

How big is the Financial Penalty for Dictators? The Case of Cuban Bonds at the time of Independence*

Stéphanie Collet[#]

Aspirant F.R.S-FNRS
Université Libre de Bruxelles (ULB)
Centre Emile Bernheim, SBS-EM

July 2010

Abstract

This paper examines whether a specific risk premium associated with “odious” sovereign debt issued by dictators exists. Bondholders could indeed require a premium to compensate for the higher default risk due to the odious character of the debts. The paper quantifies the risk premium required by investors to hold debts which could be denounced as odious and analyses the relation between the value of the government bond and the extreme “odious debt” events. Based on an original database of Cuban bonds, the paper reveals the existence of a risk premium of at least 200 basis points which penalizes bonds issued by dictatorial regimes. The bond market “odious” shocks are provided by a Structural VAR analysis. As the Cuban bonds were quoted both in Brussels and in Madrid, a comparative research between the two exchanges confirms that the bond price evolution incorporates an “odious debt” premium.

Classification codes: N21, N26, F34, G15

[#] Stephanie.Collet@ulb.ac.be

* I thank sincerely Kim Oosterlinck for his supervision and engagement. I also thank Frans Buelens and Stefan Houpt for their help and availability and I am grateful to the University of Antwerp’s SCOB center for the collection of the data. I appreciate the comments and suggestions of Mark Strazicich, Ariane Szafarz, Pierre-Guillaume Méon, Jean-Luc Demeulemeester, the participants of the 2009 European Historical Economics Society Conference, the participants of the 2010 Appalachian Spring Conference in World History and Economics and the participants of the 2010 Economic and Business History Society Conference. The FNRS (Fonds National de Recherches Scientifiques) and Le Fonds Marie-Christine Adam provided useful financial support.

Preamble¹

On the 10th December 1898, an old man came home knowing exactly what his wife's first sentence would be. While turning the key in the lock, all he could think about was how he had decided to invest in a new issue on the bond market some years ago which proposed bonds guaranteed by Cuban revenues and a general Spanish guarantee. He took a deep breath and opened the door to hear "have you heard the news?" Of course he had heard the news; the Peace Treaty between the United States and Spain had been signed. Under normal circumstances, a Peace Treaty would be good news. Since the start of the Spanish-American War, he had been reassuring his wife that a change of sovereignty didn't matter since international law states that "state obligations belong to a land and its people, not to a regime". Closing the door, his wife asked him "have you heard that our bonds have been declared 'hostile debts' by the American commissioners and are not recognized in the Peace Treaty?" Taking his coat off, he answered that he even knew the two parallel arguments evoked: the loan was not for Cuba's benefit and had been imposed against its will and without its consent. The debt would later even be referred to as 'ODIOUS', but nobody knew it then.

¹ Translated from a true story published in the Feuilleton Du Courrier de la Bourse et la Banque, 1898, La Dette Cubaine, Brussels, Belgium.

Introduction

Dictators often look for both external finance and support. Their outstanding external debt may be a way to quantify the international complicity with their regime.² Therefore, debtors face morality issues for the repayment once a dictator is ousted. This paper focuses on the financial implication of dictatorship on bond pricing. More precisely, it aims at estimating to what extent a dictator is penalized when issuing sovereign debts. The bondholders could indeed require a risk premium on such bonds due to potential repudiation after a political change. The argument behind the repudiation could be illegitimacy, morality or unfairness but is expected to have no economic³ motivation.

The juridical literature addresses the issue of dictator-associated debt through the so-called “odious debt” doctrine.⁴ The repudiation of debts viewed as “odious” constitutes a major but seldom occurring political event. According to this doctrine, repudiating a dictator’s debt is legitimate when the debt was contracted for: sumptuary expenses, repression purposes including human rights violations, or corruption and crime. In such situations, the next government may refuse to honor these “odious” debts. This rule legitimizes international debt repudiation and, therefore, introduces a specific financial risk for bondholders. A recent example occurred for the Iraqi debt issued under the reign of Saddam Hussein.⁵

Empirical papers on sovereign debt and seldom occurring events have attempted to determine the impact of those events on sovereign bonds’ expected rates of return. The impact of various related events has been analyzed for the American Civil War⁶, for the Second World War⁷ and for the Russian revolution⁸. For more peaceful periods, the reactions of bond prices following political changes have also been scrutinized. As defaults might be linked with political turnover⁹, political changes may have an impact on sovereign bond prices. The effects on bond prices differ between democracies and autocracies¹⁰; democracies having a lower risk premium than dictatorships in Dhillon’s (2009) theoretical model¹¹.

² Jim Hoagland, Washington Post columnist, considered Iraqi foreign debts as “the most visible remaining symbol of international complicity with the dictator's bloody reign” (Iraq's Bigger Picture, Washington Post, 10th October 2004).

³ Even though economic motivation often play an important role on top of the ideological motivations evoked to repudiate (See Hoeflich, 1982).

⁴ Adams (1991), King, Khalfan and Thomas (2003), Gelpert (2005), Buchheit, Mitu Gulati and Thompson (2006), Jayachandran and Kremer (2006), Cheng (2007), Gelpert (2007), Howse (2007), King (2007), Shafter (2007).

⁵ Gelpert (2005), Buchheit, Mitu Gulati and Thompson (2006), Jayachandran and Kremer (2006), Cheng (2007), Gelpert (2007), Howse (2007), King (2007), Shafter (2007).

⁶ Willard, Guinnane and Rosen (1996), Weidenmier (2002), Oosterlinck and Weidenmier (2007)

⁷ Frey and Kucher (2000), Waldenström and Frey (2004)

⁸ Landon-Lane and Oosterlinck (2006)

⁹ Saiegh (2004), Bordo and Oosterlinck (2005), Saiegh (2005)

¹⁰ McGillivray and Smith (2003)

¹¹ Dhillon (2009) compares default incentives in competitive sovereign debt markets when ego rents are low, and the value of reputation to dictators is high, then democracies have lower risk premiums than dictatorships.

Several authors¹² have investigated a number of economic implications stemming from the particular concept of odious debt. Theoretical models were developed in those papers to evaluate the consequences of odious debt on future dictatorships but they remained focused on the theoretical side. To our knowledge, the financial implications of odiousness remain unexplored.

This paper aims to fill this gap and explore the existence of a specific risk premium related to odious debt. The goal of the paper is to determine the influence of the concept of odious debt on Cuban bond prices. The Cuban bond market during the 19th century is a pertinent case since only part of the Cuban debt was at first disputed due to their alleged odious character after the war. In addition, the portion of the Cuban debt seen as “normal” and not odious, turned out to be “unexpectedly” rejected for odious reasons. This change of characteristic and its impact on the bond market shows clearly the “odiousness” effect on the risk premium required by investors. The existence of differences in anticipation of the treatment for each part of the debt makes it possible to measure the perceived repudiation risk.

To reach this objective a SVAR approach was applied to the Cuban-specific case. Cuban debt, at the time of independence, was not only subject to default risk due to its odious character but was also impacted by the Spanish-American War. This approach allows to disentangle the effects of news and events related to the war from the ones linked to the odious character of the Cuban debt. By confronting the econometric analysis with the events reported in newspapers, the existence of odious shocks is highlighted and their financial impact quantified. The paper reveals the existence of a risk premium of at least 200 basis points which penalized the bonds issued by the Cuban dictatorial regimes. As the Cuban bonds were quoted both in Brussels and in Madrid, comparative research between the two exchanges confirms an “odious debt” premium in the bond price evolution.

The remaining part of the paper is structured as follows. Section 1 reviews the juridical literature on odious debt to delineate its financial implications, and presents the related economic models. Seeing the Cuban bonds as a “dream case” is debated in Section 2, and Section 3 provides the Cuban historical context around independence. The data and methodology are presented in Section 4. Section 5 is dedicated to the market evaluation of the repudiation risk through the analysis of the Cuban Bond Market in the late 19th and early 20th centuries. This section presents the results, highlights the existence of an odious risk premium and quantifies it.

¹² Jayachandran and Kremer (2006), Jayachandran *et al.* (2006), Choi and Posner (2007) and Shafter (2007)

I. The odious debt doctrine

“Odious debt” is closely related to political unfairness. It refers to situations¹³ where sovereign debt is issued without the population’s consent, or where it is not beneficial to the citizens, or is even used for oppression. The odious debt story built along historical examples gave rise to a large juridical literature in the 1920’s. With the demise of some despotic regimes, the odious debt doctrine arose in political, activists and media debates. More recently, models assessing the impact of odious debt on future dictatorships have been proposed.

a. Juridical literature

According to international law, requiring the continuity of rights and obligations, states and governments are assuming the sovereign debt incurred by their predecessors. As a result, the population remains in charge of the sovereign debt incurred so that the new government inherits it. However, exception to the succession of sovereign debt has been advocated when assuming such debt is against “moral duty”.

The French public law professor, Gaston Jèze (1922, p303, p327), developed the concept of “regime debt” as “*debts contracted during a civil war for the use of it*” or “*debts contracted in peacetime, but specially for the purpose of subjugating the liberated territory*”. “Regime debts” are typically dictator’s debts incurred to oppress the population. The former minister of Tsarist Russia and professor of law in Paris, Alexander Nahum Sack (1927, p26), asserted general rules on sovereign debt repayment. He introduced the concept of “odious debt”. Sack’s (1927, p157) definition of ‘odious debt for the population of an entire state’ is articulated along three criteria. First, the debt had to be contracted by a dictator. Secondly, the debt had to be against the general interest of the population and “*not for the needs or in the interests of the state, but rather to strengthen itself, to suppress a popular insurrection*”. Finally, the issue had to be made “*to the lender’s knowledge*” as the creditor had to be aware of the purpose of the loan. According to Sack (1927, p. 26) “sovereign debt can only be contracted for the needs and in the interest of the State”. Many other authors¹⁴ have used the odious debt concept but under other names (regime, onerous, hostile, odious or subjugation debts) and categories. In addition, an attempt to codify¹⁵ the odious debt doctrine took place in the 1980s. However, the proposed draft article¹⁶ did not enter into force. Indeed, to this day the odious debt doctrine is not supported by any international rule of law. As a result, an odious debt might be rejected but does not have to be as it is not a codified rule of law. Therefore, even when the debt is clearly odious, the debtor may end up repaying it.

¹³ Mexican debt in 1867, Peruvian debt relating to the Province of Tarapaca in 1887, Cuban debt in 1898, Annexation debt of the Transvaal in 1900, Tsarist debt in 1918, Tinoco loans (Costa Rica) in 1919.

¹⁴ Hyde (1922), Feilchenfeld’s (1931), Hyde (1947), O’Connell (1956), and Frankenberg and Kneiper (1984).

¹⁵ Bedjaoui (1977) and Vienna Convention in 1983.

¹⁶ The article proposed the non-transferability of “odious debts”.

For several decades, the odious debt doctrine lay idle. The demise of some despotic regimes, such as the Apartheid government in South Africa, led to a renewed interest. The juridical literature on the odious debt doctrine was used as a legal basis by activists to suggest successor governments should be relieved from dictator's debts. The revival also attracted scholarly attention¹⁷. King, Khalfan and Thomas (2003, p13-16) suggested three sufficient and necessary conditions for a debt to be considered as odious. The first and second criteria are respectively the absence of consent of the population and the lack of benefit from the proceeds of the issue. In other words, the debt has not received the general consent of the nation and the borrowed funds are contracted and spent in a manner which is contrary to the interest of the nation. The third criterion is creditor's awareness of these facts. Based on this recent juridical literature, the contemporary definition of an odious debt is an obligation incurred in the name of a sovereign nation on which the people of the nation did neither benefit nor consent with creditor's awareness of these facts.

Currently, the notion of odious debt is regularly called in the case of countries, such as Angola, Burma, Cuba, Haiti, Iraq, Sudan, Syria, and Zimbabwe, where dictators have contracted debts under the state's name, for their own profit. Indeed, most contemporary cases in which the media invoke the doctrine concern "dictators" debts. Given the frequency of successions and the magnitude of debts that could be at stake the College of International Jurists should devise appropriate international responses to the purported odious debt doctrine proposed by the U.S. government and human rights groups (Cheng 2007, p6). Indeed, an inaccurate formulation of the odious debt doctrine is an open door to repudiate sovereign debt for opportunistic purposes.

In practice, the juridical debate is directly related to the price of bonds because of the repudiation risk. This repudiation risk may be considered as an "odious" risk premium as the possibility of bonds being worthless exists. Nowadays, the juridical position on odious debt is still debated. The difficulty in assessing the odiousness of a debt contributes to this on-going debate. Three arguments make assessment difficult. First, sovereign debts are fungible. Secondly, the debt purpose is unknown in advance and a dictator decides how to spend the debt. Finally, in actual sovereign debts, bondholders do not have the information on the purpose of the debt. However, in the Cuban case, the purposes of the debts were accurate. As a result, the Cuban bond prices reflected the default risk due to the odious character of the debts and not the uncertainty on the purpose of those debts.

¹⁷ Adams (1991), King, Khalfan and Thomas (2003), Gelpern (2005), Buchheit, Mitu Gulati and Thompson (2006), Cheng (2007), Gelpern (2007), Howse (2007), King (2007), Shafter (2007).

b. Odious debt model

One of the goals of the juridical odious debt doctrine is to prevent wasteful and harmful expenses. In this optic, the odious debts doctrine is economically rational as lenders are likely to refuse lending money to odious regimes. Indeed, their investment is likely to be lost at the end of the odious regime. Having trouble to remain financially sustainable, the odious regime is less likely to survive for prolonged periods. Preventing odious debts and reducing the survival time of odious regimes have indeed been presented as justifications of the odious debt doctrine. Various¹⁸ theoretical models concentrated on economic implications stemming from the concept of odious debt. According to those models, the odious debt doctrine might be welfare-improving but might also induce odious regimes to misbehave even more.

Jayachandran and Kremer's (2006) "loan sanctions" model proposes carefully circumscribed legal loan sanctions on odious regimes. To do so, international organizations, such as the United Nations Security Council or Transparency International, would have the power to declare *ex-ante* particular regimes as odious. Under their assumptions, the model's mechanism leads to multiple equilibriums where creditors lend to non-odious regimes and not to odious regimes. This financial straightjacket on odious regimes reduces the utility of a dictator and, as a result, reduces the probability of future dictatorship. The "loan sanctions" model implies having an opinion and judging regimes which is contrary to the non-interventionist principles in international law. Moreover, some assumptions such as having a credible threat in case of default are hard to put into practice. Furthermore, the model implies a consensus on the odious cases which might be hard to obtain without self interest and political inter-state relations influencing the outcome. Therefore, an odious regime policy rests on a careful evaluation of the extent to which the regime's behaviour is likely to worsen the policy.

Jayachandran, Kremer and Shafter (2006) and Shafter (2007) propose a new model to tackle the difficulty in achieving a consensus and the time inconsistency of the "loan sanctions" model. These authors propose an alternative "due diligence" model that provides a greater *ex-ante* certainty. This odious doctrine proposal requires creditors to exercise due diligence to ensure the use of the funds. The due diligence has to put forward the non-odious purposes of the loan. The goal of the due diligence is to avoid the possibility of a successor regime repudiating the sovereign debt for odious reasons. However, the result might be more dubious in presence of political pressure or global security conditions. For example, Cheng (2007, p29) argues that, for the sake of global interest, no financial straightjacket should be imposed on an odious regime with a nuclear weapon.

An odious regime may become even more odious with a financial straightjacket imposed on it (Choi and Posner, 2007). Choi and Posner's model assumes complete information of whether

¹⁸ Jayachandran and Kremer (2006), Jayachandran *et al.* (2006), Choi and Posner (2007) and Shafter (2007).

the regime is odious or not. In the model, dictators might invest in the state's future or spend for personal consumption. Their model shows that the existence of an odious debt mechanism increases the probability of regime overthrowing which pushes dictators towards borrowing for personal expenditure. As the odious debt doctrine makes the dictator in power short-sighted, state investment is more difficult to implement and is less likely to occur. Therefore, taking the motives and practices of dictators into account, the odious debt doctrine could benefit or harm the state public welfare.

The above-mentioned models deal with the theoretical side of the research question. In contrast, this paper focuses on the practical implication of the odious debt doctrine. Are dictators punished on the sovereign bond market? In other words, do dictators' debts undergo an odious risk premium? Note that the dictator himself will never be punished as he will receive the full proceeds of the debt. However, if the dictator was to come back, financial markets might then impose a penalty. The paper reveals the existence of a link between the odious debt doctrine and the reaction on the financial market. While this practical implication is delineate, it does not provide an answer on the welfare improvement or worsening of the doctrine.

II. The dream case: Cuban bonds

This paper will highlight whether the dictators have less advantageous conditions when they want to contract a loan. It analyzes whether the market requires *ex-ante* compensation towards repudiation risk of a debt for "odious" reasons. In order to reach this goal, it can be useful to think of what could be considered as a "dream case". This perfect case would involve a country under a dictatorship which has issued two debts with identical financial characteristics (rate, coupon, maturity, etc). The only difference between the debts would be that one is odious and the other is not. This could happen for example if only one of the two debts was used against the interest of the population.

The Cuban case study in the late 19th century is probably the closest one can get to this dream case. In the late 19th century, two Cuban debts were issued under the Spanish power of the governor-general. One of the two debts was at the time seen as "unfair to repay" while the other was viewed as "legitimate". One may debate whether Cuba was at the time under a dictatorship. According to (Chapman 1927, p84), the authoritative political regime established by one person imposed by the Spanish mother-country, the "governor-general", renders Cuba eligible as such.

Most scholars trace the emergence of the odious debt notion back to the Spanish-American War of 1898 when the United States occupied Cuba and refused to recognize the Cuban debts. As the first reference to odious debt, the Cuban debts represent an opportunity to analyze the practical implications of an odious debt declaration on bond prices. Two Cuban debts

contracted under Spanish rules were exchanged on European bond markets. Table 1 compares the two Cuban debts: Cuba 6% and Cuba 5%. “Cuba 6%” was a sovereign bond emitted in 1886 by Spain on behalf of Cuba. A total amount of 585,750,000 francs or pesetas were issued in 1,171,500 bonds of 500 nominal value. The bond had to be repaid at its nominal value 50 years later by drawing. Each bond paid 7.5 francs on the 1st of January, April, July and October to reach a 6% rate. The bond had, next to the Cuban special guarantee, a general Spanish guarantee. “Cuba 5%”¹⁹ had the same issuer, the same guarantee and the same pay-back method. However, “Cuba 5%” was issued in 1890, had a 5%²⁰ coupon rate and represented 391,588,000²¹ francs or pesetas. Some similarities emerge such as the issuer or the duration. However, there are some differences as the interest rates. Among these differences, the use of the debt turns out to be crucial in this search.

Table 1: The two Cuban debts

	Cuba 6%	Cuba 5%
Issuer	Spain in name of Cuba	
Payback	Drawing 50 years	
Revenue relying on	Cuban's	
General guarantee	By Spain	
Market	International	
Debt Initial purpose	Refunding old Cuban debts	Refunding Cuba 6% debt
Year of issue	1886	1890
Coupon	Quarterly 6%	Quarterly 5%
Total amount	585 750 kfr.	391 588 kfr.
Max amount	620 000 kfr.	875 000 kfr.
Use of debt	Refunding old Cuban debts	Keeping power over Cuba
Newspapers	'Normal'	'Unfair to repay'
Expectation	NON-ODIOUS	ODIOUS

On the basis of financial archives, original databases tracking the evolution of prices of the Cuban bonds and a benchmark have been set up. This database is the starting point of the econometric analyses which will in particular focus on the relationship between the value of the government bond and the odious debt events considered. As anticipation of the actors is reflected in the bond prices, an econometric approach is useful to interpret the expectations of the people directly and indirectly committed in the bond markets.

¹⁹ Note that two types of Cuba 5% were quoted: Cuba 5% and Cuba 5%bis. Cuba 5%bis started to be quoted on August 1898 and its quoted price is nearly always the same as Cuba 5%. As their prices are so close, only the most liquid (Cuba 5%) is taken into account for the analysis.

²⁰ 6.25 francs on the 1st of January, April, July and October.

²¹ 783,176 piece of 500 nominal value.

III. Historical Context

Since the 16th century, Cuba had been in Spanish possession. Spain was most of the time controlling and monopolizing Cuban trade and commerce. For example, prior to 1860, part of the Cuban revenues were sent to Madrid and used for national expenses.²² Cuba had been seen for a long time as “the most interesting addition which could be made”, “an island which is constantly Americanizing and “an acquisition which is in the natural order of things” by the United States.²³ In 1848, President James K. Polk quietly authorized his ambassador in Spain, Romulus Mitchell Saunders, to negotiate the purchase of Cuba. He eventually offered up to \$100 million but Spain refused the deal.

Twenty years later, the Ten Years' War (1868-78) broke out in the Eastern part of Cuba. Its instigators wanted to free Cuba from Spain. The revolt failed as the Western portion of the island stayed under Spanish power. The United States declined to intervene or to recognize the legitimacy of the Cuban movement.²⁴ This war as well as other colonial expeditions considerably burdened the Cuban budget and debts between 1861 and 1880.²⁵

a. The Cuban debts

The so-called Cuban debts consisted mainly of various loans consolidated and converted through two Spanish laws of 25th July 1884 and 13th July 1885.²⁶ Cuban debts incurred by Spain between 1861 and 1880 had increased due to Spain's attempts to reincorporate San Domingo into the Spanish dominion and to pay for Spanish expeditions to Mexico.²⁷

A 6% Cuban loan, which resulted in the raising of up to 620 million pesetas or francs, was contracted under a Spanish Royal Decree of 10 May 1886.²⁸ The purpose of the bill was to repay the old Cuban debts. The interest and redemption of the Mortgage Bills were to be satisfied out of the yearly Budget of the Island of Cuba guaranteed by “the receipts of the

²² Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan.

²³ « Ce n'est pas aujourd'hui que les Etats-Unis ont jeté leurs vues sur la perle des Antilles. Jefferson, Président des Etats-Unis écrivait en 1823 : je déclare avoir toujours été d'avis que Cuba serait l'addition la plus intéressante qui pourrait être faite à notre système d'état. En 1854, le diplomate anglais qui a longtemps représenté son pays à Cuba écrivait : « ... en résumé, depuis que je connais l'île de Cuba, elle n'a pas cessé de s'américaniser lentement mais constamment ». Les Etats-Unis déclarèrent repousser la proposition de la France et de l'Angleterre de renoncer à la possession de Cuba. Les Etats-Unis déclarèrent : «Cuba est l'acquisition future qui est dans l'ordre naturel des choses ». Entre temps le président Polk avait vainement offert à l'Espagne d'acheter l'île (cent million de dollars). Depuis lors les Etats-Unis ont multiplié leurs tentatives et pas un seul instant ils ont perdu Cuba de vue. En 1898 ils croient le moment psychologique venu de réaliser leur projet.» L'Opinion, 1898, journal libéral, N°106-107, 16 and 17 March 1898, Antwerp, Belgium.

²⁴ Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, p83.

²⁵ Bedjaoui, M., 1977, *Succession of States in Respect of Matters Other Than Treaties*, Yearbook of the International Law Commission, Vol. 2, Part 1, p72.

²⁶ Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, p332.

²⁷ Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, p339.

²⁸ Le recueil financier annuel, 1901-1902, p729. Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, p332.

Customs, the Seal, and the stamp office, the Island of Cuba, the direct and indirect taxes existing in the island, or which may be established there in the future”.²⁹ In addition, Spain decided to attach the general guarantee of the Spanish nation to the Cuban debts.³⁰ Those bonds were sold on international markets and were held by nationals of a number of major countries, including Belgium, England, France, Germany, Spain and Switzerland.³¹

In September 1890, a new bond issue of up to 875 million pesetas, with the same guarantee, was authorized by the Spanish government to refund the loan of 1886 and to cover new debts contracted between 1886 and 1890.³² Here again, the Cuban debts were obligations secured by Cuban revenues but were contracted by Spain under Spanish law and were sold on international markets.

b. The turning point

The world panic of 1893 resulted in acute economic distress for Cuba³³, especially for the Cuban sugar markets, which were devastated by competition in Europe and by United State’s protectionism. These drove down the world price of sugar from eight to two cents a pound. Next to economic distress, Cubans wanted independence irrespective of the character of Spanish rules and their effort towards a “Cuban home rule”³⁴ government.³⁵ In 1895, the Spanish empire was on the brink of collapse and the Cuban people yearned again for self-government. This resulted in the Cuban War of Independence (1895-97). Cubans supported the action of guerrillas who burned loyalists’ plantations by night so that “if the Spaniards would not give up Cuba, then Cuba will be worthless to them”³⁶.

To restore order, all Cubans were ordered to move into garrisoned Spanish towns.³⁷ Therefore, loans contracted by Spain in 1890 were diverted in part from their original purpose and used directly to finance the repression of the insurrectionary movement in the island between 1895 and 1897.³⁸ The United States was profoundly averse to war, although the public sentiment favoured intervention on the Cubans’ side.³⁹ Funds were raised in the United States to “free Cuba”. Despite this movement, the US government prevented many attempts to support the

²⁹ Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, pp332 - 333.

³⁰ Monimat, 1886, *chronique financière*, 28/11/1886, Brussels, Belgium.

³¹ “Assemblée publique des porteurs de fonds Espagnols et Cubain”, 5/12/1898, p31.

³² *Le Courrier de la Bourse et la Banque*, August 1898, journal quotidien, Brussels, Belgium. Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, p333.

³³ Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, p73.

³⁴ The island was to be ruled by a governor in conjunction with a council of Cuban inhabitants. The Cuban home rule was passed in February 1895 but never went into effect as the revolution began.

³⁵ Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, pp74 - 75.

³⁶ Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, p80.

³⁷ This is called the reconcentrado policy. Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, p81.

³⁸ Bedjaoui, M., 1977, *Succession of States in Respect of Matters Other Than Treaties*, Yearbook of the International Law Commission, Vol. 2, Part 1, p72.

³⁹ Alger, R.A., 1901, *The Spanish-American war*, Harper & bros. New-York, p1.

“Cuban government in the woods”⁴⁰ to remain neutral. As the year 1897 drew to a close, the Spanish government which was desirous to avoid a United States intervention announced the establishment of a Cuban home rule leaving most of the functions of government in the hands of an elected legislature.⁴¹ The die-hard Spaniards in the Constitutional Unionist party demonstrated against Cuban home rule and the Americans in Cuba.⁴² The American consul-general became alarmed and requested the “Maine” to proceed to Havana harbour to protect American citizens. On 15th February 1898, an explosion sank the American battleship costing 264 lives. The United States held Spain responsible, directly or by culpable neglect, for this disaster.⁴³ However, even after the destruction of the Maine, investors believed war could be averted.⁴⁴ Finally, the overwhelming popular sympathy for “Cuba libre” played an important role in the resolution proposed in the United States congress which led to an ultimatum, requiring the Spanish evacuation of Cuba, sent to Spain on the 21st April 1898. As the Spanish government was resolute to keep Cuba, the Spanish-American War (25 April – 12 August 1898) followed.

c. The controversy

After the war, peace commissioners drew up a treaty of peace (13 August – 10 December 1898). The debate around the two Cuban debts started as the victorious United States refused to recognize the Cuban debts. In the first step towards the Peace Treaty, the United States sought to include the following motion: *“Spain will relinquish all claim of sovereignty over and title to Cuba”*.⁴⁵ The Spanish Commissioners’ response was to add the acknowledgment by the United States of *“all charges and obligations of every kind in existence at the time of the ratification of this treaty of peace, which the Crown of Spain and her authorities in the island of Cuba may have contracted lawfully in the exercise of the sovereignty hereby relinquished and transferred, and which as such constitute an integral part thereof”*.⁴⁶ The American Commissioners rejected this proposal and the Cuban debts controversy arose. Spanish and American commissioners presented dramatically opposing points of view to justify why the other should recognize the Cuban debts.

The Cuban controversy is especially interesting to analyze since at first only part of the Cuban debts were disputed because of their alleged odious character. On the 8th August 1898, the requested Peace conditions of the United States included the rejection of Cuban debts. Soon, newspapers started to discuss the “Cuban bond affair” giving their characteristics, including the destination of the funds raised by these debts. Since the issue of the Cuban debt, those characteristics as well as the purpose of the debt were available in the official stock exchange

⁴⁰ Political humorists in the United States refer to the Cuban organization as a “Cuban government in the woods”.

⁴¹ Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, p83.

⁴² Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, p84.

⁴³ Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, p87.

⁴⁴ Alger, R.A., 1901, *The Spanish-American war*, Harper & bros. New-York, p4.

⁴⁵ Moore, I.J., 1906, *Digest of International Law*, U.S. Government Printing Office, Washington, Vol. 1, p351.

⁴⁶ Moore, I.J., 1906, *Digest of International Law*, U.S. Government Printing Office, Washington, Vol. 1, p352.

publication.⁴⁷ The information in those publications was so accurate that each single bond could be linked to a particular purpose using its serial number. For example, Cuba 5% bonds with an issue number between 625,001 and 1,125,000 represented an “extraordinary issue to face expenses in Cuba’s budget caused by insurrection expenses”.⁴⁸

The loan of 1890 was used for direct repression of the Cuban insurrection and was seen in Belgium as “unfair” to repay while the 1886 loan was seen as “normal” since its proceeds had been used to refinance old debts.⁴⁹ In the same way, *The London Standard* differentiated both debts based on the rebellion date criterion. According to it, “great disappointment is expressed that The United States decline to recognize, or to make Cuba recognize, part of the Cuban debts”⁵⁰. The debts issued before the 1895 rebellion is the part expected to be recognized by the United States. The entire 1886 Cuban loan and a small⁵¹ part of 1890 loan were issued before the rebellion. As a result, that part of the Cuban debt was expected to be recognized by the United States while the other was not. The existence of differences in anticipation of the treatment for each series of debts makes it possible to measure the perceived repudiation risk. According to some newspapers at the time, all Cuban debts could end up being rejected as the 1886 loan was used to refinance old debts which had partially served colonial conquest.⁵² The American and Spanish press didn’t differentiate between the two Cuban debts. The American press affirmed their intention to reject all Cuban debts, “Spain will pay the Cuban debts”⁵³, while the Spanish held that “the United States should assume it wholly”⁵⁴.

On the one hand, the United States considered the Cuban debts as odious because the borrowed amounts had not benefited the Cuban people but only the crown of Spain. The American Commissioners adopted an approach based on principles of the doctrine such as equity, moral duty and fairness. In this way, they constructed a rationale to reject the ‘odious’ debts based on two arguments.

First, “the loans have not been contracted for the benefit of Cuba, but, on the contrary, the proceeds had been spent in a way contrary to the interests of Cuba”.⁵⁵ This argument

⁴⁷ Such as *Le recueil financier annuel* for the Belgian bondholders or the *Annuaire des valeurs admises à la cote officielle* for the French bondholders.

⁴⁸ *Annuaire des valeurs admises à la cote officielle*, 1896, p2143. « crédit extraordinaire au budget général de l’île de Cuba pour les dépenses occasionnées par l’insurrection », *Annuaire des valeurs admises à la cote officielle*, 1897, p185.

⁴⁹ *La Cote Libre: organe de la Finance, de l’industrie et du Commerce*, journal quotidien, Brussels, Belgium.

⁵⁰ *The London Standard* August 18, 1898.

⁵¹ It is about 0.1045% of the total 1890 Cuban debt.

⁵² *Le Courrier de la Bourse et la Banque*, 1898 and 1899, journal quotidien, Brussels, Belgium.

⁵³ “Spain will pay the Cuban debts: Her Commission in Paris Yields to the American Demand.”, *The New York Times*, October 28, 1898.

⁵⁴ “Peace work is delayed: our commissioners Hold Two Sessions to Formulate a Final Answer to the Cuban Debt.”, *The New York Times*, October 23, 1898.

⁵⁵ Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, p337.

maintained that Spain had not contracted the loans for Cuba's benefit. Indeed, the loans had only served to finance operations contrary to Cuba's interests such as its dependency. For example, Cuba's military expenditure under Spanish domination accounted for three quarters of its total expenditure in the financial year 1886-1887.⁵⁶ Furthermore, the American commissioners also put forward as a moral argument that the borrowing purpose was to crush revolts attempted by the Cuban population against their domination.⁵⁷ Therefore, Cuba could not be held responsible for a debt contracted in order to maintain it under Spanish power.⁵⁸

Secondly, *"the financial burdens connected with these loans had been imposed upon Cuba against her will and without her consent"*.⁵⁹ In the second argument, the core point was the fact that Cuba had no voice on this debt. Therefore, the United States maintained that financial charges resulting from the loans had been imposed upon Cuba against its will. The Spanish colony had not been consulted by the metropolitan country regarding these loans.⁶⁰ According to the American Commissioners, Cuba's 6% loans had been imposed upon Cuba.⁶¹ The United States memorandum pointed out that the corresponding debts had been created by the Spanish Government for its own purposes, through its own agents, and that Cuba had no part in their creation.⁶²

On the other hand, the Spanish commission agents, basing themselves on established jurisprudence, judged that in acquiring Cuba, the United States also had to assume the debts of the island. The Spanish Commissioners asserted the principle of international law which states that obligations belong to a land and its people, not to a regime. According to them, the strictly legal doctrine showed that the revenue pledges as well as the public debts are part of the ceded sovereignty. According to the historical precedents, the outstanding Cuban debts had to be recognized and taken over by the United States. However, Spain was prepared to deviate

⁵⁶ Bedjaoui, M., 1977, *Succession of States in Respect of Matters Other Than Treaties*, Yearbook of the International Law Commission, Vol. 2, Part 1, p72.

⁵⁷ The Americans asserted that *"If, as is sometimes asserted, the struggles for Cuban independence have been carried on and supported by a minority of the people of the island, to impose upon the inhabitants as a whole the cost of suppressing the insurrections would be to punish the many for the deeds of the few. If, on the other hand, those struggles have, as the American Commissioners maintain, represented the hopes and aspirations of the body of the Cuban people, to crush the inhabitants by a burden created by Spain in the effort to oppose their independence, would be even more unjust"* and pointed out that the creditors knew that the revenues were pledged for *"the continuous effort to put down a people struggling for freedom from the Spanish rule,"* and that *"they took the obvious chances of their investment on so precarious a security"* see Feilchenfeld, E., 1931, pp340.

⁵⁸ Bedjaoui, M., 1977, *Succession of States in Respect of Matters Other Than Treaties*, Yearbook of the International Law Commission, Vol. 2, Part 1, p72.

⁵⁹ Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, p337.

⁶⁰ Bedjaoui, M., 1977, *Succession of States in Respect of Matters Other Than Treaties*, Yearbook of the International Law Commission, Vol. 2, Part 1, p72.

⁶¹ Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, p338.

⁶² Bedjaoui, M., 1977, *Succession of States in Respect of Matters Other Than Treaties*, Yearbook of the International Law Commission, Vol. 2, Part 1, p72.

from its strict international law approach to reach a compromise subject to certain compensations being granted.⁶³

The Cuban debts controversy generated detailed discussions on reasons and issues leading to the groundwork of today's odious debt doctrine. Finally, Spain relinquished her sovereignty over Cuba to the United States in the Peace Treaty of Paris on 10th December 1898. In the treaty, the United States did not recognize the 1886 and 1890 Cuban loans. Both Cuban debts were thus finally rejected for odious reasons.

d. The settlement

After the Peace Treaty, negotiations between the bondholders' associations and the authorities began. According to the French and Belgian bondholders' associations, the United States was to blame for its position. However, the associations managed to reach a settlement with the Spanish authorities. All the coupons were paid by Spain but bondholders had to take a severe cut⁶⁴. Finally, on 27th March 1900, a Spanish law allowed the conversion⁶⁵ of Cuban bonds into Spanish interior bonds. This conversion encountered a 60%⁶⁶ success and was made compulsory by the 28th November 1901 law. The bondholders, who had not been consulted, felt under duress and forced.⁶⁷ The former Cuban bondholders received certificates which indicated in particular the amount they had held previously. The law entered into force on the 1st January 1902 and the Cuban bonds were totally removed in February 1902. Cuba, whose independence took place on the 20th of May 1902, emitted a 5% bond of \$35 million in New York.

IV. Data Series and methodology

The Cuban debts consisted of two debts having identical issuer, nominal value and guarantees. Their differences lie in the year of issue (1886 and 1890), the coupon (6% and 5%) and the reason of issue. The Cuba 5% was seen as "unfair" to repay as soon as 1898, while the Cuba 6% was "unexpectedly" also rejected for odious reasons at the end of 1898. Therefore, during the year 1898, one of the Cuban debts was seen as odious (Cuba 5%) and the other (Cuba 6%) was not. This represents an opportunity to analyze the risk premium required by an investor to hold a debt which could be declared odious. Furthermore, once both Cuban debts were declared odious, the effect and impact of an odious debt on the bond market might be

⁶³ Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, p343.

⁶⁴ 20% was taken off because the Cuban debts were colonial debts, another 20% was taken off because of taxes Spain imposed on utilities and finally coupons were paid in pesetas which meant the bondholders incurred exchange rate losses. According to the Cuban bondholder association (Comité de Détenteurs de fonds Espagnols et Cubains) of 1899-1900, the total loss for the Cuban bondholders would be 50%.

⁶⁵ 100 unity of the 1886 loan was converted into 120 unity of 4% perpetual interior Spanish debt. 100 unity of the 1886 loan was converted into 100 unity of 4% perpetual interior Spanish debt.

⁶⁶ End 1900, what has been converted? 372,463,500 out of 585,750,000 for Cuba 6% and 213,284,500 out of 391,588,000 for Cuba 5%.

⁶⁷ Comité des Détenteurs de Fonds Espagnols et Cubains, 1902-1903, p151.

analyzed. Indeed, as Cuba 6% was “unexpectedly” declared odious, the odious debt premium is expected and is actually not incorporated in its bond price before the “odious” announcement. Moreover, Cuba 6% and Cuba 5% can be analyzed separately using a benchmark which is strongly affected by the Spanish-American War. The chosen benchmark is a Spanish “exterior” 4% bond. Using this methodology, the analysis detects the important shifts in the bond market which are not attributable to the benchmark.

a. Data Series

The Cuban bonds were traded in Brussels and the data series were published in the *Bourse de Bruxelles* and *Le Courrier de la Bourse et la Banque*. The considered period starts six months before the Spanish-American War and stretches to the month where the Spanish law permitted the conversion of the Cuban debts into Spanish debts. It thus ranges from October 1st 1897 to April 2nd 1900. Overall, it represents 914 days over a 30 month horizon. Two Cuban debts, both very liquid, were quoted: “Cuba 6%” and “Cuba 5%”. A Spanish 4%⁶⁸ exterior bond is used as the benchmark. It is a liquid perpetual⁶⁹ bond whose coupons were payable according to their nominal value.

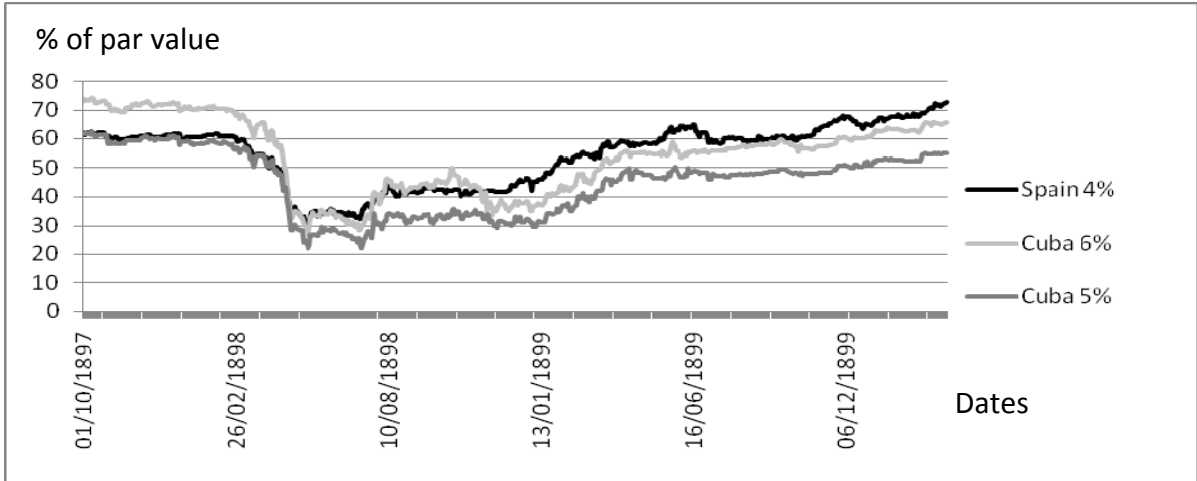


Figure 1 : Cuba 5%, Cuba 6%, Spain 4% bond price

The price evolution for Cuba 5%, Cuba 6% and Spain 4% bond prices is represented in Figure 1. Bond prices are expressed in % of par value for the period stretching from October 1897 to March 1900. The yield to maturity of the two Cuban bonds and the Spanish bond are represented in Figure 2. Cuba 5% and Spain 4% bond price kept an average of 60% of par value before the Spanish-American War while the Cuba 6% bond price was around 70%. As those prices are “dirty prices”, part of the difference is explained by the difference in coupons of the bond. With the start of the Spanish-American War in April 1898, the bond prices dropped to around 25-35% of par-value. The bonds remained at this level until the end of the war in August 1898. The two Cuban bonds went from a 8-10% to a 12-27% yield to maturity range.

⁶⁸ 1 franc for every 100 francs nominal value on the 1st of January, April, July and October

⁶⁹ Note that, in 1900, the perpetual was about to become a bond with a long maturity paid back by drawing. However, the law was never passed.

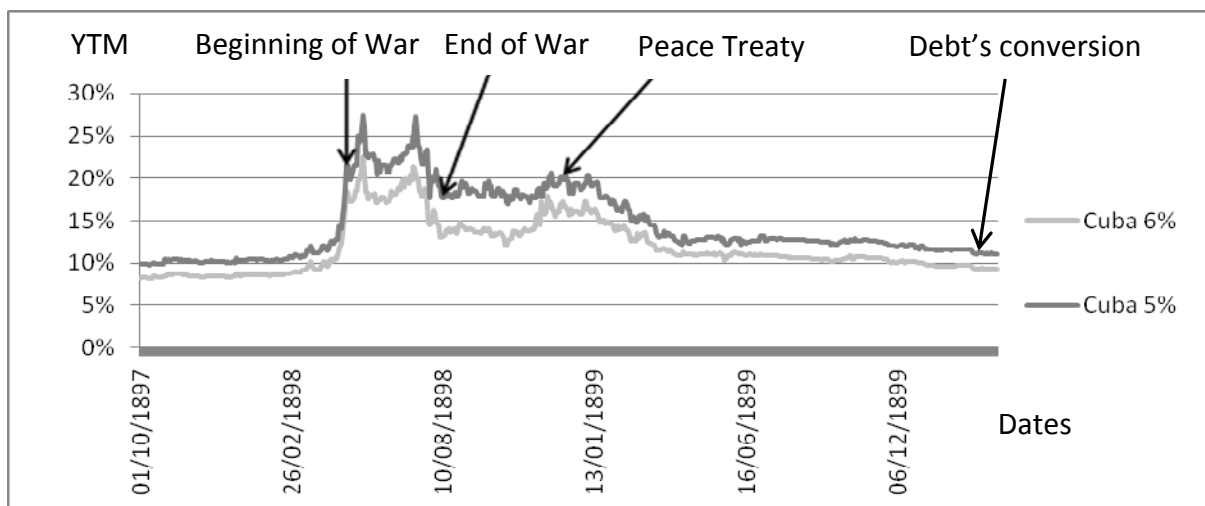


Figure 2 : Cuba 5% and Cuba 6% yield to maturity

Between the end of the war and the Peace Treaty, Spain 4% and Cuba 6% held at a value between 40 and 50% of par value. However, Cuba 5%, which was accused to have directly helped finance the repression of the Cuban insurrection, remained at a 33% par value level. This bond, seen as “unfair” to repay by both parties (Spain and America) would become the first example of a bond declared odious. In the same way, the yield to maturity of Cuba 5% remained near 20% while Cuba 6% dropped to 13%.

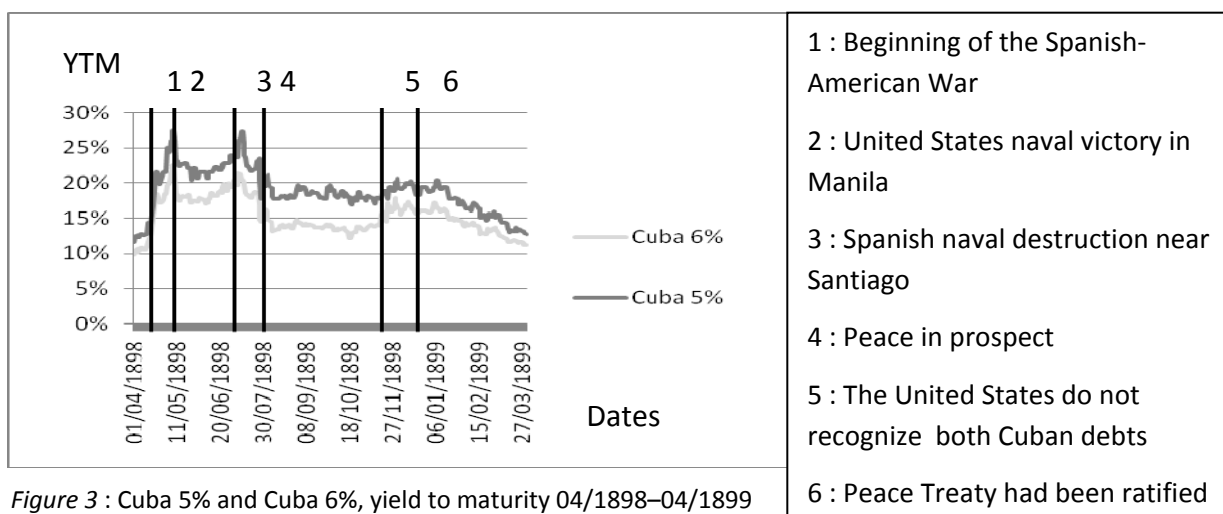


Figure 3 : Cuba 5% and Cuba 6%, yield to maturity 04/1898–04/1899

- 1 : Beginning of the Spanish-American War
- 2 : United States naval victory in Manila
- 3 : Spanish naval destruction near Santiago
- 4 : Peace in prospect
- 5 : The United States do not recognize both Cuban debts
- 6 : Peace Treaty had been ratified

Eventually, at the Peace Treaty of Paris (10th December 1898), neither the Cuba 5% nor Cuba 6% were recognized by the United States. Both Cuban bonds had been rejected for their odious character. As a result, the Cuba 6% drove down to 35% of par value. The negotiations between the Cuban bondholders and the Spanish authorities, after the Peace Treaty, led to a Spanish law permitting a conversion from Cuban bonds into Spanish “interior” bonds. At the end of March 1900, both Cuban debt’s yields to maturity were close to their pre-war level.

b. Methodology

The goal of the paper is to analyze if there is a premium reflecting the possibility that the debt will be declared odious by future governments. The Cuban debts offer an opportunity to analyse the premium caused by its possible odious character. Therefore, the Cuban bond daily return and an appropriate benchmark are analysed using a Structural Vector Auto-Regression (SVAR) approach (Sims, 1980; Hamilton, 1994).

To use this kind of approach, a benchmark is required. The appropriate benchmark should be affected by the Spanish-American War but cannot be affected by the odious character. The benchmark used is the Spanish 4% “exterior” bond. This bond is liquid and has the general guarantee of Spain, as do the Cuban debts. The Spanish bond is clearly affected by the Spanish-American War and is not affected by an odious character as it was used in Spanish interest and was decided to be issued by a Spanish law.

The daily returns of the three bonds (Spain 4%, Cuba 6% and Cuba 5%) are computed as follows:

$$r_t = \frac{p_t - p_{t-1} + D_{t-1}}{p_{t-1}}$$

r_t being the daily return, p_t the daily bond price and D_t the dividend related to the bond. On the contrary to the bond price and yield to maturity, the daily returns are stationary according to the standard Unit Root Test.

In order to compute the SVAR, the reduced form of the Vector Auto-Regression (VAR) is estimated:

$$y_t = A_1 y_{t-1} + \dots + A_p y_{t-p} + \alpha_t + \varepsilon_t$$

y_t is a (3×1) vector of endogenous variables; the first element being the daily return of the Spain bond, the second and third elements being respectively the daily return of Cuba 6% and Cuba 5%. α_t is a (3×1) vector of exogenous variables and ε_t is the vector of innovations which are neither correlated with its lagged values nor with y_t lagged values. Finally, $A_1 \dots A_p$ are matrices of coefficients to be estimated. The lag $j=7$, which corresponds to a week, has been determined through four⁷⁰ tests on the lag selection. Annex 1 shows the results of these tests.

The VAR model allows the analysis of systems of interrelated time series through its dynamic lag structure. Firstly, the impulse responses are computed to trace the effects of a one-time shock to one endogenous variable on the current and future values of the other endogenous

⁷⁰ LR test statistic, Final prediction error (FPE), Akaike information criterion (AIC) and HQ: Hannan-Quinn information criterion (HQ)

variables. Secondly, the variance decomposition is derived from the VAR and determines the contributions from each series in the total variance of the endogenous variable. This first step towards the SVAR determines the dynamic relationship between the bonds.

In our case, the specific shocks considered on the Cuban debt series have to be distinguished from the market shocks. The shocks on the market are represented by the benchmark. As Cuba's mother land, Spain was affected in the same way by the Spanish-American War. Once the market shocks had been excluded, the other specific "shocks" affecting the Cuban bonds were identified by a set of orthogonal structural shocks. The SVAR allows the impact of various shocks on the Cuban bonds to be determined quantitatively. The goal is to separate the co-movements into two shocks associated with structural parameters. In other words, the purpose is to disentangle the effects of news and events impacted by the Spanish-American War from the odious debt impacts on the Cuban debts.

In practice, if enough restrictions have been set, the orthogonal components of the error terms are identified. Indeed, according to the set of restrictions, the non-recursive orthogonalization of the error terms is obtained and the structural responses that identify the unobservable shocks can be derived.

Let $u_t = (u_{1t} + u_{2t} + u_{3t})'$ be the orthogonal structural errors terms. The first element of u_t is an amalgam of shocks which directly impact the Spanish bond. The second and third elements of u_t are then an amalgam of shocks that impact the daily return of, respectively, Cuba 6% and Cuba 5%. This amalgam of shocks is orthogonal to the first shock (Spain bond shocks) and does not immediately impact the daily return of the Spain bond.

With those specifications, a set of restrictions has been drawn, such as the orthogonormality of the error terms ($E(u_t u_t') = I$), in order to estimate the A and B matrices of the following equation:

$$A\varepsilon_t = Bu_t$$

The orthogonal structural error terms u_{2t} and u_{3t} then provide the shocks, orthogonal to Spain 4%, impacting Cuba 6% and Cuba 5% respectively. It is reasonable to expect that most of these shocks are due to events outside Spain and in particular outside the Spanish-American War. Identification of the event related to a shock is difficult. Other studies such as Willard *et al.* (1996) stress that historians attribute different importance to events than people at that time. As a result, news available at that time is crucial to understanding the origin of each shock. In order to identify the explanations of the shocks, six⁷¹ daily newspapers have been used.

⁷¹ Le Matin, journal quotidien, Antwerp, Belgium.

L'Opinion, journal libéral, Antwerp, Belgium.

Le Courier de la Bourse et la Banque, journal quotidien, Brussels, Belgium.

V. Results

a. Odious debt premium

In order to determine the risk premium required ex-ante to compensate the repudiation risk of a debt for "odious" reasons, we compare the yield to maturity and the returns of Cuba 5% and Cuba 6%. The data has been split into five periods: the "normal", the "pre-war and war", the "Peace Treaty", the "Post Treaty" and the "back to normal" periods. Table 2 provides descriptive statistics for the bonds yield to maturity. However, as the yield series are not stationary, correlation may be spurious. To cope with this issue, the bond returns are also considered. Table 3 provides descriptive statistics for the bond returns during the same five periods. The first period is "normal" as the war has not yet started, the "War" period starts at the first war rumors. The Peace Treaty period started when the negotiations began, at the end of the war, and ended with negotiations by the signed Peace Treaty. The Post Peace Treaty period corresponds to the period after the Peace Treaty where there are still rumours on the payment coupons. Once the uncertainty on payment ends, the "back to normal" period starts.

"Diff. Cuba" represents a new series calculated as the difference in yield to maturity or return between Cuba 5% and Cuba 6%. As a result, if both yields are affected by the same event, it does not matter and "Diff. Cuba" will be close to zero. The difference in anticipation between the two debts will be revealed by this new series. Diff. Cuba, with regard to the returns, is not significantly different from 0 during the various periods except during the Peace Treaty period. In addition, during the Peace Treaty period, the difference in returns between the two bonds is 0.70% median and 0.42% mean which is not significantly different from 0. When taking the yield to maturity of those bonds, the difference during the Peace Treaty is 4.18% on average. Even during the war, the difference between Cuba 5% and Cuba 6% yield to maturity is less than during the Peace Treaty period. In the same way, "Diff. Cuba", both in yield to maturity and in return, also puts forward a greater standard deviation during the Peace Treaty period. In other words, the risk of a gap between the two bonds seems to be equally or even more present during the negotiations (Peace Treaty period) than during the war period.

The correlation between Cuba5% and Cuba6% is another clue indicating that a major element was impacting the investors' expectations for one of the bonds and not for the other during the Peace Treaty. As the yield series are not stationary, no conclusion can be drawn from the correlation in yield to maturity and the bond returns have to be considered. The correlations between the two Cuban bond returns are 73% and 54% respectively for the first two periods. This correlation is however a meagre 5% during the Peace Treaty Period which is significantly different from the other periods. This significant drop is confirmed at a 5% confidence level. After the negotiation, correlation between the bonds rises again to 37% and 60%.

La Cote Libre: organe de la Finance, de l'industrie et du Commerce, journal quotidien, Brussels, Belgium.
Bourse de Bruxelles, journal de la bourse, Brussels, Belgium.
Het handelsblad van Antwerpen, journal quotidien, Antwerp, Belgium.

Table 2 : Yield to maturity descriptive statistics

Period Bond	"Normal" (Oct 1897-Jan1898)			Pre-war and War (Feb 1898-Aug 1898)			Peace Treaty (Aug 1898-Dec 1898)			Post Peace Treaty (Dec 1898-March 1899)			Back to "normal" (Apr 1899-Apr 1900)		
	Cuba 6	Cuba 5	Diff. Cuba	Cuba 6	Cuba 5	Diff. Cuba	Cuba 6	Cuba 5	Diff. Cuba	Cuba 6	Cuba 5	Diff. Cuba	Cuba 6	Cuba 5	Diff. Cuba
Mean	8.52%	10.20%	1.68%	14.56%	17.71%	3.15%	14.19%	18.37%	4.18%	14.20%	16.75%	2.55%	10.44%	12.29%	1.85%
St. Dev.	0.002	0.002	0.001	0.045	0.056	0.009	0.011	0.007	0.013	0.018	0.023	0.006	0.005	0.006	0.002
Median	8.49%	10.22%	1.67%	16.34%	20.18%	3.07%	13.90%	18.20%	4.31%	14.23%	16.93%	2.52%	10.58%	12.52%	1.88%
Min	8.20%	9.73%	1.47%	8.52%	10.20%	1.47%	12.14%	16.93%	0.57%	11.08%	12.78%	1.30%	9.30%	11.03%	1.11%
Max	8.82%	10.55%	1.97%	22.56%	27.38%	6.83%	17.96%	20.63%	5.84%	17.30%	20.35%	4.06%	11.40%	13.13%	2.24%

Table 3: Return descriptive statistics

Period Bond	"Normal" (Oct 1897-Jan1898)			Pre-war and War (Feb 1898-Aug 1898)			Peace Treaty (Aug 1898-Dec 1898)			Post Peace Treaty (Dec 1898-March 1899)			Back to "normal" (Apr 1899-Apr 1900)		
	Cuba 6	Cuba 5	Diff. Cuba	Cuba 6	Cuba 5	Diff. Cuba	Cuba 6	Cuba 5	Diff. Cuba	Cuba 6	Cuba 5	Diff. Cuba	Cuba 6	Cuba 5	Diff. Cuba
Mean	0.75%	0.80%	-0,05%	1.60%	1.62%	-0,02%	1.61%	2.03%	-0.42%**	2.46%	2.50%	-0,04%	1.33%	1.33%	0,01%
	The mean return of "Diff. Cuba", the new serie calculated as the difference between Cuba5 and Cuba6, is significantly different from 0 only during the Peace Treaty Period														
St. Dev.	0.011	0.012	0.008	0.039	0.043	0.040	0.032	0.028	0.042	0.022	0.027	0.028	0.012	0.014	0.011
Median	0.82%	0.89%	0.00%	1.18%	1.46%	0.00%	1.62%	2.26%	-0.70%	2.53%	2.48%	-0.13%	1.29%	1.26%	0.00%
Min	-1.90%	-3.01%	-3.27%	-10.30%	-12.76%	-14.08%	-13.70%	-6.20%	-21.45%	-4.72%	-4.86%	-6.57%	-2.92%	-7.09%	-4.23%
Max	3.53%	4.44%	2.32%	16.64%	17.29%	12.05%	10.27%	10.05%	12.86%	7.84%	11.19%	9.00%	5.03%	8.00%	5.09%
Skewness	-0.43	-0.58	-0.40	0.44	-0.06	0.17	-0.96	-0.45	-0.76	-0.31	0.20	0.47	-0.09	0.08	-0.06
Kurtosis	0.49	2.76	1.91	2.52	2.99	1.82	4.34	0.86	5.08	0.74	0.53	0.87	1.17	6.58	4.50
	73.65%		/	54.24%		/	4,45%**		/	36.95%		/	60.34%		/
Correlation	The correlation between the Cuba5 serie and the Cuba6 serie during the Peace Treaty is significantly different from the other periods														

All this highlights the Cuban bonds similarities⁷², according to the investors, during the Pre-war and the Post Treaty periods. Indeed, before as well as after those two periods, the two Cuban debts had around the same return and were highly correlated. During the Peace Treaty period, the expectations for these two debts clearly differed. However, the difference between the two debts is already present during the war period. Indeed, the mean and standard deviation start to differ before the end of the war. The Peace Treaty period turns out to be the period where there was a significant drop in the correlation between bond returns in comparison with the other periods. In addition, the difference in return between the two Cuban debts is significantly different from 0 for that period. Clearly, the “repugnancy”, “odiousness” or “unfairness to repay” had an impact on the risk premium required by investors. The difference in use of these debts became crucial. Indeed, it is the only characteristic changing between the two Cuban debts during the Peace Treaty period. Furthermore, the next section will confirm this as, during this period, the majority of the shocks took place. Note that, except for the period between rumours announcing the war until a few weeks following the signature of the Peace Treaty, there is generally a difference of 1 to 2%⁷³ between the two Cuban debts yields to maturity. As a result, the odious risk premium represents at least 200 basis points!⁷⁴

b. Structural Odious shocks

The expectations for the two Cuban debts differed during the Peace Treaty period. On the one hand, it was thought for long time that Cuba 5% would not be refunded because of its odious use in the insurrection. On the other hand, Cuba 6% which was expected to be taken over turned out to be unexpectedly also considered as odious. As both Cuban debts were eventually declared odious, the effect and impact of an odious debt on the bond market are analyzed on both debts. Indeed, as Cuba 6% was “unexpectedly” also odious, the odious debt premium is unlikely to be incorporated in the bond price before its odious announcement. Therefore, Cuba 6% and Cuba 5% odious character on the bond market is determined separately using a benchmark which is strongly affected by the Spanish-American War (Spain 4%). In this case, the use of a SVAR analysis detects the important shocks on the bond market which are not attributable to the benchmark.

Let’s first assess the impact on returns of a temporary shock on the three interrelated series. In order to do this, an impulse response function is used to determine the effect of a one standard deviation magnitude temporary shock on the returns of the bonds. Annex 2

⁷² Same emitter, same revenue relying on, same guarantee, same nominal value, same payback method and same market on which the bond is sold (see Table 1).

⁷³ Although these bonds have some identical characteristics (see Table 1), they differ from each other: the coupon, the date of issue, the microstructure, the liquidity (Cuba 6% is slightly more liquid than Cuba 5%). These differences may explain the constant difference between the two Cuban bonds.

⁷⁴ The “Diff. Cuba” during the Peace Treaty period is over the 4% while the constant difference between the two debts is less than 2%.

represents the impulse response function. The main result is the absence or limited effect of the Cuban debts on the Spanish debt whereas this one affects the Cuban debts. Annex 3 and Annex 4 report the variance decomposition results for the whole period and the Peace Treaty period respectively. The variance decomposition shows the dynamic relationship between the bonds. The obtained results are coherent with the structural VAR results.

The structural VAR expectations are reported in Table 4. The beginning of the war should result in a negative shock for both Cuban debts. Intuitively, the debts are expected to have different SVAR result for war-related news. Indeed, as Cuba 6% is expected to be taken over by the United States, any news in favour of an American win will have a positive impact. The rational is that the American bond rating is better than that of the Spanish bond rating. The unexpectedly odious character of Cuba 6% is expected to result in a negative shock. As the odiousness of Cuba 5% is expected to already be in the bond pricing, no structural shock is expected at the odiousness announcement.

Table 4: SVAR expectations

	Cuba 5% ODIOUS	Cuba 6% NON - ODIOUS
Begin of the War	-	-
War news pro-Spain	+	0
War news pro-US	-	+
End of the War	-	+
Financial Status Spain	-	0
Both debt rejected	0	-
Coupons & repayment	+	+

The first parts of Figure 4 and Figure 5 represent the residuals of Cuba 6% and Cuba 5% obtained by the VAR model respectively. The SVAR method allows the orthogonal shocks to Spain 4% for both Cuban debts to be obtained. The specific structural shocks of Cuba 5% and Cuba 6% are depicted in the middle part of Figure 4 and Figure 5 respectively. The shocks considered are large shocks with a deviation over twice the distribution deviation. As the structural shocks are normalized, every shock over two will be a large shock to be studied.

Fifteen shocks have been identified for the Cuba 5% bond and fourteen for Cuba 6%. Some of these shocks occur for one day but others last a few days. Cuba 6% and Cuba 5% have common shocks as they occur at the same time, other shocks are specific to one of the series. Their structural shocks are then assimilated back on their respective yield to maturity (last part of Figure 4 and Figure 5). The next step consists of identifying as much as possible the large structural shocks and those related to the odiousness to determine quantitatively the impact of the odious risk premium in the Cuban case study.

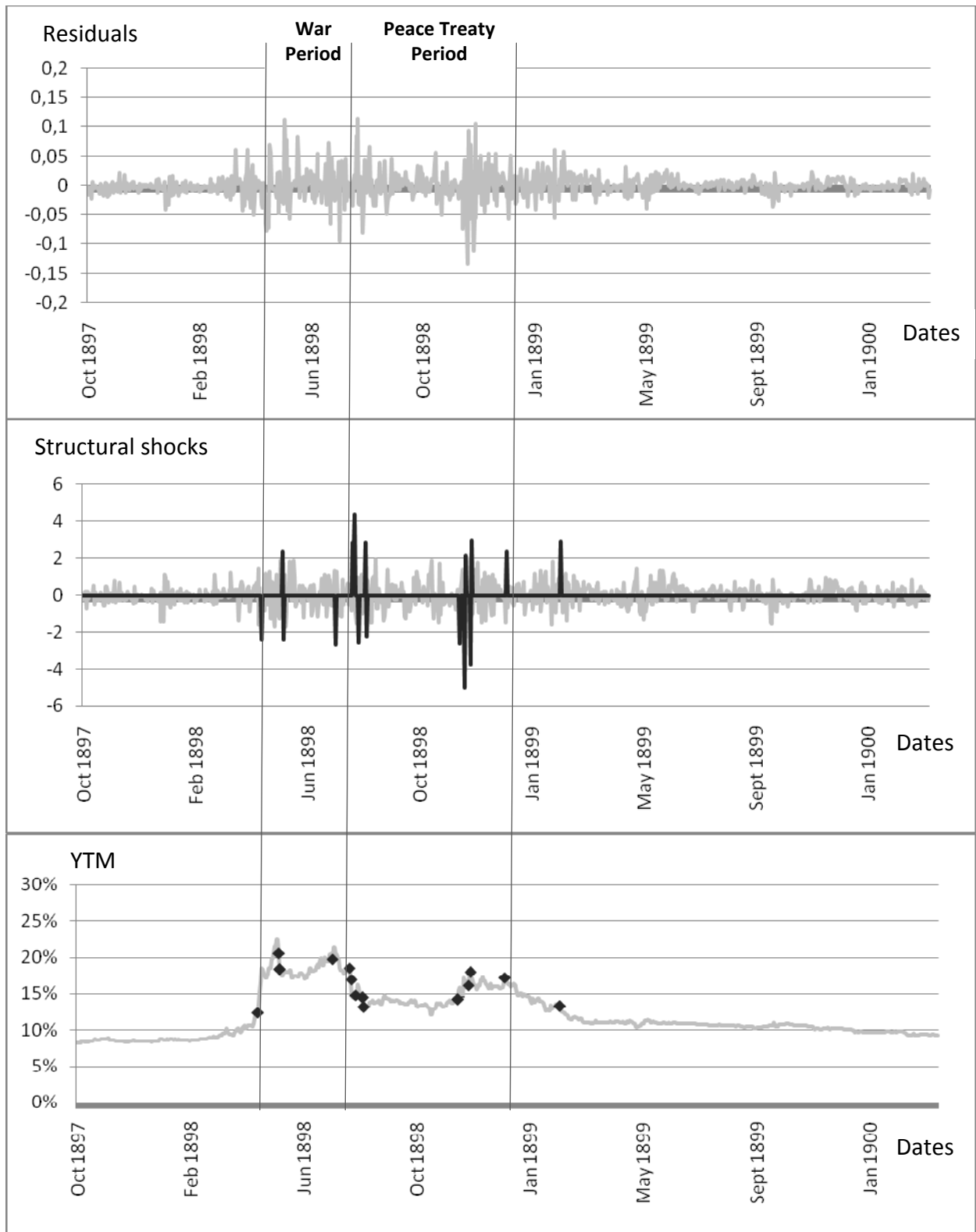


Figure 4 : Cuba 6% SVAR

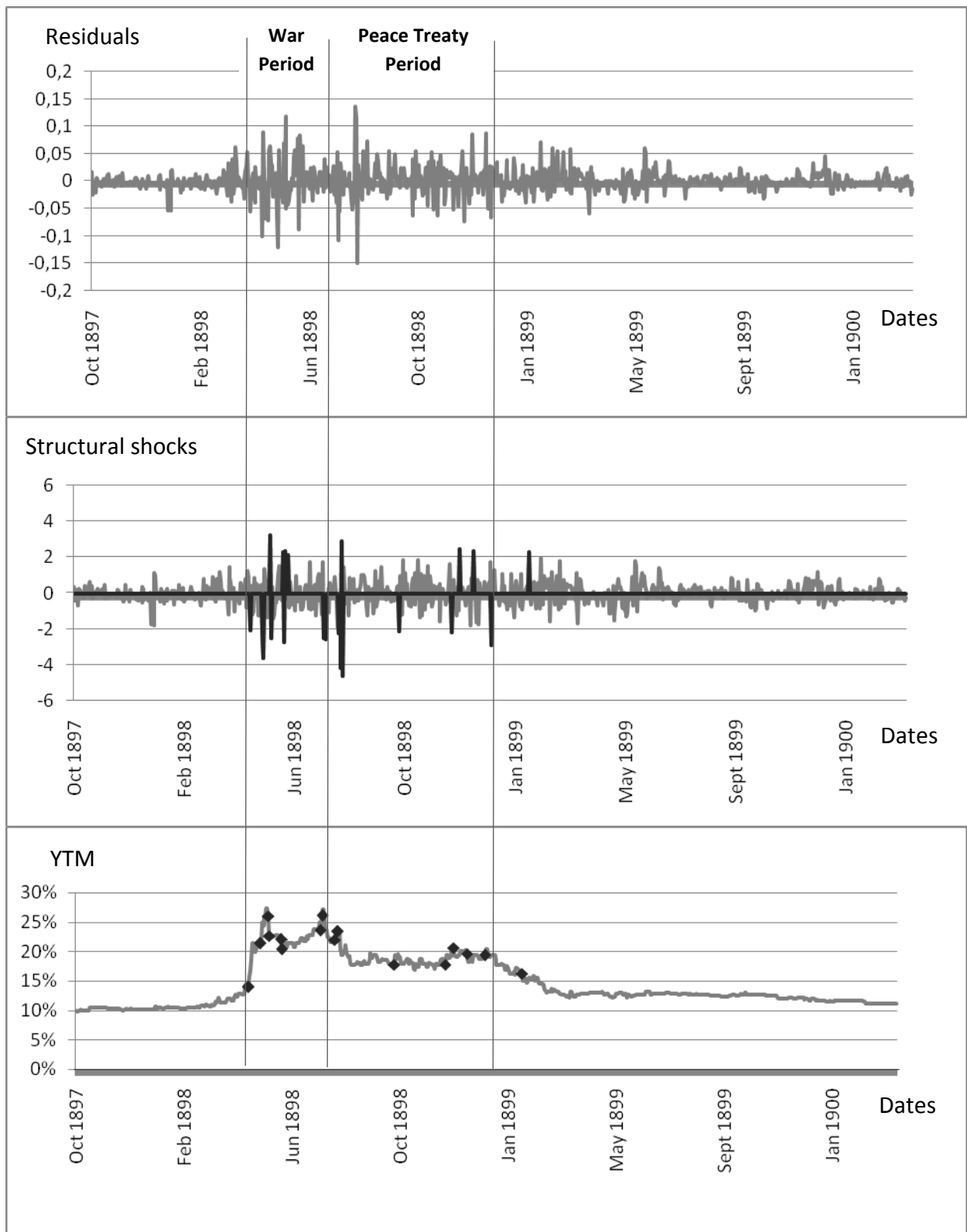


Figure 5 : Cuba 5% SVAR

The identification of the impact of precise events has been possible by going through six⁷⁵ daily journals covering this period. While reading the six newspapers from October 1897 to March 1900, major headlines on Cuba and the Spanish-American War were often found around shocks dates. Every shock has been associated with one or more particular events. Some events occurred around the same period and gave rise to multiple suggested explanations for the shocks. Regarding those shocks, the positive impact of some event may be attenuated by the simultaneous negative impact of another event. The shocks are classified in four types: political shocks, financial shocks, shocks due to war and shocks due to the odious character of the debt.

Although the structural shocks are orthogonal to those related to Spain, the Cuban structural shocks include the Spanish-American War events which had obviously a larger influence on Cuba than on Spain. The Cuban bonds “over reacted” compared to the Spanish benchmark on those events. For example, the beginning of the war had larger consequences for Cuban bonds than the Spanish bonds and turned out to be a negative shock to both Cuban debts. In the same way, the destruction of the fleet of Admiral Cervera (shock 7), which was viewed as one of the most important causes of the Spanish defeat, was at the time already seen as a turning point toward American victory (Alger 1901, p462). Some events (shock 1-7), crucial in the Spanish-American War, affected Cuba 5% more than Cuba 6%. This observation is likely to be related to the odious character of the former bond. A US victory would indeed have meant that the bond would not be repaid, whereas Cuba 6% bondholders could still hope to be reimbursed.

The “peace in prospect” (shock 8) impacted positively Cuba 6% but had an overall negative impact on Cuba 5%. As Cuba 5% was considered as unfair to repay, an American victory was likely to result in the rejection of this bond. Since international law states that “state obligations belong to a land and its people, not to a regime”, the United State victory implied that Cuba 6% would be taken over. Rumors of peace affected positively (shock 10) Cuba 6%. If Cuba 6% was taken over by the United States, the bond would benefit from the US credit rating, an element much better than the Spanish guarantee. Impacting both debts in an opposite way, shock 8 is the shock highlighting the odiousness of Cuba 5% according to the financial markets at that time.

⁷⁵ Le Matin, journal quotidien, Antwerp, Belgium.

L'Opinion, journal libéral, Antwerp, Belgium.

Le Courrier de la Bourse et la Banque, journal quotidien, Brussels, Belgium.

La Cote Libre: organe de la Finance, de l'industrie et du Commerce, journal quotidien, Brussels, Belgium.

Bourse de Bruxelles, journal de la bourse, Brussels, Belgium.

Het handelsblad van Antwerpen, journal quotidien, Antwerp, Belgium.

Table 5 : Structural Shocks

N°	Date	cuba 5%	cuba 6%	Suggested Explanation	Type
1	18/4/1898	-	-	Beginning of War: first rumour of war	W
2	1-2/5/1898	-		Naval battle: victory of the United States in Manila	W
3	10/5/1898	+	+	Spanish government raises funds for war	F
	11/5/1898	-	-	American war budget in good shape	F
4	24/5/1898	+		Arrival of Admiral Cervera in Santiago without encumbers	W
				Rumours on Spanish bond emissions	F
5	25/5/1898	-		Admiral Cervera's position in Santiago rises anxiety - rumours on his destruction	W
6	26-29/5/1898	+		Admiral Cervera's news reassures the Spanish power - rumors denied	W
7	6-9/7/1898	-	-	Naval battle: Spanish destruction of Admiral Cervera's squadron near Santiago	W
8	23-28/7/1898	- *	+	1. Peace in prospect: declaration of Spain (23/7/1898)	P
				2. Rumours: Spain forces the United States to beat a retreat (24/7/1898) - denied (27/7/1898)	W
				3. Fighting of Nippe: cruiser sunk by the United States (26/7/1898)	W
9	31/7/1898		-	Peace conditions expected: independence of Cuba, allowances to be paid and uncertainty on the Cuban debts	O
10	7/8/1898		+	Rumors: majority of the Spanish cabinet has decided to accept the conditions	P
11	8/8/1898		-	Requested conditions of peace: renunciation of Cuba and rejection of the Cuban debts	O
12	28/9/1898	-		Financial standing of Spain: colonial and national debts on the same foot?	F
13	16/11/1898		-	Confirmation: the Americans do not recognize the Cuban debts	O
14	21-23/11/1898	-	- **	Rumors: acceptance by Spain of the peace conditions of the United States	P
15	27-28/11/1898		-	Waited Peace Treaty, resignation from governor of Cuba, public opinion is resigned	P
16	29/11-2/12/1898	+	+	Announcement in Paris that the 1st January coupon will be paid in full	F
17	17/12/1898	+		Announcement in Madrid that the payment of the coupons is certain	F
18	5-7/1/1899	-	+		
	16/2/1899	+		Rumors on the payment of the coupons	F
	4/3/1899		+		

Shocks are sorted according to the type of event they represent: P = political; w = war; F = finance; O = odiousness

* = 3 negative shocks and 1 smaller positive shock

** = negative shock directly followed by a smaller positive shock

Shocks 9, 11 and 13 are directly related to the odious debt notion. The expected peace conditions did not concern Cuba 6% which might have given rise to uncertainty. The requested conditions of peace included the rejection of all Cuban debts. In the same way,

the confirmation that the Americans would recognize none of the Cuban debts (shock 13) affects only negatively Cuba 6% which became “unexpectedly” odious. Those shocks (9, 11 and 13) impact only Cuba 6% because Cuba 5% was already seen as odious and thus would not be refunded. This is confirmed by shock 12 showing that only Cuba 5% strongly reacts to the refund probability of Spanish colonial debts.

The rumors of acceptance by Spain of the United States peace conditions (shock 14) imply the rejection with certainty of both Cuban debts. In Shock 15, public opinion is resigned to the refund of the two Cuban debts. Those shocks fatally decrease the likelihood of reimbursement impacting negatively the Cuban debts. The last three shocks (shock 16, 17 and 18) detected are suggested to be linked to rumors concerning the coupon payments.

This result puts forward a premium reflecting the possibility that a debt could be declared odious by the future Cuban government. This is done through the structural VAR approach which allows the specific “odious debt” shocks to be disentangled from the Spanish benchmark shocks. The unexpected odious character of Cuba 6% permits the detection of three shocks directly related to the odious debt notion. The odious characters of the Cuban bonds were detected at different times. Indeed, it was thought for a long time that Cuba 5% would not be refunded, while Cuba 6% was expected to be reimbursed by the United States. The unexpected odious character of Cuba 6% permitted the detection of three shocks related (shock 9, 11 and 13). The shift in yield to maturity of those shocks provides a method of quantifying the magnitude of the impact of its odious character. The rumors on the uncertainty of Cuba 6% (shock 9) gave rise to an increase of 1.39% in yield to maturity. The newspaper headlines on the requested conditions of peace which would include the rejection of the Cuban debts (shock 11) represented a 0.23% rise of yield to maturity. The increase in yield to maturity corresponding to the official non-recognition of Cuba 6% by the Americans (shock 13) implied a 1.21% increase. From the Cuba Bond Market behavior, the required ex-ante compensation towards repudiation risk of a debt for "odious" reasons has been quantified in three shocks through a SVAR analysis. Those odious related shocks represent large moves on the bond market and reflect the presence of an odious risk premium.

Next to the original Cuban bond data from the *Bourse de Bruxelles*, the “same” Cuban bonds were traded in Madrid allowing a robustness check. The paper will now compare the data from the two exchanges (Brussels and Madrid). The goal is to confront the data from the Madrid Stock Exchange with the obtained results, namely the existence of risk premium for the debts contracted by dictatorial regimes. It allows the different reactions due to odious events to be analysed according to the stock exchange. This allows to analyse whether the impact of events were perceived differently in these two countries as well as comparing the influence on the risk premium required by the people investing in the obligations emitted by the dictatorial modes.

Madrid data are collected in the *boletin de cotizacion Oficial de la bolsa de comercio de Madrid*. As the goal is to confirm the presence of the odious shocks in the series, the data ranges from July 1898 to December 1898. While the Cuban debts on the Brussels market were paid in francs, the “same” debt in Madrid were paid in pesetas. A major money depreciation took place during the considered period.⁷⁶ As a result a daily exchange rate has been used to enable comparison of the data. A clear mark was made to differentiate the bond issued in Madrid and the other exterior bonds.⁷⁷ As a result, differences in prices occurred on various “same” bonds between the Madrid and the Paris market.⁷⁸ It is rational to expect those differences to be possible between Brussels and Madrid as well. The SVAR result on the Madrid data can be found in Annex 5. The comparison of the Cuba 6% and Cuba 5% debt between the two exchanges is shown in Figure 6 and Figure 7 respectively.

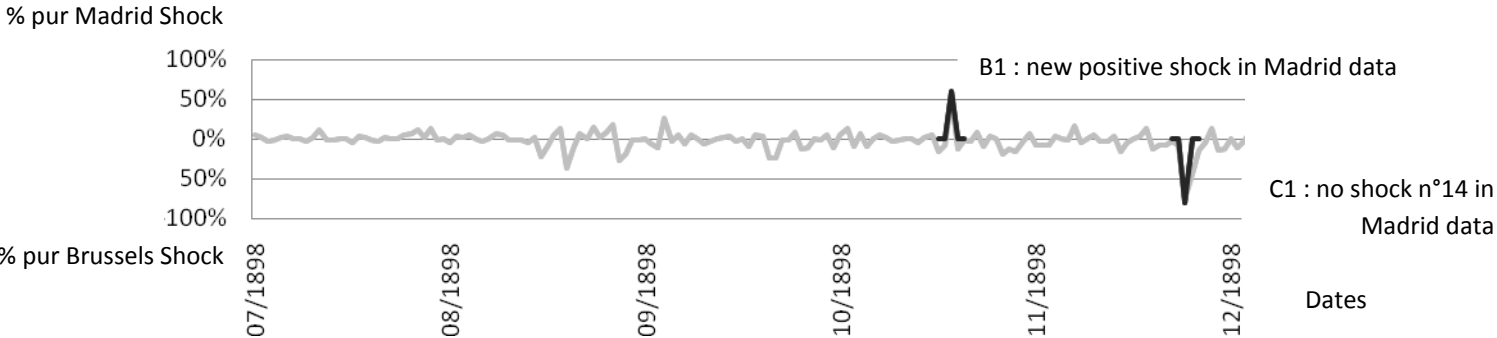


Figure 6 : Cuba 6% shock comparison

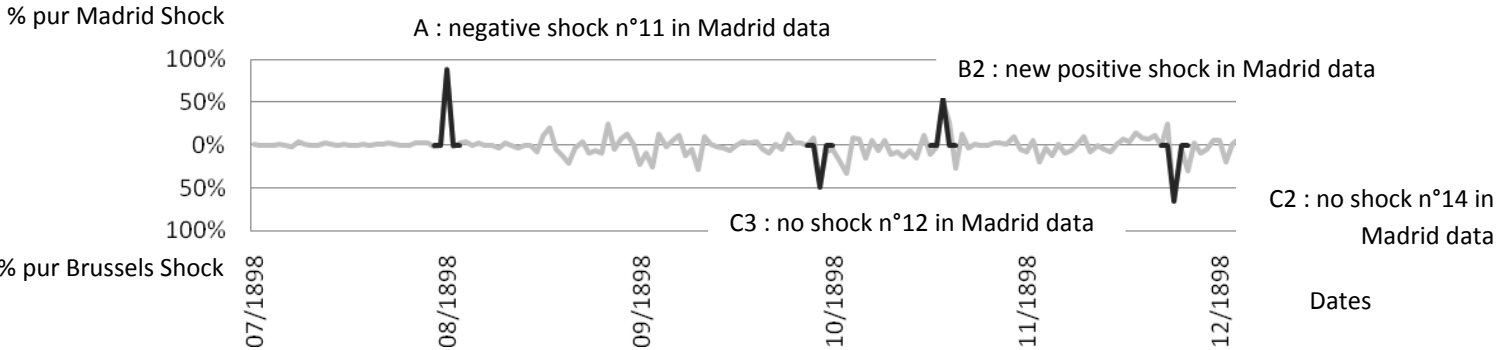


Figure 7 : Cuba 5% shock comparison

The main emphasis is that all the odious shocks of Cuba 6% are also present in the Madrid data. In addition, the Cuba 5% series on the Madrid exchange does have an odious shock on 31st July 1898 (shock 11, see A). In Madrid newspapers, both Cuban debts were seen as non-

⁷⁶Lacombe, E., 1901, “le change espagnol”, Association Nationale des porteurs Français de valeurs étrangère, p28.

⁷⁷ Lacombe, E., 1901, “le change espagnol”, Association Nationale des porteurs Français de valeurs étrangère, p53.

⁷⁸ Lacombe, E., 1901, “le change espagnol”, Association Nationale des porteurs Français de valeurs étrangère, p54.

odious. A different view of the odious status in the newspaper might provide an impact on the series. In addition, an event can have a bigger impact on the stock exchange of the emitter country. In the Madrid data, an additional positive shock occurred on both data series on 16th October 1898 (see B), while two shocks are no longer present (shock 12 and shock 14, see C). Note that these two shocks are linked to news published in Belgian newspapers. Finally, small amplitude differences appeared but all are negligible. Odious debt events were perceived in both countries which confirms the risk premium required.

Conclusion

In spite of a broad juridical literature and theoretical economic models, a practical financial case to evaluate the consequences of odious debt was lacking. This paper aims to better understand the impact on bond prices of the odious debt. It focuses on the financial implications of odious bond pricing and has estimated to what extent it is penalized when issued sovereign debt. This paper has established the existence of a specific risk premium related to odious debt and has estimated the “bonus” required by investors to hold debts which could be declared odious. Such premiums can be attributable to higher default risk. To tackle this issue, an original data set was collected to provide the evolution of Cuban bond prices at the end of the 19th century. This case study is pertinent since part of the Cuban debts were disputed due to their alleged odious character after the war. The difference in anticipation of the treatment for each series of debts measures a perceived repudiation risk.

A first intuition of the result has been highlighted by a detailed daily Cuban bond price evolution in five time periods. One of these periods, the Peace Treaty period, revealed a difference in expectations between the two parts of the Cuban debts. However, the difference between the two Cuban debts was already present in the bond pricing during the war period. The difference in use of these debts became crucial and the evidence of a premium reflecting the possibility that a debt could be declared odious by the future Cuban government was set. Further, a structural VAR approach allowed the specific “odious debt” shocks to be disentangled from the Spanish-American War shocks. This confirms the required ex-ante compensation towards repudiation risk of a debt for “odious” reason. Finally, the non-odious part of the Cuban debts turned out to be also “unexpectedly” rejected for odious reasons. The SVAR analysis on the bond price highlights an “odious debt” premium incorporated in the Cuban bonds. Three shocks related to the odious debt notion were detected.

These results can be linked to actual odious debt problematic on the bond market as it gives a first insight on the economic behavior of present and future candidates to odious debt status. It fills a gap on the comprehension of political expectations on the sovereign debt bond market. Clearly, the “repugnancy”, “odiousness” or “unfair to repay” aspects had an impact on the risk premium required by investors.

References

- Adams, P., 1991, *Odious Debts: Loose Lending, Corruption and the Third World's Environmental Legacy*, Earthscan, Toronto, 256p.
- Alger, R.A., 1901, *The Spanish-American war*, Harper and Brothers Publishers, New-York, 465p.
- Annuaire des valeurs admises à la cote officielle, issues from 1896 to 1902, Paris, France. (CAEF)
- Assemblée publique des porteurs de fonds Espagnols et Cubain, 5/12/1898. (SCOB)
- Bai, J., Perron, P., 1998, "Estimating and testing linear models with multiple structural changes", *Econometrica*, Vol 66, No1, pp. 47-78.
- Bai, J., Perron, P., 2003, "Multiple structural change models: a simulation analysis", *Journal of Econometrics*, Vol 18, No1, pp. 1-22.
- Bedjaoui, M., 1977, *Succession of States in Respect of Matters Other Than Treaties*, Yearbook of the International Law Commission, Vol 2, Part 1, 45p.
- Bordo, M., Oosterlinck, K., 2005 "Do Political Changes trigger debt default and do defaults lead to political changes?", *mimeo Rutgers University and NBER*.
- Bourse de Bruxelles, issues from 1896 to 1902, journal de la bourse, Brussels, Belgium.
- Buchheit, L., Mitu Gulati, G., Thompson, R., 2006, "The Dilemma of Odious Debts", Duke Law School Legal Studies Paper No. 127, *Duke Law Journal*.
- Chapman, C., 1927, *A history of the Cuban Republic*, The Macmillan Company, New-York, 700p.
- Cheng, T.-H., 2007, "Renegotiating the Odious Debt Doctrine", *Law and Contemporary Problems*, Vol 70, No3, pp. 7-32.
- Choi, A., Posner, E., 2007, "A Critique of the Odious Debt Doctrine", *Law and Contemporary Problems*, Vol 70, No3, pp. 33-52.
- Comité des Détenteurs de Fonds Espagnols et Cubains, issues from 1899 to 1903. (SCOB)
- Dhillon, A., Sjostrom, T., 2009, "Leader Reputation and Default in Sovereign Debt", *Warwick Economic Research Papers*.
- Feilchenfeld, E., 1931, *Public Debts and State Succession*, New York, MacMillan, 922p.
- Feuilleton Du Courrier de la Bourse et la Banque, issues from 1897 to 1902, La Dette Cubaine, Brussels, Belgium.
- Frankenberg, G., Kneiper, R., 1984, "Legal Problems of the Overindebtedness of Developing Countries: The Current Relevance of the Doctrine of Odious Debts", *International Journal of the Sociology of Law*, Vol 12, No 4, pp 415-438.
- Frey, B., Kucher, M., 2000, "History as reflected in capital markets: the case of World War II", *Journal of Economic History*, Vol 60, No2, pp. 468-496.
- Gelpern, A., 2005, "What Iraq and Argentina Might Learn from Each Other", *Chicago Journal of International Law*, Vol 6, No 1, pp. 391-414.

- Gelpern, A., 2007, "Odious, Not Debt.", *Law and Contemporary Problems*, Vol 70, No3, pp. 81-114.
- Hamilton, J.D., 1994, *Times series analysis*, Princeton University Press, Princeton, 820p.
- Het handelsblad van Antwerpen, issues from 1897 to 1902, journal quotidien, Antwerp, Belgium.
- Hoeflich, M.N., 1982, "Through a Glass Darkly: Reflections upon the History of the International Law of Public Debt in Connection with State Succession", *University of Illinois Law Review*, Vol 1982, No 1, pp. 39-70.
- Howse, R., 2007, "The Concept Of Odious Debt In Public International Law", *United Nations Conference on Trade and Development (UNCTAD) Discussion Paper No 185*.
- Hyde, C.C., 1922, "The negotiation of external loans with foreign Governments", *American Journal on International Law*, Vol XVIII, No 4, pp 523-531.
- Hyde, C.C., 1947, *International Law, Chiefly as Interpreted and Applied by the United States*, Little Brown & Co., Boston, 2489p.
- Jayachandran, S., Kremer, M., 2003, "Odious debt when dictators borrow who repays the loan?", *Brookings Review*, spring, pp. 32-35.
- Jayachandran, S., Kremer, M., 2006, "Odious debt", *The American Economic Review*, Vol 96, No1, pp.82-92.
- Jayachandran, S., Kremer, M., Shafter, J., 2006, "Applying the Odious Debts Doctrine while Preserving Legitimate Lending", *Ethics and International Affairs*, pp 3 - 23.
- Jèze, G., 1922, *Cours de science des finances et de législation financière française. Théorie du crédit public*, 6th ed, M. Giard, Paris, 416p.
- Khafan, A., King, J., and Tomas, B., 2003, "Advancing the Odious Debt Doctrine", *Centre for International Sustainable Development Law (CISDL) working paper*.
- King, J., 2007, "Odious Debt: The Terms of the Debate", *North Carolina Journal of International Law and Commercial Regulation*, Vol 32, No4, pp. 605-668.
- King, J., 2007, "The Doctrine of Odious Debt in International Law: A Restatement", *SSRN working paper* No id1027682.
- La Cote Libre: organe de la Finance, de l'industrie et du Commerce, issues from 1897 to 1902, journal quotidien, Brussels, Belgium.
- Lacombe, E., 1901, "le change espagnol", Association Nationale des porteurs Français de valeurs étrangère.
- Landon-Lane, J., Oosterlinck K., 2006, "Hope springs eternal: French bondholders and the Soviet Repudiation (1915-1919)", *Review of Finance*, Vol 10, pp. 507-535.
- Le Courier de la Bourse et la Banque, issues from 1897 to 1902, journal quotidien, Brussels, Belgium.
- Le Matin, issues from 1897 to 1902, journal quotidien, Antwerp, Belgium.

- Le recueil financier annuel, issues from 1897 to 1902.
- L'Opinion, issues from 1897 to 1902, journal libéral, Antwerp, Belgium.
- Mc Gillivray, F., Smith, A., 2003, "Who can be trusted? Sovereign debt and the impact of leadership change", *Department of Politics New York University Working Paper*.
- Moniteur des intérêts matériels (Monimat), issues from 1886 to 1902, chronique financière, Brussels, Belgium.
- Moore, I.J., 1906, *Digest of International Law*, U.S. Government Printing Office, Washington, Vol 1, 939p.
- O'Connell, D., 1956, *The Law of state succession*, Cambridge University Press, Cambridge, 425p.
- Oosterlinck, K., Weidenmier, M., 2007, "Victory or Repudiation: The Probability of the Southern Confederacy Winning the Civil War", *NBER Working Paper W13567*.
- Sack, A.N., 1927, *Les effets de transformations des Etats sur leurs dettes publiques et autres obligations financières*, Recueil Sirey, Paris.
- Saiegh, S., 2004, "Income Distribution, Political Competition and Sovereign Debt Repudiation", *Mimeo Dept of Political Science*, University of Pittsburgh.
- Saiegh, S., 2005, "Can Democracy prevent default?", *Mimeo Dept of Political Science*, University of Pittsburgh.
- Shafter, J., 2007, "The Due Diligence Model: An Executive Approach to Odious Debt Reform", *North Carolina Journal of International Law and Commercial Regulation*, Vol 32, No4, pp 669-698.
- Sims, C.A., 1980, "Macroeconomics and reality", *Econometrica*, Vol 48, No1, pp. 1-48.
- The London Standard, issues in 1898.
- The New York Times, issues in 1898.
- Waldenström, D., Frey, B., 2004, "Markets work in war: World War II reflected in Zurich and Stockholm bond markets", *Financial History Review*, Vol 11, No1, pp. 51-67.
- Weidenmier, M., 2002, "Turning points in the U.S. Civil War: Views from the Grayback market", *Southern Economic Journal*, Vol 68, No4, pp. 875-890.
- Willard, K., Guinnane, T., Rosen, H., 1996, "Turning points in the Civil War: Views from the Greenback market", *The American Economic Review*, Vol 86, No4, pp. 1001-1018.

Archives

- Bolsas y Mercados Espanoles, Madrid, Spain.
- Centre des Archives Economiques et Financières (CAEF), Savigny-le-temple, France.
- Koninklijk Bibliotheek van België (KBR), Brussels, Belgium.
- Studiecentrum voor Onderneming en Beurs (SCOB), Antwerp, Belgium.

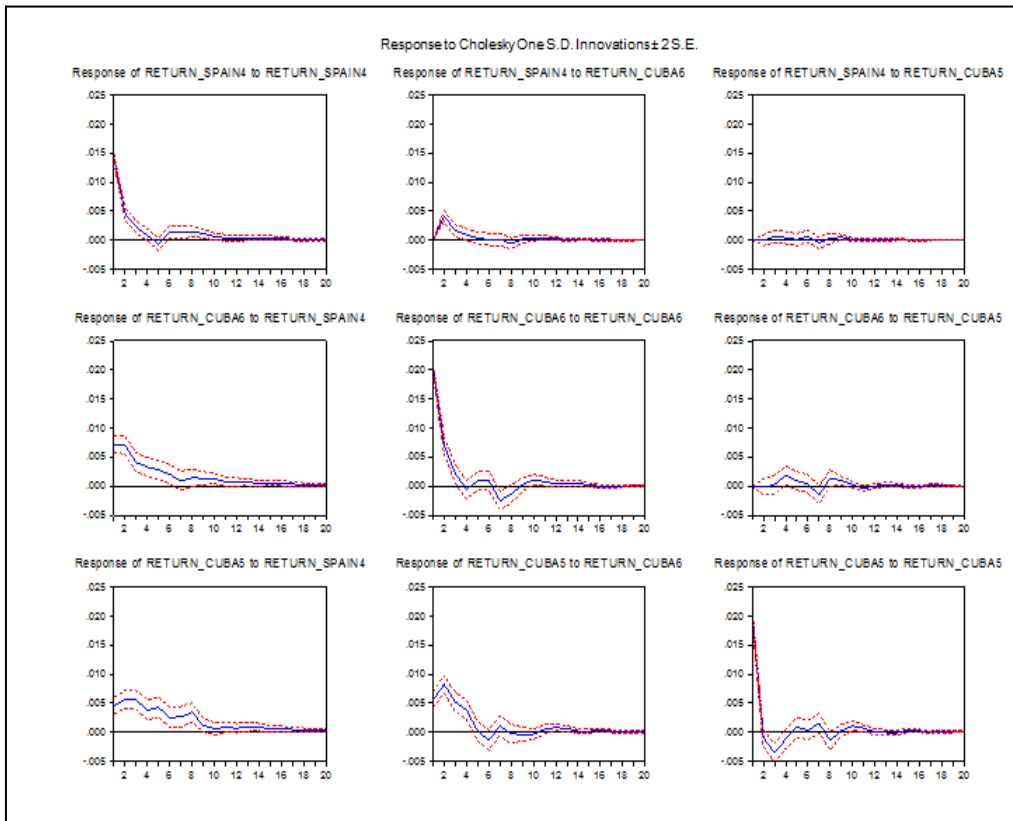
Annex

Annex 1 : Lag

Lag	0	1	2	3	4	5	6	7	8	9	10
LR	NA	354,41	43,91	42,11	1,99	3,43	34,61	23,69*	6,14	3,20	7,40
FPE	3,50E-07	2,38E-07	2,29E-07	2,20E-07	2,22E-07	2,23E-07	2,16E-07	2,12e-07*	2,13E-07	2,14E-07	2,14E-07
AIC	-9,19	-9,58	-9,62	-9,65	-9,65	-9,64	-9,67	-9,69*	-9,68	-9,67	-9,66
HQ	-9,19	-9,56	-9,60	-9,63	-9,61	-9,60	-9,62	-9,63*	-9,62	-9,61	-9,60

* indicates lag order selected by the criterion

Annex 2 : Impulse response



The transformation of the impulse is done through the Cholesky factor of the residual covariance matrix and is consistent to different orderings in the data. The temporary shock occur at time $t=1$. The Cuba 6% responses to its own shock but a response to the Cuba 5% is lacking. However, Cuba 5% response to the Cuba 6% with a magnitude of up to 0.8% and the effect disappears after 5 days. Cuba 5% as well as Cuba 6% response to Spain 4% during 8 to 10 days after the shock had occurred. Both Cuban debts reactions are about 0.5%. Note that

Spain 4% response to Cuba 6% at t=2 but not to Cuba 5%. In other words, Spain affects Cuba but Cuba effect on Spain is limited if not absent.

Annex 3 : Variance decomposition of the whole period

Period	S.E.	Variance Decomposition of CUBA6% :			S.E.	Variance Decomposition of CUBA5%:		
		CUBA6	SPAIN4	CUBA5		CUBA5	CUBA6	SPAIN4
1	0,0214	88,54	11,46	0,00	0,0216	88,74	6,70	4,55
2	0,0236	81,76	18,23	0,01	0,0237	73,29	17,45	9,25
3	0,0240	79,52	20,46	0,02	0,0252	67,21	19,77	13,03
4	0,0243	77,64	21,78	0,58	0,0258	64,40	21,02	14,59
5	0,0245	76,54	22,75	0,71	0,0261	62,72	20,44	16,84
6	0,0246	76,04	23,23	0,73	0,0263	61,99	20,48	17,53
7	0,0248	75,89	23,01	1,10	0,0265	61,40	20,35	18,25
8	0,0249	75,49	23,13	1,38	0,0267	60,53	19,98	19,49
9	0,0250	75,16	23,31	1,53	0,0268	60,41	19,95	19,64
10	0,0251	75,01	23,46	1,53	0,0268	60,43	19,93	19,64
11	0,0251	74,95	23,50	1,56	0,0268	60,38	19,92	19,70
12	0,0251	74,90	23,55	1,55	0,0269	60,29	19,98	19,73
13	0,0251	74,84	23,59	1,57	0,0269	60,19	20,00	19,81
14	0,0251	74,82	23,61	1,57	0,0269	60,13	19,98	19,88
15	0,0251	74,77	23,65	1,57	0,0269	60,12	19,97	19,91
16	0,0251	74,75	23,68	1,57	0,0269	60,09	19,97	19,94
17	0,0251	74,73	23,69	1,58	0,0269	60,07	19,97	19,96
18	0,0251	74,72	23,70	1,58	0,0269	60,06	19,97	19,97
19	0,0251	74,72	23,70	1,58	0,0269	60,05	19,97	19,98
20	0,0251	74,72	23,70	1,58	0,0269	60,05	19,96	19,98

To set the dynamic relationship between the bonds, the variance of Cuba 6% and Cuba 5% has been decomposed to determine the contributions of each series in its total variance. The "S.E." contains the forecast error while the remaining columns represent the percentage of the forecast variance due to the considered series. It has been done for different time horizons (from 1 to 20 periods ahead). The decomposition used is the Cholesky decomposition. Note that the results are consistent to different orderings in the decomposition. As from 2-periods ahead, 18% to 24% of the Cuba 6% variance is contributed by Spain 4% while less than 2% by Cuba 5%. This puts forward the importance of Spain in Cuba 6% forecast error and the possible "foreign" shocks hitting Cuba 6%. The "foreign" shocks are shocks affecting specifically Cuba 6% such as the announcement of Cuba 6% as odious.

In the subsample of the Peace Treaty period, Spain 4% contributes less than 6% to Cuba 6%. Over 93% of the Cuba 6% variance decomposition comes from "foreign" shocks. If the

investors expected Cuba 6% to be taken over by Cuba as a non-odious debt, it is logical that Spain's contribution to the variance drops and specific shocks rises. Those specific shocks to Cuba 6% are put forward by the SVAR approach. As from 2-periods ahead, 17% to 21% of the Cuba 5% variance is contributed by Cuba 6%. Spain 4% contributes between 16% and 20% of Cuba 5% forecast error from period 5. This puts forward the importance of both Spain 4% and Cuba 6% during the whole sample on Cuba 5% variance.

In the subsample of the Peace Treaty period, Spain 4% still contributes for a non-negligible part (around 15%) to Cuba 5% variance. Cuba 6% contributes only about half in the subsample of what it does in the whole sample. If the investors expected Cuba 5% to be an odious debt and that the probability to be paid back depends on the Spanish performance, it is logical that Spain's contribution to the Cuba 5% variance persists while the effect of Cuba 6% drops. As Cuba 6%, specific shocks attributable to Cuba 5% are revealed from the variance decomposition and are put forward by the SVAR approach.

Annex 4 : Variance decomposition of the sub sample

Period	Variance Decomposition of CUBA6% :				Variance Decomposition of CUBA5%:			
	S.E.	CUBA6	SPAIN4	CUBA5	S.E.	CUBA5	CUBA6	SPAIN4
1	0,0322	97,03	2,97	0,00	0,0254	91,74	1,20	7,05
2	0,0330	94,13	5,34	0,53	0,0279	76,03	10,38	13,59
3	0,0331	93,84	5,63	0,53	0,0282	74,31	10,85	14,85
4	0,0331	93,80	5,68	0,53	0,0283	74,05	10,91	15,05
5	0,0331	93,79	5,68	0,53	0,0283	74,00	10,92	15,08
6	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
7	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
8	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
9	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
10	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
11	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
12	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
13	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
14	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
15	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
16	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
17	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
18	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
19	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09
20	0,0331	93,79	5,69	0,53	0,0283	73,99	10,92	15,09

Annex 5 : Structural VAR result - Madrid data

