dependent countries. For evidence on trade surpluses in Indonesia, see Maddison (1990:366). Golay (1976: 375-376) suggests that somewhat more than half of the export surpluses of several Southeast Asian countries financed net outflows of interest and dividends.

[14] Brett (1973: 267).

A policy of free trade in manufactures is not nearly as vital to domestic land-owning elites in sovereign countries as it is to foreign capital in dependent countries. Protection of manufacturing can hurt the landed elites by lowering their export earnings, taxing their consumption of luxury imports, and increasing un-skilled wages because of a rise in the cost of wage goods and diversion of labor to manufacturing. In the long run, it may cause worries about sharing power with a nascent industrial bourgeoisie. But there also exist some important offsetting gains from industrialization. An industrial sector can create domestic demand for primary products, thereby offsetting to some degree fluctuations in export earnings. Industrialization can also create demand for new primary products which can be supplied domestically. Perhaps most importantly, the more enterprising members of the landed elites will diversify into industrial activities, thereby weakening the opposition of this class to industrialization.

On the other hand, a policy of protectionism would strike at the very roots of foreign capital, whether it dominates the trade of dependent countries or processes their raw materials in advanced country locations. The former will face a decline in their returns since protectionism will most likely reduce trade flows. The latter will not only lose their foreign markets, but they will now have to compete with the new industries in lagging countries for their raw materials. There will of course be some compensating gains to the advanced countries from increasing exports of capital goods to the lagging countries, but these gains may be no consolation to those sections of manufacturing capital engaged in the production of consumer nondurables. Moreover, the greatest threat to these industries may emerge in the long run, when they face competition in their home markets from low-cost producers in lagging countries.

Sovereign countries are also likely to raise more taxes than dependent countries, enabling the former to provide better infrastructure for the growth of manufacturing. Landed elites in sovereign countries will be willing to raise revenues by taxing imports (for reasons explained earlier), and taxing the incomes of capital, both domestic and foreign, engaged in trade and manufacturing. Dependent countries will be much less willing and able to impose any of these taxes. Instead, they will shift the burden of taxes onto their indigenous landed elites. But this burden must remain modest in order to avoid the risk of alienating an important ally, thus producing a tendency towards a lower tax base in dependent countries.

The security concerns of dependent and sovereign lagging countries also pulled them in opposite directions on industrial policy. The security of dependent countries was normally guaran-

teed by the imperialist powers, and they rarely maintained large armies of their own. On the other hand, sovereign countries generally took responsibility for their own defense, and maintained large armies for this purpose. The nascent manufacturing sectors in these countries derived important advantages from their armies. The military's domestic procurements often provided captive markets for several basic goods, including clothing, shoes, tents, construction materials, light arms and ammunition; they had access to roads and railways built for strategic reasons; they could draw upon the supply of skilled manpower emanating from military colleges, and maintenance and repair facilities. More importantly, the strong feedbacks between a country's defense and its manufacturing base, provided an independent impetus towards industrialization in sovereign countries.

One should add that the policy bias against manufactures in dependent countries is not an iron law. In special cases, colonial powers may encourage economic growth in colonies when it serves their security needs. Driven by the urge to catch-up with the industrial leaders, Japan encouraged investments in Manchuria, Korea and Taiwan, in order to take advantage of their cheap labor, power and raw materials. Japan also implemented progressive agricultural policies in these colonies, albeit under the colonial aegis, in order to reduce its own dependence on imported food from non-colonial sources. In a less spectacular manner, under pressures stemming from the Second World War, Britain also modified its colonial policies to accommodate some industrialization in India.

The presence in any colony of large numbers of settlers from the metropolitan country can also create conditions favorable to local industrialization. The settlers bring valuable industrial and entrepreneurial skills; they constitute a potential market for domestic manufactures; but most importantly, they will be able to exploit their close social ties with colonial governments to extract policies supportive of industrialization. It is not surprising, therefore, that those African countries - such as Rhodesia and Kenya - which made some progress in industrial development had large settler populations.[15]

3. Imperialism and Industrial Policies

Although our aim here is not to be exhaustive, a quick survey of the historical evidence reveals that sovereign countries pursued trade, banking and state-procurement policies, starting

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[15] Kilby (1975:473).

at various points during the nineteenth century, which biased incentives in favor of domestic manufactures; few of these policies were to be found in the dependent countries over the same period.

In Bairoch's (1993: 41) striking phrase, the dependent countries were "an ocean of liberalism" during the century and a half preceding 1950. A policy of free or nearly-free trade was the norm in the colonies until the start of Second World War. Import tariffs were levied only for revenue purposes, and these remained very modest and were often accompanied by offsetting taxes on domestic production.[16] The quasi-colonies were not in a visibly more envious position with regard to tariff autonomy. The open-door policies imposed on them during the first half of the nineteenth century placed severs limits on the tariffs they could impose. The Ottoman realms began the nineteenth century with a 3 percent limit on their import tariffs; this was raised to 8 percent in 1861, and 11 percent in 1907 in order to pay off foreign debts.[17] Iran, Morocco, Tunisia, Algeria, Aden, Thailand, Saudi Arabia and China were placed under similar restraints.[18] These quasi-colonies did not begin to gain tariff autonomy until several years after World War I.[19]

The sovereign countries during most of this period were, to use Bairoch's (1993: 41) phrase, "an ocean of protectionism", with fairly high tariffs in place as early as the first half of the nineteenth century. An examination of ad valorem tariffs on imports of British cotton manufactures in 1884 shows that these rates were generally higher in sovereign countries compared to dependent countries. The highest rates were observed in Argentina (30), Brazil (30), Chile (25), Victoria (25), Canada (20), Austria (18), Belgium (15), Holland (15), New Zealand (15) and Greece (15), all sovereign countries; the numbers in parentheses are percent tariffs. The lowest rates were observed in India (5), China (5), Guyana (5), Queensland (5) and Turkey (7), all of which were colonies or quasi-colonies in 1884. The tariff autonomy of sovereign countries during the late nineteenth century is also reflected in the percent of total revenues derived from customs duties. Whereas this was a mere 2 percent for India, it

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[16] See Chaudhuri (1983: 865-866) for such policies in India, Owen (1981: 225) for Egypt, Brett (1973: 269-72) for Tanganyika.

[17] Crouchley 1938: 72-73).

[18] Tariff rates for Middle Eastern countries obtained from Issawi (1982: 19-22). For China, see Lewis (1978: 200) and Maddison (1985: 34). For Thailand, see Lewis (1978: 200).

[19] Turkey gained its tariff autonomy in 1929; Iran in 1928; Egypt in 1930; and Iraq in 1933. See Issawi (1982:22).

was 78 percent in Canada, 77 percent in Australia, 73 percent in Norway, 63 percent in United States, 57 percent in Sweden, and 56 percent in Denmark. The average for 13 European countries was 19.5 percent.[20]

Although several countries in South America were forced to sign unequal treaties with Britain as a quid pro quo for help received in wresting their independence from Spain, this did not always prevent their following protectionist policies from an early date.[21] In 1826, tariffs on the bulk of Peru's imports were set at 30 percent; but coarse woolens, footwear, hats and furniture paid as much as 90 percent.[22] In 1824, imports into Mexico paid a series of duties totaling 51.4 percent of the c.i.f. value of imports. There also existed a ban on the entry of 116 articles; in 1843 an additional 180 articles were added to this list.[23] Similarly, Brazil in 1844 had tariffs of 30 percent on most manufactures including cotton. Over the next three years, duties on machinery and raw materials were lifted, thereby increasing the protectionist effect of the existing tariffs. By 1885, the average tariffs had risen to 45 percent, with the highest rates going up to 100 percent.[24] In Chile, customs duties provided roughly 60 percent of total government revenues between 1835 and 1860, though this proportion declined in the next two decades.[25] The ratio of tariff revenues to imports in Colombia fluctuated between 16 and 86 percent over 1879-1890, but stabilized at around 50 percent after the turn of the century.[26]

Tariffs were of course not the only instrument of industrial policy during this period. Sovereign countries promoted industries by means of a broad range of instruments in addition to trade policies. Gerschenkron's (1962) seminal studies on late industrialization in nineteenth-century Europe show that government interventions in support of industrialization were pervasive in the most backward sovereign economies of Europe. In Russia, for instance, the government set up investment banks, provided direct subsidies to industries, used official procurements to create markets for industries, and performed coordinating and en-

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[20] Mulhall (1892:558).
[21] Bairoch (1993:41).
[22] Mathew (1968: 565).
[23] Potash (1983: 19, 21, and 139).
[24] Stein (1957: 10-15 and 84).
[25] Cariola and Sunkel (1985: 137).
[26] McGreevey (1985: 67).

trepreneurial functions.[27]

Although less well known, a similar set of interventions was enforced by some non-European countries as early as the first half of nineteenth century. The Mexican government began to promote industries shortly after its independence in 1821. An industrial bank, set up in 1830, provided machinery on credit and subsidized funds to private entrepreneurs. During its twelve-year life span, the bank made a pivotal contribution to the development of Mexico's modern textile industry.[28] Perhaps the most systematic early effort at state-led industrialization outside of Europe occurred in Egypt from 1810 to 1838; by the end of this period, state monopolies had made investments worth $12 million in a broad range of industries including foundries, textiles, paper, chemicals, shipyards, glassware, and arsenals. At their height, these industries employed some 30,000 workers. However, nearly all these industries failed when Egypt was forced, following its defeat in 1840, to forego all state monopolies and disband the army, thereby depriving the state industries of their revenues and demand.[29]

After regaining their independence in this century, nearly all dependent countries were quick to enact policies to promote their manufactures. Upon acquiring various levels of policy autonomy during the 1930s, Turkey, Iran, Egypt and Iraq lost no time in introducing a broad range of measures to support industrialization, including quotas and differentiated tariffs to protect their manufactures; greater investments in infrastructure; creating banks to finance industrialization; setting up industries (in Turkey and Iran) in the public sector; and offering tax relief, reduced railway rates and preference in government purchases to domestic industries. These measures were more vigorously pursued in Turkey and Iran, which enjoyed greater autonomy, than Egypt and Iraq.[30] A similar switch in industrial policies would be repeated in nearly all the colonies when they gained independence in the 1950s and 1960s.

At the other extreme, there is very little evidence that colonial governments had any policies for promoting industries. In the words of Fieldhouse (1981: 68), "no colonial government had a department of industry before 1945. The state almost never actively encouraged

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[27] See Trebilcock (1981: 205-291) for a study of Russian industrialization in the light of Gerschenkron's experience.

[28] Potash (1983: xi, 46-48, 125).

[29] Issawi (1982: 154), Crouchley (1938: 69-71) and Batou (1991).

[30] Issawi (1982: 14, 22) and Jalal (1972: 6, 88-89, and 104-105).

indigenous entrepreneurs to invest in local import-substituting industrial production. The government did not provide medium or long-term loans to help would-be capitalists, though the banking system, owned by banks in the metropolis and geared to the needs of import/export trade, was seldom willing to provide these essential credit facilities to non-Europeans." One might add, the colonial state rarely used its procurement policies to encourage domestic industries.

4. Cross-Country Evidence

Theory and historical evidence lead us to expect that loss or erosion of sovereignty would lead to market and policy biases against industrialization over the period 1800 to 1950. This proposition lends itself to empirical analysis, since the cumulative impact of the dual biases can be expected produce lower levels of industrialization in countries with lower levels of sovereign control over their policies.

A search of the literature turned up only one empirical study of this hypothesis. Morris and Adelman (1988) examined the relationship between industrialization and sovereignty as part of a monumental exercise that employed disjoint principal components analysis to explore patterns of development in a stratified sample of 23 countries over three time periods, 1850-1860, 1860-1890 and 1890-1914. Their analysis shows that 'foreign domination of economic policies' is one of two most "critical forces explaining differences among the four country groups in industrialization patterns".[31] Since our theoretical analysis and the associated historical evidence assign a determining role to sovereignty in affecting levels of industrialization, we will employ the simpler regression techniques to test for the impact of sovereignty on levels of industrialization.

Our hypothesis on the relationship between sovereignty and levels of industrialization can be tested by adding qualitative variables for sovereignty to the framework developed by Chenery and Syrquin (1975) for studying patterns of development.[32] The augmented Chenery-

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[31] Morris and Adelman (1988: 122). The four country groups are defined in terms of the following criteria: 'substantial early industrialization through autonomous market system growth'; 'later substantial industrialization promoted by national governments'; 'late modest industrial growth following primary export expansion in countries where land is fairly abundant'; and 'negligible industrialization in export-oriented, densely settled peasant economies'.

[32] It may be objected that countries which failed to industrialize were ripe targets for colonization, and hence it is likely that their colonial status is a proxy for factors which were inimical to indu-

Syrquin framework may be set out as follows:

$$IND = \alpha + \beta U + \gamma V + \varepsilon \qquad [1]$$

where IND is an index of industrialization, U is a vector of variables relating to imperialist control, V is a vector of economic determinants of IND, and K is the error term. Industrialization is defined as the ratio (YMFG) of manufacturing output to GDP.[33] Mining is excluded from the industrial sector because its relative size depends upon the accidents of natural endowments and the element of rent in the value of its output.

The concept of imperialist control is operationalized in terms of a six-fold taxonomy based on the degree and duration of imperialist control over the period 1860 to 1960. SOV=1 for all countries that were independent in, or before 1921, and enjoyed sovereign status following independence; DEP=1 for all countries that were independent in, or before 1921, and were dependencies over most of the period following independence; QC=1 for countries that were colonies and (or) quasi-colonies over most of the period 1860to 1940; NIC2=1 for newly independent countries which gained their independence between 1940 and 1950; and NIC 1=1 for newly independent countries which gained their independence between 1950 and 1960. The base category for this set of imperialist dummies consists of countries that were colonies in 1960. These categories have been defined to reflect increasing

strialization. There are two responses to this objection. One might point out that, outside of some countries in Western Europe, United States, and, perhaps, Canada, industrialization had made little headway at the time that the process of colonization was already nearly complete (during the 1870s). At another level, a little reflection quickly reveals that a country's chances of being colonized—or avoiding this fate – during the nineteenth century, hinged on several plausible factors: size of the country, proximity to advanced countries, whether it was landlocked or an island, whether it had riverine access, whether it had tropical or temperate climate, the vector of diseases and the state of medical technology, density of population, internal divisiveness due to religious differences, imperialist rivalries, balance of power, alliances with major powers, strategic importance to major powers, etc. A mere listing of these factors should help to dispel any simplistic correlations between a country's sovereign status and its initial level of industrialization.

[33] Alternatively, we might define IND in terms of the sectoral share of manufacturing (LMFG) in a country's total labor force. However, our empirical analysis does not focus on this definition for two reasons. Sectoral attribution of labor force is difficult conceptually when the same laborers engage in multiple activities, a phenomenon quite common in developing countries. Secondly, the use of LMFG greatly reduces our sample of observations from 84 to 64; the reduced sample leaves us with very few observations to estimate some of our imperialist dummies. Regressions with LMFG as the dependent variable were nevertheless estimated, and the results are discussed at the end of this section.

imperialist control as we move from sovereign countries to the colonies.

Various combinations of these imperialist dummies will also be used in the estimations. On the assumption that differences in degrees of imperialist control between colonies and quasi-colonies were not substantial, or that a decade or two of industrial policies following independence may not be sufficient to offset the adverse economic impact of imperialist policies going back several decades, it would be more appropriate to test the imperialist thesis in terms of a three-fold taxonomy consisting of sovereign countries, dependencies, and all other countries that were colonies or quasi-colonies during most of the period from 1860 to 1960. Alternatively, since distinctions between sovereign countries and dependencies might be considered controversial, we constructed a two-fold taxonomy consisting of two categories: SOV-DEP=1 for all sovereign countries and dependencies, and SOV-DEP=0 for all other countries. An even stronger version of this logic would lump dependencies with the colonies and quasi-colonies, giving us two categories: sovereign countries and all dependent countries.

To define the set of economic determinants of industrialization, we first turn to Chenery and Syrquin (1975). Their investigation of patterns of development, across countries and over time, showed that per capita income (Y), population (POP), and the squares of these terms explained most of the variations in sectoral output shares. These results were supported by appeals to Engel's law and the presence of scale economies in manufacturing. In addition, we introduce a new variable, population density (DEN)—defined as hectares of arable land per person—to serve as a proxy for resource availability; this is a rough proxy since it does not account for differences in land quality or the presence of minerals. The incorporation of DEN obviated the need to split the sample, as Chenery and Syrquin (1975) do, into primary-oriented and industry-oriented countries.

The choice of an appropriate year for testing our hypotheses on imperialism is important. Ideally, the impact of imperialism on industrialization should be examined at some point during the decade of the 1940s. Beyond this period, differences between colonies and independent countries tend to diminish as imperialist powers come under increasing pressure to accommodate the interests of indigenous labor and capital in the colonies.[34] But na-

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[34] The growing movements for national liberation in the colonies, the Second World War, and the logic of the Cold War all forced colonial powers beginning in the late 1940s to give greater weight

tional income accounts for several countries, especially those in Sub-Saharan Africa, do not begin until 1960. This was also a watershed year in the history of decolonization since most African countries gained their independence in 1960. As a result, it was decided to test our hypothesis for 1960 when data on a sufficiently large and diverse sample of countries first become available.

Data sources for all the variables pertaining to 1960 are easily identified. Data on YMFG and LMFG (defined as percentage share of manufacturing labor in total labor force) were obtained respectively from World Bank (1960) and Bairoch (1968). Data on per capita income (converted into a common set of 1985 prices) and POP were obtained from Summers et al (1993). Summers et al (1993) do not present break¬downs of GDP by industries. As a result, we were forced to rely on YMFG in domestic prices which are subject to distortions arising from trade policies. Population density, DEN, is calculated as hectares of arable land per person. Measures of arable land (including land under permanent crops and land temporarily fallow), in hectares, were found in Food and Agricultural Organization (1961, 1963 and 1966). These values are for years nearest to 1960 for which data were available. In most cases, they lie within a band of three years around 1960. Dates of independence for countries in our sample were taken from Taylor and Hudson (1972: 26-29).

The overall results of regressions on YMFG reported in tables 1 and 2 are quickly reviewed. Since the inclusion of DEN significantly reduces our sample size from 84 to 71, it was decided to present the results first without this variable and then with this variable; the list of countries in the two samples are given in appendices Al and A2 respectively. An examination of the Rr s , ranging from 0.72 to 0.73 in table 1 and 0.75 to 0.80 in table 2, reveal a fairly high degree of explanatory power for these cross-country regressions. The F-statistics too are highly significant increasing our confidence in the parameter estimates. It may be noted that the results on /-statistics reported in the tables have been corrected using White's heteroskedasticity-consistent estimators.

The results in table 1 generally provide strong confirmation of our hypothesis regarding the adverse impact of imperialism on industrialization. Four of the five imperialist dummies, SOV, DEP, NIC2 and NIC1 have positive coefficients with all but the first being significant

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to the needs of the colonies than they had done in previous periods. See Alarn (1994: 244-47).

Table One
Regressions Explaining Variations in YMFG across Countries In 1960

Variables	(1)	(2)	(3)	(4)
Constant	1.42	1.94+	1.60	2.25*
	(1.28)	(1.80)	(1.19)	(2.06)
Y	0.70E-2**	0.73E-2**	0.75E-2**	0.74E-2**
	(7.10)	(7.23)	(7.04)	(7.47)
$Y2$	-0.62E-6**	-0.66E-6**	-0.68E-6**	-0.68E-6**
	(6.03)	(6.52)	(5.38)	(6.67)
POP	0.09**	0.11**	0.12**	0.10**
	(3.05)	(4.03)	(3.70)	(3.76)
POP²	-0.19E-3**	-0.21E-3**	-0.23E-3**	-0.20E-3**
	(2.77)	(3.40)	(2.93)	(3.17)
NIC1	2.08			
	(0.98)			
NIC2	4.43**			
	(2.59)			
QC	-0.04			
	(0.01)			
DEP	4.42**	3.58**		
	(3.40)	(2.87)		
SOV	7.03**	5.86**		5.36**
	(3.67)	(3.25)		(3.07)
SOV-DEP			5.12**	
			(3.60)	
R2	0.73	0.73	0.73	0.72
F	26.5**	38.0**	.. .** 45.4	44.0**
N	84	84	84	84

(**), (*), and (+) represent statistical significance at the 1, 5 and 10 percent levels respectively

at the 1 percent level. This means that if YMFG in a colony was 8.7 per cent in 1960 (the mean value of YMFGs in all colonies in the same year), the corresponding values of YMFG in a sovereign, dependent, or newly industrializing country (NIC2) with identical economic characteristics were 15.60, 12. 96, 12.97, and 10.65 per cent respectively. Although, NIC1 appears with a positive coefficient, this is not significant at the 10 percent level. Perhaps because these countries gained their independence in the 1950s, some of them had little time to implement a program of industrialization by 1960. The negative coefficient on QC is of no particular significance, its coefficient and associated r-value being very small. The failure of QC to appear with a positive sign might also perhaps be explained in terms of two factors. Of the five quasi-colonies in our sample (Egypt, Iraq, Iran, Thailand and Turkey), two are oil-rich; when we introduced a dummy for oil-rich countries in the first regression, this gave us a positive, though still insignificant, coefficient for QC. Further, all five quasi-colonies had a history of monarchic forms of government, suggesting that this, rather than their status as quasi-colonies, might account for their lag in industrialization. It has been argued that absolutist monarchies are inimical to education and economic development.[35]

The other variants of our hypothesis on imperialism receive even stronger confirmation. DEP and SOV in column 2 of table 1 have positive coefficients that are significant at the 1 percent level. The results imply that if YMFG in a dependent country (defined to include QCs, NIC2s, NIC Is and colonies) was 10.4 percent in 1960 (the mean value of YMFG for all dependent countries in the same year), the values of YMFG for dependencies and sovereign countries in 1960, similar in their economic characteristics to the dependent country, were 14.0 and 16.3 percent respectively. We get similar results, reported in column 3, when sovereign countries and dependencies are subsumed into one category. The results in column 4 of table 1 show that the strongest version of our hypothesis on imperialism also passes muster: the coefficient of SOV is positive and statistically significant at the 1 percent level. The anti-industry bias in the output structure of dependent countries was quite strong even in 1960. Compared to a dependent country with YMFG equal to 10.8 per cent (the mean value of YMFG for all dependent countries), industrialization in a sovereign country, ceteris paribus, was 50 percent higher, with YMFG equal to 16.2 percent.

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[35] Some evidence on this thesis may be found in Easterlin (1981).

Table Two

Regressions Explaining Variations in MFG across Countries In 1960

Variables	(1)	(2)	(3)	(4)
Constant	0.39	1.64	1.28	2.12*
	(0.38)	(1.52)	(1.34)	(1.92)
Y	0.72E-2**	0.71E-2**	0.73E-2**	0.73E-2**
	(7.65)	(6.79)	(7.87)	(7.07)
$Y2$	-0.65E-6**	-0.64E-6**	-0.67E-6**	-0.67E-6**
	(7.27)	(6.34)	(6.91)	(6.57)
POP	0.13**	0.13**	0.14**	0.12**
	(5.29)	(5.04)	(5.80)	(4.68)
POP^2	-0.28E-3**	-0.26E-3**	-0.28E-3**	-0.25E-3**
	(5.09)	(4.31)	(4.96)	(4.03)
DEN	0.43E-1**	0.40E-1**	0.40E-1**	0.35E-1**
	(4.37)	(3.72)	(3.69)	(3.20)
NIC1	3.94+			
	(1.77)			
NIC2	6.22**			
	(3.98)			
QC	-2.79			
	(1.10)			
DEP	5.12**	3.98**		
	(4.18)	(3.17)		
SOV	7.10**	6.08**		5.36**
	(3.55)	(3.02)		(2.76)
SOV-DEP			5.33**	
			(3.49)	
R2	0.80	0.76	0.76	0.75
F	28.6	33.2	38.7	36.7
N	71	71	71	71

(* *), (*), and (+) represent statistical significance at the 1, 5 and 10 percent levels respectively

The results in table 2 show that the addition of DEN to our regressions, while reducing the sample size from 84 to 71, did not significantly alter our previous results. DEN appears with the expected positive sign and is moreover statistically significant at the 1 percent level in every regression. The inclusion of DEN has also significantly raised the values of R^2s. NIC1 is now statistically significant at the 10 percent level; previously it was not significant at this level. It may be noted that the values of the coefficients of SOV and SOV-DEP in the regressions remain virtually unchanged, giving some indication of the robustness of these results. The sample of countries in the regressions reported in Tables 1 and 2 includes both lagging and advanced countries. It might be argued that our tests should be applied only to the sample of lagging countries over the century ending in the 1950s. To examine if our results are sensitive to the inclusion of advanced countries, the regressions in tables 1 and 2 were estimated after excluding 14 advanced countries.[36] The new regressions had somewhat smaller R^2s, but all the previous results with respect to the imperialist dummies remained unchanged.

There are two countries in our sample of colonies, Hong Kong and Singapore, which do not quite belong there. Since these economies do not have an agricultural hinterland, the relative size of manufacturing in total output gets inflated, making their comparison with other countries problematic. This was confirmed when we re-estimated the regressions in tables 1 and 2 without these countries. The values of the coefficients on the imperialist dummies as well as their *t*-values were now significantly higher.

When we excluded from our sample countries with populations of less than 1 million and, later, countries with populations less than 2 million, all the results in tables 1 and 2 with respect to the imperialist dummies remained unchanged in their essentials. Similar results were also reported when we re-estimated the regressions with the logs of Y, POP and their square terms. Alternatively, since the dependent variable in our regressions has a lower bound at 0 and an upper bound at 100, the regressions were re-estimated using the logistic transformation of the dependent variable. This left nearly all our results unchanged; only NIC1 now appeared with a negative sign not significant at the 10 percent level.

Given the importance of Y in our regressions – Y and Y^2 alone explain 63 percent of the variation in YMFG – it was decided to explore how the results in tables 1 and 2 would be af-

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[36] The advanced countries excluded from our sample are: Canada, US, Australia, Austria, Belgium, Denmark, Finland, France, W. Germany, Italy, Norway, Netherlands, Sweden, and UK

fected if we used an earlier data set on Y from Summers and Heston (1991) instead of Summers et al (1993). These data sets give widely different estimates of Y for several countries, the result primarily of an expansion in the number of benchmark countries for the 1993 data set. However, given the wide range in the values of Y across countries, the overall correlation coefficient between the two data sets remains very high at 0.98 for our sample of countries. When our regressions were re-estimated using the 1991 data, the results on the imperialist dummies were stronger than before.

A more systematic check on the sensitivity of our results was also undertaken following Levine and Renelt's (1992) adaptation of Learner's extreme bounds analysis. The independent variables are disaggregated into three subsets, as shown below:

$$YMFG = \alpha + \beta_i I + \beta_m M + \beta_z Z + \mu \qquad [2]$$

where I is a vector of always-included variables; M is the vector of imperialist dummies whose robustness is being explored; and Z is the subset of other explanatory variables. The I-variables for the regressions in table 1 are Y, Y^2, POP and POP^2; DEN is added to these I-variables for the regressions in table 2. What are the Z-variables? All other things remaining the same, landlocked countries (LAND = 1 for landlocked countries) are expected to have a larger manufacturing sector because of the greater natural protection they enjoy from imports. On the other hand, manufacturing activities will lag behind Y in oil-rich countries (OIL=1 for oil-rich countries), where this sector has not had sufficient time to catch-up with the oil-induced increases in Y. Finally, since all but seven of the colonies in our sample are in Sub-Saharan Africa, it may be argued that the lower values of YMFG in the colonies may be due to factors which are specific to Sub-Saharan Africa. While it is quite easy to introduce a third dummy variable (AFR = 1 for countries in Sub-Saharan Africa) to check for the presence of such an effect, this creates a multicollinearity problem as well as some problems of interpretation which will be discussed later.

Having identified the Z-variables, the regressions in table 1 were re-estimated after including all possible linear combinations of LAND, OIL, and AFR. The base values (taken from the regressions in table 1) and the upper and lower bounds of the coefficients of NIC2, DEP, SOV, and SOV-DEP are reported in table 3; the results for NIC1 and QC were not reported because their base values were not statistically significant. The results show that SOV is robust at the 1 percent level in the first regression; SOV is also robust in the second and fourth regressions at the 5 percent level; and SOV-DEP is robust at the 5 percent level in the third

Table Three

Sensitivity Results on Regressions in Table 1

Dep. Var.	M-Vars.			t	Other Vars	R/F
YMFG	NIC2	High	6.69	3.10**	LAND	F
(Eqn. 1)		Base	4.43	2.59**		
		Low	3.89	1.45	OIL, AFR	
YMFG	DEP	High	5.65	2.60**	LAND	F
(Eqn. 1)		Base	4.42	3.40**		
		Low	2.70	0.99	OIL, AFR	
YMFG	SOV	High	7.26	3.84**	LAND	R
(Eqn. 1)		Base	7.03	3.67**		
		Low	5.23	2.64**	OIL, AFR	
YMFG	DEP	High	4.24	2.11**	Land	F
(Eqn. 2)		Base	3.58	2.87**		
		Low	1.09	0.77	OIL, AFR	
YMFG	SOV	High	6.07	3.00**	LAND	R
(Eqn. 2)		Base	5.86	3.25**		
		Low	3.85	2.08*	LAND,AFR	
YMFG	SOV	High	5.45	3.17**	AFR	R
(Eqn. 3)		Base	5.36	3.07**		
		Low	3.57	2.07*	AFR, OIL, Land	
YMFG	SOV-DEP	High	5.07	3.58**	LAND	R
(Eqn. 4)		Base	5.12	3.60**		
		Low	2.89	2.11*	AFR	

(**), (*), and (+) represent statistical significance at the 1, 5 and 10 percent levels respectively

Table Four
Sensitivity Results on Regressions in Table 2

Dep. Var.	M-Var.			t	Other Vars.	R/F
YMFG (Eqn. 1)	NIC2	High	6.69	4.04**	LAND	R
		Base	6.22	3.98**		
		Low	3.89	1.92*	OIL, AFR	
YMFG (Eqn. 1)	DEP	High	5.66	4.08**	LAND	F
		Base	5.12	4.18**		
		Low	2.70	1.47	OIL, AFR	
YMFG (Eqn. 1)	SOV	High	7.26	3.71**	LAND	R
		Base	7.10	3.55**		
		Low	5.23	2.65**	OIL, AFR	
YMFG (Eqn. 2)	DEP	High	4.02	3.03**	LAND	F
		Base	3.98	3.17**		
		Low	1.09	0.77	OIL, AFR	
YMFG (Eqn. 2)	SOV	High	6.07	3.00**	LAND	R
		Base	6.08	3.02**		
		Low	3.93	2.12*	OIL, AFR	
YMFG (Eqn. 3)	SOV	High	5.53	2.35*	AFR	R
		Base	5.36	2.76**		
		Low	3.44	1.83+	OIL	
YMFG (Eqn. 4)	SOV-DEP	High	5.35	3.50**	LAND	R
		Base	5.33	3.49**		
		Low	2.89	2.09*	LAND,OIL,AFR	

(**), (*), and (+) represent statistical significance at the 1, 5 and 10 percent levels respectively

regression. Similar results are reported in table 4 for the imperialist dummies in table 2 with one difference: NIC2 is now robust at the 5 percent level. These results suggest that differences in levels of industrialization between the colonies and any one of the other dependent countries are not robust. On the other hand, the sensitivity analysis provides confirmation for our imperialist thesis in the two stronger versions: controlling for all other factors, levels of industrialization in the sovereign countries are higher than in any of several groups of dependent countries; and, mat levels of industrialization in the sovereign countries find dependencies as a group are higher than in the remaining dependent countries.

The inclusion of AFR in the sensitivity analysis calls for some comments. AFR always takes a negative sign in the regressions that is often significant at the 10 percent or higher levels. It is not clear *a priori* whether this negative effect on industrialization is due to the presence of some factors specific to Sub-Saharan Africa, or whether the interaction of colonialism with these Afro-centric factors produces this result. Fortunately, some simple tests can be devised to throw light on this question. If industrialization in Sub-Saharan Africa before 1960 had been retarded by Afro-centric factors alone, then these factors would continue to retard industrialization in these countries long after 1960. Accordingly, two new variables were defined: RYMFG = (YMFG-1970)/(YMFG-1960) and RY= (Y-1970)/(Y-1960). Data on YMFG-1970 and Y-1970 were obtained from World Bank (1993) and Summers et al. (1993) respectively. We then regressed RYMFG on AFR and various combinations of YMFG-60, Y-1960 and RY. The results, reported in table 5, show that AFR always appears with a positive coefficient that is statistically significant at the 5 percent or better levels: the *t*-statistics were corrected using White's heteroskedasticity-consistent estimator. This suggests that countries in Sub-Saharan Africa increased their YMFGs more rapidly during the 1960s than all the other countries, suggesting that the earlier industrial lag in these countries could not have been due to Afro-centric factors alone. If this result is to be taken seriously, the inclusion of AFR in the sensitivity analysis is not warranted. Correspondingly, both NIC2 and DEP would pass the test of robustness. It should also be noted that there is high multicollinearity between the imperialist dummies and AFR. The correlation coefficient between AFR and the sum of all the imperialist dummies is 0.78 for the sample in table 1, and 0.72 for the sample in table 2. This may explain why the *t*-values for the imperialist dummies in the first column of tables 1 and 2 (especially NIC2 and DEP) decline when these regressions are re-estimated with AFR.

Table Five

Regressions Explaining Advances in Industrialization: 1960-1970

Variables	(1)	(2)	(3)	(4)
Constant	1.59**	1.22**	1.61**	1.84*^"
	(12.87)	(30.44)	(12.03)	(5.09)
Y-1960		-0.38E-4**	0.47E-4	0.41E-4
		(4.67)	(1.62)	(1.46)
YMFG-1960	-0.02**		-0.03**	-0.03**
	(3.99)		(3.18)	(2.48)
RY				-0.17**
				(2.98)
AFR	0.35**	0.56**	0.36**	0.33**
	(2.14)	(2.77)	(2.02)	(2.07)
R^2	0.33	0.25	0.33	0.33
F	16.2**	11.1**	11.2**	8.5**
N	63	63	63	63

(**), (*), and (+) represent statistical significance at the 1, 5 and 10 percent levels respectively

Table Six
Regressions Explaining Variations In LMFG Across Countries In 1960

Variables	(1)	(2)	(3)
Constant	1.41	2.15	1.71
	(0.75	(1.25)	(0.92)
Y	0.58E-2**	0.65E-2**	0.57E-2**
	(4.23)	(5.82)	(4.20)
$_Y$2	-0.31E-6*	-0.35E-6**	-0.31E-6*
	(2.18)	(2.64)	(2.17)
POP	-0.18E-2	-0.49	-0.31E-6
	(0.06)	(0.18)	(0.12)
POP^2	0.23E-4	0.11E-5	0.26E-4
	(0.37)	(0.02)	(0.42)
DEP	0.89		
	(0.72)		
SOV	3.45*		3.29*
	(1.97)		(1.95)
SOV-DEP		0.15E-2	
		(1.43)	
R2	0.80	0.79	0.80
F	., _** 41.3	46.9**	50.2**
N	62	62	62

(**), (*), and (+) represent statistical significance at the 1, 5 and 10 percent levels respectively

Should we not also test our hypothesis on imperialism with LMFG as the dependent variable to confirm our results? There are several practical difficulties to doing this. It was pointed out earlier that the quality of data on employment is not as reliable as the national accounts data. But there are more serious constraints arising from data availability. The use of LMFG as the dependent variable reduces our sample size from 84 to 64; a list of the sample countries is provided in appendix A3. A greater difficulty arises from the type of colonies in this sample: of the 11 colonies in our sample, 8 have populations of less than 1 million and 6 are small island economies. Clearly, this is not a representative sample of the colonies, thus placing in doubt the utility of any analysis with such a biased sample.

With these caveats in mind, we nevertheless re-ran the regressions in tables 1 and 2 with LMFG as the dependent variable. The initial results from these regressions, reported in table 6, were not generally supportive of the hypothesis on imperialism; most of the imperialist control dummies were statistically insignificant at the 10 percent level. But this was mostly due to the presence of two clear outliers: Venezuela and Hong Kong. Once these outliers were eliminated from our sample, the results on the imperialist dummies were similar to those reported earlier. Since there were only two observations each for NIC1 and QC, clearly an insufficient basis for making statistical inferences, we have only reported regressions with three sets of imperialist control dummies in table 6. These results in columns 1 and 2 show that SOV has a positive coefficient that is statistically significant at the 5 percent level; the coefficients for DEP in column 1 and SOV-DEP in column 2 are positive but not statistically significant at the 10 percent level. Although these results are not reported, the inclusion of DEN in these regressions leaves the results on SOV and DEP unchanged, while SOV-DEP is now statistically significant at the 5 percent level. The sensitivity of these results was also checked by incorporating AFR; these exercises were not extended to OIL and LAND because there were only 2 observations on OIL and 3 observations on LAND. The inclusion of AFR in the regressions made SOV statistically significant at the 1 percent level, both with and without DEN. SOV-DEP is statistically significant at the 10 percent level without DEN, at the 5 percent level with DEN included.

5. Concluding Remarks

This paper has presented theory and evidence to show that imperialism was a major factor impeding the spread of the industrial revolution during the century ending in the 1950s. The

supporting evidence is of two kinds. First, the historical evidence presented in section three shows that sovereign countries were promoting manufactures during most of the century and a half ending in the 1950s, while policies in dependent countries were biased in the opposite direction. Second, the regression analysis shows that the shares of manufactures in dependent countries were significantly lower than in sovereign countries with comparable economic characteristics. Moreover, these results are shown to be robust to changes in sample size, functional forms, and specifications of the estimating equations. In particular, our basic results are not affected by the introduction of a dummy for Sub-Saharan Africa.

Apart from providing empirical content to frequent nationalist claims that imperialism sought to set back industrialization in lagging countries, the main result of this paper is not without some relevance to contemporary debates about appropriate economic policies in lagging countries. The period 1860 to 1960 provides a rather large number of pure cases of economies which got their prices "right", and others which got their prices "wrong". The dependent countries accepted border prices, gave free access to foreign capital, had low government expenditures, eschewed subsidies to manufactures, balanced their budgets, and placed severe limits on public enterprises in the financial and manufacturing sectors. It is the sovereign countries which often resorted to heterodox economic policies during this period: they liberally employed protective tariffs, set up manufactures in the public sector, created protected markets (when they could) for their manufactures in their dependencies, often failed to balance their budgets, experienced a rising share of government expenditures in GDP, maintained overvalued currencies, and, sometimes, reneged on their international obligations in times of payments crises. This paper has shown that these distortionary policies produced a significantly larger manufacturing sector in the sovereign countries compared to countries which were relatively free from policy-induced distortions.

Yet it is the sovereign countries, free to pursue distortionary policies, whose growth performance was incomparably superior to that of the dependent countries over the period from 1860 to 1960. It may be worth recalling that this superior economic performance in the sovereign countries was accomplished despite two great wars in which many of them participated directly, suffering enormous war damages, while most dependencies were spared direct involvement in these wars and the accompanying losses to physical and human capital. How then did the sovereign countries, with the double handicaps of distortionary policies and war-

damages to their economies, nevertheless, continue to pull ahead of the dependencies? Certainly, an objective answer to this question would lead to a more balanced appraisal of the kinds of economic policies that lead to more rapid growth.

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Appendix Al

Country Sample in Table 1 Regressions

COL	NIC1	NIC2	QC	DEP	SOV
Algeria	Ghana	Burma	Egypt	Costa Rica	Ethiopia
Angola	Morocco	India	Iran	Dom. Rep.	S. Africa
Benin	Tunisia	Indonesia	Iraq	El Salvador	Canada
C. Afr. Rep.	Malaysia	Israel	Thailand	Honduras	Mexico
Chad		Korea, S.	Turkey	Nicaragua	US
Congo		Pakistan		Panama	Argentina
Ivory Coast		Philippines			Bolivia
Kenya		Sri Lanka			Brazil
Madagascar		Taiwan			Chile
Malawi					Colombia
Mali					Ecuador
Mauritania					Paraguay
Mozambique					Venezuela
Niger					Uruguay
Nigeria					Japan
Rwanda					Austria
Senegal					Belgium
Somalia					Denmark
Tanzania					Finland
Togo					France
Uganda					Germany, W.
Zaire					Greece
Zimbabwe					Italy
Zambia					Netherlands
Jamaica					Norway
Trinidad &					Portugal
Tobago					Spain
Hong Kong					Sweden
Singapore					UK
					Yugoslavia
					Australia

Appendix A2 Country Sample in Table 2 Regressions

COL	NIC1	NIC2	QC	DEP	SOV
Algeria	Ghana	Burma	Iran	Costa Rica	Ethiopia
C. Afr. Rep.	Morocco	India	Iraq	Dom. Rep.	S. Africa
Chad	Tunisia	Israel	Thailand	El Salvador	Canada
Kenya		Korea, S.	Turkey	Honduras	Mexico
Madagascar		Philippines		Nicaragua	US
Malawi		Sri Lanka		Panama	Argentina
Mali		Taiwan			Brazil
Mauritania					Chile
Mozambique					Colombia
Niger					Ecuador
Nigeria					Paraguay
Rwanda					Peru
Senegal					Uruguay
Tanzania					Jamaica
Togo					Austria
Uganda					Belgium
Zambia					Denmark
Jamaica					Finland
Trinidad &					France
Tobago					Germany, W.
Hong Kong					Greece
Singapore					Italy
					Netherlands
					Norway
					Portugal
					Spain
					Sweden
					UK
					Yugoslavia
					Australia

Appendix A3
Country Sample in Table 6 Regressions

COL	NIC1	NIC2	QC	DEP	SOV
Gabon	Ghana	India	Egypt	Costa Rica	Liberia
Ivory Coast	Morocco	Indonesia	Thailand	Dom. Rep.	S. Africa
Mauritius	Malaysia	Israel	Turkey	El Salvador	Canada
Niger		Jordan		Honduras	Mexico
Nigeria		Pakistan		Nicaragua	US
Barbados		Philippines		Panama	Argentina
Jamaica		Syria			Brazil
Trinidad &					Chile
Tobago					Ecuador
Guyana					Paraguay
Surinam					Peru
Hong Kong					Uruguay
Cyprus					Venezuela
					Japan
					Austria
					Belgium
					Denmark
					Finland
					France
					Germany, W.
					Greece
					Iceland
					Ireland
					Luxembourg
					Netherlands
					Norway
					Portugal
					Spain
					Sweden
					Switzerland
					UK
					Yugoslavia
					Australia
					New Zealand