



Asociación Española de Historia Económica

DATOS SOBRE TESIS DOCTORALES

Autor: Pilar NOGUES-MARCO

Filiación (Universidad/centro de investigación): Universidad Carlos III de Madrid

e-contacto: nogues.marco@gmail.com

Programa de Máster: Master y Diploma de Estudios Avanzados en Historia Económica. Universidad de Barcelona-Universidad Autónoma de Barcelona

Programa de Doctorado/Estudios de Doctorado: Doctorado en Ciencias Económicas, especialidad en Finanzas Internacionales, Sciences-Po, París (en cotutela con la Universitat de Barcelona)

Título de la Tesis: BULLIONISM, SPECIE-POINT MECHANISM AND BULLION FLOWS IN THE EARLY 18TH-CENTURY EUROPE

Dirección: Marc Flandreau

Idioma: Inglés

Miembros del tribunal y su filiación:

- Albert CARRERAS – Professor at Pompeu Fabra University, (president)
- Marc FLANDREAU- Professor at Graduate Institute, Geneva and detached Professor at Institut d'Etudes Politiques, Paris (supervisor)
- Larry NEAL, Professor at University of Illinois and Visiting Professor at London School of Economics (referee)
- Carles SUDRIÀ, Professor at University of Barcelona (co-supervisor)
- Nathan SUSSMAN, Professor at Hebrew University, Jerusalem (referee)

Fecha de defensa: Paris, 22 enero 2010

Calificación: mention très honorable avec les félicitations du Jury à l'unanimité

Mención europea: sí (evaluador externo para la obtención de la mención europea: Vincent Bignon, Associate Professor at IUFM-University of Paris 12 and Visiting Lecturer at Graduate Institute, Geneva)

Premios y menciones obtenidos:

Resumen: (no más de 1000 palabras)

SUMMARY OF THE CANDIDATE'S PRESENTATION:

Pilar Nogués-Marco begins by describing the Castilian bullionist regime and the legal restrictions on bullion transactions in Cadiz. Two laws regulated transactions on bullion from the Late Middle Ages until colonial independence: fixed prices and bans on export. The alleged aim of these laws was to prevent bullion outflows. However, they caused substantial illegal outflows.

Using archival data from a French merchant house from Marseille, the second chapter describes the working of the illegal outflows. French smugglers bought silver in Cadiz with bills of exchange drawn on Amsterdam and then sold it in London for bills of exchange drawn on Amsterdam. The net balance in their accounts in Amsterdam showed their profit margin. Calculating the silver point mechanism between London and Cadiz, Pilar Nogués-Marco estimates the profit margin.

Through arbitrage, she then estimates the “shadow” market price of bullion in Spain. Her results show mis-pricing of the Spanish price for bullion. Silver was undervalued in Spain, which explains why there was a profit margin for the French smugglers.

The third chapter provides counterfactual evidence. The results for the case with bullion controls (Cadiz-London) are compared with free bullion movements between Amsterdam-London in the same period. The counterfactual shows that in the absence of controls, there was no arbitrage benefit. Comparing silver price in Amsterdam and London, breaks of the gold points and silver points were few and non-persistent. Miss Nogués-Marco concludes that bullion controls were the reason of the silver mispricing in Cadiz.

Chapter four, five and six focus on the structure of the black market for silver in Cadiz in order to explain the existence of a permanent arbitrage gain (“mis-pricing”). French merchants were most prominent among foreign merchants involved in smuggling silver. They enjoyed diplomatic privileges extended by the Spanish crown and were able to organize a self-enforcing cartel connected by partnership and family ties. The cartel maintained market power that enabled it to buy silver below the international price. It thus appropriated and dissipated part of the Spanish rent from owning foreign mines. Pilar Nogués-Marco ended her presentation with a graphical resolution of the underlying model of the specie-point mechanism with oligopsony. It shows that the optimal oligopsonistic price was lower than the international competitive price. The price gap was the reason for the arbitrage. Oligopsony limited smuggling (compared to what would have obtained under perfect arbitrage competition, the Amsterdam-London case), thus limiting equilibrium silver outflows.

SUMMARY OF JURY QUESTIONS AND CANDIDATE ANSWERS:

Professor **Larry Neal** (*premier rapporteur*) began the comments. He praised the dissertation, both in terms of research efforts underlying it and the economic analysis that motivates it. The dissertation combines original archival research with a precise economic analysis of the price determination of Spanish silver in three different markets – Cadiz, London, and Amsterdam. Professor Neal gave the candidate many valuable pieces of advice regarding bibliography, the order of the chapters, the meaning of some sentences, and the clarity of some concepts and notation. He focused his comments in third main points: the triangular arbitrage, the supply side of the smuggler market in

Cadiz and the idea that the government would prefer oligopsonistic smuggling to competitive smuggling. First, he focused on Figures 2.2 & 2.3. for his comment on the triangular arbitrage. He considered that the profit equation is not clear enough. The Figure 2.3 shows the total the debit side (used to pay for silver in Cadiz) less the credit side (paid into the account from Paris for silver sold in Marseille). But the profit paid out should show up in this account as three debits, one each for *Roux, Magon & Lefer* and *Tourton Baur* to share the profits. It is not needed to mess up the diagram with these further accounting details, but at least show the profit to the smugglers as the credit less the debit in the Paris account. Second, professor Neal remarked on the need to address explicitly the other side of the smuggler market in Cadiz, the possibilities for market power by the sellers of illegal silver. The author focused entirely on oligopsonistic power and does not mention at all the possibility of some degree of oligopolistic power exercised by the Spanish *cargadores* on the selling side in the murky reaches of the outer harbour of Cadiz that Pilar describes in chapter 4. Indeed, chapter 4 should have a section discussing the possibilities of the *cargadores* organizing effectively as a similar cartel to that of the French merchant houses that the author describes so convincingly. She mentions in passing corruption and collusion rampant in the system, which leads one to suspect the possibility of oligopoly power by the *cargadores* or a subset. But then the large number that Pilar mentions suggests that they could not self-organize as effectively as the much smaller and more cohesive number of French merchants. See the recent article in JEH on the economics of the *Grosse Fermes* created by Colbert in France as a counter-example of how the tax farmers (which is essentially the role of the *cargadores*) were first effectively organized by Colbert to benefit a smaller, more cohesive group and then exploited by Colbert to increase the tax take by the French government. Professor Neal has to suspect that under the Bourbon monarchy in Spain something like this probably occurred, but perhaps not until Carlos III. What would happen to the smuggling profits if the *cargadores* had the ability to exercise equal market power with the French cartel? Would it reduce the amount smuggled? Does the author have the quantities from the Roux archive as well as the prices? If so, that would be a great addition for the eventual book that professor Neal hopes Pilar will be working on as a follow up. Finally, the idea that the government would prefer oligopsonistic smuggling to competitive smuggling is good – just needs to be explained in more detail, using the kind of argument suggested from the French example of the *Fermes Générales*.

Pilar thanked all the comments, suggestions and pieces of advice that Professor Neal sent to her in a very valuable report. They will be really useful to improve the research. Regarding the first comments, Pilar agreed with improving the Figures 2.2 & 2.3 to give more clarity to the explanation of the triangular arbitrage. Actually, it is crucial to understand the way that arbitrage equation was constructed and it is very important therefore to have a clear explanation in the Figures. The second comment was also developed by Professor Sudrià afterwards (see below). Pilar considered that prices give the information from a theoretical point of view. The price was below the competitive price, which means market power of the demand side. Pilar did not know the reference of *Grosse Fermes*. She thanked for this reference to elaborate a more sophisticated argument. The idea that the government would prefer oligopsonistic smuggling to competitive smuggling appeared also from theory. The quantity traded in an oligopsonistic market is lower than in a competitive market. As government wanted to retain bullion at home, the oligopsonistic smuggling should have been preferred to the competitive smuggling. However, Pilar did not work with the traded quantities because

the archive did not give the information on quantities. She considered it very important to analyze the topic of market structure having also quantities and not only prices, and for this reason she has started to research in the East India Company archive. With the EIC having the monopoly of the British bullion trade with Asia, the archive contains both prices and quantities. This source can give as a lot of knowledge about the relation between bullion flows and market structure.

Professor **Nathan Sussman** (*deuxième rapporteur*) discussed the merits of the dissertation. He praised the combination of hitherto unstudied archival material spanning many archives in several locations – really impressive with rigorous modelling of the economic part of the story that makes a significant contribution for both disciplines. He considers the dissertation as a perfect example of an excellent research in Economic history. Professor Sussman elaborated also on the merit of additional research, perhaps in future work. The first, which is close to his research interests, is the relationship between monetary policy and the arbitrage opportunities analyzed in the dissertation. Pilar shows that the debasement of 1737 removed the arbitrage opportunities. And we observe that monetary policy was very active between 1636 and 1686 it was then stable from 1686 to 1726 – and from 1728 to 1737 – the period analyzed in this dissertation. Then, was smuggling pervasive only in periods of monetary stability? What is the rationale for monetary policy – seignorage revenues or addressing exchange rate misalignments? Or upholding the mercantilist strategy? If it is the exchange rate (mint prices) then why in some periods and not others? Are the arbitrage profits analyzed here a standard feature of periods of monetary stability? Why did the authorities tolerate it in one period and not others? His concern is whether Pilar is analyzing a common phenomenon, or one unique to this period – put differently, is this an interesting case or can we extend the analysis to the 300 years or so of bullion exports from Spain?

The second major concern is with the characterization of the relationship between international trade, bullion flows and financial flow. Professor Sussman completely agreed that in the period analyzed, well in fact even in the late middle ages, the international medium of exchange is dominated by bills of exchange and that bullion is, for the most part, traded as a commodity. However, the underlying arbitrage opportunities are an outcome of the relative prices of silver bullion in two markets: it was lower in Spain than in the rest of Europe – such that there is an underlying trade in bullion in return for commodities. He said that if he understands correctly, what the arbitrageurs are doing is to profit from the mispricing of bullion by the Spanish authorities – for them it is purely an arbitrage operation. But for the seller of bullion and the buyer at the other end (say Paris and London) these are ‘real’ transactions. At the end of the day, the Spanish seller of bullion has a credit in Amsterdam that he can use to buy goods. A purely arbitrage transaction i.e. one that does not involve an international trade transaction would be one that would involve dry exchange (like in the middle ages) where the seller of bullion has received domestic credit of coins while bypassing the mint or if a Spanish merchant would appear on the debit side of the account in Amsterdam. In the case described we have a foreign trade transaction (indirectly) between a Spaniard and a foreign merchant. The counterfactual would have been a transaction between two Spanish merchants. Finally, given the mercantilist attitudes of the Spanish monarchy – perhaps, rather than downplaying trade flows (balance) we may want to think how to tie them with monetary policy – to have a complete understanding of the phenomenon over the long run. The idea that a cartel was the second best solution

for the Spanish government is a very interesting idea; nevertheless, the debasement of 1737 – stopped arbitrage – why did they wait?

The author thanked Professor Sussman for the comments which will be taken in consideration for future research. They exceed the scope of the dissertation, but the candidate agreed on the importance of these questions to have a complete understanding of the phenomenon over the long run. Professor Sussman raised two main concerns: one regarding the relationship between monetary policy and arbitrage, and the other about the relationship between arbitrage and trade.

First, regarding the relationship between monetary policy and arbitrage, the candidate believes that the phenomenon –arbitrage- is not unique to this period. It was a common phenomenon during the 300 years, but operated in a different way in different times. When the arbitrated parity broke the silver point, arbitrage operated as explained in the dissertation. But when government devaluated to adjust the arbitrated parity to the silver point, the oligopsonistic mark-down was reduced and arbitrageurs stop smuggling from Cadiz to Europe. But they tried to export directly from America to Europe with the aim of catching the *Cargadores*' mark-down of trade with America. At least, this is the candidate's intuition according to the evidence found in primary sources of operations between Spanish-America and Europe in the 1750s and 1760s.

And second, regarding the relationship between arbitrage and trade, Pilar explained that arbitrage did not involve dry exchange, i.e., exchange and re-exchange or fictitious exchange (De Roover, 1944). For the point of view of the foreign merchants in Cadiz, arbitrage with bullion was a pure arbitrage transaction, i.e., buying silver in Cadiz and selling it in another market for a higher price. For the global point of view, the operation means a credit in Amsterdam for the Spanish seller in Cadiz and a debit in Amsterdam for the buyer in London/Paris. Agents' account could be indirectly balance with foreign trade transactions and/or financial transaction. Probably both happened, although we do not know in which proportion. Evidence from Amsterdam bankers (if exists) would be crucial to full understand the relationship between arbitrage and trade (and also finance). The author was looking at the archives of the 18th-century Amsterdam bankers kept in *Stadsarchief* Amsterdam, but she did not find accounting books which permitted to address this question.

Professor **Albert Carreras** (*president du jury*) considered that the thesis presented and defended by Pilar Nogues-Marco is of very high calibre. It addresses a major puzzle on economic historiography: the lack of prices for silver bullion free market –illegal- transactions. Silver was the major commodity being traded internationally during the early modern era. He said that Pilar had made a superb contribution by focusing on the problem by understanding where the solution could lie, finding the archival evidence, understanding it, and making sense of the new data she gathered. He expanded on the relevant theoretical, conceptual, methodological and archival issues, and emphasized that Pilar's thesis provides clarity from the historiographical confusion that existed a few years ago. He gave practical pieces of advice for publication. And he also addressed some remarks on the title, as the current one could downplay the real contribution of the thesis. "Smuggling American silver in early 18th century Europe" describes more forcefully the content of the thesis. For the sake of the core argument the economic overall context is a bit forgotten. The considerations provided by major European economic thinkers would also be a valuable addition to the printed version.

The candidate thanked the comments and pieces of advice and agreed the interest of studying the economic overall context and also the monetary thought to frame the topic in the contemporary economic policy.

Professor **Carles Sudrià** (*directeur de la thèse à Barcelone*) encouraged her for future research to think from the point of view of policy makers, i.e., which were the reasons of the Crown to maintain the bullionist policy? He focused his main comments on the agents involved in smuggling. He asked her about the other participants in the bullion market. His question was about the people that bought the silver to the French smugglers and the people that sold it from them. First, the French smugglers were a small group of well connected expatriates. They were able to enact an oligopsony that allowed them to buy silver below the international price. And they sold to the European bankers or traders that needed this silver to fuel the trade with East India. Why were they not able to counteract the French smugglers' tactics? Were they less well organized? Did they compete among themselves? They could be also few and powerful. Second, the sellers were the same "*cargadores*" that controlled the whole American trade. They were also a small group of privileged people and they would be able to act as an oligopoly.

Pilar thanked him for his questions. She considered important to distinguish between market structures in main European places (i.e., London) and Cadiz. French smugglers sold the silver in London. London was a competitive market. Anyone could buy and sell silver in London because it was a free market without barriers of entry. And its price was the international competitive price because bullion movements were free. However, the situation in Cadiz was different. Cadiz was a black market. Buyers were an oligopsony as demonstrated in the dissertation. Sellers also could have had a structure of imperfect competition because trade with the Spanish-America was a business with barriers of entry as only Spanish could trade with colonies. How much market power had the sellers? The prices give us information about the equilibrium. Prices are below the international price. Then, if sellers had a structure of imperfect competition, we are in a case of bilateral monopoly in which buyers had the market power. Therefore, it is equivalent to an oligopsony in practise. Although the quantitative result is equivalent, Pilar agreed the historical importance of understanding sellers' market structure as they dominated trade with America.

Professor **Marc Flandreau** (*directeur de la thèse à Sciences Po*) praised the many qualities of the dissertation. He predicted that the work had a potential to revolutionize the current understanding of the political economy of bullionism. He stressed that a key innovation of the thesis was to outline the importance of market structure. Cadiz black market emerged because the legal divide between the Spanish supply of bullion and the demand for bullion represented by foreign merchants prevented American silver to flow directly in the European markets. The reason why bullion markets were organized the way they were (as black markets), why bullion was quoted as it was (in French bankers' correspondence) and so on, are complex matters in the study of market structure. The thesis lends itself to a Coasian study in firm organization. He encouraged the author to further her thinking by trying in the future to discuss in "Coasian" ways what the nature of the business of smuggling was. Second, he emphasized the importance of thinking about the government objective function as the explanation of bullionism. The

government preferred an oligopsony of smugglers rather than competitive smuggling. Why? He mentioned the idea of the rent-seeking behaviour by the Spanish Crown, which is briefly discussed in the dissertation, and encouraged the author to focus on it. What were the benefits of this market set up? Did it permit a greater extraction of seigniorage? Did it facilitate other types of exploitation? Addressing these questions would lead the author to elaborate a coherent explanation of bullionism.

The candidate thanked him for comments and ideas. She agreed the importance of studying in depth why the Spanish government maintained the bullionist policy so long and the interest of analysing the government rent-seeking behaviour. She also thanked the approach toward a Coasian study in firm organization. It is a very suggestive way to frame the business of smuggling.

Le jury s'est ensuite retiré pour délibérer. L'accord a été complet sur les grandes qualités de la thèse qui a reçu a mention très honorable.

Puis, par vote à bulletin secret, il a été décidé d'attribuer à Pilar Nogués-Marco, les félicitations du Jury à l'unanimité. En effet, il s'agit d'un travail qui bouleverse l'état actuel de la recherche sur la nature du bullionisme et les fondements de l'économie de rente qu'il a créé. Par ailleurs, la découverte par Pilar Nogués-Marco, de documents prouvant l'existence de prix sur le marché noir espagnol, ainsi que l'étude de la formation de ces prix, constitue une réalisation scientifique exceptionnelle, tant sur le plan économique qu'historique.

En présence de la candidate et du public, le président lit alors les décisions du jury.

Códigos JEL:

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Observaciones: