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(1870-1910)**

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Commodity Chains: what can we learn from a business history of the rubber chain? (1870-1910)

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Abstract

The literature on the rubber boom applied a Dependendist view of rubber production in the Brazilian Amazon. Even though a sizable surplus was generated in the rubber chain, it was mostly appropriated by foreigners. This view is in tune with the Global Commodity Chain approach that argues that manufacturing/core economies absorb the bulk of surplus generated in the commodity chain. This paper challenges both frameworks and asks for a more careful examination of the business history of commodity chains: it is a first step in this direction through an analysis of the relationship between two nodes of the rubber chain.

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1 Introduction

The development of the rubber boom (1870-1910) in the Brazilian Amazon is shrouded by myths and legends that reflect the high profits accrued in a region that was considered by most, a pre-capitalist society. In this context, Manaus Opera House is paradigmatic: the building is a monument to rubber bonanza. Inaugurated in December 1896, it is still preserved in its original style: eclectic and neo-classic architecture built with materials and a labor force brought from Europe. In Belém, the main rubber hub, another sumptuous theatre had been built from rubber proceeds some years earlier, the Theatro da Paz (Theatre of Peace). During the rubber boom, it was said that Manaus diamond consumption per capita was the largest in the world, men walked with canes topped in gold and silver, children went to school in Paris or Lausanne and almost 2,500 inhabitants took first-class tickets to Europe every year. Houses were decorated in Parisien style where “pre-dinner drinks were usually sipped from silver champagne goblets set on Carrara marble-topped tables with bases of solid gold”.² In addition, it was also said that Havana cigars were lit with bank notes of 500 *milréis* (equivalent to 20 pounds at the 1900 exchange rate) and that every toothache was treated in Europe.³ Exaggeration or not, these descriptions of the rubber boom reflect the rapid wealth that flowed to the region from 1870 to 1910, capturing the imagination of many people around the world and fuelling immigration.

Despite these accounts of money squandering, the literature on the rubber boom has resorted to a Dependendist view of rubber production in the Brazilian Amazon in which foreigners appropriated and sent abroad most of the wealth accumulated from rubber production. This view is in tune with the Global Commodity Chain approach

² Collier (1968, p. 22).

³ Prado and Capelato (1975, p. 300).

that argues that manufacturing/core economies absorb the bulk of surplus generated in the commodity chain. This paper challenges both approaches and asks for a more careful analysis of the business history of commodity chains. The business analysis at the micro level may falsify or verify assertions made at the macro level, which had been the usual level of analysis of commodity chains so far. By rejecting the Global Commodity Chain approach, it is necessary to examine more carefully the historical evolution of the commodity chain. This paper is a first step in this direction through a business history of the relationship between two nodes of the rubber chain: exporters placed in Brazil and importers placed in industrialized countries.

The paper is organized in 6 sections, including this introduction. Section 2 provides a discussion on the Global Commodity Chain Approach, highlighting its main assumptions and works as well as its limitations. Section 3 presents the rubber chain and explains the Dependence view on the rubber trade in the Brazilian Amazon during the rubber boom (1870-1910). Section 4 discusses some of the stylized facts that contradict assumptions made by the Dependence view whereas Section 5 provides an analysis of the relationship between two nodes of the rubber chain by using business archives. Finally, Section 6 concludes the paper.

2 The Global Commodity Chain Approach

The Global Commodity Chain (GCC) approach addresses questions about what products countries do (and should) import and export in relation to complex institutions. Instead of deriving trade patterns from optimizing behavior of rational economic agents, for GCC, trade is taken as embedded in, and to a considerable extent

as determined by, specific (but changing) institutional structures.⁴ GCC is ultimately the development of the World-System Theory at the micro level. It is thus imperative to discuss the main features of this theory before analyzing the Global Commodity Chain approach.

A social-system is a self-contained unit of analysis as the dynamics of its development is mainly internal. Only small autonomous subsistence economies and world-systems can be considered as actual social systems. According to Wallerstein, a world-system is thus “a social system, one that has boundaries, structures, member groups, rules of legitimation, and coherence”.⁵ In history, there have only existed two types of world-systems: world-empires, in which there was a single political system over the whole area, and world-economies in which such political system did not exist. According to Wallerstein, it was exactly the absence of a single political system that allowed capitalism to operate within an arena larger than any political entity could actually control, giving capitalists room for maneuver that was structurally based.

Geographical factors such as transport and communication defined the borders of this world-system, inside which an extensive division of labor developed. This division of labor was geographical and arose not only from ecological factors as it was also a function of the social organization of work: following a Marxist framework, it magnified and legitimized the ability of some groups within the system to exploit others. As a consequence, a clear-cut division between core-states and peripheral areas arose. Whereas core-states were those where a strong state machinery and a national culture were created to ensure the coherence of the world-system and to justify disparities that had arisen within the world-system, peripheral areas were those where the indigenous

⁴ Raikes, Jensen and Ponte (2000, p. 394).

⁵ Wallerstein (1976, p. 347).

states were weak, ranging from non-existence (e.g. colonial situation) to one with a low degree of autonomy (such as neo-colonial situation). Core-states were thus understood as those that possessed sovereignty *vis-à-vis* other states which additionally were strong before any particular social group within the state. There were also semiperipheral areas which were in between the core and the periphery: some of those areas had been either a core-state of a given world-economy or a peripheral area that was promoted as a result of changing geopolitics of an expanding world-economy. It is possible to infer then that for Wallerstein, state structures were relatively strong in the core-areas and relatively weak in the periphery.⁶

The aforementioned division of labor entails a hierarchy of occupational tasks in which core-states concentrated higher levels of skill and capital. Since a capitalist world-economy essentially rewarded accumulated capital (including human capital) at a higher rate than raw labor, the system was prone to self-maintenance and to increasing disparity. Moreover, the absence of a central political entity made it very difficult to employ counteracting measures to remedy this maldistribution of rewards. This maldistribution of rewards, in turn, did not necessarily generate the seeds of internal discontentment and dissolution since with the expansion of the system (especially through technological developments) ever new areas were being absorbed. This process of development in the periphery (and in the semiperiphery) then masked the inequality of rewards.⁷

Wallerstein's framework is based essentially on the nation-state and consequently individual workers, entrepreneurs, industries and firms were either neglected in his analysis or assigned a secondary role. As these players influence the functioning of the

⁶ Wallerstein (1976).

⁷ Wallerstein (1976).

world-system, it was necessary to integrate them into the Wallersteinian framework. That is exactly one of the initial objectives of the global commodity chain (GCC) literature: according to its proponents, by tracing the network of commodity chains, it is possible to track the underlying division and integration of labor processes and thus monitor the constant development and transformation of the world-economy's production system.⁸ In this context, a commodity chain is understood as a "network of labor and production processes whose end result is a finished commodity"⁹. For analytical purposes, the chain is assumed to be comprised of several nodes or "boxes" that correspond to quite specific production processes. The boundaries of a given box are taken as socially constructed and locally integrated, highlighting the social embeddedness of economic organization. Therefore, a box may be redefined, reconstructed, consolidated or subdivided based on technical or social organizational changes.

In short, a "GCC consists of a set of interorganizational networks clustered around one commodity or product, linking households, enterprises, and states to one another within the world-economy"¹⁰. At the macro level, all these networks are constituents of the world-system in which an extensive division of labor exists along geographic lines. This division of labor is understood as being usually triggered by a globalization process of production and trade.¹¹ For analytical purposes, such globalization process may be subdivided into three different phases: a) investment-based globalization (1950-1970) when the multinational spread of transnational corporations accelerated in a growing number of manufacturing and raw material

⁸ Hopkins and Wallerstein (1994, p. 17).

⁹ Hopkins and Wallerstein (1986, p. 159).

¹⁰ Gereffi, Korzeniewicz and Korzeniewicz (1994, p. 2).

¹¹ Gereffi, Humphrey and Sturgeon (2005, pp. 78-79).

industries; b) trade-based globalization (1970-1995) was based on the rapid and diversified industrialization of a wide range of developing nations, changing the center of gravity for many manufacturing industries; c) digital globalization (1995 to date) when an information revolution developed as a consequence of the rapid spread of connectivity, impacting on business strategies.

The result of this ongoing globalization process is the emergence of a worldwide manufacturing system in which production capacity is dispersed to an unprecedented number of developing as well as industrialized countries. This globalization pattern implies a degree of functional integration between and control over internationally dispersed activities that span over core, semiperipheral and peripheral areas¹². This international dispersion of activities, in turn, follows a hierarchy whose rationale is given by the world-system theory: a relatively greater share of wealth accrues to core-like nodes than to peripheral ones, underscoring the fact that, by construction, the periphery produces raw materials whereas the core produces industrial products. Even though this is too simple and might not be true for all commodity chains, it should be true for the world-economy as a whole.

Therefore, hierarchy among countries at the macro-level (periphery versus core areas in the world-system theory) translates into a relation of power among nodes along a commodity chain at the micro level (GCC). Power here is defined as the ability to coordinate and control transnational production systems, which can be structured and categorized in two different ways: as producer-driven or buyer-driven. On the one hand, “producer-driven commodity chains are those industries in which transnational corporations or other large integrated industrial enterprises play the central role in

¹² Gereffi (1994, pp. 95-96).

controlling the production system (including its backward and forward linkages)”¹³. The distinctive feature of the producer-driven commodity chain is the degree of control exercised by the headquarters of transnational corporations. On the other hand, “buyer-driven commodity chains refer to those industries in which large retailers, brand-name merchandisers, and trading companies play the pivotal role in setting up decentralized production networks in a variety of exporting countries, typically located in the Third World”¹⁴.

Ultimately, under the GCC framework, power assures that the most profitable nodes will be located in core areas. According to Hopkins and Wallerstein, monopoly and competition are key to understand the distribution of wealth among the nodes in a commodity chain (and in aggregate, for the world-system as a whole). Competitive pressures are less pronounced in core nodes as enterprises and states in core areas gain competitive edge through innovations that transfer competitive pressures to peripheral areas of the world economy¹⁵.

Even though commodity chain analyses are usually a-historic, competitive pressures change over time following a Shumpeterian notion of competition. For Hopkins and Wallerstein, concentration and decentralization (or shifts in the zonal location of nodes) are associated with cyclical rhythms of the world economy: during A-periods (upswings) vertical integration and geographical concentration of boxes of a chain are induced as a consequence of reduction of transaction costs, whereas during B-periods (downswings) a geographical dispersal of chain’s boxes happens in order to ensure reduction in labor costs by subcontracting.¹⁶

¹³ Gereffi (1994, p. 97).

¹⁴ Gereffi (1994, p. 97).

¹⁵ Hopkins and Wallerstein (1994, p. 18).

¹⁶ Hopkins and Wallerstein (1994, pp. 19-20).

The underlying idea of the Global Commodity Chain framework is thus that, by describing and analyzing a commodity chain, it is possible to show how social relations shape production, distribution, and consumption in a given industry or sector. Even though theoretically it could be applied to all commodity chains (maybe requiring sometimes some adaptations), GCC has mainly been applied to industrial chains such as apparel¹⁷, semi-conductors¹⁸, automobiles¹⁹ and footwear²⁰ despite some attempts to apply it to other areas such as services²¹, fresh fruit and vegetables²² and illegal commodities²³. Therefore, the rubber chain has been so far left out. However, it will be argued here that the GCC approach does not provide a suitable framework to analyze the rubber chain and thus an alternative theory/model needs to be found.

The Global Commodity Chain approach is a development of the world-system theory at the micro level. As such, it is an extension of the dependency theory. Instead of the Prebischian notion of dependency being created from increasingly unequal terms of trade²⁴, in the world-system the global market is an uneven playing field, underscored by the existing hierarchy between core and periphery areas that translates into a relation of power between nodes of the commodity chain located in these two areas. Proponents of the GCC approach have seldom appropriately defined the concept of 'power'. It is certainly the equivalent of the hierarchy existent at the macro level but its underlying rationale is usually lacking. For Hopkins and Wallerstein, core areas derive power over peripheral (and semiperipheral) areas out of the development and possession of more advanced technologies and consequently by high degrees of market power whereas, for

¹⁷ Gereffi (1999).

¹⁸ Henderson (1989).

¹⁹ Doner (1991).

²⁰ Schmitz (1999).

²¹ Rabach and Kim (1994).

²² Reynolds (1994).

²³ Wilson and Zambrano (1994).

²⁴ See for instance Love (1980). See also Prebisch (1959).

Gereffi, power involves the ability to out-source lower value-added activities and to retain or incorporate those with higher value-added.²⁵ As noted by Raikes *et al.*, under the GCC approach, power is usually regarded in an 'all or nothing' terms: it usually disregards degrees of power along the chain and assumes a polar structure in which one node of the chain is taken as dominant.²⁶

As mentioned above, the GCC approach was usually applied to industrial chains and largely ignored their historical/cyclical context. Both the historical and cyclical contexts are embedded. On the one hand, the historical context is actually provided by the world-system theory that describes how capitalism evolved within the world-system. On the other hand, cycles are explained by a Schumpeterian notion of development.

There have been some efforts though to construct the global commodity chain analysis with a more detailed historical context. Although there are just a few contributions in this direction²⁷, its proponents tend to reject the center-periphery assumption of GCC. By doing so, they typically reject the world-system theory altogether replacing it with more neoclassical economic reasoning and modern standard trade theory models. A construction of a more detailed and integrated historical context becomes thus a requirement as it ceases to be embedded in and becomes commodity-specific. In this context, the evolution of the commodity chain over time now interacts with this more general and specific historical background. In the commodity chain approach, the macro dimension is usually explored but very little has been done to incorporate the micro dimension of the chain. In this regard, business archives provide a rich source to complement and verify assertions about commodity chain made at the

²⁵ Hopkins and Wallerstein (1994) and Gereffi (1994).

²⁶ Raikes, Jensen and Ponte (2000, p. 402).

²⁷ See, for instance, Topik, Marichal and Frank (2006), Clarence-Smith (2000) and Hunter (2005).

macro level. The objective of this paper is exactly to bring business history to the fore: through the analysis between two nodes of the rubber chain, the paper shows that the rubber chain does not fit into the GCC framework. The dependentist view of rubber production does not seem valid either.

3 The Rubber Chain: Exporters, Exploitation & Dependency

Until mid-eighteenth century metallic currency was barely used in the Brazilian Amazon, and the bulk of transactions was carried out through exchanges of merchandises such as cotton. Only in 1749 was fiat money introduced, and a hundred years later it was still of scarce utilization due to slavery (which meant that many labor arrangements did not involve payment of wages) and geographical conditions (in more remote places people still preferred to exchange merchandises than to make transactions based on fiat money). Since colonial times, however, an informal credit channel had been evolving. The first economic activity of the region, the collection of *drogas do sertão*²⁸, relied heavily upon the exchange of merchandises: the gatherer received merchandises in exchange for the product collected in the Amazon Forest. This informal credit channel was called *aviamento* which means credit without money.²⁹

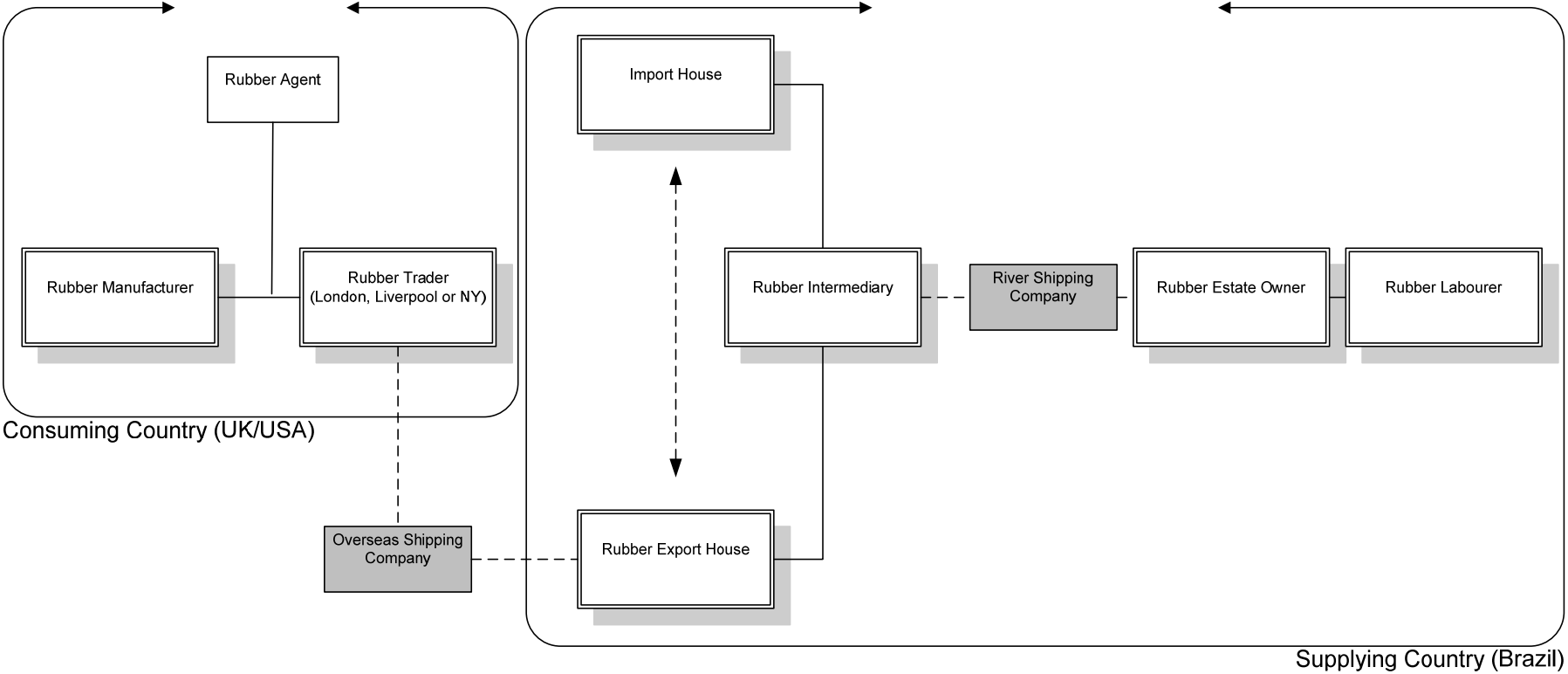
Therefore, according to the literature, *aviamento* turned to be the typical credit channel in the Amazon Region. During the rubber boom the *aviamento* was roughly organized into a horizontal channel (see Figure 1) in which the estate owner advanced the merchandises to the tapper in exchange for a promise to deliver a certain quantity of rubber. This merchandise was supposed to be the means of living that would allow him

²⁸ 'Drogas do sertão' means, literally, drugs from the backlands and in the Amazonian context it meant commodities extracted from the Amazon Forest.

²⁹ Santos (1980, p. 157).

to concentrate solely on rubber extraction. The estate owner, in turn, was financed by an *aviador*, who was merely an intermediary who bought the merchandises from the export houses (or from importers with the money advanced by the export houses) which were the ultimate source of funding in that credit channel. Supposedly, these export houses were controlled from abroad and their surplus drained to core economies, notably the USA, Britain, France and Germany. In these economies, the rubber chain was much simpler: there were rubber traders (importers of crude rubber) who supplied the manufacturing firms, either directly or through an intermediary or agent.

Figure 1 - The Rubber Chain



Source: Elaborated by me, following a stylised version of the rubber chain.

The *aviamento* credit channel encompassed all nodes of the rubber chain located within the Brazilian Amazon and was much more complex than what this 'Weberian' ideal credit chain suggests. It hides several other relationships between the economic agents involved in the rubber chain as the degree of verticalization increased over time, especially during the last decade of the rubber boom (1900-1910). First, several intermediaries possessed their own ships to transport rubber from the jungle to warehouses in Belém or Manaus. Secondly, these intermediaries invariably ended up possessing some rubber estates, either following a business plan or as a consequence of foreclosure of rubber estates for collection of debts from their clients. Thirdly, some intermediaries also exported part of their rubber and could then be considered as export houses. Conversely, some export houses ventured into the intermediary market and also ended up renting or buying rubber estates.

Contemporary accounts stressed the extreme economic exploitation entailed by this credit chain. For instance, in 1854 Sebastião do Rego Barros, president of Pará Province, stated that

"(...) this difference [he referred to the trade balance surplus, highlighting that imports had doubled whereas exports had quadrupled from 1851-52 to 1853-54] is the result of higher consumption of imported goods, the extremely high price of rubber and, consequently, the employment of almost every man into rubber extraction and production which impels us to buy first necessity goods, which we had produced once, from other Provinces. This is certainly bad since the high profits of rubber industry, which absorbs and annihilates every other industry, do not lead to wealth distribution and establishment of small properties with their advantages and stability but rather to wealth accumulation in the hands

of a few, mainly foreigners. This scenario results in poverty for the mass population who abandoned their homes, small stores and maybe families in order to devote themselves to an uncertain and harsh life in which profits evaporates rapidly."³⁰

Another president of Pará Province, Francisco Carlos de Araújo Brusque, echoed Barros' view in 1862:

"[Rubber industry] is the most important element of our actual wealth, but this should not be mistaken, it is wealth for a few since it pours misfortune and poverty into the heart of those employed in its extraction and production.

(...)

*The men who work [in the rubber industry] are represented as inert quantities, or figures at the end of a column that can be summed up, as if the mankind were a company where the worker plays the role of a machine where everything can be represented as profits or losses, forgetting that those quantities are persons and the arithmetic figures are lives; morality of human beings guided by God to the same destiny to which we aspire."*³¹

Rego Barros' and Araújo Brusque's complaints were made very early in the Rubber boom and they most certainly voiced the fear and opposition against rubber production stemming from part of the old Amazonian elite who based their wealth in

³⁰ Barros, S. R. "Falla que o exm. snr. conselheiro Sebastião do Rego Barros, presidente desta provincia, dirigiu á Assembleia Legislativa provincial na abertura da mesma Assembleia no dia 15 de agosto de 1854." edited by Pará: Typ. da Aurora Paraense, 1854, pp. 9-10 (underlined by me).

³¹ Brusque, F. C. A. "Relatorio apresentado á Assembléa Legislativa da provincia do Pará na primeira sessão da XIII legislatura pelo exm.o senr. presidente da provincia, dr. Francisco Carlos de Araujo Brusque em 1.o de setembro de 1862." edited by Pará: Typ. de Frederico Carlos Rhossard, 1862, pp. 47-48 (underlined by me).

agriculture, cattle or other traditional activity of the region. The opposition eventually faded as most of the old elite were integrated into rubber production or profited indirectly from it. However, the organization of crude rubber production in the Brazilian Amazon continued to be denounced. The usual complaint was that the [foreign] export houses, sitting at the top of the chain, were absorbing most of the profits from rubber production. The credit channel was criticized by contemporaries such as Woodroffe. For him, the credit chain entailed exploitation at each layer of the rubber chain,

“(...) nearly the whole of the Amazon seringals [rubber estates] are mortgaged to commercial houses in Manáos, Pará, and the smaller towns, the proprietor relying upon the mortgages for his merchandise and, as a rule, binding them down to deliver to him alone. The whole organization reminds me one of the saying that the biggest fishes eat the bigger ones, who in their turn, prey on the little ones, whilst these, the little fish, eat mud.”³²

British Consuls also denounced the *aviamento* credit chain, as Mr. Cheetham did in 1909:

“(...) The whole of this valuable trade is gathered in the first place by a handful of illiterate, untrained men who, taking their lives in their hands, enter the vast uncultivated wilderness of the upper Amazon and on behalf of distant aviadores [intermediaries] and nominal forest owners, tap the trees and smoke the rubber

³² Woodroffe (1916, p. 48).

that later figures as the second asset in Brazilian commercial and financial prosperity.”³³

Contemporary descriptions such as these could be tediously repeated. What is important is to understand how these descriptions shaped the way researchers later perceived the rubber boom. Some authors indeed followed this exploitative line of argument to construct a dependentist view of the rubber boom in the Brazilian Amazon.³⁴ Their views can be summarized in the following way. Debt-peonage, bondage, semi-serfdom or indenture system was at the heart of rubber production in the Brazilian Amazon since it developed as the commonest outcome of migration to the Amazon. The underlying idea was that in order to move, the laborer indebted himself and, once having arrived at the rubber estate, was exploited. Rubber laborers were generally described as comprised of a mass of dehumanised and defenceless men who were exploited by cruel and greedy capitalists due to the latter’s monopoly over the means of production (rubber fields and tools). In turn, rubber estate owners were also usually taken as having power to enforce the so-called ‘Rules of the Rubber Fields’ which dictated that fugitive laborers would be returned to their original rubber fields. Since the laborer was inside the forest and worked alone, escape was normally a difficult enterprise since there were not many alternatives left. If the conditions prevailing in the forest were not sufficient to entice laborers to work, rubber estate owners could resort to physical punishment, or so the literature argued.

Violence was at least assumed as a latent threat that shaped labor relations during the Brazilian rubber boom. Because land was supposedly free, in a *Domarian* framework,

³³ UK Diplomatic and Consular Reports, n. 4358, *Annual Series, Brazil, Report for the Year 1908 on the Trade of Brazil*, pp. 24-25.

³⁴ Ferreira Reis (1953), Prado and Capelato (1975), Santos (1980) and Bunker (1985).

labor had to be controlled or coerced. This account of the rubber boom was extended to the other links of the rubber chain providing the basis of a Dependence view of rubber production in the Brazilian Amazon. The credit channel was organized in a vertical way, in which every node was exploiting the node immediately beneath it. In this view, rubber production was the outcome of several successive exploitative relations along the rubber chain in which most of the surplus was drained by [foreign] export houses. These foreign export houses, in turn, were merely agents of foreign buyers who were the ultimate winners. Monopoly of capital was the mechanism that provided the rationale for such exploitative system. In this setting, at first glance, the rubber chain could neatly fit into the GCC framework.

The Dependence view and the GCC approach certainly have different rationales, but some parallels can be drawn between their predictions. For the GCC approach, the manufacturers were the winners as they concentrated capital, technology (vulcanization) and skills that sanctioned a lower level of competition and higher profitability. Manufacturers should have thus retained the most profitable activities and outsourced the least profitable ones. In this context, traders would merely be agents of industrial interests as much as suppliers of raw rubber would be tied to traders: surplus was thereby sucked up from supply to the manufacturing core. In turn, for the Dependence literature the ultimate winners were the foreign traders but only because their proponents were applying a partial analysis to the rubber chain. If we apply their rationale for the nodes located in the manufacturing countries, we certainly ended up with the same result from the GCC approach: manufacturers were the most profitable agents of the rubber chain. Even though competition was not central to their analysis (rather the Domarian and Marxist frameworks were), it helped explain the way foreign

traders generated 'monopoly' surpluses from the chain that were drained to the manufacturing economies.

4 Rubber Trade: Stylized Facts

The Brazilian Amazon (periphery) was thus a producer of raw material (crude rubber) to supply rubber manufacturing companies located at core economies, notably, the USA and Britain. In this regard, the GCC and Dependence literatures would suggest the following points:

1. The nodes located in the manufacturing countries were the most profitable ones;
2. There was a situation of dependency and exploitation along the chain in which, from the Brazilian Amazon perspective, foreigners were profiting the most;
3. Competition should increase and Profitability decrease as we move from rubber manufacturing to raw rubber supply.

However, crude rubber production may have been extremely profitable and not as competitive as the GCC approach would let us believe. Thus export houses had to be foreign-owned, controlled from abroad. This is the rationale for the dependence view of the rubber chain: the blame was invariably on the [foreign] export houses which extracted most of the surplus generated in the rubber production. But did nationality of capital really matter? How concentrated were Brazilian Amazon's rubber exports? Were the export houses only agents of foreign buyers? Were they really exploiting the rubber chain? These questions are all interconnected and to provide answers, it is necessary to

look at the export market in Brazil and see its interactions with buyers located abroad. That is the objective of this section and of the following one.

Active foreign participation in the Amazonian trade can probably be dated from the 1850s when two foreign export houses appeared in the city of Belém (and would both later become among the largest in the region): Denis Crouan & Co., French cocoa traders, and Singlehurst, Brocklehurst & Co., a British concern that later would also organize the transatlantic Red Cross Line.³⁵ Over time, foreign capital became predominant in the export sector. Looking at the ranking of rubber exporters from Pará in Figure 2, it is possible to see the foreign presence in the Amazonian rubber trade: Cmok, Prusse & Co. (German), Adelbert H. Alden (USA), Frank da Costa & Co. (Brazilian), The Sears Pará Rubber Co. (USA), Rudolph Zietz (German), Witt & Co. (German), R. Suárez (Bolivian), Mello & Co. (a Brazilian concern that was later reorganized and re-capitalized in London), H. A. Astlett (USA), Kanthack & Co. (British), Comptoir Colonial Français (French), B.A.Antunes (Portuguese/Brazilian). However, as Weinstein (1983) has already claimed, origin of capital is not as important as their relationship with foreign buyers. We will come back to this point later in this section.

Figure 2 also shows the market share in the rubber trade during the fiscal year 1899-1900. From 1870 to 1910, some other export houses fought for a position in the trade but throughout most of the rubber boom, a few export houses dominated the rubber export trade in both Manaus and Belém, the two rubber hubs. For instance, as Figure 2 shows, during the 1899-1900 fiscal year, the top three export houses accounted for 72.9% of all rubber exported from Belém and 53.0% from Manaus. Concentration was in fact even higher since several Manaus export houses were simply agents or branches

³⁵ Weinstein (1983, p. 62) and Fernandes (2009, Ch. 6).

of Belém export houses which moved part of their operations upriver as a consequence of taxation incentives: in 1878 the State of Amazonas (where Manaus lays) decided to divert part of the trade towards its jurisdiction by levying a lower duty for rubber exported directly from Manaus in comparison with rubber channeled through Belém. When in 1885 the tax gap widened to 5 percentage points, most export houses and intermediaries (*aviadores*) were forced to move part of their operations to Manaus in order to profit from the lower tariff.³⁶

Figure 2 - List of Exporters of Rubber from Pará and Manaus (1899-1900)

| From Belém (in kg) | USA | % | Europe | % | Total | % |
|----------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Cmok, Prusse & Co. | 2,081 | 20.7% | 3,367 | 39.1% | 5,448 | 29.2% |
| Adelbert H. Alden | 3,032 | 30.1% | 1,182 | 13.7% | 4,214 | 22.6% |
| Frank da Costa & Co. | 2,302 | 22.9% | 1,651 | 19.2% | 3,953 | 21.2% |
| The Sears Pará Rubber Co. | 1,908 | 19.0% | - | 0.0% | 1,908 | 10.2% |
| Rud. Zeitz | 250 | 2.5% | 895 | 10.4% | 1,145 | 6.1% |
| Denis Crouan & Co. | 107 | 1.1% | 349 | 4.1% | 456 | 2.4% |
| R. Suárez & Co. | - | 0.0% | 334 | 3.9% | 334 | 1.8% |
| Mello & Co. | - | 0.0% | 227 | 2.6% | 227 | 1.2% |
| H. A. Astlett | 187 | 1.9% | 16 | 0.2% | 203 | 1.1% |
| Henry Airlie & Co. | 105 | 1.0% | 71 | 0.8% | 176 | 0.9% |
| Kanthack & Co. | 32 | 0.3% | 101 | 1.2% | 133 | 0.7% |
| Comptoir Colonial Français | - | 0.0% | 132 | 1.5% | 132 | 0.7% |
| B.A.Antunes & Co. | - | 0.0% | 101 | 1.2% | 101 | 0.5% |
| Sundry Exporters | 61 | 0.6% | 184 | 2.1% | 245 | 1.3% |
| Total | 10,065 | 100.0% | 8,610 | 100.0% | 18,676 | 100.0% |
| From Manaus (in kg) | USA | % | Europe | % | Total | % |
| Prusse, Dusendschon & Co. | 773 | 32.1% | 1,090 | 18.8% | 1,863 | 22.7% |
| Witt & Co. | 825 | 34.2% | 506 | 8.7% | 1,331 | 16.2% |
| Marius & Levy | 11 | 0.5% | 1,144 | 19.7% | 1,155 | 14.1% |
| Rud. Zeitz | 89 | 3.7% | 400 | 6.9% | 489 | 6.0% |
| Adelbert Alden | 356 | 14.8% | 49 | 0.8% | 405 | 4.9% |
| Comptoir Colonial Français | 4 | 0.2% | 337 | 5.8% | 341 | 4.2% |
| J.H.Andresen | 22 | 0.9% | 276 | 4.8% | 298 | 3.6% |
| Brocklehurst & Co. | 112 | 4.6% | 138 | 2.4% | 250 | 3.0% |
| Kahn Pollack & Co. | - | 0.0% | 193 | 3.3% | 193 | 2.4% |
| Luiz Schill & Co. | - | 0.0% | 144 | 2.5% | 144 | 1.8% |
| Mello & Co. | 4 | 0.2% | 125 | 2.2% | 129 | 1.6% |
| J.A. de Freitas & Co. | 26 | 1.1% | 77 | 1.3% | 103 | 1.3% |
| Moray and Aguiar | - | 0.0% | 119 | 2.1% | 119 | 1.4% |
| Sundry Exporters | 187 | 7.8% | 255 | 4.4% | 442 | 5.4% |
| Iquitos Merchants | - | 0.0% | 944 | 16.3% | 944 | 11.5% |
| Total | 2,409 | 100.0% | 5,797 | 100.0% | 8,207 | 100.0% |
| Grand Total | 12,474 | | 14,407 | | 26,883 | |

Source: Adapted from *UK Diplomatic and Consular Reports, n. 2580, Annual Series, Brazil, Report for the Year 1900 on the trade of Para and District, p. 23.*

³⁶ Weinstein (1983, pp. 195-196).

Looking at the names of the companies in Figure 2 above, it is clear that some export houses operated in both cities. That was obviously the case of the German exporter, Rudolph Zietz; the French Company, *Comptoir Colonial Français*; the American export house, Adelbert H. Alden; and etc. However, some other branches were more difficult to identify as, for instance, Witt & Co. (Manaus) was related to Frank da Costa & Co. (Belém) and Prusse Dusendschon & Co. (Manaus) to Cmok, Prusse & Co. (Belém). Even though B.A. Antunes & Co. (Portuguese/Brazilian) only appears listed among Belém export houses, they also had business in Manaus and Santarém.³⁷ The rubber export trade was indeed concentrated in the hands of a few firms, indicating a low degree of competition within the rubber trade node of the chain.

It is very difficult though to analyze how competitive the rubber export trade was, as it is hard to follow a given company's track record over time because export houses frequently changed their names. For instance, until 1910, the house of Ernesto Schramm became Pusinelli, Prusse & Co., then Cmok, Schrader & Co., and finally Schrader Gruner & Co. Therefore, even though the names of the leading export houses changed over time and even though several restructuring of these companies occurred³⁸, the control of the export trade remained mostly in the same hands during the rubber boom. Indeed, looking at the ranking of top exporters of rubber from Manaus in 1910 it can be inferred that they were basically the same as in 1899-1900: 1st) Dusendschon, Zarges & Co. (the reminiscent of Prusse, Dusendschon & Co.): 6,536,080 kilograms of rubber exported; 2nd) Adelbert H. Alden: 2,880,490 kilograms and; 3rd) Scholz & Co. (which was the successor of Witt & Co.): 2,715,130 kilograms. In total, these three

³⁷ *Almanack e Indicador Commercial do Pará 1905*, p. 652. Several other examples of companies operating in both cities could be cited, we are limiting the analysis here to the main companies.

³⁸ Note that the majority of main exporters in 1899-1901 were listed in the *Commercial Directory of Latin America 1892*, pp. 41-44.

companies handled 77.2% of the total quantity of rubber exported from Manaus.³⁹ Therefore, Barham and Coomes' claim that "(...) frequent entry and exit of export houses during the rubber boom are consistent with an actively competitive industry"⁴⁰ does not find support in the data. It is true that some firms disappeared, as happened to the *Comptoir Colonial Français*⁴¹, but at the top the companies were usually only changing their names, with the rubber trade remaining basically in the same hands throughout most of the period.

Moreover, Barham and Coomes (1996) further argued that high concentration levels were consistent with competition due to contestability: rubber was freely traded in major ports in the USA, Europe and the Amazon; there were plenty of information available to participants in the market, especially from two trade journals *India Rubber World* (published in New York) and *India Rubber Journal* (published in London); rubber production was very decentralized, being spread over a large territory; etc. In order to further support their argument, they cite Weinstein's (1983) account of the unsuccessful attempts by the Vianni trading house to corner Belém rubber exchange over more than a decade in the 1870s and 1880s.

First, information was definitely available in the major cities but it is unlikely that it reached the far corners of the Amazon basin where production was actually taking

³⁹ Looking at the ranking of exporters in 1883 (in Pará) gives the same impression. Ernesto Schramm & Co. was already the leading exporter. It was possible to find Sears & Co. (3), Denis Crouan & Co. (5), Singlehurst, Brocklehurst & Co. (8), and B.A.Antunes & Co. (16), among others. Some companies, like J.C.G.Vianna & Co. (2) eventually disappeared. This company however had a meteoric rise and fall, following several attempts of Vianna to corner the market, and its position in the ranking may be quite misleading. See Weinstein (1983) for details on this company and *Relatório da Comissão da Praça do Commercio do Pará, Apresentado em Assembléa Geral de 10 de Janeiro de 1884, Anexo n. 72* for the ranking of exporters in 1883.

⁴⁰ Barham and Coomes (1996, pp. 32-35).

⁴¹ Note that Comptoir Colonial Français was a French concern that was created with the intention of verticalize the entire rubber chain through "modern" methods of management. The company was nonetheless a fiasco entering in liquidation still during the boom, possibly because the managers neglected Amazonian institutions. The company was a successor of J.M.Marques who sold out his entire intermediary and exporting business. See Weinstein (1983).

place, especially because the main trade journals were published in English and a few people spoke English in the Amazon between 1870 and 1910. It is unlikely that even the majority of immigrants spoke that language, as most of them were Portuguese.⁴² Secondly, production was decentralized but the decision upon levels of production may not have been as decentralized as claimed by Barham and Coomes (1996): the trade was controlled by a handful of firms and their orders and funding ultimately defined the quantity of rubber to be produced. Thirdly, Barham and Coomes' account of the rubber trade is not accurate. Trade was not exactly free inasmuch as some of the transactions may have been hidden under forward contracts and only part of the trade occurred in spot markets. The free market they refer to is the marginal market: a) the Brazilian spot market was supplied by the rubber produced in excess of the forward contracts set by the export houses; b) in the USA and in Britain, the spot market was fed by the rubber ordered in excess of the forward contracts. They might differ quite substantially, as it is not clear that Brazilian export houses would only make orders following orders coming from abroad: as next section shows, it is not true that Amazonian export houses were simply agents of foreign manufacturers. Actually, according to a representative of the Sears Commercial Company (one of the main rubber importing firms into the USA), manufacturers did not have stakes in export houses placed in Brazil and nor did they in importers placed in their home countries.⁴³ It is thus very likely that these rubber traders speculated quite a lot.

⁴² True, information from these articles eventually found their way into the Amazon via local newspapers. However, the level of illiteracy was very high and probably only the elite could read them. Even if it is believed that information could have spread by 'word-of-mouth', it would take long to reach the most remote parts of the Amazon forest.

⁴³ *New York Times*, June 3rd 1887. However, as times go by, the relationship between the New York Commercial Co. (a pool of rubber traders that encompassed George Alden & Co., Chs. Loewenthal & Co., Reimers & Meyer & Co. and Earle Bros.) and the US Rubber Co. would become blurred due to the presence of Charles Flint behind both firms. See further below in the text for a discussion on that matter.

The degree of competition in the rubber trade seems then to have been very limited indeed. As shown, a handful of companies managed to possess a high market share of the rubber export trade that remained mostly unchanged over time. The nature of their business was simply to buy rubber at the lowest prices possible from the intermediaries, called *aviadores* (even though some export houses were also *aviadores* in their own right), and sell at the highest possible prices to importers located mostly in Britain and in the United States. Supposedly, these export houses acted as agents for rubber buying firms placed in New York and Liverpool, although a few functioned independently (such as J. Marques). For instance, Ernesto Schramm represented Heilbut, Symons & Co. of Liverpool and Reimers & Meyer of New York and Boston whereas La-Roque da Costa & Co. (and Frank da Costa & Co.) represented Joseph Banigan (from Woonsocket Rubber Co. and later president of the United States Rubber Co.) and the Boston Rubber Shoe Co.⁴⁴ Moreover, Sears & Co. was founded in 1882 as a subsidiary of the renowned and ubiquitous W. R. Grace & Co. besides having also initially represented Charles R. Flint & Co., the future architect of mergers in the US rubber manufacturing industry.⁴⁵ His plans were to devise a pool of rubber buyers to increase their bargain position in the rubber trade. Finally, Adelbert H. Alden represented George A. Alden & Co., from Boston, USA.⁴⁶

If rubber exporters in Brazil are assumed to have simply followed orders coming from abroad, origin of capital mattered little and the critical thing is actually the nationality of their main buyers and the relationship they possessed with them.

⁴⁴ *India Rubber World*, March 1902, p. 177. Although partly Brazilian funded, the behavior of that company differed in no significant way from foreign export houses. See Weinstein (1983).

⁴⁵ *New York Times*, Oct. 23rd, 1885. Sears Pará Co. was established in 1882 by R. T. Sears, W. R. Grace, M. P. Grace and C. R. Flint to carry out 'legitimate trade', as opposed to speculation. The firm made purchases of rubber through large advances to rubber receivers, making delivery to rubber manufacturers at market prices.

⁴⁶ *New York Times*, Feb. 19th, 1913.

However, different export houses had different goals, as some acted as agents for rubber manufacturers whereas others were simply brokers. Indeed, according to a Confidential Letter of Hulne Cheeltham to Sir Edward Grey (Petrópolis, 14th March 1909),

“The American Export houses are in more direct relations with the manufacturers, and act rather as agents, while the German and French houses are in the position of brokers, who, by withholding supply and other manipulations, produce artificial prices and otherwise disturb the market.”

If it is possible to generalize, nationality did matter then. However, the distinction was not so much between Brazilian/Portuguese export houses versus Foreign ones but rather between Agent Export Houses and Independent Export Houses. According to Cheeltham (1909) and Weinstein (1983), American export houses tended to be agents of foreign manufacturers whereas other export houses tended to act more independently as brokers. But what was the degree of freedom these export houses actually had? Were they merely agents of rubber importing firms placed in New York, Liverpool and London for which they received a fee for their services? Were they able to speculate? What was the bargain position they had in their interactions with rubber buyers? These are very difficult questions to address in a definitive way but, based on new accounting data (micro) collected by the author from American, British and Brazilian sources, next section tries to shed some light on some of these issues by analyzing a case study: the relationship between J.H. Andresen, a Portuguese/Brazilian rubber export house of Manaus and Schluter & Co. traders of rubber coffee and tea, placed in London but with branches in Liverpool, New York, Hamburg and in several other cities in Europe. If some light can be shed on these issues, it will be possible to draw the power relation

between rubber traders in rubber consuming countries versus rubber traders in rubber producing countries.

5 Case Study: Edmund Schluter & Co. vs. J. H. Andresen & Co.

Edmund Schluter & Co. were general merchants (particularly in coffee, rubber and tea) with trading links in France, Germany, Belgium, Sweden, Italy, Austria, the United States and Brazil. The business was founded in 1858 and was initially based at 35 Mincing Lane (1858-1859). In 1860, they moved to 24 Mark Lane where they remained throughout the rubber boom.⁴⁷ The company collection is comprised of ledgers, account sales, bills receivable, cash books, coffee purchase book, expenditure daybook, invoice book, and journals. However, only the ledgers and the cash books overlap with the rubber boom (1870-1910). The ledgers are divided into three handwritten notebooks: 1873-1886, 1887-1900, and 1901-1910.⁴⁸ They show more detailed information on the company's Balance Sheets than what was ultimately published and submitted to the London Stock Exchange. Whereas the published Balance Sheets only showed consolidated accounts, the handwritten ledgers provide all information related to that account at the end of the year. The cash book only refer to the period 1904-1910 but provides even more detailed information. In every account, it is possible to see all operations credited/debited, even if it is the same operation repeated several times during the year. It further shows the date when these operations took place. Therefore,

⁴⁷ Records of the company were donated to the Guildhall Library in 2005, catalogued and given free access to the public at the Manuscript Section. The surviving records used here refer to Ledgers/Balance Sheets (1873-1910) and Cash Books (1904-1910).

⁴⁸ They show information on Office Furniture, Reserve Account, Share Account, Sundry Charges Account, Insurance Account, Commission Account, Debtors, Cash Account, Interest Account, Exchange Account, Bills Payable, Merchandise Account, Rubber Account, Tea Account, Coffee Account, Account Sales, Loan Account, Creditors, Bills Receivable, Trade Expenses, Dockcharges Account, Freight Account, Postage and Telegrams, Billbrockage, Coupons Account, Shipping Charges, Fire Insurance and Sundry Creditors.

whilst the ledgers provide a snapshot of the financial situation of the company at the end of the year, the cash books provide information for all operations that happened within that same year.⁴⁹

From the company's balance sheets, it is not possible to know where funding came from, but they provided some clues. Dividends were rarely paid (or at least they were not explicitly stated in the balance sheets) and when they did, they usually referred to someone from the Schluter's family or some other German investor⁵⁰. The company seldom borrowed money and when it did, very small amounts were involved. It is possible that members of the Schluter family might have individually borrowed money and invested it in the company but, unfortunately, if these transactions ever existed, it was not possible to trace them. Small loans were sometimes given to individuals and companies but they were never significant either.

A significant amount of money was invested in stock shares of several companies. The composition of the company's portfolio changed substantially over time. In the 1870s, investments in shares were very limited and indicated a tendency to invest in Central Europe, notably in Hungary. In the 1880s, investment in English concerns started to abound in parallel with a shift of investments towards Asia and the River Plate.⁵¹ Argentina would indeed become the biggest recipient of investments from the Company, especially after 1885 when Schluter & Co. started to buy Argentine government bonds. Figure 3 above shows a sample page of Schluter & Co.'s ledger in 1888. On the left hand side, it is possible to see some of the Argentine shares and bonds the company invested in: 'River Plate and General Investment', 'Argentine Drawn

⁴⁹ *Edmund Schluter & Co. Accounts. Ledgers/Balance Sheets (1873-1910) and Cash Book (1904-1910), Manuscript Section at Guildhall Library, catalogue reference: MS 35975-91.*

⁵⁰ The surnames suggest that they were usually of German origin.

⁵¹ *Edmund Schluter & Co. Accounts. Ledgers/Balance Sheets (1873-1886), Manuscript Section at Guildhall Library, catalogue reference: MS 35975.*

Bonds & Coupons' and 'Argentine Ced. Nacional B'. Indeed, from 1888, investments in Argentina became more diversified with the company holding shares in a railway, a water supply & drainage company and an investment trust. Investments elsewhere also became more diversified with an important stake on 2 copper companies besides investments in aluminum production, an ammunition company and banks.⁵²

In the 1890s, investments in Argentina continued to dominate in a context in which the portfolio of the Company substantially increased, comprising investments in several different sectors: tobacco, cotton, petroleum, railway, trading, sugar refining, sugar, banks, waterworks, etc. The portfolio further showed a broader geographical coverage: Portugal, Brazil, Argentina, Uruguay, Cuba, North America, Borneo, England, Germany, etc. After the turn of the century, the portfolio diminished in size and in composition with an increasing participation of government loans: besides Argentine bonds, Japanese and Brazilian bonds also appeared in the portfolio.⁵³ From the records of the company, it is difficult though to assess the profitability of these investments but it is possible to speculate that the reduction of the company's investments in the 1900s were a consequence of losses incurred in the 1890s when several holdings were written off (possibly due to the economic and credit crisis in Argentina).

⁵² *Edmund Schluter & Co. Accounts. Ledgers/Balance Sheets (1888), Manuscript Section at Guildhall Library, catalogue reference: MS 35976.*

⁵³ *Edmund Schluter & Co. Accounts. Ledgers, Manuscript Section at Guildhall Library, catalogue reference: MS 35976.*

Figure 3 - Sample Page of Schluter & Co.'s Ledger, 31st December 1888

| Balance Sheet | | 31 st December 1888 | |
|--|--------|--------------------------------|--------------|
| Brought over | | £9500 | £9026 17 6 |
| Lewis, Seal | | 16500 | |
| National Investment Co. lim | | 4500 | |
| Franc. Ballmann | | 25 8 3 | |
| | | | 30525 8 3 |
| 12 To Share Account | | | |
| Star of Share do. | | | |
| Metal Market. Exchange Co. lim | | | |
| 5 shares £20. in £10. pd. up | 1 | | |
| International M. of Ldn. lim | | | |
| 25 shares £20. in £10. pd. up | 275 | | |
| New Zealand Red Hill Gold | | | |
| 100 shares £1. in pd. up | 1 | | |
| By Mitchell. Co. Mining Co. lim | | | |
| 20 shares sold | 219 | 2 | |
| London Produce Clearing Co. lim | | | |
| 1 Founder share £10 | 10 | | |
| 100 shares £10. in full | 250 | | |
| Consolidated Commercial Co. lim | | | |
| 1200 shares ordinary £1. pd. up | 495 | | |
| \$50000 Argent. Red Sea B. | | | |
| £10000 sold 55 ³ / ₄ | 1110 | 14 | 6 |
| 10000 - 55 ³ / ₄ | 1111 | 4 | 6 |
| 10000 - 55 ³ / ₄ | 1116 | 4 | 6 |
| 20000 - 55 | 2200 | | |
| River Plate. General Investm. Co. lim | | | |
| 75 shares sold | 216 | 17 | |
| London Commercial Sale Co. lim | | | |
| 5 shares £100. in £25 | 94 | 9 | |
| Argentine Ocean Bonds. Co. lim | | | |
| 20 615 | 20 | 1 | 6 |
| Carried forward | £2262 | 4 | 11 49 56 3 9 |
| Brought over | | £2760 15 11 | £2760 15 11 |
| 22766 L. Alfaro Mining Co. lim | 600 | | |
| 22787 - " " " | 200 | | |
| 22994 - F. H. Olsen | 445 | 5 | |
| 22995 - " " " | 18 | 5 | 6 |
| 22785 - Alfaro Mining Co. lim | 100 | | |
| 22788 - " " " | 260 | 9 | 4 |
| 24026 - J. H. Anderson | 166 | 13 | 7 |
| 22920 - J. Frutiger | 180 | | |
| 22792 - E. Gogona | 320 | | |
| 22304 - F. H. Olsen | 500 | | |
| 22305 - " " " | 200 | | |
| 22306 - " " " | 12 | 15 | 00 |
| 22724 - Schenfeld. Co. lim | 144 | 3 | 2 |
| 22209 - W. M. Piper | 600 | | |
| 22917 - J. Frutiger | 50 | | |
| 22912 - " " " | 70 | | |
| 22919 - " " " | 80 | | |
| 22292 - Wedekind Sch. Co. lim | 2000 | | |
| 22293 - " " " | 76 | 6 | 10 |
| 22294 - Carl Muhl. Co. lim | 250 | | |
| 22915 - E. Gogona | 600 | | |
| 22296 - " " " | 550 | | |
| 22924 - J. Frutiger | 120 | | |
| 22297 - E. Gogona | 160 | | |
| 22900 - Ballmann | 425 | 12 | 7 |
| 22901 - " " " | 5000 | | |
| 22902 - F. H. Olsen | 3000 | | |
| 22903 - H. H. O. Eicken | 2052 | 5 | 6 |
| 22908 - Wedekind Sch. Co. lim | 1000 | | |
| 22298 - E. Gogona | 120 | | |
| 22904 - H. H. O. Eicken | 14 | 17 | 9 |
| Carried forward | £22752 | 16 | 7 4 12 5 7 8 |

Source: Edmund Schluter & Co. Accounts. Ledgers/Balance Sheets (1888), Manuscript Section at Guildhall Library, catalogue reference: MS 35976.

From 1870s to 1910, in contrast to its investments, the company became more and more concentrated in the market of a very few products: coffee, rubber, tea and to a much lesser extent cocoa. Even though coffee was the main product traded by the company, this product will not be analyzed here as the interest rests solely on the rubber trade (more specifically on the Brazilian rubber trade). Schluter & Co. distributed rubber to the European Continent and to the USA (sometimes rubber was also shipped directly to the final destination) and several rubber manufacturers figured among the clients of the company: Dunlop Rubber Co., Northern Rubber Co., Rubber Co. of Scotland, Russian-American India-Rubber Co., Spencer & Co., Clyde Rubber Co., Praeger Gummi W. Fabr., Unity Rubber Co. Ltd., among others.⁵⁴ It is then possible to infer that Schluter & Co. was an independent rubber trader, as no significant long-term relationship could be traced between Schluter and any of the above listed rubber manufacturers.

Among the Brazilian suppliers of rubber to Schluter and Co. some were identified: Marius & Levy, Schölz & Co, J. H. Andresen, S. Brocklehurst & Co., Mesquita & Co., Pará/Marajó Rubber Estates Co. and Araujo Rozas & Co. As mentioned elsewhere before, S. Brocklehurst & Co. organised one of the main shipping lines (Red Cross Line) connecting Liverpool to the Brazilian Amazon besides being an exporter in its own right. Therefore, due to its two different operations, from the records of the company it is difficult to separate what was purely rubber trade and what was

⁵⁴ *Edmund Schluter & Co. Accounts. Ledgers, Manuscript Section at Guildhall Library, catalogue reference: MS 35975-7.*

shipping⁵⁵. Since Marius and Levy changed their name (they were ultimately bought out by B. Levy & Co.) and their operations virtually vanished after the turn of the century and most of the other companies sold rubber to Schluter & Co. only sporadically, I decided to limit the analysis to the relationship between J. H. Andresen & Co. and Schluter & Co.

J. H. Andresen & Co. (or S/A Armazéns Andresen) was a Portuguese/Brazilian trade house placed in Manaus that handled several Amazonian commodities amongst which, of course, crude rubber. According to Figure 2 further above, Andresen ranked in 7th among the top exporters of rubber from Manaus, a position established by its prominent role as a rubber intermediary, especially along the river Solimões.⁵⁶ Andresen operations were usually channeled via Oporto that was connected to Manaus through its own transatlantic vessels.⁵⁷ Since there is no evidence that Schluter & Co. ever transacted any other commodity with J.H.Andresen & Co., it is likely that most of the transactions between this company and Andresen referred to rubber despite the fact that Andresen was a big player in the market of Brazil nuts. Conversely, Schluter & Co. was only buying a portion of Andresen's trade and thus the relationship was not a monopsony. Therefore, Andresen seems to have been an independent trader as well.

⁵⁵ It is true that Schluter & Co. specified a separate account for shipping charges but it is not at all clear if the outstanding bills and debts of the S. Brocklehurst & Co. would refer to the rubber trade or to shipping charges. Anyway, only a few transactions with S. Brocklehurst & Co. were identified which would not be enough to make a full picture of the rubber trade as intended here.

⁵⁶ Plane (1903, p. 45).

⁵⁷ LeCointe (1922, p. 249).

Figure 4: Trade Relationship Between Schluter & Co. and J.H.Andresen & Co.

| | Estimated Total of Rubber Imported by Schluter (A) | Estimated Total Rubber Imported by Schluter from Andresen (B) | Total Rubber Exported by Andresen (C) | % of Andresen Exports on Total Purchases from Schluter (B)/(A) | % of Schluter Purchases on Total Exports from Andresen (C)/(B) |
|-------------|---|--|--|---|---|
| 1907 | 427,350 | 226,844 | 437,948 | 53.1% | 51.8% |
| 1909 | 2,122,416 | 354,940 | 484,096 | 16.7% | 73.3% |
| 1910 | 3,040,274 | 123,545 | 438,825 | 4.1% | 28.2% |

Source: (A) = Schluter & Co. Cash Book (1904-1910), Manuscript Section at Guildhall Library, catalogue reference: MS 35976-8; (B) = I divided total value of transactions between Schluter and Andresen by the average price of rubber from British Trade Statistics found in Fernandes (2009); (C) = for 1907, data came from *The State of Amazonas and its Rubber Forests: with the compliments of the Chamber of Commerce of the State of Amazonas at Manaus (1908)*, p. 13. For 1909 and 1910, data was compiled from Loureiro (1989), pp.210-219.

Looking at the financial and commercial transactions between Schluter & Co. and J.H. Andresen & Co., it is possible to identify three major periods. First, during the 1890s, there are no surviving cash books of Schluter & Co. and thus the analysis was carried out only from ledgers (balance sheets). The problem with balance sheets is that, as emphasized earlier, they only show a snapshot of financial and commercial transactions of Schluter & Co. at the end of the year and, by consequence, all transactions that were initiated and completed within the calendar year may not have been registered in any way there (only their results were). Before the 1890s, J.H.Andresen & Co. was rarely recorded, making any inferences about this period very uncertain. In the 1890s, J.H.Andresen & Co. name consistently appeared in the balance sheets in form of Schluter's creditor or debtor or whenever there were any outstanding

bills to be paid by Schluter.⁵⁸ In this period, Andresen was usually a net creditor of the company as it can be seen in the Figure 4 below.

Secondly, in the first five years of the twentieth century (1900-1904), Andresen's net position turned into a huge debt with Schluter & Co. that was nonetheless offset by outstanding bills. Therefore, the data does not suggest in any way that J.H.Andresen & Co. ever became heavily indebted with Schluter & Co. Therefore, Andresen's net debtor position in these years only reflected the nature of the trade: rubber was sent, say, from Manaus to Liverpool and invoiced against Schluter & Co. in form of short term payable bills. If no other transactions were made, Andresen's debtor position would be cleared out after just a few months.⁵⁹ We can thus conclude that there was no relation of financial dependence between these two firms.

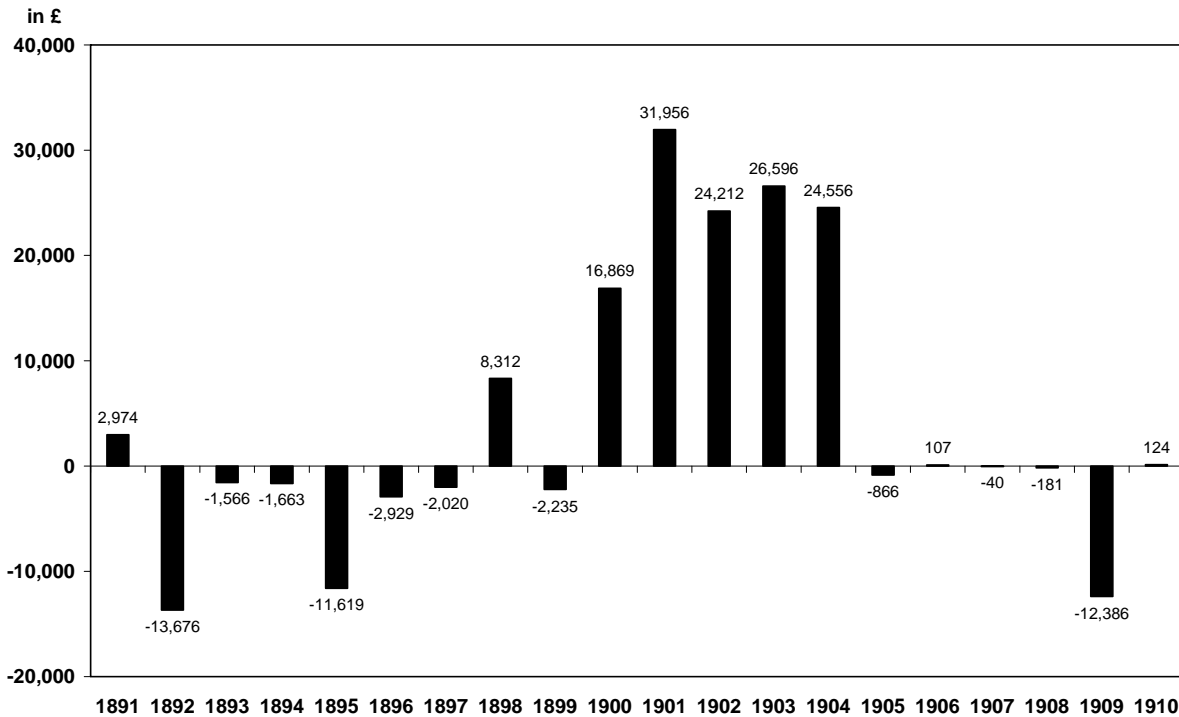
In 1905 there is evidence of the only interest payment earned from J.H.Andresen amounting to £26 11s. Since there was no outstanding loan to Andresen in the Balance Sheet in 1905, I believe that the interest payment referred to a short term loan that was probably paid back during the same fiscal year. However, from that year onward, Schluter & Co.'s cash books suggest a change in the nature of the trade with Andresen: Andresen's net debtor position was henceforth always close to zero, payable bills vanished from the balance sheets and the financial transactions between these two firms decreased drastically, especially after 1906 (with the exception of the year 1909).⁶⁰

⁵⁸ *Schluter & Co. Ledgers/Balance Sheets (1887-1900), Manuscript Section at Guildhall Library, catalogue reference: MS 35976.*

⁵⁹ *Schluter & Co. Ledgers/Balance Sheets (1900-1904), Manuscript Section at Guildhall Library, catalogue reference: MS 35977.*

⁶⁰ *Schluter & Co. Cash Book (1904-1910), Manuscript Section at Guildhall Library, catalogue reference: MS 35978.*

**Figure 5 – J.H. Andresen’s net debtor position against Schluter & Co., 1891-1910
(in current £)**



Source: Schluter & Co. Ledgers/Balance Sheets (1891-1910) and Cash Book (1904-1910), Manuscript Section at Guildhall Library, catalogue reference: MS 35976-8. Note: positive figures refer to net debt of J.H.Andresen & Co. with Schluter & Co., whereas negative figures indicate that Schluter was in net debt with J.H.Andresen.

Why did Schluter & Co. substantially changed the nature of the trade with Andresen after 1906? Did any other Amazonian firm take over Andresen’s position? Schluter & Co.’s rubber account indicate that the Company continued to expand its rubber trade so that some other firm took indeed Andresen’s position as the main supplier of rubber to Schluter. According to Figure 4, in 1907, Andresen accounted for approximately 53% of all rubber imported by Schluter whereas in 1909, its share had decreased to 17% and in 1910 to only 4%. However, no other Amazonian firm replaced Andresen as the trade was in fact shifted elsewhere, especially to Asia where rubber plantations were starting to invade the market. Therefore it seems that Schluter & Co.

made an early shift towards Asia⁶¹, consistently diminishing the relative volume traded with J.H.Andresen & Co. In turn, the latter firm did not diminish its overseas trade, finding other buyers for its exports. Indeed, in 1910, Schluter & Co. bought only 28% of all rubber exported by J.H.Andresen & Co.

This change in strategy can also be inferred from Schluter's investment portfolio. Despite the importance of the rubber trade for the company, until 1907 there was no direct investment in any rubber producing venture. As can be seen from Figure 6 below, from that year onwards, the company started to invest in several plantation companies usually located in South East Asia despite the large sum invested in guayule production in 1910.⁶² Guayule Rubber Co. Ltd. was a company operating in Mexico from wild guayule rubber sources whose total authorized capital amounted to £400,000 (which was fully paid-up).⁶³ Therefore, despite the huge investment in this company, Schluter & Co. had just over 1% of the venture. Additionally, there is no evidence that the company ever invested in any of its partners in the Brazilian rubber trade even though it is possible that a certain member of the Schluter family might have personally invested in, say, Andresen.

⁶¹ If this was a conscious decision it is impossible to know. It might very well be the case that J.H.Andresen & Co. decided to change its trade partner in Europe and not the opposite.

⁶² *Schluter & Co. Ledger/Balance Sheets (1901-1910)*, Manuscript Section at Guildhall Library, catalogue reference: MS 35977.

⁶³ *Rubber Producing Companies, Capitalized in Sterling*, March 1911.

**Figure 6 – Rubber Shares in Schluter & Co.’s Portfolio, 1873-1910
(in current £)**

| Year | N. of Shares | Name of the Company | £ | s. | d. |
|------|--------------|---|-------|----|----|
| 1907 | 100 | Bantong Selangor Rubber Estates | 50 | - | - |
| 1908 | 100 | Bantong Selangor Rubber Estates | 87 | 10 | - |
| | 250 | Ledbury Rubber Estates | 93 | 15 | - |
| 1909 | 1,000 | Anglo Malay Rubber Co. Ltd | 800 | - | - |
| | 500 | Chersoncor Estates Ltd. | 125 | - | - |
| | 1,645 | Batong Malaka Rubber Estates Ltd. | 2 | 3 | 2 |
| 1910 | 1,000 | Guayule Rubber Co. Ltd. | 1,000 | - | - |
| | 3,000 | Guayule Rubber Co. Ltd. (ordinary shares) | 1,735 | - | - |
| | 3,080 | Guayule Rubber Co. Ltd. (ordinary shares) | 2,000 | - | - |
| | 200 | Rubber Plantation Investment Trust | 333 | 14 | - |
| | 200 | Anglo Malay Rubber Co. Ltd | 226 | 9 | - |
| | 500 | Highlands Lowlands Para Rubber Co. | 1,326 | 2 | - |

Source: Schluter & Co. Ledger/Balance Sheets (1907-1910), Manuscript Section at Guildhall Library, catalogue reference: MS 35977.

What does the analysis of Schluter & Co. accounts tell us? First, the relationship between Schluter and Andresen resembles a usual trade relationship in which both companies benefited. The accounts indeed suggest that no firm possessed any specific market power over another: J.H.Andresen had other clients and Schluter & Co. had other suppliers. Market shares changed sharply (see Figure 4) indicating that their relationship was not given by static long-term contracts that stipulated fixed amounts or shares to be transacted between these two companies. It is true that before 1906, J.H.Andresen was a major supplier of rubber to Schluter & Co., but this relationship changed over time following different market conditions. The advent of plantations (and maybe the 1906 crisis following the unsuccessful valorization attempt by the Vienna trading house) caused Schluter’s rubber trade to divert elsewhere but J.H.Andresen still found buyers for its exports. Secondly, the trade between Schluter

and Andresen was not based on commissions: Schluter seemed to have bought the rubber from Andresen and sold it either directly to rubber manufacturers or to its own agents placed in several cities in Europe and in the USA. Thirdly, even though the relationship between Schluter and Andresen seemed to have followed market conditions, we should expect that the former firm might have enjoyed a privileged position due to its knowledge of supply of and demand for rubber [at least until 1906]. However, looking at its own accounts, Schluter & Co. generated very small margins in the rubber trade⁶⁴, which would indicate that if any of these two firms was benefiting at the expense of the other, that firm would be Andresen and not Schluter. Without Andresen's accounts it is impossible though to make any definitive conclusion about which link of the rubber chain profited the most in the rubber trade and to define, incontestably, the relations of power between rubber traders placed in rubber consuming and rubber producing countries. After 1906, with further diversification of Schluter & Co. towards plantation rubber, it is likely that the bargain position changed in Schluter's favor. Indeed, from 1907 onwards, Schluter's profits with rubber increased sharply: the company accrued £168 in 1907 and £2,235 in 1910. However, J.H. Andresen & Co. was still faring well in rubber markets due to the continuing scarcity of this raw material that prevailed until 1910.

⁶⁴ From the records of the company, however, it is difficult to know exactly how the profit and loss on the rubber trade was calculated. The results suggest the perception of the company towards the rubber trade though.

Accounts of De Mello & Co.⁶⁵, a similar *aviador-cum-exporter*⁶⁶, suggest that this firm was profiting quite a lot from the rubber trade. The balance sheet at June 30th 1907 shows that the firm earned £60,138 in profits (after dividends). According to the report of directors, the company received 521 tons of rubber that were sold for £251,561 2s. 10d., or on average by 9s. 8d. per kg. The average price of rubber imported from Brazil into the UK (which includes freight rate and docking expenses) was 8s. 11d. (1906-1907) much lower than the price earned by De Mello & Co. That can either simply indicate that this company was selling higher quality rubber or that it possessed some market power, especially because the company was not exporting all its production as part of its rubber was sold to other exporters in Manaus: therefore, the average price earned by the company was higher than the average price paid by buyers in the UK even though the company was selling a significant part of its production in the domestic market. For the sake of comparison, in 1907, Schluter & Co. handled 427 tons of rubber and earned £169 in profits compared to staggering £60,138 in profits earned by De Mello in that same year (out of sales amounting to 521 tons of rubber).⁶⁷ So, I do not think we should expect anything too dissimilar for J.H.Andresen. We may safely infer that this company was also very good positioned in the rubber market, being able to exploit its market power to a considerable extent.

⁶⁵ Guildhall Library, *Tea, Coffee & Rubber – 1906-1907, commercial report, catalogue number 978*.

⁶⁶ In 1907-8, Andresen ranked 4th in the list of rubber intermediaries at Manaus, with a total of 820 tons of rubber handled. We can thus say that Andresen was much bigger than De Mello and, all else equal, we could thus expect higher profits for Andresen than those reported for De Mello. See *The State of Amazonas and its Rubber Forests: with the compliments of the Chamber of Commerce of the State of Amazonas at Manaus, 1908*.

⁶⁷ Obviously, the total

Generalizations from this case study are still hard to draw as it is difficult to know how typical this relationship was. There is no other case study to compare and the results here should be regarded then as a first step towards a full understanding of the nature and conditions of the transatlantic rubber trade. Yet, until 1910, J.H.Andresen might have enjoyed a quite substantial room for maneuver in the rubber market, contradicting, at first glance, the fact that export houses in Brazil were generally solely operating on behalf of buyers placed in Europe and in the USA.

It is still necessary to unveil more data from Agent export houses and analyze their relationship with foreign buyers to see if their commercial relationship was really so dissimilar from the one depicted here. However, as most of these agent export houses represented a foreign trader rather than a manufacturer, it is possible that the only difference referred merely to the place where the speculation occurred. The commercial activities discussed here would be replicated in the consumer's markets (mostly in New York, Liverpool, London, Havre or Hamburg) between the foreign rubber trader and the manufacturer. In this regard, it is instructive to see the relationship between the New York Commercial Co. and the US Rubber Co. The former firm was a pool of US rubber traders organized by Charles Flint in order to control the rubber market and force prices down. The US Rubber Co., in turn, was a result of several mergers of rubber manufacturing companies (also architected by Flint) that aimed at increasing bargaining power in the rubber markets. Looking at the purchases of rubber for the year of 1893, we can see that the New York Commercial Co. was buying rubber on account of the US Rubber Co. in exchange for a commission. Despite

the different commercial arrangement compared to our case study, the relationship between these two companies was not fundamentally different from the one between Schluter and Andresen. Here, instead of bargaining over prices, the US Rubber Co. and the NY Commercial Co. were bargaining over commission rates.⁶⁸ Anyway, the NY Commercial Co. did not seem to have strictly followed policies set by US Rubber Co. as attested by the several attempts of this firm to artificially increase rubber prices in the market which would logically be against US Rubber Co.'s interests.⁶⁹ Until around the turn of the century, the NY Commercial Co. (through any of its component traders) had no direct branch in Brazil, using instead local exporters (some of them Brazilian) to supply its needs. For instance, the German export house of Pusinelli, Prusse & Co. (antecessors of Cmok, Prusse & Co.) was the main agent of Reimers & Meyer & Co. (which was part of the NY Commercial Co.). However, the German export house was not strictly tied only with Reimers & Meyer & Co. as this firm also worked as agent for Heilbut, Symons & Co. of Liverpool. Therefore, the exporter placed in Brazil still had lots of room for maneuver.

In sum, according to the GCC approach we should expect that core economies would retain the most profitable nodes of the chain. However, our sketchy data

⁶⁸ See for instance the Letter from John C. Marin (Assistant Auditor of the US Rubber Co.) to Henry L. Hotchkiss (Chairman of the Committee Accounts & Audit, US Rubber Co.) dated January 24th, 1896. See *US Rubber Company Collection, Baker Library, Harvard Business School*.

⁶⁹ See *New York Times*: March 10th 1886 (*Rubber Traders Combining*), June 3rd 1887 (*The Great Rubber Deal: Trying to Harmonize the Conflicting Interests*), June 5th 1887 (*Rubber Trade Schemes*), June 17th 1887 (*Trying to Corner Rubber*), November 6th 1887 (*How Rubber Stretches: the Boom in the Market and its Consequences*), November 6th 1887 (*A Short Lived Boom: Prices for Crude Rubber Falling Again - What Mr. Sears Says*), December 14th 1889 (*The Brazilian Monopoly: Foreign Merchants Vigorously Protesting Against Concession*), January 15th 1888 (*A Bigger Rubber Trust: An Association Avowedly to Make Prices and Quality Better*), September 29th 1889 (*A Rubber Trust Assured*).

suggests that export houses placed in Brazil were profiting substantially, much more than foreign buyers. These export houses had room for maneuver to speculate in the market leaving foreign buyers and manufacturers at their mercy. Their market power originated from their local connections with intermediaries (some of them were actually intermediaries themselves) and/or through simple advancement of credit. There is no evidence that rubber exporters placed in Brazil were not exploiting their market power or that they were facing strong monopsony power. Moreover, the results here seem to contradict the dependentist theory too, insofar as many of these export houses (and, especially intermediaries) were partly or wholly Brazilian owned. The essence of our story here is that the behavior of export houses placed in Brazil was not defined by their nationality but rather by their bargain position which depended on market conditions and on the actions of other players.

6 Final Remarks

The Global Commodity Chain (GCC) approach addresses questions about what products countries do (and should) import and export in relation to complex institutions. Instead of deriving trade patterns from optimizing behavior of rational economic agents, for GCC, trade is taken as embedded in, and to a considerable extent as determined by specific (but changing) institutional structures. The Global Commodity Chain approach is a development of the world-system theory at the micro level and, as such, it is an extension of the dependency theory. Instead of the

Prebischian notion of dependency being created from increasingly unequal terms of trade, in the world-system theory, the global market is an uneven playing field, underscored by the existing hierarchy between core and periphery areas that translates into a relation of power between nodes of the commodity chain located in these two areas.

The proponents of the commodity chain approach, however, reject the center-periphery assumption of GCC. By doing so, they typically reject the world-system theory altogether replacing it with more neoclassical economic reasoning and modern standard trade theory models. A construction of a more detailed and integrated historical context becomes thus a requirement as it ceases to be embedded in and becomes commodity-specific. In this context, the evolution of the commodity chain over time now interacts with this more general and specific historical background. In the commodity chain approach, the macro dimension is usually explored but very little has been done to incorporate the micro dimension of the chain. Business archives provide a rich source to complement and verify assertions about commodity chain made at the macro level. But, what can we learn from the business history of the rubber chain?

First, like in Frank and Musacchio (2006), the paper shows that GCC does not provide a useful framework to the analysis of certain commodity chains, in particular, the rubber chain.⁷⁰ Secondly, despite Barham and Coomes' (1996) claims and now, to some extent, contrary to Frank and Musacchio (2006), the export market was not at all

⁷⁰ Frank and Musacchio (2006).

free and there was substantial room for collusion among a few firms.⁷¹ Since most of these firms were foreign-owned, at first glance, the dependentist view seems to have been right: foreign-owned export houses were extracting most of the surplus from the Brazilian rubber chain. However, there are problems with this interpretation. First, there is no evidence that export houses colluded. Secondly, foreign export houses were sometimes capitalized by Brazilian/Portuguese capital as well. The distinction of nationality of capital was not so black and white and what really mattered was the relationship between export houses placed in Brazil and their foreign buyer(s). If all export houses were solely agents of a single (or a very few) foreign buyer, most of the surplus was probably drained to agents placed abroad. If these firms were able to speculate, it is expected that their profits were much higher and appropriated [at least partly] internally. As argued here, export houses were not mere agents of foreign rubber buyers. Moreover, they probably profited the most in the rubber chain, much more than their foreign buyers anyway.

Indeed, the analysis of the relationship between one Brazilian/Portuguese rubber exporter and one British rubber buyer indicates that the relationship between them resembled a usual trade relationship in which both companies benefited. However, if any company exercised market power, it was probably the Brazilian/Portuguese export house. Generalizations from this case study are hard to draw as it is difficult to know how typical this relationship was but the Brazilian/Portuguese export house might have enjoyed some market power at the

⁷¹ Barham and Coomes (1996) and Frank and Musacchio (2006).

British buyer's expense, contradicting, at first glance, the fact that export houses in Brazil were generally solely operating on behalf of buyers placed in Europe and in the USA. There is no evidence that rubber exporters placed in Brazil were prevented from exploiting their market power or that they were facing monopsony power. Rubber manufacturers were to some extent in the hands of rubber traders, be they Brazilian, Portuguese, Germans, French or English. This result certainly brings the rubber chain away from the ideal Wallersteinian chain type. More business history of the rubber chain (and of other commodity chains) is needed to verify or falsify some of the assumptions made at the macro level of analysis. As shown here, the micro analysis shows additional information that helps understand the rubber chain.

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