SUCROSE, AND YET SO FAR: COMMODITY DEPENDENCE IN THE BRITISH WEST INDIES AND THE DANCE OF THE MILLIONS

by

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The Dance of the Millions occurred during the year 1920 when, following the cessation of World War One price controls, the price of sugar increased by 43%. Sugar producers of the British West Indies, a group of 12 islands in the Caribbean Sea, realized incredible profits during the price surge. The price of sugar was unsustainable, however, and decreased by 51% in 1921.

This thesis exploits the fact that some Islands relied heavily on the exportation of sugar while others exported none at all to determine the impact of the Dance of the Millions. Considering the period from 1910-1930 with non-producers as a control group, the price volatility is found to decrease producer imports by 48.2% while not significantly impacting exports. Differences in price levels do not change significantly with sugar producer perhaps having slightly lower prices for subsistence. Government revenue and expenditure for sugar producers decrease by 28.2% and respectively 26.3%. Governments are seen to reduce expenditure with revenue and no significant increase in public debt is found. Finally, producers see total deposits in government-run savings banks decrease by 45.5% even as the price volatility of World War One lead to a concentration of wealth in sugar-producing countries.

Taken together, the Dance of the Millions is seen to be a deeply harmful event for the economies of sugar producers. These results confirm explanations of the resource curse that focus on the negative impacts of price volatility.

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Section 1: Introduction

Speaking before a congressional subcommittee investigating a potential sugar shortage in 1920, Senator Reed Smoot prophesied the harm that would befall producers should the price of sugar rise to 20 cents per pound:

> of all the people who want to prevent that it is the sugar producer. He has got to live; he has got to produce sugar in the future, and he has got to deal with a people who, if they were compelled to pay 20 cents, would never forget it. It would be the most costly money that ever came into the coffers of the sugar-producing interests if such a thing should happen (Committee on Agriculture and Forestry, 1919)

In the case of Cuba, the largest foreign source of sugar for the United States, Smoot's warning proved true. As the price of sugar climbed to as high as 23.57 cents per pound, the people of Cuba celebrated by engaging in lavish spending, a time referred to as the Dance of the Millions (Grogan, 2004). The price, however, was unstable, propped up by speculation from American refiners and loans from American banks (Grogan, 2004). Per Ayala, 1995, when the speculative bubble burst, bank loans that had been issued to growers with the belief that sugar prices would remain elevated could not be repaid. When the dust settled, the vast majority of Cuban sugar plantations were owned by Americans. American banks dominated the Cuban financial landscape, and, in the countryside, “workers were idle and rural shopkeepers went bankrupt” (Ayala, 1995).

But what of the other sugar-producing Caribbean nations? At the time of World War One, the British West Indies had seen a steady decline in geopolitical importance. The rise of Cuba and Puerto Rico as sugar-producing giants had forced the British colonial bloc into the background with many colonies abandoning sugar production altogether (Dippel et al., 2020). Additionally, a higher return of investment available in

other regions of the British Empire impelled investors to abandon pursuing the construction of new plantations meaning that production could only occur within sugar mills that had been constructed previously. The wartime sugar shortage thrust the Caribbean colonies back into the spotlight, giving them the role of feeding a war-torn Europe. While the British West Indies production was small compared to Cuba, the sugar they produced was no less important in the allied war effort.

This paper utilizes data collected from yearly colonial reports between 1910 and 1930, often called the "Blue Books," to determine the effect of the commodity price volatility between 1920 and 1921 on key outcomes for sugar-producing and non-producing islands. These outcomes include the price level, trade, public and personal finance, and demographics. A difference-in-difference research method with ordinary-least-squares regression is utilized. Caribbean islands who exported little sugar are considered a control group while those who produced higher levels of sugar are considered "treated" by the price volatility. The consideration of a continuous variable that captures the level of sugar production between 1905 and 1909 confirms the results for these groups.

The price volatility of the post-war years is found to decrease producer imports by 48.2% while not significantly impacting exports. Differences in price levels do not change significantly with sugar producers perhaps having slightly lower prices for subsistence. Government revenue and expenditure for sugar producers decrease by 28.2% and 26.3% respectively. Governments are seen to reduce expenditure with revenue and no significant increase in public debt is found. Finally, producers see total deposits in government-run savings banks decrease by 45.5% even as the price

volatility of World War One leads to a concentration of wealth in sugar-producing countries.

This thesis will proceed in the following order. Section 1 will present a literature review of commodity dependence and a historical overview of the sugar price shock. Section 2 will describe the data sources used as well as the determination of who is considered a sugar producer and what time the event occupies. Section 3 will discuss prices and form a limited price index for the British West Indies. Section 4 will analyze the impact of the Dance of the Millions on trade. Section 5 will analyze the impact on government finance. Section 6 will discuss the effect on personal finance. Section 7 will briefly discuss demographics and immigration. Finally, section 8 will conclude.

Literature Review

The question of the resource curse, a situation where an abundance of natural resources actually leads to slower economic development, has been studied at length by economists. A country is said to be commodity dependent if commodities make up 60% or more of total exports. Commodity dependent nations occupy a precarious position, at the mercy of international markets. Today, of the countries studied by the United Nations Conference on Trade and Development, 53% were determined to be commodity dependent (UNCTAD, 2021). Developed countries are more likely to have diverse economies that are not commodity dependent while 64% of developing nations rely on the exportation of commodities. Notably, the number of commodity dependent nations has increased over the past 10 years. The impact of commodity dependence on nations is especially important now, given the dramatic fluctuations in commodity

prices that have taken place following the COVID-19 pandemic and the Russian invasion of Ukraine (Ezeaku et al., 2021, Tröster and Küblböck, 2020).

A vast literature exists on the impacts of commodity dependence. Specifically, a body of recent work focuses on the effect of commodity price volatility on dependent nations. Higher commodity prices have been linked with shorter, less deadly conflicts (Bazzi and Blattman, 2014). This is due, in part, to higher commodity prices increasing the opportunity cost of insurgency, as the allure of producing high price commodities outcompetes any benefits from conflict. High commodity price volatility has also been linked with increases in child mortality (Makhlouf et al., 2017, Miller and Urdinola, 2010). Since commodity dependent nations are often also reliant on the importation of food, losses in export revenue translate into a reduced ability to import and worse nutrition.

Price volatility is the main barrier to development for commodity dependent nations. While improvements in commodity terms of trade benefit commodity exporters, these booms are counteracted by the busts of volatility (Cavalcanti et al., 2015, Collier and Goderis, 2008). Volatility is seen to impact growth in several ways. First, during times of high prices, governments invest in costly infrastructure projects that do not yield impressive returns (Deaton, 1999). When prices collapse, these projects must be abandoned, often leading to debt. Further, private consumption is similarly reduced during price busts (Collier and Goderis, 2008). Second, commodity price volatility is associated with a decrease in capital flows to commodity dependent nations, with fluctuating prices increasing uncertainty (Blattman et al., 2015). Third, volatility harms the accumulation of capital, both human and physical (Cavalcanti et al.,

2015). Fourth, due to incentives associated with commodity dependence, such as for oil-dependent countries, autocracy and bad-governance are more likely, exacerbating the impacts of commodity dependence (Karl, 2004).

Several factors can mitigate the negative effects of commodity dependence. Commodity-exporting developed nations do not face the same impacts as less developed nations (Nkurunzia et al., 2017). Good institutions, for instance, play a large role in mitigating the negative impacts of volatility (Collier and Goderis, 2008). Notably, autocratic countries have been found to be impacted more by price volatility than democracies (Makhlouf et al., 2017).

This thesis occupies a unique position in the literature. Rather than study general trends, it utilizes a distinct volatile event to determine the impacts of volatility and their potential links to the resource curse. It utilizes treatment and control groups that are generally homogenous apart from their dependence on sugar. Given that the localities studied are all colonies, administered by the same colonial office, there is little difference in institutions between them. Any other country level differences are controlled for using country fixed effects.

History

The British West Indies were scattered British Colonies with territory in Central America, the Caribbean Sea, the Atlantic Ocean, and South America. All but two of the colonies, British Guiana and British Honduras, were entirely islands. The colonies differed dramatically in terms of geographic size. British Guiana, a colony on the north coast of South America, had a total area of 83,000 square miles. Bermuda, conversely, was east of the United States in the Atlantic Ocean and had a total area of just 22 square

miles (Barclays Bank, 1952). This thesis will only consider the island colonies within the Caribbean, namely: Antigua, The Bahamas, Barbados, Dominica, Grenada, Jamaica, Montserrat, St. Kitt's and Nevis, St. Lucia, St. Vincent, Trinidad and Tobago, and the British Virgin Islands. These colonies are selected in order to maintain homogeneity within the sample.

The British Caribbean territories share a common history as pawns in larger geopolitical games. As Sidney W. Mintz wrote, "Caribbean people have always been entangled with a wider world, for the region has, since 1492, been caught up in skeins of imperial control, spun in Amsterdam, London, Paris, Madrid, and other European and North American centers of world power" (Mintz, 1985). During the period of study, the individual colonies of the British West Indies were strictly under the thumb of the British Colonial Office. Any local representation was purely symbolic with British appointed governors empowered to overrule any local decisions (Concepcion et al., 1944).

The islands conferred great benefits to their colonizers. Winston Churchill, speaking to the West India Company in London admitted that the wealth of the British West Indies had been the start of all the country's colonial exploits (Concepcion et al., 1944). At the same time, the islands that had made Britain rich and their inhabitants who had worked the fields were treated with disdain by those in power. Perhaps most colorfully, is the assertion of one British official who, when speaking in Jamaica, referred to the islands as "dung heaps at the door steps of America" (Concepcion et al., 1944).

British leaders and businesses viewed the British West Indies as a region meant to be exhaustively exploited and attempted to wring as much profit from the colonies as possible with little care for the inhabitants. To extract this profit, the colonies focused on the growing of cash crops later sold on the world market. This focus meant that the islands were trapped exporting sugar and importing food. Several attempts by wealthy growers at diversifying the West Indian economy, in products such as limes and cotton, failed, with the small islands unable to compete with more efficient specialized regions (Concepcion et al., 1944). This left sugar as the main pillar of the West Indian Economy.

Originally, to provide labor for the large sugar plantations, slaves were sent to the Caribbean. With the eventual abolition of slavery in British colonies, however, business was forced to transition to a wage-based system. Though free, the former slaves were still dependent upon the large sugar plantations and refineries for employment, and small farms were uncommon. This dependence was cultivated by a coercive colonial legal system bent on ensuring labor for plantation owners (Dippel et al., 2020).

In 1886, Cuba abolished slavery, over 50 years after the practice had been ended in the British West Indies. The country experienced further turmoil following its independence from Spain in 1898. When no longer a colony, Cuba saw a meteoric rise in sugar production between 1900 and 1920 as foreign capital flowed in and operations modernized (Ayala, 1995). This boom of Cuban sugar diminished the economic importance of the British West Indies as the islands saw a dramatic drop in their overall share of Caribbean sugar production (Table 1).

Table 1: Yearly Sugar Production in the British West Indies and Caribbean				
Year	British West Indies	Cuba	Whole Caribbean	Percent in British West Indies
1850	100	223	401	24.9%
1900	126	284	588	21.4%
1920	128	3,729	4,524	2.8%
1940	426	2,441	4,246	10.0%

Units are given in 1,000 metric tons. Note the increase in Caribbean sugar production following 1900 was mostly due to increased Cuban production following its independence from Spain. Source: Harrison, 2001.

Given the new dominance of Cuban sugar in the Caribbean, as well as competition from more distant markets, many Caribbean colonies did eventually wean themselves from dependence on sugar (Dippel et al., 2020). Of the 12 colonies considered, in the period 1905-1909 (inclusive) three colonies had on average less than 1% of export value attributed to sugar, four colonies had between 1% and 5% of export value attributed to sugar, and 5 colonies had over 15% of export value attributed to sugar (Colonial Blue Books).

World War One represented a significant shock to the world sugar market. Before the war, the market had been evenly divided between sugar beet (primarily grown in Europe and the continental US) and sugar cane (primarily grown in the tropics). By 1919, this had shifted and just a quarter of world production came from beets while the remaining three quarters came from sugar cane. In all, “The battle lines of World War One encompassed approximately one-third of the world’s sugar supply"

(Grogan, 2004). Thus, Europe saw battlefields replace beet fields and production plummet (Committee on Agriculture and Forestry, 1919).

The war curtailed production in two main ways. First, the act of waging war is inherently destructive. The area of France that was most fought over included the region devoted to the growth of sugar beets (Bernhardt, 1920). During these assaults, the Germans destroyed farms and sugar factories, limiting refining capacity (Committee on Agriculture and Forestry, 1919). Additionally, large swaths of agricultural land near the front lines were either destroyed or impossible to cultivate safely. Second, the war pulled labor away from sugar farming and into armies and more "vital" industries such as munitions manufacturing. In short, the war served to drain European sugar producers of both labor and capital leading to an inevitable decline in production (Litman, 1920).

Table 2: Yearly Sugar Production in Europe During WWI

1914-15	1915-16	1916-17	1917-18
8,466	5,699	5,424	4,498

Units are given in 1,000 short tons. Source: Litman, 1920

Among the Allies, many found it difficult to obtain a sufficient sugar supply. France and Italy, who before the war had an almost entirely self-sufficient domestic supply, were forced to import. The United Kingdom was hit even harder. In fact, before the war, the United Kingdom had imported 54.2 percent of its sugar from Germany and Austria-Hungary, their wartime enemies (Litman, 1920). In total, "...practically 70 per cent of the normal sugar supply of the United Kingdom was thus completely wiped out of existence..." (Bernhardt, 1920).

The push for greater sugar importation presented the Allies with another conundrum: shipping. German submarines succeeded in sinking thousands of allied

ships, substantially increasing the cost of a transatlantic voyage. This cost was reflected in the price of insurance for commercial shipping which increased significantly (Litman, 1920). The war further stressed the reserve of available shipping as tonnage was essential for the importation of other food and equipment for the Allies. Following the war, Joshua Bernhardt, a sugar statistician for the United States Food Administration wrote, "... it is important to bear in mind that the primary problem was not one of sugar but of shipping tonnage. There would have been in all probability a sufficient supply of sugar for all the Allies throughout the war, had ships been available to bring sugar from distant sources of supply" (Bernhardt, 1920). With unlimited shipping at their disposal, the Allies would have acquired sugar from Asian producing countries, such as Java and the Philippines. The distance of such ports, however, forced the Allies to focus on acquiring a sugar supply closer to home. A ship traveling 200 miles a day would have made the trip from England to Java and back, including loading and unloading times, in approximately 150 days. The same ship traveling to either Cuba or New York could depart and return in just 50 days (Bernhardt, 1920). With shipping severely limited, long voyages to collect sugar were not cost-effective. Thus, distant sugar production remained untapped.

All of these factors—the destruction of farmland, a shifting labor force, the loss of trading partners, and a lack of shipping—contributed to a general shortage of sugar for the Allies. Even after increases in production in certain areas, like Cuba, offset some losses, it was most certainly a sellers' market. The few producers who were able to supply the Allies found many of their competitors excluded from the market and an increased demand to meet.

As mentioned above, war represents a significant drain on a country's resources. Perhaps it is best summarized by Simon Litman who said that “the war brought with it an insistent and inelastic demand on the part of the government for all kinds of commodities needed to feed, clothe, equip, house and transport the army” (Litman, 1920). Reasons for this are twofold. First, war necessitates a different consumption basket, the quantity of goods consumed in a nation on average, than in times of peace. Countries are forced to “consume” larger numbers of bullets and helmets than would be normally necessary. Second, marching and digging trenches is strenuous work, meaning that soldiers must consume more calories per day. A government report during the war found that each British soldier ate between 1.5 and 2 times their civilian caloric intake (Litman, 1920). Additionally, there is an increase in waste and wear and tear due to supply chain inefficiencies and the destructive nature of combat.

The war also saw an increase in demand from civilians, further straining food production. Conscription and wartime production led to a redistribution of wealth toward poorer individuals, who were more likely to spend their newfound income on previously unattainable luxuries (Litman, 1920). This was true globally. In Japan and China, for instance, wage increases led to higher sugar consumption as the countries purchased sugar from Java and the Philippines, which, because of a lack of shipping, could not enter the American and European markets (Committee on Agriculture and Forestry, 1919). As the purchasing power of poorer individuals increased, so too did their demand for sugar. Writing of war-torn France after the war, Manuel Rionda, a Cuban sugar producer, said, “the working classes have a much larger buying capacity than ever before. In spite of the high price of sugar the laborer now has the means to

indulge in sweets and his wife buys 20 pounds instead of one and the children have more change for candies" (Grogan, 2004). Along with an increase in hard candy consumption, the time period saw a considerable increase in the consumption of soft drinks. The 1919 ratification of prohibition meant that alcohol was replaced by soda in the drinking habits of Americans as breweries converted to produce root beer and ginger ale (Grogan, 2004).

While wartime rationing controls and limited supply kept sugar consumption in check, there was a definite trend towards an increase in consumption at the close of the war. This is best explained by Dr. Alonzo E. Taylor from the US War Trade Board. Testifying before Congress, Dr. Taylor gave a bleak assessment of European sugar demand, "These people are tired and exhausted by war. In some countries, notably in Germany, they are emaciated, and the tendency of the people is to get back to a normal ration again as soon as possible. Therefore the pressure which they lay upon their governments is to buy liberally and freely" (Committee on Agriculture and Forestry, 1919). The United States was forced to compete in the market with countries who had been under ration and deprived of a quality standard of living for years. Given America's purchasing power at the time, however, US consumers would undoubtedly be able to compete. Later in his testimony, Dr. Taylor indicated that sugar prices were dependent upon how effectively European countries could ward off cries of greater consumption from their citizens and thus how willing they would be to drive up prices. Regardless of price, "...America is going to get the sugar she wants..." (Committee on Agriculture and Forestry, 1919).

During World War One various efforts were made by the United States and the United Kingdom to control sugar prices. One of the first acts by the United States was to embargo food exports that did not occur under federally provided licenses (Litman, 1920). This allowed the government to funnel supplies to the Allies while maintaining domestic supplies. While at the outbreak of war England had entered the sugar market aggressively, the approach only served to increase prices further. This necessitated the creation of a cooperative organization between the Allies and the US, a need that eventually led to the formation of the International Sugar Committee (Bernhardt, 1920). This coordinated the sugar supply between the Allies to ensure each nation was allocated a sufficient amount.

The organization that oversaw US sugar prices and distribution was the United State Sugar Equalization Board. This corporation, whose stock was entirely owned by the US government, entered into contracts with all major American producers and refiners in order to create a uniform sugar price with fluctuations only occurring based on the cost of transportation from coastal refineries to inland cities. The Board also entered into contracts with Cuban sugar producers to buy the entire country's crop en masse. The crop was then divided between the US and allies with roughly a third going to Europe (Bernhardt, 1920). While attempting to increase supply, the Board simultaneously worked to keep consumption in check, engaging in advertising campaigns that encouraged sugar conservation. Restrictions were also placed upon manufacturers who received their sugar supply based upon importance, a technique also adopted in Britain. This system saw industries more vital to the war effort, like fruit

canning, fully stocked while candy makers had to get by on a small percentage of their pre-war supply (Litman, 1920).

Many in the US government viewed wartime price controls as heretical, fearing that increased government intervention into markets would continue in times of peace. Among the followers of this belief was President Wilson. Thus, when the harsh realities of war necessitated a more proactive government approach, he made sure to stipulate that wartime agencies and legislation, like the Food Control Act, would end when hostilities ceased. The US government, however, was taken by surprise when the armistice was announced in 1918 and unprepared to dial back price controls (Rotwein, 1945). The Sugar Equalization Board had planned for several more years of fighting and engaged in contracts meant to continue through the end of 1919 (Bernhardt, 1920). For this reason, price controls actually ceased in 1920 with the end of sugar purchasing contracts and the liquidation of the Board.

For some time, it had been unclear whether the Sugar Equalization Board was holding up prices so as to maintain sufficient production to supply both the US and the Allies or holding them down to protect consumers. As 1919 closed, however, and the Equalization Board folded, it became clear that controls had restrained prices. The sugar supplies of Java and the Philippines, a panacea to any sugar shortage, seemed to disappear overnight as it became clear that large sums of sugar had already been sold in Asian markets (Committee on Agriculture and Forestry, 1919). What Javanese sugar did make its way to America began selling for 11 cents per pound plus transportation costs, twice the price that the Equalization Board had paid for Cuban sugar (Grogan, 2004). European Beet sugar, though recovering, was still far below pre-war levels of

output. While Germany and Austria-Hungary had returned to the global marketplace, the Russian Revolution had effectively cut off the sugar beet fields in Russia and parts of Poland (Committee on Agriculture and Forestry, 1919). All of these factors contributed to a perfect storm which, upon the resumption of regular market operations, caused the price of sugar to shoot up

While attention has been paid to the impact of this price volatility on Cuba, little has been written on the British West Indies (Grogan, 2004). The following pages will consider different aspects of the British West Indies and how they shifted for sugar producers and non-sugar producers during the war and following the Dance of the Millions.

Country Versus Colony

The following pages will refer to each Caribbean colony as a "country." This is meant to avoid confusion in comparison between this thesis and the economic literature. However, given that this semantical decision erases centuries of colonial oppression, it is suggested that the reader keep in mind the power structures of the colonies including a legacy of over a century of slavery, coercive labor systems, and lack of political franchise for those not of European descent.

Section 2: Methods

Data

Data were collected from two sources. First, yearly colonial statistical reports, often called the "Blue Books" were accessed through the British Online Archives. These are reports containing a multitude of useful statistics sent to British officials in England about the condition of the colony. While their accuracy has been questioned (De Zwart, 2011), the difference-in-difference method utilized only requires that there are no systematic differences in inaccuracies of the data between producers and non-producers. Second, data were collected from the "Statistical Tables Relating to the Colonial and Other Possessions of the United Kingdom" (and successor publications in the series), which is a collection of the various statistical tables from the Blue Books.[1] These sources are henceforth referred to as the "statistical compendiums." These compendiums report data from the Blue Books in a condensed form and facilitate data collection for certain variables. Given that the statistical compendiums report data from Blue Books, they are, for the most part, identical. When discrepancies were detected between sources, the Blue Books were selected as the more primary source. Such differences were uncommon. Spot checks of Compendium data were conducted to ensure consistency with Blue Books. Of the variables considered, prices and trade used Blue Book data entirely while government finance, personal finance, and demographics used a blend of Blue Book and Statistical Compendium data.

[1] Provided, very generously, by Dr. Woan Foong Wong and Dr. Bruce Blonigen.

One characteristic of British Colonial reporting is the choice of March 31st, in some colonies, as the end of the fiscal year. While the standard fiscal year ending December 31st was eventually adopted by all colonies at different times, this presents an issue for data collection. Collection of data ending on March 31st will be presented as data from the previous year. For example, if revenue is listed as "For the fiscal year ended March 31st, 1915," then the revenue is collected as being for the year 1914. As 3/4 of 1914 months are represented in the total revenue while just 1/4 of 1915 months are represented, the datapoint is primarily a measure of 1914 revenue.

Determination of Sugar Producers

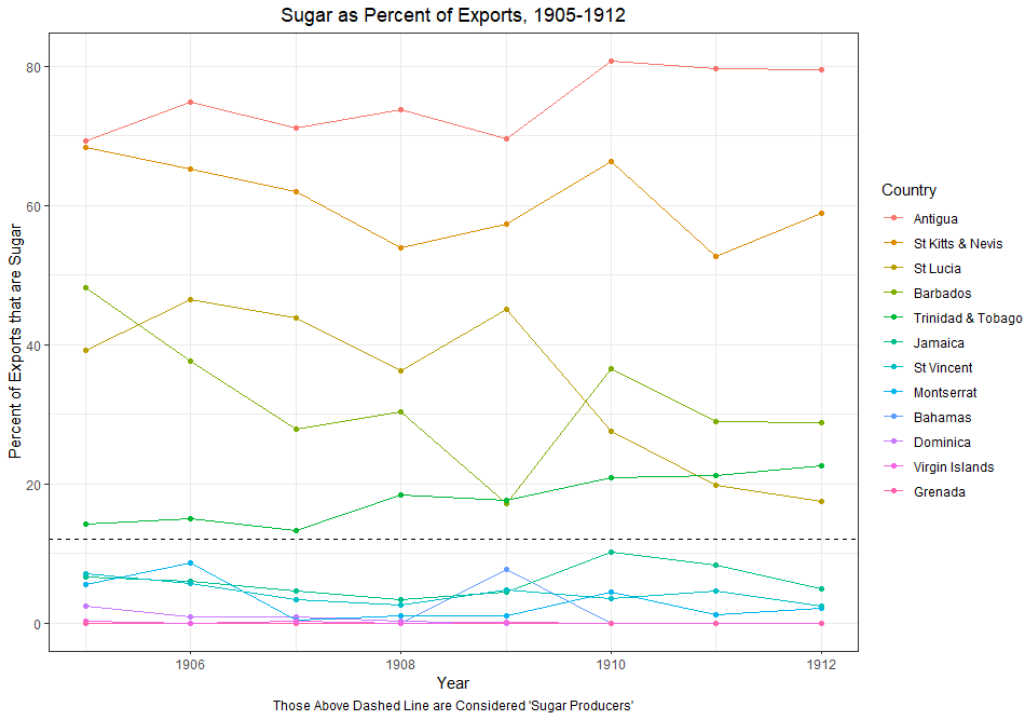
To measure the impact of the Dance of the Millions on sugar producers, determining which islands are producers and which are non-producers is essential. To do this, sugar exports as a percentage of total exports for the years 1905-1909 were considered. This period was selected as it directly precedes the pre-period, including the disruption of the sugar market caused by World War One, without extending so far as to capture the previous dominance of sugar production in the entire British Caribbean (Dippel et al., 2020). As demonstrated in Table 3, there was heterogeneity in what percent of exports were sugar with some countries being heavily reliant on the commodity for trade while others exported none.

Countries who have sugar as a share of total exports greater than or equal to 15% are deemed to be producers while those with smaller shares are considered non-producers. The reasoning behind this is twofold. First, the cutoff ensures a consistent gap in the percent of exports that are sugar between producers and non-producers

Table 3: Percent of Sugar in Total Exports, 1905-1909		
Colony	Percent	Is Producer?
Antigua	72.2	Yes
St. Kitts & Nevis	62.3	Yes
St. Lucia	41.4	Yes
Barbados	36.0	Yes
Trinidad & Tobago	15.2	Yes
Jamaica	5.1	No
St. Vincent	4.7	No
Montserrat	3.8	No
Dominica	1.0	No
Virgin Islands	0.1	No
Bahamas	0.0	No
Grenada	0.0	No

Source: Yearly British Colonial Statistical Reports, 1905-1909

Figure 1:



in the pre-war period. Second, while St. Lucia and Barbados after 1908 see the share of sugar shrink to near or even below Trinidad and Tobago, none of these countries dip below the 15.2% threshold in this period while non-producers never approach it

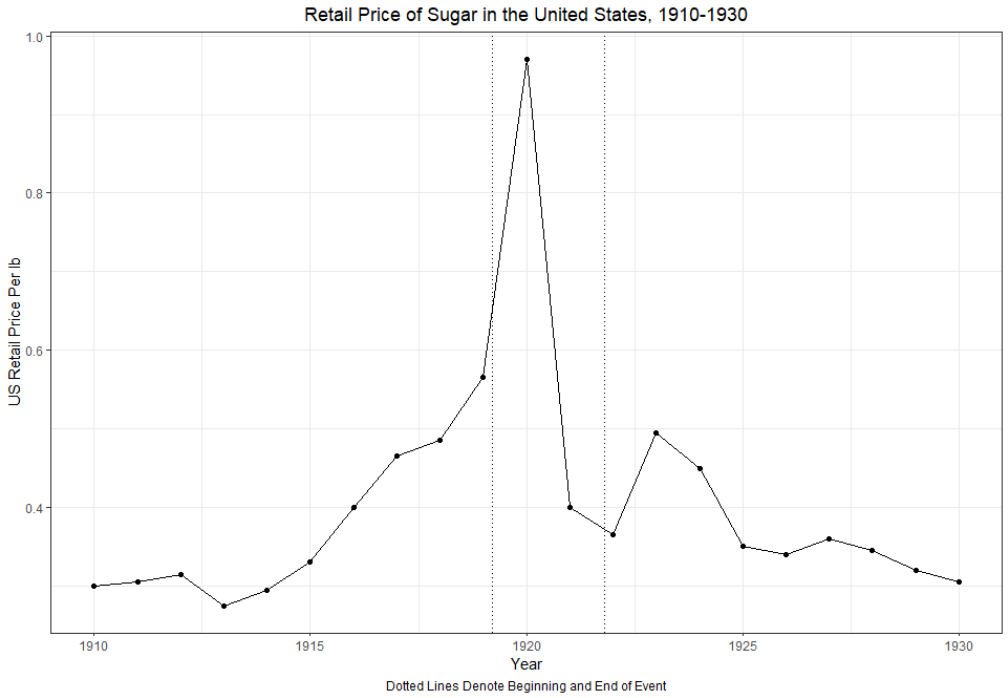
(Jamaica comes closest with 10.26% sugar in 1910 before declining again). While the binary consideration of producer and non-producer is useful for interpretation, results will be confirmed by also considering the continuous sugar percentage between 1905 and 1909 as a dependent variable.

Determination of the Event

The dramatic increase in sugar prices, known as the Dance of the Millions, occurred in the year 1920. The true power of the event, however, lies not simply in the dramatic price increase, but also in the subsequent crash. Historians have posited that the main mechanism of economic decline following the Dance of the Millions was the extensive credit extended to sugar producers who could only repay if the price remained high (Grogan, 2004). Thus, 1920 and 1921 are selected as the event, capturing the price volatility, and consider 1910-1919 as our pre-period and 1922-1930 as our post-period. Notably, while the price of sugar in the post-period is slightly lower, on average, than the price of sugar in the pre-period, this difference is not statistically significant.[2]

[2] This is determined by regressing the US Price of Sugar on a binary post event variable.

Figure 2:

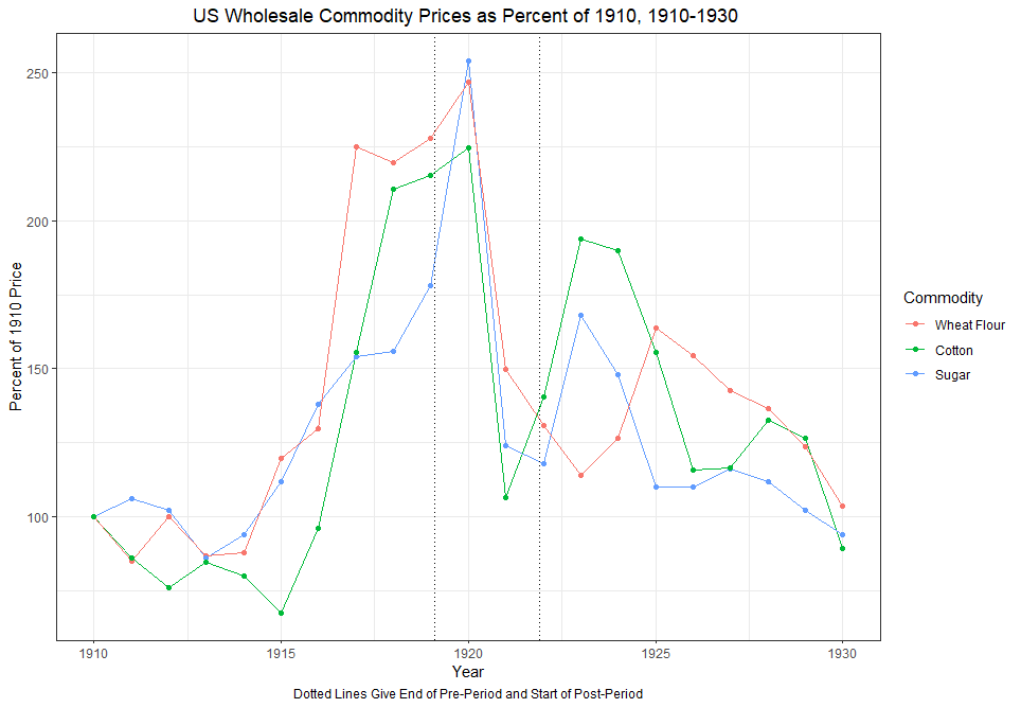


Source: The Bureau of the Census. Historical Statistics of the United States: Colonial Times to 1970

Section 3: Prices

At the heart of the impact of the Dance of the Millions, and World War One more generally, lies the question of price volatility. Many commodities faced the same wartime pressures as sugar. Problems of limited shipping and destruction of fields throughout Europe applied to all commodities. For example, European wheat production was cut by 43% percent between 1914 and 1918 while European sugar production fell 58% (Grogan, 2004). What is remarkable about sugar is the extent to which price controls were successful. The price of sugar remained well below the general price of food before spiking in 1920 (Sugar: Facts and Figures, 1952).

Figure 3:



Source: The Bureau of the Census. Historical Statistics of the United States: Colonial Times to 1970

The brevity of the Dance of the Millions makes it unique. In the US, wheat flour and cotton had prices double that of 1910 for substantial periods of time during the period of study, wheat flour for the years 1917-1920 and cotton for the years 1918-1920. Neither commodity ever exceeded 250% of their 1910 price. Sugar is different, only costing more than double the 1910 wholesale price in one year, 1920. In that year, sugar cost 254% of it's price in 1910 (Figure 3). This difference between sugar prices and other food prices is critical since among the non-producer group many are reliant on other food exports, though not sugar.

Current historical literature suggests that the Dance of the Millions left the price level elevated in Cuba (Ayala, 1995). In Cuba, the loss of access to credit left stores in the countryside unable to purchase goods except with cash, meaning that prices remained elevated even as the countryside devolved into poverty. The lack of access to liquidity restricted the supply of goods meaning that prices increased. Such a difference between producers and non-producers in the British West Indies is essential to study as it will change the interpretation of future nominal results.

Little has been written on the price level in the British West Indies following the Dance of the Millions. Data on retail prices from yearly Blue Books are utilized to determine post-war price level dynamics. While the Blue Book price data have been criticized as potentially inaccurate (Frankema and Waijenburg, 2011) for the purposes of constructing a price index, it is simply necessary to assume that errors of colonial administrators were random. To compare between the price levels of producers and non-producers, this assumption can be relaxed further. Should there be non-random

errors, it is sufficient to assume that they did not differ between producers and non-producers.

Generally, a good's price is reported in the Blue Books as a single average for the entire year. In some instances, however, a range of prices is presented. When this occurs, a simple average of the maximum and minimum value is considered. Comfortingly, only around 21% of all prices are given as ranges and just under 17% of the subset of prices considered for the price index. Thus, any outsized distortion due to the simple average is unlikely.

Construction of the price index closely follows the method of De Zwart, 2011. A worker's basic subsistence needs are considered. That is, the number of calories necessary not to starve given a distribution across three food types: staples, meats, and butter. A worker on the edge of subsistence is assumed to construct a basket based on the cheapest calories available in each category. Prices for goods with fewer than 20 entries, meaning that the good is not present in a full time series for any of the countries, are omitted from consideration. For example, while the Bahama's include the price of turtle meat per pound between 1910 and 1919, the exclusion in the post period makes comparison difficult. Additionally, goods with changing and difficult to convert units are excluded. For instance, while a price index of alcoholic beverages could be particularly compelling as a measure of luxury spending, the shift between prices being reported "per quart" to "per bottle" to "per case" means that a consistent and accurate time series for alcoholic beverages is difficult.

A major issue with constructing a price index for the entirety of the British West Indies is the reporting of prices for an island group known as the Leeward Islands. This

group, containing both countries most dependent on sugar (Antigua and St. Kitts and Nevis) as well as countries producing little sugar (Dominica, Montserrat, and the Virgin Islands), reports just one set of prices between 1910 and 1919. As this one group represents 40% of the total sample, the omission of price data during the pre-period substantially restricts the amount of price data available. While it is possible that the countries had identical price levels prior to 1920, when data becomes available for the five islands, the resultant price indices are so disparate as to make this unlikely. Thus, it makes the most sense to simply omit the islands from the consideration of prices levels. While conclusions on price fluctuations are more accurate with this limited sample, they cannot be extended to all islands in order to create real monetary values. The price sample then consists of 3 sugar producers and 4 non-producers. Producers: St. Lucia, Barbados, and Trinidad & Tobago. Non-producers: Jamaica, St. Vincent, Bahamas, and Grenada.

Due to a consistent lack of data for wheat flour, wheat bread, and potatoes for the islands of St. Vincent, St. Lucia, and Grenada, the staple group was restricted to rice in order to prevent spurious fluctuations based on a lack of data. No data manipulation or interpolation was undertaken apart from this restriction. Finally, 1914 is selected as the base year as it is the first year that data is available for Jamaica.

The price basket is created using data on caloric content for each food. Following De Zwart, 2011, subsistence is assumed to include the consumption of 1,845 calories per day from staples, 34 calories per day from meat, and 60 calories per day from butter. Table 4 presents the different foods considered, their group and their calories per pound. While previous literature has considered other goods such as fuel,

cotton, and soap (Morten, 2019 and De Zwart, 2011) a lack of consistent price data prevents the inclusion of these goods. For many countries, soap and fuel prices are reported consistently only following World War One.

Table 4: Products Considered in Subsistence Price Basket		
Product Type	Product	Calories per Pound[3]
Staples	Wheat Flour	1,538
	Wheat Bread	1,281
	Rice	502
	Potatoes	494
Meat	Beef	1,563
	Mutton	1,168
	Pork	1,104
	Fish	474
Butter	Butter, salted or fresh	3,264

Source: Gebhardt and Thomas, Nutritive Value of Foods, 2002.

With the calorie information above, it is possible to assign each product a "price per calorie" in every year. Then, the price level in each year is given by the total cost of the cheapest combination of products from each group that yield the required 1,939 daily calories. This is because an individual on the edge of subsistence is assumed to prioritize the consumption of cheap calories. So, the price basket in each year can be represented as:

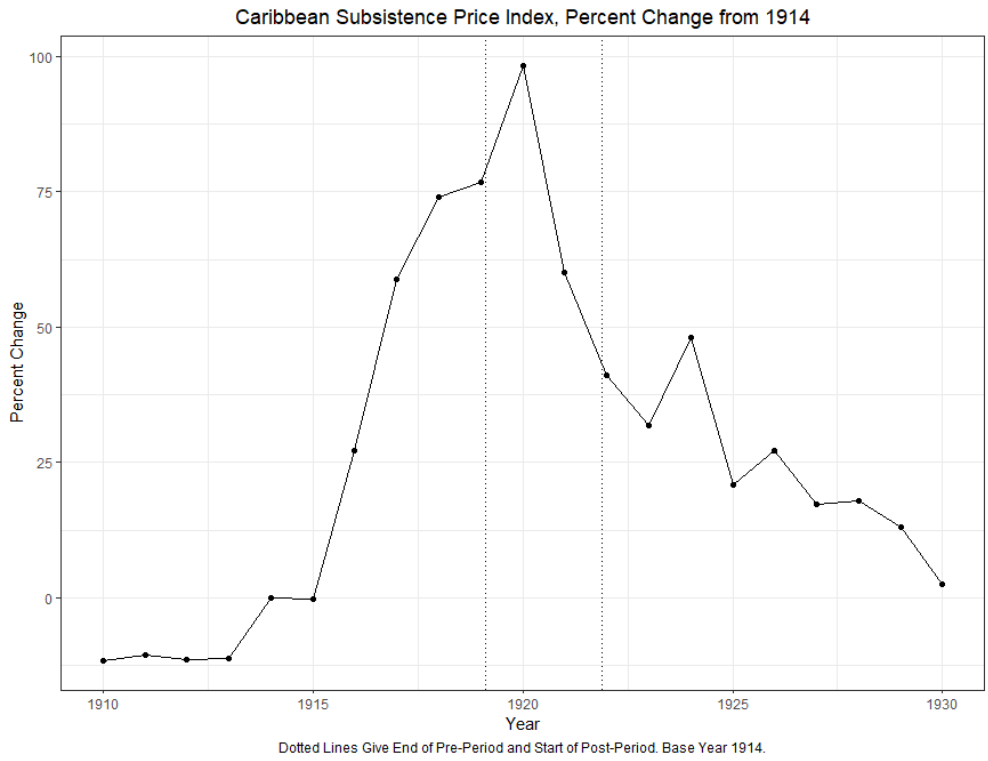
$$\text{Minimum Subsistence Cost}_{i,t} = 1{,}845\alpha_{i,t} + 34\beta_{i,t} + 60\gamma_{i,t}$$

Where $\alpha_{i,t}$ is the cheapest price per calorie in the staple group, $\beta_{i,t}$ is the cheapest price per calorie in the meat group, and $\gamma_{i,t}$ is the cheapest price per calorie in the butter group for a given year and country. Then, country price indices are calculated using 1914 as a base year.

[3] Calorie information for mutton is based on the number of calories in lamb. Calorie information for Cod is used for prices products listed as "fish." This is because Cod are the only fish ever mentioned by name in the Blue Book price section.

Following the creation of this yearly basket, it is clear to see that the minimum cost of subsistence closely followed the trends of commodity prices in the US. Over the course of World War One, the price level is seen to increase dramatically, reaching its zenith in 1920. Then, following the Dance of the Millions, prices decreased gradually, nearing 1914 levels in 1930.

Figure 4:



Source: Blue Book Price Data[4]

To determine the differential impacts of the Dance of the Millions on sugar producers and non-producers, four difference-in-difference models are estimated using ordinary

4 Yearly percent changes from 1914 are calculated using the regression $\text{Log}(\text{Index}_{i,t}) = \beta_0 + \gamma_t + \varepsilon_i$, where $\text{Index}_{i,t}$ represents the yearly minimum subsistence price index for each country, γ_t is a vector of yearly fixed effects, and ε_i is an error term. The graph plots each value of $100 \times \gamma_t$. Of the 147 possible observations, only 8 are missing.

least squares regression with varying levels of controls. This method is used in all following sections. A difference-in-difference method is used as re-period trends are determined to be parallel. This determination is made in two ways. First, yearly fixed effect coefficients are considered for sugar producers and non-producers. No significant yearly differences exist between either group in the pre-period. Second, a placebo event is considered in 1915 with a pre-period of 1910-1914 and a post period of 1916-1920. A difference-in-difference model is estimated and no significant change in trends is found. Thus, a difference-in-difference is considered reasonable. The first model is given by the equation,

$$\text{Log}(\text{Outcome}_{i,t}) = \beta_0 + \beta_1(\text{Producer}_i \times \text{Post}_t) + \beta_2\text{Post}_t + \varepsilon_{i,t} \quad (1)$$

Where,

- $\text{Outcome}_{i,t}$ gives the variable of study. Here, it is the yearly price level for each country.
- Producer_i is a dummy variable that is 1 if the country is a sugar producer and 0 otherwise.
- Post_t is a dummy variable that is 1 if the year is after the price shock (1922-1930) and 0 before (1910-1919). The years 1920 and 1921 are not included in any regression.
- $\varepsilon_{i,t}$ is an error term.

Next, country fixed effects are accounted for in the following model,

$$\text{Log}(\text{Outcome}_{i,t}) = \beta_0 + \beta_1(\text{Producer}_i \times \text{Post}_t) + \beta_2\text{Post}_t + \delta_i + \varepsilon_{i,t} \quad (2).$$

Where,

- δ_i accounts for country fixed effects. It represents a series of dummy variables for each of the 7 countries who have price index.

Then, country fixed effects are removed, and yearly fixed effects are included,

$$Log(Outcome_{i,t}) = \beta_0 + \beta_1(Producer_i \times Post_t) + \beta_3 Producer_i + \gamma_t + \varepsilon_{i,t} \quad (3).$$

Where,

- γ_t accounts for yearly fixed effects. It represents a series of dummy variables that are 1 in their given year and 0 in all other years.

Finally, both country and year fixed effects are considered,

$$Log(Outcome_{i,t}) = \beta_0 + \beta_1(Producer_i \times Post_t) + \gamma_t + \delta_i + \varepsilon_{i,t} \quad (4).$$

The following table presents the results from these regressions. Non-clustered standard errors are reported though results are confirmed using robust standard errors. We see that the Dance of the Millions and the subsequent collapse did not lead to any significant difference between producers and non-producers. This holds for all of our models. If anything, the negative sign for every β_1 term indicates that prices may have been slightly lower on sugar-producing islands, though not significantly. Results remain insignificant when replacing the binary $Producer_i$ variable with a continuous variable that represents the percentage of sugar in exports between 1905 and 1909.[5]

These results do not necessarily refute Ayala's assertion about prices in Cuba. Prices were, on average, higher in sugar-producing countries in the years 1921 and 1922, though not significantly.[6] This suggests that any differential positive impact on prices was small and short-lived.

[5] In fact, the signs flip to be positive but only barely and with such large standard errors as to be irrelevant.
[6] This is confirmed using the same model as is presented in figure 5.

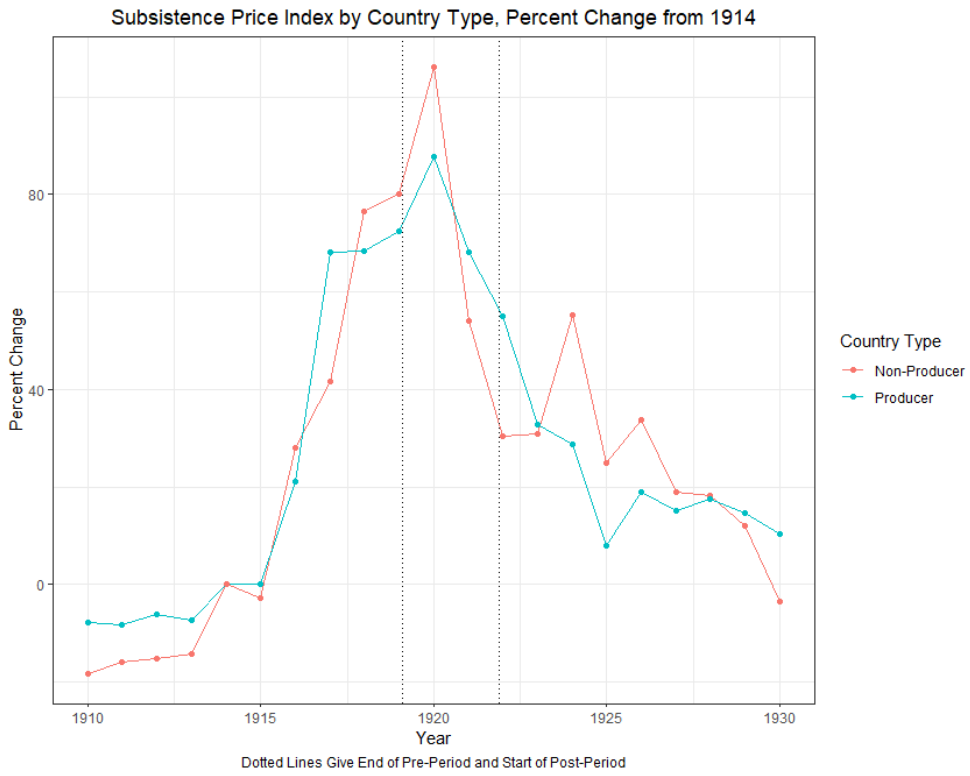
Table 5: Regression Results for Price Index

	Dependent variable:			
	Log(Price Index)			
	(1)	(2)	(3)	(4)
Producer × Post 1921	-0.011	-0.070	-0.036	-0.051
	(0.093)	(0.118)	(0.092)	(0.067)
Post 1921	0.057	0.089	-	-
	(0.075)	(0.077)		
Producer	-	-	0.033	-
			(0.064)	
Constant	4.794***	5.073***	4.474***	4.765***
	(0.045)	(0.083)	(0.108)	(0.086)
Has Country Fixed Effects	-	Yes	-	Yes
Has Yearly Fixed Effects	-	-	Yes	Yes
Observations	125	125	125	125
R^2	0.006	0.228	0.581	0.789
Adjusted R^2	-0.011	0.175	0.500	0.736
Note:		*p<0.1; **p<0.05; ***p<0.01		

While this result may lend some credence to the idea that future nominal outcome variables are not overly skewed by a difference in price level between producers and non-producers, several caveats must be noted. For one, only 7 of the 12 total Caribbean nations considered are in this sample. Those most dependent on sugar and some of those least dependent on sugar are excluded. Second, the price basket selection is incredibly specific. While the result suggests that farmworkers on St. Lucian sugar plantations were paying the same amount to survive as onion farmers in the Bahamas, extrapolating the same conclusion to blacksmiths on either island, likely with different

consumption habits than farmers, is imprecise. Given that a majority of the population in the British West Indies worked in agriculture and were subject to a coercive labor system, the use of minimum subsistence cost captures the reality for the most workers (Dippel et al., 2020). It may, however, not capture the changes in prices paid by colonial elites of European descent. In fact, using the same price basket and daily calorie consumption but suggesting that individuals will pay the average price rather than minimum price of goods in each category (staples, meat, butter) and running the same regression as in Equation 4, being a producer after the Dance of the Millions is associated with a 14.9% decrease in price level. This result is significant at the $p < 0.05$ level. Notably, though, this result is not robust when considering a continuous variable for sugar production between 1905 and 1909 rather than the binary producer variable. Thus, while poorer workers in sugar-producing and non-producing territories may have seen similar price levels, those not living at the edge of subsistence in producing countries may have seen their relative prices decrease slightly.

Figure 5:



Source: Blue Book Price Data[7]

Taken in whole, retail prices in the British West Indies seem to follow similar trends to commodity prices in the US: increasing over World War One, spiking in 1920, and decreasing in the post war period. Further, producers and non-producers price levels trended together both before and after the Dance of the Millions. The inflation that the historical literature suggests impacted Cuba was not seen to differentially effect sugar producers and non-producers. While the average price of subsistence may have decreased in sugar-producing countries, this result is not robust and does not capture the

[7] Yearly percent changes from 1914 are calculated using the regression $\text{Log}(\text{Index}_{i,t}) = \beta_0 + \beta_1 \text{Year}_t + \beta_2(\text{Year}_t \times \text{Producer}_i) + \delta_i + \varepsilon_{i,t}$ where $\text{Index}_{i,t}$ represents the yearly minimum subsistence price index for each country, Year_t is a vector of categorical variables for each year, Producer_i is a dummy variable indicating if a country is a sugar producer, δ_i gives country fixed effects and $\varepsilon_{i,t}$ is and error term. The graph plots each value of $100 \times \beta_1$ for non-producers and $100 \times (\beta_1 + \beta_2)$ for producers in each year.

consumption habits of a majority of the population who worked in agriculture. The Dance of the Millions is therefore found not to significantly impact price levels for sugar producers.

Section 4: Trade

Trade data in the Blue Books is presented in several forms. Imports are relatively straightforward, with data on values available in all years. Exports, on the other hand, are presented in multiple ways. First, export values are broken down into five categories:

1. "Food, Drink and Tobacco."[8]
2. "Raw Materials and Articles mainly Unmanufactured."
3. "Articles wholly or mainly Manufactured."
4. "Miscellaneous and Unclassified."
5. "Bullion and Specie."

While data on each category would provide insight into the evolution of the economic makeup of the British West Indies, data is unfortunately sparse enough to make this difficult. As such, data in category 1 are collected when available. Data is admittedly spotty, only available in 74.6% of possible observations. The absence of this data in the pre-period specifically makes it difficult to draw meaningful conclusions about the any shifts in the export of food following the Dance of the Millions. Broader export measures are present at higher rates. Total exports, the most general category, does not have any missing observations. Total exports measures both the export of goods produced by the colony (home produce) as well as those produced elsewhere and merely passing through the colony for transshipment (re-exports). These subcategories also have excellent data completion rates with 97.6% of observations available.

8 These specific names come from the Blue Book for Trinidad and Tobago, 1926. There is slight variation in naming convention across countries and years, but the categories are identical

Unfortunately, the missing data is non-random, with Grenada accounting for 5 of the 6 missing years.[9] Finally, data on sugar exports were collected. These data were also split into home produce, re-exports, and total exports. In each category, all data are available in the Blue Books.

Imports

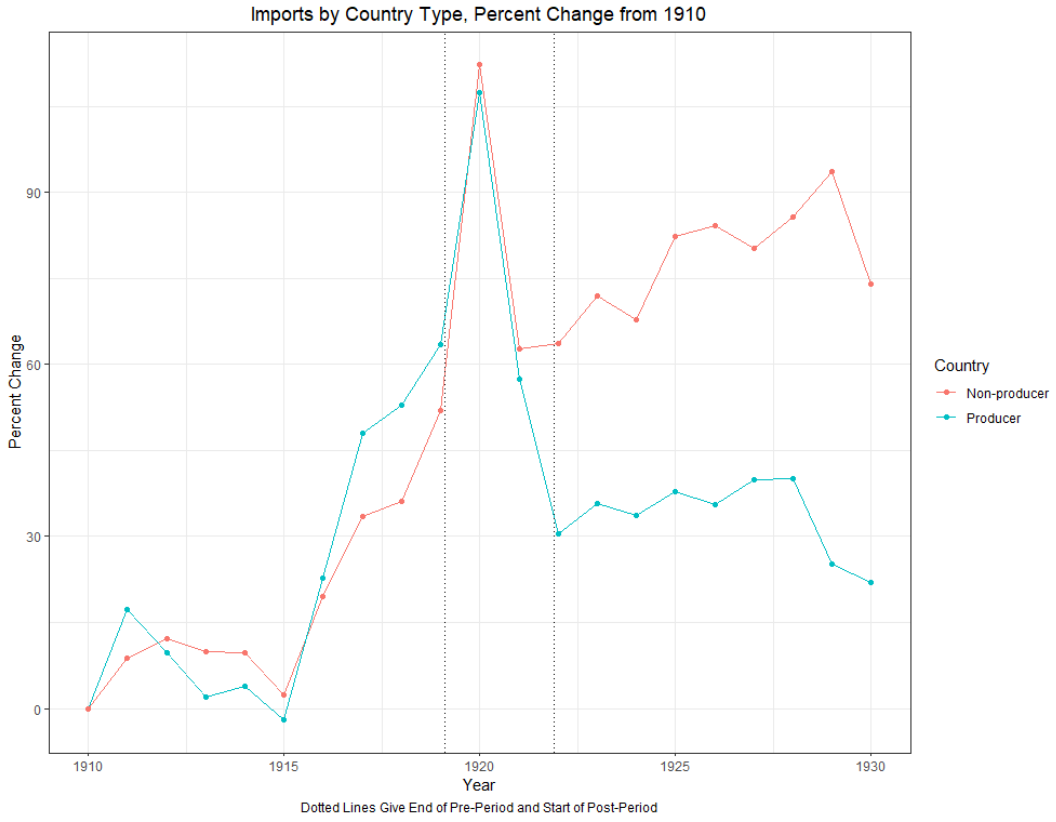
The economic system of the British West Indies was focused on the export of cash crops and import of goods necessary for survival (Mintz, 1985). As such, importation value is a direct measure of wellbeing on the islands. In order to determine the impact of the Dance of the Millions on imports, a similar difference-in-difference research design is employed as in the consideration of prices. Trends in the pre-period are parallel. While producers are seen to have slightly higher imports over the course of World War One, this is also never significant. Parallel trends are confirmed by considering both yearly fixed effect coefficients for both producers and non-producers as well as two placebo tests. For the first placebo test, the Dance of the Millions is imagined taking place in 1915 and a difference-in-difference model such as in Equation 8 is estimated. The pre period includes 1910 – 1914 while 1916-1920 accounts for the post-period. While producers see imports increase slightly compared to non-producers after this placebo event (owing to the impacts of World War One) this increase is not significant at any meaningful level.[10] For the second placebo test, the Dance of the Millions is imagined taking place in 1911, with 1907-1910 as a pre-period and 1912-

[9] The missing years for home produce and re-exports for Grenada include 1912 and 1914-1917. The other missing observation is the Bahamas, 1921. This data point is unnecessary for regression as it would be removed in the event anyway.

[10] Producers are seen to have a 9.8% increase compared to non-producers following the pseudo-event, but this is not significant at the $p < 0.05$ level.

1915 as a post period (so as not to include the main impacts of World War One already measured in the first placebo test). This placebo test also yields insignificant changes in differences following the placebo event.[11]

Figure 6:



Source: Blue Book Trade Data[12]

As trends are seen to be parallel, a difference-in-difference approach is again adopted. The equation,

$$\text{Log}(\text{Imports}_{i,t}) = \beta_0 + \beta_1(\text{Producer}_i \times \text{Post}_t) + \gamma_t + \delta_i + \varepsilon_{i,t} \qquad (4)$$

[11] Producers are seen to have a 3.3% decrease compared to non-producers following the pseudo-event, but this is not significant at the $p < 0.05$ level.

12 Similar to in Figure 5, the equation $\text{Log}(\text{Imports}_{i,t}) = \beta_0 + \beta_1 \text{Year}_t + \beta_2(\text{Year}_t \times \text{Producer}_i) + \varepsilon_{i,t}$ is estimated. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$.

is estimated using ordinary least squares regression. Here, $Imports_{i,t}$ gives the yearly nominal import value for each country. All other variables are consistent from previous models. Controls are again added in gradually. The following table presents the results from these regressions. Adding in both country and yearly fixed effects, the volatility surrounding the Dance of the Millions is seen to have led to a 48.2% decrease in imports for sugar-producing countries. This is significant at the $p < 0.01$ level. Additionally, it remains highly significant when the percent of exports that were sugar between 1905 and 1909 are considered, rather than the binary producer variable.[13]

Several mechanisms can explain this. First, it is possible that the price jump in 1920 led to an overextension of credit to sugar producers like in Cuba. Saddled with this debt, producers would have less disposable income to spend on imported goods. Second, a mass unemployment or decline in real wages following the collapse of the sugar industry would lead to a similar decrease in demand for imported goods as workers would be unable to pay. Third, it is possible that the majority of imports into the British West Indies were consumed by a European elite who, when the market returned to previous levels, elected to simply leave the islands, taking their demand with them. Finally, it is possible that increases in revenue over the course of World War One led individuals to invest in durable goods, which would explain the slight positive difference in imports between 1916 and 1919. With the end of wartime prosperity, these durable goods may have offered real, long-term benefits to their owners and made further importation less necessary. This seems unlikely, however, given that non-

[13] Having 40% of exports attributed to sugar between 1905 and 1909 is associated with a 32.8% decrease in imports following the dance of the millions. This result is significant at the $p < 0.01$ level.

producers maintained elevated import levels for a lengthy period of time following the Dance of the Millions. The price level of producers and non-producers should also be considered. While the price level in producing countries may have been slightly lower after 1921, the magnitude of the impact on sugar-producing countries suggests that they were made worse off.

Table 6: Regression Results for Nominal Imports

	Dependent variable:			
	Log(Imports)			
	(1)	(2)	(3)	(4)
Producer × Post 1921	0.859***	-0.482***	-0.482	-0.482***
	(0.313)	(0.079)	(0.428)	(0.072)
Post 1921	0.039	0.597***	-	-
	(0.250)	(0.051)		
Producer	-	-	1.341***	-
			(0.294)	
Constant	12.559***	12.227***	11.802***	12.029***
	(0.147)	(0.074)	(0.475)	(0.099)
Country Fixed Effects	-	Yes	-	Yes
Yearly Fixed Effects	-	-	Yes	Yes
Observations	228	228	228	228
R^2	0.047	0.969	0.140	0.977
Adjusted R^2	0.038	0.968	0.057	0.973
Note:				*p<0.1; **p<0.05; ***p<0.01

The price volatility surrounding the Dance of the Millions led to a 48.2% decrease in imports for sugar producers. While the event brought large sums of money to sugar-producing communities, the brevity of this cash flow had long term detrimental effects. This cannot be explained entirely by country or yearly effects and instead leads

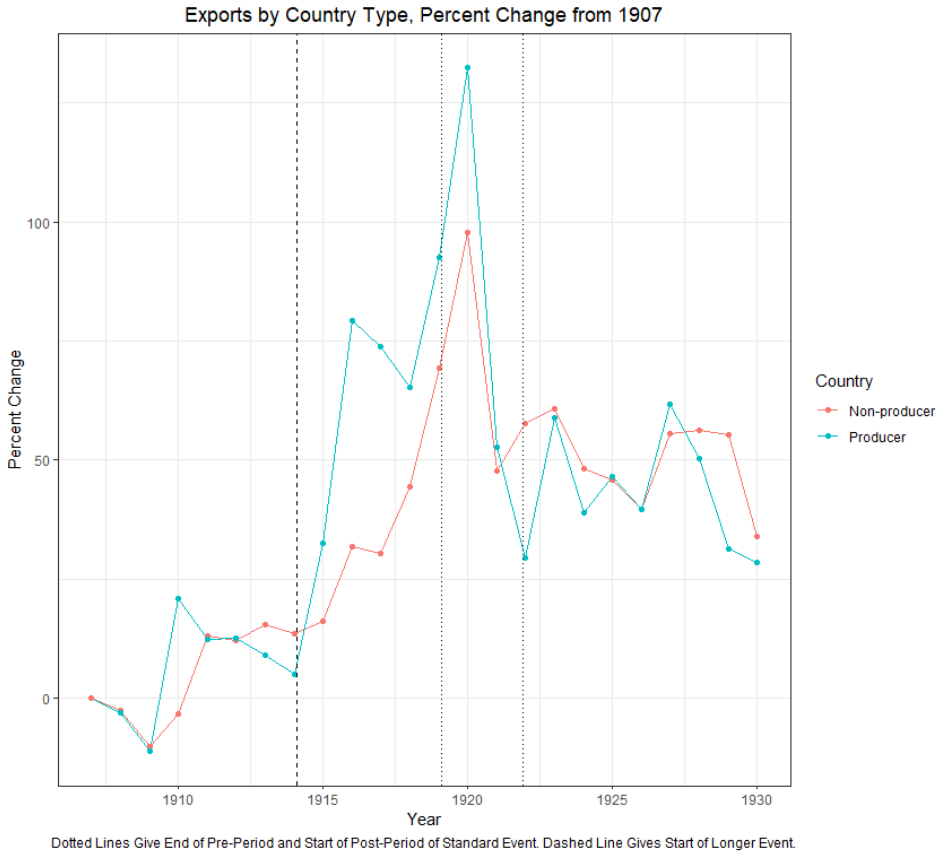
to the conclusion that the profit was indeed costly, as Senator Smoot had predicted. This presents evidence in favor of the literature which suggests that private expenditure falls following commodity price volatility.

Exports

Export trends in the pre-period are not parallel for producer and non-producers. This is due to the differential impact of World War One on each group. While there are no significant differences for producers and non-producers when considering yearly fixed effect coefficients, running our first placebo test again, (considering a pseudo 1915 event, a pre-period of 1910-1914 and a post-period of 1916-1920) we see a 32% increase in exports after our placebo event. This result is significant at the $p < 0.01$ level. Thus, prior to the Dance of the Millions producers and non-producers were not trending together. Because of this, non-producers cannot be considered a reasonable control group for sugar producers. Running our second placebo again, (considering a pseudo 1911 event, a pre-period of 1907-1910, and a post period of 1912-1915) we see no significant change post event, suggesting that export trends would have remained parallel without World War One.[14]

[14] This placebo test suggests a 5.2% decrease in producer's exports compared to non-producers, but this result is not significant at the $p < 0.05$ level.

Figure 7:



Source: Blue Book Trade Data[15]

Given the results of these placebo tests, it seems reasonable to conclude that World War One led to greater increases in exports for producers than non-producers and that their trends would have remained generally parallel without the war. This means that by excluding the war we may consider non-producers to be a control group and producers a treatment group. Thus, two different models are considered. First, using the same difference-in-difference model as before, we estimate the equation,

$$\text{Log}(\text{Exports}_{i,t}) = \beta_0 + \beta_1(\text{Producer}_i \times \text{Post}_t) + \gamma_t + \delta_i + \varepsilon_{i,t} \qquad (4)$$

[15] The equation $\text{Log}(\text{Exports}_{i,t}) = \beta_0 + \beta_1 \text{Year}_t + \beta_2(\text{Year}_t \times \text{Producer}_i) + \varepsilon_{i,t}$ is estimated. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$.

where $Exports_{i,t}$ gives the yearly total nominal export value for each country. As pre-trends are not parallel, this regression measures the loss of wartime gains, not simply the impact of the Dance of the Millions. Second, the same model is estimated with the event expanded to be 1915-1921. The pre-period is similarly expanded to be 1907-1914. Here, $Post_t$ becomes a dummy variable that is 1 if the observation occurs after the event (1922-1930) and 0 before the event (1907-1914). The exclusion of World War One in total as well as the volatile post-war years allows us to analyze the implications of the Dance of the Millions and World War One together. Unfortunately, the impact of each individual event cannot be easily established. The following tables present results from these regressions.

Table 7: Regression Results for Nominal Exports, Standard Event

	Dependent variable:			
	Log(Exports)			
	(1)	(2)	(3)	(4)
Producer × Post 1921	1.134***	-0.236***	-0.236	-0.236***
	(0.317)	(0.090)	(0.431)	(0.077)
Post 1921	-0.310	0.260***	-	-
	(0.253)	(0.058)		
Producer	-	-	1.370***	-
			(0.297)	
Constant	12.550***	12.326***	11.738***	12.085***
	(0.148)	(0.083)	(0.479)	(0.106)
Has Country Fixed Effects	-	Yes	-	Yes
Has Yearly Fixed Effects	-	-	Yes	Yes
Observations	228	228	228	228
R^2	0.056	0.962	0.155	0.974
Adjusted R^2	0.048	0.960	0.073	0.970
Note:				*p<0.1; **p<0.05; ***p<0.01

Table 8: Regression Results for Nominal Exports, Longer Event

	Dependent variable:			
	Log(Exports)			
	(1)	(2)	(3)	(4)
Producer × 1921	1.134***	-0.085	-0.085	-0.085
	(0.312)	(0.076)	(0.457)	(0.075)
Post 1921	-0.052	0.456***	-	-
	(0.259)	(0.049)		
Producer	-	-	1.219***	3.088***
			(0.333)	(0.099)
Constant	12.292***	11.992***	11.732***	8.851***
	(0.163)	(0.072)	(0.484)	(0.100)
Has Country Fixed Effect	-	Yes	-	Yes
Has Yearly Fixed Effects	-	-	Yes	Yes
Observations	204	204	204	204
R^2	0.077	0.975	0.142	0.978
Adjusted R^2	0.068	0.974	0.058	0.974
Note:		*p<0.1; **p<0.05; ***p<0.01		

Per Equation 12, there was a significant decrease in producer exports compared to non-producers following the Dance of the Millions. Equation 16, however, suggests that this was due to a loss of wartime prosperity.[16] Similarly, considering exports of home produce and re-exports and using a model identical to Equation 12, we see that the Dance of the Millions had an insignificant effect on the home produce exports of producers and a significantly negative impact of re-exports of producers when

[16] Both of these results are confirmed by using a continuous variable for sugar as a share of exports for 1905-1909 instead of the binary $Producer_i$ variable.

considering the small event alone.[17] The post-war decline can then be linked to a slowing of re-exports rather than a loss of domestic production.[18] This is unsurprising as a scarcity of shipping, as in World War One, likely necessitated efficiency gains through shipping interconnectedness. Following the war, when this interconnectedness was no longer cost effective, re-exports dropped. Thus, while there was a significant fall in nominal export value for sugar producers following the Dance of the Millions, it was not overly harmful, primarily applied to re-exports, and placed the groups back at pre-war differences. With the consideration that price levels may have been slightly lower in sugar-producing countries post-event, it is possible that sugar exporting countries even had positive real export growth following the Dance of the Millions.

Given the decline in imports for producers following the Dance of the Millions, the apparent lack of impact on exports is slightly surprising. Several scenarios could explain this. First, it could be that the price decrease in 1921 was not really that harmful to sugar producers exporting capabilities. Perhaps producers did go into debt as in Cuba, but this debt was manageable and sufficient capital was available to pay for necessary growing season investments. Or, if this debt was not manageable, creditors took possession of sugar estates and were able to run them as efficiently as pre-war. Second, if the price collapse of 1921 were instead particularly damaging, it is possible that this was offset by economic growth during World War One and the high-price post-war years. Perhaps sufficient infrastructure investments were made, either in the form of

[17] Both of these results are confirmed by using a continuous variable for sugar as a share of exports for 1905-1909 instead of the binary $Producer_i$ variable.

[18] Two caveats append this. First, both home produce and re-exports violate the parallel trends assumption. Second, Grenada is omitted due to missing data.

production modernization or public investment in communication or transportation networks, so that even with a decline in price sugar cultivation and refinement could take place at elevated rates.

In conclusion, the view of the Dance of the Millions as a decadent time leading to long-term despair is not reflected in the export data. While exports decreased from 1920 to 1922, this placed producers even with their position prior to World War One. This was likely due to the Dance of the Millions not being as damaging as previously considered, a finding that does not square fully with the decline in imports, or war-time spending leading to steady production even following the price crash. While seemingly counterintuitive, this fits with the literature's conclusion that price shocks led to short term economic benefit, even after prices collapse.

Section 5: Government Finance

Revenue

Considering the Blue Books and Yearly Colonial Statistical Compendiums, a full set of data on government revenue was established.[19] Trends in the pre-period are determined to be parallel by considering yearly fixed effects coefficients and by considering a placebo event in 1915.[20] As neither yield any significant difference between producers and non-producers in the pre-period, trends are parallel. The equation:

$$\text{Log}(\text{Revenue}_{i,t}) = \beta_0 + \beta_1(\text{Producer}_i \times \text{Post}_t) + \gamma_t + \delta_i + \varepsilon_{i,t} \quad (4)$$

is estimated. Here, $\text{Revenue}_{i,t}$ gives yearly revenue for each country. The binary variable Post_t is returned to which is 1 for the years 1910-1919 and 0 for the years 1922-1930. Country and year fixed effects are again added in gradually. The following table gives the results from these regressions.

The Dance of the Millions is seen to be associated with a 28.2% decrease in governmental revenue for sugar producers relative to non-producers. This is significant at the $p < 0.01$ level and confirmed using a continuous variable for pre 1910 sugar as a percent of exports.[21] This result is unsurprising given that a significant portion of revenue is highly related to trade, especially imports. This includes import and export duties as well as port, harbor, wharf, and lighthouse dues, all of which are reasonably

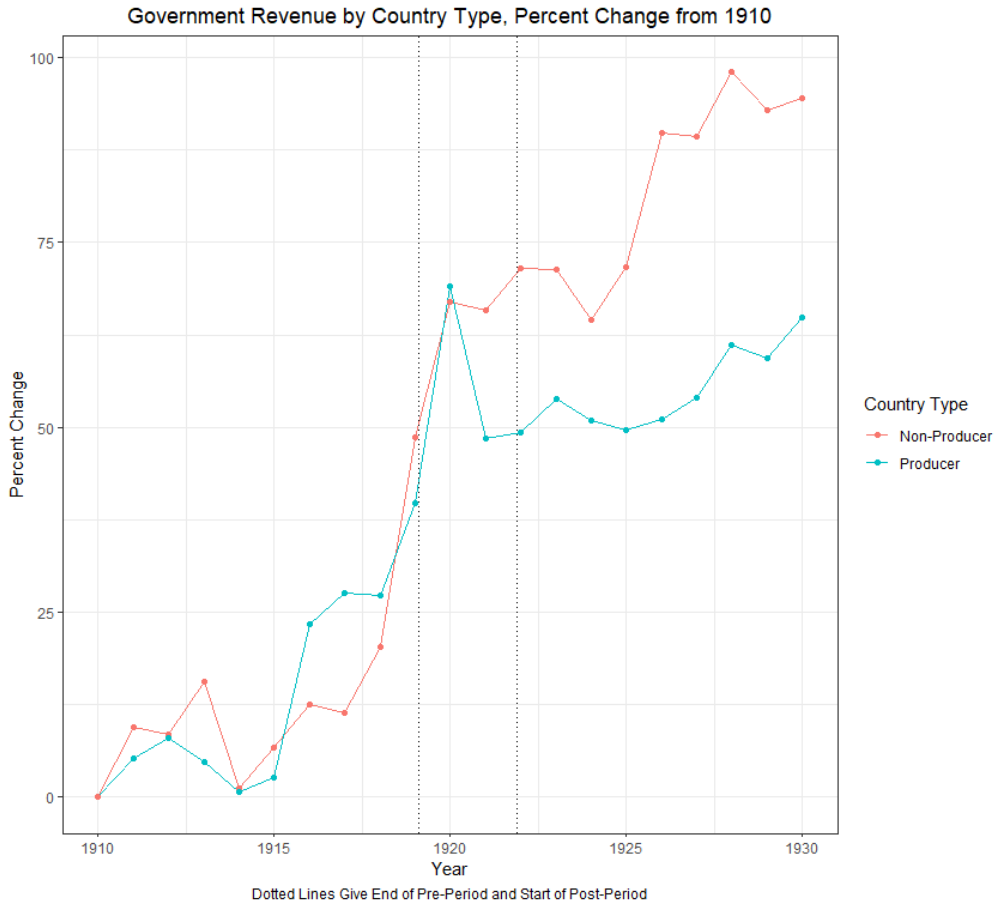
[19] Only one data point: Trinidad and Tobago, 1915, is missing. Happily, this data point is omitted in the placebo test and thus likely does not skew the parallel trends determination.
[20] This placebo test suggests an 8.7% increase in producer's revenue compared to non-producers, but this result is not significant at the $p < 0.05$ level. Pre-period: 1910-1914. Post-period: 1916-1920.
[21] A share of sugar in exports of 40% in the period 1905-1909 is seen to be associated with a 19.96% decrease in revenue following the Dance of the Millions. This is significant at the $p < 0.01$ level.

depressed following price volatility. This is a direct consequence of individual income losses as lower imports fuel lower revenues, possibly perpetuating lessened growth. While this mechanism will be slightly different for countries that do not rely on trade duties for revenue, the concept will remain the same as lowered economic activity will lead to less available taxable income. Two caveats are necessary for these results. First, the possibility that price levels are slightly lower in sugar-producing countries post event would decrease the magnitude of the impact on real revenue. Second, these results capture a loss of wartime prosperity which, while not significant, may slightly bias results downward.

Table 9: Regression Results for Nominal Governmental Revenue

	Dependent variable:			
	Log(Revenue)			
	(1)	(2)	(3)	(4)
Producer × Post 1921	0.683**	-0.284***	-0.238	-0.282***
	(0.301)	(0.081)	(0.422)	(0.078)
Post 1921	0.310	0.692***	-	-
	(0.240)	(0.052)		
Producer	-	-	0.921***	-
			(0.291)	
Constant	11.297***	10.970***	10.797***	10.833***
	(0.141)	(0.075)	(0.467)	(0.107)
Has Country Fixed Effects	-	Yes	-	Yes
Has Yearly Fixed Effects	-	-	Yes	Yes
Observations	227	227	227	227
R^2	0.057	0.966	0.107	0.971
Adjusted R^2	0.049	0.964	0.020	0.966
Note:		*p<0.1; **p<0.05; ***p<0.01		

Figure 8:



Source: Blue Book and Statistical Compendium Revenue Data[22]

Expenditure

Data is available for government expenditure with the same completeness as revenue. Trends are similarly parallel, confirmed through coefficients of yearly fixed effects and a placebo event in 1915.[23] As neither yield any significant difference between producers and non-producers in the pre-period, trends are parallel. The equation:

[22] The equation $\text{Log}(\text{Revenue}_{i,t}) = \beta_0 + \beta_1 \text{Year}_t + \beta_2(\text{Year}_t \times \text{Producer}_i) + \varepsilon_{i,t}$ is estimated. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$.

[23] This placebo test suggests an 5.3% increase in producer's revenue compared to non-producers, but this result is not significant at the $p < 0.05$ level. Pre-period: 1910-1914. Post-period: 1916-1920.

$$\text{Log}(\text{Expenditure}_{i,t}) = \beta_0 + \beta_1(\text{Producer}_i \times \text{Post}_t) + \gamma_t + \delta_i + \varepsilon_{i,t} \quad (4)$$

is estimated. Here, $\text{Expenditure}_{i,t}$ gives yearly expenditure for each country. Again, yearly and country fixed effects are added in gradually. The following table presents the results from these regressions.

Table 10: Regression Results for Nominal Governmental Expenditure

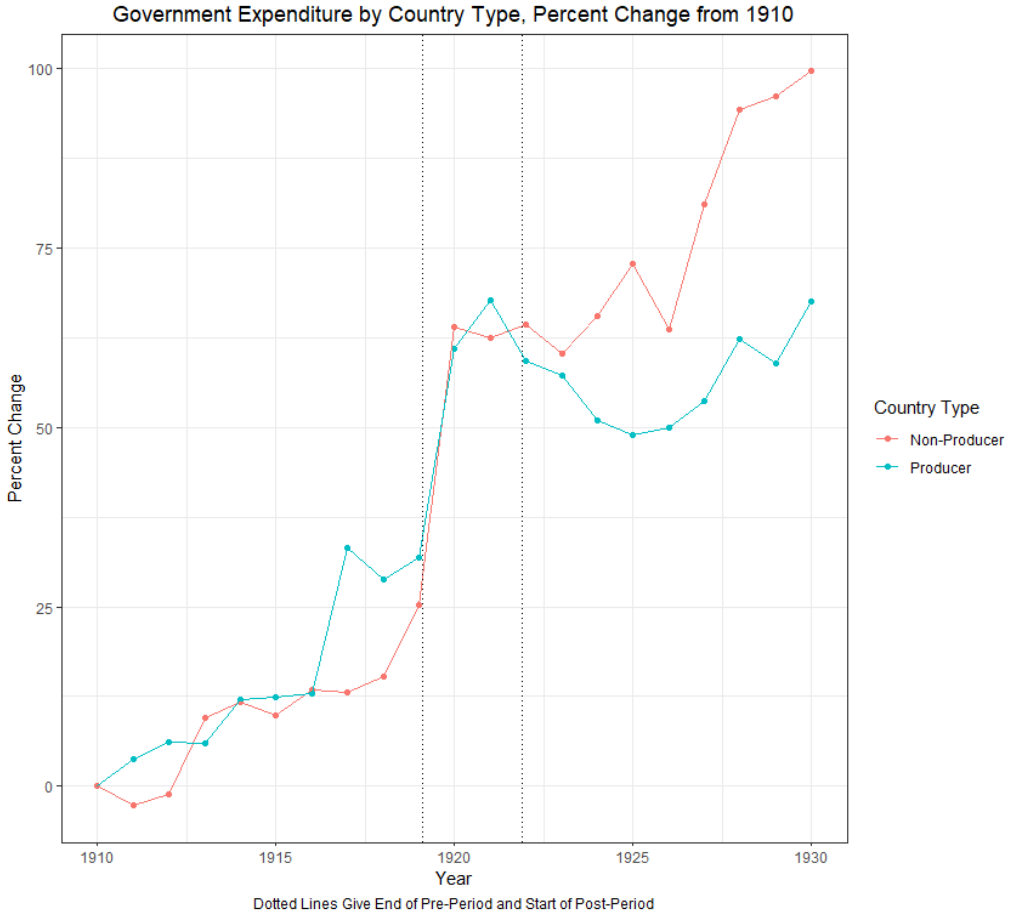
	Dependent variable:			
	Log(Expenditure)			
	(1)	(2)	(3)	(4)
Producer × Post 1921	0.734**	-0.263***	-0.220	-0.263***
	(0.297)	(0.074)	(0.416)	(0.072)
Post 1921	0.287	0.681***	-	-
	(0.237)	(0.048)		
Producer	-	-	0.953***	-
			(0.287)	
Constant	11.291***	11.020***	10.798***	10.904***
	(0.140)	(0.069)	(0.461)	(0.099)
Has Country Fixed Effects	-	Yes	-	Yes
Has Yearly Fixed Effects	-	-	Yes	Yes
Observations	227	227	227	227
R^2	0.062	0.971	0.114	0.975
Adjusted R^2	0.053	0.969	0.028	0.971
Note:				*p<0.1; **p<0.05; ***p<0.01

The Dance of the Millions is associated with a 26.3% decrease in governmental expenditure. This result is significant at the $p < 0.01$ level. The result is also confirmed by considering sugar as a percent of exports before the period of study. [24] This result is unsurprising given the simultaneous decrease in governmental revenue.

[24] A share of sugar in exports of 40% in the period 1905-1909 is seen to be associated with a 17.88% decrease in revenue following the Dance of the Millions. This is significant at the $p < 0.01$ level.

This shift in governmental expenditure is likely a main mechanism by which price volatility impacts the growth rates of commodity dependent nations. As government expenditure increases economic activity and can lead to even further future

Figure 9:



Source: Blue Book and Statistical Compendium Expenditure Data[25]

growth and revenue, decreases in expenditure compared to countries that did not experience similar volatility can compound over time. Taken over the history of a country, this can explain why those with abundant natural resources grow more slowly

[25] The equation $\text{Log}(\text{Expenditure}_{i,t}) = \beta_0 + \beta_1 \text{Year}_t + \beta_2(\text{Year}_t \times \text{Producer}_i) + \varepsilon_{i,t}$ is estimated. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$.

than those with limited resource reserves. As with revenue, the same caveats exist. Differential impacts of World War One slightly bias these results downward as well as the possible lower price level in sugar-producing countries. The fact that revenue and expenditure trend so closely (perhaps with a one-year lag) is noteworthy. The Dance of the Millions did not lead to changes in deficits for producers relative to non-producers, suggesting that governments adjusted to the shifting revenue conditions and "lived within their means."

Public Debt

Finally, governmental debt is considered. Just two observations are missing in the dataset.[26] Debt, unlike expenditure and revenue, is prone to substantial swings as countries undertake large scale capital projects and pay off swaths of bonds as they come due. While the parallel trends assumption cannot be rejected when considering yearly fixed effect coefficients or a placebo event in 1915, this is likely due to wide variations in changes in debt for producers in the pre-period.[27] Additionally, while trends for producers and non-producers do cross in the pre-period following the outbreak World War One, this is not so significant as to reject the parallel trends assumption. With these limitations in mind, the following difference-in-difference equation is estimated:

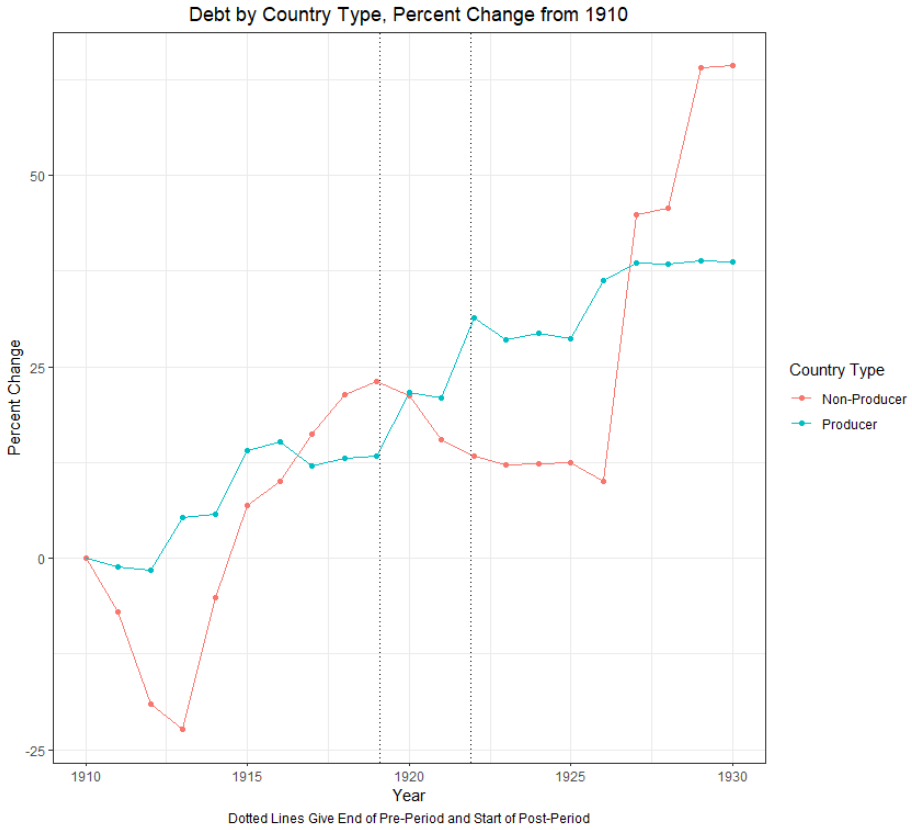
$$\text{Log}(\text{Debt}_{i,t}) = \beta_0 + \beta_1(\text{Producer}_i \times \text{Post}_t) + \gamma_t + \delta_i + \varepsilon_{i,t} \qquad (4).^{28}$$

[26] Trinidad and Tobago, 1915 and 1916.
[27] This placebo test suggests an 17.2% decrease in producer's debt compared to non-producers, but this result is not significant at the $p < 0.05$ level. Pre-period: 1910-1914. Post-period: 1916-1920.
[28] $\text{Log}(\text{Debt}_{i,t} + 1)$ is actually considered due to the Virgin Islands having no debt during certain years.

Here, $Debt_{i,t}$ gives yearly debt for each country. Again, yearly and country fixed effects are added in gradually. The following table presents the results from these regressions.

Unsurprisingly, no significant impact of the Dance of the Millions is found on sugar producers. Perhaps more interesting is the same regression model with the bandwidth restricted. Selecting World War One as the pre-period (1915-1919) and

Figure 10:



Source: Blue Book and Statistical Compendium Expenditure Data[29]

Table 11: Regression Results for Nominal Governmental Expenditure, Standard Period

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[29] The equation $Log(Debt_{i,t}+1) = \beta_0 + \beta_1 Year_t + \beta_2(Year_t \times Producer_i) + \varepsilon_{i,t}$ is estimated. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$. $Log(Debt_{i,t}+1)$ is considered due to the Virgin Islands having no debt during certain years.

	Dependent variable:			
	Log(Debt)			
	(1)	(2)	(3)	(4)
Producer × Post 1921	2.867***	-0.015	0.075	-0.018
	(0.711)	(0.110)	(0.989)	(0.109)
Post 1921	-0.851	0.286***	-	-
	(0.569)	(0.071)		
Producer	-	-	2.792***	-
			(0.685)	
Constant	10.651***	11.649***	9.507***	11.606***
	(0.335)	(0.102)	(1.092)	(0.149)
Has Country Fixed Effects	-	Yes	-	Yes
Has Yearly Fixed Effects	-	-	Yes	Yes
Observations	226	226	226	226
R^2	0.070	0.989	0.141	0.990
Adjusted R^2	0.061	0.988	0.057	0.989
Note:		*p<0.1; **p<0.05; ***p<0.01		

restricting the post-period to before the major capital investments of non-producers that began in 1927 (1922-1926), a pre-period with more convincing parallel trends is taken, and a post-period with less non-producer variation. This model suggests that the Dance of the Millions led to a 20.2% increase in debt for sugar producers. This result is significant at the $p < 0.05$ level. Even this restricted model, however, does not robustly show that debt increased for producers. When using a continuous variable for sugar as a percent of exports prior to 1910, the significance disappears.[30]

[30] A share of sugar in exports of 40% in the period 1905-1909 is seen to be associated with a 5.96% increase in debt following the Dance of the Millions. However, this is not even significant at the $p < 0.1$ level.

Considering the inconclusiveness of both the flawed broad model as well as the restricted model, the Dance of the Millions is not found to have any substantial impact on government debt. This fits with the earlier finding that deficits did not increase for producers following the Dance of the Millions. Sugar-producing governments, confronted with declining revenue, elected to restrict expenditure and not undertake any significant capital projects. Interestingly, non-producing nations are found to undertake capital projects and accrue substantial debt in 1927 and 1929. Given steadily increasing government revenue for non-producers in the post-period, government officials likely determined this debt not to be overly burdensome.

Section 6: Individual Finance

Data on individual finance were collected from the Blue Books and the Yearly Colonial Statistical Compendiums. These data, describing the yearly balance sheets of government-run colonial savings banks, offer insight into the trends of individuals' saving behavior. How price volatility impacts personal savings presents a key insight into how the resource curse slows growth. There are three main gaps in the data: 1912, where 5 countries have missing data, 1915, where 6 countries have missing data, and 1925, when 5 countries have missing data.[31] These years are simply omitted from analysis rather than interpolated. Given that trends are generally linear, this loss of data is not damaging to statistical accuracy.

A possible caveat of this analysis is that public savings banks may not be comparable to privately run banks. Only two facts need to be true for this to not factor heavily into conclusions. First, that saving behavior with government-run banks follows general saving trends. And second, that government-run banks do not differ substantially between sugar-producing and non-producing islands. As both assumptions appear reasonable, the analysis is undertaken.

Number of Depositors

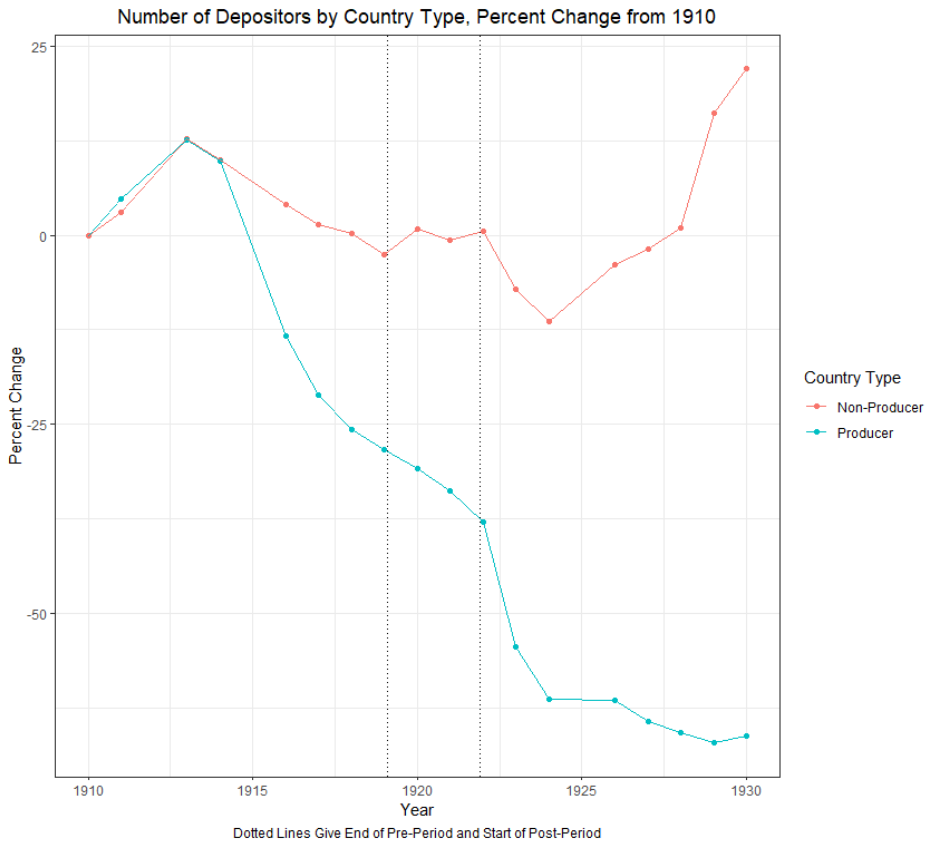
Data are available on the number of depositors with funds saved in government-run banks. Surprisingly, the number of depositors decreased significantly in sugar-producing countries over the course of World War One while the number of depositors in non-producing countries remained flat. This is even while producers raked in

[31] There is also missing data for Trinidad and Tobago 1916 as well as Montserrat 1919.

wartime profits from the elevated sugar price. Parallel trends are violated, making a difference-in-difference impossible.

The reason for this difference in trends is slightly mysterious. Perhaps larger percentages of men in sugar-producing colonies were called to serve in World War One, withdrawing their money before leaving. Given the dramatic wartime sugar shortages, however, this seems unlikely. Alternatively, it could be that the war and price volatility led individuals to grow distrustful of a government-run savings bank, though why this

Figure 11:



Source: Blue Book and Statistical Compendium Expenditure Data[32]

[32] The equation $\text{Log}(\text{Depositors}_{i,t}) = \beta_0 + \beta_1 \text{Year}_t + \beta_2(\text{Year}_t \times \text{Producer}_i) + \varepsilon_{i,t}$ is estimated. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$.

would differentially impact producers and non-producers is unclear. There does not even appear to be a great discontinuity for sugar producers before and after the Dance of the Millions. This is confirmed using a regression discontinuity design.[33] Regardless of the reason for the decline, this result, coupled with the dynamics of deposit amounts, leads to a compelling conclusion.

Total Deposits

The total amount to credit for depositors did not follow the same decreasing trend during World War One. Instead, producers and non-producers trend together. This is confirmed by considering yearly fixed effect coefficients for producers and non-producers and by the simulation of a placebo event in 1915. [34] The fact that producers maintain parity with non-producers, even as producing countries shed depositors, is emblematic of the short term positive impact that price increases can have on commodity dependent nations. The prosperity, though, does not last. As pre-trends are parallel, a difference-in-difference research design is utilized. The equation,

$$\text{Log}(\text{Credit}_{i,t}) = \beta_0 + \beta_1(\text{Producer}_i \times \text{Post}_t) + \gamma_t + \delta_i + \varepsilon_{i,t} \quad (4)$$

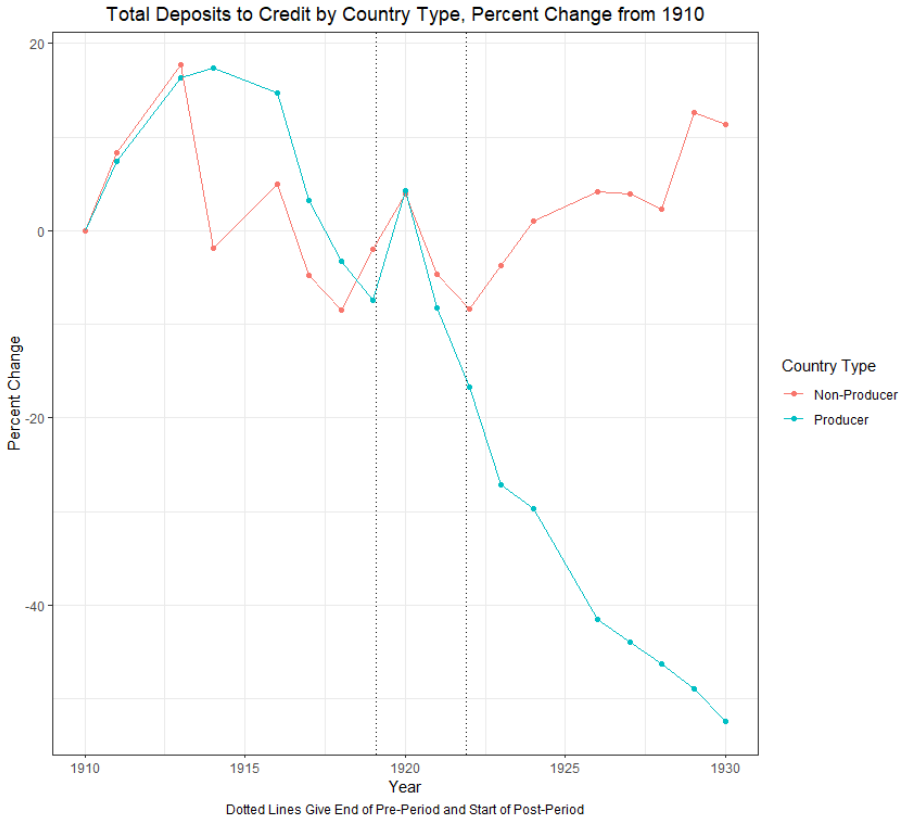
is estimated. Here, $\text{Credit}_{i,t}$ gives yearly value of credit available to depositors. Country and yearly fixed effects are added in gradually. The following table provides results from these regressions. The Dance of the Millions is associated with a 45.5% decrease in total deposits in government savings banks. This result is significant at the $p < 0.01$

[33] The equation: $\text{Log}(\text{Depositors}_{i,t}) = \beta_0 + \beta_1\text{Distance}_t + \beta_2\text{Post}_t + \beta_3(\text{Post}_t \times \text{Distance}_t) + \varepsilon_{i,t}$ is estimated. Here, Distance_t gives the number of the years (1922 = 1, 1919 = -1, etc.). While post event there are 15.8% fewer depositors, this is not significant at even the $p < 0.1$ level.

[34] This placebo test suggests an 2% decrease in producer's debt compared to non-producers following the 1915 pesudo event. But, this result is not significant at the $p < 0.05$ level. Pre-period: 1910-1914. Post-period: 1916-1920.

level. Additionally, it is confirmed by replacing the binary producer variable with a continuous variable for sugar as a percent of exports pre-1910.[35] This result, while dramatic, is unsurprising given the decrease in creditors even prior to the Dance of the Millions. Coupled with the apparent lack of change in export values, however, the story becomes slightly more complicated. If exports remained at pre-war levels, why would

Figure 12:



Source: Blue Book and Statistical Compendium Expenditure Data[36]

[35] A share of sugar in exports of 40% in the period 1905-1909 is seen to be associated with a 56.76% decrease in total deposits following the Dance of the Millions. This result is significant at the $p < 0.01$ level.

[36] The equation $Log(Credit_{i,t}) = \beta_0 + \beta_1 Year_t + \beta_2(Year_t \times Producer_i) + \varepsilon_{i,t}$ is estimated. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$.

Table 12: Regression Results for Private Deposits to Credit

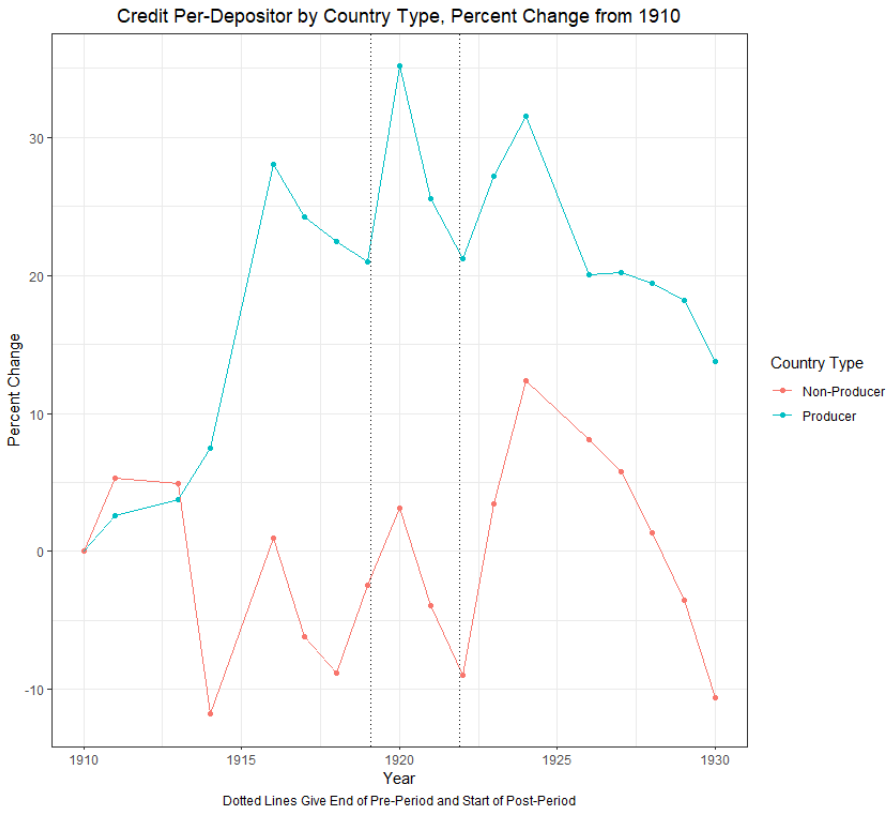
	Dependent variable:			
	Log(Credit)			
	(1)	(2)	(3)	(4)
Producer × Post 1921	1.265***	-0.453***	-0.404	-0.455***
	(0.395)	(0.126)	(0.557)	(0.130)
Post 1921	-0.674**	0.012	-	-
	(0.322)	(0.081)		
producer	-	-	1.669***	-
			(0.395)	
Constant	10.258***	10.486***	9.558***	10.452***
	(0.196)	(0.117)	(0.571)	(0.170)
Has Country Fixed Effects	-	Yes	-	Yes
Has Yearly Fixed Effects	-	-	Yes	Yes
Observations	191	191	191	191
R^2	0.053	0.955	0.143	0.956
Adjusted R^2	0.043	0.952	0.059	0.949
Note:		*p<0.1; **p<0.05; ***p<0.01		

total deposits decrease? One theory that could explain this would be an overextension of debt during the Dance of the Millions. Faced with these obligations coming due, sugar growers could have relied on their deposits to pay off debt or for financing the capital-intensive planting season. If, as in Cuba, ownership of sugar plantations shifted to more distant ownership, then profits would be realized elsewhere, and domestic savings would necessarily decline.

Perhaps most interesting is the interaction between decreasing numbers of depositors and decreasing credit levels. These factors combine to increase the value of credit per-depositor in sugar-producing countries. During years of higher commodity

prices: the wartime increase of 1916, the Dance of the Millions in 1920, and the post war commodity bump in 1924, credit becomes more concentrated before gradually decreasing in concentration. While non-producers end the period of study with lower credit per depositor due to increases in the number of depositors, savings in sugar-producing nations become more concentrated. A similar pattern of boom and bust is present for non-producers, though not to the same extent in 1916 and 1920 due to lower sugar dependence. While this finding is qualified by the perplexing decrease in the

Figure 13:



Source: Blue Book and Statistical Compendium Expenditure Data[37]

[37] The equation $\text{Log}(\text{CreditPer}_{i,t}) = \beta_0 + \beta_1 \text{Year}_t + \beta_2(\text{Year}_t \times \text{Producer}_i) + \varepsilon_{i,t}$ is estimated. Here, $\text{CreditPer}_{i,t}$ gives the yearly average credit value per-depositor for each country. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$.

number of depositors in sugar-producing countries prior to the Dance of the Millions, it begs further investigation. Perhaps volatility causes greater wealth concentration in commodity dependent nations as smaller producers cannot deal as effectively with fluctuations as larger producers. This may lead to smaller producers being forced out of the market by larger producers and, in the resulting market, a lack of competition slowing growth. While this analysis comes nowhere close to answering this complicated question, it presents evidence for the theory and presents an avenue for future research.

Section 7: Demographics

Births and Deaths

Data on yearly births and deaths are available in the Blue Books and the Yearly Colonial Statistical Compendiums. Trends are generally parallel throughout the period for both statistics. While deaths appear to spike in sugar-producing countries in 1920 and 1921, no significant impact of the Dance of the Millions can be found.[38] This lack of impact likely is caused by the large year-to-year variance of births and deaths which exists with just 12 countries. This, then, does not meaningfully contradict the literature on price fluctuations leading to higher mortality rates. Over the course of the period, both births and deaths are found to be decreasing at a rate of .2% per year. This finding is significant for births at the $p < 0.05$ level but not significant for deaths. Taken together, this presents evidence that the differences in sugar-producing and non-producing countries are driven not by demographic changes but by the impact of the Dance of the Millions.

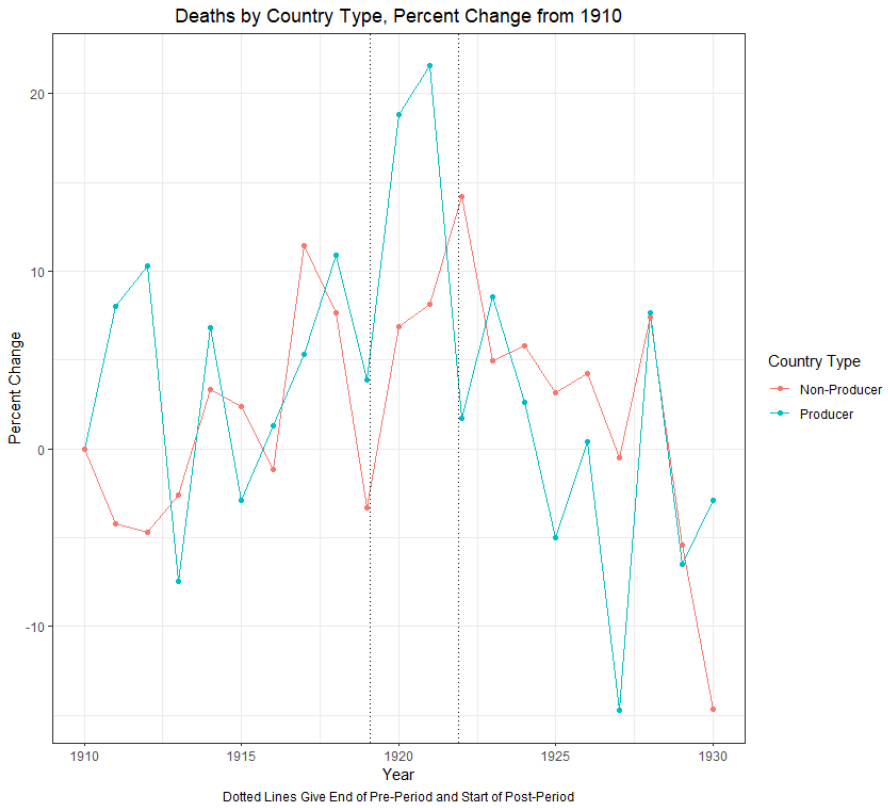
Immigration

An area that demands further study is the role of immigration in explaining the impacts of the Dance of the Millions. Shifts away from sugar-producing colonies and towards non-producing colonies could explain, in part, the changes in imports, government revenue, and private depositors for producers. To determine if immigration flows are different between producers and non-producers, data on immigration and emigration were collected from the Yearly Colonial Statistical Compendiums for the

[38] While the increase is impressive, per yearly fixed effects coefficients it is not statistically significant.

years 1922-1927. Data was collected on all countries excluding the Leeward Islands. While it appears that changes in population due to inward and outward flows trend together, this cannot be established with sufficient robustness due to the small sample size.[39] Firstly, immigration was incredibly limited in this period. Producers experienced, on average, a yearly emigration of just .21% of the population, while non-producers experienced yearly immigration of just .08% of the population. Regressing the yearly

Figure 14:



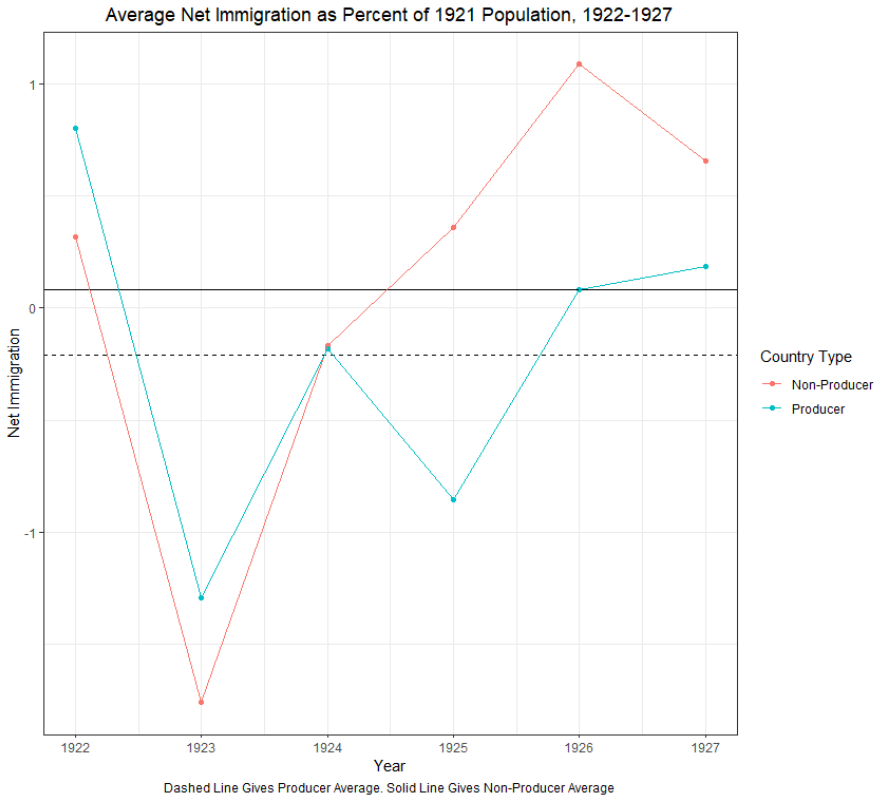
Source: Blue Book and Statistical Compendium Expenditure Data[40]

[39] Changes in population due to immigration were considered as a percentage 1921 population to standardize across countries.

[40] The equation $Log(Deaths_{i,t}) = \beta_0 + \beta_1 Year_t + \beta_2(Year_t \times Producer_i) + \varepsilon_{i,t}$ is estimated. Here, $Deaths_{i,t}$ gives the yearly number of deaths for each country. Data points for non-producers are $100\times \beta_1$. Those for producers are $100\times(\beta_1 + \beta_2)$.

average change for non-producers on the yearly average change for producers, we see that a 10% increase in immigration to producers will be associated with a 8.98% increase in immigration to non-producers. While this result is not significant due to the small sample size, it presents further evidence that immigration trended together for producers and non-producers. An analysis of immigration flows of the entire British West Indies between 1910 and 1930 rather than of a subset in the post period would further interpretation of results beyond this incredibly cursory note. However, given that births and deaths did not meaningfully change following the Dance of the Millions, there appears to be some evidence, however minor, that immigration did not play a substantial role in the impacts of the Dance of the Millions.

Figure 15:



Source: Statistical Compendium Expenditure Data

Section 8: Conclusion

This thesis has considered the differing impact of the Dance of the Millions on colonies in the British West Indies using data from colonial Blue Books and the Yearly Colonial Statistical Compendiums. In so doing, it has attempted to determine how commodity price volatility affects countries who are commodity dependent. Given that some islands in the British West Indies were heavily reliant on sugar while others produced little, a meaningful comparison can be made between those impacted by price volatility and those who are not.

The Dance of the Millions is not found to have a statistically significant impact on price levels for those on the edge of subsistence. Price levels for those paying the cost of average calories are found to be lower in sugar-producing countries following the price shock, though not robustly. This suggests that general price levels in sugar-producing countries may have been slightly lower, indicating that consumers purchasing higher priced goods would have paid less in sugar-producing countries following the Dance of the Millions.

The price shock was found to reduce imports of sugar-producing nations by 48.2%. This confirms aspects of the literature which link price volatility in commodity dependent nations with decreased consumer expenditure. As the British West Indies relied heavily on the importation of goods, this can be considered a direct welfare loss. However, the extent to which this loss impacted poorer or richer individuals is unknown. The Dance of the Millions was not found to have a significant impact on total exports. During World War One, re-exports increased for sugar producers, likely due to a lack of shipping and the need for greater efficiency. Following the war, re-exports

plummeted as shipping became more plentiful. Exports of home produce increased throughout the war and did not significantly decrease after. The lack of impact on total exports fits with certain literature that finds short term gains following price volatility that are eventually overcome by countervailing forces.

Additionally, the Dance of the Millions led to a 28.2% decrease in government revenue for sugar producers and a 26.3% decrease in government expenditure. This confirms literature that suggests that reduced government expenditure due to price volatility is a main mechanism by which commodity dependence limits growth. Decreases in revenue and expenditure were found to move in tandem and no significant evidence was found that the price volatility caused sugar producers debt obligations to increase.

The number of depositors holding money in government-run savings banks in sugar-producing colonies steadily decreased following the outbreak of World War One. This trend differed significantly from countries that did not produce sugar, leading to speculation as to the cause of this pre-period divergence. This same issue does not plague data on the total amount of deposits standing to the credit of depositors. The Dance of the Millions is found to decrease the amount of total deposits by 45.5%. This confirms existing literature on price volatility leading wealth losses. Several mechanisms are presented to explain this including the need to draw down credit in order to pay off debt and the transfer of ownership of plantations to distant countries that did not save in local banks. Finally, the Dance of the Millions is seen to lead to a consolidation of wealth in sugar-producing colonies. A cycle emerges whereby commodity price increases lead to greater wealth consolidation which then grows more

diffuse in subsequent years. This complements the existing literature on volatility leading to greater inequality and could be a fruitful mechanism to study further so as to better understand the resource curse.

Finally, the Dance of the Millions is not found to have a statistically significant impact on the number of births and deaths in sugar-producing countries. Both the number of births and deaths are seen to be generally trending downwards over the course of the sample. While sugar-producing countries do see a jump in deaths in the years 1920 and 1921, these increases are not significantly different from the sample average. Taking the results on births and deaths in conjunction with a limited 6-year sample of immigration. Evidence is presented that immigration did not play a significant role in the results for sugar producers following the Dance of the Millions.

Several extensions of this work exist. The Blue Books contain a wealth of knowledge including data on criminal convictions, pupils enrolled in school, and foreign dignitaries. These statistics could reveal interesting insights into the link between commodity price volatility and unrest, educational expenditure, and economic diplomacy. Additionally, trade flows could be studied more granularly, with data available on shipping as well as imports and exports to individual countries. Wages could also be considered, though data quality varies widely from country to country and year to year. While difficult, this could present a compelling relationship between price volatility and labor market forces. Finally, the study could be expanded to all British colonies during World War One. A consideration of more geographic areas with different commodities and levels of dependence would be an insightful addition to the literature.

Taking results together, a country is seen to be far worse off following the Dance of the Millions. This holds important results for countries today who find themselves reliant on the export of commodities. While short term gains may exist during periods of high prices, profits remain short lived. Eventually, the sweet will turn sour and the music will stop.

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