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**"ECONOMIC DEVELOPMENT POLICIES AND FOREIGN LOANS
IN MEXICO, 1888-1910"**

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One of the most polemical issues with respect to the immense foreign debts of contemporary Latin America is the question of how wisely or unwisely the loan monies have been invested or spent. There remains much uncertainty as to the extent to which the bulk of the loans were actually invested productively or, alternatively, were diverted to nonproductive uses such as deficit spending, refinancing of old loans, financial speculation or capital flight. The lack of complete and precise information on many of the loans taken by public and private institutions and firms makes it extremely difficult to reach a definite conclusion with respect to the productive or non-productive use of the loan funds. The problem is complicated by the fact that in numerous cases the publicized objectives of the loans do not correspond with actual investment of the proceeds. To follow the twisting and often invisible trail of the loan monies from the coffers of the international banks to the treasuries of Latin American governments and companies and thence to local agencies, state and municipal governments, subcontractors and multiple additional recipients of the funds is a task which may be successfully accomplished only with the help of a metaphorical Ariadne's thread.

But this problem of identifying the actual investment of the loan funds is not new. In fact, historians find that throughout the nineteenth and twentieth centuries there has existed a considerable gulf between the ostensible, published objectives of foreign loans and their final destiny. Examples abound. The first Argentine foreign loan, provided by the London merchant bank of Baring Brothers, was originally intended for port works but was actually used for bank speculation and for the financing of the naval war against Brazil in 1826-27. The Mexican loans of 1864 and 1865 were originally issued to promote the economic

plans of the emperor Maximilian but in practice were used to pay the expenses of the French troops that had invaded Mexico. The Santo Domingo loan of 1872 was ostensibly intended for economic development yet actually went to line the pockets of foreign bankers and speculators.¹

Nonetheless, in the case of most foreign loans taken by Latin American states there exists a large amount of official documents which can provide data on the actual investment of the monies received by a given government. In order to evaluate the productive or non/productive nature of the investments it is well to begin by analyzing the information published by the finance ministries of the respective Latin American governments. At a later stage, it may be possible to compare such data with additional information from other sources. In the present paper I have used the official documents of the Mexican Finance ministry and other state economic agencies to outline the basic loan strategy of the regime of Porfirio Díaz between 1888 and the year 1910, when the Mexican revolution erupted. More specifically, it is my intention to evaluate the contribution of state debt policies to the financing of railroad development in Mexico in this period.

During the last twenty years of the regime of Porfirio Díaz, the Mexican government undertook the promotion of a series of ambitious public works projects, including the construction of railways, ports, a modern telegraphic system and a series of large drainage and irrigation works. The object of this paper is to examine the method in which the state helped finance railway construction. To focus on the railways seems particularly important because according to most economic historians, they were the sector which contributed most to the rapid economic growth of Mexico in the late nineteenth century. It is also argued that railway expansion depended mainly on the injection of a large volume of direct foreign investments.

¹ Information on these as well as other more productive loans can be found in Carlos Marichal, *A Century of Debt Crises in Latin America: from Independence to the Great Depression, 1820-1930*, (Princeton University Press, 1989).

However, a closer and more detailed view allows one to observe that the Mexican government, itself, played a larger role in this process than is generally supposed by providing an important part of the funds required for the sustainment of railway construction, including the payment of subsidies as well as the issue of internal and external bonds.

A first objective of this paper is to demonstrate that Mexican economic development policies were not simply improvised after 1880 to take advantage of the new inflow of foreign funds but, on the contrary, had deep roots. From the 1850s government authorities made transport modernization the number one priority in terms of economic promotion policies. However, there was insufficient capital (public or private) to effectively implement such policies until the 1880s. Subsequently, the Mexican government played a key role in directing and financing several of the major railway projects of the era.

In order to finance railroad construction the government relied on three sources of funds: fiscal revenues, internal loans and external loans. It is my purpose (as the second objective of this paper) to analyze the shifting combination of external and internal funding used to finance railway building in Mexico. The local funds consisted in various financial instruments. These included subsidies to private railway companies, these being the most common form of government aid to construction in the 1880s and early 1890s. Subsequently, another important form of financial support came through the issue of internal silver bonds which were paid to the construction firm of Weetman Pearson and Sons, as well as to other contractors, which later were able to sell a large portion of these bonds in European money markets, transforming these internal bonds into external bonds. External funds were also heavily used to finance railways: these included several foreign loans raised in Europe and the United States between 1889 and 1904, portions of which were used to cover subsidies in arrears and/or to provide cash for new construction.

By 1910 the bulk of both the internal and the external debts of the Mexican government (surpassing U\$S 500 million) could be directly linked to the costs incurred in railway promotion. Was the investment of so much government money in railway projects a wise economic decision in the case of a nation which faced acute capital shortages? From a macroeconomic perspective the answer is probably affirmative, particularly if we take into account Coatsworth's proposition that close to one half of the increase in per capita GNP generated between 1880 and 1910 can be directly attributed to railway construction and operation.² But, from a microeconomic perspective, there exist serious doubts. In order to offer conclusive answers more systematic research is required, but it is my purpose-in the last part of this paper-to argue that in the case of the two largest railway projects in the which the Mexican government was involved the financial costs quite possibly surpassed any potential benefits to the Mexican economy. I refer, on the one hand, to the building of the Tehuantepec railroad in the 1890s and, on the other, to the so-called "Mexicanization" of the bulk of the railway system by the government between 1903 and 1908.³ Such a historical analysis of the financing of state economic projects through foreign loans may be of comparative interest for researchers currently involved in examining the impact of financial policies in other Latin American nations and their impact on economic growth.

² See John Coatsworth, Growth Against Development: The Economic Impact of Railroads in Porfirian Mexico (Dekalb, Northern Illinois University Press, 1981), p.180.

³ The possibility of making an evaluation of the costs and benefits of state economic policies on the basis of historical reconstruction and analysis is illustrated by the excellent study of Gabriel Tortella, Los orígenes del capitalismo español (Madrid, 1973), which provides a theoretical and empirical analysis of state policies with respect to railway and banking development in the mid-nineteenth century in Spain.

The origins of the economic development policies of the Mexican government

The Mexican state was one of the first in Latin America to create a public agency specifically aimed at promoting national economic development. The establishment of the Mexican Secretaría de Fomento in 1853 preceded the first economic development ministries of other Latin American nations, most of which came into being in the 1860's or 1870's under a variety of names, Ministerio de Agricultura, Comercio e Obras Públicas (Brazil, 1861), Ministerio de Fomento (Guatemala, 1871 and Venezuela, 1874), Ministerio del Interior (Argentina, 1863).⁴ In the case of Mexico, the Secretaría de Fomento was intended to promote a variety of public works projects although, initially, scarcity of funds made it impossible to carry out major investments.

In the first Memoria (annual report) of the Secretaría de Fomento, published in 1857, the minister, Manuel Siliceo, reviewed the state of the various departments in his charge- roads, bridges, ports, mines, agricultural colonization- observing that the lack of public funds had made reforms and improvements negligible despite the existence of a number of attractive economic and technical projects. In the second report of the Secretaría, published eight years later during the empire of Maximilian, minister Luis Robles Pezuela summarized the efforts undertaken to repair roads and bridges destroyed during the war and included information on a variety of programs for the construction of telegraph lines, railways and urban water works. In practice, nonetheless, the bulk of investments made by Fomento during the year 1865

⁴ Already in the 1840's, the Conservative Mexican politician, Lucas Alamán, began exploring the possibility of creating an economic development agency and he was the key figure behind the decree of 1853 establishing the Secretaría de Fomento. For a discussion of the equivalent Brazilian ministry, established February 16, 1861, see Relatorio da Reparticao dos Negocios da Agricultura, Comercio e Obras Públicas (Rio de Janeiro, 1861). In Venezuela the Ministerio de Fomento was established in August, 1874; see Memoria del Ministerio de Fomento, (Caracas, 1876). On Guatemala see David McGreery, Desarrollo económico y política nacional: el Ministerio de Fomento de Guatemala, 1871-1885 (Guatemala, 1982). On the Argentine development agencies see Carlos Marichal, "Políticas de desarrollo económico y deuda externa en Argentina, 1868-1880", Siglo XIX, III, no.5 (Monterrey, 1988), 89-124.

were directed to road and bridge repairs and construction: 60% of a total 1.2 million pesos invested.⁵

After the defeat and demise of the Empire in 1867, Mexican governments increased authorizations for the Secretaría de Fomento steadily. The budget of Fomento rose from 2.3 million pesos in 1868/69 to 5 million pesos in 1874/75 and to an annual average of 10 million pesos in 1880-84: these sums represented respectively 12% of the total government budget in 1868/69, 21% in 1874/75 and 20-25% in the early 1880's.⁶

In what economic projects were these funds invested? Between 1867 and 1890 there were basically three categories which accounted for the overwhelming bulk of public capital investments: roads and bridges, telegraphs and railroad subsidies. As of the end of the war in 1867, the Liberal elite placed particular emphasis on the urgent need to renovate the national transport and communications network. Blas Balcarcel, minister of Fomento in 1868, stressed this point:

"The lack of long distance roads that can connect the ports with principal commercial cities of the Republic after a half a century of independent political existence can only be explained by taking into account the constant military conflicts..."⁷

By that date, the government was spending some 800,000 pesos annually for the repair of the principal roads and planned to invest another half million pesos in the construction of six important routes across the mountain ridges of the Sierra Madre Oriental and Occidental. By 1877 a new department called the Inspección General de Caminos had been established and was in charge of supervising 4,396 kilometers

⁵ See Memoria de Fomento, 1865, pp.500-502, for a synopsis of investments by the Secretaría de Fomento.

⁶ For data see charts in Cuenta del Tesoro Federal, 1885-86.

of existing roads and of another 2,740 kilometres of roads in the process of construction.

A second state priority was the establishment of a national telegraph network for a mix of military and commercial reasons. The growth of the lines was spectacular: 4,000 kilometers in operation by early 1870 and 11,000 kilometers by 1875.⁸ By 1877 there were already 323 employees of the state telegraphic system without including those of the Federal District or the engineers and workers engaged in the construction of new lines. This growth in the employees of the Secretaría de Fomento was symptomatic of the expansion of the public administration in projects linked to economic development.

While roads and telegraphs received the bulk of public monies up until the mid-1870's, in subsequent periods it was the construction of railroads that became the focus of government development efforts. It was under the direction of Vicente Riva Palacio, minister of Fomento between 1876 and 1880, that the basic policy directives were formulated for railroad promotion. The minister announced that there were three different strategies which the state could adopt. The first consisted in the promotion of government-built railroad lines, such as was the case in the Puebla-Tehuacán railroad. A second option was the provision of state subsidies for private companies: the most important example was that of the Ferrocarril Mexicano, connecting Veracruz with Mexico, which had received some financial support from the government. The third method lay in convincing the governments of the different states of the Mexican republic to offer concessions and promote new lines on their own account or in association with capitalists interested in investing money in such ventures.⁹

⁷ Memoria de la Secretaría de Fomento, 1868, p.13.

⁸ Kenneth Cott, "Porfirian Investment Policies, 1876-1910", Ph.D. thesis, University of New Mexico, 1978, pp.39-40.

⁹ For a resumé of the Riva Palacios' railroad policies see K. Cott, "Porfirian Investment Policies,..." pp.80-87. On early railroad legislation see Abdiel Oñate, "Las concesiones de los gobiernos mexicanos en materia de ferrocarriles entre 1848 y 1876: un examen de política económica", Investigación Económica, no.153 (1980), pp.63-90.

During the 1880's, under the direction of minister Carlos Pacheco, the construction of railroads became the axis of government development policies. The last two methods underlined by Riva Palacio were adopted and as a result construction advanced at a quick pace. This was a decade of rapid but somewhat disorderly construction of railways throughout Latin America, impelled by dozens of concessions to as many contracting companies which were more interested in turning a profit than in coordinating efforts to build a coherent transport network. Nonetheless, by 1890, Mexico had a total of more than 9,000 kilometers of new railroad track.

During the 1890s construction continued although there was a significant slowdown as a result of the international economic crises of 1890 and 1893 which slowed the transfer of funds from Europe and the United States. Nonetheless, the Mexican government did not reduce its investments in railroads, but rather increased them. According to the returns published by the Mexican treasury, the Secretaría de Fomento had invested 31 million pesos in railways in the 1880s, whereas both Fomento and the new Secretaría de Comunicaciones y Obras Publicas invested over 60 million pesos in the 1890s.¹⁰ After the turn of the century there was a brief expansion of private foreign investments in Mexican rails, although once again this process was drawn to a close by an international financial crisis, namely that of 1907. Previous to that date, however, the Mexican government had initiated a process of concentration of the major railroads by means of a process known as "Mexicanization", which meant the acquisition by the Finance Ministry of the majority of stock in the largest privately-owned companies. These measures, were, in some regards, the logical conclusion of the policies that had inspired the creation of the Secretaría de Fomento a half-century before.

¹⁰ These estimates are based on global data published by the Tesorería General de la Federación, Cuentas del Tesoro Federal (1881-1900). Nonetheless, these general figures are not always reliable and should be compared with other official financial documents.

Government and railway finances: Public subsidies for private enterprise

In numerous works on the economic history of the "porfiriato" (1876-1910), historians have laid emphasis on the role of foreign capital in promoting the new railway companies. Certainly North American and British capital played a decisive role in this process. But it should not be forgotten that much of the construction was financed through large subsidies provided by the Mexican government. These subsidies became one of the most important forms to assure private capital accumulation in the period and contributed to the prosperity of both large foreign-owned transport corporations, like the Mexican Central and National Railways (owned by United States magnates), and Mexican-owned construction firms, such as that of Delfín Sánchez, contractor of the Ferrocarril Interoceánico, or that of Sebastián Camacho, expert buyer and seller of railroad concessions.

It is clear that the total monetary costs of such subsidies-mostly expended between 1880 and 1894-were extremely high, surpassing any previous investments by the Mexican state in economic projects. In most cases, the subsidies fluctuated between 6,000 and 8,000 pesos per kilometer of track constructed, although in some exceptional cases-such as the sections of the Tehuantepec Railway contracted with the entrepreneur, Delfín Sánchez-the subsidies reached the fabulous sum of 25,000 pesos per kilometer. The transfer of these funds from government treasury to company coffers not only assured the latter that they would not suffer losses in any given year but, in fact, covered an important part of total construction costs.

The Secretaría de Fomento was the agency in charge of providing subsidies to the private companies, utilizing tax monies and construction certificates for these purposes. The certificates were a kind of treasury promissory note which could be used to pay customs taxes, or alternatively which could be sold to merchants as a special type of commercial paper which could be eventually cashed at the customs

offices. Between 1880 and 1892, Fomento provided diverse companies with over 60 million pesos in such subsidies, and promised to pay additional sums in short order. (See figures in Table 1.)

That the millions in subsidies provided by the state for private railway firms represented a huge public gift to the foreign and national capitalists involved in the contracts was recognized by leading economic ideologists of the regime, as can be seen in the testimony of Pablo Macedo, lawyer and director of the Banco Nacional de México as well as member of the most important of the official economic commissions of the age ¹¹. In this respect, it is abundantly clear that while foreign capital played a major role in the promotion of the modern transport railway network of the nation, the financial contribution of the state should not be underestimated, as has been common in most economic histories of Mexico, to date.

On the other hand, it would be erroneous to suggest that Mexican railway policies were unique. On the contrary, the provision of public subsidies to stimulate the construction of private or public railroads was a common feature of the last quarter of the nineteenth century throughout Latin America and other regions of the world. ¹²

Eventually, the Finance Ministry (Secretaría de Hacienda y Crédito Pública) began to pressure the Secretaría de Fomento to reduce the issue of customs certificates since these reduced the tax receipts of the national treasury and provoked great complications in accounting procedures. As a result, new forms of financing were sought to promote public works, the most important of which were the negotiation of foreign loans, being subsequently followed by the issue of a large volume of internal silver bonds.

¹¹ Pablo Macedo, la evolución mercantil: comunicaciones y obras públicas; la hacienda pública: tres monografías, (Mexico, 1905), pp.230-31.

¹² See, for instance, the information on subsidies in Eduardo Zalduendo, Libras y rieles: las inversiones británicas para el desarrollo de los ferrocarriles en Argentina, Brasil, Canadá e India durante el siglo XIX, Buenos Aires, 1975.

Foreign loans for railways

From the year 1888, with the consolidation of the outstanding foreign debt, the Mexican government returned to the international capital markets in search of funds for its most important development projects. Among the plans sponsored by a new public works ministry (Secretaría de Comunicaciones y Obras Públicas created in 1891), was the construction of the state-financed Ferrocarril de Tehuantepec, port works in Veracruz, Coatzacoalcos, Salina Cruz and Manzanillo, and the draining of the Valley of Mexico, site of the nation's capital. These works were to be carried out by foreign construction firms (especially by the large British concern of Weetman Pearson and Sons) but they were to become state properties.¹³

The government investments in these works were covered in large measure by several foreign loans issued in 1889, 1890, 1893, 1904 as well as by the issue of a considerable volume of internal debt, in the shape of so-called "silver bonds". This combination of external and internal debt has not been analyzed in depth by historians and suggests the complexity of the financial policies adopted by the Mexican state at this early stage. We will comment at greater length on this problem in a later section of this paper.

The new financial strategy was also associated with the adoption of a new geo/economic strategy of development by government authorities in the 1890's. In contrast to the 1880's, when railroad projects had been approved without constraints by federal and state legislatures throughout the nation, after 1890 the government financial elite, headed by José Yves Limantour (economic czar until 1910) sought to channel government funds mainly to railroad construction in the center and south of the republic. This was linked to

¹³ For an overview of Pearson's operations in Mexico see Cathryn Thorup, "La competencia británica y norteamericana en México, 1887-1910", Historia Mexicana, xxxi, no.4, (1982), pp.599-641.

the concern with the massive presence of United States capital in the northern regions of the nation, particularly in railroads and mining. In his famous draft of the Railway Law of 1898, Limantour did not explicitly criticize United States capitalists, but he made it clear that state subsidies and investments should be channeled to public works in areas where the North Americans exercised a less commanding presence. Hence funds were to be directed to the conclusion of such works as the Ferrocarril Interoceánico, connecting Veracruz and Acapulco, the Puebla-Oaxaca railway (known as the Ferrocarril Mexicano del Sur), the Tehuantepec railway, and a railroad to connect Tehuantepec with the Guatemalan border. A similar emphasis was placed on other types of public works, such as the drainage of the Valley of Mexico, the modernization of the port of Veracruz and the construction of ports of Salina Cruz and Coatzacoalcos, all located in central and southern portions of the republic.¹⁴

In these state-financed projects, moreover, it may be observed that the contracts were awarded to a variety of Mexican and British companies, rather than to United States enterprises. It should be remarked that British capital was already dominant in railways located in the central and southern regions: in the Ferrocarril Mexicano, in the Interoceanic railway, in the lines to Oaxaca and in the contracts for the Tehuantepec railway.¹⁵ There is no doubt that the British preponderance in these areas was due in part to the weakness of the United States presence there, but it was also indicative of the strategy of the Mexican elite which sought the alliance with European capitalists as a counterweight to the economic expansion of its powerful neighbor to the North.¹⁶

¹⁴ On these diverse projects see the excellent descriptions in Pablo Macedo, La evolución mercantil: comunicaciones y obras públicas; la hacienda pública, tres monografías (México, 1905), pp.223-338. Also see Francisco Calderón, "Los ferrocarriles" in D. Cosío Villegas, Historia Moderna de México: la vida económica, (México, 1974); and Armando Rojas Rosales, "La comunicación interoceánica y la construcción del Ferrocarril Nacional de Tehuantepec, 1824-1894", thesis, Universidad Autónoma Metropolitana, 1986.

¹⁵ There is a need for monographic research on British investments in Mexico although a general introduction can be found in Alfred Tischendorf, Great Britain and Mexico in the Age Porfirio Diaz (Durham, North Carolina, 1961).

¹⁶ For comments by a leading elite ideologist of the period on the role of United States capital and the formulation of state railroad policies see Pablo Macedo, La evolución mercantil, pp.516-528.

The expansion of the state's economic role, nonetheless, was not an inexpensive task. The rapid growth of both the external and the internal debt was testimony to this effort. And it may be suggested that in some instances the financial effort proved excessive. But before delving into the question of benefits and costs of these public investment strategies, it is worthwhile reviewing the specific loan policies contracted from 1888 to promote economic development projects.

Between 1888 and 1910 the Mexican government negotiated seven foreign loans, four of which were used essentially to refinance outstanding debts, although it should be stressed that in point of fact these refinancing loans brought little in the way of fresh funds into Mexico, since they were limited simply to the issue of new bonds for old ones. On the other hand, the bond issues which can be defined as "public works loans", did produce a net transfer of funds from abroad and were hence the principal cause of the increase in the external public debt. These loans included the 1889 city of Mexico loan, the 1889 Tehuantepec Railway loan, the 1890 railway loan and the 1904 loan-which covered both railway and port investments. (See details in Chart 3).

The first Mexican foreign loan for public works was a transaction negotiated with London banking firms on behalf of the City of Mexico in the year 1889 for a total of 2,400,000 pounds sterling. This credit was intended to finance the massive drainage works underway in the Valley of Mexico. To be more specific, the monies went to pay the costs of construction of the Tequisquiac tunnel and a series of water works for the capital. The loan was expensive insofar as the issue price of 70% was quite low and as a result of considerable commissions distributed to various intermediaries, including an English capitalist named Mullins, and two Mexican politicians, Joaquín Casasús and Benito Gómez Farías.¹⁷ Nonetheless, it can be estimated that approximately 1,150,000 pounds sterling of the funds received were actually

invested in the public works cited.

The second public works' loan also was taken in 1889 for a sum of 2,700,000 pounds sterling with the specific object of financing the Tehuantepec railway. Issued simultaneously in Berlin and London at the price of 77 by the Dresdner Bank, it may be calculated that it allowed for the investment of some two million pounds in the railroad construction, although it should also be mentioned that corruption and maladministration by the contractors absorbed a substantial part of the funds. As a result, it became necessary to request new short-term credits from the Dresdner Bank to conclude the lines begun; these credits were liquidated with a part of the refinancing loan of 1893.¹⁸

The third public works' loan was that of 1890 for the sum of 6,000,000 pounds sterling, the bonds being issued by the Berlin banking house of Bleichroder at the price of 88. These served to pay off subsidies owed to a variety of private railway companies. According to Bazant's analysis of the treasury accounts, the Mexican government received net proceeds of 26.5 million pesos, of which 19.8 million went to the Ferrocarril Central (owned by United States capitalists) and 3.5 million to the Ferrocarril Mexicano (a concern owned by both British and Mexican investors).¹⁹

Subsequent to 1890 and for over a decade, the Mexican government did not use foreign gold loans to finance new public works. The reasons, as will be suggested in the following section, were related to a series of international economic factors which had a negative impact on the Mexican economy, forcing it to rely more heavily on internal sources of capital for public works projects. It would not be until 1904, when the financial situation had improved, and when New York bankers were more disposed to lend money

¹⁷ José Valadés, El porfirismo: historia de un régimen. El crecimiento, (México, 1977), I, p.125.

¹⁸ For details see William Wynne, State Insolvency and Foreign Bondholders (New Haven, 1951), II, pp.52-54.

abroad, that the Mexican government was able to raise a new and voluminous public works loan, payable in gold. This was the famous Speyer loan, valued at U\$S 40 million, and used mainly for the completion of several major railroad and port projects. (See Table 3.) But before reviewing state policies of railway finance in the first decade of the twentieth century, it is worthwhile to focus attention on the rather special situation that prevailed during the 1890s.

The internal debt: silver bonds for railway construction

At the end of 1891, the Mexican economy began to suffer the effects of a recession which subsequently intensified with the international economic crisis of 1893. The fall of silver prices as well as of other export commodities, combined with a series of internal problems to oblige the government to seek a refinancing loan in 1893 and forced it to suspend the issue of external gold bonds for public works during a decade. The great expense of contracting external loans which were payable in gold is underlined by successive finance ministers. Both in the Memoria de Hacienda of 1891-92, prepared by veteran minister, Matías Romero, as well as in that of 1894-95, prepared by José Yves Limantour, information is provided which indicates the burden of having to pay in gold when silver prices (Mexico's principal export) were descending. In 1894, for example, the debt service on the gold loans of 1888, 1889 and 1890 cost the treasury 11 million pesos, of which 5 million pesos were due to the exchange costs implicit in the declining value of silver.²⁰

Nonetheless, there were alternatives to the issue of gold loans since there eventually developed a market in Europe for Mexican bonds payable in silver pesos, most of which were used for various

¹⁹ J. Bazant, Historia de la deuda exterior, p.140.

²⁰ Data in Cuenta del Tesoro Federal, 1894-95.

economic development projects. A comparative review of the data in Tables 1 and 2 indicates that the issue of 5% and 6% internal bonds virtually replaced subsidies as the principal form of government finance for railways after 1892. Moreover, the information bespeaks the trend towards greater financial support for state railways, such as the Tehuantepec road, and other lines in the south-central sections of the republic rather than the United States-owned companies in the northern regions, which had been so heavily favored in the 1880s.

In addition to the foreign loans, therefore, the Mexican government began to issue a large volume of internal bonds in silver pesos with interest rates of 5% and 6% between 1894 and 1910. (See Chart 4). As the historian Jan Bazant has suggested, these bonds served mainly to subsidize private companies building new railway lines as well as to the contractors of state public works projects.²¹ Despite the fact that these securities were considered bonds of the internal debt and paid interest in silver pesos rather than in gold, it is well-known that they circulated widely in foreign capital markets. There are no studies that we know of the sales of this special kind of bonds in European stock markets, but it can be gathered from the Memorias of the Finance Ministry that by the turn of the century they came to constitute, in practice, a part of the external debt. A number of private financial houses in Mexico City, such as Hugo Scherer and Co, which had close connections to both French and German banking firms, probably played a key role in placing the silver bonds abroad.²² But there is as yet insufficient hard data on these complex financial operations to be able to reach definite conclusions.

²¹ See statistical chart in Jan Bazant, Historia de la deuda externa de México, 1823-1946 (México, 1981), p.272.

²² There is some information on the role of Schere in numerous international financial transactions in Raymond Poidevin, Les relations économiques et financières entre la France et l'Allemagne de 1898 a 1914, Paris, 1969, pp.13, 71-72, 212-213, 335, 716, but not enough specifically on sales of silver bonds to provide solid support for our

How were the proceeds of the bond issues invested in the public works mentioned? How much was invested in capital equipment and what portion was spent in salaries of workers? To answer such questions in detail it would be necessary to carry out prolonged research in various as yet uncatalogued historical archives, a task which goes beyond our present possibilities.²³ For this reason we will limit ourselves to mention of the best-known case of the disbursement of the silver bonds for public works. These internal bonds were the preferred instrument used by Limantour for payments to his favorite contractor, Weetman Pearson, engaged in numerous public works projects. This British firm, which (by the end of the century) was one of the most important engineering/construction firms in the world, succeeded in winning the contracts for the following public works in Mexico: the Great Canal of the City of Mexico (1889-1898); the port works of Veracruz (1895-1902); the reconstruction of the Tehuantepec railway (1898-1906); the port works of Coatzacoalcos and Salina Cruz (1896-1907); and drainage and water works in the ports of Veracruz, Coatzacoalcos, Salina Cruz and Mazatlán.²⁴

In total, Pearson and Sons received payments on the order of 62 million pesos, of which approximately 80% were paid with tax revenues or in the shape of internal silver bonds, the latter being sold through financial intermediaries in Mexico and Europe. It would appear that the market in Europe for silver bonds improved markedly in the years 1898-1901 when silver prices were rising. By 1902, however, the drop in silver prices made suspension of the issue of new silver bonds inevitable. The remaining payments due to Pearson and other public works contractors were subsequently made with the proceeds of the large 1904 foreign loan (previously mentioned) that was issued by Speyer and Company in New York, London and Frankfurt. Of the 35 million dollars received by the Mexican government, approximately

suggestion with respect to the sale of silver bonds abroad.

²³ The bulk of documents pertaining to the Secretaría de Hacienda are held in the Archivo General de la Nación, Galería 6, but as yet have not been catalogued and are therefore difficult to consult.

²⁴ C. Thorup, "La competencia británica", includes a series of tables which detail the works undertaken by

53% was used to cover the costs of acquisition of the Interoceanic and National railways, 20% for various railway subsidies, 14% for port works and the rest to pay off outstanding government debts.²⁵

Foreign debt and railways: an evaluation of costs and benefits

On the basis of the global data provided by Bazant and Turlington, it can be calculated that approximately 40% of the total foreign debt issued between 1888 and 1910 was due to transactions directly connected with the promotion of economic development projects such as railroads, port works and water works. However, it is likely that this is a considerable underestimate since a large part of the external bonds issued were simply refinancing operations and did not actually imply an increase of debt but rather the exchange of new bonds for old ones. In other words, the real increase in debt was basically a result of the economic development loans. Furthermore, consideration should be given to the additional external bonds issued not cited by the authors mentioned above. These included U\$S 50 million issued on account of the state bank known as the Caja de Préstamos para Obras de Irrigación y Fomento de la Agricultura as well as the 138 million pesos in mortgage bonds issued to conclude the formation of the National Railway company.²⁶

The aggregate figures cited suggest that well over two thirds of the external debt of Mexico in 1910 was directly related to economic development projects, to which should be added the large portion of the internal debt also used for this same purpose. Evidently, the considerable volume of funds invested reflects the large role that the Mexican state had come to play in the process of capitalist transformation of

Pearson and estimated costs.

²⁵ J. Bazant, Historia de la deuda exterior, pp.163-64.

²⁶ Bazant (p.168) uses the data provided by Edgar Turlington, Mexico and her Foreign Creditors (New York, 1930).

the economy. But at the same time, several questions of a more qualitative nature remain with respect to the costs and benefits of the projects undertaken.

As has been previously suggested, during the Porfiriato, the priorities of the Mexican government with respect to the promotion of economic development (and, in particular of railroads) varied substantially. During the decade of the 1880s the main instrument used to accelerate railroad construction were government subsidies transferred to private railway firms with the general purpose of attracting foreign capital in order to consolidate the national transport network. After 1890, some subsidies were continued but the Finance Ministry tended to favor their replacement with external bonds. At the same time, large investments were made for the first time directly by the government in railroad, port and drainage works, which were state-owned. Finally, after 1903, the Finance Ministry resolved to establish much firmer financial and regulatory control over the foreign-owned railway firms, creating for this purpose the "mixed" enterprise known as Ferrocarriles Nacionales.

To evaluate the costs and benefits of such policies it is necessary to place them in context, by subperiods. But before proceeding, it is worthwhile warning the reader that what follows are simply a series of general hypothesis which require more detailed analytical and statistical verification. The main intention here is to suggest that the costs may have outweighed the benefits in the case of two major railway projects in which the government was involved, namely those of the construction of the Tehuantepec Railway (carried out in the 1890s) and the organization of the great state-controlled conglomerate of Ferrocarriles Mexicanos between 1903 and 1908.

The reason why it is important to focus on the Tehuantepec railway lies in the fact that the construction of this railroad and the terminal ports of Coatzacoalcos and Salina Cruz together absorbed the

greater part of the funds invested by the Federal government in public works projects during the period 1890-1902. However, the analysis of the government's financial policies with respect to the promotion of state-owned enterprises, as was the case with the Tehuantepec Railway, is especially complex because of the prolonged period which it took to build and rebuild this road (over thirty years) as well as because of the large number of private contractors involved. The accounting and financial records of the company constitute a maze of documents which do not provide a transparent idea of the real costs involved. Cost overruns, for instance, were among the largest of which there is record for in Porfirian Mexico. But apart from the toll of corruption, it would appear that the essential question-from a macroeconomic perspective - is whether these investments were the best possible choices for the government, given a possible menu of alternative options for the investment of its considerable financial resources.

It does not seem questionable, for example, that the port works of Veracruz and the massive drainage works in the Valley of Mexico were of considerable commercial utility as well as important factors in improving public health in two critical urban sites. On the other hand, greater doubts may be presented with respect to the wisdom of investing huge sums in the Tehuantepec railway/port complex, which actually were the costliest of all public works carried out during the Porfiriato. Indeed, even Pablo Macedo, one of the foremost ideologues of the economic development projects of the regime, suggested that this railroad was a white elephant of gigantic proportions.²⁷

A precise breakdown of the sums invested in these trans-isthmian works is not yet available because of the difficulty in verifying all the government accounts related both to the railroad (and its several contractors) as well as to the various stages of the construction of the terminal ports of Coatzacoalcos and

²⁷ Ibid. p.227.

Salina Cruz. Nonetheless, a preliminary estimate would place total public investments between 1890 and 1907 in this combined railway/port project at above 100 million pesos. Whether utilizing such a large amount of public funds for this particular project was reasonable in lieu of investing in alternative projects is open to question. There is no question, however, that in terms of economic returns, the Tehuantepec project was largely a failure; the railroad did not pay and its multiplier effects on the isthmus and most neighboring regions were relatively limited.

That the Mexican government should have provided such large sums for this one particular project raises questions as to the illusions that the Porfirian elite had with respect to the impact of the construction of the trans-isthmian railroad. Contemporary pamphlets and literature indicate that they felt that the Tehuantepec line was destined to become a key route uniting the international trade between Atlantic and Pacific. Moreover, the 1890s was a propitious decade for such plans. It should be recalled, in this regard, that the Panama Canal project had been frozen in the 1890s-precisely when the Tehuantepec Railway was being completed-as a consequence of the spectacular financial debacle of the French-owned *Compagnie de Panama* in 1889, after several years of efforts to build the canal. United States determination to conclude the canal did not become manifest until 1903, when construction on the Tehuantepec line had terminated. This specific circumstance may have been the single most important factor which impelled the Mexican government elite to channel such a large portion of public funds into this railway company, which was until 1903 the only entirely state-owned enterprise in the country.

While there exist a large number of doubts with respect to the "raison d'etre" of such projects as the Tehuantepec railway, there are even more unresolved questions with respect to the radical change in transport policy adopted by the Mexican state after 1903. For it was after this date that the supposedly "laissez-faire" Porfirian elite decided to embark on an enormously ambitious and financially costly plan to

nationalize the bulk of the railroads in the country.

If it is hard to evaluate the productivity of direct investments in one public works projects like Tehuantepec, it is even more difficult to calculate the costs and benefits of a financial transaction as complex as the partial nationalization of Mexican railways undertaken by minister Limantour between 1903 and 1908. However, there is enough evidence to suggest that the price paid was too high.

From early 1903, Limantour began to adopt a series of measures which were intended to further strengthen the role of the government in the railway sector. By acquiring majority control of the Ferrocarril Interoceánico (previously dominated by British investors) as well as in the Ferrocarril Nacional (held by United States capitalists), the finance ministry established the groundwork for the establishment of a large state holding company to be known as Ferrocarriles Nacionales de Mexico. The negotiations with the different actors involved, and especially with the United States directors of the various railway firms were extremely complex. Nonetheless, by means of much arm twisting, threats of legal reprisal and financial acumen, Limantour was finally able to consolidate the different roads under one corporate umbrella, which remains to this today the largest transport firm in the nation. As a result, by 1910, the state controlled the greater part of the nation's railway and telegraph system as well as the port works, and was extending its influence in other key sectors such as banking.

Numerous historical works suggest that one of the principal reasons which led Limantour to buy up the stock in the foreign-owned railroad companies was the fear that powerful United States railway magnates were planning to consolidate the principal lines in Mexico and form a virtual transport monopoly. The realization of such a plan would have seriously limited the autonomous power of the Mexican government to regulate railroad tariffs and would have allowed the railway magnates to dominate the

Mexican export economy.

Limantour resolved to use loans to obtain capital with which to buy up the stock of various railroad companies in New York and other foreign stock exchanges. The first such operation was conducted in 1903 with a U\$S 25 million short-term loan provided by the international banking firms of Speyer Brothers. Shortly thereafter, in 1904, Speyer Brothers was authorized to issue a U\$S 40 million loan which supplied additional funds for this purpose. And by 1907, the Mexican government had managed to obtain majority control in the largest railroad companies, including the Interoceánico, the Nacional and the Central lines.

While these financial transactions did permit the government to extend its control over the national transport system by creating the large holding company known as Ferrocarriles Nacionales de México, the expenses involved were extremely large, perhaps unjustifiably so. Only a detailed study of the financial accounts of each of Limantour's negotiations with the bankers and railway companies can provide a definitive answer to this quandary, but there are serious doubts as to the financial wisdom involved in this ambitious economic strategy. In the first place, it should be recalled that most of the lines which were bought up by the government had been heavily subsidized by the Mexican state in the 1880's and 1890's. The government was, in effect, paying twice over for these railroad properties. As has been indicated in previous sections of this paper, the total financial contribution of the government-in the shape of direct subsidies, construction certificates and bonds- which went to the Central, Nacional and Interoceánico lines from the 1880s down to 1893 surpassed 40 million pesos.²⁸ And it should not be forgotten that this was a time when the silver peso was worth much more than after 1893.

²⁸ The almost 5 million pesos pending payment to the Nacional which are listed in Table 1 were paid with the proceeds of the 1893 foreign loan.

In the second place, it is not altogether clear that buying the railroad companies was a good business investment since their profits were falling; the government acquisition of a large portion of the stock therefore can be seen as potentially a rescue operation for a large number of the foreign stockowners of these enterprises, who received payments in hard currency in exchange for depreciating paper.²⁹

In the third place, the stock of the railroad companies was paid for in gold at a time when Mexican silver prices continued to decline, thus placing an enormous financial burden on the treasury. Payments were made by having recourse to foreign loans, which therefore increased the already large foreign debt.

In summary, there are numerous unanswered questions with respect to the economic consequences of the loan strategies adopted by the Porfirian regime. We have dealt in this paper only with those loans directly tied to the promotion of railway development, but it may be suggested that a more extensive analysis, including the study of the great refinancing loans of 1899 and 1910, would raise even more doubts with respect to the wisdom of promoting an export model of growth which relied on increasing the foreign debt of the nation. In this respect, it is perhaps not overly presumptuous to suggest that such a historical and theoretical preoccupation is relevant to the wideranging debate which accompanies the contemporary debt crisis.

²⁹ On the critical financial situation of the US-owned railways see data in Alfredo Cuellar, La situación financiera de los Ferrocarriles Nacionales de México con relación al trabajo, México, 1935, pp.112-114.

TABLE
FOREIGN LOANS OF MEXICAN FEDERAL GOVERNMENT (1888-1910)
(in pounds sterling)

Year	Value of Loan	Interest Rate	Issue Price	Objective	Banker
1888	10,500,000	6%	70-85	Refinance old debts	Bleichroder A. Gibbs
1889	2,700,000	5%	70	Tehuantepec Railway Bank	Dresdner
1890	6,000,000	6%	89	Railway Subsidies	Bleichroder
1893	3,000,000	6%	60-75	Refinance debts	Bleichroder
1899	22,700,000	5%	96-97	Conversion entire external debt	Bleichroder Deutsche Dresdner JP Morgan Banamex
1904	8,230, 452	4%	89	Public Works	Speyer and Co (NY,London Franfort)
1910	22,200,000	4%	95	Conversion of 1899 Loan	Bleichroder Deutsche Morgan,Grenfell Paris/Bas Banamex

Source: Jan Bazant, Historia de la deuda externa de México, 1823-1946, chaps.6-8, (México, 1968).

TABLE 1

GOVERNMENT SUBSIDIES PAID TO RAILWAYS UP TO 1892

(Cash, Construction Certificates and Bonds)

(in silver pesos)

<u>Name of Railway</u>	<u>Cash and Certificates</u>	<u>Pending Payment*</u>	<u>Bonds Paid</u>	<u>Bonds Unpaid*</u>
Mexicano	16,881,945	-	-	-
Interoceánico	5,206,673	205,837	-	-
Central Mexicano	21,653,807	-	-	-
Nacional Mexicano	7,164,319	4,878,497	-	-
Mexicano del Sur	528,101	8,975,898	-	-
Monterrey al Golfo	-	-	5,534,572	-
Tehuantepec	4,215,486	-	13,500,000	250,000
Other railways	9,025,211	1,122,214	609,428	708,849
<u>Subtotals</u>	<u>64,943,712</u>	<u>15,217,759</u>	<u>19,394,000</u>	<u>958,428</u>

Source: Memoria de la Secretaría de Hacienda, 1891-1892, pp.74-84.

*Payments approved by financial authorities but still not disbursed.

TABLE 4

**OUTSTANDING BOND ISSUES OF INTERNAL AND EXTERNAL
MEXICAN FEDERAL GOVERNMENT DEBT 1893-1910¹**

(thousands of pesos)

Year	<u>Internal Bonds</u>			<u>External Bonds</u> ²
	Railway Bonds ³	Port Bonds ⁴	Silver Bonds ⁵	
1893	6,523		4,460	128,190
1894	6,483	4,922		128,402
1895	10,469	2,752	16,210	154,078
1896	9,802	7	20,899	160,764
1897	9,599	7	30,333	159,731
1898	9,567	7	39,767	159,664
1899	9,545	7	53,863	157,676
1900	9,419	7	62,256	163,464
1901	11,319	7	73,598	162,008
1902	12,832	-	78,873	161,021
1903	15,202	-	78,632	159,790
1904	15,174	-	79,844	168,379
1905	605	-	81,552	360,340 ⁶
1906	3	-	84,212	356,969
1907	2	-	86,019	353,232
1908	2	-	87,371	349,411
1909	2	-	92,813	345,491
1910	2	-	90,968	341,409

Source: Tesorería General de la Federación, Cuenta del Tesoro Federal, 193-1910.

¹ Bonds issued by the Secretaría de Hacienda y Crédito Público.

² The source consulted does not include bond issues of the Caja de Obras Públicas (1908) or of the external bonds of the state-controlled Ferrocarriles Nacionales.

³ These were essentially bonds issued as subsidies to private railroad companies. The figure do not include the 13,500,000 pesos in external bonds issued on behalf of the Tehuantepec Railway since 1889.

⁴ Bonds issued to finance port works.

⁵ Bonds payable in silver, issued in Mexico but circulating widely in European money markets.

⁶ The increase in external bond values was due to the adoption of the gold standard under the monetary reform of 1905 and to the issue of the 1904 Speyer loan.