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**THE PRINCIPAL-AGENT QUESTION:  
THE CHARTERED TRADING COMPANIES**

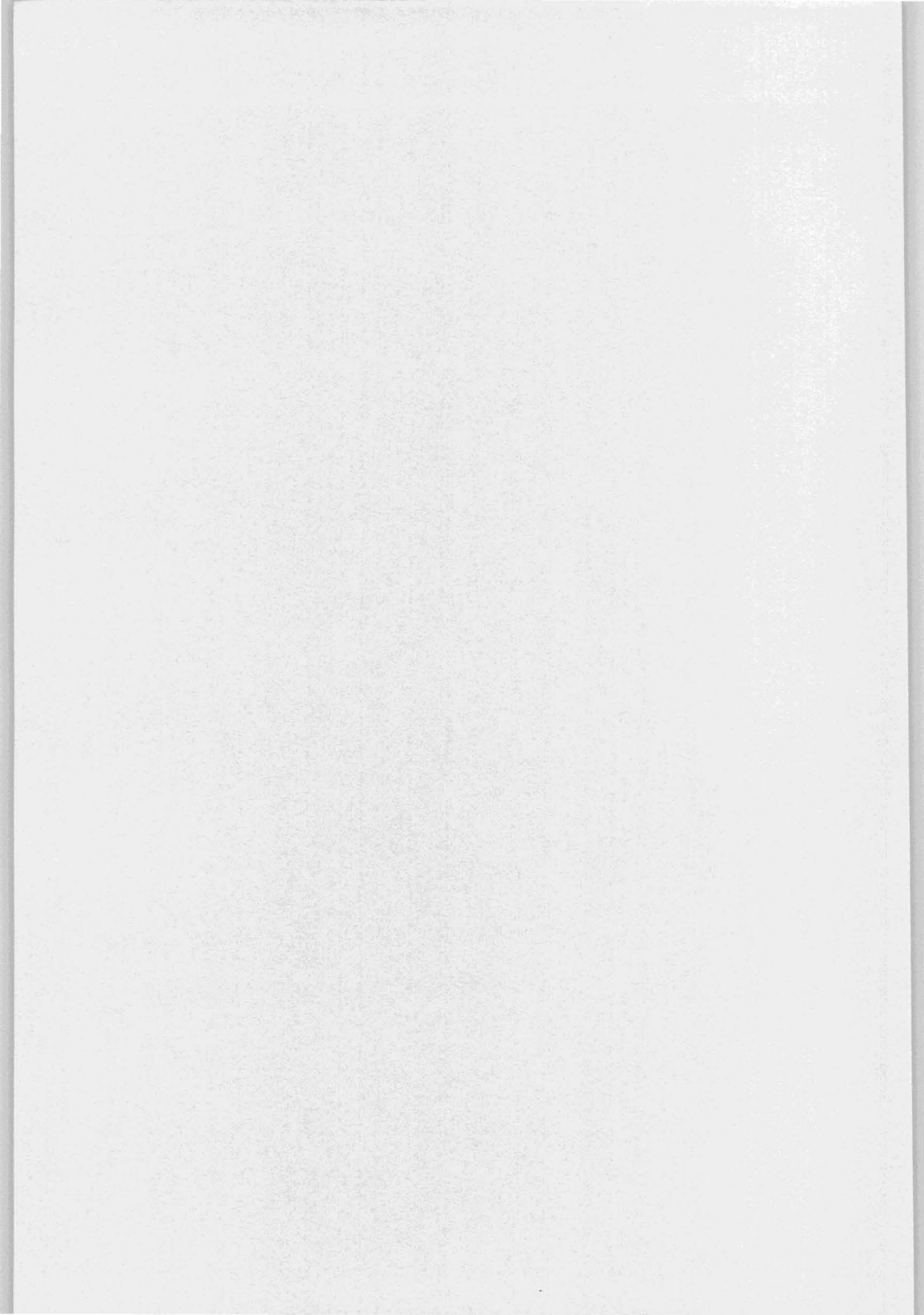
**S.P. Ville and S.R.H. Jones**

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## The Principal-Agent Question: the Chartered Trading Companies

In assessing the efficiency properties of chartered trading companies, as the earliest examples of multinationals, an important issue was their need to obtain a high level of performance from decision-makers. The divorce of ownership from control and the distance of many operations from the European head offices of the firms meant significant levels of responsibility had to be delegated to a managerial class. At the same time, remoteness made it difficult to measure and assess managerial performance. Steve Nicholas and Ann Carlos have argued that delegation to managerial agents had a critical impact upon their profitability: "the major problem facing the trading companies, therefore, was that of managing their managers at a distance".<sup>1</sup> They investigate the response of the companies to the agency question, identifying the incentive structures, monitoring systems, and behavioural mores adopted which, they believe, largely solved the problem. "For the Hudson's Bay Company", they conclude, "agency was not a serious problem".<sup>2</sup> We also believe that agency was a prevalent concern for the trading companies and that, aware of the matter, they adopted palliative measures. However, there are major difficulties in attenuating the costs of agency, particularly in the historical context of these companies, and the ineffectiveness of their solutions is confirmed by extensive evidence of managerial malfeasance. Indeed, managerial opportunism seems to have been regarded as a largely unavoidable consequence of long distance trading and production in an era of poor communications.

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<sup>1</sup> A. M. Carlos and S. Nicholas, 'Agency Problems in Early Chartered Companies: the Case of the Hudson's Bay Company', *Journal of Economic History* 50, 4, 1990, p. 855.

<sup>2</sup> A. M. Carlos and S. Nicholas, 'Managing the Manager: Computing Costs of Agency in the Hudson's Bay Company, 1670-1810', (Unpublished paper for Economic History Society of Australia and New Zealand Conference, July 1992, Department of Economics, University of Western Australia), p. 13.

### **The Agency Problem**

A principal agent relationship exists whenever an owner (principal) delegates decision-making responsibility to another person (agent).<sup>3</sup> It is frequently applied to deal with the relationship between owner and manager in modern large scale businesses. The contract between the two is not a costless one since the principal will need to monitor carefully the agent's behaviour. In the conduct of his or her duties the agent will acquire information unknown to the principal. This information asymmetry creates a moral hazard which enables the agent to act opportunistically, that is in a manner inconsistent with the owner's best interests. Opportunism can take various forms, from indolence to fraudulence, all of which involve a manager attempting to maximise his or her utility function in a manner inconsistent with the best interests of the firm. Principals develop methods of attenuating the costs of agency. Reducing the degree of delegated responsibility may be at odds with the needs of the organisation and bring with it increased costs elsewhere. Complex monitoring systems, a variety of individual and group incentives, and the fostering of a company ethos are the main devices employed. Monitoring increases the probability of detection, incentives raise the opportunity cost of opportunism, and a company ethos encourages loyal and honest behaviour.

There are many impediments to the success of agency mitigation schemes. There must be a reasonable expectation that reduced agency costs will more than offset the costs of these policies. Successful monitoring requires effective reporting systems which convey wide ranging, regular, accurate and up to date information about the operations of the firm at a distance. Imperfect observation and measurement of manager performance can have negative consequences by influencing the agent's

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<sup>3</sup> For an introduction to the principal-agent relationship see: N. Strong and M. Waterson, 'Principals, Agents, and Information', in R. Clarke and T. McGuinness (eds) *The Economics of the Firm* (Oxford, 1987), pp. 18-61. K. Arrow, 'The Economics of Agency', in J. Pratt and R. Zeckhauser (eds) *Principals and Agents: the Structure of Business* (Boston, 1984), pp. 27-51.

behaviour. For example, if output quantities only can be observed this may lead to a decline in quality. The agent will generally be reluctant to share superior information with the principal because it will inhibit his or her rent-gathering potential and may attempt to distort information-gathering procedures as a defence mechanism. Reporting systems may convey accurate information but it must be interpreted under conditions of uncertainty arising from trade fluctuations. The structure of decision-making may also complicate monitoring particularly in larger companies with greater managerial specialization and interdependent teamwork. Mutual monitoring among agents may appear to work but is likely to produce additional costs of over-monitoring.<sup>4</sup> Cooperation among agents may make effective monitoring almost impossible. Irrespective of the quality of the information received, the firm must have in place a centralised structure capable of rapid and intelligent interpretation of such information and able to act upon it.

The main drawback in establishing incentive structures is the difficulty of relating rewards to output. Teamwork and imperfect information emphasise the extent of the problem. Even where individual work can be observed through efficient monitoring systems the level and nature of incentives necessary to mitigate opportunism depends upon the opportunity cost which must vary over time and between individuals. This creates a series of unique situations which makes accurate contracting, based upon precedent, very difficult. The difficulties of designing an appropriate package of incentives are reflected in a lack of consensus in the theoretical literature between the relative merits of promotion and bonus-based incentives and, more broadly, between monetary and non-monetary rewards.<sup>5</sup> Monetary incentives can lead to a decline in quality and encourage a narrow focus on completing particular tasks quickly and with

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<sup>4</sup> G. P. Baker, M. C. Jensen and K. J. Murphy, 'Compensation and Incentives: Practice vs Theory', *Journal of Finance*, 43, 3, 1988, p. 606.

<sup>5</sup> Ibid, pp. 594-5, 600-1

little exercise of risk or initiative. Non-monetary rewards, such as praise and reputation, overcome this problem but are highly reliant upon close and regular interaction between principal and agent.

Modern contract theory, particularly relational and implicit contracting, allows for the fact that there is much in an agreement which is subject to regular change or cannot be formalised in a specific document. Incomplete contracts necessarily vest managers with discretion which can be used to acquire rents. Implicit contract theory recognises that an employment contract will generally be unable to deal explicitly with all aspects of a relationship in a formal manner.<sup>6</sup> Thus, contracting can be highly complex and varied in nature and this is primarily a consequence of uncertainty. Writing and regularly revising complex and individualised employment contracts is a costly exercise. Williamson has argued that complex contractual relations require governance structures with superior adaptive properties.<sup>7</sup> The nature of these structures and how they are adaptive is not made clear in the theoretical literature but evidently such flexibility must be based upon sound information flows about the performance and role of the contracting parties and an ability to interpret and act upon this information.

The apparent ineffectiveness of incentive structures and monitoring systems has led Herbert Simon to argue that there are, 'other powerful motivations that induce

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<sup>6</sup> S. Rosen, 'Implicit Contracts: a Survey', *Journal of Economic Literature* 23, 1985, pp. 1144-1175, reprinted in S. Rosen (ed.) *Implicit Contract Theory* (Aldershot, 1994), pp. 382-413.

<sup>7</sup> O. E. Williamson, 'Transaction-Cost Economics: the Governance of Contractual Relations', *Journal of Law and Economics* 22, 1979, p. 239



employees to accept organizational goals and authority as bases for their actions'.<sup>8</sup> Notions of pride, loyalty, docility, and identification all discourage opportunism. It is open to discussion how far such values can be inculcated into an individual rather than being intrinsic to their personality in the first place. It may also be doubted whether 'most human beings are gifted with a considerable measure of docility'.<sup>9</sup> The appropriate level of docility would require some element of fostering by the firm, which would not be costless, and would probably only work under specific conditions particularly where there is close and regular interaction within the enterprise. While docility and conformity may be appropriate values in an unskilled workforce, a firm may expect somewhat different behavioural values from managers frequently based upon individualism and initiative.

### **Agency Mitigation by the Chartered Trading Companies**

#### *i) Contracts and Incentives*

Carlos and Nicholas provide evidence of incentives established by several trading companies, noting that, 'the principals wrote a generous employment contract for their managers'.<sup>10</sup> Governors of the Hudson's Bay Company (HBC) located in North America periodically earned £50-£200 per annum while £100 was common amongst its managers.<sup>11</sup> The Agent-General of the Royal African Company (RAC) received

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<sup>8</sup> H. Simon, 'Organizations and Markets', *Journal of Economic Perspectives* 5, 2, 1991, p. 34.

<sup>9</sup> Ibid, p. 36.

<sup>10</sup> A. Carlos and S. Nicholas, ' "Giants of an Earlier Capitalism": the Chartered Trading Companies as Modern Multinationals', *Business History Review* 62, 1998, p. 414.

<sup>11</sup> Carlos and Nicholas, 'Agency Problems', pp. 862, 867.

between £400 and £1000 and middle managers £200.<sup>12</sup> Carlos argues that wages paid by the RAC included a non-compensating wage differential which, in terms of wage efficiency modelling, promoted employee compliance.<sup>13</sup> Generous gratuities and bonuses as high as 50 to 100 per cent of annual salary were offered to employees of the HBC; in the RAC the Agent-General was paid a £200 gratuity though evidence of similar generosity to middle managers has not been uncovered.<sup>14</sup> Bonds were lodged by company managers; these ranged typically between £300 and £2000, those in the RAC were about ten times the annual salary. Bonds were higher for those in the more senior and responsible posts and so were increased with promotion.<sup>15</sup> Oaths agreeing not to pursue private trade were common with penalties for their breach including reprimand, loss of the bond, or dismissal.

Comparatively little information on incentives has been unearthed and mostly relates to the leading figures. However, many more minor servants were also in a position to act opportunistically. Salary levels provided by Nicholas and Carlos were not particularly high in comparison with similar occupations. Indeed, £40 for a chief

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<sup>12</sup> Carlos and Nicholas, ‘“Giants of an Earlier Capitalism”’, p. 414; A. Carlos, ‘Agent Opportunism and the Role of Company Culture: the Hudson’s Bay and the Royal African Companies Compared’, *Business and Economic History* 20, 1991, pp. 145-6. There is some inconsistency between the salaries reported in these two papers

<sup>13</sup> A. M. Carlos, ‘Bonding and the Agency Problem: Evidence from the Royal Africa Company, 1672-91’, *Explorations in Economic History* 31, 1994, pp. 317-22.

<sup>14</sup> Carlos and Nicholas, ‘Agency Problems’, pp. 862, 867; Carlos, ‘Agent Opportunism’, p. 146.

<sup>15</sup> Carlos and Nicholas, ‘Agency Problems’, p. 864; Carlos, ‘Agent Opportunism’, p. 146.

factor would seem low.<sup>16</sup> Factors' salaries in the English East India Company (EEIC) in the seventeenth century varied from as little as £10 to £150 or £250 per annum.<sup>17</sup> Shipmasters employed in private shipping firms could expect to earn in the overseas trades in the region of £6-10 per month plus additional benefits in the form of freight allowances and free board and lodgings both on board and ashore.<sup>18</sup> HBC masters and crew earned no more than prevailing occupational rates.<sup>19</sup> Relating incentive structures to individual performance has been cited as a general problem. Charles Bayly was paid the apparently generous salary of £200 by the HBC and yet was still sent home accused of private trading in 1674.<sup>20</sup> We are unconvinced by the assertion of Carlos and Nicholas that, 'in comparison to a list of wages for British workers, the managers were well paid'.<sup>21</sup> The reference is to Williamson's calculations of British pay structures which indicate that engineers and lawyers were

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<sup>16</sup> H. Innis, *The Fur Trade in Canada* (New Haven, CN, 1930), p. 130. F. P. Robinson, *The Trade of the East India Company, 1709-1813* (Cambridge, 1912), p. 63 cites complaints of impoverishment by company servants in Bombay in 1768.

<sup>17</sup> K. N. Chaudhuri, *The English East India Company. The Study of an Early Joint Stock Company* (London, 1965), pp. 83-4.

<sup>18</sup> S. Ville, *English Shipowning in the Industrial Revolution* (Manchester, 1987), pp. 80-3; R. Davis, *The Rise of the English Shipping Industry in the Seventeenth and Eighteenth Centuries* (London, 1962), pp. 138-9.

<sup>19</sup> Ville, *English Shipowning*, pp. 80-3, 164-8; Davis, *English Shipping Industry*, pp. 133-45; Innis, *Fur Trade*, pp. 130, 158. As late as 1768 the seamen of the HBC went on strike for improved wages.

<sup>20</sup> D. MacKay, *The Honourable Company: A History of the Hudson's Bay Company* (London, 1937), p. 48

<sup>21</sup> Carlos and Nicholas, 'Agency Problems', p. 862.

generally paid more than most senior trading company officials.<sup>22</sup> Historians of the trading companies view salaries as poor and believe that private trade was an early form of 'moonlighting' to supplement their modest living.<sup>23</sup>

There is little to suggest that wages contained a non-compensating differential. Wage levels, which we have argued were unexceptional, were mostly determined by seniority, length of service, and skills. Living conditions in, for example, Africa and northern Canada, were such that higher salaries were more likely to reflect a risk premium. Many companies experienced recruitment and retention problems, a solution to which would have been to raise wages. Perhaps the weakest aspect of the case for an efficiency wage is the simplistic assertion that there was an excess of supply over demand for labour, "on various occasions more people are listed as having applied for the position than hired".<sup>24</sup> One might expect this to be the norm for many managerial positions.

How effective were bonds and oaths as instruments of employee control? The companies called home suspected opportunists for questioning and took appropriate subsequent action. Such punishment might be viewed as a normal part of an employee-employer relationship. Nicholas and Carlos have noted: "We have found

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<sup>22</sup> J. Williamson, 'Structure of Pay in Britain, 1710-1911', in *Research In Economic History*, 7, 1982, p. 48.

<sup>23</sup> G. M. Anderson, R. E. McCormick and R. D. Tollison, 'The Economic Organization of the English East India Company', *Journal of Economic Behavior and Organization*, 4, 1983, p. 228; H. Furber, *Rival Empires of Trade in the Orient, 1600-1800* (Minneapolis, 1976), p. 227; O. Prakash, *The Dutch East India Company and the Economy of Bengal, 1630-1720* (Princeton, NJ, 1985), p. 84; T. S. Willan, *The Early History of the Russia Company* (Manchester, 1956), pp. 36-7; K. G. Davies, *The Royal Africa Company* (London, 1957), pp. 253-4.

<sup>24</sup> Carlos, 'Bonding and the Agency Problem', p. 322.

little evidence that those bonds were forfeited, implying that they were successful in reducing opportunism.”<sup>25</sup> Likewise, we have found no evidence of forfeiture but suggest that bonds were therefore an ineffective control mechanism. Instead, they were used to obtain financial restitution in the event of misappropriation or false accounting.

ii) *Monitoring and Internal Controls*

Commercial information was used to monitor managers from a distance. From accounts and correspondence, the Dutch East India Company (VOC) built up information dealing with stock levels, advances, debts, credits, the composition of trade, and cost price data.<sup>26</sup> The HBC attempted to standardise trading values in terms of a ‘beaver standard’ and relied on an ‘overplus’ or balancing item when gift exchange and other more random transactions complicated the picture.<sup>27</sup> Interpreting such information and acting upon it was the responsibility of company committees. The correspondence sub-committees of the East India companies are seen as playing an important role through their tasks of reading and replying to all letters and reports.<sup>28</sup> Direct observation occurred through mutual monitoring and by ship searches conducted by ‘waiters’ who were paid a proportion of any smuggled goods which were detected.<sup>29</sup>

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<sup>25</sup> Carlos and Nicholas, ‘Agency Problems’, p. 864.

<sup>26</sup> Carlos and Nicholas, “‘Giants of an Earlier Capitalism’”, pp. 407-8.

<sup>27</sup> Carlos and Nicholas, ‘Agency Problems’, pp. 867-71.

<sup>28</sup> Carlos and Nicholas, “‘Giants of an Earlier Capitalism’”, p. 408, Carlos and Nicholas, ‘Agency Problems’, pp. 870.

<sup>29</sup> Carlos and Nicholas, ‘Agency Problems’, pp. 865-7, 874; Carlos, ‘Agent Opportunism’, p. 147

We would be circumspect about the value of long distance information in identifying agent opportunism. In an era of slow and irregular communications questions must be raised about the extent to which such information had become obsolete by the time it reached key decision-makers in Europe. As the companies expanded this problem became worse. There is little evidence of a system of regular reporting and in some cases the main information flows occurred only annually. Accuracy and the nature of information were equally important. Information exchanges were primarily concerned with commercial policy particularly in terms of the type of trade goods required beyond Europe and the state of the market in imported produce. Even in this respect information was incomplete; the RAC, for example, kept a book record of auction but not contract sales.<sup>30</sup> The accounting methods of the companies have been variously criticised. The VOC lacked cost-price calculations and simply set costs against total sales without showing the price of imports and exports.<sup>31</sup> In the case of the EEIC it has been suggested that much of the correspondence was concerned with political rather than commercial matters, reflecting the company's functional duality.<sup>32</sup> Information was deliberately distorted by managers. Jerome Horsey, a Russia Company employee, falsified inventories and kept company goods himself.<sup>33</sup> William Jersey, an accountant with the EEIC in Pegu, was dismissed twice by the

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<sup>30</sup> Davies, *Royal Africa Company*, p. 361.

<sup>31</sup> F. Gaastra, 'The Shifting Balance of Trade of the Dutch East India Company', in L. Blussé and F. Gaastra (eds) *Companies and Trade* (The Hague, 1981), p. 54.

<sup>32</sup> Furber, *Rival Empires*, p. 199.

<sup>33</sup> Willan, *Russia Company*, p. 207.

company.<sup>34</sup>

The complex and uncertain nature of international trading provided many opportunities for misinformation. The numerous and fluctuating Indian currencies complicated international transactions as did inaccurate measurement and weighing.<sup>35</sup> The prices of many imported and exported commodities were highly volatile; muscovado sugar imported from Barbados fluctuated between 16s and 54s, 1674-96.<sup>36</sup> Freight rates could be similarly volatile.<sup>37</sup> The frauds committed by Hugh Barker of the EEIC in 1736 arose from imperfect price information on silk imports.<sup>38</sup> Such uncertainty in the terms of trade provided scope for collusive fraudulence between company employees and local traders many of whom worked closely together. Company policy of gift giving and sanctioned bribery provided even more scope for opportunistic 'trimming' by local managers.<sup>39</sup> Even though gifts and bribes might be recorded in the account books the amounts would have been extremely difficult to verify.

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<sup>34</sup> Furber, *Rival Empires*, p. 270.

<sup>35</sup> Furber, *Rival Empires*, pp. 196-7. S. Ville. 'The Problem of Tonnage Measurement in the English Shipping Industry, 1780-1830', *International Journal of Maritime History*, 1, 2, 1989, pp. 74-6 highlights the bribery of coal meters by shipowners in order to overstate delivery volumes by substantial amounts.

<sup>36</sup> Davies, *Royal Africa Company*, p. 366. Davies, *Royal Africa Company*, p. 356.

<sup>37</sup> Ville, *English Shipowning*, p. 172.

<sup>38</sup> K.N. Chaudhuri, *The Trading world of Asia and the English East India Company, 1660-1760* (Cambridge, 1978) p. 357.

<sup>39</sup> Chaudhuri, *Trading World*, p. 125 suggests large sums were involved in official bribery by the English East India Company.

Attempts by the HBC to overcome such problems by establishing a formal exchange rate between trade exports and imported beaver skins appears unconvincing as a monitoring tool. This rate remained unchanged for many years in spite of the fact that the terms of trade must have fluctuated. This fluctuation was allowed for in the accounts by an 'overplus', measuring the saving in export goods from an improvement in the terms of trade. It would still remain difficult, however, for company officers in Europe to detect the true reasons for such fluctuations. Nicholas and Carlos attribute favourable movements to quality shading in such products as cloth, brandy, and tobacco. This deceived the local Indian population, and must have been hard to monitor back in Europe. A contemporary trader, Joseph La France, wrote in 1742:

...the governors add to the price of their goods, exact many more furs from the natives than is required by the standard, and sometimes pay them not equally for furs of the same value. This they call the profit of the over-plus trade, part of which they always add to the Company's stock for the sake of enhancing the merit of their services, and apply the remainder to their own use, which is often expended in bribes to skreen their faults and continue them in their command.<sup>40</sup>

A company report of 1812 recommended replacing the standard with a system of accounts current which, 'would considerably improve the value of your returns, and shew you at once the trader who is most worthy of being prompted or rewarded'.<sup>41</sup>

How did the companies use and act upon information received? Nicholas and Carlos draw attention to the large volume of information generated by the companies but give little indication of how it was used. Others suggest that the companies may have been overburdened by the detail and suffered from diseconomies of information. Davies observes that the RAC made little attempt to "digest or summarise the information",

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<sup>40</sup> Innis, *Fur Trade*, p. 146. In addition, since the prices of articles varied between outposts there was little value in making such comparisons. *Ibid*, pp. 147-8.

<sup>41</sup> *Ibid*, p. 166.



Mackay shows that the HBC's London Head Office sometimes took two years to provide decisions to the outposts on urgent matters.<sup>42</sup> Furber's comments on the VOC are particularly striking:

There is no doubt whatever that hundreds of pages sent home were never even read. Anyone working among the company's records at the Dutch National Archives is likely to open a volume to find thousands of grains of sand used to blot the ink lying undisturbed between its pages.<sup>43</sup>

The infrequent arrival of large volumes of company accounts accentuated problems of information processing. Where information from overseas was carefully checked suspicion might fall upon company employees but proving a case against an individual could be difficult and often not worth the time and effort. Willan suggests that the Russia Company was unable to find adequate evidence to act against many employees strongly suspected of private trading.<sup>44</sup>

Direct monitoring through vessel searches removed the problems of distance and time but was fraught with deception and bribery. Davies believes that searches conducted by the RAC were largely ineffective and gives the example of slaves written off as dead being landed in the West Indies before the company's agents came aboard.<sup>45</sup> Furber suggest that there were many points on the French coast where illegal cargoes could be landed, while Glamann argues that the growth in the size of company fleets

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<sup>42</sup> Davies, *Royal Africa Company* , p. 111; Mackay, *Honourable Company*, p. 134.

<sup>43</sup> Furber, *Rival Empires*, p. 191.

<sup>44</sup> Willan, *Russia Company*, p. 203.

<sup>45</sup> Davies, *Royal Africa Company* , p. 110.

in the eighteenth century, arriving together, made the task of searching more difficult.<sup>46</sup> By delegating monitoring to relatively minor officials the companies ran the risk of collusive opportunism and bribery.<sup>47</sup>

### *iii) Company culture*

The conscious or sub-conscious development of corporate cultures by the HBC and RAC are examined by Carlos and Nicholas: "The directors definitely tried to create a social system in which the managers and workers were made to feel part of a family".<sup>48</sup> They argue that in the case of the HBC pensions, positive encouragement, a socially or geographically homogeneous workforce, and the fostering of a moral code created an atmosphere of honesty and loyalty.<sup>49</sup> The ephemeral RAC failed to do likewise because of short term employment profiles and the openness of the environment which increased the opportunity for corruption.<sup>50</sup>

Evidence of the growth of corporate cultures is highly tenuous. Close and regular interaction was impossible in long distance trading companies of this era. Carlos and

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<sup>46</sup> Furber, *Rival Empires*, p. 142; K. Glamann, *Dutch-Asiatic Trade, 1620-1720* (Cambridge, 1978), p. 239.

<sup>47</sup> See the example provided in footnote 53. Carlos, 'Bonding and the Agency Problem', p. 327 alternatively gives an example of a chief mate's abortive attempt to bribe a waiter. Naturally, such failed attempts are more likely to have come to light than the successful ones.

<sup>48</sup> Carlos and Nicholas, 'Agency Problems', pp. 873. They differ in view between their articles as to whether corporate cultures were imposed by the firm or developed subconsciously.

<sup>49</sup> Ibid, pp. 872-4.

<sup>50</sup> Carlos, 'Agent Opportunism', p. 149-50.

Nicholas allege positive encouragement was replete in company correspondence but no examples are provided. Their little homilies were insufficient to prevent desertion, drunkenness, and gross immorality on a grand scale. Fostering a family atmosphere was at odds with encouraging servants to monitor each other and report misdemeanours. Innis provides evidence for the absence of an *esprit de corps* in the HBC at the end of the eighteenth century.<sup>51</sup> The genocidal aftermath of the wrecking of the VOC's vessel, *Batavia*, on the Abrolhos Islands in 1629 also contradicts notions of a cooperative company culture.<sup>52</sup> It remains unproven that the HBC sought or were able to recruit an homogeneous workforce and a managerial class with a shared set of values. Recruitment from Christ's Hospital reflected the educational attainments of these boys and, as a single source, minimised recruitment costs. The recruitment of Orcadians was linked to their familiarity with extremely cold climates and the position of the Orkneys on the northern route to North America. In 1812, Colin Robertson, who had been hired to recommend improvements to the operations of the HBC, wrote of the unsuitability of Orkneymen who only joined the company as a last resort and left once they had earned sufficient money.<sup>53</sup> Nor was an homogeneous workforce necessarily a loyal or industrious one. The overseas workforce may have held common group values, but if these were different from those of the directors in London, this might create a hostile culture, prone to collusive opportunism. Wartime payments of injury and death pensions were intended to keep men at their posts at dangerous times rather than a means of fostering a family environment. Some private shipowners paid their principal captains retainers and offered pensions on retirement

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<sup>51</sup> Innis, *Fur Trade*, p. 158.

<sup>52</sup> A stimulating account of these events and the archaeological discoveries which they yielded is provided in H. Edwards, *Islands of Angry Ghosts* (London, 1966).

<sup>53</sup> Innis, *Fur Trade*, p. 165.

or death as a means of retaining their services.<sup>54</sup>

### **Evidence of Persistent Opportunism**

Historians of the trading companies provide extensive primary evidence of opportunism and conclude that it was a major problem which did not decline, indeed may have increased, over the course of the seventeenth and eighteenth centuries. For the EEIC, Chaudhuri noted, 'the Company was never able to solve satisfactorily the difficult task of controlling the officials in Asia and extracting compliance to its orders'.<sup>55</sup> Davies noted the 'lethargy and dishonesty' of officials and Wood, 'a rich crop of abuses' in the Levant Company.<sup>56</sup> Governors, chief agents, and company ambassadors were all convicted of corruption. In 1734 Sir Robert Cowan was dismissed as governor of Bombay for the EEIC on a charge of corruption.<sup>57</sup> Dishonesty was often the result of collusion among company servants, and with former employees, local merchants, and even local rulers. In 1626 George Willoughby, on returning from India, informed the EEIC of a, 'notorious abuse' committed in collusion by three of its factors, 'to the exceeding loss and prejudice of the Company'.<sup>58</sup> The companies were defrauded both in the disposal of their goods and the procurement of return commodities. Incorrect invoice returns and the substitution of different grades of the same commodity meant both quantity and quality

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<sup>54</sup> Ville, *English Shipowning*, p. 74.

<sup>55</sup> Chaudhuri, *Trading World*, p. 40.

<sup>56</sup> Davies, *Royal Africa Company*, p. 165; A. C. Wood, *A History of the Levant Company* (London, 1964), p. 56.

<sup>57</sup> Chaudhuri, *Trading World*, p. 212.

<sup>58</sup> Chaudhuri, *English East India Company*, p. 87.

manipulation was involved. Embezzlement of non-traded company goods and assets and unsanctioned borrowing from the firms also occurred. One example of each type of fraud may be given from a very long list of recorded incidents. A VOC director in Bengal sold company goods to a merchant in return for a 20 or 30 per cent commission when he could have sold them to others for a higher price.<sup>59</sup> Russia Company vessels returned with poor quality furs and incomplete cargoes.<sup>60</sup> EEIC employees regularly embezzled military stores.<sup>61</sup>

Possibly the most prevalent form of opportunism was private trading. Furber has claimed that nearly all Europeans living in the East Indies before the nineteenth century were living a double life, working for a company and developing their own private trade.<sup>62</sup> The loss of employee effort to the company was clear enough but it could also mean product quality substitution between company and private trade, securing the best price agreements for themselves, and taking up cargo space on board vessel. Shipmasters deliberately acted in a dilatory manner so that they would miss the return season to Europe and remain in south-east Asia where they could participate in the country trade where involvement of the EEIC was negligible particularly after the middle of the seventeenth century.<sup>63</sup> By contrast, 'private English traders constituted by far the largest and most enduring group of Europeans engaged in the

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<sup>59</sup> Prakash, *Dutch East India Company*, p. 83.

<sup>60</sup> Willan, *Russia Company*, p. 78.

<sup>61</sup> Furber, *Rival Empires*, pp. 200-1.

<sup>62</sup> Ibid, p. 66.

<sup>63</sup> Ibid, pp. 279-80.

trade of the Indian Ocean and the South China Seas'.<sup>64</sup> One contemporary viewed the private trade of employees of the VOC from Bengal as being as great as the official trade.<sup>65</sup> The companies appeared ambivalent towards private trade. Recognising that it could serve as an incentive structure but also cut into company business, they periodically banned and permitted it. The VOC allowed its servants some 'privilege tonnage' by which they could bring home a certain amount of tea on their own account. Anderson et al have viewed the privileged tonnage as the most important form of incentive structure for ship masters.<sup>66</sup> However, such privileges were regularly violated and exceeded on a large scale. It has been estimated that a half of the private trade in tea by VOC employees in the middle of the eighteenth century was unsanctioned.<sup>67</sup> Nor did opportunism decline over time in response to counter measures by the companies. In the 1750s, three-quarters of a century after outlawing it, the HBC was still suffering from private trade which included ship masters and local governors smuggling out furs for private profit.<sup>68</sup> As late as 1786, Sir Archibald Campbell arrived in Madras as the new governor for the EEIC and began investigations which revealed that the company's service was riddled with corruption.<sup>69</sup>

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<sup>64</sup> O. M. Prakash, 'India and the Indian Ocean Maritime Trading Network, 1500-1800' (unpublished paper of New Directions in Maritime History Conference, University of Western Australia, 1993), pp. 11-12.

<sup>65</sup> Prakash, *Dutch East India Company*, p. 84.

<sup>66</sup> Anderson et al, 'Economic Organization', pp. 233-4.

<sup>67</sup> Glamann, *Dutch-Asiatic*, pp. 237-8.

<sup>68</sup> Mackay, *Honourable Company*, pp. 101-2.

<sup>69</sup> Furber, *Rival Empires*, pp. 200-1.

## Modelling Managerial Opportunism

It is more difficult to evaluate the significance of employee opportunism to company performance. Davies argues that, 'it is impossible to estimate even approximately how much the company [RAC] lost by the frauds of its agents and factors'.<sup>70</sup> Some writers have viewed employee activities as relevant to the difficulties or downfall of companies. Prakash believes employee action 'contributed significantly' to the VOC's problems, while Wood suggests it did more than anything to destroy the Levant Company's prosperity by 1660.<sup>71</sup> The EEIC attempted to mitigate private trading when it realised the serious impact it was having upon the firm's business. Carlos and Nicholas attempt to model managerial opportunism in the HBC in 1810.<sup>72</sup> While we welcome the bold methodology as probably the first historical application of an agency model, we believe that the model is technically flawed and inappropriately applied.<sup>73</sup>

The intention of the model is to show what proportions of total potential profit accrue to the Company (the principal) and the manager (the agent). The expected net revenue for the company ( $R_c$ ) and for the agent ( $R_a$ ) are expressed as follows:

$$R_c = sR - am^2 - pI$$

$$R_a = b(1-s)R + pI$$

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<sup>70</sup> Davies, *Royal Africa Company*, p. 111.

<sup>71</sup> Prakash, *Dutch East India Company*, p. 83; Wood, *Levant Company*, p. 56.

<sup>72</sup> A. M. Carlos and S. Nicholas, 'Managing the manager: an Application of the Principal Agent Model to the Hudson's Bay Company', *Oxford Economic Papers*, 45, 1993.

<sup>73</sup> For a detailed critique of its specification and a modified solution of the Carlos-Nicholas model, see M. Casson, S. Jones, and S. Ville, 'Modelling Agency in the Hudson's Bay Company: a Critique', *Discussion Papers in Economics*, University of Reading, 1995.

where **R** is total expected revenue from trade, **I** the salary, **s** the proportion of official trade, **1-s** the proportion of private managerial trade, **m** the level of monitoring, **p** the probability of trade remaining undetected. **a** is a coefficient of the cost of monitoring and **b** a coefficient for measuring the degree of agent inefficiency compared with the company. The net revenue for the company is calculated by deducting the cost of monitoring and agent salaries from the total revenue of official trade. Agent income is the revenue generated from private trade plus salary. They introduce a third equation which derives a relationship between the probability of non-detection, **p**, the level of monitoring, **m**, and managerial trade, **(1-s)**:

$$p = 1 - (1-s)^2 m.$$

This provides a substitute for **p** in solving **R<sub>a</sub>** and **R<sub>c</sub>**. Differentiation is then used to obtain optimal values for **I**, **m**, and **s**. From these sets of equations, **R<sub>a</sub>** and **R<sub>c</sub>** can now both be solely expressed in terms of **sR**, **I**, and **p** which is what the authors require since they have historic values of 1810 for **sR** and **I** together with a hypothesised value for **p**. With an **sR** value of £25 977, **I** of £2690 and **(1-p)** of 0.8 the total expected profits are £30 819 of which the company took 78.2 per cent and the managers 15.7 per cent with the balance taken up by inefficiency and the costs of monitoring. Reducing the probability of detection to 0.6 only marginally affects the result with 77.8 per cent of profits going to the company and 14.2 per cent to the manager.<sup>74</sup> The full costs of agency include inefficiency and monitoring, as well as the manager's return. In this case, therefore, agency costs were 21.8 to 22.2 per cent of total returns. On the basis of their interpretation of these results, Carlos and Nicholas conclude that the agency problem had been solved by 1810.

While the intention of the model is to measure the total gains to the managers and the losses to the company from opportunism it only captures the gains and losses of private trading. A second limitation of the model is that it simply attempts to measure

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<sup>74</sup> Ibid, p. 247-52



the revenue generated by the division of trade between the company and its managers. It tells us nothing about the profit achieved by either party. By their own admission the fixed costs facing the company are ignored, as are many of the variable costs.

How effective is the model, though, in measuring private trade? We believe that the expression of  $p$  in terms of  $(1-s)$  and  $m$  is incorrect. We question whether  $p$  can be expressed in terms of  $s$ . While we might expect the probability of detection to increase with monitoring levels, though perhaps to a diminishing degree, it is much less evident that they rose with the increased proportion of private trade. Whilst increased private trade will lead to increased *levels* of detection it will not affect *rates* of detection. No matter how many times a manager attempts to smuggle private trade in the course of a year, the probability of his being detected, *ceteris paribus*, will not rise unless the level of monitoring does. Hypothetically, therefore, the relationship seems unfounded. If, in this particular example, we can equate levels and rates of detection there is no explanation as to why a squared value of  $(1-s)$  is employed. Without a squared value there would be no remaining value once  $p$  had been differentiated in terms of  $s$  in attempting to solve  $R_a$  and  $R_c$ . Nor is it clear that any relationship between  $p$  and  $(1-s)$  is consistent over all values. At low levels of private trade, the probability of detection might change very little but at higher levels rise sharply. Carlos and Nicholas tell us that this relationship is based upon historical evidence although none is provided and we are not aware of any. Thus, there appears to be no clear or consistent relationship between  $p$  and  $(1-s)$ . It is perhaps symptomatic of their confusion that they appear to contradict themselves later in the paper by arguing that, 'the probability of detection depends both on the level of monitoring and the environment in which the trade is conducted'.<sup>75</sup> They do not attempt to model their imprecise notions of a closed environment which might increase detection rates.

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<sup>75</sup> Carlos and Nicholas, 'Managing the Manager', p. 253.

The parameters **a** and **b** measure the cost of monitoring and the (in)efficiency of private relative to official trade, respectively. There are no historical values available for either parameter. Therefore, they simulate the costs of agency by using parameter values for **a** and **b** between 0.2 and 0.8. No **a** values above 0.8 are provided although they admit it would be possible to have values greater than 1. Of greater concern, though, is their unwillingness to accept that **b** could be greater than 1 and therefore private trade more efficient than that of the company. While private trade incurred additional costs from smuggling and surreptitiously supplying the market, managers benefited from superior information, particularly in the procurement of goods, which lowered their variable costs relative to those of the firm. They also had lower establishment costs, being able to free-ride by using the firm's time, trading posts, shipping space, and commercial information at little expense. Indeed, as we noted earlier, free-riding and preferential treatment were likely to tilt the balance of relative efficiency between the two modes even further. On this basis, we would suggest that the private trader was in a position to operate more efficiently than the firm and therefore **b** should have a value greater than 1. This represents a major problem for Carlos and Nicholas since their model is especially sensitive to variations in **b**.

Aside from its limited scope and technical flaws, the manner in which the model is applied is problematic. Concentration upon a single year rather than providing a longitudinal comparison inevitably limits its comparative value. It tells us nothing about the extent of the agency problem in the HBC's early years in spite of the authors claim that an agency problem had existed and was solved by the introduction of control measures at some point in the company's history. If the problem was solved we know nothing of its historical sequence whether it was a sudden, gradual, intermittent, or cyclical process. Equally, it provokes questions concerning the representativeness of the year chosen. In fact, the choice of 1810 could not have been more unfortunate. It fell in the middle of the French Wars when the profitability of

shipping and overseas trade was known to be highly volatile.<sup>76</sup>

By reframing their equations Carlos and Nicholas were able to derive 1810 values for agent and company 'profit' in terms of  $sR$ ,  $I$ , and  $p$ . However, while there is historical data for salaries and company sales revenue, nothing exists for the probability of detection. Instead, they 'infer' a value for  $p$  from qualitative evidence on monitoring levels and the trade environment contained in the HBC archives. We are told that direct and indirect monitoring took place but there is no indication of how many were caught in a single fleet, year or series of years. It is clear that evidence has not been unearthed of the precision to derive a figure for modelling the probability of detection. Their guess of 0.8 is extremely high; if the probability of being detected was 80 per cent this in itself would have prevented almost all private trade, something we know not to have happened. Even 0.6 which they use in a sensitivity analysis is too high. On the basis of our scepticism regarding control systems we would choose a much lower figure, say 0.1. This ought to result in a larger share of profit going to the agent and a smaller one to the company. To our surprise, the model provided the opposite result: agent share of profit collapsed from 14-16 per cent to only 8.76 per cent while company profit rose from 77-78 per cent to 80.01 per cent. If the probability of detection is reduced to zero, that private trade was never stopped, agent profit falls further to 7.9 per cent and company profit rises further to 80.25. This is a remarkable contradiction of Carlos and Nicholas's assertion that direct and indirect monitoring systems introduced by the company helped attenuate agency. Instead, the model predicts that these systems made the problem worse! By setting the probability of detection at a maximum of one we find that agent profit rises to 17.16 per cent and that of the company falls to 78.55.

In order to try and understand why this should happen it is necessary to show the

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<sup>76</sup> Ville, *English Shipowning*, ch. 6.

equations reframed in terms of  $sR$ ,  $I$ , and  $p$ , something which Nicholas and Carlos omit from their paper. Thus:

$$R_a = I(2-P)$$

$$R_c = sR - I(1/2 - P)$$

It takes little imagination to realise that neither of these equations are going to provide the outcomes expected. With respect to agent profit,  $R_a$ , we would expect that reducing the probability of detection would increase profit or increasing detection rates would reduce profits. As we saw above, the outcome is exactly the opposite.

Similarly, the limitations of the model mean that any increase in agent salaries, other things remaining the same, will necessarily increase the agent's share of profit rather than reduce it by discouraging opportunism. Thus, if we use Carlos and Nicholas's original figures including a detection rate of 0.8 but increase agent salaries from £2690 to £4000 we find that the agent's share rises to 20.7 per cent and that of the company falls to 71.25. This would appear significant since their estimate for salaries appears to be somewhat conservative.<sup>77</sup>

Equally surprising is the fact that the agent's profit is independent of the level of trade and can only fluctuate between one and two times the salary level:

$$I < R_a < 2I$$

$$\text{because } 0 < p < 1$$

In relation to  $R_c$  we find, contrary to our expectations, that it rises when the probability of detection falls and vice-versa. In addition, it is constrained within the limits of company sales revenue plus or minus half agent salaries:

$$(sR - I/2) < R_c < (sR + I/2)$$

$$\text{because } 0 < p < 1$$

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<sup>77</sup> See Casson, Jones and Ville, 'Modelling Agency'.

The other two components of agency costs, inefficiency and monitoring, are also independent of the level or value of trade and closely constrained:

Inefficiency =  $pI$  and thus in the region 0 to  $I$

Monitoring =  $I/2$

Moreover, since we have no historic values for private trade and the model limits agent profit, unrealistically, to a maximum of double salary we are unable to show a large percentage return to the agent. Equally, total agency costs are limited to two and a half times salary. The fact that only  $R_c$  is reliant on the level and value of trade makes the model inflexible. In addition, since agent profit and inefficiency are influenced in the opposite direction by  $p$ , the result of changes in the probability of detection is simply to shift the balance of agency costs between these two categories with very little impact on company profit. Thus, increasing detection rates would appear as of little consequence for the companies. If the original equation  $p = 1 - (1-s)^2m$  had been rejected, as we suggested above, it would have been impossible to express agent costs in terms of only salary and detection rates and the model could not have been calibrated in the absence of historical data on private trade. It is unlikely, of course, that we would have values for private trade given its clandestine nature; the same problem confronts historians of smuggling. We are also sceptical about the manner in which the authors derive an historic figure for  $sR$ .  $sR$  is calculated by deducting total sales revenue from the value of trade goods. While this net figure may be affected by agent opportunism it might equally be the consequence of changed trading conditions. In their example, if the company's trade revenue is halved then the firm's share of profits falls from 78 per cent to 64 and that of the agent rises from 15 to 26. However, we need to be able to distinguish whether this was primarily due to agent opportunism or a downturn in markets.

## Conclusion

It is clear that the chartered trading companies faced considerable control problems in operating multinationally in a period of slow and irregular communications and

with few organizational precedents on which to base their actions. We agree with Carlos and Nicholas that the companies were aware of the problem and made some attempts to respond to it. However, the general constraints in mitigating agency costs and the particular problems of the historical context have inclined us to a more circumspect few of the outcome. Extensive primary evidence confirms that managerial opportunism continued to be a major problem for the companies. There is no indication from the companies that they solved the problem indeed their continual modification of control policies suggests the opposite. Modelling the impact of agency costs on profitability provides an interesting methodological exercise but in its current form produces results which are too constrained and in fact contradict the predicted outcome.

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