

The Role of Demand in the Historical Development of the Banana Market

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Comments)**

1. Introduction:

In the 1880s Americans did not consume, or did not even know about the existence of bananas. By the 1890s this fruit was sold in the main American cities in individual packages wrapped in tin foil as a luxury good. By the 1910s they were considered a cheap fruit, part of the basic diet of the growing American urban working class. After the 1930s Americans could find bananas in any grocery store or super market in the country at any time of the year. Bananas stopped being considered an exotic fruit and became common as part of the breakfast together with other traditional goods such as bread and milk.

A national mass consumption of bananas was possible because of the production and distribution network made by the Boston-based United Fruit Company (now Chiquita) and, at a lesser extent, by the New Orleans-based Standard Fruit and Steamship Company (now Dole). In the early years of the twentieth-century, these companies created an impressive network that included plantations in Central America, railways, steamships, telegraph lines, hospital, schools, harbors, and a distribution system in the US. The historical development of the supply side has been studied by several authors as an example of a successful vertical integration process.¹

The role of the demand side has not been studied by historians. The immense effort made by companies like United Fruit or Standard Fruit to develop the banana supply in the

¹ See Adams (1914), Wilson, Read (1986), Wilkins (1974), Bucheli (2001).

United States had to respond to a domestic demand for the fruit. In this paper I show that in the early 20th century, bananas came to satisfy an existing demand for fresh fruit that could not be satisfied by the American local production. These were years of precarious refrigeration systems or industrial food elaboration processes. The American market depended on the seasonally fruits produced in their country, so the access to a tropical fruit that was available all year long was welcome by consumers. This advantage of the banana remained as long as a food processing industry was not developed in the US. Once Americans have access to other substitutes, after World War II, bananas lost their advantage and its consumption, relative to other goods, fell.

This paper is based on the United Fruit Company's Annual Reports to the Stockholders, statistics compiled by the US Department of Commerce, the US Department of Agriculture, and several technical reports of development agencies.

2. The development of the banana supply

How did bananas come to the United States? Throughout the twentieth century more than 80% of the world's banana exports were in hands of the Boston-based United Fruit Company, followed by the Standard Fruit & Steamship Company of New Orleans. The United Fruit, created in 1899, built an impressive production and distribution network from the banana plantations in Central America and the Caribbean to the United States, that dominated this market for several decades.

Before the 1880s tropical fruits were barely known in the United States. Small shipments of bananas arrived in those years and were sold as luxury goods in expensive hotels. It was during this decade when bananas gradually became known by the general public and became available in grocery stores. However, they still remained as luxury goods as late as in 1899, when importers had to sell the fruit with instructions on how to peel it. ²

The fact that bananas were a luxury good in the late nineteenth-century explains the big success of one of the founding fathers of United Fruit, Lorenzo D. Baker, when in the late

² Jenkins (2000, 1-15)

1880s he imported several bunches of bananas from Jamaica to New York selling them at a very good price. The high profits Baker made from this first shipment made him get in touch with Bostonian entrepreneur Andrew Preston with whom he created the Boston Fruit Company, a banana marketing enterprise. The Boston Fruit Company eventually bought a large number of ships creating that would eventually become the largest private fleet in the world, the Great White Fleet.

In 1899 another Bostonian entrepreneur, Minor C. Keith, approached Preston and Baker in order to merge his businesses with theirs. Keith was a railroad entrepreneur in Central America and owned thousands of acres in the region, many of them planted with banana trees already. They agreed and the United Fruit Company was born in March 30th, 1899.

The new company was led by Preston and Keith as Vice-president. Their diverse interests and skills complemented the other. Keith had his railroad network and plantations in Central America, plus the market in the United States South-East, and Preston grew bananas in the West Indies, ran the Great White Fleet, and sold to the United States North-East. As the company grew Keith continued with his railroad projects in Central America.³ United Fruit's production infrastructure growth during its first years of existence was impressive and shows the process of vertical integration the company was going through during the first decades of the century. This can be clearly shown in Graphs 1 to 3. Graph 1 shows the rise in the company's landholdings, Graph 2 the increasing value of the company's fleet, and Graph 3 the increasing value of its railway investments. Additionally, in 1900 United Fruit acquired the Fruit Dispatch Company, a fruit marketing company operating in the United States. With Fruit Dispatch under its ownership, United Fruit assured the control of banana distribution in the US.

Several authors have explained the company's vertical integration by the very specific characteristics of the good the company was marketing. First, bananas are a highly perishable good, so a lack of coordination between producers, transporters, and distributors could result in big losses. In the early twentieth-century the ships'

³ May & Plaza (1958, 6-8)

refrigeration system was very precarious and fruits got easily rotten. Second, bananas could not be grown in the United States, and had to be imported from the distant plantations of Central America and the Caribbean. Therefore, the production and marketing process had to deal with issues such as a different language, several governments with different economic policies, and countries with a poor transport and communication infrastructure, something that demanded an even closer coordination of each stage of the production process.⁴

The imports made by these corporations had a tendency to increase in the long term. This tendency had three important interruptions. The first one, during World War I, the second one during the Great Depression, and the third one during World War II. The imports were measured only in dollars until 1904. Afterwards they were also measured in stems until 1961, and, from that year, in tons. Graphs 4 and 5 show the tendencies measured in both stems and tons. A measurement of just stems would produce inaccurate results because it has been proved that they changed weight throughout the time. Graph 5 has the information in tons from 1920 according to the conversion made by ECLA. No reliable conversion was made for the years before.

United Fruit's management would not have gone through these tremendous efforts of creating its production and distribution network if a demand for its good had not existed. The first decade of the twentieth century witnessed a very clear change in the way bananas were perceived by the American consumers from luxury good into part of their basic diet. The next section explains the reasons of this evolution.

3. From hotel suites to workers' lunch boxes: The evolution to mass banana consumption, 1880s-World War I

For the exception of a few shipments in the 1860s, banana imports were imported year by year only after the mid-1880s. Graph 6 shows a constant increase in banana imports

⁴ For a more detailed analysis of the company's vertical integration process see: Read (1986), May & Plaza (1958), and Wilkins (1974).

measured in dollars after 1884 up to the 1900s. Unfortunately, American customs offices did not record the number of stems of bananas or the weight of the imports before 1908, so there is no way to figure out the quantity of bananas actually imported before 1908. However, the growth seen after 1884 from a level of zero to more than ten million dollars shows an undeniable impressive growth of imports of the fruit. The steady growth in the 1880s coincides with the creation of the Boston Fruit Company, and after a decrease in the last decades of the century, one can see a new push to imports after 1899, that is, after the creation of United Fruit and Standard Fruit.

In its first annual report United Fruit told its stockholders that the company was making gains from the growing demand of the fruit in the American market. The numbers mentioned by President Andrew Preston in the 1901 Annual Report show the dramatic changes this market was going through.

Through its distributing department, the Fruit Dispatch Company, your company has organized a most thorough and systematic method of disposing of its products throughout the United States, agencies for marketing of the fruit having been established in all of the principal cities of the country. While only a short time has elapsed since its organization was perfected, the results have been extremely gratifying, not only enabling the consumer to purchase bananas at less cost than ever before, but largely increasing the consumption of the fruit. During the year 1901 the Fruit Dispatch Company distributed 18,906 carloads of tropical products, against 16,197 the preceding year, an increase of 2,709 carloads, or nearly 16%.⁵

The impressive figures continued the years after. In 1902 the company reported an increase of 12% in banana sales and a significant reduction of transportation costs.⁶ The company's marketing effort continued aggressively increasing the number of branches of Fruit Dispatch in 50% just for the year of 1905,⁷ reporting an increase in sales from this subsidiary of 17% for the year after.⁸ The company even reported that the increase of

⁵ United Fruit Company, *Annual Report to the Stockholders* (Boston: 1901, 6-7)

⁶ United Fruit Company, *Annual Report to the Stockholders* (Boston: 1902, 7)

⁷ United Fruit Company, *Annual Report to the Stockholders* (Boston: 1905, 5)

⁸ United Fruit Company, *Annual Report to the Stockholders* (Boston: 1906, 8)

demand was not only in the United States but also in Europe, a market it reported would be its next target.

The change was also seen in the way people perceived bananas. In her study of the evolution of bananas in American society, Virginia Jenkins shows that while in the late 19th century bananas were advertised only as an item to be tasted only in up-scale hotels and restaurants, in the early years of the century widely-read magazines began to include cooking recipes that included bananas as one of its ingredients. Bananas gradually disappeared from the menus of expensive restaurants and were increasingly mentioned in popular songs and in newspapers cartoons. By the late 1900s and early 1910s bananas were even shown in magazines and silent films as the symbol of the food of the poor. In fact, bananas were offered to the European immigrants who came through Ellis Island as their first taste of the US.⁹

The import companies tried to increase the demand even more by distributing books or pamphlets in which they highlighted the benefits of bananas. Their main target were housewives, who were taught not only banana recipes, but also the nutritional value of the fruit and the advantages it had as baby food because of its texture. The import companies even tried to create some cultural changes among the American population, such as the belief that a respectable lady would not eat a banana in public. They were so successful that with time people considered bananas a fruit for women and children.¹⁰

An evidence of the changing status of bananas in the US was the political debate that developed around them in the 1910s. In July 1913, the Senate Finance Committee included the fruit in the proposed Underwood-Simmons Tariff. Bananas would be taxed five cents per bunch so that the government would raise one million dollars a year. This proposal faced strong opposition from different sectors. Small companies, like Atlantic Fruit Company argued that this tax would make the smaller companies' businesses much more difficult reinforcing the already overwhelming power United Fruit, turning it into a

⁹ Jenkins (2000, 1-16; 108-09)

¹⁰ Jenkins (2000, 107-110)

monopoly. On the other hand Byron W. Holt, chairman of the Tariff Reform Committee of the Reform Club criticized the tax as regressive. According to Holt bananas not only Americans could count on finding in the grocery stores all year long at an affordable price, regardless of the season. Additionally, Holt praised the high nutritive value of its price in the ten years before. In a widely publicized letter to the New York Times, Holt said that “the consumption is greater in the poorer districts of large cities than any in 1912.”¹¹

Buyers’ Protective Association held a public meeting in New York City to demand President Wilson to reject the banana tax proposal. During that meeting, the President of Sophie Loeb, claimed that the current cost of five cents for four working class families. During his speech, the President of the Buyers’ Association, Harry

The only fruit that comes every day in the year, year in and year out, almost unvarying in price, within the reach of all, nutritious, healthy in its germ-proof coat, is the golden

golden satisfiers of American desires. Does Congress expect to cheapen the banana for

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media. Joseph DiGiorgio, a banana importer from New York, brought foreign delegations one of the proponents of the tariff, defended it by saying that it would hurt the quasi-monopolistic power of United Fruit, more than the final consumers. *The New York Times*

¹¹ Jenkins (2000, 22-23)

immediately attacked his view by arguing that this company was not exactly a “bad trust,” since it was benefiting the poor. “Never were bananas cheaper, better or more plenty” than that year, argued the *Times*.¹³

The lobby against the tariff included diplomatic legations and international organizations. The ambassadors of Costa Rica, Panama, Guatemala, and Nicaragua appealed to Wilson to oppose the tariff. The Director General of the Pan-American Union expressed that the banana business had done more for the development of the producing countries than anything before, in a very short time. The economic prosperity of Central America and the Caribbean and their political stability would be on stake if the tariff was approved. The debate continued for several months until the November of that year, when the banana tax was dropped from the Underwood-Simmons Bill tax list, something that was celebrated with a joyful headline in *The New York Times*.¹⁴

How right were the enemies of the tariff? One way to test their argument is by analyzing the per-capita consumption of bananas in that period. Between the year 1909 (first year in which this information is available) up to 1914 the consumption of bananas per person during the year climbed from 17 pounds to 18.1 pounds. This increase becomes even more significant when one calculates the weight of bananas among the consumption of all fresh fruits. The result is shown in Table I.

Table I
Per-capita consumption of bananas in retail weights vs. percentage of per-capita consumption of bananas on total fresh fruits

	Bananas (pounds)	% Bananas/Total Fresh Fruits
1909	17	20.9
1910	16.9	20.7
1911	18.8	26.1
1912	17.1	24.3
1913	18.4	21.9
1914	18.1	26.5

Source: Author’s calculations with information from US Department of Agriculture, Economic Research Service, *U.S. Food Consumption*, Statistical Bulletin # 364 (Washington: USDA, 1965: 35)

¹² Jenkins (2000, 23-24)

¹³ Jenkins (2000, 24)

¹⁴ Jenkins (2000, 25-27)

Table I shows that by the mid-1910s bananas were certainly important in the diet of American consumers. By taxing bananas the authorities would have affected more than a quarter of the fresh fruit consumed by Americans. The situation was specially bad for the lack of substitutes bananas had as a fruit that could be found in stores all year long. Fruit processing had not been developed yet in a way it could satisfy the existing demand, so it could not be considered an option. One of the main targets of banana advertisement was specially hurt, since canned baby food production with fruit only began until the mid-1930s. Table II shows the percentage of processed food consumption for the same period as a total of all fruits (elaborated and fresh).

Table II
Per-capita consumption of processed foods: Percentage on total fruits (fresh and processed)

	% Processed fruits/Total Fruits
1909	9.3
1910	9.9
1911	12.4
1912	13.9
1913	10.4
1914	15.4

Source: Author's calculations with information from US Department of Agriculture, Economic Research Service, *U.S. Food Consumption*, Statistical Bulletin # 364 (Washington: USDA, 1965: 18-19)

The quantitative and anecdotal evidence shows that before World War I bananas certainly became into an important staple in American diet. This fruit came to satisfy a demand for fresh fruit that could not be satisfied by local production or processed food. This is specially significant if we take into account that these were years of rapid urbanization, industrialization, and constant population growth.

4. The big boost of the 1920s and the effects of the Depression on banana consumption

World War I affected negatively the banana market. Trade in the Caribbean basin was virtually interrupted and the US government required both United Fruit and Standard Fruit to provide ships to the war effort. This decreased dramatically the imports of fruits on per-capita consumption, but as graphs 4 and 5 show, they had a remarkable recovery after the conflict. In fact, United Fruit's management was so confident that the demand would continue increasing that it announced its shareholders that the amount of land for cultivation was going to increase significantly in the following months.¹⁵

The exceptional increase in imports for the period after World War I can be attributed to the increasing demand of a non-saturated market. As graph 7 shows, the per-capita consumption of bananas increased at a very fast pace during the 1920s, stimulating the import companies go bring more and more fruit to the country. In order to keep this demand growing United Fruit kept advertising new ways to eat bananas. One of them came in 1924 when the a recipe book distributed by Fruit Dispatch Company promoted the consumption of bananas with corn flakes and milk for breakfast. By 1929 United Fruit decided to create the Advertisement Department at Fruit Dispatch in order to have a full-time staff creating new ideas to promote banana consumption. This idea was such a success that in the years that came afterwards the company made deals with cereal companies in order to mutually promote their products.¹⁶

The crisis of 1929 affected the banana sector as it did with the rest of the economy. The import companies faced different difficulties to keep their imports afloat and the per-capita consumption fell as well. It is worth highlighting that although the per-capita consumption of fresh fruit in general fell during the first four years of the Depression, the participation of bananas among all fresh fruits also fell. An explanation of this would require further calculations, but one can speculate that during these years bananas had

¹⁵ United Fruit Company, *Annual Report to the Stockholders* (Boston: 1919, 5)

¹⁶ Jenkins (2000, 106-07)

lost part of their advantage as a fruit available all year long probably because of developments in refrigeration systems. Bananas reached their lowest point of participation in 1933, the same year of the lowest per-capita consumption of fresh fruit in the pre-World War II period, as shown in Table III.

Table III
Per-capita Consumption of Fresh Fruits vs. Bananas, 1928-1938

	Bananas	Total Fresh Fruit	% Bananas on Total Fresh Fruit
1928	21.3	133.7	28.5
1929	20.7	128.1	26.5
1930	19.6	119.3	23.4
1931	17.8	147	26.1
1932	16	115.9	18.5
1933	13.2	114.8	15.1
1934	15.7	115	18.0
1935	18	134.2	24.1
1936	19.1	124.1	23.7
1937	21.8	142.7	31.1
1938	19.5	131	25.5
1939	17.9	148.6	26.6

Source: Author's calculations with information from US Department of Agriculture, Economic Research Service, U.S. Food Consumption, Statistical Bulletin # 364 (Washington: USDA, 1965: 18-19)

The recovery of fresh fruit and banana consumption in the late 1930s, something that came together with the revival of the American economy, was followed by a sudden halt with the outbreak of World War II in 1939. As seen in Graphs 4 and 5 banana imports fell down to their lowest historical levels severely affecting the per-capita demand for the fruit. Once the war finished, the import companies were ready to re-supply the market in a similar way to the one they did after World War I. However, the post-war period showed a very different scenario. Bananas, and fresh fruit in general, faced the presence of a substitute that changed the demand patterns for the time to come.

5. The development of processed food and its impact in the demand for bananas

When the Buyers' Association protested to the Federal Government against the tariff on banana imports they argued that this tariff would have a negative impact among American working class. This argument made a lot of sense in times in which American consumers depended on the fruit of the season in order to get the nutrients fruits provide. However, the post-WWII period witnessed technical changes that permitted a better preservation of fruit in a way it eventually had a deep impact on the fresh fruit market.

When WWII finished Americans had been living without one of their favorite pre-war fruits for around four years, so when banana imports re-opened its return was welcome. In fact, imports of bananas increased as never before, as shown in graph 5, reaching its highest levels in the late 1950s. This huge increase in exports, however, responded more to changes on the supply side, than on the demand side. The evidence can be seen in: a) Per-capita consumption fell in the post-war years; b) Retail prices for bananas also fell in this period; c) The market began to replace fresh fruit for processed fruit; and c) The gigantic boost in imports was a product of a higher productivity of banana plantations in Latin America.

The per-capita consumption of bananas reached its highest historical level, an average 21.8 pounds of bananas in 1948, when imports re-started. This level was slightly higher than the one reached before the war in 1937 when consumption per-capita was as high as 21.3 pounds. This shows that the demand for bananas at the per-capita level had not changed during the war, but it could not be satisfied by the importing companies. However, as Graph 7 shows, the per-capita consumption began to gradually fall during the 1950s.

This falling per-capita and the skyrocketing imports came together with a fall on the real retail price. I calculate the real retail price of bananas for the period between 1947 and 1963 using the consumer price index provided by the Department of Agriculture (see Graph 8). My calculation of the banana real retail price is done by using the consumer price index for food calculated by the USDA (1958=100). The bad news for the

marketing and producing companies, was that this tendency was not unique of the United States. The calculations made by Jean-Paul Valles show something similar for the European countries (the place in which United Fruit had its hopes of a big post-war demand). Valles results are shown in Graph 9.

The fall in per-capita consumption was not only in bananas, but in all fresh fruit in general. Where was the demand going? What was replacing the nutritional value of fresh fruit? The answer is, processed foods. After WWII the technological developments on processed foods made fruit available in forms different from fresh fruit and ended with the advantage bananas had of being available all year long, in contrast to other seasonal fruits. Graph 10 shows how the per-capita consumption of fresh fruit tend to fall in the post-war period while processed fruit increased during the same period. While in 1909 processed fruit only represented around 5% of all the fruit consumed in the US, by the early 1960s it had reached levels above 40% (see Graph 11).

One specific industry that clearly replaced bananas, was the processed baby food. While in 1934 the total supply of canned baby food was of 21 million pounds, in 1956 it was of one billion pounds (see Graph 12). The per-capita consumption of this food also increased dramatically. Graph 13 shows the enormous growth this item had. It is worth remembering that one of the main targets the early banana industry had were the babies.

The shift of consumer preferences came parallel to an increase of productivity by the Latin American producers. During the second half of the 1950s Standard Fruit and United Fruit experimented with a new kind of banana that had a higher yield, was more resistant to diseases, and more resistant to strong winds. This higher productivity (as seen in Graph 14) helped to push down the prices together with the fall in demand. The banana companies dealt with this situation by diversifying their operations and going to the growing business of processed foods. United Fruit began doing this big change in the mid-1960s in a process that consolidated in 1970 when the company merged with AMK-John Morrell, a meat packing company, and created a new company called United Brands. United Brands continued with a strong marketing campaign for bananas,

promoting the Chiquita brand, while at the same time going into a wide range of processed foods.

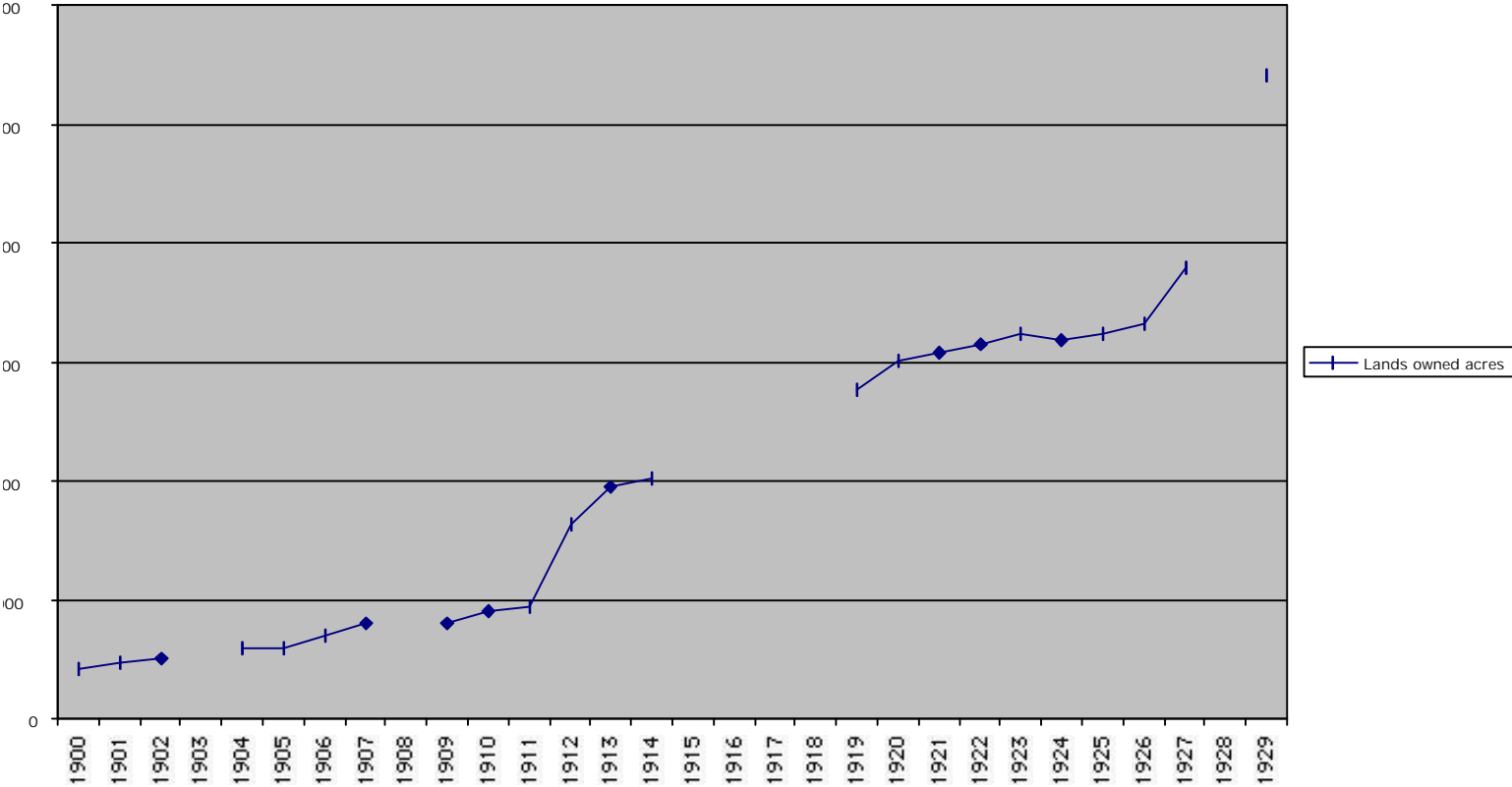
6. Conclusion

The banana export industry developed in Latin America supplied an existing demand for fresh fruit in the US other fruits could not satisfy. In the late nineteenth-century the fruit arrived as a luxury and exotic fruit but it soon turned into a mass consumption good and part of the basic diet of the American population. In the first decades of the century it was even considered that a tax on banana imports had regressive effects. The shift was the product of a realization of the banana companies that this good could supply the American market of a fresh fruit that did not depend on seasonal changes. The banana companies made huge investments in Latin America and provided the fruit in large quantities. In spite of the always increasing supply, the American per-capita consumption of the fruit remained growing until World War II, with the exception of the periods of economic crisis (Great Depression) and international conflicts that simply did not permit trade in the Caribbean Basin (World War I and World War II).

This growing levels of per-capita consumption, that for so many years looked with no end, came to a stop and began to decrease in the 1950s. The developments in food processing permitted the Americans to have other options with which they could satisfy their demand for fruits, without depending on the season. Demand for processed fruit increased dramatically, while the one for fresh fruit decreased even in absolute terms. This trend made the multinational corporations change their internal structure, diversify, and orient their operations toward the processed fruit industry too.

Graph 1

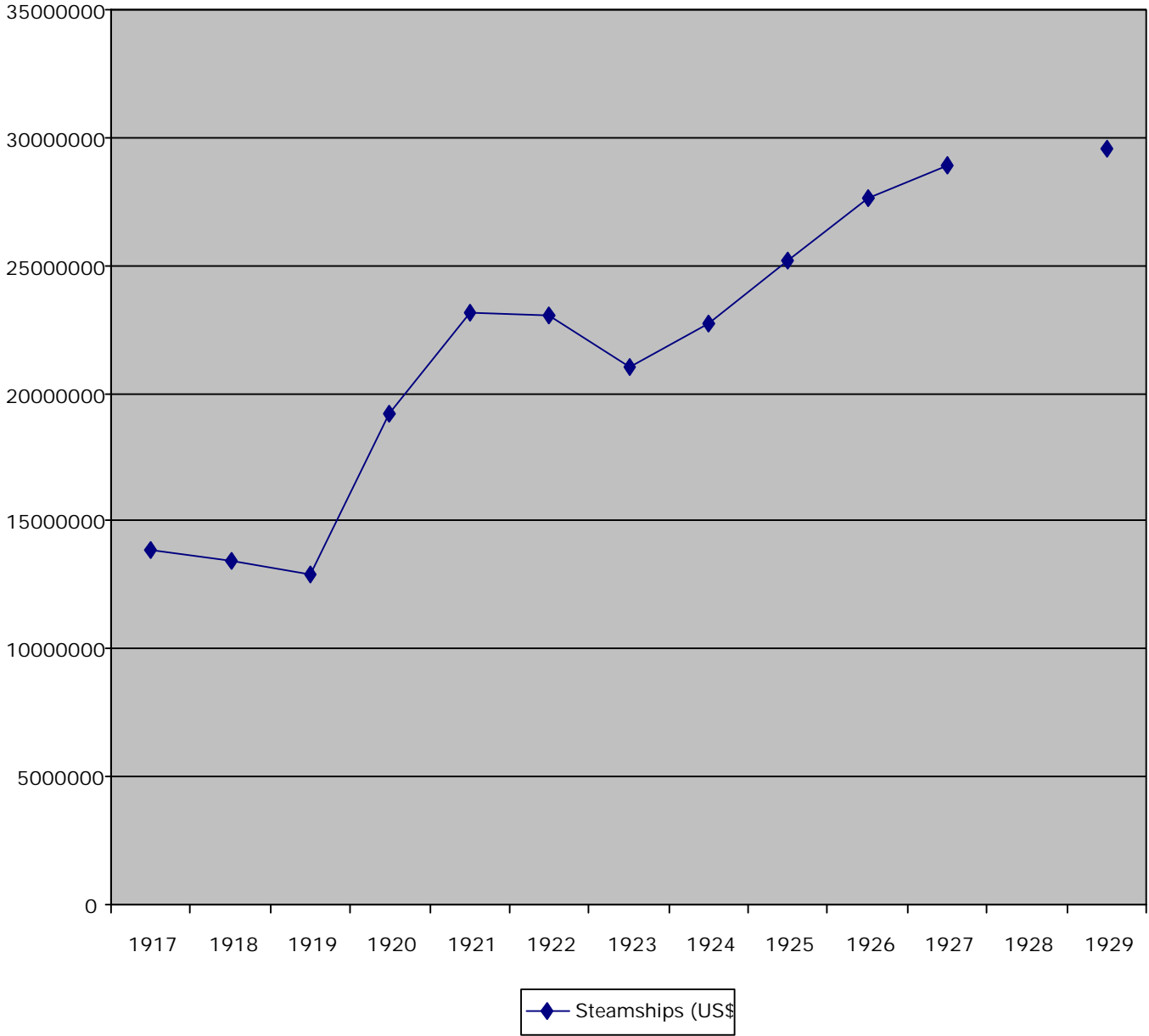
United Fruit-Lands Owned (acres)



Source: United Fruit Company, *Annual Report to the Stockholders* (Boston: Various years)

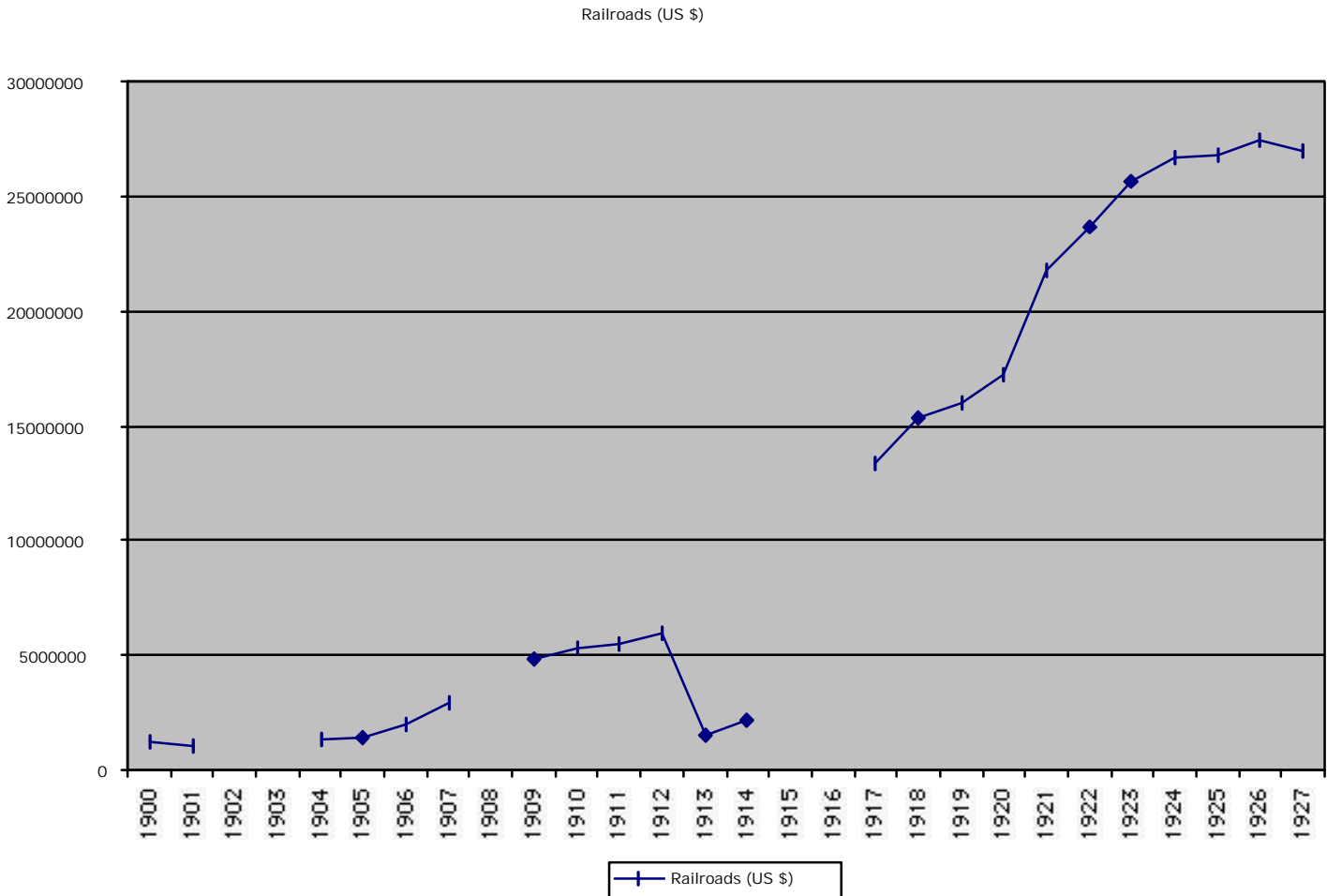
Graph 2

Steamships (US\$)



Source: United Fruit Company, *Annual Report to the Stockholders* (Boston: Various Years)

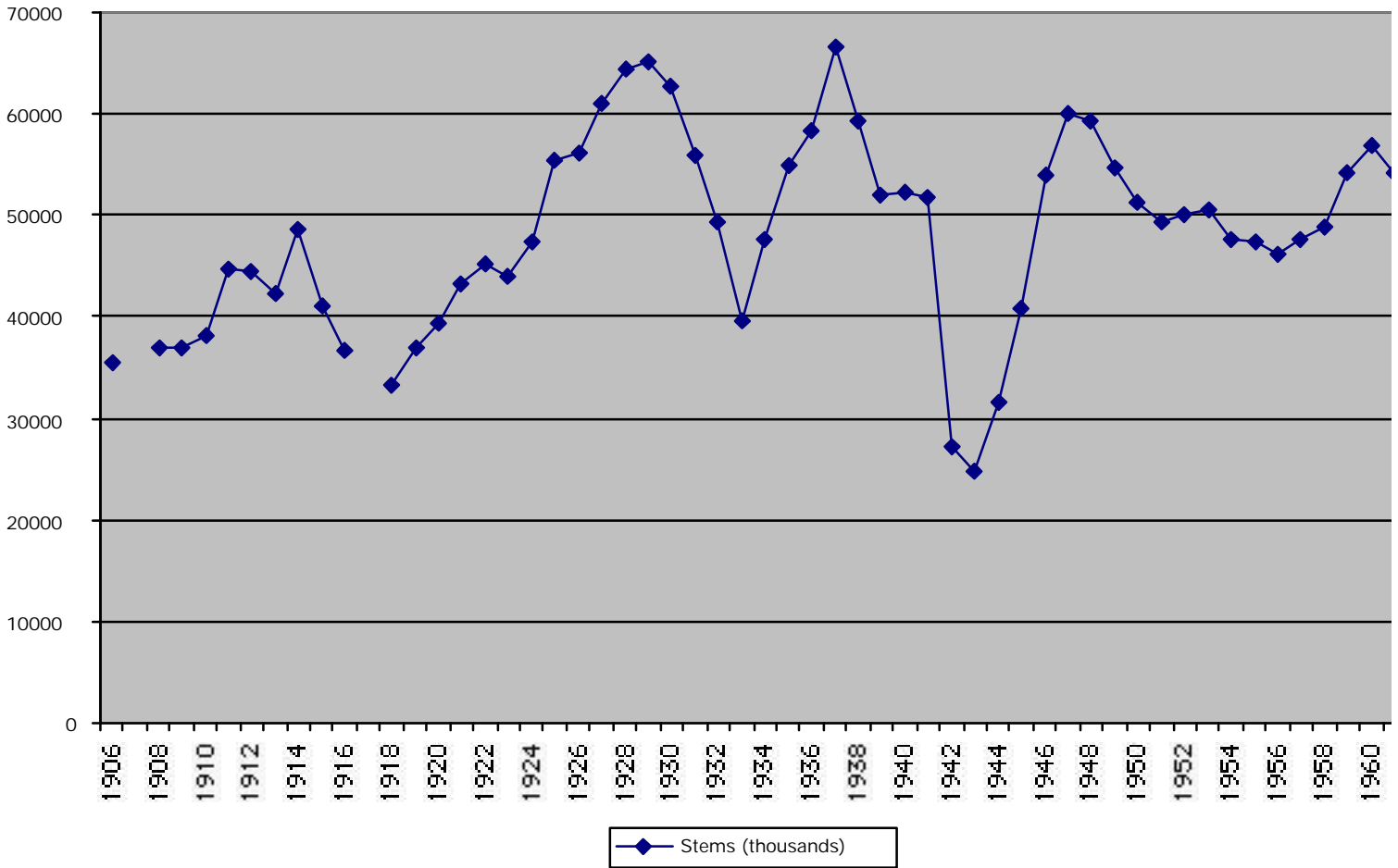
Graph 3



Source: United Fruit Company, *Annual Report to the Stockholders* (Boston: Various Years)

Graph 4

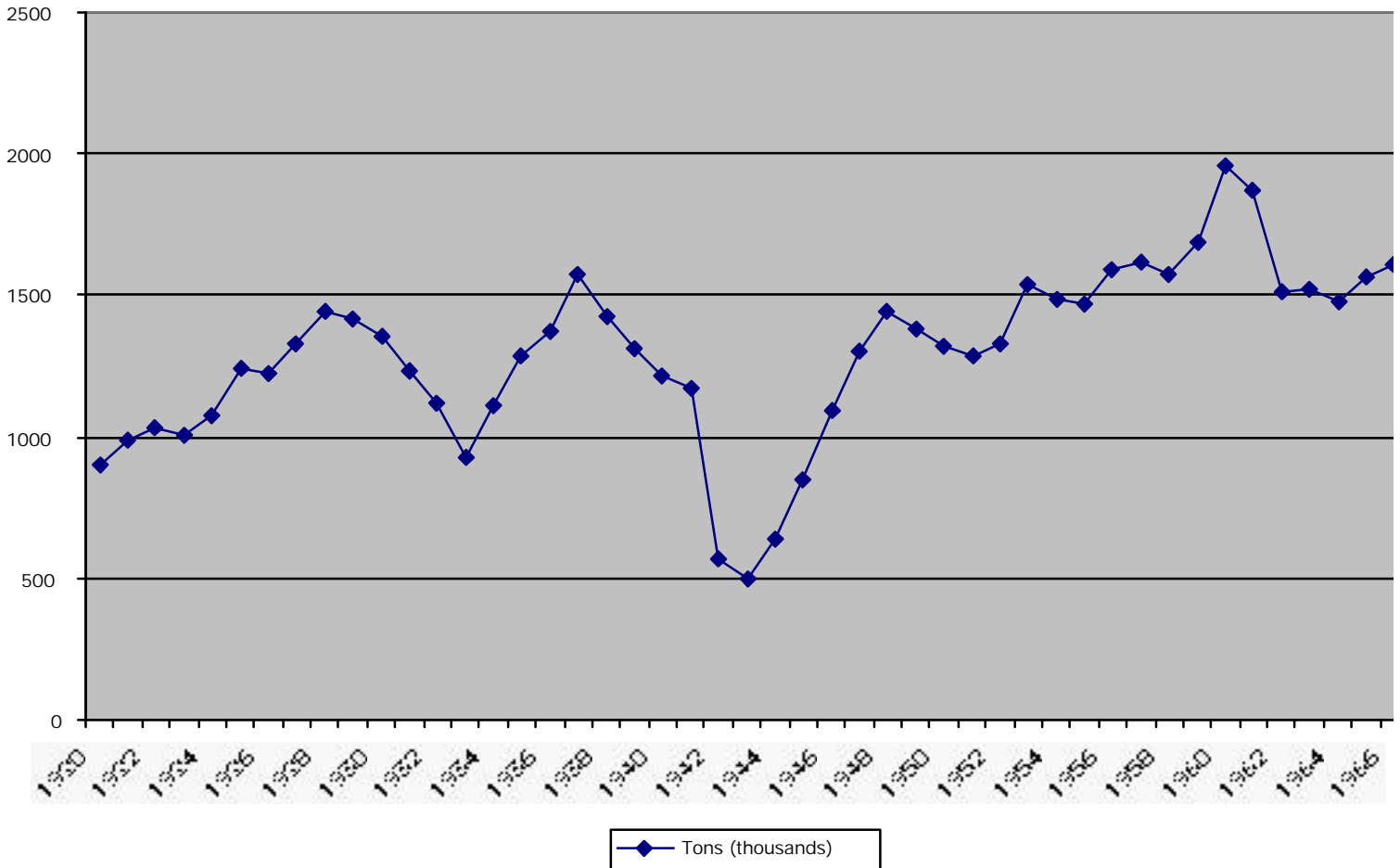
Banana Stems Imported to the US (thousands)



Source: Arthur, Henry, James Houck & George Beckford, *Tropical Agribusiness Structures and Adjustments: Bananas* (Boston: Harvard Business School, 1962), 182

Graph 5

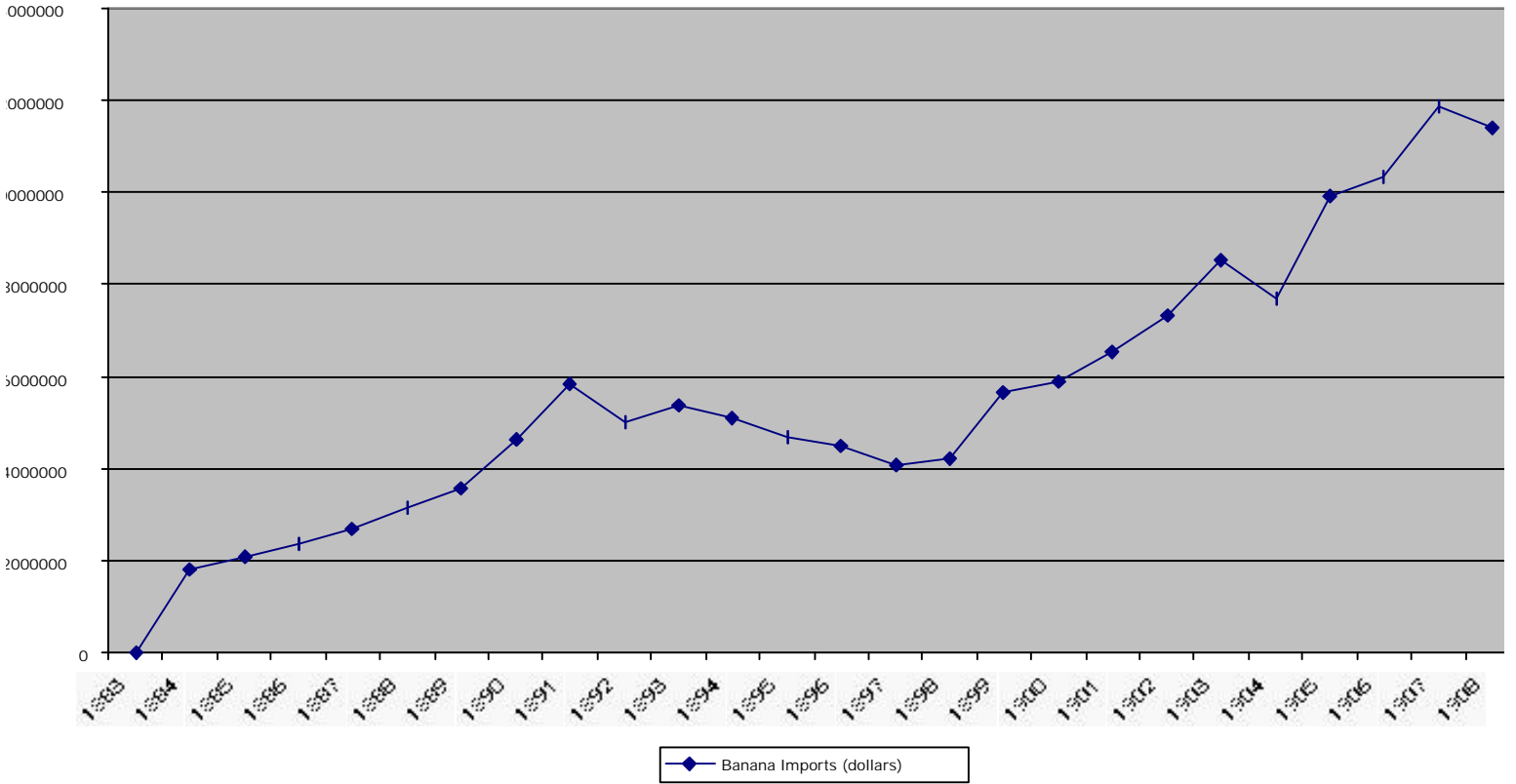
US Banana Imports Tons (thousands)



Source: CEPAL, "Evolución y Perspectivas del Mercado Internacional del Banano", *Revista Económica de la CEPAL*, vol 3, No. 2, Oct. 1958. 21; Arthur, Henry, James Houck & George Beckford, *Tropical Agribusiness Structures and Adjustments: Bananas* (Boston: Harvard Business School, 1962)

Graph 6

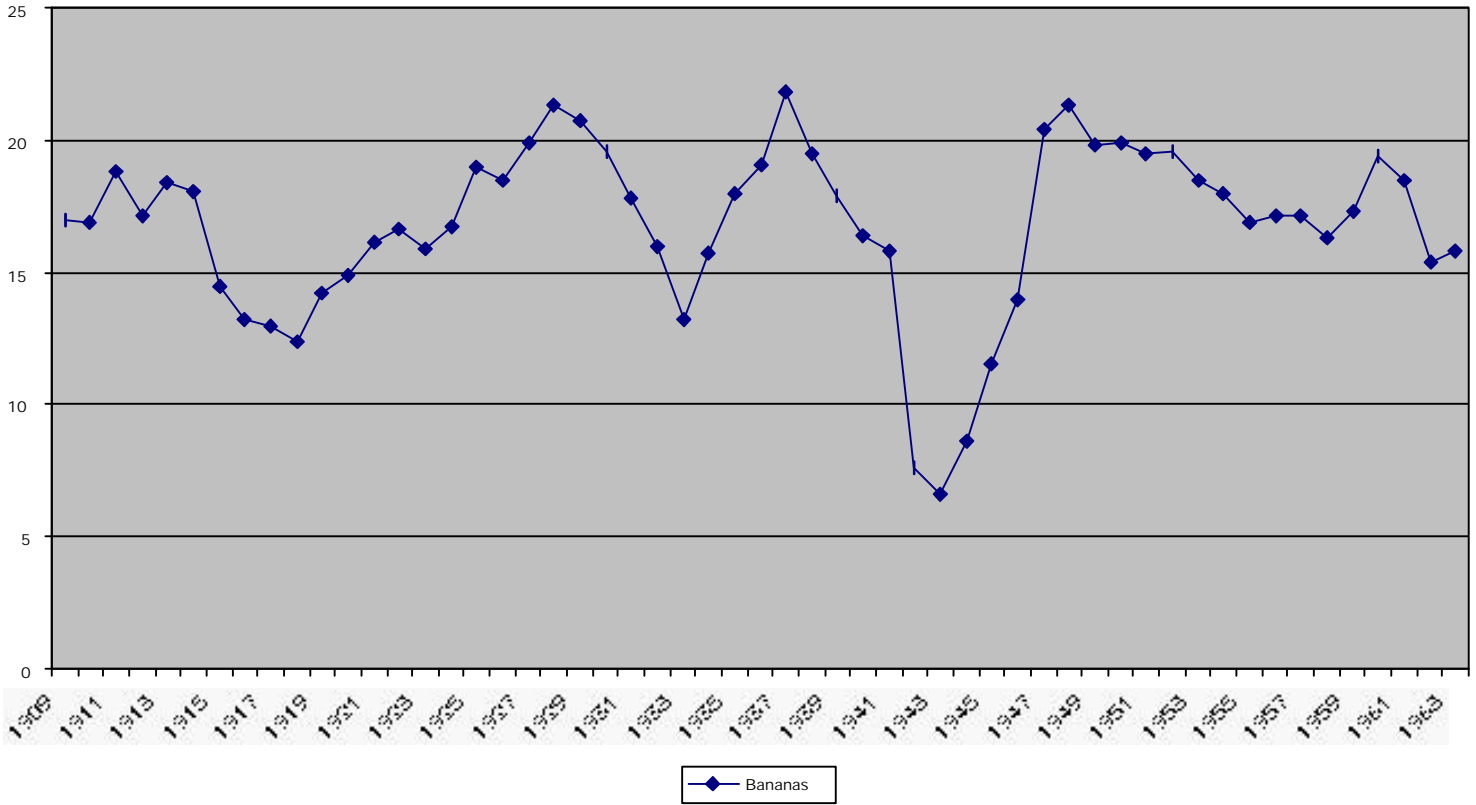
US Banana Imports (dollars)



Source: United States Department of Agriculture, Bureau of Statistics, *Bulletin 74, Imports of Farm Products into the United States, 1851-1908* (Washington: USDA, 1909)

Graph 7

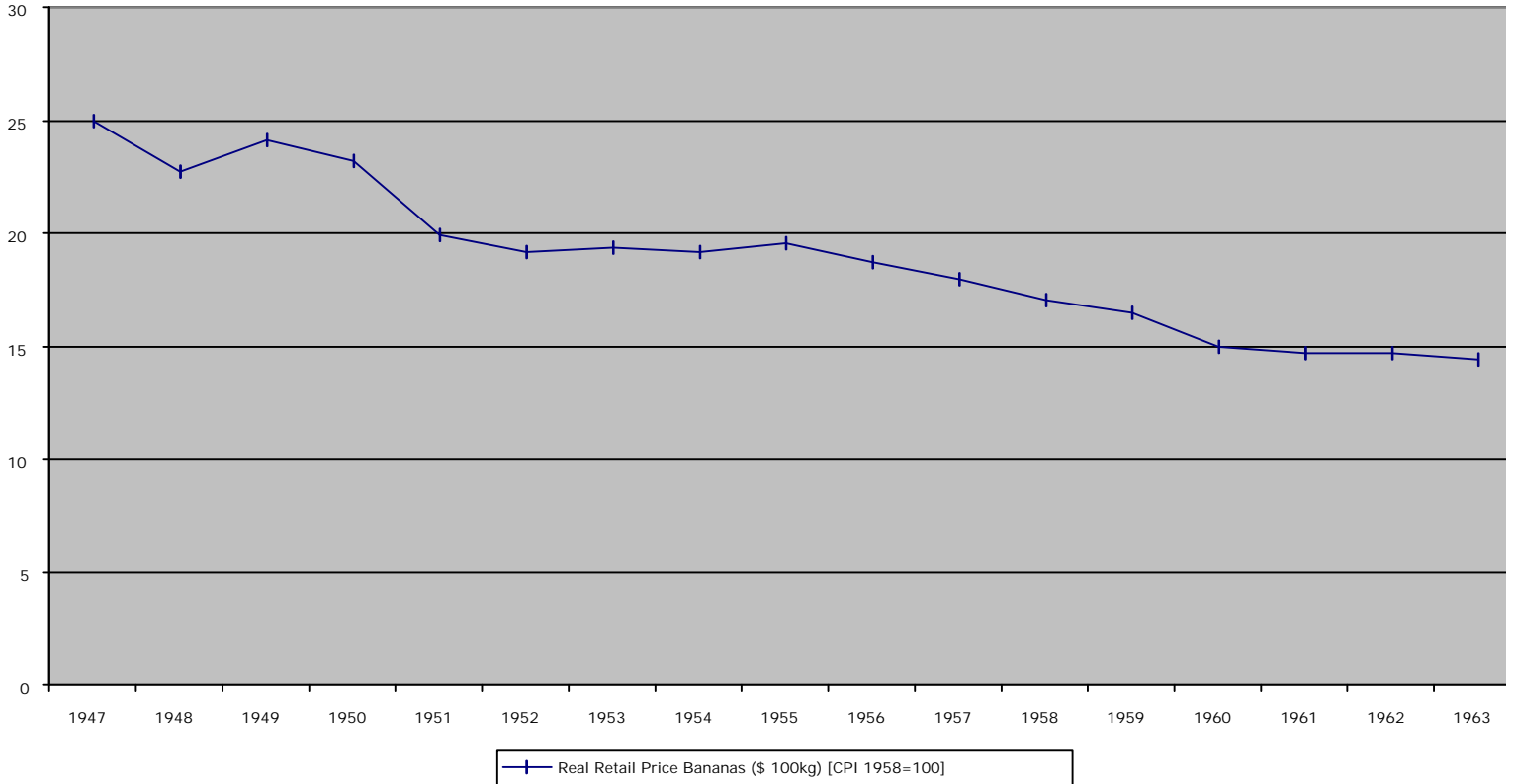
US Per-Capita Consumption of Bananas (pounds)



Source: United States Department of Agriculture, *US Food Consumption: Sources of Data and Trends, 1909-63* (Washington: USDA, 1965: 32)

Graph 8

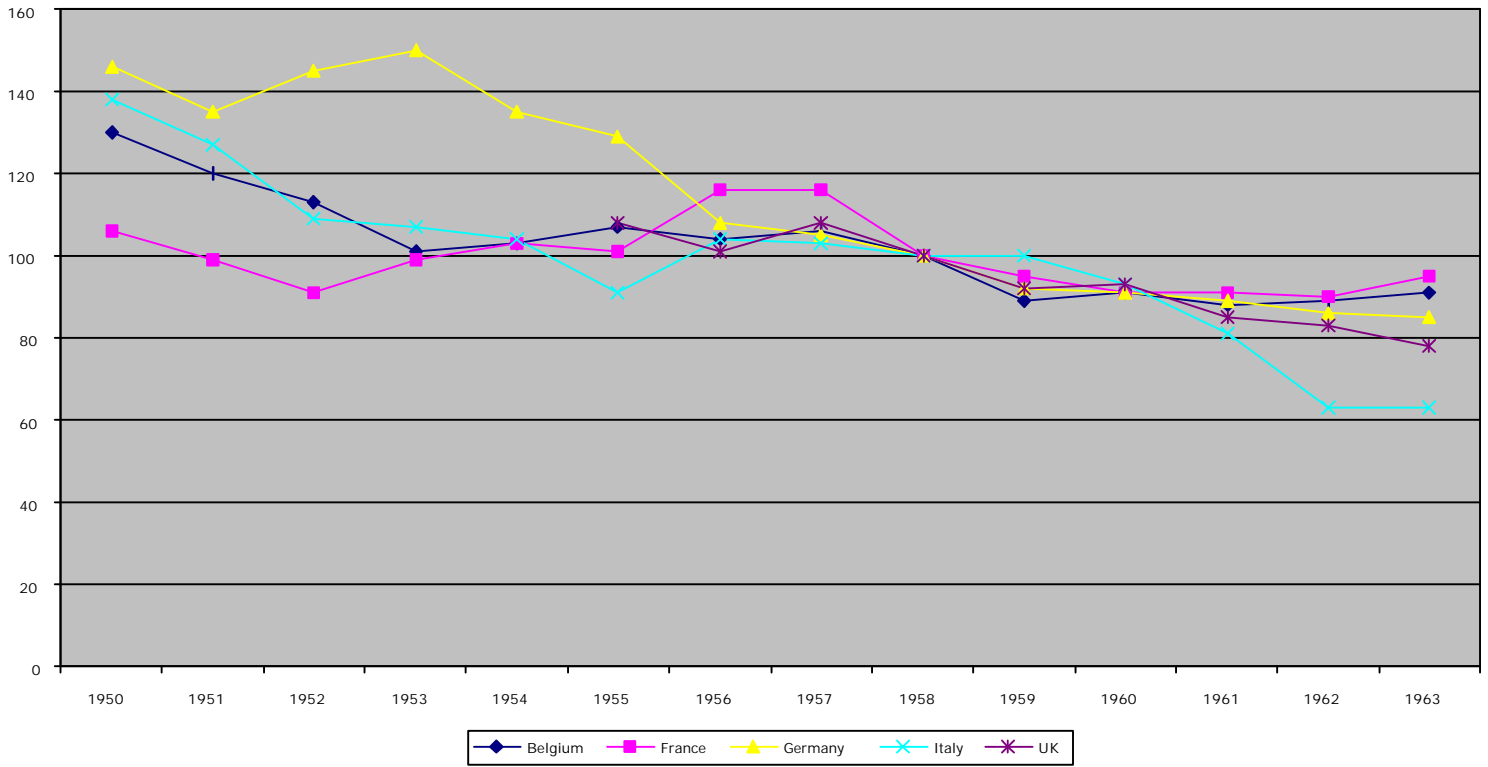
Real Retail Price Bananas (\$ 100kg) [CPI 1958=100]



Source: Author's calculations with information from United States Department of Agriculture, *US Food Consumption: Sources of Data and Trends, 1909-63* (Washington: USDA, 1965: 180); Arthur, Henry, James Houck & George Beckford, *Tropical Agribusiness Structures and Adjustments: Bananas* (Boston: Harvard Business School, 16)

Graph 9

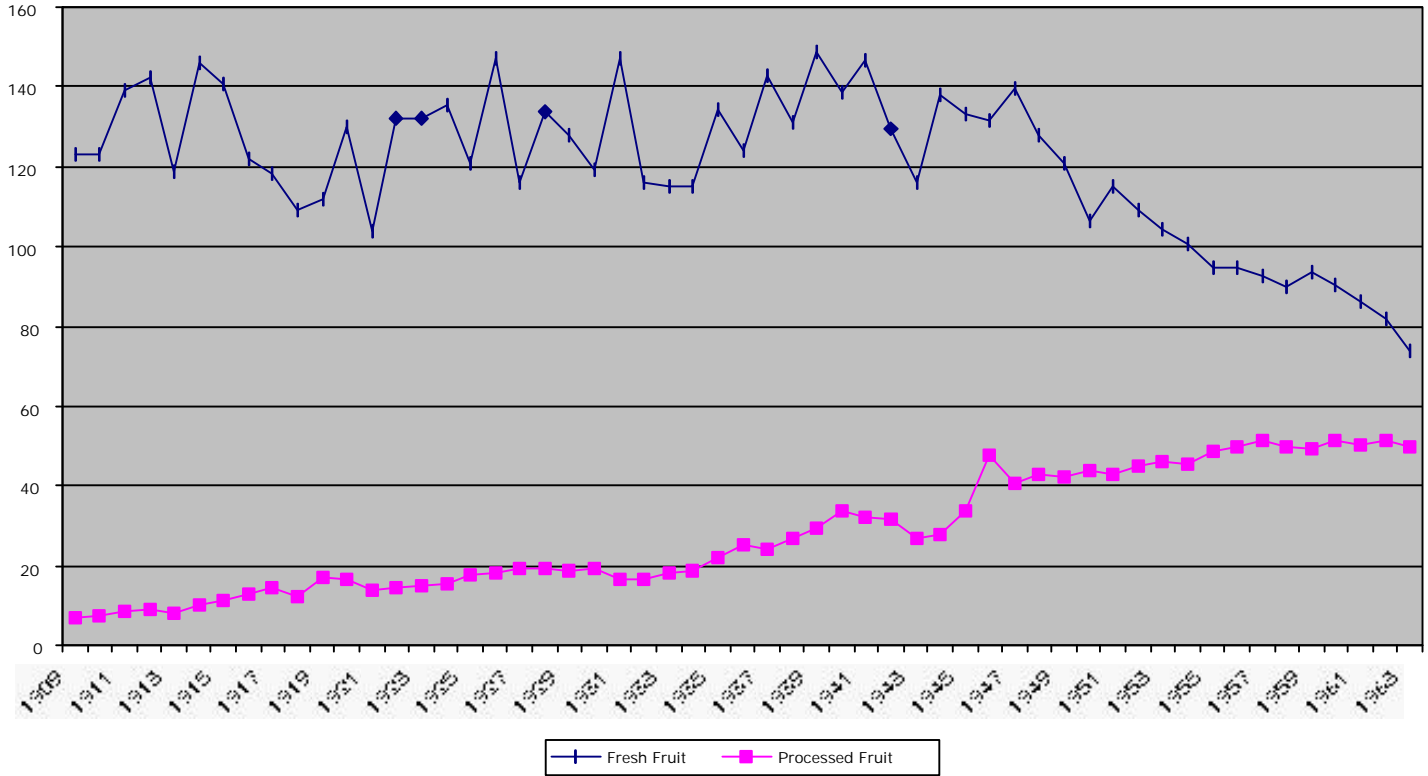
Real Retail Prices of Bananas (Europe) 1958=100



Source: Valles, Jean-Paul, *The World Market for Bananas, 1964-72: Outlook for Demand, Supply, and Prices* (New York: Praeger, 1968: 60-61)

Graph 10

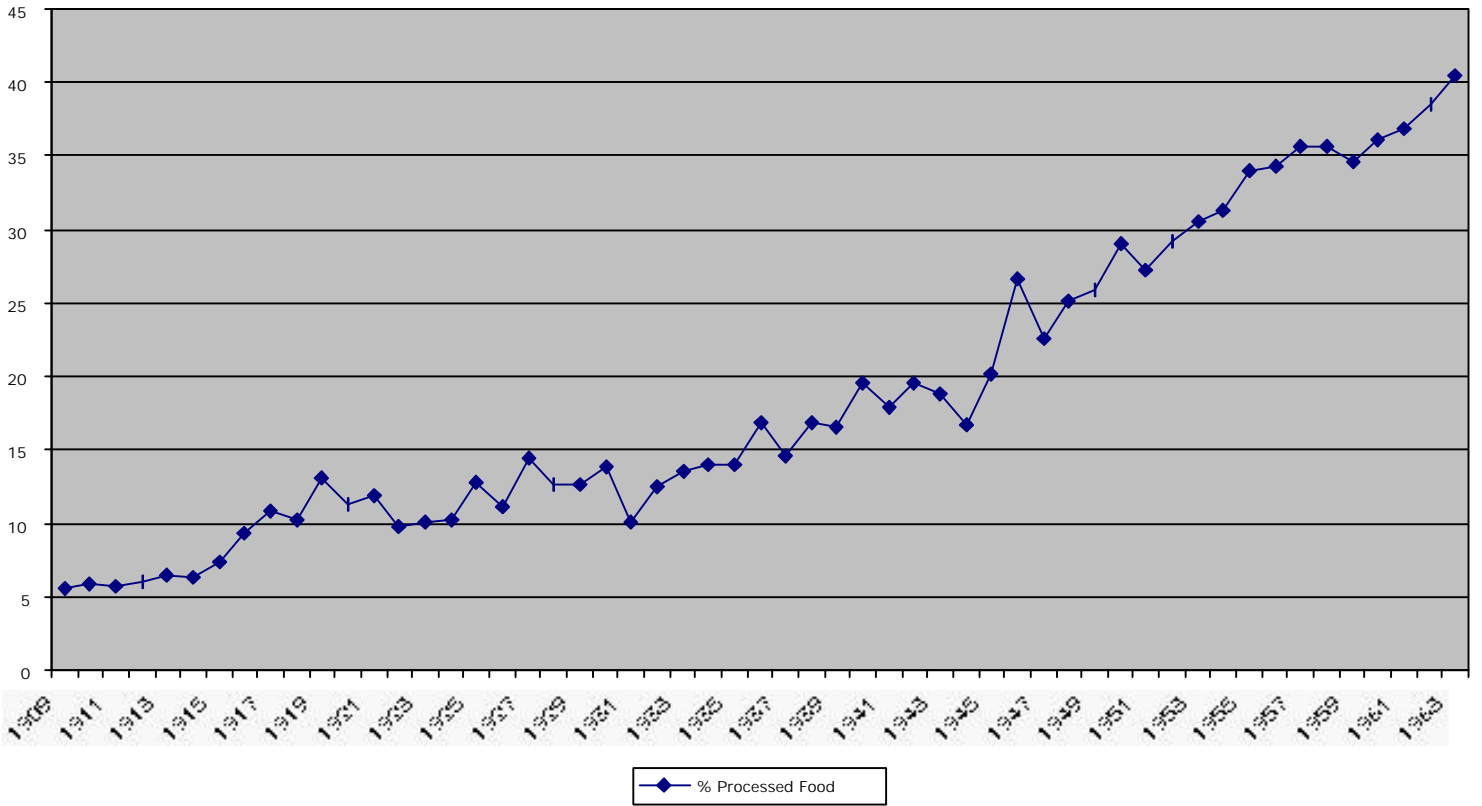
US Per-Capita Consumption Fresh Fruit vs. Processed Fruit (lbs)



Source: United States Department of Agriculture, *US Food Consumption: Sources of Data and Trends, 1909-63* (Washington: USDA, 1965: 18)

Graph 11

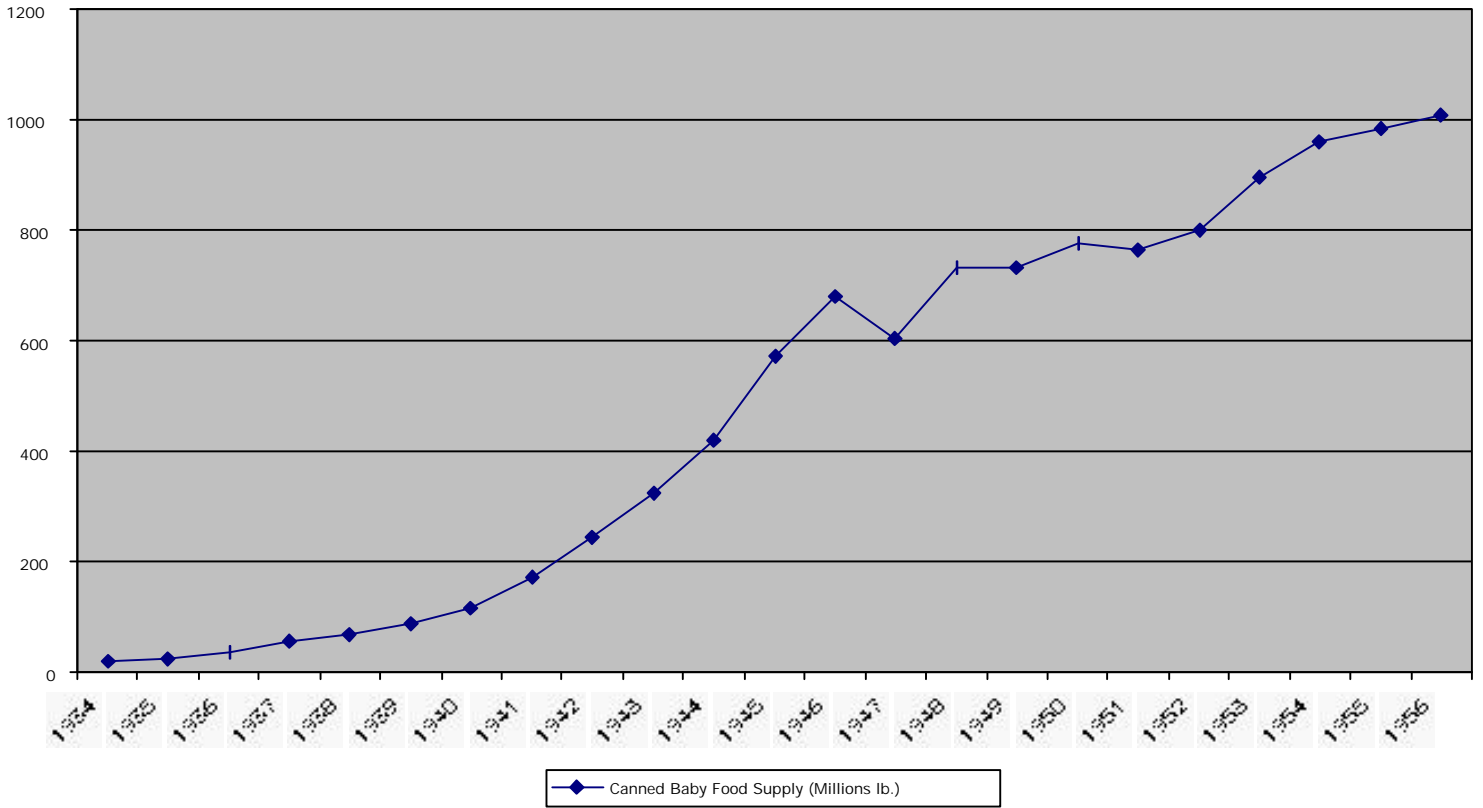
Processed Fruit as a Percentage of the Total Per-Capita Fruit Consumption



Source: Authors calculations with information from : United States Department of Agriculture, *US Food Consumption: Sources of Data and Trends, 1909-63* (Washington: USDA, 1965: 18)

Graph 12

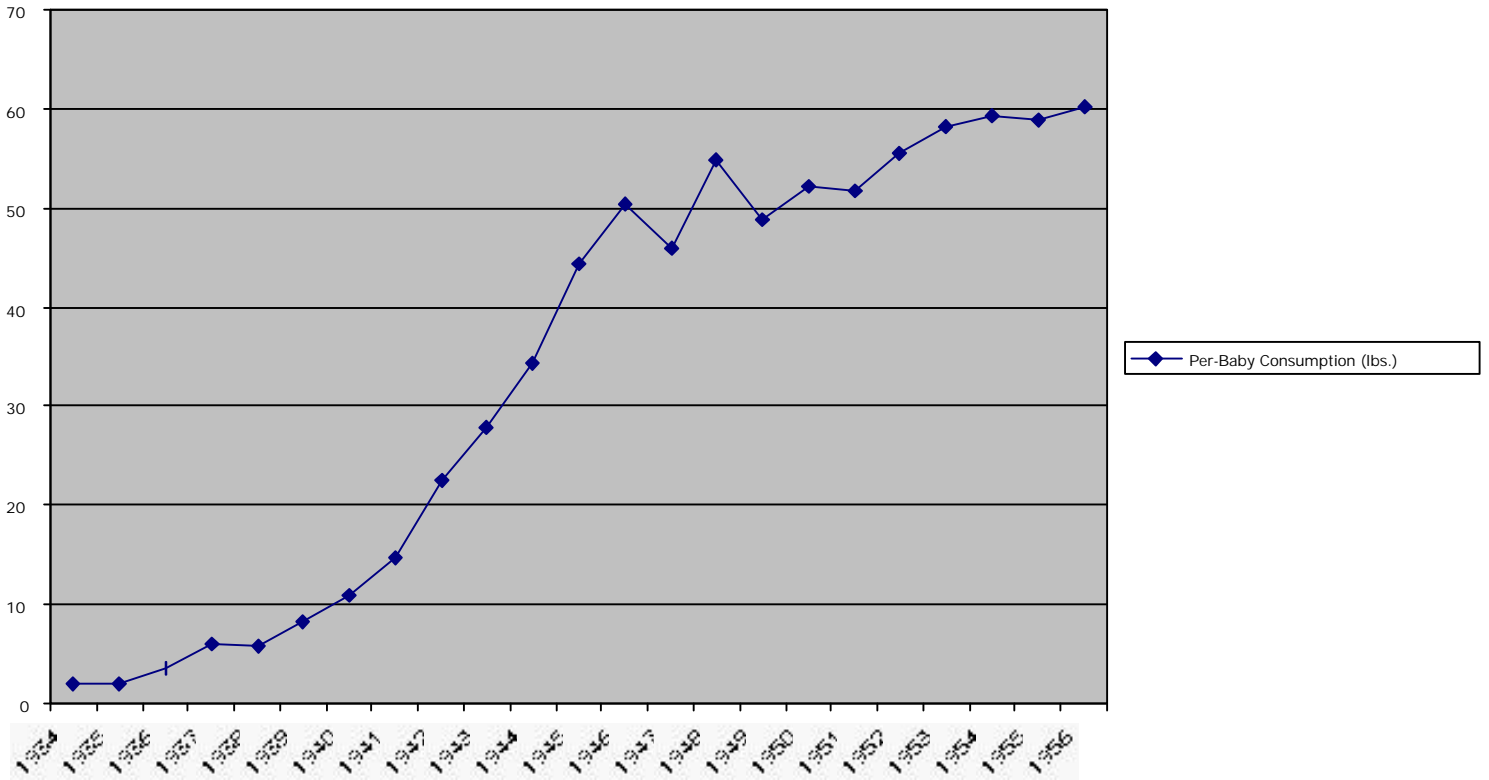
Canned Baby Food Supply (Millions lb.)



Source: : United States Department of Agriculture, *US Food Consumption: Sources of Data and Trends, 1909-63* (Washington: USDA, 1965: 140)

Graph 13

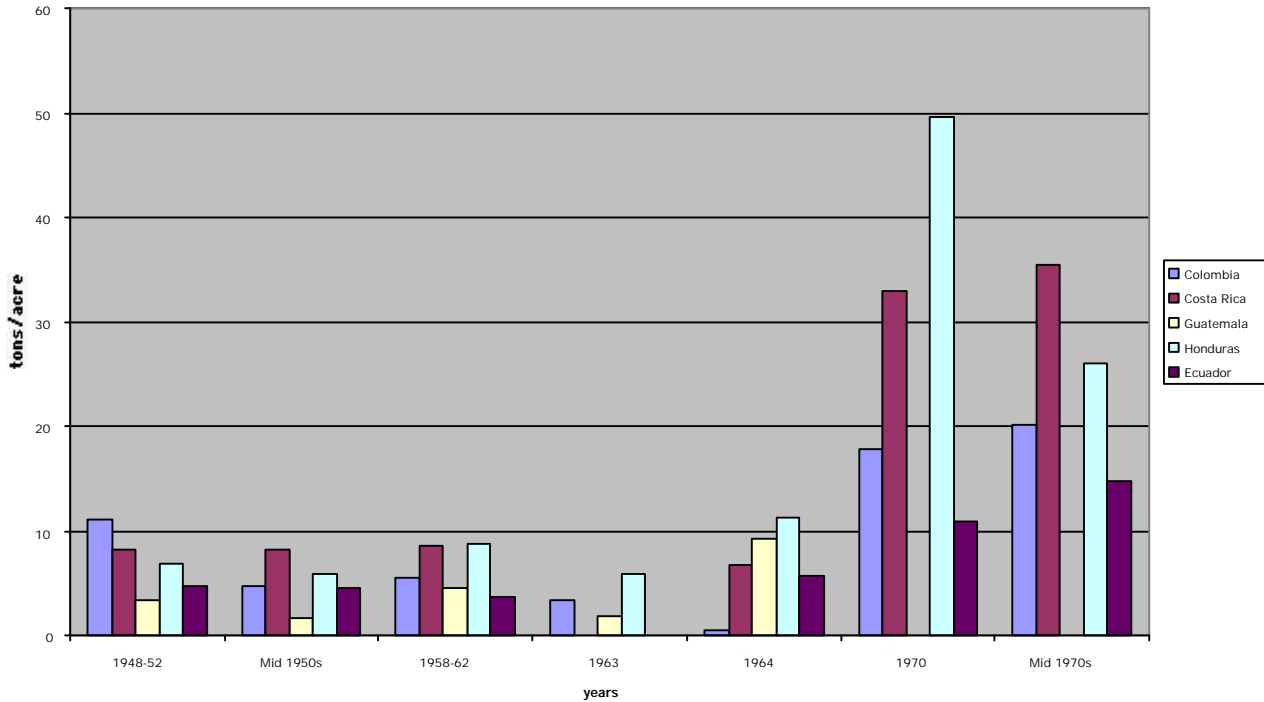
Per-Baby Consumption of Processed Baby Food (lbs.)



Source: United States Department of Agriculture, *US Food Consumption: Sources of Data and Trends, 1909-63* (Washington: USDA, 1965: 140)

Graph 14

Productivity of Banana Plantations – Tons of Bananas/Acre 1948-70s



Source: Calculations made using data from: Valles, Jean-Paul, The World Market for Bananas, 1964-72 (New York: Praeger, 1968) 206-07, 209, 212-14; Arthur, Henry, James Houck & George Beckford, Tropical Agribusiness Structures and Adjustments: Bananas (Boston: Harvard Business School, 1968) 81, 172; United Nations-FAO, The World Banana Economy, 1970-1984 (Rome: FAO, 1986) 12, 16, 19, 23. Conversions: One acre=2.47*hectare, 1 lb. = 0.45kg.

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