

Where Are All the Yankees?

Ownership and Entrepreneurship in Cuban Sugar, 1898-1921

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When writing about the US intervention in Cuba, historians often associate Cuba's fate with a swift invasion of foreign capital during and immediately after the US occupation (1898-1902) that "overwhelmed" the local economy as American corporations "rushed in" to buy up properties damaged by the war.¹ The data cited to show this massive inflow are from Leland Jenks, who gathered estimates in 1928 of the value of assets in Cuba owned by US citizens, which had been reported by various diplomatic and other officials in 1896, 1906, 1909, 1911 and 1928. Louis Pérez, for example, concludes from Jenks' data that "the Cuban economy was all but totally dominated by foreign capital," observing that "by 1911, the total US capital stake in Cuba passed over the \$200 million mark."² Curiously, however, Jenks considered these data to show the opposite--that the movement of foreign capital into Cuba was slower than expected.

Contemporaries concurred with Jenks that capital did not rush in immediately. Perfecto Lacoste, who had served as Mayor of Havana, then as Secretary of Agriculture, Commerce and Industry under the US occupational government, wrote a scathing critique in the spring of 1901 that attacked the US government for raising barriers and refusing to assist the Cuban planters to

¹ Pérez, Louis A. *Cuba Under the Platt Amendment* (University of Pittsburgh Press, 1986), pp. 72, 74. ¹ Ibarra, Jorge, *Prologue to Revolution: Cuba, 1898-1959* (Boulder, Lynne Rienner, 1998), p. 14.

² Pérez, *Cuba Under Platt*, p. 74. Jenks, *Our Cuban Colony* (New York, Vanguard, 1928), pp. 161-63.

restore activity at their mills. Not a single credit institution, he declared, had been set up to meet the credit needs to replant and rebuild. “[T]hough it is true that something has been accomplished in the way of reconstruction, it is due exclusively to the personal efforts of the planters.”³

Manuel Rionda recalled how credit from U.S. institutions was hard to get after 1898 as Cuban hacendados tried to dig out from the ruins of war. His New York sugar brokerage, Czarnikow, MacDougall & Co., was able to advance money only because of its connections in London to its parent company, C. Czarnikow, Ltd., and Schroeders bank. Many self-determined hacendados, unable to get credit, did it on their own, he said, plowing back their earnings into their estates, frugally saving to rebuild, expand and make improvements to their factories.⁴

“Whatever the American Occupation was doing,” Jenks observes, “it was not enabling sugar crops to grow at remunerative prices.” He finds that the availability of external finance in Cuba remained limited until after 1909. Even after the obstacles erected by the American occupational government were lifted, “the unsettled political status” and the American tariff continued to “discourage most forms of enterprise and capital investment in Cuba.”⁵

Why do Jenks and other scholars reach such different conclusions when observing the same figures on foreign investment? An underlying problem is the absence of comparable data on domestic investment. It is impossible, therefore, to assess the relative importance of foreign to domestic capital. Jenks finds it to be insufficient, whereas more recent scholarship sees it as overwhelming. How can one determine whether foreign investment overwhelmed local entrepreneurs, if we don’t even know how large it was relative to domestic investment?

This paper presents an alternative measure of investment for the island’s dominant industry, the sugar industry, which permits comparison of domestic and foreign investment in the industry. The new measure is a physical measure, which exploits the annual increments to the grinding capacity of sugar mills, observable at the establishment level using production and capacity data, which I have assembled from several sources. These data are merged with a database of the identities of the principal owners of sugar mills, which I have been working on a for many years collection, compiling and reconciling information from a wide variety of sources

³ Healy, David, *The United States and Cuba* (University of Wisconsin Press, 1963), pp. [93], 190. Report of the Dept. of Agriculture, Commerce and Industry, March 15, 1901, in the *Annual Reports of the War Department for the Fiscal Year Ended June 30, 1900*, I, Part II, Part 4, pp. 4-9.

⁴ McAvoy, pp. 128-29.

⁵ Jenks, *Our Cuban Colony*, pp. 161-62

on the individual owners and nationalities of the firms.⁶ The patterns observed cast new light on the role of foreign and domestic entrepreneurship and investment in the Cuban sugar industry. They confirm some of the claims in the literature, but they also challenge many conventional views.

Besides giving evidence of investment, the physical measure gives information about the nationality of entrepreneurial input into the expansion of the sugar industry. I define the “entrepreneur,” in this paper, as an individual or organization that undertakes the development of a new mill or the significant expansion of an existing mill. Sugar mill construction or expansion required a number of entrepreneurial inputs, including identifying new opportunities, and raising finance to purchase new or additional equipment, to build new or additional railroads to haul cane or sugar, develop cane plantations, and contract with independent growers to supply cane. Investments made to increase the capacity of a sugar mill were usually Schumpeterian innovations, expansions also improved the technology in the mill due to adoption of new vintages of machinery.

Because our knowledge of Cuban domestic investment is so limited, the paper examines a number of basic questions about domestic and foreign investors and entrepreneurs in the Cuban sugar industry from the early republic to about 1921. What role did each play after the US intervention and in the following decades? What patterns do we see for investment in existing mills versus construction of new mills? What role did foreign corporate acquisitions play? How did they compare with the overall market for sugar properties? How were Cuban mill owners affected by the entry of large, deep-pocketed foreign rivals?

Central to the paper is a question of timing. Most historical narratives argue that Spanish and creole owners lost possession of their mills in the transition after the war because they could not obtain access to credit and unable to resist takeover by foreign capitalists. Historian, Louis Pérez describes how, “In a capital-starved and credit-hungry economy, they were all but overwhelmed by capital from the outside. ... The creole bourgeoisie was economically shattered, the insurgent petty bourgeoisie was politically debilitated.”⁷ Jorge Ibarra describes a massive wave of foreign investment immediately following the US occupation, during which “financial

⁶ Much of the original research for the database was done in collaboration with Richard Sicotte.

⁷ Pérez, *Ibid.*, p. 72

corporations rushed in to buy up dozens of Cuban- and Spanish-owned sugar mills and plantations that had been seriously damaged during the war.”⁸

Yet if Cuban mill owners, unable to obtain credit, were forced to sell to American capitalists, producing a massive foreign takeover, then former Cuban owners of sugar mills must have received significant proceeds from these sales, which must have empowered them to invest in the local economy, if they wished to do so. What did former Cuban owners do with the proceeds? One view maintains that the proceeds were small because sugar estates and other properties were sold at fire-sale prices immediately after the war of independence, while the Cuban economy was in shambles and Cuban elites were in financial distress. The estimates in the paper allow us to ask whether the timing of foreign investment support this common narrative.

Scholars often describe foreign investment and property acquisition in Cuba as coming in waves. César Ayala describes two waves between 1898 and 1920—the first during or immediately after the US occupation of the island and the second during the sugar boom of 1914-1919. Describing their combined effects, he presents a view of ubiquitous imperial domination. “Land and agricultural establishments were transferred to the United States owners in a great feast of division of the colonial bounty. ... [T]he sugar economy ... came under the control of a few gigantic concerns interlocked among themselves, with the sugar refining industry of the United States, and with the biggest banks.”⁹ Jorge Ibarra similarly attributes the denationalization of the country’s industrial capacity to a period of time between 1898 and the next two decades when massive transfers of Cuban and Spanish properties damaged during the war took place.¹⁰ Characteristic of these descriptions is an ambiguity about the timing of these transfers. When actually did the majority of them take place? Were foreign acquisitions most

⁸ Ibarra, *Ibid.*, p. 14; Ayala, *American Sugar Kingdom*, p. 78.

⁹ Ayala, César, *American Sugar Kingdom: The Plantation Economy of the Spanish Caribbean, 1898-1934* (Chapel Hill: University of North Carolina Press, 1999), p. 78.

¹³ The data for 1917-1930 are from Cuba, Secretaría de Agricultura Comercio y Trabajo, *Memoria de la zafra* (annual); for 1905-1916 are from Cuba, Secretaría de Hacienda, *La industria azucarera y sus derivados*. Prior years are from *Cuba Bulletin*, 1904; and [U.S. War Department, *Report of Secretary of War*, 1901]. Grinding capacities based on engineers’ or managers’ ratings were reported by the Sec. de Agricultura, Comercio y Trabajo, *Memoria de la zafra*, from [1916 on]. Prior to that year, grinding capacities are estimated using historical local maxima. For more complete description, see Data Appendix. Overlapping estimates and variations on the length of the window were constructed after 1917 to compare the estimates results from the estimation procedure to to the independent rated capacity data available after 1917, which track favorably against the reported rated capacity estimates.

often of properties damaged by the war? Did they take place while postwar asset prices remained depressed, or not? My findings call for a revision of some of these views.

Jenks' Estimates of US Foreign Assets in Cuba

Table 3.1 summarizes the estimates from Jenks and others of US-owned assets in Cuba from 1895 to 1928. It gives some evidence of two waves of foreign investment in Cuba, but the limited benchmark years make it difficult to discern especially the second. The rate of growth asset values between 1895 and 1906 of 16 percent reveals a rapid response by US investors to opportunities and needs of the postwar economic recovery in Cuba. In fact, since the investment during these years would only have begun after the hostilities has ceased, the average rate of increase after 1898 would be about 22 percent per year. Yet unlike the usual narrative, the highest rates of increase before 1906 are more diversified, and not primarily in the sugar industry, focused instead on government debt, railroads, cattle, tobacco, fruit and land.

Faltering capital movement observed by Jenks, shown in Table 3.1 as no growth between 1906 and 1911, might be explained by the Panic of 1907. Jenks thought that dampened investor enthusiasm caused by uncertainties over sustained political and economic uncertainties was at least as important. After 1911, the annual rate of growth in US asset value averages 10.6 percent; however, the large gap in observations between 1911 and 1925 makes it difficult to say whether the second wave of investment took place during the 1914-1919 sugar boom, during the high sugar prices of the First World War, as many historians believe.

Investment in the Sugar Industry

An alternative physical measure of investment may be calculated using increments to the production capacity at each mill computed from establishment-level data on the grinding capacities of mills. The measure exploits the first differences of the grinding capacity at each mill. The units of measurement are bags of sugar per day. First-differences provide information about additions at each mill to daily grinding capacity in bags per day, which were a consequence of the investment and installation of additional physical plant and equipment. In the absence of data on dollar amounts invested, this measure of physical or "real" investment offers the next best alternative. The grinding capacity data were included in annual reports of the Secretaría de Agricultura, Comercio y Trabajo beginning in 1916. For earlier years, I used

annual production data to construct an alternative grinding capacity estimate based on five-year moving historical production maxima.¹³

Table 3.1. Real Assets in Cuba Owned by US Citizens

(millions of constant \$ US of 1926)

U.S. Foreign Assets in Cuba (millions of constant US\$ 1926)	1895	1906	1911	1925	1929
Agroindustry and manufacturing					
Sugar	31	48	77	769	736
Tobacco	1	48	31	51	21
Other manufacturing	-	-	-	41	47
Subtotal	33	97	108	862	804
Agriculture					
Fruit and fruit land	-	10	-	-	-
Cattle	0.3	48	-	-	26
Subtotal	0.3	58	15	-	26
Unimproved lands, other land	-	19	23	108	105
Mining	21	5	6	36	53
Mercantile and financial					
mercantile	1	1	2	31	32
Banking	-	7	8	21	26
mortgages	-	4	31	-	-
Subtotal	1	12	40	51	58
Transportation, communications and public utilities					
Shipping	-	2	8	-	-
Railroads	3	39	39	113	126
elec. railroads (urban)	-	24	-	-	-
telephones	-	4	31	103	121
Subtotal	-	69	77	215	247
Hotels and tourism	-	-	-	-	16
Government debt	-	60	46	113	105
Other	-	-	-	10	32
Total	54	319	316	1385	1413
		1895-06	1906-11	1911-25	1925-29
Annual average growth rate (%)		16.1	-0.2	10.6	8.5

Sources: see appendix to longer paper. [Sourcefile: Cuban Investment 2.xls & Ch3 Table 3-1n2.docx]

¹³ The data for 1917-1930 are from Cuba, Secretaría de Agricultura Comercio y Trabajo, *Memoria de la zafra* (annual); for 1905-1916 are from Cuba, Secretaría de Hacienda, *La industria azucarera y sus derivados*. Prior years are from *Cuba Bulletin*, 1904; and [U.S. War Department, *Report of Secretary of War*, 1901]. Grinding capacities based on engineers' or managers' ratings were reported by the Sec. de Agricultura, Comercio y Trabajo, *Memoria de la zafra*, from [1916 on]. Prior to that year, grinding capacities are estimated using historical local maxima. For more complete description, see Data Appendix. Overlapping estimates and variations on the length of the window were constructed after 1917 to compare the estimates results from the estimation procedure to to the independent rated capacity data available after 1917, which track favorably against the reported rated capacity estimates.

Notes to Table 3.1

1895. Estimates of North American investments around 1895 are debated in the literature. The contemporary estimate that is most cited is that of Secretary of State Richard Olney, whose estimates are found in his annual report to President Grover Cleveland in December of 1896. Olney estimates that total assets were “more likely to fall under than over the mark” of \$50 million nominal (\$104 in dollars of 1926 as reported in the table). Jenks reports Olney’s estimate, which had become the accepted figure (p. 32 [?GETPAGE]); yet other contemporary estimates are much lower. Edwin F. Atkins attested to Congressman William F. Draper an estimate of total American assets before the war of \$30 million; and Fidel y Pierra, chair of the Cuban Revolutionary Committee in New York, claimed there were about \$25 million in plantations and other enterprises and \$10 to \$15 million in crop advances (Weigle, p. 193 and n. 60). Richard Weigle criticizes all of these estimates as too large. Of the available contemporary estimates, only Olney’s memorandum itemizes the estimates, but it does not provide information about how the numbers were assembled, except that they were broken down by district, for estates and crops: Cienfuegos, \$12 million; Matanzas, \$8.75 million; Sagua La Grande \$7.5 million; and Manzanillo, \$3 million; plus \$15 million in mining operations in Santiago, and acknowledgement of approximately \$2.5 million, of “commercial and manufacturing, railway enterprises, and the like” in other interior districts for which “tabulated statements are wanting” (from Olney’s annual report and memorandum, as quoted in Weigle, p. 192). Olney’s estimates for “estates and crops” appears to include short-term advances to finance sugarcane, which are not included in the other figures in the table. Subtracting \$10-15 million for advances, in accordance with Fidel y Pierra, puts Olney’s estimates for “estates” at \$16-21 million.

Using evidence from corporate disclosure statements, Weigle finds that Olney’s estimate substantially overstates actual investments in sugar and mining companies. For example, the North American sugar company at Manzanillo, the Central Teresa Sugar Co., owned at the time by Hugh Kelly and Joe Rigney, is estimated in the records of the Spanish Treaty Claims Commission at \$1.6 million. Olney’s estimate for Manzanillo was \$3 million, yet there was no other North American-owned sugar mill in the district of Manzanillo at that time. Using independent estimates of the other sugar companies and mining companies found in the records of the Spanish Treaty Claims Commission, testimony before the Senate Committee on Finance, *Cuban Sugar Sales*, and Miscellaneous Letters in the U.S. State Department archives, Weigle assembles a revised estimate totaling \$20 million. His correction, however, results in an estimate that is too low because it undervalues some of the sugar and mining properties, and it overlooks smaller investments, such as minority shares in domestically controlled mills. For example of the latter, his estimate of investment in the district of Manzanillo of \$1.6 million accounts only for the Central Teresa, but it overlooks a smaller investment by Henry Havemeyer in an estate at Tanámo Bay in the same district, where he was preparing construction of a new sugar mill in partnership with [WHOM]?. The project was abandoned after 1895, but Havemeyer continued to own a share of the property in 1900, when he testified before the commission. Weigle’s revised estimate of assets in sugar enterprises was \$10 million, which includes mills owned by Cubans he identified as naturalized citizens of the United States.

I conducted an independent assessment of the estimated values of sugar estates owned and controlled by North Americans, using an independent assessment of nationality identity, since Weigle appears to have relied in part on whether the owner’s last name was Hispanic, or not. Revising this estimate upward to account, admittedly imperfectly, for invisible minority investments by foreigners in domestically controlled enterprises, I arrive at approximately \$15 million, close to the lower estimate from Olney when crop advances are netted out. Weigle’s estimate for mining of \$8 million appears more reliable. I revise it upward to \$10 million to account for omissions. Although most assets were in sugar and mining, there were small investments in other sectors, which Weigle’s estimate omits. I accept the \$2.5 million which Olney estimated for “commercial and manufacturing, railway enterprises, and the like,” which I apportion between railroad, tobacco, other agriculture and mercantile enterprise based on inferences and best guesses taken from handwritten notes on Olney’s memorandum. My estimate adds up to \$26 million, which is very close to Fidel y Pierra and not inconsistent with Atkins’ estimate, since he does not indicate whether or not he included crop advances in his estimate. The numbers shown in the table appear different because they are adjusted for inflation using the WPI from the United States Bureau of Labor Statistics, which is used in lieu of an adequate Cuban price index.

To make the series correspond to the effects of investment expenditures, only positive first-differences in daily grinding capacity are taken in account. Reductions in grinding capacities sometimes occurred, but they reflect retirement of existing equipment, which represented a sunk or unrecoverable cost. Negative first-differences, therefore, are omitted in the measure. More specifically: if k_{it} is the capacity of mill i in year t , define $\overline{\Delta k_{it}} = k_{it} - k_{i,t-1}$, if $k_{it} - k_{i,t-1} \geq 0$; otherwise, $\overline{\Delta k_{it}} = 0$. The series presented in Figure 3.4 gives net additions to grinding capacity contributed by each national group, n , computed as $\overline{\Delta K_{nt}} = \sum_i \overline{\Delta k_{nit}}$.

A few caveats are warranted. First, the estimates do not capture replacement investment. This will not have a great effect on inferences about timing, fluctuations and comparisons across nationality groups, if equipment replacements occurred roughly at a constant rate, and if they were not a large share of total investment in the industry. Indeed, rates of expansion of grinding capacities were so high from 1899 to 1929 that this condition is satisfied. After the 1880s, a pronounced upward trend in the optimal scale took off, which lasted through the first quarter of the twentieth century. After 1901, the number of active mills remained fairly constant, but the average production capacity of mills in the industry rose 3.5 times between 1904 and 1920 as technical improvements increased economies of scale and demand for exports grew. The Central Narcisa, one of the earliest mills to convert to centralized milling, is a typical case. In 1889, a Caibarién merchant, Mariano Artís acquired the old Ingenio Belencito in Yaguajay, founded around 1845. He invested in state-of-the-art equipment and converted the mill into the Central Narcisa. The 1889 conversion expanded the mill's capacity from about 500 tons to over 4000 tons. In 1894, it was expanded again, doubling its capacity.¹⁴ By 1919, it had been expanded to 30,000, and again by 1925 to almost 50,000 tons. Most surviving mills exhibit similar patterns of repeated stepwise expansion. A greater proportion of the new capacity came from the expansion of existing mills than from new mills. Between 1904 and 1920, the daily grinding capacity in the industry increased 3.8 times. I find that only 25 percent was contributed by new mills (this

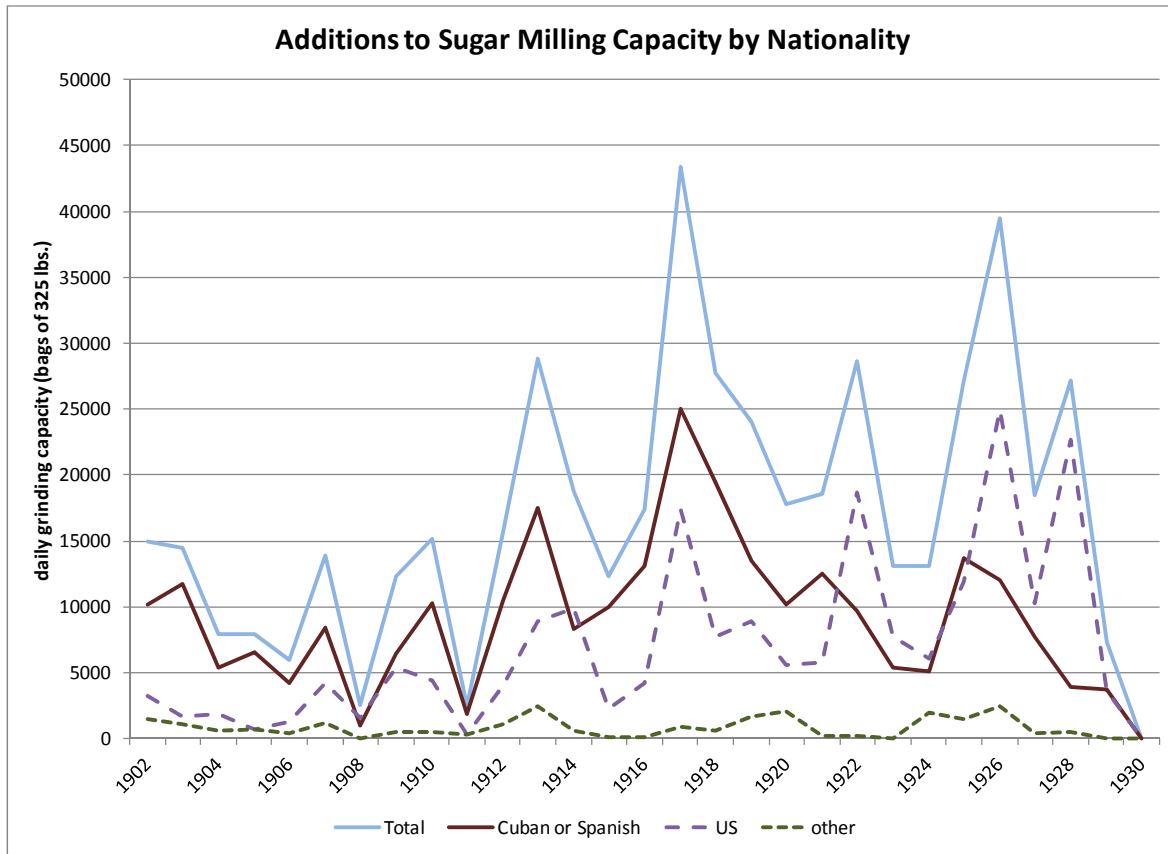
¹⁴ Venegas Delgado, Hernán, "Acerca del proceso de concentración y centralización de la industria azucarera en la region mediana a fines del siglo XIX," *Islas* 86 (1987): 65-121; Porter, Robert P. *Appendix to the Report on the Commercial and Industrial Condition of the Island of Cuba* (Washington, DC, GPO, 1899), p. [GETPAGE]. Jiménez, Guillermo, *Las empresas de Cuba: 1958*, (Miami, Ocean Press, [YEAR]), p. 462.

assumes that a new mills achieved its initial intended capacity in its first three years of operation); 75 percent was contributed by additions in capacity at existing mills.

Effective increases in the machinery for grinding capacity had to be accompanied by complementary investments in cane plantations, railroads, and other fixed investments. The estimates assume proportionality, so they do not account for cost heterogeneities. Some new mills, for example, were built in virgin forest, which required less acreage, but the forest had to be cleared, cane fields had to be developed, and railroad lines extended to the fields. Other new mills, built on the sites of former *ingenios*, may have saved on some startup investment costs, such as clearing land, and may have had access to existing public railroad lines to haul cane, obviating an complementary investment in a private railroad system. Finally, the estimates reflect contributions to the production capacity of the industry, not the investment cost or value these assets. The cost of building a sugar mill in Cuba, which, according to estimates, quadrupled from the turn of the century through the end of the First World War, is not reflected in the series.

Figure 3.1 gives the basic results for 1903 to 1930, aggregated for the industry as a whole and for principal nationality groups. First, it corroborates the usual characterization of two investment waves—a small, brief wave that peaked before 1904 and a second larger wave, of longer duration, that peaked during the First World War. But it does not corroborate the conventional view of foreign domination of investment in the sugar industry. North American investors are not shown to “rush in” to build or buy up sugar estates after 1898. The postwar recovery of the sugar industry was driven almost entirely by domestically owned, Cuban and Spanish, mills. This share of US investment shown the in the figure is consistent with the estimate of US-owned assets in the sugar industry in Table 3.1. A crude estimate of the capital stock invested in US-owned sugar properties in 1906, represented in Table 3.1, places it roughly around 12-15 percent of the industry’s production capacity. The share of US-owned production capacity in the establishment-level database is 16.5 percent. Allowing for a considerable margin of error, these two estimates are roughly consistent.

Figure 3.1



Second, the timing of the second wave of expansion is placed before the sugar price boom of the First World War. Pronounced fluctuations make it difficult to discern trends with precision, but the acceleration after 1908 was certainly under way by 1913, which precedes. The sharp rise in the sugar price in early August 1914, which occurred shortly after Russia, Germany, France and the UK declared war.¹⁵ High wartime prices cannot have initiated the wave.

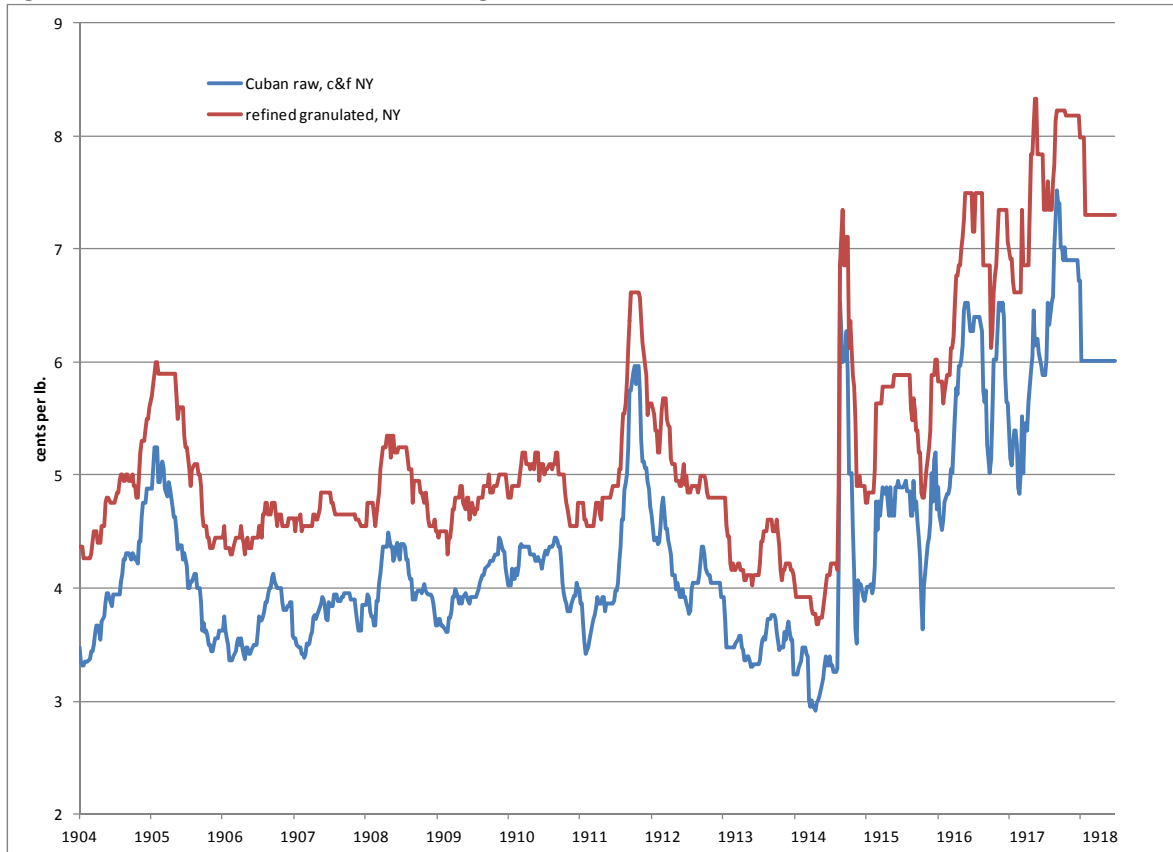
New Mill Construction and Acquisition

The entrepreneurial inputs needed to build a new mill in virgin or undeveloped land required greater knowledge of local conditions than those to improve and expand an existing mill. Domestic entrepreneurs, with more local knowledge and better social connections, may have had an advantage over foreign firms. When investors acquired an existing mill, even if the new owners expanded its capacity, there were fewer unknowns. The fertility of the local soils

¹⁵ The UK, as a major importer of German beet sugar, anticipated shortages of sugar from an interruption of its trade with German, and moved defensively to buy up sugar stocks from other sugar suppliers. Bernhardt, Joshua, *Government Control of the Sugar Industry in the United States* (New York: Macmillan, 1920); and UK Report of the Sugar Commission, [1919]

was known. Local sugarcane growers and field administrators, with whom mill owners contracted, were familiar with cane supply contracts and had experience hiring seasonal field labor and supervising the harvest.

Figure 3.2. Price of Raw and Refined Sugar, c&f New York, 1904-1918



A local entrepreneurial advantage for new mill construction is supported by Oscar Pino-Santos, who finds that most new mills of this period were founded by Cuban entrepreneurs, and most mills acquired by North Americans were purchased from domestic owners, rather than built *de novo*.¹⁶ My estimates support his finding. Table 3.3 displays the number of mills built *de novo* and the number of existing mills acquired by each major nationality group for three-year intervals from 1899 to 1928. North Americans acquired more mills than they built *de novo*; although, the difference was not great until after 1914. Before 1914, the ratio of acquisitions-to-*de novo* mills was 11:14. After 1914, to 1922, it was almost 4 to 1. It remained similarly high

¹⁶ Pino-Santos, Oscar, *Asalto a Cuba por la oligarquía financiera yanquí* (Casa de las Américas, 1973), pp. 42-49, 93-95.

until the Cuban government prohibited any further new mill construction in 1926. Table 3.4, which shows the additions to capacity at *de novo* mills and existing mills, shows that, before 1914, *de novo* mills built by US owners tended to be larger, but that difference vanishes after 1914, as Cuban entrepreneurs came to dominate in the construction of new mills. After 1920, expansion of capacity at existing mills tended to be concentrated among US-owned mills, but not before. Explaining the post-1921 pattern is beyond the scope of this paper.

Corroborating evidence that the second wave preceded the wartime rise in the sugar price may be found in the timing of a new mill construction boom, which took off in 1914. Between 1899 and 1913, only 16 new mills were built, an average of slightly more than one per year; but from 1914 to 1921, 47 new mills were erected, almost 6 per year. Of these, nine of these construction projects had been announced and under construction before August 1914.¹⁹ As seen in Tables 3.3 and 3.4, most of the new mills between 1914 and 1919 were built by domestic firms, about 75 percent. The rate of new construction slowed after the 1919, but from 1914 to 1926, when the Cuban government prohibited construction of any further new mills, new mill construction was dominated by domestic, rather than foreign, entrepreneurs.

North American acquisitions of Cuban sugar mills accelerated around the same time. Historians often portray the Cuban sellers as in financial distress and forced to sell and imply that only North Americans were able to finance the purchase of a mill.²⁰ The ownership data show, to the contrary, that there was quite an active market in sugar properties, and most parties on either side of the transaction were domestic owners. As shown in Table 3.5, before 1916 about 85 percent of the sellers and 75 percent of the buyers were domestic. The number of mills changing from domestic to US hands, however, rose significantly after 1915. As we see below, the number of North American buyers that were large corporate buyers also increased around this time.

¹⁹ Reports in the *Louisiana Planter and Sugar Manufacturer*, which followed all new mill projects, and even reported rumors of projects, confirm that surveys and plans for all 9 were initiated in 1913 or before, and they were under construction when the war broke out.

²⁰ Ayala, *American Sugar Kingdom*, pp. 78-79.

Table 3.3. De Novo Construction and Acquisition of Sugar Mills by Nationality of Ownership

	Cuban		Spanish		US		Canadian		French		English		Other		Total		Total
	de novo	acquisitions	de novo	acquisitions	de novo	acquisitions	de novo	acquisitions	de novo	acquisitions	de novo	acquisitions	de novo	acquisitions	de novo	Acquisitions	All
1899-01	2	3	0	6	0	0	0	0	0	0	0	0	0	0	2	9	11
1902-04	0	4	0	12	4	2	0	0	0	1	0	2	0	0	4	21	25
1905-07	4	11	2	10	2	6	0	0	0	1	0	0	0	0	8	28	36
1908-10	1	8	0	10	2	2	0	0	0	0	0	0	0	0	3	20	23
1911-13	1	4	1	7	3	4	0	0	0	0	0	0	1	0	6	15	21
1914-16	13	10	2	5	4	24	0	0	1	0	0	1	0	1	20	41	61
1917-19	16	23	3	6	6	11	0	0	0	1	0	0	0	1	25	42	67
1920-22	9	26	0	6	3	14	0	3	0	0	0	0	0	0	12	49	61
1923-25	4	17	0	0	1	19	0	3	0	0	0	1	0	0	5	40	45
1926-28	1	17	0	0	0	4	0	2	0	0	0	0	0	0	1	23	24
1929-31	0	5	0	3	0	10	0	1	0	0	0	0	0	0	0	19	19

Table 3.4. Additions to Annual Grinding Capacity from De Novo and Existing Mills by Nationality
 (all figures are percent, except last column)

Year	Cuban			Spanish			US			other			Total		Total
	de novo	existing	total	de novo	existing	total	de novo	existing	total	de novo	existing	total	de novo	existing	
Millions of bags															
1902-04	0.7	16.3	17.0	-	10.2	10.2	4.0	2.9	6.9	-	3.3	3.3	4.7	32.7	37.3
1905-07	0.8	10.2	11.0	0.5	7.8	8.2	3.9	2.3	6.2	-	2.3	2.3	5.2	22.6	27.7
1908-10	0.8	10.0	10.8	-	6.9	6.9	2.3	9.0	11.3	-	1.1	1.1	3.1	26.9	30.0
1911-13	-	15.0	15.0	-	14.9	14.9	6.6	6.7	13.3	0.3	3.5	3.8	6.9	40.0	46.9
1914-16	14.3	4.2	18.5	2.8	10.0	12.8	5.3	11.1	16.3	0.2	0.7	0.9	22.5	26.0	48.5
1917-19	17.7	26.0	43.8	5.3	8.9	14.2	10.7	23.3	34.0	-	3.1	3.1	33.8	61.4	95.1
1920-22	10.5	13.6	24.1	-	8.3	8.3	8.1	22.0	30.1	-	2.4	2.4	18.5	46.4	64.9
1923-25	6.8	14.1	20.9	-	3.3	3.3	2.7	23.1	25.7	-	3.4	3.4	9.5	43.9	53.3
1926-28	3.0	18.9	21.9	-	1.8	1.8	-	57.9	57.9	-	3.4	3.4	3.0	82.1	85.1
Total	54.7	128.3	183.0	8.6	72.0	80.6	43.4	158.4	201.8	0.5	23.2	23.7	107.2	381.9	489.1

**Table 3. 5. Transfers of Mills Paired by Nationality of Buyer and Seller
Transfers 1905-1915**

Buyer:	Cuban	Spanish	French	other Eur.	English	Canad ian	US	Total
Seller:								
Cuban	35	10	1	-	2	-	6	54
Spanish	6	20	-	-	-	-	3	29
French	-	1	-	-	-	-	1	2
other Eur.	-	-	-	-	-	-	1	1
English	-	1	-	-	-	-	3	4
Canadian	-	-	-	-	-	-	-	0
US	2	1	-	-	-	-	4	7
Total	43	33	1	0	2	0	18	97

Transfers 1916-1921

Buyer:	Cuban	Spanish	French	other Eur.	English	Canad ian	US	Total
Seller:								
Cuban	29	9	1	1	-	-	16	56
Spanish	6	5	-	-	-	-	15	26
French	2	-	-	-	-	-	1	3
other Eur.	1	-	-	-	-	-	-	1
English	-	-	-	-	-	-	1	1
Canadian	-	-	-	-	-	-	-	0
US	5	-	-	-	-	-	8	13
Total	43	14	1	1	0	0	41	100

The Second Investment Wave

The timing of the investment and construction boom, which began sometime between 1909 and 1913, therefore, requires another explanation besides the wartime price shock. The trade press reveals a growing optimism about the future competitiveness of the Cuban sugar industry. As the country left behind the tragedies of the war of independence and took advantage of its new preferential access to the market for sugar in the United States, several factors came together to make the contemporary outlook more bullish.

First, the rapid growth of consumption in the US market combined with the slow expansion and perceived limitations of potential competitors. A sugar engineer writing for *Cuba Magazine* in 1911 paints a picture of a rosy outlook for future sugar market conditions. The rate of increase in sugar consumption in the United States averaged 5 percent per year, total consumption doubling every 14 years at this rate. The author explains the slow growth of beet sugar in the US as a consequence of “an artificial production, never having been able to meet the

competition of cane sugar in any market except when protected by high tariffs.” Cane sugar production in Puerto Rico and Hawaii, he predicted “have almost reached their possible limit of production.”²² Cuba had cost competitiveness and abundant good land. Growing as fast as it was, the opportunities for Cuba in the US market seemed limited only by the availability of “good lands suitable for cane” as long as they were “well located as to freight rates.”

Second was a reduction in costs. A revolution in the sugar manufacturing technology in Cuba had emerged in the late 1880s and 1890s, which introduced major changes in the size and sophistication of the processes and equipment employed at the state-of-the-art mills and had reduced the cost of production per unit substantially. The new technology was highly capital-intensive, compared with the technology used in sugar estates in Cuba before the 1880s. The new modern mills operated on a scale several times larger than the old *ingenios* so that, when a single new central factory was installed in a district, it tended to absorb the cane zones of the surrounding former sugar estates. These revolutionary technological and social changes were in the process of geographical diffusion throughout the island when war broke out in 1895. When the hostilities ended and recovery took hold, geographical diffusion was revived and continued to sweep across the island.

A third factor was substantial railroad construction, which opened up to sugar production vast extensions of land that previously had not been “well located as to freight rates.” By far the most important development was the construction of the Cuba Railroad, launched in 1900, led by railroad tycoon, Sir William Van Horne, builder of the Canadian-Pacific Railway. Before the Cuba Railroad, the eastern part of the island had no rail network. The Cuba Railroad opened a vast interior, which had been commercially undeveloped, stretching between Oriente and the city of Santa Clara, including almost the entire province of Puerto Príncipe (Camagüey).²⁴

Anywhere the new rail lines crossed districts with good cane soils, they opened up new opportunities for building sugar mills. Between 1905 and 1914, two-thirds of the mills built *de novo* were on lands that had been recently opened for development by new railroad construction. Two were built and operated by the Cuba Co., parent of the Cuba Railroad Co.²⁶ Three others were North American or partially North American-owned mills, built on branches of the Cuba

²² An Engineer, “A New Sugar Estate in Cuba,” *Cuba Magazine* 3.4 (Dec. 1911): 218-19. See also “El horizonte azucarero mundial,” *Mundo Azucarero* 1.12 (July 1914): 355-56.

²⁴ Jenks, pp. 150-52; Zanetti and García, pp. 211-34.

²⁶ These were Centrales Jatibonico (1907) and the Jobabo (1912).

Railroad. Five others were built by syndicates of domestic investors, consisting typically of a combination of local wealth holders and residents of Havana.²⁹ After August 1914, the wartime sugar price boom gave added stimulus to the construction of new mills. Even so, most mills built between 1915 and 1920 followed a similar pattern—three-quarters, in fact, were situated in lands opened up by recent railroad construction.³⁰

Entry of North American Corporations

Entry of a few North American corporations during the first wave of investment, following the war of independence, introduced some important innovations from the United States into the sugar industry. Essentially, they demonstrated advantages to the corporate finance of sugar enterprises. Industrial corporate finance was a fairly new practice in the United States. While for decades there had been large market for the securities of railroads and utilities, emergence of a significant demand for industrial securities was recent.³³ It is, therefore, not surprising that corporate finance of sugar enterprises entered at a critical moment when the capital markets of the two countries became more integrated, and the opportunities for investment from the United States into Cuba more attractive.

Oscar Zanetti describes the corporation as introducing “new and important features into the physiognomy of the [Cuban] sugar sector”—namely, that it introduced a practice that facilitated the consolidation of multiple mills under a single owner and management.³⁴ The initial aggregate effect was small. By 1906, American companies owned about 15 percent of the industrial capacity in the sector, but about 7 percent of these American companies were traditional dynasties, owned by families that had roots both in Cuba and the United States,

²⁹ For example, the Ciego de Avila Sug. Co. was “composed of prominent citizens of Havana, including Orestes Ferrara, Pelayo García, Isidro Fontainais, H. J. de Mesa, Eustachio Balanzalategui [sic], Jose Miguel Tarafa, prominent citizens of Ciego de Avila, incl. Vicente Pérez. *Louisiana Planter*, 55.7 (Aug. 14, 1915): 104; 50.13 (Mar. 29, 1913): 205.

³⁰ Cf. Zanetti & García, on Central Hershey and the developments in the plains of Camagüey.

³³ Larry Neal and Lance Davis, “Why Did Finance Capitalism and the Second Industrial Revolution Arise in the 1890s?” in Naomi Lamoreaux and Kenneth Sokoloff, eds., *Financing Innovation in the United States, 1870 to the Present* (MIT Press, 2007), pp. 139-42. See also O’Sullivan, Mary, “Expansion of the US Stock Market, 1885-1930: Historical Facts and Theoretical Fashions,” *Enterprise and Society*, 8.3 (2007): 489-542; Davis, Lance, “Capital Markets and Industrial Concentration: The US and UK, a Comparative Study,” *Economic History Review* 19.2 (1966): 255-72.

³⁵ The Narcisa was owned by the North American Sugar Co., founded by the Fowler Brothers, who were British citizens, Cuban-born sons of a merchant family whose patriarch had migrated to Cuba in the mid-nineteenth century from Canada to build a leading merchant house in Cienfuegos. The Fowlers were the principal owners of the corporation and managed the estate. Other shareholders included English and Cuban-born residents of New York City.

mostly acquired before the war. Only 8 percent was owned by three corporations, which had acquired or built and consolidated 10 of the 170, or so, active sugar mills on the island.

These corporate financiers, nevertheless, introduced new, more effective ways of financing the construction of the new large-scale sugar factories. A few financier-entrepreneurs demonstrated how equity finance could be used to raise the large sums of money necessary to build a state-of-the-art mill *de novo*. In 1899, Robert B. Hawley and associates raised the finance to build the Central Chaparra, celebrated internationally as a remarkable engineering feat. Andrew Preston, founder of the United Fruit Co., made a similar investment in 1899 in the Central Boston. By 1907, these model mills, the largest on the island, achieved daily capacities exceeding 2000 bags per day. But neither were they much larger, at that time, than the largest domestic mills, nor was their technology so dramatically different. In 1907, four centrales recognized as having state-of-the-art facilities had capacities of 1600 bags or more, including the Terry family's Central Caracas, the Baró family's Central Conchita, and the Zulueta y Gámiz family's, Álava, and the Fowler Brothers' Narcisa.³⁵ Local entrepreneurs were thus able to finance rival modern facilities comparable to those of deep-pocketed Wall Street investors.

What distinguished the investments of Hawley and Preston, in regard to their finance, however, was they had built these two state-of-the-art machinery facilities, with the latest in engineering designs and the largest known economies of scale to date *as start-ups*—that is, all at once.³⁶ The large scales of rival domestic mills had been financed by a decade or more of retained earnings plowed back into family enterprises, possibly augmented by a mortgage.

Consolidation of Cuban sugar mills has been associated with the great merger movement of 1897-1903 in the United States.³⁷ The merger wave did, in fact, spill over into Cuba in the tobacco industry. In 1899, a New York syndicate acquired and temporarily controlled 90 percent

³⁵ The Narcisa was owned by the North American Sugar Co., founded by the Fowler Brothers, who were British citizens, Cuban-born sons of a merchant family whose patriarch had migrated to Cuba in the mid-nineteenth century from Canada to build a leading merchant house in Cienfuegos. The Fowlers were the principal owners of the corporation and managed the estate. Other shareholders included English and Cuban-born residents of New York City.

³⁶ "All at once" generally means "in its first three years," since it typically took about three years to build a new mill up to its intended capacity.

³⁷ Nelson, Ralph Lowell, "The Merger Movement in Manufacturing and Mining, 1895-1907," Ph.D. diss. Columbia University, 1955; Lamoreaux, Naomi, *The Great Merger Movement in American Business, 1895-1904* (Cambridge University Press, 1988).

of the Cuban export trade in cigars.³⁸ Yet, in the sugar industry, consolidation was limited and did not create any major industrial concentrations until after 1914. (See Table 3.6). By 1907, the United Fruit Co. had built two large state-of-the-art sugar factories. Hawley had joined with members of the New York sugar brokerage, B. H. Howell & Son, to form a holding company, the Cuban-American Sugar Company, which acquired the eight mills by 1910. Cuban-American stock was traded over the counter in its early years; by 1914 its stock was trading publicly on the New York Stock Exchange; it was the first Cuban sugar company to be listed. The only other foreign company with three or more mills in 1907 was the Guantánamo Sugar Company, founded in 1905 to consolidate three estates. James H. Post, a principal of B.H. Howell & Son, and President of the National Sugar Refining Co. became the president.

Many wealthy Cubans invested abroad in the United States and Europe. Jenks cites estimates of Antonio S. de Bustamante that placed Cuban holdings of foreign securities in 1903 at \$42 million, \$30 million in US bonds and other securities, and \$12 million in French, British, and German securities. To the extent that they invested in the securities of North American corporations operating in Cuba, these investments would mistakenly appear as foreign investments.³⁹ It is impossible to say how large Cuban investments in the stock of the North American corporations was, but the number of wealthholders who were knowledgeable of the industry suggests it was certainly not insignificant. Promoters of new ventures often tried to enlist Cuban subscribers. Manuel Rionda, who promoted the Central Manatí, founded in 1913 attempted to attract as much Cuban equity capital as possible in the initial offering.⁴⁰ The Punta Alegre Sugar Company merged in 1916 with the Compañía Azucarera Vertientes, which had been founded a year or so earlier by a Cuban investor syndicate, exchanged their shares of stock in the Compañía Azucarera Vertientes for shares of the Punta Alegre Sugar Company.

³⁸ The Cuban market share of the American Cigar Co. was quickly eroded by domestic competition to about 50 percent by 1906. Jenks, pp. 158-60. S.a. J. Rivero Muñíz, *Tabaco: su historia en Cuba*. [See Ch3 Foreign Direct Investment 28-4.docx]

³⁹ In some cases, companies that were incorporated in the United States by American founders came subsequently to be majority owned and controlled by Cuban shareholders. Jenks cites as examples the Banco Nacional de Cuba, which was founded in 1901 by Samuel Jarvis and R.R. Conklin of New York City but came to be controlled by an immigrant from Galicia, Spain, José (“Pote”) López Rodríguez, and the Havana Electric Railway, which was seized in 1907 on behalf of its Cuban shareholders’ interests, who selected Frank Steinhart, at that time the American-consul-general in Havana. These two immigrants to Cuba were among the most prominent businessmen in Cuba in these years. Jenks, pp. 165-66.

⁴⁰ McAvoy, *Sugar Baron*, [PAGES].

Table 3.6. Shares of Total Sugar Grinding Capacity Owned by Foreign and Transnational Groups

	Transnational groups			Other vertical Int.			Vertically integrated with refiners							bank-owned or controlled			
	Atkins & assoc.	Rionda group	Fowler Bros.	Unit. Fruit Co.	Cuba Co.	Hershey	Cuban-Amer. Sugar	Guan-tanamo	Cuban-Domin-ican	Antilla	Punta Alegre	Am. Sugar Ref.	Warner Sugar Ref.	Cuba Cane Sugar	Natl. City Bank	Royal Bank Can.	Total
1901	2.5	0.2	1.5	-	-	-	-	-	-	-	-	-	-	-	-	-	4.2
1904	1.4	1.2	3.0	1.5	-	-	4.0	-	-	-	-	-	-	-	-	-	11.1
1907	1.1	1.2	3.0	3.0	0.7	-	5.4	1.7	-	-	-	-	-	-	-	-	16.2
1910	1.0	1.5	3.4	6.1	0.7	-	6.8	2.0	-	-	-	-	-	-	-	-	21.5
1913	0.9	3.8	3.2	4.6	2.1	-	6.9	1.5	-	-	-	-	-	-	-	-	23.0
1916	0.9	4.4	2.6	4.2	2.1	0.1	6.8	1.3	0.1	-	0.2	0.1	-	14.0	-	-	37.0
1919	0.7	4.9	2.5	2.7	1.6	0.2	5.9	1.1	2.1	-	1.7	0.4	-	14.4	-	-	38.3
1922	0.4	4.4	2.3	3.0	1.9	0.9	5.8	1.2	3.2	1.5	1.9	0.5	1.6	13.2	-	1.2	42.9
1925	0.4	5.4	2.4	2.9	2.0	0.9	5.3	1.2	3.5	-	5.1	0.4	1.5	12.3	4.9	3.1	51.2
1928	0.4	5.7	2.3	3.0	2.0	1.5	5.2	1.1	3.8	-	6.2	0.5	-	12.4	6.0	3.7	53.9

Source: see Data Appendix

Corporate Consolidation

The industrial and corporate landscape changed unmistakably after August 1914. The biggest change came with the organization of the Cuba Cane Sugar Corporation. Incorporated on December 31, 1915, in a few short months it acquired 17 sugar estates in Cuba in the winter of 1916 and two more before the end of 1920. Capitalized at \$50 million, by the end of its first active crop season in 1916 it represented 14 percent of the grinding capacity of the island. The next largest company, which was the Cuban-American, had 7 percent. The main promoter of Cuba Cane was Manuel Rionda, who for several years had contemplated the idea of a great consolidation in Cuban sugar.

Rionda's intention was to build a company that could stand up to the bargaining power of the sugar trust, an oligopsony of three big refiners, American Sugar Refining, Federal Sugar Refining, and Arbuckles. Complaints about the trust in Cuba had to do with the seasonality of supplies against the continuity of refiners' demands. During the peak grinding season in Cuba between January and May, a glut on the market drove prices down. In the summer months, when stocks diminished refiners tended to bid up the price of sugar. Rionda identified the problem as insufficient storage. Those who could finance it built warehouses at mill sites or at ports where they stored the sugar until prices were more favorable. However, many Cuban producers were either in debt and obliged to sell their sugar as soon as it was produced to meet obligations, or were constrained by a shortage of storage facilities and high storage prices. Rionda believed a large combination of mills, represented by his brokerage, Czarnikow-Rionda, would be able to make the necessary investments and establish bargaining power vis-à-vis the big three refiners.⁴¹

The sharp rise in the price of sugar in August 1914 gave him the opportunity—the potential windfall profits could attract investors to subscribe.⁴² Cuba Cane's initial public offering, like other industrial securities at this time, was seen as a high-risk, but potentially high return alternative to railway and public utilities securities. It was underwritten by an investment banker syndicate led by Eugene Meyer Jr. and Company, which included Guaranty Trust and J.P. Morgan & Co.⁴³ Its stock was traded on the New York Curb market, which, as Larry Neal and

⁴¹ McAvoy, Muriel, *Sugar Baron: Manuel Rionda and the Fortunes of Pre-Castro Cuba* (Gainesville, University of Florida Press, 2003), pp. 81-103. [See version 30-3 dated 2/21, p. 35, on Manatí and Vertientes, and n. 19 on Conklin and López Rodríguez and Banco Nacional. NB Centrales Vertientes and Florida built on land opened recently by Cuba Railroad]

⁴² McAvoy, *Ibid.*, pp. 81-82.

⁴³ McAvoy, *Ibid.* p. 85; *Wall Street Journal*, Mar. 17, 1916; Apr. 3, 1916; *New York Times* Mar. 16, 1916.

Lance Davis show, specialized in securities that could not list on the New York Stock Exchange, often securities in an earlier stage of their evolution, comparable today to later stage venture capital or “mezzanine” finance.⁴⁴ It never paid dividends on common stock and went bankrupt in 1930. At its peak in 1920, Cuba Cane and the Rionda group together owned about 20 percent of the industrial capacity in the island, and Czarnikow-Rionda handled about 60 percent of the sales of Cuban raw sugar in the United States.

Collaboration, Sales and Serial Entrepreneurs

Foreign entry of American financier-entrepreneurs in 1899 seems to have had a significant qualitative influence on the industry. Not only methods of financing, but also methods of organizing, large-scale sugar enterprises spread quickly, and leading Cuban sugar producers also adopted them. It would be misleading, however, to say that the new practices of finance and organization were introduced by American entrepreneurs alone. The initial ventures by Hawley, Preston and Post in each case involved collaborations with leading Cuban entrepreneurs. After 1914, a majority of *de novo* mills were built by domestic entrepreneurs, many of which were sold to North American companies. Some domestic entrepreneurs, it appears, specialized as serial entrepreneurs, who used proceeds from sales to a North American corporation to fund a subsequent venture.

As one example, when Robert Hawley founded the Central Chaparra in 1899, it was in collaboration with a General Mario García Menocal, a Cuban Cornell-trained engineer, who while serving in the Liberation Army discovered a stretch of undeveloped land at Puerto Padre, which later became the site of the Chaparra (1901) and the Delicias (1910). Menocal designed and supervised the installation of both mills. When the Chaparra was merged with other Hawley-Howell-Post properties to form the Cuban-American Sugar Company in 1906, Menocal became their General Manager and served on the Board of Directors of the Cuban-American Sugar company until he was elected President of Cuba in 1912. Ernesto A. Longa, who built the Central Mercedita, similarly continued as its General Manager after it merged with the Cuban-American. Juan McCulloch, a Cuban-born son of an American immigrant, continued as General Manager of the Central Unidad after it was acquired by the Cuban-American in 1906. And Longa and McCulloch served as well on the Board of Directors. The construction of Central

⁴⁴ Neal and Davis, “Why Did Finance Capitalism,” pp. 139-42; O’Sullivan, “Expansion of the US Stock Market.”

Boston by the United Fruit Co., and the reorganization of the Guantanamo Sugar Co. were also products of collaborations with local entrepreneurs.

If Cuban owners were in as bad a shape financially as many historians suggest, one would not expect to see them reappear as owners of another sugar mill shortly after selling one to an American company. What I observe is that the growing demand for Cuban sugar estates after 1914 gave many Cuban *hacendados* an opportunity to capitalize on illiquid investments and use the proceeds either to diversify assets or to reinvest in sugar. In the case of the Cuba Cane Sugar Corporation, Rionda acquired the company's original 17 estates by purchasing them from fourteen different persons or companies. Only five of these former sugar estate owners, who sold to Cuba Cane, did not reemerge afterward as an owner of another mill within a few years. Most of Cuba Cane's purchases were acquired from leading Cuban entrepreneurs who continued to be successful. Some were clients of Manuel Rionda. Muriel McAvoy observes that a number of his clients drove hard bargains, and Rionda ended up paying more than he had intended.⁴⁹

Some of the sellers were serial entrepreneurs—entrepreneurs who had a habit of building an enterprise, selling it, then building another.⁵⁰ After selling his Central Mercedes to Cuba Cane in 1916, Miguel Arango, founded another mill, Central Violeta, which he sold to Cuba Cane in 1919. Colonel José M. Tarafa sold two estates, Centrales Jagüeyal and Morón, to Cuba Cane for a total of \$8.35 million. He continued to own four other successful sugar estates, which he had founded, plus a fifth estate owned in partnership with the Rionda family. Furthermore, after the sale was completed, he announced he had raised sufficient financing to begin construction on a major new railroad development he had been planning for years, the Cuba Northern Railroad Co., of which he was the entrepreneur and principal owner.

Another serial entrepreneur was Victor Mendoza, who sold the family estate, Central Santa Gertrudis, to the Cuba Cane Sugar Corporation in 1916 for \$2.3 million and then founded the Central Cunagua in 1918. His firm, Victor G. Mendoza & Co., a leading Havana engineering consulting firm, designed and installed the factory, known as one of the best performing mills

⁴⁹ McAvoy, *Sugar Baron: Manuel Rionda and the Fortunes of Pre-Castro Cuba* (Gainesville, University of Florida Press, 2003), pp. [PAGES].

⁵⁰ This was likely fairly common as well before the war of independence. One of the earlier cases I have identified is Cirilo González, who acquired the Central Tinguaro during the war of independence from well-known nineteenth-century Matanzas *hacendado* Carlos de la Rosa, but sold it to the Cuban-American Sugar Company in 1899. In the same year, González, who had acquired the small Ingenio San José, reorganized it into the Central Washington, which he developed into a leading central factory and sold it in 1911 to the Rionda family. *Jiménez*, p. ??

and fourth largest mill in the island. In 1920, he sold this mill to the American Sugar Refining Company for \$14 million. Then in 1921, when American Sugar Refining decided to build a second mill, they hired Victor Mendoza & Co. to design and install it, the Central Jaronú—and equally impressive engineering achievement, it became the largest mill in the island.

No one exhibited the qualities of serial entrepreneurship more than Mario García Menocal, who was the “moving spirit”, as the contemporary press noted, behind the founding of the Central Chaparra. He was the one who had discovered the uniquely advantageous site on which it was built, and designed and supervised the factory, which was considered at the time to be an extraordinary engineering feat, superior to anything to date anywhere in the world. He then went on to develop the Central Delicias while serving as General Manager of the Central Chaparra Sugar Company. He resigned from his position with the Cuban-American Sugar Company in 1912, when he became President of Cuba. While he served as President, he founded the Central Palma in 1917, which he lost in the financial crisis of 1921. Then in 1925, he founded the Central Santa Marta in Camagüey. Completed in 1927, it was the last *de novo* mill to be built before the Cuban government prohibited the construction of new mills in 1926.

If the techniques for financing new large-scale factories had been introduced introduced by foreigners in 1899, Cuban entrepreneurs led in their application by the First World War.

Prices and Exit Strategies

Some historians argue that the benefits going to Cuban sellers of sugar estates were negligible because North American corporations bought up sugar properties after the war of independence at fire-sale prices. We observe that most North American purchases came after 1914, when the price of sugar boomed and the demand for sugar properties had risen.⁵¹ Luís V. de Abad, in an article for *Cuba Review* in 1921, observed how the cost of building a new sugar factory rose from just before to the end of the First World War. Previous estimates for 1901 and 1911 placed the estimate for building a mill with the latest machinery, sugarcane plantations, railroads, etc., at about \$5 to \$6 per bag of annual capacity.⁵² De Abad observed that by 1914 the approximate cost had risen to \$9.50 per bag of annual capacity for a “modern” mill, an increase in cost of about 50 percent. For anyone seeking to acquire a mill, acquisition of an existing mill

⁵¹ Speck, “Prosperity,” pp. 68-69; McAvoy, pp. 81-85; *Louisiana Planter* 56.6 (Feb. 5, 1916), 88; [Jimenez., Guillermo, *Las empresas de Cuba, 1958* (Miami: Ediciones Universales, 2000).]

⁵² Hugh Kelly, a mill owner and longtime agent for one of the main sugar machinery manufacturers in the island, in 1901 estimated the cost of a mill equipped with modern machinery at about \$5 to \$6 per bag. An engineer writing for *Cuba Magazine* in 1911 gave a similar estimate for that year.

and *de novo* construction were substitutes; therefore, one would expect the cost of existing mills to move with the cost of mill construction. De Abad observes that as the war progressed the cost of erecting a well-equipped mill was driven even higher, to \$22.50 per bag by 1920. Then it fell, after the financial crisis of 1921, to about \$15 per bag.⁵³

There are many reasons why owners of existing mills might want to sell. Whether or not they intended to exit the industry, many domestic mill owners may have foreseen the moment as offering a good exit strategy to sell out to American companies eager for a piece of the action—an unusual opportunity to capitalize on illiquid assets. Manuel Rionda's sudden entry in early 1916 was instrumental in bidding up prices in the market for sugar properties. Word got around quickly that he was willing to pay top dollar. In a few short months at the beginning of 1916, Cuba Cane acquired 14 percent of the industrial capacity in the sugar industry. This must certainly have driven the market price for sugar properties up significantly.⁵⁴

Cuban banker, José López Rodríguez, may have obtained some inside information. In 1915, he purchased Centrales Conchita and Asunción from Juan Pedro Baró for \$3.5 million, which he sold following year and to Cuba Cane for \$6.3 million. Prices received by sellers for the 17 mills sold to Cuba Cane in 1916 averaged \$14.5 per bag of annual capacity. Only one received less than \$10 per bag of capacity, and the highest price received was \$18 per bag. Some of the shareholders of Cuba Cane accused Rionda of overpaying for some of the properties.

Even so the price of sugar properties continued to rise. Arango's sale of his second mill to Cuba Cane in 1919, and the Mendozas' sale of their Central Cunagua to the American Sugar Refining Company in 1920 both went for hefty prices of about \$23 per bag. The Gómez Mena brothers sold two their high-performance mills to Warner Sugar Refining Company in May 1920 while the price of sugar was soaring, just before the 1921 financial crisis hit, must have gone for a similar price. As far as exit strategies go, Arango, the Mendozas and the Gómez Menas timed it well. The Gómez Menas repurchased their two mills after the crisis of 1921, presumably for a nice profit on the two transactions.

⁵³ De Abad, Luis V., "Capital Invested in the Cuban Sugar Industry." *Cuba Review* 20.1 (Dec. 1921): 26-27; An Engineer, "'A New Sugar Estate in Cuba," *Cuba Magazine* 3.4 (Dec. 1911): 218-19; Kelly, Hugh, "The Case of Cuba Before the People of the United States": Extracts from an address of Hugh Kelly at the complementary dinner tendered to the Cuban Economic Commission at the University Club, New York, Nov. 20, 1901. New York: Andreini, 1901.

⁵⁴ McAvoy, pp. 81-103.

Vertical Integration

Some historians have argued that growing vertical integration represented a collusive effort to monopsonize the Cuban sugar industry.⁵⁵ However, not all vertically integrated enterprises were aligned with refiner or user interests. The earliest North American corporate investments were linked to refiners. Post and Howell, who were principal owners of both the Cuban-American and the Guantánamo, were officers of the New York refining company, the National Sugar Refining Company, which became the usual outlet, or buyer, of their raw sugar. Other refiners acquired sugar properties in Cuba during the World War. Warner Sugar Refining Company purchased a small mill in 1915, the Central Palmarito, and some adjacent land on which built a more up-to-date mill in 1918, the Central Miranda, which was eventually expanded to absorb the cane zone of the outmoded Palmarito (which was retired in 1926). In 1920, it acquired the Centrales Amistad and Gómez Mena from Andrés Gómez Mena, two of the most technically advanced mills, owned and managed by one of the leading Cuban sugar entrepreneurs on the island. The American Sugar Refining Company acquired its first mill in Cuba in 1919, the Central Cunagua, which at the time of the purchase was the fourth largest mill in Cuba, built in 1917 by one of the leading Cuban sugar engineering companies, Victor G. Mendoza y Cía. By the end of the war, vertically integrated refiner interests owned about 11 percent of the industry's grinding capacity.

Other sugar users also made acquisitions. The chocolatier, Milton Hershey, acquired the small Ingenio San Juan Bautista, where he, in 1918, built a large mill, Central Hershey, which he later converted into a refinery to furnish sugar for his chocolate operations in Hershey, PA.

However, brokers who integrated backward, for example, benefited more from higher raw sugar prices. Manuel Rionda, whose New York brokerage house, Czarnikow-Rionda, became the leading agent for Cuban producers selling sugar to eastern seaboard refiners, was the most important broker to invest in sugar estates at this time. The Rionda family, which had founded the Central Tuinucú in 1889, built two new mills in 1901 and 1913, and acquired three others in 1908, 1911 and 1919, one in partnership Tarafa. The Rionda dynasty owned almost 5 percent of the industrial capacity. Another vertically integrated company that benefited more from high raw sugar prices was the Cuba Company, parent company of the Cuba Railroad Company, which built and operated two mills in remote areas along the central railroad, intended

⁵⁵ Ayala, *American Sugar Kingdom*.

to generate traffic, demonstrate profitability, and attract other entrepreneurs to build mills in the interior along the railroad line. Neither side acquired enough capacity to dominate the market.

Conclusion

The findings revise the conventional narrative in ways that elevate the significance of the local entrepreneur. The recovery following the war of independence was led not by foreign but by domestic entrepreneurship. The second wave of investment was stimulated initially by real long-term local opportunities created by new technology and the opening up of new lands by railroad construction. A mill construction boon led by domestic entrepreneurs may, in part, have been stimulated by the rise of the price of sugar during the First World War, but certainly the price boom explains only part of it.

The foreign corporate landscape began to change after 1914. The price boom during World War I was important for encouraging greater entry of North American corporations for a variety of strategic reasons. Domestic entrepreneurs who built many new mills or developed existing ones after 1914 found it advantageous to sell their sugar properties to Cuba Cane and other entering North American corporations, which were more likely to acquire than to build *de novo*. Foreign corporations' enthusiasm for entry into the market during the period of high wartime prices drove up the price of sugar properties. Many Cuban owners and entrepreneurs took advantage of the booming market as an attractive "exit strategy" or as an opportunity to capitalize on an existing enterprise in order to invest in another.