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Accounting for triangular trade

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This study complements our investigations into the use of accounting manuals as representations of commercial activities. Our previous work focused on the *Guide du Commerce* of Gagnat de l'Aulnais and the slave trade in eighteenth-century France. We broaden our scope with cross-sectional archival evidence to examine the extent to which the methods and operations in these sources point to a collective knowledge shared amongst traders and those engaged to conduct the slave trade on their behalf. Of particular interest is the prevalence of standardised methods, documents and terms of trade, all of which point, in a similar way to that of the *Guide du Commerce*, to the slave trade's technical contributions to capitalism (Pétre-Grenouilleau 2004, 352). The archival evidence illustrates the rationalisation and institutionalisation of an economic system, albeit a particular outlier, and its progressive sophistication in terms of operating processes, creating thereby the illusion of a rational business model.

Keywords: accounting manuals; institutional networks; knowledge transmission; triangular trade; France

Introduction

Our earlier research into the history of, and accounting for, the slave trade has examined accounting manuals as representations of commercial activities. This research has prompted us to expand the scope of our studies to incorporate current themes within the history of slavery, as well as prevalent themes in maritime history. The present study questions to what extent the accounting for triangular trade exemplified a shared collective knowledge amongst *armateurs*, ship captains, investors, African traders and colonial agents. The accounting and trading system, as we first encountered it in the *Guide du Commerce*, was both rational and standardised. We began to question whether or not this representation was an anomaly, the author's own invention. Our earlier research provided initial evidence that the systems and practices outlined in this work conformed to eighteenth-century practices. These findings provided a means to link our research to the techno-rationality arguments provided by scholars of the history of slavery and maritime trade more generally.

To further our knowledge, we have undertaken archival research to develop a cross-sectional analysis of ship owners, vessels, voyages and captains from a number of trading cities of eighteenth-century France. From these 21 cases, we attempt to demonstrate that the accounting for triangular trade exhibited the same rationalising tendencies as other forms of capitalism.

The French slave trade has been described as a lottery that operated within the broader sector of maritime and international trade and colonialism. The trade offered the possibility of high

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potential returns but also exhibited high risk. Yet, its attraction lay in the ability to take advantage of these high returns to offset lower returns from trade in other areas.¹ To some degree, high barriers to entry were evident, as the cost to mount such a venture was considerable and the venture's success depended partially on luck but also on the skill of the vessel captain and crew. Risks also were related to the length of the voyage, the unpredictability of the weather, health concerns and international relations. Captive and crew mortality varied greatly. The question of risk sharing is an important one in relation to the returns generated. We focus on the three main parties concerned: the *armateur*, who undertook and raised the capital for the venture, the ship's captain, and the colonial agent, who acted on commission to sell the captives to colonists as slave labour.

The *armateur* had his personal capital at risk in these ventures as part of his overall business operations. Given the financial commitment, these voyages, including the vessel, were subdivided into parts shared across a network of diversified investors. While risk sharing reduced exposure in an individual voyage, the *armateur* confronted the reality of time lags and market uncertainty with respect to the sale of colonial goods. The *armateur* also earned commissions for transactions on behalf of other associates, including insurance arrangements. Risk diversification was prevalent within the slave-trade market, across the maritime trade sector more generally and in other business interests. As noted by Gaston-Martin (1993) and Meyer (1999), *négociants* did not specialise in the slave-trade but included this sector in their broader business and investment portfolio.

The ship's captain stood to benefit substantially from a slave-trade venture. Not only did the captain receive wages well in excess of those earned in less risky shipping operations, he frequently earned additional sums from bonuses and incentives provided to align further his interests with those of associates.² He sometimes had the dual role of being an agent on behalf of the *armateur* and the other associates, as well as being an associate in the venture which he commanded. The returns from this trade provided the means to move up the social ladder within the trading community.

The colonial agent was responsible for the sales of the captives in the colonies. The *armateur* generally provided the name of the colonial agent to whom the captain was referred and in many cases an alternate should the trade location change. Colonial agents worked on a commission basis, and their ability to attract trade depended to a great extent on the reputational effects of their business conduct and their frequent links to the French trading community through family ties. They became known for their business skill, especially in their ability to attract colonists who would be firm in their financial commitments, along with their understanding of the market situation for both captives and the colonial merchandise for which they were exchanged.

We proceed as follows. The next section presents an overview of the trade operations, including differences in the French *versus* English system, after which we outline our sample and sources. The following two sections examine the instructions to vessel captains and the control and incentive systems utilised. We conclude the study with summary comments and suggestions for further research.

Triangular trade

The triangular pattern of the slave trade was reflected in the accounting process. First, the vessel was outfitted to leave France. This process or *l'armement* included all costs prior to departure. The pre-departure costs (*la mise-hors*) were divided amongst the associates according to their respective share. After leaving the French port, the vessel travelled to trading locations on the African Coast. The vessel captain purchased captives at various locations in Africa (Coast of

Guinea, Coast of Angola, Mozambique) in exchange for the merchandise sent from France. Once the captives were acquired, the vessel made its 'middle passage' across the Atlantic to the colonies. Upon arrival in the colonies, the captain addressed himself to the designated colonial agent through whom the sale of captives took place. The terms of trade were cash, bills and letters of exchange, and colonial commodities (primarily sugar, tobacco and indigo). The vessel then returned to France with goods and funds, while the captain frequently remained in the colonies to manage this part of the venture. He also was required to provide various reports to the *armateur* in France, along with similar reports provided by the colonial agent. The laying up or *le désarmement* of the vessel took place in France, and included payment of outstanding wages, duties and other fees upon arrival to dock and unload the vessel. The series of shipments of colonial goods continued as the colonists repaid their outstanding debt through these shipments. The sale of these goods resulted in a series of *retours* or net proceeds that were divided amongst the associates according to their respective shares.

Differences between the French and the English trade

As noted elsewhere (see Daudin 2004; McWatters and Lemarchand 2006; McWatters 2008), the organisation of the slave trade in France differed significantly from the English case, which has been the subject of more extensive research. The reasons for these variations included the following:

- French vessels were relatively inefficient compared to those from England and other countries due to state requirements resulting in higher staffing ratios (crew to tonnage).
- The French government tended to provide more support to colonists compared to counterparts in other countries, especially in terms of debt repayments.
- The credit and banking system in France was less developed relative to those in other parts of Europe, including the financing and liquidity of state debt.
- The French government provided specific incentives to promote the trade (such as a bonus for slaves introduced, the elimination of duties on colonial goods) or to receive funds (through the imposition of duty payments on each captive introduced), in the latter case gaining financially and directly from the trade.
- The commissions received by colonial agents were much less in the French case compared to those in England (in the English case, the colonial agent bore the risk of non-payment by colonists, whereas in France it was the *armateur*); the commissions earned in each context reflected these differences in risk – English agents often received 10% but French counterparts earned only 1–2%. In the French trade, colonists paid for slaves with hard currency or more usually with the exchange of colonial merchandise sent to France for sale by the *armateur* on the open market. The colonial agent was not responsible for debt collection. In the English case, the slave market and the goods market were not linked in this way, with the commission agent bearing responsibility for debt collection. Thus, the commissions earned in each context reflected these risk differences (Darity 1985; Daudin 2004; Richardson 1976).

The captain had a much greater and multi-faceted role in the French context, especially with respect to sales, the selection of colonial merchandise, sales terms, and arrangements with the colonial agent. The captain was selected for his versatility, often staying in the colonies to collect debts and oversee the affairs of the vessel. For example, in the declaration to the admiralty upon the return of *La Jeanette* to Nantes in 1741, the second captain Adrien Chapy noted that he had

taken command of the ship in order that the captain could remain in Saint-Domingue to manage the affairs of the vessel (*'gérer les affaires du navire'*) on behalf of the *armateur* Darrèche (A.D. L.-A. B4789). In the captain's instructions of *La Bonne Société*, Article 17 outlined that the captain would stay in Port au Prince if the colonial agent had died and until such time as new instructions were received. As well, the Article specified the captain's expenses during this stay that were to be charged on account to the vessel (Bibliothèque Municipale de La Rochelle, hereafter, B.M. La R., Ms 2290).

Theoretical underpinnings

Before proceeding with our analysis, we situate the slave trade and its organisation within the broader context of social and trading networks. These networks also provide a practical demonstration of communities of practice. We then adopt insights from institutional economics and agency theory to illustrate how these networks became institutionalised and formalised in practice. As with communities of practice, institutional mechanisms incorporated diffusion mechanisms with respect to organisational learning and processes.

Social and trading networks

Business and commercial interests in France were reinforced by links through family, religious and social ties. Those involved in trade or investment had established strong networks throughout the country and internationally. These networks had a commercial as well as a social dimension. An important means to foster strong business links was via their parallelism in family relations. In the case of the French colonies in the Caribbean, many families had interests there, both in plantations and as commercial agents. Some of these holdings resulted from investments made to facilitate control and oversight, but many also resulted from assets received as partial debt repayment by colonists. Trading families sent family members to manage and oversee operations in other European cities and overseas. Younger family members went abroad, to other parts of Europe to acquire business and language skills, or to the colonies as a means to provide career opportunities to offspring. Many of the latter would send their own children to France and other parts of Europe to be educated or to enter the commercial trade.

Networks offered competitive intelligence, financial and investment support and opportunities, and a means to lever one's own business skill and capital. The business correspondence of the *armateur* Deguer underscores the value of networks. For example, in 1772, concerns about the credit worthiness of the Labatut interests in Saint-Domingue led to court action. It also created a ripple effect through the entire business network, as other associates and *négociants* were made aware of this situation and concerns were expressed about business links with this family in Bordeaux (A.D. L.-A. 8J7). Letters to business partners, potential investors and family members demonstrate the constant need to maintain strong relations with those whose support and credit would be important. These letters also confirm the degree of familiarity within these networks. Correspondence dealt with business matters but also spoke to other aspects of their relationships, be it family ties, health matters, travel, etc. Recommendations for investments and personnel, along with self-promotion, were frequent topics.

In maritime trade, these networks provided additional means to recruit labour, especially ship captains. The latter often remained with the same *armateur* for many voyages and a number of years. They also were 'recruited' by others, even in different cities, having established their reputation and being recommended by *armateurs* and investors. They frequently were members

of the *armateur's* family, offering a means of control for the *armateur* and on-the-job training for the family member. Others rose through the ranks, both in terms of their trade and, importantly, in terms of family circles and social linkages. Captains could do well financially through their own trading, leading to entrées into the commercial and social milieu.

The armateur milieu

Armateurs were a close network linked through their business interests, family, social and cultural context. Networks facilitated repeated contracting and fostered long-term relationships. The reputation of the individual members was the key to co-operation, decreasing both contracting costs and reducing opportunism. Membership in this context resulted from the trust and reputation as a result of prior activities and exchanges. These exchange mechanisms were long-standing in nature and reinforced by their sharing of cultural, social and family ties.³ As noted by Pétré-Grenouilleau (1998, 113): 'Trade, is therefore, above all, a set of gestures, behaviours, ways of thinking, in brief, the expression of an original culture ... Even within families, everything therefore worked for the maintenance of the professional, mercantile and bourgeois values of the milieu'.

Free Masonry (*la franc-maçonnerie*)

The role of membership in the Free Masons, while not necessarily a dominant feature of the social milieu, was an important integrating mechanism. Nevertheless, during the eighteenth century prior to the French Revolution, membership of the Free Masons and the number of lodges were increasing. As noted by Masseaut (2000), this aspect of commercial society was expressed in any number of ways, including the naming of vessels which were part of commercial fleets. Vessel names, such as *Les Coeurs Unis* and *L'Harmonie*, were also names of Free Mason lodges in Nantes. Other names symbolised Free Masonry values, including *La Vertu*, *La Parfaite*, *La Paix* and *L'Union*. Free Masonry linked traders across various commercial centres, with lodges being established in the major port cities. It also brought together commercial interests across Europe, especially as they reinforced other linkages such as those which linked Jacobite sympathisers with their counterparts in other parts of Europe. Religious ties were not limited to Catholics, but similarly Protestants, who were well established in various cities, including Nantes, La Rochelle and Bordeaux, were closely tied to commercial interests in Holland, with whom they shared their religion.

However, Free Masonry networks were a supplement (and a useful, perhaps necessary one) to existing networks. In the eighteenth century, commercial success was measured on an international scale. Being part of these international networks was necessary, and inserting oneself into the requisite social and commercial contexts was obligatory. Social mobility, be it from small trader to *armateur*, or from ship's captain to ship owner, was possible, but required both financial and social credit.

The ideas of Free Masonry echoed those of the philosophy of the period. The '*siècle des Lumières*' and the belief in science, rational thought and progress were of great interest to the commercial elite. Self-edification was one reason. Such knowledge and understanding also were important in terms of business itself. The eighteenth-century salon and library meant art and literature but also mathematics, medicine and science. Such knowledge could bring important returns if it led to improvements in business operations. Masseaut (2000) outlines this interlocking

relationship, along with its reconciliation with what appears to us today as the ‘unspeakable traffic’ of slavery.

Ship captains

As noted earlier, captains were highly sought after, and their reputations, good or bad, followed them. The captain of a trading vessel was expected to be multi-talented. Not only did he have to possess all the requisite technical and navigational skills (for which he had been admitted to the rank of captain), but also possess business acumen, the ability to manage a diverse crew, and the understanding of the terms of trade in both Africa and the Caribbean. The *Guide du Commerce* outlines this versatility briefly (Gaignat de l’Aulnais 1771, 310), where the author describes this difficult trade and the necessary knowledge required of the captain: what sort of merchandise, what quantities, their assortment, differences related to geographic location and levels of competition, etc. The terms of exchange changed, as did the preferences of buyers and sellers. Upon reaching the rank of captain, many individuals stayed with the same *armateur* for a long time. Given the diverse trade undertaken by most *armateurs*, captains were involved in a variety of voyages, some involving the complete circuit of triangular trade, others dealing only with *les voyages en droiture* between the colonies and Europe, and others as part of trade operations within European networks.

Given the mutual dependence of *armateur* and captain, a certain familiarity is noted in correspondence between them (Hervé 1999, 52). Such correspondence also indicates that, in reporting to their *armateur*, captains provided up-to-date information regarding the trade situation, competitors, merchandise preferences and prices. While attaining the rank of captain represented upward social mobility, some captains came to this profession via established commercial families. Other captains came from the ranks of the nobility, in part, to forge commercial links that were considered (and in some cases legislated) to be otherwise outside the domain of these social groups.

The slave trade’s social organisation suggests an interesting parallel between organisational networks and communities of practice. We adopt the concept of community of practice in the sense of a group of individuals who undertake a craft or practice with particular emphasis on the role of social capital and social relations which develop around their activities (Barlatier and Thomas 2007; Cox 2005; Dupouët, Yildizoglu, and Cohendet 2003). Learning in these communities can be formal, such as within a guild or apprenticeship, or informal. In our case, we consider two potential communities of practice, one composed of the *armateurs* and one of the ship captains. The two groups and their practices were interlinked and membership was not restrictive in the sense that captains could move into the *armateur* circle as a result of financial success and family ties. Both groups learned by doing, through imitation, and observation. As part of a social network, this learning also included how to act and conduct oneself, along with the performance of the actual work or business activity.

*Institutional economics and agency theory*⁴

The slave trade was part of the overall system of maritime trade, and thus incorporated, adapted and utilised the norms and practices long established in trading operations. Many of these were formalised in, and reinforced by, legal and state requirements, such as those required by the *Ordonnance de la Marine* (1681). The social and organisational networks in which this trade was conducted further institutionalised norms and practices, and provided important diffusion mechanisms through which ways-of-doing and modes of action were reinforced.

Similar to other long-distance trading operations, the slave trade demonstrated the customary features of principal-agent relationships: moral hazard, opportunism, adverse selection. Thus, our research analysis draws upon the relevant literature of institutional economics and agency theory, as well as network analysis as applied to maritime trade.⁵ As noted earlier, we focus on the three main parties involved, the *armateur*, the ship's captain and the colonial agent.

The *armateur* engaged the ship's captain and also the agent in the colonies to act on his/her behalf and on behalf of the other associates to whom the *armateur* was accountable. Imperfect information across and amongst all groups meant that possibilities existed for opportunistic behaviour and adverse selection in all areas. The interests of all parties (e.g. *armateur*, associates, captain and colonial agent) were not necessarily aligned. It could be expected that the captain would operate in his own interest, given that his actions could not be observed, and the conditions of his contract with the *armateur* left him room to take advantage of the trading situation to his own benefit. The possibility existed for shirking by the captain and his productivity was difficult to measure in that his work was unobservable. The *armateur* only learned of the trade situation in both Africa and the colonies after the fact. Some control existed due to the surveillance role of other crew members and of the colonial agent who reported to the *armateur*. Shirking was mitigated by the captain's own self-interest to complete the voyage successfully and safely. It also was reduced through the use of incentives: bonuses to the captain and officers for captives safely introduced to the colonies (referred to as the *prime par tête* or '*par-tête*'); the system of *les pactotilles* or *port-permis*⁶ that had long been established in the shipping trade; sales commissions such that it was in the captain's interest to get the best price in the colonies on the best terms, in some instances including a commission on credit recoveries; and the captain's share interest in the voyage.

The captain was responsible for the selection of captives, the final decision on trade locations and the exchange terms (despite specific indications dictated in the *armateur's* instructions and the requirement to consult on these decisions with other officers aboard the vessel). A certain amount of competition existed within the sector. Nonetheless, captains who commanded slave ships tended to be more specialised in this area, while not all who were recruited into this role were successful.

While the *armateur* could not observe the captain once he left port, he could obtain information through other means: reports sent to France via other ships; observation of the captain by crew members (the crew sometimes included members of various *armateur* families); reports on the captain's conduct in the colonies via the colonial agent, etc. However, this information was costly to obtain and not timely. Hence, various control mechanisms and incentive structures, both informal and formal, were developed over time to reduce transaction costs. As indicated in the *Ordonnance de la Marine*, the captain was obligated to consult regularly with his officers about navigational matters and, more generally, about all important decisions affecting life on board.⁷

The colonial agents also had opportunities to turn situations to their advantage, as their counterparts in France relied on their knowledge and expertise to select a clientele that would meet its financial commitments. An element of control was possible in that the market was not a monopoly; thus, if agents did not perform well, they could be replaced. Yet colonial agents did not bear the same level of risk as did investors in France, and were compensated accordingly. The colonial agent also performed an important role in providing the necessary reports to government (as stipulated in the *Ordonnance*) and to the *armateur*, which at the same time assured the accountability of the captain and of the *armateur* to other associates.

Institutional economics suggests that formal mechanisms are preferred to informal or social contracts. Thus formal mechanisms will replace social controls as societies and norms evolve

over time. Greif (1994) broadens this analysis to incorporate cultural and context-specific factors, yet concurs that over time networks based on mutual trust will be replaced by those based on contract. However, as argued by Forestier (2005), and as we further examine here, the slave trade utilised both formal and informal mechanisms in combination to reduce transaction costs. While the mechanisms became more formal over time, they did not eliminate the significant role played by social, cultural and business networks.

Formal mechanisms included the *armateur's* instructions to the captain, the agreed-upon contract between the captain and the *armateur* (including wages, bonuses and other perquisites), and the mandated reporting to the admiralty (prior to departure, on return and upon arrival in the colonial port). These formal mechanisms incorporated specific accounting controls that ensured the accountability of the captain, the agent and the *armateur* to the government and to various partners and associates.

Informal mechanisms included the reputational effects of the *armateur's* and agent's conduct, the importance of repeat contracting, the social (including family) relations amongst the *négo-ciants*, captains and others, and the ability, through trading success, to climb the social ladder. Social control was an important factor in facilitating trade.

Sources and sample

Our research examines 21 voyages undertaken by vessels whose port of registry was one of the five principal centres of the French slave trade (Table 1). These voyages represent less than 1% of the expeditions carried out from these cities in the eighteenth century. The paucity of available sources explains in great measure the limited sample size, but we make no claims here as to its exhaustiveness. We are far from having managed to locate all of the available documents. Moreover, we have had to abandon the study of some sources due to difficulties in terms of access and the practical constraints of time. Nonetheless, a fairly extensive review of the prior literature and of the catalogues of specific archival collections, supported by the very comprehensive overview of the sources for the study of the slave trade undertaken by Mettas (1975), reinforces our opinion that it would be difficult to exceed a sample size of roughly 30 voyages.

Depending on the voyage, our study was based on primary sources (Archives Départementales de Loire-Atlantique and de Charente-Maritime, Archives Municipales and Bibliothèque Municipale de La Rochelle, the Belgian State Archives in Ghent) and/or using a variety of works by historians (see Table 2). In particular, we draw upon two works of Rinchon (1938, 1964) which

Table 1. Departure point of the voyages examined.

Port of Registry	Number of voyages (1713–92)	Sample (1731–84)
Nantes	1402	10
La Rochelle	423	6
Bordeaux	393	3
Saint-Malo	214	1
Vannes	12	1
Total	2444	21

Source: Mettas (1984).

Table 2. List of voyages studied and sources drawn upon.

Vessel	Port	Dates	Archives	Secondary sources
<i>Le Diligent</i>	Vannes	1731–32	Beinecke Rare Book and Manuscript Library, Yale University, Gen Mss Vol. 7	Harms (2002)
<i>L’Africain</i>	Nantes	1738–40	A.D. L.-A. B 5004	Mousnier (1957, 19–126)
<i>La Reine des Anges</i>	Nantes	1741–2	A.D. L.-A. 16 J 9	Boulanger (1970), Rinchon (1964, 81–4)
<i>Le Saint-Édouard</i>	Nantes	1741–	A.D. L.-A. B 4789	
<i>La Bellonne</i>	La Rochelle	1741–2	A.D. C.-M. E 512	
<i>Le Jason</i>	La Rochelle	1742–4	Private archives not located	Coupleux (1983)
<i>La Jeannette</i>	Nantes	1743–5	A.D. L.-A. 2Mi 886, B 5006	Boulanger (1970)
<i>La Reine de France</i>	Nantes	1743–5	A.E.B. Gand. Fonds d’Hoop 965	Rinchon (1964, 84–93)
<i>La Levrette</i>	Bordeaux	1748–9	A.D. L.-A. 2Mi 886, B 5006	Mousnier (1957)
<i>La Diligente</i>	Nantes	1749–50	A.D. L.-A. B 5004	
<i>La Perle</i>	Saint-Malo	1755–7		Vignols (1930)
<i>Le Télémaque</i>	Nantes	1763–5	A.E.B. Gand. Fonds d’Hoop 965, 969, 970	Rinchon (1964, 95–123)
<i>Le Roy Guinguin</i>	Nantes	1764–6	A.D. L.-A. 16 J 1	
<i>L’Africain</i>	Nantes	1766–8	A.E.B. Gand. Fonds d’Hoop 969, 971–974, 982	Rinchon (1938, 141–239; 1964, 137–222)
<i>Le Pompée</i>	Nantes	1769–70	A.E.B. Gand. Fonds d’Hoop 975–976, 982	Rinchon (1964, 223–91)
<i>Le Roi Dahomet</i>	La Rochelle	1772–4	A.M. La R. Ms E 282	Yacou (2001)
<i>Le Duc de Laval</i>	La Rochelle	1773–6	A.E.B. Gand. Fonds d’Hoop 965, 969, 977, 982	Rinchon (1964, 293–331)
<i>La Suzanne-Marguerite</i>	La Rochelle	1775–6	A.M. La R. E 280	Yacou (2001)
<i>Le Pactole</i>	Bordeaux	1777–8	A.E.B. Gand. Fonds d’Hoop 965, 969	Rinchon (1964, 347–58)
<i>Le Pactole</i>	Bordeaux	1783–84	A.E.B. Gand. Fonds d’Hoop 965, 969	Rinchon (1964, 359–67)
<i>La Bonne Société</i>	La Rochelle	1783–84	B.M. La R. Ms 2290–2291	

exploited the very rich archival collection of the captain Van Alstein, held in the Belgian State Archives in Ghent, and the works of Yacou (2001), Harms (2002) and Vignols (1930).

The data provided in Mettas (1984) have enabled us to supplement those at our disposal in the documents examined and the volumes previously cited. Constituted essentially from the files of the admiralty archives, this valuable catalogue provides various details for each voyage: the vessel (e.g. tonnage, *armateur* and captain), the progress of the expedition (e.g. date of departure, main ports of call, return date, incidents, etc.) and commercial operations (e.g. number of captives bought and sold). Moreover, in order to place these 21 voyages in the overall context of the French eighteenth-century triangular trade, we have drawn upon the work of Masseaut (1992), which was carried out for Nantes and built on the data initially gathered by Mettas. We also have made use of the Voyages Database of the Trans-Atlantic Slave Trade Database (accessible online at <http://www.slavevoyages.org>).

In the course of our research, we began first with accounting documents, analogous to those in the list provided by Gaignat de l'Aulnais (1771, 310) in his *Guide du Commerce*:

The manner by which to manage this trade is not very difficult. Four principal books (a trade journal, a journal of the sale of Blacks and of the purchase of return merchandise from America, an invoice book and a general ledger) are sufficient to provide an account of one's management, both at the Coast for the trade in Blacks, purchase of gold powder, etc. and in America for the sales there and the purchase of return merchandise.⁸

We supplemented these sources with two important documents to which Gaignat makes no reference at all as they do not form part of the accounting records. These are the instructions provided to the captain by the *armateur* and the ship's log book. The *Ordonnance de la Marine* (1681) stipulated the requirement for a log book to be kept in which were to be recorded all events related to navigation, transactions, as well as incidents linked to life on board. In principle, it was to be maintained by the captain, or by the ships' scrivener (*l'écrivain*)⁹ if there was one, as in the case of a certain Dam Joulin, who we encounter on the *Affricain* (1738), *La Jeannette* (1743) and *La Levrette* (1748), in the latter case engaged as the second captain.

Complete sets of document for the same voyage have been impossible to come by, and hence our research is focused on incomplete records (see Table 3). Frequently only one of the documents for a voyage is found, for example, the ship's log book, because it has been kept in the admiralty archives for a particular reason, such as litigation related to the vessel. Sometimes it is the descendent of a captain who has undertaken to publish the ship's log of his distant ancestor as a fictionalised account (Coupleux 1983), or better, by providing a faithful transcription of it (Plasse 2005). Yet all of these sources remain very partial. A few private archival collections, those of *armateurs* or captains, housed in public institutions, contain more significant sets of records. None exists, however, in which we find together the accounts for the outfitting and laying up (*l'armement et le désarmement*) of a ship created by the *armateur* and the complete management documents of the captain, which would allow us to calculate and analyse the return from a specific voyage.

Instructions to captains

We focus our analysis in this section on the sub-set of our sample for which the instructions to captains are available. Even if the relatively few instructions examined are dispersed over time – 45 years separates the first voyage from the last – and if their format and details vary somewhat, the same type of instructions generally are found. The sample data are summarised in Table 4. These instructions can be divided into two categories: maritime and commercial instructions; and

Table 3. List of documents available for each voyage.

	Instructions to captains/ <i>Instructions aux capitaines</i>	Ship's Log Book/ <i>Journal de bord</i>	Trade Journal/ <i>Journal de traite</i>	Recapitulation Table of the Trade/ <i>Tableau récapitulatif de traite</i>	Sale of Captives/ <i>Vente des captifs</i>	Invoice of the Return Cargo/ <i>Facture de la cargaison de retour</i>	Remarks
<i>Le Senaut</i>			X	X	X	X	Artificial example of Gaignat
<i>Le Diligent</i>		X					
<i>L'Africain</i>	X	X					
<i>La Reine des Anges</i>	X		X	X			
<i>Le Saint-Édouard</i>				X	X	X	
<i>La Bellonne</i>				X			
<i>Le Jason</i>							Novel
<i>La Jeannette</i>		X					
<i>La Reine de France</i>			X		X	X	
<i>La Levrette</i>		X					
<i>La Diligente</i>		X					
<i>La Perle</i>					Summary		
<i>Le Télémaque</i>				Fragment	Fragment	Fragment	
<i>Le Roy Guinguin</i>			X	X Summary			
<i>L'Africain</i>	X	X	X	X	X	Various details	
<i>Le Pompée</i>	X	X	X	X	X p. 281	X	
<i>Le Roi Dahomet</i>		X	X		X		
<i>Le Duc de Laval</i>	X	X			Some details		
<i>La Suzanne–Marguerite</i>			X		X		
<i>Le Pactole</i>			X	X			
<i>Le Pactole</i>		X					
<i>La Bonne Société</i>	X		X	X	X	X	

Table 4. Instructions to captains.

			Archives	Secondary sources
<i>L’Affricain</i>	Nantes	1738–40	A.D. L.-A. B 5004	Mousnier (1957, 19–29)
<i>La Reine des Anges</i>	Nantes	1741–2	A.D. L.-A. 16 J 9	Rinchon (1964, 81–4)
<i>L’Africain</i>	Nantes	1766–8	A.E. B. Gand. Fonds d’Hoop 982	Rinchon (1938, 158–70)
<i>Le Pompée</i>	Nantes	1769–70	A.E. B. Gand. Fonds d’Hoop 982	Rinchon (1964, 239–46)
<i>Le Duc de Laval</i>	La Rochelle	1773–6	A.E. B. Gand. Fonds d’Hoop 982	Rinchon (1964, 296–8)
<i>La Bonne Société</i>	La Rochelle	1783–4	B.M. La R. Ms 2291	

contractual terms related to the incentives given to the captain and to ship officers over and above their salaries. The first category is examined here, while the second is explored more fully in the next section devoted to incentive systems.

Some of the maritime and commercial instructions (the only ones that are truly instructions in the proper sense of the term) deal with the entire voyage. Amongst the orders of a more general nature, four of the six cases recommended, in varied but more or less equivalent terms, the use of the greatest economy (*‘d’user de la plus sage économie’*), as stated in the instructions for *La Bonne Société*). Other instructions dealt only with one of the three stages of the voyage: the trade along the coast of Africa, the middle passage from Africa to the West Indies, or the stay in the Antilles.

The trade along the African coast

Once the part of the African coast along which the vessel was to undertake its trade was determined (coast of Guinea or coast of Angola), the precise choice of trading locations generally was left to the captain as the opportunities arose. The instructions next indicated what was anticipated in terms of purchases. In the case of the captain of *L’Affricain* (1738), it simply was stated to procure the greatest number of captives that it was possible for the ship to carry.¹⁰ The instructions for other ships, however, set quantified objectives in terms of the value of the merchandise cargo of *la mise-hors*: a range of 400 to 500 captives for *Le Pompée* (1769); from 480 to 500 for *Le Duc de Laval* (1773). The two vessels loaded respectively only 390 and 393 captives, after both had spent more than eight months along the coast of Africa. A minimum number of 400 was stipulated for the captain of *La Reine des Anges* (1741): ‘if contrary to our expectations the trade is long and lingers, to avoid the wasting away of his cargo, he [the captain] will leave the coast as soon as he has acquired four hundred strong and good slaves on the account of the vessel’.¹¹ This order was scrupulously observed, as the vessel left Africa with 407 captives after spending six months and five days on the coast. Moreover, it underscores two key elements in the success of the undertaking: the speed of the trading campaign and the quality of the loaded ‘cargo’.

The sojourn on the African coast, if the trade dragged on beyond what was anticipated, could become particularly trying, not only for the captives but also for the members of the crew due to poor climatic conditions, the insalubrious nature of the vessels, as well as the risks of revolt. According to the statistics compiled by Masseaut (1992, 18) for the eighteenth-century Nantes trade, the annual average duration of the stay on the African coast was three to eight months,

Table 5. Voyage duration and mortality rates.

	Voyage dates	Trade duration (days)	Duration of the crossing (Africa–Antilles) (days)	Total number of captives traded	Number of captives sold	Mortality Number Percentage
<i>L’Africain</i>	1738–40	179	122	323	292	31 10
<i>La Reine des Anges</i>	1741–2	188	104	407	269	138 34
<i>Le Saint-Édouard</i>	1741–	125	58	232	183	49 21
<i>La Reine de France</i>	1743–5	134	146	440	404	36 8
<i>La Perle</i>	1755–7	150	64	603	588	15 2
<i>Le Télémaque</i>	1763–5	170	64	342	320	22 6
<i>L’Africain</i>	1766–8	124	64	386	377	9 2
<i>Le Pompée</i>	1769–70	246	34	390	325	65 17
<i>Le Roi Dahomet</i>	1772–74	139	62	424	406	18 4
<i>Le Duc de Laval</i>	1773–6	262	53	393	346	47 12
<i>La Suzanne-Marguerite</i>	1775–6	259	92	567	393	174 31
<i>Le Pactole</i>	1777–8	202	80	690	609	81 12
<i>La Bonne Société</i>	1783–4	100	165	425	350	75 18
Average		175	85	432	374	58 14

depending upon market conditions and the competence of the captain. We find related figures for a sub-set of 13 of the 21 voyages for which we have all of the necessary data at our disposal. The shortest trade duration was three months and nine days (*La Bonne Société* 1783); the longest was eight months and 18 days (*Le Duc de Laval* 1773), with an average stay of five months and 23 days. As Table 5 indicates, the ships which experienced the longest sojourns on the African coast were often those for which the mortality level was the greatest; the correlation coefficient between the mortality rate¹² and the duration of the trade is 0.38. However, the small size of our sub-set and the statistical non-significance of our observed coefficient make it impossible to draw reliable conclusions from these data, especially as the causes of death are many.

Therefore, to obtain more robust results for captive mortality, in relation to the influence of several variables examined in this section, we downloaded all French voyages listed in the Trans-Atlantic Slave Trade Database that took place between 1711 and 1790, in effect, 3,043 voyages. Next, we extracted sub-samples in terms of the data necessary to undertake analyses of mortality rates. In this case, based on our final sample of 802 voyages, the resulting correlation coefficient between the mortality rate of captives and the duration of the trade campaign in Africa is only 0.11 (significant at the 1% level), which is very small.¹³

While the average stay in Africa increased throughout the first half of the century, during which the trade was more itinerant in nature and competition intensified, it decreased in the following period (Masseaut 1992, 19–20). This decrease resulted, in part, from an improved organisation of the trading system which led to a concentration of the supply side of the trade at a few specific points along the coast: Juda (Ouidah) on the coast of Guinea and Cabinda on the coast of Angola.

The graph in Figure 1 (calculations based on 1467 voyages from the Trans-Atlantic Slave Trade Database) confirms for France overall the observations of Masseaut (1992) for Nantes. Moreover, the comparison of the two curves – that for the average duration of the trade campaign and that for the number of voyages by period – indicates the progress in terms of the trade’s organisation during the last quarter of the eighteenth century. In effect, from 1711–15 to 1766–70, a

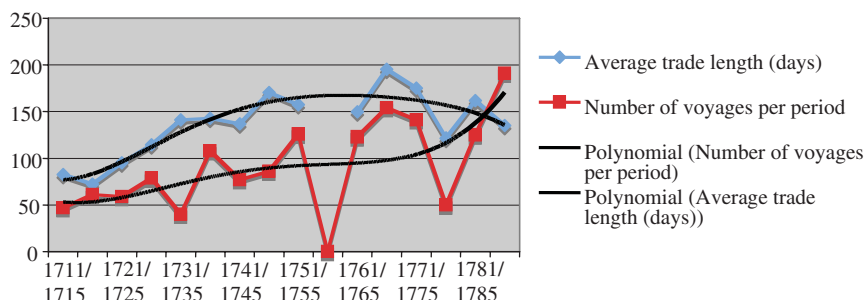


Figure 1. Average trade length (days) and number of voyages 1711–90 (five-year periods).

Source: The Trans-Atlantic Slave Trade Database (figures calculated for 1,467 voyages).

growth in competition translated into a substantial increase in the average stay, with a correlation coefficient of 0.75 between the two series (significant at the 1% level); whereas afterwards, a general downward trend in the trade duration is in evidence, despite significant growth in competition during the last two periods – the number of voyages and the total number of captives boarded increased from 125 to 191 (+53%) and from 48,917 to 65,655 (+34%) respectively between 1781–5 and 1786–90.

The ‘quality’ of the captive cargo, in essence, good health, good looking and youth, was frequently noted in connection with the need to protect it throughout the voyage. Captains were instructed to select the best and youngest, and to trade as few women and young girls as possible. As stated in the instructions of *L’Affricain* in 1738:

Above all, strive to find good-looking captives and prefer young ones. Besides the fact that they will withstand better the fatigue of the crossing, you will be able to sell them more advantageously in America. Before trading the Blacks, have your surgeon visit them. Take as few women and little children as you can.¹⁴

One notes a preference for men who would be immediately productive; in effect, the life expectancy on the plantations was very short at the time, and the natural replacement of the slave population was not particularly sought after by plantation owners. Captains were expected to provide market updates as frequently as possible via other ships such that those in France were advised of changes to the terms of trade, competition, etc.

The middle passage from Africa to the West Indies

While the duration of this crossing could be from three weeks to four months, the average time was between two and three months during the entire century (Masseaut 1992, 23). We find comparable figures for our sub-set, from one extreme of one month and four days (*Le Pompée* 1770) to that of five months and 13 days (*La Bonne Société* 1784); the average being two months and 24 days. To make their crossing, the vessels needed to take advantage of the trade winds. To leave the Gulf of Benin, ships travelled south of the equator to encounter the south-east trade winds, passing via the Île de Principe, where ships frequently made a port of call as much to rest and refresh the cargo as to await favourable winds. A skilful captain was essential, as the route to the Antilles passed through a zone in which dead calm alternated with violent thunderstorms, and the risks of a vessel coming to a complete standstill were not inconsiderable (Masseaut 1992, 21–2).

This crossing clearly could be very trying for the captives, and all the instructions examined devoted a paragraph to their care. As the century progressed, a certain humanism even began to be exhibited. One cannot express it better than did the *armateurs* of *La Bonne Société* in 1783: the captives were to be

well fed, carefully cared for and observed and guarded adequately to eliminate the danger of revolt; familiarity with female captives was to be avoided to prevent negative consequences; finally, captives were to be shown humanity and kindness matched with the necessary prudence.¹⁵

(B.M. La R. Ms. 2290)

Portier, the *armateur* of *L'Africain* (1766), devoted no less than five articles of his instructions to this matter, setting out specifics related to the food, water, daily visits by the ship surgeon, hygiene, and the necessary vigilance. On the latter point, he recommended the advisability of engaging some young Negroes as spies (*'négrillons espions'*) while prohibiting their negative treatment. As revolts amongst the captives were rare, it was equally unnecessary to provoke them, as it was dangerous to be taken by surprise by them. The articles of *La Bonne Société* (1783) reiterated this tone:

However, in case of an unfortunate accident, put your records in order such that we can provide ourselves with recourse against our insurers. If, God forbid, you experience some sort of revolt amongst the Negroes, do not forget to insert in your statements that they were in irons.¹⁶

(B.M. La R. Ms. 2290)

Nonetheless, the mortality rate remained of major importance. Only two vessels out of a total of 1,427 ships recorded as having left Nantes during the eighteenth century did not report any loss of captives. The largest number of deaths was recorded by *La Fleur Américaine*, which took more than four months to cross the Atlantic, 325 of the 384 African captives aboard dying during the voyage (Masseaut 1992, 23). Of the sub-sample examined, the average is 14%, with a minimum of 2% (*La Perle* and *L'Africain*) and a maximum of 34% (*La Reine des Anges*). The correlation coefficient between the mortality rate of captives and the duration of the crossing is only 0.19 and not statistically significant, but the data from the Trans-Atlantic Slave Trade Database bear witness to this variable as a decisive factor. For 802 voyages undertaken from 1711 to 1790, we report a correlation coefficient of 0.41 between the captive mortality rate and the duration of the middle passage (significant at the 1% level).¹⁷

Captive mortality, whose evolution is presented in Figure 2 for the same sample of 802 voyages, was a fundamental element that the *armateurs* took into account in their provisional calculations. In 1770, in a letter in which the *armateur* Deguer of Nantes proposed to his close relatives their participation in the financing of a voyage that he was about to launch, he estimated this mortality rate to be 10% (A.D. L.-A. 8J6, Folio 3; Rinchon 1956, 52–3). This estimation corresponds to the average rate that we observe at the end of the 1760s, prior to evidence of a resurgence that could be attributed potentially to the weakened health of captives due to greater competition and an overall increase in the number of captives boarded.

The West Indies

Once the crossing had taken place, it was important to find the best location in the islands to sell the captives. Depending on the final destination, Saint-Domingue, La Martinique or even Guadeloupe or Guyana, the captain usually was provided with a number of agents, depending

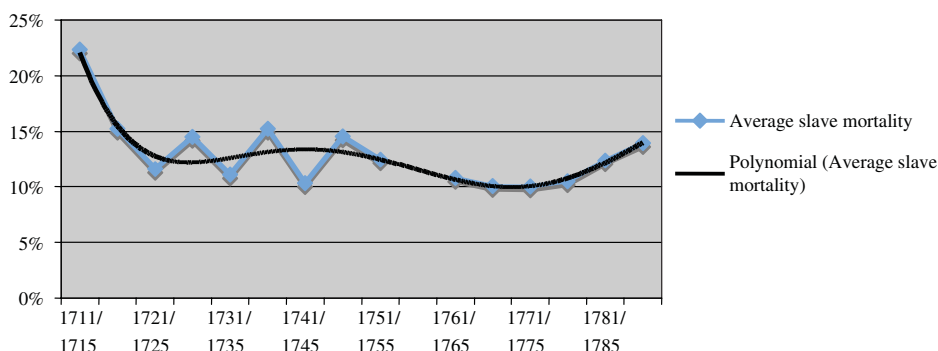


Figure 2. Average slave mortality 1711–90 (five-year periods).

Source: The Trans-Atlantic Slave Trade Database (figures calculated for 802 voyages).

upon the ports in which he was likely to disembark. These agents helped him in making his final choice in light of the market situation, and then would provide advice and guidance during the sale. The most successful sale was not necessarily the one which was achieved at the highest prices. Rather, it was the one that resulted in the most hard currency, and for the remainder, credit-worthy buyers and short credit terms. The words to this effect varied little. For example, those of *L’Affricain* (1738) stated that the captain was ‘only to sell to sound debtors and to obtain as much as he could in hard currency [. . .] But as we anticipate that it is not easy to sell all for cash, you should sell on the shortest terms that you can’.¹⁸ To motivate sales, there was no hesitation to lower expectations: ‘lower even the prices of your Negroes to obtain [cash] or reduce the payment terms’ (*L’Africain* 1766, and *Le Pompée* 1769). Credit recoveries were such a crucial matter that in the case of two vessels, both outfitted by les Portier, it was arranged that the captain would remain in the Antilles to take care of business while the second captain would return the vessel to Nantes. Unfortunately, we do not have sufficient data at our disposal to enable us to estimate the operating profitability of the vessels in our sample, even in a partial way based on the conclusion of the sales of captives.

The progressive decrease in the duration of expeditions and the reduced risks as measured in terms of mortality rates made the trade more attractive than it had been at the beginning of the century. Many of these ‘improvements’ were due to changes in operating methods such as vessel size and design, better hygiene, training, as well as the result of knowledge transfer amongst market players. The slave-trade ventures offered enviable professional opportunities to the maritime populations that took advantage of them. The number of captives tripled in the eighteenth century compared to the previous one, yet this increase required only twice the number of expeditions (Masseaut 1992, 46). Vessel dimensions grew but the overall number of crew decreased: between the periods 1711–30 and 1771–90, the average vessel tonnage rose from 175 to 267 tonnes (+53%), while the total crew size fell from 46 to 36 (–24%).¹⁹ The potential return from an expedition, as measured by its net proceeds, clearly improved over the course of the eighteenth century, in no small measure due to improved operating methods and industry knowledge.

Control mechanisms and incentives

Controls and incentives included both formal and informal mechanisms. We analyse these mechanisms in terms of our sample data, and draw on additional source materials to provide further confirmatory details.

Formal controls related to prescribed documents and reporting, as well as established patterns of action within maritime trade and the slave trade in particular. As per the *Ordonnance de la Marine* (1681) and as outlined in the *rôle d'armement* for each voyage, captains and the *armateurs* had a number of formalities with which to comply. First, this document outlined the voyage in terms of location, purpose, crew and the name of the *armateur*. It was signed on departure by the captain, *armateur* and admiralty officials, including the acceptance by the captain of funds to provide the two-month advance paid to the crew. The document also attested to the duty to report to port authorities within 24 hours of arrival in the port of final destination.

Besides this reporting obligation, vessel captains had to comply with colonial formalities related to their arrival in port, cargo, duty payments and the attestation of events such as the death of crew members. The captain also was required to prepare sales reports on the trade in Africa and the sales in the colonies, in writing, to both the colonial agent and the *armateur*. The colonial agent also had a duty to report to the *armateur*, thus implementing an extra measure of accountability by requiring that both agents reported to the *armateur* and therefore each serving as a check on the other.

Instructions to captains, which were signed by both parties (the *armateur* as principal, and the captain as agent), detailed their agreement as to the nature of the voyage, destination(s), number of expected captives, along with the specific terms of the wage payment and incentive structure. As noted earlier, wages on slave-trade voyages provided a premium for the risk undertaken and the extended nature of these voyages relative to other maritime shipping. This contract established the responsibilities of the captain, and often included a statement about penalties to be paid if the captain acted otherwise. For example, the instructions of *La Bonne Société* included a penalty if goods or captives other than those authorised as *port-permis* were boarded on ship. In the case of *L'Affricain*, the *armateur*, Charles Trochon, required a daily record of expenses incurred during the trade period in Africa, along with other records.

Articles in the instructions to captains (and other sources) indicate that the various incentives offered became more systematic and institutionalised over time. More incentives were developed and used in different and differing combinations (*port-permis*, bonus, commissions and share interest) as indicated in Table 6. Experience with various incentives (such as *les port-permis*) led to their use in combination with, or replacement by, others (such as sales commissions, commissions on *les retours* – to enhance the captain's long-term perspective). Officers were frequently included in these incentive arrangements such that their interests were aligned and joint effort was motivated. For example, ship's officers, especially the medical officer

Table 6. Types of incentive and frequency of use.

Incentive type	One incentive used	Two incentives used	Three incentives used	All four incentives used	Frequency of use
<i>Port-permis</i>	5	1	3	2	11
<i>Par-tête</i>	1	1	3	2	7
Commission (%)	0	2	3	2	7
Share interest	0	0	0	2	2
Number of voyages where incentive used	6	2	3	2	13

(*le chirurgien*), received a bonus '*par-tête*' for each captive safely introduced and sold in the colonies.

Acquiring a share interest in the vessel was a long-established practice in maritime trade, offering the captain another means to gain financially. Forestier (2005, 26) has calculated the percentage of voyages where this occurred at 21.33% for the 211 ventures from La Rochelle between 1763 and 1792 (i.e. 45 ventures). Jolin (1999, 101) calculated this at 11% for the 259 voyages from Nantes between 1717 and 1738 (i.e. 29 voyages), which he stated as comparable to other studies undertaken for La Rochelle.²⁰ In our sample, captains held a share interest in 9.5% of the voyages. We have traced further examples of this share interest in the records of other vessels not included in our sample. For example, the records of the *armateur* Deguer indicate that the captain frequently had a share interest ranging from 1/40th to 1/4 (see McWatters 2008). It became more frequently used as an incentive in the latter stages of the eighteenth century, in Deguer's case for ventures undertaken after 1763. A share interest was not an innovation of the slave trade, as it was used in other shipping ventures, but its more prevalent use in this sector in later years suggests the evolving nature of controls and incentives over time. A share interest placed the captain in the position of an associate, thus on a similar level to the other investors, all the while being an agent in terms of his role in commanding the vessel and overseeing the conduct of business. Finally, the captain had to raise funds to finance his share, and this financing was often through a loan for which the *armateur* acted as guarantor or lender.

Certain incentives had a more immediate line of sight, such as the *port-permis* and especially the commission, in that the recipient could readily determine the amount and the relationship between performance and the payment. From the *armateur's* point of view, these types of incentives were a better tool with which to measure productivity and efficiency. These incentives were short-term in nature such that they were paid once the performance had been completed – they were calculated on arrival in the colonies.

Other incentives, such as the percentage paid on '*les recouvrements*', i.e. the recovery of funds at a later date (two cases of this mechanism in our sample), and an ownership share were long-term in nature. If the captain received funds from this type of incentive, he bore more risk in that the payment of these incentives resulted from actions and factors not under his control. For example, the recovery of funds owed in the colonies and the net returns produced from the sale of colonial goods depended, amongst other things, upon the prevailing market situation, the colonists' credit standing and often political factors (such as the forgiveness by the French state of certain colonial debts to appease colonists at the expense of French merchants). While this type of incentive would align the captain's interests more closely with those of associates, its long-term value would not be as easily determinable. For the agent who wished to finalise the voyage and move on to other opportunities, a continued share interest would not offer that possibility as readily. For the *armateur* and agent (captain) who re-contracted on other voyages, it might be more enticing as a way of fostering this longer-term relationship. For example, the records of the *armateur* Deguer provide a number of examples in which the captain held a share interest and was re-contracted on a series of voyages. In our sample, the captain Van Alstein held a share interest in two voyages (*Le Pompée* and *Le Duc de Laval*), but not his last voyage (*Le Pactole*), perhaps as he anticipated his final days as a captain and a shift to a passive investor. As noted in Rinchon (1964), Van Alstein did take up a share interest of 6,000 *livres* in the subsequent voyage of *Le Pactole* but not its command.

As noted, accountability and control were augmented by a system of informal controls. While the *armateur* could not observe the actions of the captain once he left port, he did have other means by which to acquire information. For example, the instructions to captains often included the

request to provide updates via other ships. The officers were to be consulted on matters related to changes in itinerary or routing, but also had the responsibility to account to the authorities and the *armateur* in the case of deemed negligence or similar misconduct on the part of the captain.

Positive reputational effects and the ability to make use of them and financial gains to move up the social ladder were integral to the trade's smooth functioning. Captains who were deemed unsuccessful were replaced and this information followed them. Successful captains were sought after and highly esteemed by *armateurs*, with whom they often had family connections. In our sample, Captain Van Alstein built on his marine success to enter into the social milieu of Nantes, leaving the trade for a life of relative ease. During his career, he was noted to be a dependable and highly successful captain, and his recognition led to recruitment in various port cities (Nantes, Bordeaux and La Rochelle).

Both *armateurs* and captains operated within settings that display features typical of communities of practice. *Armateurs* undertook their affairs within systems of accountability in which specific methods, including those of accounting, provided control and standardised norms of behaviour. The accounting reports and records used across the sector became more standardised over time. The complexity of incentive systems in the trade increased as *armateurs* shared their knowledge with like-minded traders and investors. Information about the trade, its participants and markets was shared across the network and resulted in joint action to promote shared interests.

Similarly, vessel captains undertook their voyages as members of a maritime community who learned by doing and by sharing information. Captains rose through the ranks, and by doing so gained knowledge and experience of maritime operations. They also gained knowledge of accounting and reporting systems that provided control mechanisms and accountability to the *armateur*, the State and to other crew members. We know that Van Alstein 'practised' his trade by studying the log books and trade journals of earlier voyages, including that of *La Reine de France*. The *Guide du Commerce* of Gaignat de l'Aulnais (1771), published as a commercial guide to strategic success in maritime trade, including the slave trade, recreated the world of maritime commerce by recopying and supplementing the records of earlier voyages. Traders and vessel captains could acquire through this manual an understanding of the methods necessary in the trade and how accountability relationships functioned and were maintained.

Network relationships were an important dimension of the control system in a milieu where social, business and family ties were intertwined at many levels. Families operated together in business and reinforced these links through marriages. Investments and financial backing were provided by others in the same social circle. Yet this circle was more accurately a set of expanding ones, as networks operated within the local community, across France and other parts of Europe, and extended to the colonies.

We find evidence of these network ties in our sample. Georges Eustache, who outfitted *Le Saint Edouard* in 1741, was the uncle of Van Alstein and the person to whom Van Alstein first addressed himself on his arrival in Nantes from Antwerp. This family connection likely facilitated Van Alstein's introduction into local networks. The Grou family, whose operations included *La Diligente* and *Le Télémaque*, also was distantly related to Van Alstein, which might further explain his ability to move within these networks. Van Alstein's personal records note a life of social and economic comfort amongst the *négociants* of the city. He commanded a number of the vessels in our sample, was recruited by different *armateurs* in different port cities, thanks to his highly favourable reputation that was shared across the network. He served as captain of two of the voyages, *L'Africain* and *Le Pompée*, undertaken by the Portier family. Charles Trochon, *armateur* of *L'Africain*, belonged to an established business family in Nantes and was linked to the Portiers through marriage and business ties, including insurance syndicates.

Family and social ties also extended across various port cities. For example, the Nairac family operated in both La Rochelle and Bordeaux, in our case outfitting *La Suzanne Marguerite* and *Le Pactole* respectively in these cities. Business dealings with the Nairacs figure frequently in the accounts of other *armateurs*, either for merchandise, insurance or referrals to their colonial agent. The Nairacs also had business connections in Saint-Malo with whom various *négociants* in Nantes associated. It was through these extended networks that Van Alstein was recruited by Garesché to be captain in La Rochelle where he commanded *Le Duc de Laval* in 1773. Van Alstein later was recommended by Garesché to a member of the Nairac family in Bordeaux as captain of *Le Pactole* (Rinchon 1964, 296, 335).

Families also were established in the colonies as plantation owners and colonial agents, facilitating business relationships. For example, the Rozée family (linked to les Portier through business and marriage) held a share interest in Forget, Lecompte and Bourret in la Martinique (A.D. L.-A. E II 354, 18-7-1745). We see similar colonial ties with the Chaurand family, who also were related to the Portiers, as Honoré Chaurand had married Marie Portier de Lantimo in 1748. At their marriage, an attestation of his personal fortune included a half-interest in property in la Martinique (Meyer 1999, 190, fn.1). The Nairac family also maintained ties with colonial agents. For example, the records of the *armateur* Deguer indicate that he often engaged the Nairac's agent in Saint-Domingue, De Russey. De Russey had family in Saint-Malo, and the Saint-Malo branch in turn invested in Deguer's business. Garesché operated a branch network in Saint-Domingue, referring Van Alstein to these family members when he reached the colonies.²¹ These family and business networks reduced transaction costs and offered an efficient way to monitor behaviour and reduce opportunism (Boyce 1995; Forestier 2005). As well, given the financial interests shared across members of these elites, the financial gains (and losses) were distributed across the sector. Opportunistic behaviour and the consequent loss of reputation were quickly transmitted across the various local, national and international networks.

Conclusions and future research directions

This research study provides further insights into the nature and operations of the French slave trade in the eighteenth century, including the role of accounting in the standardisation of its practices and techniques. The French case offers a useful example of how trade patterns differed across states and adapted to political, economic and social forces. While our sample size is small, we present evidence that the system became more routinised and refined as business interests sought to obtain market returns, while also attempting to minimise, as much as possible, the risks undertaken.

The accounting system was based on procedures long established in maritime trade. Yet these procedures were enhanced through the introduction and greater use of a variety of incentives that supported other mechanisms to control the slave trade. The series of articles which outlined the instructions to captains became more comprehensive, as *armateurs*, captains and associates gained more experience in the trade, its rewards and its pitfalls. The slave trade also contributed to the globalisation of the market economy as trade links were established across a number of continents. Accounting supported these new network relations through its reporting mechanisms, which both reinforced and reflected existing social and family ties.

The records that we have examined to date provide us with further indications as to how accounting knowledge was transmitted and how these ways-of-doing became accepted norms of conduct and action. The trade was not organised as a guild, but knowledge transmission was guild-like in nature. As noted earlier, the trade displays features common in communities of practice, including the importance of social capital and shared understandings of their milieu. Business

interests shared market intelligence, invested in each other's operations and worked jointly to create sustainable trade networks. Likewise, captains learned through doing, including frequent consultation with fellow captains and crew and the study of documents from earlier voyages.

An avenue for future research is the specific examination of the slave trade's contribution to capitalism. Based on this research sample, we see the emergence and use of a number of formal incentive and control mechanisms, adopted in complementary fashion with a series of informal ones. The complementary use and the choice of particular incentive combinations are a singular feature of this trade sector, adopted subsequently in other commercial activities. Their adoption is clear evidence of their value in reducing the negative features inherent in agency relationships.

Future research could develop this line of reasoning to provide a model that specifies the circumstances under which such incentives tend to be employed and in what particular combinations. Initial results suggest that certain conditions favour their emergence and adoption: management at a distance across space and time; high-risk ventures; and slow circulation of working capital. We intend to explore these patterns further, including the examination of these business networks in other maritime sectors with similar risk/return profiles, including the trade of *les corsaires* and the privatisation of war.

Notes

1. Further analysis of profitability is discussed in Daget (1990), Daudin (2002a, 2002b, 2004), Gaston-Martin (1993), Meyer (1999), Pétrel-Grenouilleau (1998, 2004) and Rinchon (1956); in the English context, Anderson and Richardson (1985), Darity (1985), Inikori (1983, 1981) and Thomas and Bean (1974).
2. A sample of *les rôles d'armement* for vessels leaving Nantes between 1735 and 1743 (Archives Départementales de Loire-Atlantique, hereafter, A.D. L.-A., 180 J 351 to 374) indicated a wage premium for captains of slave-trade vessels of 38.3% relative to those paid to captains in other areas of maritime trade. The premium for the lieutenant and *contre-maître* was 18.1%. Chouteau (1994) analysed voyages from Nantes in 1784 and reported the following premiums: captains, 42%; second captain, 44%; surgeon, 71%; and *contre-maître*, 22%. The premium for the surgeon underscores the importance of this role in slave-trade voyages. Incentives provided to the surgeon also encouraged careful attention to the well-being of captives.
3. These arguments are more fully developed in Boyce (1995).
4. A review of agency theory and its use in accounting history is provided in Bricker and Chandler (1998).
5. In the course of our research, we learned of complementary research by Forestier (2005) which examines the slave trade at La Rochelle, also adopting this theoretical approach and providing important confirmatory details.
6. Private cargo (*pacotille* or *port-permis*) were items that the officers and some members of the crew were allowed to transport for their own use, over and above the ship's normal cargo. The captives became the personal property of the officers. These incentives motivated officers to ensure cargo arrived safely at its destination.
7. The pertinent articles are Titre I, Article 15 and especially Article 25; Titre III, Article 3.
8. '*La manière de gérer cette traite n'est pas bien difficile. Quatre livres principaux qui sont, un journal de traites, un journal de la vente des noirs et de l'achat des marchandises en retour de l'Amérique, un livres de factures et un grand livre, suffisent pour donner raison de sa gestion, tant à la Côte pour le troc des nègres, achat de poudre d'or, etc. qu'à l'Amérique pour la vente d'iceux et l'achat des marchandises en retour*'.
9. The *Ordonnance de la Marine* (1681) stipulated the maintenance of a log book by the captain in Livre 2, Titre 1, Article X: '*Sera tenu [le maître] d'avoir un registre ou journal cotté et paraphé en chaque feuillet par l'un des principaux intéressez au bâtiment, sur lequel il écrira le jour qu'il aura été établi maître, le nom des officiers et matelots de l'équipage, le prix et les conditions de leur engagement, les payemens qu'il leur fera, sa recette et sa dépense concernant le navire, et généralement tout ce qui regarde le fait de sa charge, ou pour raison de quoy il aura quelque compte à rendre, ou quelque demande à faire*'. Alternatively, it could be kept by the ship's scrivener as set out in Livre 2, Titre III, Article 1: '*L'écrivain sera tenu d'avoir un registre ou journal, cotté et paraphé en chaque page par le lieutenant de l'amirauté, ou par deux des principaux propriétaires du navire*'.
10. '*Votre cargaison est assez forte pour pouvoir charger le plus de noirs que vous pourrez dans le navire*'.
11. '*Si contre notre attente la traite était longue et traînait en longueur, pour empêcher le dépérissement de sa cargaison, il partira de la côte sitôt qu'il sera rempli de quatre cents beaux et bons esclaves pour le compte du dit navire*'.

12. The mortality rate is calculated by expressing the difference between the number of captives traded and the number of captives sold as a percentage of the number of captives traded.
13. In actual fact, it was the crews who seemed to suffer from a long stay on the African coast, with a correlation coefficient between the crew mortality rate and the trade duration of 0.19 (calculated on a sub-set of 713 of the 802 voyages and significant at the 1% level).
14. '*Sur toutes choses, attachez-vous à prendre de beaux captifs et préférez les jeunes. Outre qu'ils résistent mieux à la fatigue de la traversée, vous les vendrez plus avantageusement à l'Amérique. Avant de traiter les noirs vous les ferez visiter par votre chirurgien. Prenez le moins de femmes et de négrillons que vous pourrez.*'
15. '*Bien nourris, convenablement soignés et suffisamment observés et gardés pour n'avoir point de révolte à craindre*'; '*empêcher de même la fréquentation des blancs avec les négresses ce qui souvent a de fâcheuses suites*'; '*au surplus, nous vous recommandons l'humanité envers tous les captifs et de les traiter avec toute la douceur qui pourra s'allier avec la prudence*'.
16. '*En cas de fâcheux accidents mettez vos procès-verbaux en règle afin de nous ménager notre recours contre nos assureurs. Si par malheur, ce qu'à Dieu ne plaise, vous éprouvez quelque révolte des nègres, n'oubliez pas d'insérer dans vos procès-verbaux que les noirs étoient aux fers*'.
17. Again, the average mortality rate of the crew was higher than that of the captives – 18.7% compared to 12.4% for a sample of 702 voyages. We observe a correlation coefficient of 0.10 (significant at the 1% level) of the crew mortality rate with the duration of the middle passage. It was, therefore, the sojourn on the African coast that was the most problematic for sailors, but the *armateurs* seemed to have adapted to this situation without difficulty as no allusion is made at all to it in the captains' instructions.
18. '*Ne vendre qu'à de bons débiteurs et le plus que vous pourrez en argent comptant [...] Comme nous prévoyons qu'il n'est pas facile de tout vendre au comptant, vous vendrez au plus court terme que vous pourrez*'.
19. Figures calculated for 1467 voyages extracted from the Trans-Atlantic Slave Trade Database.
20. For further details of the La Rochelle trade, the interested reader is directed to Deveau (1990).
21. Forestier (2005, 16) examines the networks emanating from La Rochelle. She notes that about 50% of the *armateurs* in her study had relatives in the colonies. Twenty-nine per cent had family relations to which they directed their ventures upon reaching colonial ports.

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