

## **The Empire's victims strike back: US internal politics and the payment of reparations to Colombia over the loss of Panama**

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Scholars debating whether the net effects of economic imperialism on 'colonized' countries have been positive or negative assume imperialism as a unidirectional force from a homogenous imperial center to a colonized periphery. We argue that economic imperialism is not necessarily unidirectional. Rather, we posit that countries victims of an imperialist action can develop strategies to exploit internal political and economic conflicts within the empire and in this way obtain economic benefits from the empire's actions. We illustrate our point with a paradigmatic case of economic imperialism: the US support to the separation of the Colombian province of Panama in 1903. Despite its relative weakness, Colombia eventually received reparations from the US in the amount of \$25 million. Contrary to previous interpretations, we show that this payment was not a product of a new vision within the US on how it should relate to its southern neighbors. Rather, this was possible because Colombia developed strategies to use conflicting economic and political interests within the US in its favor.

Keywords: economic imperialism, US-Latin American relations, Panama Canal, Colombia.

## **Introduction**

Why do governments subsidize home companies into operations in foreign countries? The question is interesting. From the normative point of view, if the company expects to be profitable when operating abroad, then there is no rationale for subsidies. If the company does not expect to be profitable, then a positive externality must be in place for the home country to subsidize its entry into a foreign market. The externality may be supply of foreign exchange or a specific input that may be rationed in the international markets at some critical time. The business must, however, be of an immense scale to have significant effects on the home economy.

An alternative explanation is that the company receiving the subsidy captures government. In this case, lobbying and other activities by the private company lead to subsidies and the use of taxpayers money to face risks that otherwise are bare with private capital. Risky decisions are made, capital is allocated inefficiently and taxpayers loose their money and trust on institutions.

In this paper the issue is studied in the context of the oil industry in the United States early twentieth century. In the 1910s the US government granted a subsidy of at least \$15m to Standard Oil of New Jersey, Jersey Standard, to enter to Colombia and produce oil. The subsidy is disguised as part of reparations payment to Colombia for the role played by of the US in the separation of Panama from Colombia in 1903. The case is even more interesting when one considers that the subsidy is granted when the US produces close to 70% of all oil in the world and is a net exporter of oil. Thus, the subsidy ultimately aided American and may others in world.

The subsidy may have been the one of the first attempts the US government performed to intervene in the international oil market. Later events to subsidize through military action or diplomatic threat the supply and price of oil are well known. The subsidies have contributed to the long term development of the American economy by reinforcing reliance on cheap oil, and are connected to the difficulties the country faces in adapting to a new regime where energy prices are higher once the environmental costs are included. Thus, the case studied may have been at the heart of the pattern of development of the United States during the twentieth century.

The paper is organized as follows. The second section examines the events leading to the US granting the subsidy to Jersey Standard. The third section identifies who supported and who opposed the subsidy, and why. The benefits Jersey derived from the project in Colombia are calculated in the fourth section, while the fifth examines the benefits derived by oil consumers. Finally, conclusions are put forward.

### **Why did the US government offer a subsidy?**

On April 21<sup>st</sup> 1921 the US congress ratified the Urrutia-Thompson treaty (initially signed in 1914) and agreed to pay \$25m reparation to Colombia for the role it played in the separation of Panama from Colombia in 1903. Why did the US government pay reparation? Why did it pay in the early 1920s and not before? Why did it pay \$25m? Answering these questions allows identifying different motivations for the US paying compensation to Colombia and attributing a “money weight” to each of the different motivations behind payment.

The key point is that before Panama separated from Colombia the US had a clear interest in offering Colombia terms to allow the US build the Panama Canal on its territory. But after Panama separated from Colombia, the US did not have to offer anything to Colombia to develop the canal or enjoy its benefits. One can argue that, almost two decades after a US military (peaceful) intervention to promote Panama’s separation from Colombia, the US government felt remorse and is inclined to pay a price for its past actions. Alternatively, one might consider that the US government finds it convenient to ease relations with Colombians and reduce their hostility towards Americans. And paying a price for it is also a great way to reduce hostility from other Latin American countries. Interestingly, the US ended up paying much more than it had ever offered to pay Colombia for the right to build the canal. Why pay more?

The argument proposed here is that the US government is willing to pay more to exploit Colombia’s oil resources. American oil companies at the time lobbied to block entry of competitors to Colombia and subsidize their entry to the new market. Most reported lobbying efforts came from Jersey Standard, who got the first contract to produce and transport oil in Colombia.

*US government willingness to pay for Panama, before Panama is independent*

In the 19<sup>th</sup> century the US develops increasing commercial exchange with the far-east. In 1844 the Opium wars end and open the China market to international trade. The trip is long and risky. Reacting to booming trade and transport demand, American entrepreneurs in Boston and New York develop a faster sail ship, the Clipper ship, gaining important market share in the China trade. The economic incentives to develop a transport project dramatically reducing transport time to the Pacific and increasing transportation safety are now evident. And the US government sets to develop a diplomatic strategy to guarantee access to any transport project built on the Panama Isthmus. The 1846 Mallarino-Bidlack treaty guarantees US access to any transport project, while the US offers neutrality and respect for Colombian territory on the Isthmus.<sup>1</sup>

In 1848, after winning the Mexican war, the US acquires California and other western territories. The gold rush in California represents an explosion of transport demand to the Pacific Ocean. Initially, American entrepreneurs develop a railroad through Panama. The project is finished in 1855, pays royalties to Colombia's government equivalent to 3% of dividends and is one of the most profitable American companies during the 1850s and 1860s. Soon after, Japan also opens to trade and transport demand continues booming. Next, entrepreneurs aided with subsidies build the transcontinental railroads during the 1860s, 1870s and 1880s. The Central Pacific, the Union Pacific, and the Northern Pacific generate private returns higher than the opportunity costs of capital and all transcontinental railroads built generate high social benefits.<sup>2</sup>

As the US wins the Spanish war at the end of the 19<sup>th</sup> century, it acquires new territories on the Pacific Ocean, the Philippines and Guam. The rise of the US as a military power and the vast territories on the Pacific Ocean (including US Pacific coast) require appropriate defence. Communication between the Atlantic Ocean, where most of

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<sup>1</sup> Whitney (1849), Degrand, Firsk and Derby (1849), Lubbock (1916) pp. 36-108, Hutchins (1941) pp. 287-96, Russel (1948) pp. 46-61, Evans (1964) p. 33, Maurer (2011) pp. 26-38

<sup>2</sup> Whitney (1849), Degrand, Firsk and Derby (1849), Lubbock (1916) pp. 36-108, Hutchins (1941) pp. 287-96, Russel (1948) pp. 46-61, Evans (1964) p. 33, Randier (1968) pp. 161-163, Lotchin (1974) pp. 3-6, Mercer (1982) pp. 119-139, Jones (1995) pp. 117-187, Duran (2010) pp. 71-104, Maurer (2011) pp. 26-38

defence activities are located, and the Pacific Ocean becomes strategic. At the end of the 1890s the US government becomes increasingly interested in a canal through Central America, the Panama Isthmus being the preferred route.<sup>3</sup>

At first, the US tries to acquire the necessary land to build the canal through diplomatic means. The US and Colombian governments negotiate the Hay-Herran treaty. The US government offers Colombia a \$10m one-off fee and an annual fee of \$250,000 for 14 years once the canal is operating in exchange for the right to acquire the concession of New Panama Canal Company (a French company that failed to build the canal). The treaty is rejected by Colombia's congress. The US government's reaction is to support upraise in Panama on November 4<sup>th</sup> 1903, leading to Panama's separation from Colombia. Next the US negotiates successfully construction of the canal on Panama's territory. The plan goes ahead and the canal is built and finished by 1914.<sup>4</sup>

In short, during the 19<sup>th</sup> century the US showed interest in developing transportation through the Panama Isthmus. Initially, diplomatic efforts to gain access to transport projects on the Isthmus are complemented by private entrepreneurs who build a profitable railroad. At the end of the 19<sup>th</sup> century the US government is seriously interested in building a canal over Panama and offers to pay \$10m for the right to build the canal.

#### *US willingness to pay for Panama, after Panama is independent*

The story of the relations with Colombia after the Hay-Herran treaty is rejected by Colombia's congress and Panama separates from Colombia is less well known. The start must be to explain American oil companies' interest in general, and Jersey Standard's in particular, to exploit oil in Colombia.

The rise of Standard Oil has been explained elsewhere. Suffice to remark that as early as 1879, Standard Oil already had about 90% of the US refining capacity and experimented with different legal forms of commercial association to take advantage of the changing landscape set by the rapid growth of demand, the dispersion in location of

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<sup>3</sup> Maurer (2011) pp. 26-38

<sup>4</sup> McCulloh (1977) pp. 320-370, Maurer (2008) p. 686, Maurer (2011) pp. 39-68

new oil discoveries, the improvement of refining technology changing, and the invention of oil pipes. All these changes rapidly and dramatically alter the relative productivity of each oil field and refining plant, and therefore impose important challenges to management. As the industry grows, Standard Oil experiments with association instruments like trusts and holding companies, and maintains a dominant position in the industry. Until 1911, when the Standard Oil Holding Company faces the antitrust decision of the Supreme Court of Justice of the United States to divide the association into 34 different companies. The decision implies assets are allocated to the 34 different companies.<sup>5</sup>

Standard Oil of New Jersey is created. The assets allocated to the Jersey provide important refining capacity but very little oil production. In 1915 Jersey dominates the US and world markets for refined products, with 23% of the world market share, but it only produces 25% of the crude oil necessary for its refining activities. The imbalance implies Jersey Standard has to devise a strategy to increase its oil production capacity, while the company faces strong antitrust limitations to grow within the United States. Moving abroad to produce oil is not simple either, as there is the threat that federal antitrust authorities have authority over foreign operations of American firms, European governments protect their own domestic markets and also block access to oil resources located in their colonies.<sup>6</sup>

Walter Teagle, who had directed the marketing activities of the Standard Oil Holding Company in Europe during the first decade of the twentieth century, is selected to direct the foreign companies of Jersey. As the leader of Standard Oil Holding Company's European interests during the first decade of the century, Teagle faced intense competition from the Nobel-Rothschild-Deutsche Bank group and the Royal Dutch-Shell. Competition was marked by ups and downs generated by successive agreements of collusion and price wars. Initially, Teagle operates Jersey Standard's foreign companies from London and, as World War I starts in 1914, he moves to Toronto and continues managing from there. In Toronto he leads the Imperial Oil Company Limited, a subsidiary of Standard Oil Holding Company and, after 1911, of Jersey. From

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<sup>5</sup> Atack and Passell (1994) pp. 481-489, Granitz and Klein (1996) pp. 1-47

<sup>6</sup> Hidy (1952) pp. 222-223, Gibb and Knowlton (1956) pp. 77-78, p. 87, p. 106

the Imperial Oil Company, Teagle develops an international network of oil companies in Canada, Colombia, United States, and Peru during the second and third decades of the twentieth century.<sup>7</sup>

The complex legal landscape in the US and intense competition with colonial interests and European oil companies mean that discretion and opacity as to the ultimate ownership of new oil activities in foreign countries is critical to develop an effective network of oil companies abroad. Jersey looks to influence development of new oil companies with promising oil fields abroad at arms length, and to acquire the successful businesses through subsidiary companies based mostly in Canada, like the Imperial Oil. The process of continuous improvement and change in the legal form of association used to hold together what came to be the Standard Oil Holding Company accumulated experience and learning useful to coordinate a corporate growth strategy under such an indirect ownership link and loose network of firms.<sup>8</sup>

Applying such a strategy Jersey gets interested in Colombia. At the beginning of the second decade of the twentieth century Colombia captures the oil industry big players' attention. Standard Oil of New York associates with Colombian entrepreneur Diego Martinez and explores Colombia's Caribbean coast, 1911-1916. The partnership invests more than \$900,000 in the exploratory activities, but is unsuccessful. Weetman Pearson, a British oil firms operating in Mexico, develops a project to explore for oil in Colombia's Middle Magdalena river valley. Under great discretion Weetman negotiates with Colombia's government and strikes a deal. The company will invest \$400,000 to explore lands accounting for about 1% of total territory. Government, the Supreme Court of Colombia and congress are happy with the deal and the contract goes through first round discussion in congress by September 1913. And it is precisely reacting to these events that Jersey appears in Colombia, to compete for Weetman's contract.<sup>9</sup>

While entrepreneurs develop the first attempts to explore for oil in Colombia, the US government shows little interest to negotiate with Colombia to normalize relations. Colombians are offended and their pride tarnished by the events of 1903, and a strong

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<sup>7</sup> Gibb and Knowlton (1956) pp. 78-79

<sup>8</sup> Gibb and Knowlton (1956) pp. 78-79, pp. 105-109

<sup>9</sup> Bell (1921) p. 120, Diego Martinez's attorney (1923) p. 10, Mendoza and Alvarado (1939) p. 24, Isaza and Salcedo (1991) p. 90, Ripoll (2009) pp. 97-99, Duran (2011) p. 9

anti American sentiment is widespread throughout the country. In 1909 the US and Colombia's government sign the Root-Cortez treaty that offers Colombia \$2.5m and free transit to Colombian ships across the Panama canal as reparations for the role the US played in Panama's separation. Colombia's president, Rafael Reyes, took the treaty for discussion to congress. The offer was considered offensive. The reaction is so strong that not only the treaty is rejected, but the president had to go into exile. Other informal offers may have been made in 1912 and early 1913, but none become formal ones.<sup>10</sup>

In June 1913 Jersey Standard sends W. Doyle, who previously worked at the US State Department, and Chester Thompson, who works for Jersey to block the contract between Colombia and Weetman Pearson. Doyle and Thompson argue to Colombia's press that Weetman does not want to explore for oil but is really interested in building an inter-oceanic canal through the Atrato river. Their alarming claims are complemented with an informal offer from the US State Department on September 24: US government offers \$20m in reparation for the role the US played in the separation of Panama. Under these circumstances, Weetman Pearson withdraws its interest for the contract to explore for oil in Colombia on November 1913. And early 1914 the Urrutia-Thompson treaty is signed by the US and Colombian governments and ratified by Colombia's congress in June that year. The treaty indicates the US offers \$25m and privileges for Colombian ships to cross the Panama canal in reparation for the role the US played in Panama's separation.<sup>11</sup>

In 1914 Roberto de Mares, a Colombian entrepreneur with ownership over an oil concession in the Middle Magdalena river valley, is interested in associating with Jersey. Initially, Jersey sends one of its geologists to explore, F. C. Harrington, and he produces a positive report. But the directors of Jersey prefer to take no further action. Later that year de Mares reaches an agreement to explore the concession territory in

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<sup>10</sup> El Tiempo, Bogota, 5 January 1912, 15 April 1912, 7 March 1913, 2 May 1913, Rippy (1976) p. 104, p. 105. Rippy (1976) p. 104 suggests in 1913, apparently before Weetman expressed any interest to explore for oil in Colombia, the US government offers \$10m, up to \$50m to settle in an international arbitration tribunal Colombia's loss of rents connected to the royalties paid by the Panama railroad and the New Panama Canal Company, and privileges for Colombian ships to cross the Panama canal, all in exchange for the outrageous right to build another inter-oceanic canal (parallel to Panama's canal) through the Atrato river in Colombia. Randall (1992) suggests the US offered Colombia \$16m reparation. It has not been possible to confirm Rippy or Randall's information from primary sources or other secondary sources.

<sup>11</sup> El Tiempo, Bogota, September 4 1913, October 1 1913, Lael (1987) p. 98, Bucheli (2008) pp. 437-548

association with Michael Benedum, Joe Tress and George Crawford, Americans with experience in oil exploitation in the US and Mexico. The Americans had been close to merge their company, the Penn-Mex Fuel Company, with Imperial Oil, controlled by Walter Teagle and subsidiary of the Jersey. The agreement was frustrated due to changes in New Jersey's state corporate law. Exploration activities at the Magdalena concession territory culminate two years later successfully.<sup>12</sup>

On May 20 1916 the Americans incorporate in Wilmington, Delaware, the Tropical Oil Company, Troco, with authorized capital of \$50m and start immediately legal work to transfer the concession to Troco. And on 25 August 1919 the public works department of Colombia indicates the conditions for granting transfer to Troco. Conditions include reducing the original grant rights to an area of 100,000 hectares (about 20% of the original contract), the change in government royalty rate from 15% of the net production (net earnings) to 10% of gross production, the commitment to build a refinery plant with capacity to supply the entire country in at most two years, a price ceiling for refined products equivalent to New York prices, to waive diplomatic protection for the company and to fully accept and obey Colombian laws and courts. Roberto Mares and his Colombian associates receive 2.5% of Troco shares, equivalent to \$1.25m of authorized capital, or \$1m of subscribed capital in 1919.<sup>13</sup>

Although Jersey had let Troco slip away in 1914, now in 1919 with Walter Teagle as chairman of the corporation, conditions are set for Jersey to develop a more aggressive expansion into foreign markets, including Colombia. The departure of the older and more risk averse board members, the acquisition of a fleet of tanker ships during the war, and the end of the Great War, all facilitate implementation of an aggressive foreign acquisition strategy. And Teagle and the Troco associates meet again, face to face, to negotiate the price for Jersey to buy Benedum and his partners an oil company.<sup>14</sup>

In 1919, after the Roberto de Mares concession was transferred to Troco, Jersey begins talks to buy the company. A group of geologists led by A. V. Hoenig, who is in charge of the Carter Oil Company, the company that operates Jersey's most productive

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<sup>12</sup> Bell (1921) p. 120, p. 128, Gibb and Knowlton (1954) p. 85, Santiago (1986) pp. 23-27, pp. 29-32, Isaza and Salcedo (1991) p. 154

<sup>13</sup> Bell (1921) p. 120, p. 128, Boletín Minas y Petróleo, Bogotá, 1929, No. 8, pp. 90-92, Santiago (1986) pp. 23-27

<sup>14</sup> New York Times, New York, October 8 1920, Gibb and Knowlton (1956) pp. 108-109

well in the US, examines the properties of the Troco. The report is positive and values the properties at \$5m. Benedum, Tress and Crawford react and indicated that their price is closer to \$500m. Teagle negotiates at the same time on both ends, with the Troco partners and Jersey's board members, sceptical of the deal. In January 1920 it is rumoured that Jersey, through its subsidiary, International Petroleum Company, offers \$40m, close to Troco's subscribed capital \$39m. In August 1920 Teagle and Troco reach an agreement. The value of the new International Petroleum Company is expected to be close to \$100m. The New York Times reports on August 23 that the agreement has been accepted by shareholders and the stock exchange is organized.<sup>15</sup>

Once the merger between Troco and International Petroleum Company is completed, Jersey Standard has an oil field with high potential. Now it has to devise a way to take the oil out of central Colombia and into the US market. Right from the beginning of negotiations to merge with Troco in 1919, Jersey develops its plan to build an oil pipe to transport oil from the concession territory to Colombia's Caribbean coast. Troco's concession included the option to build an oil pipe, but is not explicit about price regulation of its services. Moreover, Troco's concession expires 30 years after 1921, when production of the fields must start, and, presumably, the concession assets go back to government hands after 1951. If the oil pipe is constructed under the concession contract, its assets will also pass to government in 30 years. Jersey decides not to use Troco's concession contract oil pipe clause, but instead to create, discreetly and seemingly disconnected from Jersey, a company in another country in order to use it to apply for a different concession and gain the right to build and operate the pipeline. In 1919 the National Andian Corporation Limited, Andian, with an authorized capital of \$ 1 million, is created in Canada. It is not made public that Andian is controlled by the Imperial Oil, a subsidiary of Jersey.<sup>16</sup>

Jersey assigns James Flannagan as director of Andian. Flannagan, a trusted officer for Walter Teagle, is an unfamiliar figure to almost everyone within Jersey. He is responsible for specific activities abroad and of confidential nature, commissioned directly by Teagle, and reports directly to him. During the second half of the 1910s

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<sup>15</sup> New York Times, New York, January 7 1920, January 20 1920, August 14 1920, August 23 1920, Wall Street Journal, New York, August 23 1920, Gibb and Knowlton (1956) pp. 108-109

<sup>16</sup> Congressional investigation against Andian (1925) p. 24, Gibb and Knowlton (1956) pp. 378-380, p. 649

Flannagan was key facilitating access to Mexico and Peru oil resources. And in Colombia he is involved in events that ultimately lead to allocation of a concession to build the pipeline between the Troco concession and the Caribbean sea to Andian, the ratification of the Urrutia-Thompson treaty by US congress and payment of reparations to Colombia.<sup>17</sup>

The situation is complex. By 1919 the US congress has not ratified the Urrutia-Thompson treaty signed by the two governments and ratified by Colombia's congress back in 1914 (to block entry to Weetman Pearson and facilitate it to American oil entrepreneurs, including Jersey). In 1919 the Colombian government, to facilitate the signing of the treaty by US congress, allows the transfer of the concession from Roberto de Mares to Troco and enacts legislation relaxing rules of oil exploitation in Colombia. But the United States has not ratified the treaty yet. By 1921 the Colombian government is frustrated.<sup>18</sup>

Under these circumstances, the Colombian government decides to use the pipeline contract to press Jersey and the United States Congress to do its part of the treaty. On January 25 1921, knowing that Jersey cannot exploit the concession without the pipeline, Laureano Garcia Ortiz, the minister for foreign affairs, indicates Carlos Urueta, the minister (ambassador) in the United States, through a cable:

(The US) ... wants approval of treaty to depend on other matters not connected to the original agreement. Unfair, irregular, is to hold ratification of previously recognized right to subsequent demands of different interests. Colombia agreed to adapt its legislation to such oil interests, until they were satisfied in solemn declaration by the (US) Senate. Today it pretends to defer and further amend the Treaty. My Government does not threat, it just suspends resolutions on oil concessions, because public opinion does not allow its approval anymore. Country tired in their expectation that may not be extended ... .These considerations should be communicated to whom you consider appropriate, especially Flanagan.<sup>19</sup>

Garcia Ortiz explicitly indicates Urueta to reveal the information to Flannagan,

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<sup>17</sup> Gibb and Knowlton (1956) p. 86, p. 101

<sup>18</sup> Randall (1992) p. 123, p. 129, p. 144

<sup>19</sup> Congressional investigation against Andian (1925) p. 18

hoping he will exert the influence of Jersey on the US congress to press signing of the Urrutia-Thompson treaty. The calculation is accurate. At the end of 1920 Flannagan has discussed the matter with senators Fall, Lodge, Hitchcock and Underwood of the foreign relations committee of the US congress, and with newly elected President Harding. But the treaty had not been signed by late January 1921. It is not possible to know if Colombia's government pressure led to even greater lobbying efforts by Jersey, or what actions this lobby involved to convince republican senators who originally opposed the treaty to favour it, but the treaty is ratified two months later, on April 21 1921. The US government granted in 1913 a subsidy to American oil companies, most likely Jersey Standard, and finally paid it during the first half of the 1920s.<sup>20</sup>

In a sequence of events surrounded by accusations of bribing even Colombia's newly elected president, Pedro Nel Ospina, Flannagan acted to secure the concession contract to the Andian. On October 1 1923 the Colombian government awarded Andian a concession to build and operate a pipeline between the oil wells in Troco's concession and Cartagena, on Colombia's Caribbean coast. The concession finishes in 50 years, requires Andian to provide transport service to third parties (including government), and regulates the prices of these services.<sup>21</sup>

Early in 1925 Jersey sends its pipeline construction expert, D. O. Towl to Colombia and Andian's ownership is passed from Imperial Oil to Colombian Investment Trust, fully owned by International Petroleum Company. The transaction centralizes control of Jersey's activities in Colombia into a single company, International Petroleum Company, and makes explicit after six years the close connection between Andian, Troco and Jersey. In 1925 Andian issues bonded debt for \$15m to finance construction. On March 6 1926 Andian completes the oil pipe and on July 3 the first tanker sets off to America. Once the Troco produces oil and Andian operates the oil pipe Jersey can exploit Colombia's oil resources. And soon enough, in 1928, Colombia is already the eight largest oil producer in the world.<sup>22</sup>

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<sup>20</sup> Gibb and Knowlton (1956) p. 379

<sup>21</sup> Congressional investigation against Andian (1925) p. 27, p. 41, Boletín de Minas y Petróleo, Bogotá, 1929, Vol 2, No. 8, pp. 99-110, Gibb and Knowlton (1956) pp. 378-380, Rippey (1976) p. 121, Villegas (1969) chapter 2, de la Pedraza (1985) pp. 191-193

<sup>22</sup> Oil and Gas Journal, Tulsa, 1925 January 22 p. 22, February 5 p.120, May 7 p. 68, Gibb and Knowlton (1956) pp. 379-380, p. 659, Santiago (1986) pp. 41-42, Petroleum Facts and Figures, Baltimore, 1929 p. 4

*US willingness to pay: summary*

Panama is originally part of Colombia and its geographic position is of strategic importance for communication between the Atlantic and Pacific oceans. As the 19<sup>th</sup> century evolves, the US experiences increasing commerce with the Pacific Ocean and territorial expansion on that ocean. Developing a transport project to reduce transport time to the Pacific is increasingly important for commercial interests and defence strategy. American entrepreneurs build a railroad through Panama and transcontinental railroads, while the US government constructs the Panama canal. The US maximum offer to Colombia for the right to build a transport project through Panama is \$10m (and additional royalties during operation). The offer is rejected by Colombia, Panama splits from Colombia in 1903 and the US builds the canal on Panamanian soil.

After 1903 the US shows little interest to pay reparation for its role on the separation of Panama from Colombia. The US maximum offer is \$2.5m. However, in 1913 American oil companies are interested in Colombia's oil resources. The US government raises its offer to \$25m, formalized through the Urrutia-Thompson treaty of 1914, to block entry of British competitors and facilitate allocation of concession contract to an American oil firm. But the US shows no sign of intention to pay until 1921. Once Jersey is producing oil in Colombia and ready to export, Colombia's government blocks the contract to build an oil pipe to transport oil to the coast to press the US to comply with the treaty. And the US congress ratifies the treaty that same year. The US government granted a subsidy of at least \$15m (\$25m Urrutia-Thompson minus \$10m maximum offer for right to build canal when Panama was part of Colombia) to Jersey Standard (the first and only firm producing oil in Colombia until the 1940s) to enter to Colombia to produce oil.

Note that the US government actions are not connected directly to World War I. The first increase in the offer by the US government occurs at the end of 1913, before the war starts. The second, when the US decides to actually pay, happens in 1921 when the Urrutia-Thompson is ratified, well after the war. Thus, the story is more about economics than about war time strategic military or desperate decisions.

## **Who supported and who opposed subsidy?**

The previous section describes the political disputes between Colombia and the United States for Panama and oil, and identifies the US government willingness to subsidize Jersey's entry into Colombia. Who, within the US, supported intervention through ratification of the Urrutia-Thompson? Who opposed to intervention and subsidy? What are the differences between the two groups of states?

Ideology, as exemplified, by senators' party differences may be an important determinant of the inclination to vote one way or another. In principle, democrats are more likely to see the treaty positively because it helps to normalize the relationship with Colombia. It also sends a positive signal to other Latin American countries that may have a negative perception of the United States because of previous unilateral interventions or threats of intervention. Republicans, on the contrary, are more likely to believe an aggressive stand towards Latin America and other countries, including unilateral interventions and threats, suits best to the United States interests, as illustrated by Roosevelt during the events surrounding Panama's separation.

Economic motivations may also determine the inclination senators have to vote for or against the treaty. Jersey Standard and other oil companies with chances of entering to Colombia are certainly to benefit from the subsidy, so senators close to their interests should support intervention and subsidy. Industries competing for capital and labour resources with Jersey and other oil companies, like manufacturing or farming, are likely to perceive the subsidy as unfair. Additionally, US government borrowing to pay for the subsidy may lead to higher interest rates in a context of already high interest rates and deflation after the Great War. Thus, senators close to industries different than the oil industry should oppose to intervention and the subsidy.

Consumers may also have their interests affected by the subsidy. One may assume that refining is a competitive industry and prices of oil refined products are expected to decline due to ratification of the Urrutia-Thompson and entry of Colombia's oil to the international market. Senators must then consider the gains in price reduction to final consumers in her/his state against the losses created by the opportunity cost of the

subsidy and US government expenditure. Lower prices benefit final consumers, but lower federal expenditure in their regions harms final consumer.

If one assumes refining is an industry with market power and oil prices are not to decline substantially for final consumers due to ratification of the Urrutia-Thompson, then, in country that produces 70% of world oil and is net exported, states that consume oil derivatives and produce little oil are likely to oppose the subsidy. Consumers bear the full opportunity cost of the subsidy, lower federal expenditure in their regions, and experience few of the gains derived from the subsidy.

The states whose two senators voted “nay” to ratification of the treaty are Minnesota, Washington, and Wisconsin. The states opposing ratification are republican, dominated by oil competing activities, and are also oil consumers.

The states whose two senators voted “aye” to ratification of the treaty are Alabama, Arkansas, Arizona, Colorado, Connecticut, Delaware, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Maryland, Maine, Mississippi, North Dakota, New Hampshire, New Jersey, New Mexico, Nevada, Ohio, Pennsylvania, Rhode Island, Texas, Utah, Virginia, and Wyoming. The patterns within the states supporting the treaty are less clear.

To explore the arguments above in more detail, state level data that proxy each hypothesized motivation is divided into two groups, senators for and against the treaty. Differences between groups are examined.

The data indicates the ideology hypothesis, where ideology is connected to party, is a weak one. Republicans have clear majority votes for and against ratification of the treaty. Out of the 19 senators who voted against the treaty, 15 of them, or 79%, are republicans. Out of the 69 senators who voted for the treaty, 40 of them, or 58%, are republicans. The outcome where republicans dominate both the positive and negative vote is explained by their majority in the senate, 55 out of 88 senators are republicans. The Kruskal Wallis test of difference in means confirms the intuition of the finding above: similarity between the sample of voters against and for the treaty cannot be rejected (see table 1).

**Table 1. Means by groups of states with no and yes vote to ratify the Urrutia-Thompson treaty in 1921**

	Urrutia-Thompson ratification vote	Mean value	Difference in means test
Urrutia-Thompson ratification vote (No. obs.)	No	19	
	Yes	69	
Party (R=0, D=1)	No	0.21	2.76 <sup>†</sup>
	Yes	0.42	
Oil production per capita (barrels per year)	No	2.8	-1.00
	Yes	5.5	
Oil refining capacity per capita (barrels)	No	33.5	-1.11
	Yes	69.5	
Motor vehicle registrations per capita	No	13.0	2.87*
	Yes	9.6	
Farm livestock value per capita (\$)	No	129,655.6	0.75
	Yes	110,780.7	
Farm machinery value per capita (\$)	No	63,890.9	2.46*
	Yes	37,727.2	
Manufacturing production per capita (\$)	No	491.4	0.00
	Yes	491.3	

Source: Senate vote and party of each senator from [http://www.govtrack.us/congress/vote.xpd?vote=s67\\_1-16](http://www.govtrack.us/congress/vote.xpd?vote=s67_1-16). Oil production, oil refining capacity, gas tax revenue, and motor vehicle registrations from Petroleum Facts and Figures 1928 p. 153, p. 169, p. 190, and p. 199. Farm livestock value, farm machinery value, manufacturing production from US 1920 census <http://mapserver.lib.virginia.edu/php/state.php>. Difference in means test is t-test with unequal variance between groups for all variables except party. <sup>†</sup> Indicates party group differences are analyzed using the Kruskal-Wallis non parametric test (instead of t-test), more appropriate for binary outcome data. \* Indicates test is significant at 95% level.

Senators from New Jersey, Louisiana, and Texas, where Jersey Standard has important interests, all vote for the treaty and subsidy. Thus, the idea that states where Jersey Standard is active are more likely to vote positively the treaty and subsidy receives strong support from evidence. The corporation lobbies government and congress intensely, routinely and in the specific events connected to the subsidy in 1913-1914 and 1921, and is most likely to benefit from the subsidy. Therefore the states where its interests are influential are likely to vote for the treaty.

However, a more general interpretation of the hypothesis that all states where oil is an important economic activity should vote for the treaty and subsidy does not find support in the evidence. Other non-Jersey Standard producing or refining states do not consistently vote for the subsidy. For instance, senators in California and Kansas, large oil producers and refiners, do not vote unanimously to ratify the treaty. The t-test of difference in means cannot reject the hypothesis that states that voted for and against the treaty come from similar samples regarding the importance of oil producers and refiners in each group. Thus, state presence of Jersey Standard's interests seem to affect

positively the likelihood of a positive vote for the treaty, but other oil producers do not necessarily perceive the treaty and subsidy as an opportunity.

Competition for inputs between other sectors and oil activities does not seem to explain voting behaviour either. In Wyoming, for example, both cattle and oil activities are important, and a certain degree of competition for inputs between the two sectors may be observed. But both Wyoming senators supported unanimously the treaty. In New Jersey, Pennsylvania and Ohio manufacturing activity is important, but they all voted unanimously for ratification of the treaty. Nevada, Connecticut, New Hampshire experience intense farming or manufacturing activity and no oil industry locates in these states, but the three voted unanimously for the treaty. Evidence seems to suggest, then, that state level or national level competition for inputs between the oil industry and the farming or manufacturing activities is not perceived by senators as too strong. The t-test for farm live stock value and manufacturing production indicates that it is not statistically possible to detect major differences between the sample of states that support the treaty and those who oppose the treaty. States that have high and low activity levels of oil competing industries both voted for and against the treaty.

The hypothesis that senators of states that are major consumers of oil, like owners of motor vehicles or mechanized agricultural implements (including tractors), seems to find support on the data. Minnesota, Washington and South Dakota invest intensively in vehicles, and voted negatively unanimously. California and Kansas are among the most adept buyers of vehicles and, although they have important oil production and refining activities, its senators had a divided vote. The t-test for motor vehicles and farming machinery per capita indicates that states that vote against the treaty have substantially and statistically significant higher investments on vehicles and farm machinery than states that vote for the treaty. States that have invested to consume intensively oil prefer to vote against the treaty. For senators from these states to prefer to vote against the subsidy provided to Jersey, they must believe that savings generated as a consequence of higher oil supply in the market will not trickle down to final consumers and/or not compensate the opportunity of federal expenditure. In short, oil consumers most likely perceive the subsidy to benefit exclusively Jersey Standard, as they do not expect to get lower prices and do expect to get lower federal government expenditure in their region.

In sum, the two most powerful explanations for voting patterns are whether Jersey Standard locates important activity in the state and whether the state is an intense consumer of oil or not. Presence of Jersey in a state indicates the most likely beneficiary of the subsidy is located within the state. If the state is an intense oil consumer, then, it is likely its senators oppose the ratification of the treaty, as they probably perceive the savings derived from having more oil in the international market will not be transmitted to final consumers and federal expenditure in their state will reduce. Evidence does not support explanations based on ideology, the general importance of oil production or refining within a state, or the importance of competing economic activities.

### **Did Jersey benefit from intervention?**

The first candidate to benefit from US government intervention is, of course, Jersey Standard. The previous section indicates Jersey was certainly expected to benefit from the subsidy by Jersey officers and Jersey states senators. But what did actually happen? In this section the observed benefits for Jersey derived from operation in Colombia are calculated.

The benefits Jersey derived from the US government policy intervention may be measured by the additional profits accrued due to the exploitation of oil in Colombia. Benefits come from, other things equal, lower prices and higher access to crude oil, the main input for Jersey's refining plants. In order to establish the magnitude of additional profits it is necessary to know the cost structure and prices within the vertical supply chain, all indirectly owned by Jersey. The cost structure and prices are not available, but an alternative is to identify additional profits by assuming that Troco and Andian's profits reflect Jersey's additional profits. The NPV of the Troco and the Andian projects are calculated. At this stage only some preliminary but interesting calculations are provided as archival work is underway.

Ideally one would like to have the flows of capital investments and net income for each, Troco and Andian. The natural sources for this information are the annual financial reports produced by each company. Only three years of these reports are available at this stage, for years 1936-38. The reports are for a period of high production of oil in Colombia's Troco concession to export crude oil to America's growing economy. The

information contained in these reports indicates that average capital investment for Troco 1936-38 is \$42.1m and for Andian is \$19.3m, while net earnings for Troco are \$2m and for Andian are \$7.3m. Thus, Andian's oil pipe is a more profitable business than Troco's oil production activities.<sup>23</sup>

As a temporary alternative source of information to produce Troco and Andian's NPV, production and export statistics, prices, and press information available are used here to contrast and complement the three available annual reports.

Capital investment information comes from press information regarding capital subscribed and bond debt issues. Capital subscribed, presumably to invest in building a refining plant, by Troco in 1920 is \$39m. Andian issued bond debt to finance oil pipe construction in 1924-6 for \$15m while its subscribed capital is \$1m. Thus, capital investment reports in annual reports and press seem to be roughly in line with press reports.<sup>24</sup>

Operational net income flows are constructed using production statistics and a fixed dollar profit per barrel produced or transported. Troco's operational net earnings are estimated as barrels per year produced times dollar amount profit per barrel produced in 1936-38. The profit per barrel produced is 10 cents. Andian's operational net earnings are estimated as barrels per year transported times dollar amount profits per barrel transported in 1936-38. The profit per barrel transported is 43 cents. Troco's operational net earnings are probably slightly underestimated. It exports more than 90% of crude oil production and, assuming that oil extraction costs are relatively stable, the margin on exports in 1936-38 must have been slightly lower than average margin over the whole 1921-51 period because international prices are \$1.13 per barrel in 1836-38 and slightly below the period's average, \$1.25 (\$0.67 min, \$1.99 max). Andian's net earnings are roughly accurate as transportation services experience stable costs and charge a flat fee during the period.<sup>25</sup>

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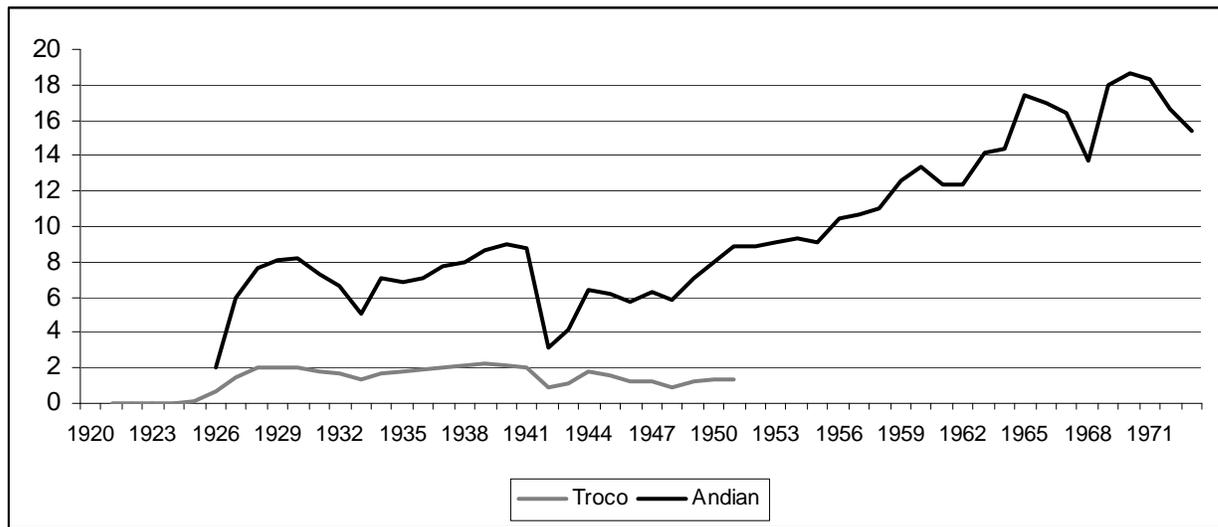
<sup>23</sup> International Petroleum Company annual reports 1936-38, with information specific to Tropical Oil Company and National Andian Corporation. Glenbow Museum Archive, Imperial Oil Collection.

<sup>24</sup> New York Times, New York, August 14 1920, Oil and Gas Journal, Tulsa, January 22 1925, February 5 1925, May 7 1925.

<sup>25</sup> Profit information comes from International Petroleum Company annual reports 1936-38, with information specific to Tropical Oil Company and National Andian Corporation. Glenbow Museum Archive, Imperial Oil Collection. Barrels produced and transported comes from Ministerio de Minas y Petroleo (1944) p. 88 and Santiago (1986) p. 63

Troco and Andian operational net earnings are presented in figure 1. Troco operational net earnings are close to \$2m per year and end in 1951, as the concession contract finished and assets are taken by Colombian government. Andian operational net earnings are in the range \$6m-\$9m until the mid 1940s, when other independent concession contracts start operation and pump oil into the Andian pipes to export to the US.

**Figure 1. Operational net earnings per annum in million dollars**



Source: Own calculations based on profit information from International Petroleum Company annual reports 1936-38 (with information specific to Tropical Oil Company and National Andian Corporation) at Glenbow Museum Archive, Imperial Oil Collection, and barrels produced and transported from Ministerio de Minas y Petroleo (1944) p. 88 and Santiago (1986) p. 63. See text for details.

The NPV is calculated using the capital investment in annual reports, the net earnings flows estimated using the method indicated above, and the Dow Jones average annual return over the period, 0.56%, as a proxy of the discount rate or inter-temporal opportunity cost. The NPV for Troco is -\$25.1m, for Andian is \$78.2m and for Jersey is \$53.1m (see table 2). The NPV reflects the lower capital investment and higher net earnings flows of the Andian, compared to the Troco. Although, the Troco net earnings flow is likely to be slightly underestimated, and therefore the NPV estimate is also downward biased, the magnitude of Troco losses implied by the NPV estimate are unlikely to be caused by the bias. Troco's estimated operational profit per barrel

produced 1936-38 needs to go up by 148% to 24.8 cents per barrel to make the NPV of the project positive – while the maximum oil price observed is just 76% higher than the price observed 1936-38. Unless 1936-38 are unusually bad years, and evidence points to the contrary, it is unlikely profits can be so much higher. The driver of Troco’s losses is the low profitability of oil extraction relative to oil transport in Colombia.

**Table 2. Net present value of Troco and Andian**

Variable	Value	Source
<b>Initial investment Troco</b>	\$42.3m	NYTimes Gibb & Knowlton (1956), contrasted with annual reports 1936-39
<b>Initial investment Andian</b>	\$19.1m	WSJ, contrasted with annual reports 1936-39
<b>Discount rate</b>	0.56% p/a (mean)	Dow-Jones, 1920-51
<b>NPV Troco</b>	-\$25.1m	Own calculation
<b>NPV Andian</b>	\$78.28m	Own calculation
<b>NPV Jersey in Colombia</b>	\$53.1	Own calculation

In sum, the US government intervention (subsidy) is not necessary to induce entry of Jersey into Colombia. The profits generated by Troco and Andian are high enough to induce private entry. If the US government intervention is perceived as necessary to convince the Colombia’s government of the convenience of not offering the contract to Weetman Pearson and offering the oil pipe contract to Andian, then the US government should have asked Jersey to return the \$15m of additional reparation to the US treasury. If US government intervention was not perceived as necessary to convince the Colombian government, then US government should not have intervened at all.

**Did consumers benefit from intervention?**

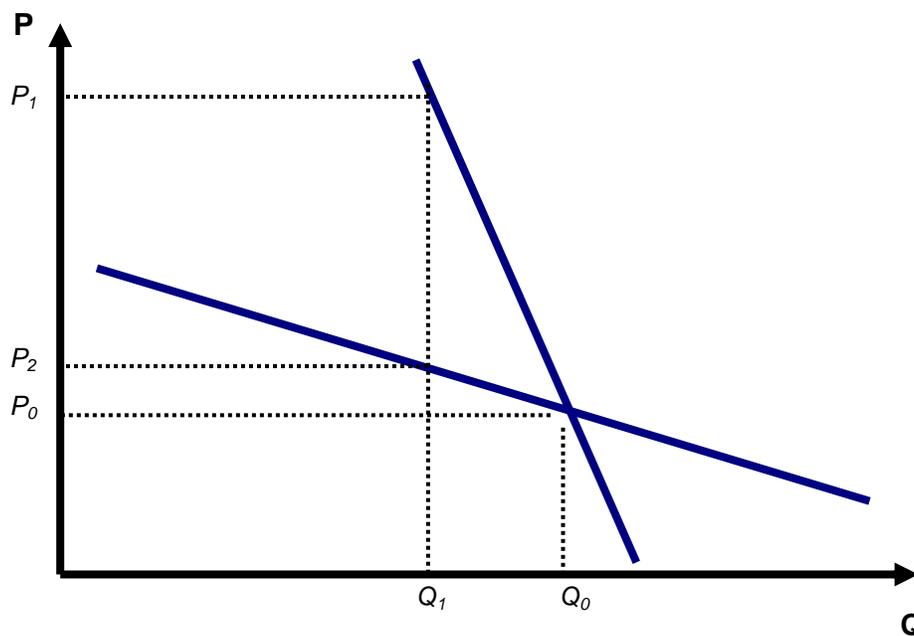
The second candidate to benefit from US government intervention is US oil consumers. America’s government intervention led to oil supply expansion and therefore to an oil price reduction, all other things equal. In turn, the oil price reduction allowed American consumers to save on oil costs. Senators from states with high oil consumption do not seem to believe the international oil price decline will trickle down to the final consumers and/or these benefits are lower than foregone federal government expenditure,

as they voted against ratification of the treaty. But how much did American consumers actually save?

The approach to calculate how much Americans save is to use the elasticity of demand to approximate the price change in the world oil market without Colombian oil, and then multiply the quantity of oil consumed by the difference between the price observed and the price that would have been prevalent had Colombian oil not been in the market. The approach works if the US and the international oil markets are well integrated, as price changes in one market should reflect in the other.

Assuming a wide range of price elasticity of demand it is possible to use Colombia's oil supply to calculate the price prevalent had Colombia not provided oil to the market. The elasticity of demand gives the reaction of quantity to a 1% price change. In turn, given the elasticity it is possible to derive the price change due to a 1% quantity change. Next a price elasticity of demand ranging from very low, 0.1, to very high, 5, is assumed to calculate the social savings under a wide range of elasticity of demand. For instance, in figure 2, equilibrium in the international oil market with Colombia's supply is given by  $P_0$  and  $Q_0$ .

**Figure 2. Calculation of effect of Colombia's oil supply on international prices**



To make the example simple, assume Colombia's supply is equivalent to 1% of the international oil market, and therefore, if Colombia goes out of the market, the oil price will increase by 10% if the price elasticity of demand is 0.1 and by 0.2% if it is 5. The first case examined is one with a low price elasticity of demand, given by equilibrium  $P_1$  and  $Q_1$ . Note the change in quantity is proportionally lower than the change in price it caused. The second case is one with a high elasticity of demand, given by equilibrium  $P_2$  and  $Q_1$ . Note the change in quantity is proportionally higher than the change in price it caused.

Ideally, data on Colombia's oil supply to the world market, the quantity traded in the international oil market, the quantity of oil consumed by America, and the observed market price are required to produce a range of estimates of social savings in oil costs. At this stage all data has been collected for year 1927. Colombia's production is 14.9m barrels per year, world oil output is 1,260m barrels per year, American consumption is 891m barrels, and the observed price is \$1.30 per barrel. Results of calculations are presented in table 3.<sup>26</sup>

**Table 3. US oil consumer's savings 1927**

	Elasticity				
	0.1	0.5	1.0	2.0	5.0
Colombia share of oil market (%)	0.012	0.012	0.012	0.012	0.012
Price reaction to Colombia out of oil market (%)	0.153	0.031	0.015	0.008	0.003
Price with Colombia in oil market (\$)	1.300	1.300	1.300	1.300	1.300
Price with Colombia out of market (\$)	1.453	1.331	1.315	1.308	1.303
Consumer's oil savings 1927 (\$)	131.5	26.3	13.2	6.6	2.6
NPV (\$m)	1,354.8	271.0	135.5	67.7	27.1

The first column in table 3 indicates Colombia's share in the oil market is 1.18%, and the price increase implied by the subtraction of Colombia's oil if the price elasticity of demand is 0.1 is 15.3%. The observed price in 1927 is \$1.30 per barrel, while the price without Colombia's supply would have been \$1.45 if the price elasticity of demand is 0.1. American consumers save more than \$131m in 1927 because Colombia's oil keep oil

<sup>26</sup> Colombia's production comes from Miniterio de Minas y Petroleo (1944) p. 88 and Santiago (1956) p. 63, world production and US consumption comes from Gibb and Knowlton (1956) p. 676, and international price comes from BP stats.

prices low. Assuming, at this stage, savings are identical every year, the NPV of the flow of savings along the 30 year period of the de Mares concession is \$1,354m. The upper bound estimate of the NPV if the price elasticity is 0.1 is over 1,300m and the lower bound is over \$27m, if the elasticity is 5. Independently of the elasticity of demand, the NPV of American consumer savings is higher than the \$15m invested by the US government to convince Colombia's government to allocate the contracts to Jersey.

Include increase in taxes due to higher Jersey profits if Troco and Andian profits are brought back home.

The question is which group in society benefit? The answer depends on the structure of the refining industry. If the industry is competitive, the lower prices derived from having Colombian oil in the world market are transferred to consumers: users of automobiles and public transport, urban developers, petrochemical industries and the shipping industry. The navy also gets its operating costs reduced. However, if there is market power in refining, then the oil refiners capture the rents, and this becomes one more source of profits for Jersey Standard.

## **Conclusions**

Preliminary conclusions indicate:

- Subsidy intervention is motivated by lobbying of Jersey and (unexplained at this stage) widespread support for reparations to Colombia
- The subsidy is not necessary to induce Jersey's entry. If US government intervention is indispensable to convince Colombia's government, then congress should have asked Jersey to return additional \$15m that cost reparation due to involvement of oil companies.
- States with high levels of investment in oil consuming machinery, like motor vehicles, opposed the subsidy. Although the subsidy may result in lower oil prices in the international oil market, consumer states, presumably, believe refiners will not pass

down the supply chain the price reduction. Consumer states will also bare the opportunity cost of the subsidy.

- Preliminary conclusion: subsidy is granted because Jersey captured US government. If refining industry enjoys market power, then, although Jersey frequently stated government attacked it, the truth is that government limited itself regarding antitrust action in refining. The subsidy is granted not withstanding opposition of oil consumers, who expect to bare little benefits from the subsidy and most of its opportunity cost. The subsidy represents one of the first instances when US government intervenes to generate a long term pattern of development reliant on cheap oil prices.

## References

- Atack, Jeremy. y Peter. Passell (1994) *A new economic view of American history*. W. W. Norton and Co.
- Bell, P. (1921) *Colombia: a commercial and industrial handbook*. Government Printing Office.
- Boletín de Minas y Petróleo*. Órgano del Departamento de Minas y Petróleos del Ministerio de Industrias. Several issues
- Boletín de Petróleos*. Órgano del Departamento de Minas y Petróleos del Ministerio de Industrias. Several issues
- Bucheli, Marcelo (2008) “Negotiating under the Monroe doctrine: Weetman Pearson and the Origins of U.S. Control of Colombian Oil” *Business History Review*, Vol. 82, pp. 529-553
- Burgos, Remberto. (1965) *El general burgos*. Instituto Internacional de Estudios del Caribe
- Congressional investigation against Andian Corporation Limited (1925). Disponible en Biblioteca Luis Angel Arango
- Degrand, P., R. Fisk and Derby (1949). *Proceedings of the Friends of a Railroad to San Francisco at their Public Meeting Held at the US Hotel in Boston*. Bosotn, Dutton and Wentworth.
- De la Pedraja, René. (1985) *Historia de la energía en Colombia, 1537-1930*. El Ancora Editores
- De la Pedraja, René. (1993) *Petróleo, electricidad, carbón y política en Colombia*. El Ancora Editores
- Diego Martinez Attorney (1923) La Cartagena Oil Refining Co. en su litigio con la Nación. Alegatos de los apoderados y sentencias de la cortes suprema de justicia.1923. Editorial de Cromos. Luis Tamayo y Co. Bogotá. 21 de marzo
- Duran, X (2010) *Was the first transcontinental railroad expected to be profitable? Evidence from entrepreneur’s declared expectations, an empirical entry decision model, and ex-post information*. PhD thesis. Department of Economic History. London School of Economics
- Duran, X. (2011) “El Petróleo en Colombia, 1900-1950: Especuladores y Empresas Multinacionales”. Document prepared for book “Celebration of Ecopetrol first 60 years”

*El Tiempo*, Bogotá. Several issues

Evans, R. (1964). "Without regard for cost": the returns on Clipper Ships." *The Journal of Political Economy* Vol. 72, No. 1, pp. 32-43.

Granitz, Elizabeth. y Benjamin. Klein (1996) "Monopolization by "raising rivals' costs: the Standard Oil case" *Journal of Law and Economics*, Vol. 39, No. 1, pp. 1-47

Gibb, George. y Evelyn. Knowlton (1956) *History of the Standard Oil Company: the resurgent years, 1911-1927*. Harper & Brothers

Hidy, Ralph (1952) "Development of large scale organization: The Standard Oil Company (New Jersey)" *Journal of Economic History*, Vol. 12, No. 4, pp. 411-424

Hutchins, J. (1941). *The American maritime industries and public policy*. Boston, Harvard University Press.

Isaza, José Fernando. y Luis Eduardo. Salcedo (1991) *Sucedió en la costa atlántica. Los albores de la industria petrolera en Colombia*. Ancora Editores.

Jones, M. (1995). *The Limits of liberty: American history 1607-1992*. Oxford, Oxford University Press.

Lael , Richard (1987) *Arrogant diplomacy: US policy towards Colombia, 1903-1922*. Wilmington, Scholarly Books

Lotchin, R. (1974). *San Francisco 1846-1856: From Hamlet to City*. New York.

Lubbock, B. (1916). *The China clippers*. Glasgow

Maurer, Noel and Carlos Yu (2010) *The big ditch: How America took, built, ran and ultimately gave away the Panama canal*. Princeton, Princeton University Press

Maurer, Noel and Carlos Yu (2008) "What T. R. Roosevelt took: The economic impact of the Panama canal" *Journal of Economic History* Vol. 68, No. 3

McCullough, David (1977) *The path between the seas: The creation of the Panama canal, 1870-1914*. New York, Simon and Schuster

Mendoza, Félix. y Benjamín. Alvarado (1939) *La industria del petróleo en Colombia*. Ministerio de la Economía Nacional. Departamento de Petróleos. Editorial ABC

Mercer, L. (1982). *Railroads and land grant policy : A study in government intervention*. New York, Academic Press.

Ministerio de Minas y Petróleo (1944) *Memoria de minas y petróleos al Congreso 1944*, Imprenta Nacional,

*New York Times*, New York. Several issues.

*Oil and Gas Journal*, Tulsa, varios ejemplares

*Petroleum Facts and Figures*, Baltimore. Several issues

Randall, Stephen. (1992) *Aliados y distantes. Historia de las relaciones entre Colombia y EE.UU. Desde la independencia hasta la guerra de las drogas*. Tercer Mundo Editores. Ediciones Uniandes. CEI.

Randier, J. (1968). *Men and ships around Cape Horn : 1616-1939*. London,.

Ripoll, María Teresa. (2009) *Empresarios centenaristas en Cartagena*. Editado por la Universidad Tecnológica de Bolívar

Rippy, Fred. (1976) *The capitalists and Colombia*. Arno Press

Russel, R. R. (1948). *Improvement of communication with the Pacific Coast as an issue of American politics, 1783-1864*. Cedar Rapids, Iowa, Torch Press.

Santiago, M. (1986) *Crónica de la concesión de Mares*, Ecopetrol

Uribe, Rafael. (1927) Republicación Alegato presentado por el general Rafael Uribe Uribe para refutar el informe presentado en 1908 por el subsecretario de gobierno señor Luciano herrera. Editorial Minerva

Villegas, Jorge (1969) *Petróleo, oligarquía e imperio*. Ediciones ESE

Villegas, Jorge. (1969) *Petróleo colombiano ganancia gringa*. Ediciones el Tigre de Papel

*Wall Street Journal*, New York. Several issues

Yergin, Daniel. (2009) *The prize: the epic quest for oil, money and power*. Free Press

Whitney, A. (1849) *Project for a railroad to the Pacific*. New York.