*The Economic and Monetary Problem of European Trade with Asia during the Seventeenth and Eigthteenth Centuries**

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I

The trading world of Europe and Asia in the early modern period was precariously balanced on a monetary system based on a large number of metallic currencies. This dependence on gold and silver for international financial transactions was cast into new dimensions by the discovery and working of the Spanish American mines in the sixteenth century, which set in motion a wide movement of precious metals. The old monetary frontiers were rapidly eroded in the process, giving rise to new trade flows, and bringing forward in economic policy-making new ideological issues that were to dominate Europe for more than two centuries. In the contemporary economic literature the ubiquity and dissemination of American treasure throughout the world occupied a large place. As the annual *flota de plata* came into port at Cadiz from Vera Cruz in New Spain statesmen and merchants turned it into an occasion for thanksgiving. Wars could now be financed, the soldiery paid, and the

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merchant was once again assured of being able to meet his obligations.[1] The enemies no less than friends of Spain looked to the Iberian reservoir to replenish their stocks of money. In the bitter words of Don Geronymo de Uztariz, the high-ranking Spanish official who wrote a treatise on the theory and practice of commerce, the vast treasures which arrived in Cadiz from the Indies contributed nothing to Spain's relief or advantage but were rather to be turned against her government. « For by this means », he wrote, « they afterwards go in large quantities, into the dominions of the Turks, who set so high a value upon the dollars of Mexico and Peru, that the merchants of Europe, to our disgrace, there negotiate them with a premium of six, eight and ten per cent, above their intrinsic value ».[2] Spanish coins not only passed into Constantinople but also reached the ports and cities of the Maghreb in large quantities, towns such as Salé, Tetuan, Oran, Algiers, Tunis, Port Farina, and Tripoli. This supply of money, according to Uztariz, enabled the Turks to carry on bloody wars against the Christians, « especially in the dominions of the Spanish monarchy ».

There were other European writers, both travellers and merchants, who had observed and commented upon the outflow of silver from Europe to the Middle East and thence to India. Gemelli Careri was one of them, visiting India in 1695. But he was certainly guilty of exaggeration when he asserted that all the gold and silver which circulated in the world eventually found their resting place in the Mughal Empire.[3] India was the penultimate destination of the American silver. For beyond South Asia there were still the vast areas of Imperial China which also depended on a metallic currency to support its economic activities. Careri, however, spoke

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1 See FERNAND BRAUDEL, *The Mediterranean and the Mediterranean World in the Age of Philip II*, tr. S. Reynolds 2 vols. (London, 1972-3), I, 480, 490-1; F. C. SPOONER, *The International Economy and Monetary Movements in France 1493-1725* (Cambridge, Mass., 1972), p. 3.

2 Don GERONYMO DE UZTARIZ, *The Theory and Practice of Commerce*, tr. John Kippax, 2 vols. (London, 1751), II, p. 15-7. [The work was first printed privately in 1724 in Madrid; The public Spanish edition appeared in 1742].

3 GEMELLI CARERI, *A Voyage Round the World*, bk. II, ch. VI, printed in Awnsham and JOHN CHURCHILL, *A Collection of Voyages and Travels*, 4 vols. (London, 1704), IV, p. 248.

the truth in pointing out the two routes which Spanish treasure took through the Middle East on its way to India. One was by way of Bab el-Mandeb and Mokha in the Red Sea; the other through Smyrna and Persia. The first network rested on the coffee trade of the Yemen; the second on that of raw silk. These facts were well-known in Europe, and long before Careri wrote the accounts of his travels in Asia, a prominent member of the English East India Company, Sir John Wolstenholme, drew attention to the three streams by which the greatest part of « the fountain of silver springing in the West Indies » and coming to Spain was again dispersed over all Asia. The Aleppo and Mokha routes were mentioned by him, as also the exports round the Cape of Good Hope. The total annual value of silver which Christendom lost to Asia in this way he estimated at £ 1,500,000.[4] There was of course another, equally famous route through which silver flowed to the orient, though it went relatively unnoticed among European observers unacquainted with the commercial workings of the Spanish Empire. This was the galleon trade between Acapulco and Manila. A royal decree dating from 1593 had laid down that the trade between the Spanish Indies and the Philippines was to be confined to two ships of 300 tons each in the interest of the inhabitants of Manila.[5] The galleons were allowed to export in Chinese silks and other goods a total of 250,000 *pesos de a ocho reales*, and import in return bullion or coins from Acapulco not exceeding 500,000 pesos. But the law was enforced with such laxity that in 1602 the Cabildo of Mexico City represented to the king that the annual loss of silver to the Philippines and the Far East from the Indies came to five million pesos.[6] In the eighteenth century Uztariz computed the drain at three million dollars, though the decrees of Philip V had prohibited in 1718 and again 1720 the importation of satins, damasks, brocades, printed cotton, and other woven

[4] P.R.O. East Indies, 1621, vol. 1, No. 88; see also CHAUDHURI, *The English East India Company*, p. 120.

[5] C. R. BOXER, *Plata es Sangre: Sidelights on the Drain of Spanish-American Silver in the Far East, 1550-1700*, « Philippine Studies », 18. 3 : 463-4 (July 1970).

[6] W. W. BORAH, *Early Colonial Trade and Navigation between Mexico and Peru* (Berkeley, 1954), p. 116-27.

goods from Asia or Africa into Spanish America.[7] Silver was such an essential item in the foreign trade of China that a local proverb of Manila described it as the very life blood of the Chinese: *plata sa sangue*.[8]

Why did Asia absorb these prodigious amounts of precious metals, or to put the question in another way, why was the balance of trade so unfavourable to Europe? This is a problem on which the historiography of three centuries has left behind a heavy encrustation of opinions and views, though there have been few attempts to search for the causal factors in a systematic fashion. The most common explanation of the large and chronic imbalance between European imports from Asia and her exports to that continent is that there was a lack of demand on the part of Asian consumers for western goods. It is true that in the early years of their trade, both the Dutch and the English East India Companies made persistent efforts to enlarge the export of woollen cloth, the staple European manufactured product, to Asian countries. But all through the two centuries with which we are concerned here the market remained limited and the value of the export commodities accounted for less than 30 per cent of the total value of the imports. The theory which relies on the rigidity of consumer taste or unsuitable climate in the Indies to account for the pattern of intercontinental trade of that time runs into difficulty when one raises the question why consumers in Europe should have developed a liking for Indian cotton textiles in a cold climate. Similar objections can be made against the second suggestion that the absorption of precious metals by India or China was essentially the result of hoarding habits in these countries and the oriental liking for ornaments.[9] If one is to believe the contemporary European observers, it would seem that silver was only mined out of the earth in South

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[7] Uztariz, *The Theory and Practice of Commerce*, II, 86-7.

[8] *Travels of Fray Sebastien Manrique 1629-1643*, ed. C.E. Luard, 2 vols. (Oxford, 1927), II, 49; quoted by Boxer, *Plata es Sangre*, p. 463.

[9] For an example of the suggestion of oriental hoarding see R. C. Blitz, *Mercantilist Policies and the Pattern of World Trade, 1500-1750*, « Journal of Economic History », 27. 1: 39-55 (March 1967). For a critique of this viewpoint see, K. N. Chaudhuri, *Treasure and Trade Balances: The East India Company's Export Trade 1660-1720*, « The Economic History Review », 2nd series, 21. 3: 486-96 (December 1968).

America to return to it in Asia. No one paused to ask what the possible size of Asia's transaction demand was for money and there was certainly no attempt to compare the levels of international income and prices as a means of explaining the direction and volume of trade flows. As we shall see later, there were economic thinkers in the eighteenth century who were aware of the absolute difference in the price levels as between Europe and Asia and they attributed the European export of silver to the Indies to this basic fact. But in general the simpler theory of Asian hoarding had a more intuitive appeal. It must be pointed out that a high liquidity preference — the modern terminology for the practice of another age — is common to all societies which make use of a metallic currency and the European search for American silver was largely motivated in the sixteenth century by such an urge.

It is perhaps no surprise that David Ricardo, the creator of classical political economy and the discoverer of the theory of comparative costs in international trade, should have pointed out the true reason for movements of precious metals, although he was not the first to do so. Bullion movements in Ricardo's views were caused by variations in the ratio of gold and silver on the one hand and the ratio of precious metals and productive goods and services on the other.[10] But Ricardo also went further than this simple explanation, and suggested an elegant answer to the fundamental problem inherent in division of labour and economic exchange. Trade across national frontiers, as his famous theorem shows, is a function of international differences in production costs and prices. In the classical theory of international trade, the monetary factors are linked to the "pure" theory through the adjustment mechanism in the balance of payment. If there is a persistent and large difference in the absolute level of prices between two trading countries, its effect is felt through fluctuations in the foreign exchange market. The Ricardian specie-flow mechanism then restores equilibrium by raising prices in the country with the favourable

10 David Ricardo, *High Price of Bullion*, printed in *Works of David Ricardo*, ed. P. Sraffa, 10 vols. (Cambridge, 1951), III, 57.

balance of payments. For European trade with Asia during the seventeenth and eighteenth centuries, there is no doubt that the positive aspect is partly explained by price differences, which did in fact cause the Ricardian specie-flow mechanism to work. As precious metals are universally used to measure domestic as well as international prices, no other definition of their role in international finance is possible. Before we examine the qualitative evidence that is available to support our hypothesis, it will be useful to set out the precise conditions which theoretically lead to a country or a whole region to accumulate trade surpluses. The theory is cast in the usual form of two countries exchanging only two commodities with a fixed supply of labour.[11] Using some symbols, we write RT_1 = the rate of change in country 1's trade balance. N_1 and N_2 = the price elasticity of demand. E_1 and E_2 = the income elasticity of demand. rP_1 and rP_2 = the rate of change in prices. R_1 and R_2 = the rate of change in income. The equation for the change in country 1's trade balance over time can be written in the form:

$$RT_1 = (N_1 + N_2 - 1)\ (rP_2 - rP_1) + E_2R_2 - E_1R_1.$$

The two pairs of elasticities, N and E, are constants in the equation while the price and income changes are variables. If we assign definite values to the constants, we can determine precisely from the above relationship what is the effect on country 1's trade balance of a given change in the price of its exports and imports or a shift in income levels.[12]

There is little doubt that Asia's massive absorption of silver in the age preceding the Industrial Revolution can be explained by the reasoning embedded in our model, if we treat it as a compensating payment off-setting the large trade surpluses. Contemporary writers, under the influence of mercantilist thinking devoted a great deal of their attention to the problem of instability in national finance caused by an adverse trade balance. Since gold and silver were regarded as universal measures of value, there was

[11] The model has been developed by Harry G. JOHNSON, *International Trade and Economic Growth* (London, 1958), ch. IV, p. 94-119.

[12] For the mathematical proof of the equation see appendix given at the end.

very little that could be done to insulate a country either from the effect of its own trade deficit or changes in the international monetary system. In the contemporary mind there was a close link between the phenomenon of a scarcity of coins and economic depression.[13] The European East India Companies with their large annual shipment of treasure to the east introduced a potential source of disturbance in the western monetary system and because of this they were specially singled out for adverse comments. The East India Company itself was perfectly aware of the fact that its main source of profits came from the sale of Asian goods in Europe, which was made possible by the wide gulf between their buying and selling prices. In a direct comparison between French and Bengal wage rates, the Court of Directors stated in 1736 the former to be six times that of the latter.[14] In the early eighteenth century, there was at least one economist who saw a clear relationship between money, prices, and wages on the one hand and the volume and character of international trade on the other. In a treatise published in 1729 and dealing with the coinage problems of the time, Thomas Prior observed, « As long as Gold in Proportion to Silver is produced in greater Plenty in *Asia*, *Africa*, and Brazil, than in the *Spanish West Indies* it will follow, that the value of Gold in Proportion to Silver will be different in those Countries. And farther, these Metals being scarcer in the *East-Indies* than in Europe, the Prices of Labour and Manufactures will consequently be lower there than with us, and for this Reason we export very few Manufactures to that Part of the World; but to purchase their Commodities are obliged to send Specie thither; And Silver in Proportion to Gold being higher valued there by above 40 *per cent* than with us, we yearly export thither Silver in great Quantities ».[15] Prior also went on to speculate that, since the yearly exportation

13 See B. E. SUPPLE, *Commercial Crisis and Change in England: 1600-1642. A Study in the Instability of a Mercantile Economy* (Cambridge, 1959).

14 Court to Bengal, 3 November 1736, Despatch Book, vol. 107, p. 81.

15 *Observations on Coin in General with some Proposals for Regulating the Value of Coin in Ireland*, by THOMAS PRIOR, printed in J. R. McCulloch, ed., *A Select Collection of Scarce and Valuable Tracts on Money* (London, 1856), p. 302, 205. The italicized words are in the original text.

of a million pounds in silver made it more scarce in Europe and plentiful in the East Indies, in time the ratio between silver and gold in Asia might conceivably reach the same level as in Europe, which would make « their Commodities . . . rise in Proportion ». However, it can be shown without any difficulty that the price level between the two continents, Europe and Asia, never reached equality in the eighteenth century. In spite of the massive injection of liquidity which took place every year, in India at least there was no long-term upward movement in prices or downward movement in interest rates, although the latter did respond to short-term variations in the supply of capital, as we shall see later. Can we ascribe the reason for the absence of long-term trends to an unusually high liquidity-preference? The question cannot be answered positively with the evidence we have at our command. The relationship between money supply and prices in any real historical situation involves too many unkown elements, too many variables that are difficult to quantify. But while we are considering the effect of the bullion imports on Indian economy, we may note the comment, made with typical perspicuity, by Fernand Braudel. As nothing is free in economic transactions, he concludes, India had to pay in some way for its precious metals. The austerity of life in the subcontinent and the emergence of compensating industries, he ascribes simultaneously to the same phenomenon, the importation of treasure.[16] There is an obvious inconsistency in juxtaposing the forces of economic growth and continuing poverty, if indeed life was austere in India. But the suggestion is in fact a valid one ,if we measure national wealth in terms of consumption and not income. Indian economy was enriched by the influx of treasure and incomes rose in money value, adding to the circular flow. But the resultant growth was obtained at the expense of current consumption.

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[16] Fernand Braudel, *Capitalism and Material Life 1400-1800*, tr. M. Kochan (London, 1973), p. 339.

II

The nature and structure of international trade between Europe and Asia.

When the English East India Company began to revive and expand its commercial activities around 1660 after the turmoils of the Civil War and the Protectorate, European trade with Asia was already more than a century and a half from its discovery and foundation. The participation of the countries of Atlantic Europe in this trade from the beginning of the seventeenth century had changed its character from what it had been under the control of the Portuguese. The spectacular increase in the volume of East India trade achieved by the Dutch and English was to leave a profound impact on the contemporary economic consciousness and give rise to a vigorous controversy about the effects of the Asian trade and the manner of its organization. By the time our period ends — in 1760 — the military conquest of Bengal by the Company was well under way. The memory of the Mughal court splendours, the power and glory of the great Islamic Empire in the subcontinent, were rapidly receding into a dimly remembered past. In the third quarter of the eighteenth century, it was impossible for any sensitive and observant European to overlook the changes that had taken place in the trade, the pace of economic growth, and the political balance of the western world since the first age of maritime expansion. These developments were no doubt uppermost in the mind of Adam Smith when he stated in his famous chapter on colonies that « the discovery of America and that of a passage to the East Indies by the Cape of Good Hope, are the two greatest and most important events recorded in the history of mankind ».[17] But to the liberal instincts of a Scotsman dedicated to the cause of economic justice, the gains and losses were not evenly shared

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17 ADAM SMITH, *The Wealth of Nations* [1776], 2 vols. (Reprinted from the Sixth Edition, London, 1905), bk. IV, ch. VII, pt. III, vol. II, p. 139. In this passage Adam Smith was echoing the view of Abbé Raynal. See GUILLAUME RAYNAL, *A Philosophical and Political History of the Settlements and Trade of the Europeans in the East and West Indies*, tr. J. Justmond, 4 vols. (Dublin, 1776), I, 1. [First published in French in 1770]. For a recent review of this point see J. H. ELLIOTT, *The Old World and the New, 1492-1660* (Cambridge, 1972), p. 1-2.

by all the countries concerned. Although he refused to predict the future, Adam Smith had no hesitation to say of the past: « To the natives, however, both of the East and West Indies, all the commercial benefits which can have resulted from those events have been sunk and lost in the dreadful misfortunes which they have occasioned ».[18] For the European nations the consequences of the inter-continental geographical discoveries were rather different. Their main effects had been to « raise the mercantile system to a degree of splendour and glory which it could never otherwise have attained to ». The object of that system was to create economic growth through trade and industry which were given greater encouragement than agricultural improvement. The result of this development could also be seen in the industrial stimulus received by the urban centres of Europe, which became the supplier of manufactured goods to the prosperous American colonists. In relation to Asia, Europeans were the sole carrier of its industrial products.[19]

Adam Smith was of course writing at a time when the corruption and the political excesses of the East India Company's servants in Bengal were an acute issue in English party politics and it was perhaps natural for him to draw a common link between the establishment of the British empire in India and the Spanish conquests in America, even though the two phenomena were separated by several centuries. Furthermore, it was a period which was beginning to witness a desire for economic change. Some of the most powerful arguments in *The Wealth of Nations* were precisely directed at the old patterns of colonial trade, based on preferential markets and exclusive navigation laws. But the question of the monopoly and the institutional arrangements of the extra-European trade were different from the fundamental problem of establishing its actual long-term impact on European economic development. For those who like Adam Smith believed in the benefits of greater freedom of trade, the extension of markets was of cardinal importance. By opening up vast areas of the New World to European industry, the

[18] *The Wealth of Nations*, p. 139.
[19] *Ibid.*, p. 139-40.

trade to America made it possible to intensify the division of labour to an extent which the old intra-European trade could never have achieved. The discovery of the Cape route to the Indies created even greater potential for market expansion. The author of *The Wealth of Nations* was perfectly aware of the qualitative difference between relatively empty regions of the New World and the densely populated areas of India or China, supporting a higher volume of trade and industry. If the effects of the East India trade were not as expansionary as those of the American trade on Europe, it was because of the restrictive influence of the monopolistic chartered companies.[20] But even so the rise of western trade with Asia had given a new dimension to economic activities on a world scale.

It is not difficult to see the reason for this general emphasis on international trade as an instrument of growth in Adam Smith's economic thinking.[21] In a society dominated by a static or slowly-developing technology, it is natural to look on trade as the main avenue for increasing individual or national wealth. Although it was not until the early nineteenth century that David Ricardo's doctrine of comparative costs was able to suggest a rigorous theoretical explanation for international trading, man had discovered through practical experience the gains from economic exchange with given production techniques. But in a country on the brink of a major technological break-through, as England was during Adam Smith's lifetime, the extension of markets through trade could also be interpreted as a crucial endogenous factor in improving productivity and total production. Of course the validity of these assertions must be checked against historical facts. During the seventeenth and eighteenth centuries English overseas trade underwent significant changes in its composition, direction, and volume.[22] It may rightly be asked how was it possible for England to expand at a rapid rate the import of a whole new range of commodities

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20 *The Wealth of Nations*, vol. I, bk. IV, ch. I, p. 448-9.

21 For a discussion of Adam Smith's theories trade, see H. Myint, *The "Classical Theory" of International Trade and the Underdeveloped Countries*, « Economic Journal », 68. 270: 317-37 (June, 1958).

22 See Ralph Davis, *English Foreign Trade, 1660-1700*, and *English Foreign Trade, 1700-1774*, printed in W. E. Minchinton, ed., *The Growth of English Overseas Trade in the Seventeenth and Eighteenth Centuries* (London, 1969).

— tobacco, sugar, Indian cotton textiles, raw silk, coffee, and tea — between 1600 and 1750? The question may indeed be posed for whole of Europe in relation to her trade with the rest of the world in the same period. There is a simple answer. Just as the geographical discoveries of the sixteenth century paved the way for new sources of supplies in America and Asia, so there was a corresponding increase in demand on the part of European people. This again could only be sustained if there was a continued rise in real income brought about by either technological improvements or a more efficient use of resources. But the analysis requires the precondition of an initial mechanism which would start up the system on its path of growth. For that we can probably look to the working of the American silver mines and the tremendous impact on world trade of the influx of newly-mined precious metals.[23] It is inconceivable that Europe's trade with the Indies, both east and west, could have been carried on in any considerable scale without the aid of American silver. It seems paradoxical that an increase in economic activities and the productive employment of surplus resources at a global level should have to await an expansion in money supply which itself occurred as a result of chance factors. But as long as gold and silver were regarded as universal standards of value and considered essential for the settlement of international balance of indebtedness, there was no escaping from this irrational logic. The central role played by American treasure and the rising level of monetary liquidity in the development of extra-European trade is not really open to challenge, though the relationship between these two factors and the overall economy of the western nations is at once more obscure and speculative.[24]

It is also important to bear in mind the dynamic nature of our model. The historical events it seeks to explain extended over the best part of two centuries. The Portuguese maritime empire in the Indian Ocean had taken on a distinct shape and cohesion

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[23] The theoretical aspects of the problem of growth and the increase in money supply is discussed by Alexandre R. E. CHABERT, *More about the Sixteenth-century Price Revolution*, printed in Peter Burke, ed., « Economy and Society in Early Modern Europe: Essays from Annales » (London, 1972).

[24] ELLIOTT, *The Old World and the New*, p. 54-71.

between 1500 and 1520. But it was not until the third decade of the century that silver from the mines of Mexico and Peru began to reach the Iberian peninsula in large quantities.[25] The metal was certainly exported to India by the Portuguese to purchase pepper for the European market. However, in many important respects the Lusitanian commercial policy in Asia fell short of the precise attributes of commercial capitalism which some historians see as the dominant characteristic of European economic institutions preceding the Industrial Revolution.[26] When the news of the Portuguese success in circumnavigating the Cape of Good Hope reached Venice, the merchant banker, Gerolamo Priuli, wrote in his diary that the Portuguese would now be able to undersell the Venetians in the spice trade, because he expected the Cape route to be cheaper than the overland caravan route. But this did not happen; instead the Portuguese spice trade was turned into a Crown monopoly, retaining the character of a redistributive enterprise living off the profits derived from a politically-controlled trade. Even Adam Smith was careful enough to point out that the colonial trade of Spain and Portugal, large as it was, gave more real encouragement to the industry of other countries — France, Flanders, Holland, and Germany — than to that of Spain and Portugal. It was only the intermediate profits of that trade which remained in the two countries, helping to support « the sumptuous profusion of the merchants of Cadiz and Lisbon ».[27]

In the early eighteenth century, there was at least one Spanish economic expert who came to the conclusion that while Spain mined the American treasure, the actual benefits were reaped by other countries. What has become of, he asked, the thousands of millions of dollars that from the discovery of the Indies have been transported to the continent of Spain, where there now remains

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[25] E. J. HAMILTON, *American Treasure and the Price Revolution in Spain 1501-1650* (Cambridge, Mass., 1934), p. 40-2.

[26] F. MAURO, *Towards an "Intercontinental Model": European Overseas Expansion between 1500 and 1800*, « The Economic History Review », 2nd series, 14. 1: 1-2 (August, 1961); E. J. HAMILTON, *American Treasure and the Rise of Capitalism*, « Economics », 9. 27: 338-57 (November, 1929).

[27] *The Wealth of Nations*, vol. II, bk, IV, ch. VII, pt. III, p. 140.

little more than some copper or brass money?[28] The relative economic failure of Spain was attributed by Uztariz to the injurious effects of Spanish trade with other nations. With the astonishingly successful example of Holland before their eyes, it was not difficult for the Spaniards to see which particular European country had gained and accumulated real capital.[29] The commercial and financial supremacy of Amsterdam during this period was beyond question. The Dutch were the undoubted masters of the European bullion trade. The bankers of Amsterdam could issue bills of exchange on Cadiz and Lisbon in quantities which the London of William III found hard to rival. Much of the Mediterranean and the Baltic trade was carried in Dutch shipping. Can we explain the economic progress of the Netherlands during the seventeenth century on the ground of successful adoption and working of commercial capitalism, and if so, what was the connexion between this larger development and the rise of Dutch East India trade? In the minds of contemporary English pamphleteers and writers on economic matters there was little doubt that the United Republic had one of the most unfettered commercial systems of the time, which enabled its merchants and economic decision-makers to utilize fully existing and new opportunities in trade. « The prodigious increase of the Netherlanders », Sir Josia Child remarked in his *A New Discourse of Trade* (1693), « in their domestick and foreign trade, riches, and multitude of shipping is the envy of the present, and may be the wonder of all future generations. And yet the means whereby they have thus advanced themselves are . . . imitable by most other nations but more easily by us of this kingdom of England ».[30] The reasons for Dutch economic success were obvious to Child and were listed by him systematically. At the top of the list was the fact that Dutch councils of state, the law-making bodiers, were composed of trading merchants who had lived abroad most of their

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[28] Don Geroymo de Uztariz, *The Theory and Practice of Commerce*, tr. John Kippax, 2 vols. (London, 1751), II, p. 10, 14. [First published in Spain in 1742].

[29] Uztariz even quoted a passage from *Mémoires sur le commerce des Hollandois dans tous les états et empires du monde* (Amsterdam, 1717) attributed to Pierre Daniel Huet to prove this point.

[30] *A New Discours of Trade* (London, 1693), p. 1. [Goldsmiths' Library of Economic Literature, University of London].

lives and who had great practical and theoretical knowledge of commercial matters. Consequently, their laws and foreign policy were framed in such a way as to give a positive advantage to trade. Among other factors mentioned by Child were Dutch honesty in weights and measures, their propensity to risk-taking and encouragement of innovations in industry and trade, liberal fiscal regulations, and above all the immense advantage of their banks and financial institutions.[31]

The foundation of Dutch commercial prosperity, as a modern study has pointed out, rested on the twin pillars of a worldwide carrying trade and a massive concentration of marketing and stapling functions in Amsterdam.[32] The biggest profits were made by the Dutch from their ability to import and redistribute a wide variety of goods throughout the markets of Europe and Asia. It was this aspect of their activities which makes the Dutch economic institutions of the seventeenth century so amenable to an analytical treatment developed in terms of historical stage theories, theories which ascribe a definite sequence in the group control of the means of production. The concept of commercial capitalism embodies the notion that there is a separation of functions between merchants and industrial producers. In a pre-industrial economy the artisan may own his few simple tools and even a certain amount of working capital. But he is not able to market his products without the help of middlemen. In such circumstances it becomes easy for traders and merchants to acquire control over the production process and its profits. The accumulation of capital in the hands of this class of men ensures that the system becomes self-perpetuating.[33] It can be seen that the critical assumption behind the theory of commercial capitalism is that of a vital connexion between productive activities

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31 *Ibid.*, p. 2-8. For a discussion of Child's polemical use of the Dutch policy see WILLIAM LETWIN, *The Origins of Scientific Economics: English Economic Thought 1660-1776* (London, 1963), p. 14.

32 CHARLES WILSON, *Anglo-Dutch Commerce and Finance in the Eighteenth Century* (Cambridge, 1941), p. 10; T. P. VAN DER KOOY, *Hollands Stapelmarkt en Haar Verval* (Amsterdam, 1931).

33 See KARL MARX, *Capital*, III, pt. IV, ch. XX. For a critique of Marxist theories of pre-modern trade, see IMMANUEL WALLERSTEIN, *The Rise and Future Demise of the World Capitalist System: Concepts for Comparative Analysis*, « Comparative Studies in Society and History », 16. 4: 387-415 (September, 1974).

and trade, which acts as a regulating mechanism. It can be argued that the commercial freedom and expertise possessed by Dutch merchants enabled them to make high profits and concentrate capital, which provided further investments for an expansion of trade. The ultimate result was not only a general enrichment of Holland but also a net rise in production. The argument applied with particular force to the rise of Dutch trade in Asia. The sharp observation of Adam Smith did not fail to notice that the commercial system of Holland generated an immense volume of loanable funds which were continually seeking profitable outlets of investment: « All near employments being completely filled up, all the capital which can be placed in them with any tolerable profit being already placed in them, the capital of Holland necessarily flows towards the most distant employments ». He concluded that if the trade to the East Indies was left open instead of being conducted through a monopoly company, it would probably absorb the greater part of Dutch surplus capital.[34]

There is ample evidence that the organization of Dutch and English trade to the East Indies at the beginning of the seventeenth century was far from being a chance, haphazard affair. The governing body of the United East India Company of the Netherlands from its early days possessed a collective strength of purpose, a financial and political ideology, that was an object of admiration from the Company's English counterpart.[35] When the group of London merchants who were to promote the first English voyage to the East Indies petitioned the Privy Council for formal permission, they stated officially that the recent Dutch success in reaching the spice markets of Asia had stirred them up « with no less affection to advance the trade of their native country than the Dutch merchants were to benefit their Commonwealth ».[36] With the deepening experience of Asian trade, both the Dutch and English learnt that

[34] *The Wealth of Nations*, vol. II, bk. IV, ch. VII, pt. III, p. 146.

[35] The Dutch East India Company's political and commercial policy in the period immediately after 1602 is discussed in NIELS STEENSGAARD, *Carracks, Caravans, and Companies: The Structural Crisis in the European-Asian Trade in the early 17th Century* (Copenhagen 1972), p. 131-41.

[36] *The Dawn of British Trade to the East Indies*, ed. H. Stevens and G. Birdwood (London, 1886), p. 8.

the American silver was indispensable for its full development, and in contemporary economic literature Spain appeared as the universal fountainhead through which the precious metals of the New World were distributed throughout Asia. In the seventeenth century, the two separate historical developments, the expansion of Europe westward to the American continents and the establishment of commercial relations with countries around the Indian Ocean, fused together under new leadership to form a powerful force in the integration of world economic exchanges. The Asian trade of the North European trading companies incorporated a far greater spirit of competitive commercialism than was the case with the Portuguese. But a word of caution is necessary here. All large-scale historical movements contain elements of contradiction, and European trade with the Indies is no exception. Take for example the Dutch attempt to control the Spice Islands by force of arms. The monopoly which they came to acquire in the supply of finer spices was a pure case of redistributive trading.

III

In many ways the activities of the special committees set up by the various East India Companies for arranging the supply of bullion and coins needed for export to the Indies, are highly relevant to an understanding of the commercial and financial structure of contemporary Europe. Apart from adding a wealth of detail to the known practices of English and Continental business houses on banking matters, they were frequently confronted with problems relating to national finance, particularly the question of monetary stability. In order to expand their Asian trade, the Dutch and the English commercial systems needed an increasing stock of precious metals. This could be obtained in two ways: by reducing the domestic use of gold and silver for currency purpose and by generating a surplus in the balance of payments. The critics of the English East India Company who argued that its policy of exporting precious metals was causing a contraction in money supply and therefore

depressing the price of domestic manufactures [37] were answered by the stock reply that the Company's re-export trade far exceeded in value the amounts originally carried out in money. The point was emphasized in the general context of English balance of trade by the Committee of Trade in 1660 when it was mentioned that England had always managed to export a sufficient quantity of goods so as to create a trade surplus in the form of gold and silver reserves.[38] This was a period when English currency of course still retained its intrinsic metallic value. But by the turn of the century, in spite of the re-coinage of 1696, the coinage had become so light that it was practically a token currency. There were frequent complaints in the early eighteenth century from the East India Company's Committee of Treasure that silver bullion or foreign coins were difficult to obtain and that the price was much higher than the official mint price. But there were few references to a tightness of money supply and a real scarcity of capital. The interest rates had fallen from the high levels of the previous century and the East India Company could easily borrow large sums of money at 4 per cent. It is true that English monetary experts always betrayed a profound anxiety about the debased condition of the national currency. But they could also take comfort from the extreme example of Portugal where the scarcity of silver coins was so great in the 1720s that the Portuguese government coined only gold pieces and a great deal of copper money. Even so business transactions were often conducted by opening books of debtor and creditor and the retail shopkeepers were in the practice of demanding exact change from their customers. Such difficulties in the management of the currency, as John Conduitt, the master of the English royal mint, pointed out in 1730 would be insupportable in a nation that subsists by trade, carried on « chiefly by multitudes of labourers and manufacturers ».[39]

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[37] For an example of such an accusation see the petition of the clothiers of Gloucestershire and Coventry to the House of Commons in 1675, « Journal of the House of Commons », 30 April and 15 November 1675; Court Book, 21 May 1675, vol. 29, p. 247.

[38] Minutes of Committee of Trade, 1660-2, British Museum, Additional Manuscript 25, 115, p. 44-54.

[39] *Observations upon the Present State of our Gold and Silver Coins 1730*, by

The fears of the English East India Company about its ability to procure the necessary quantities of bullion for export to Asia were closely associated with the atmosphere of crisis surrounding English trade and finance in the seventeenth century. In contrast, Dutch overseas trade was so overwhelmingly strong in this period that the Vereenigde Oost-Indische Compagnie, we can assume, could have experienced no serious difficulty in securing its supply of silver. Amsterdam was responsible for supplying a large amount of the English Company's requirements also, though we must remember that even the Dutch were not free from contemporary neurosis about the export of precious metals and attempted to develop alternative ways of financing their import trade from Asia.[40] But in general it can be confidently stated that the rate of eastward outflow of silver from Europe accelerated during the seventeenth and eighteenth centuries just when the production and the export of the metal was slackening off in the New World. The apparent contradiction between the two phenomena can be resolved by suggesting several possible mechanism at work. The Dutch and the English gain of silver was a partial equilibrium situation in the context of inter-European trade balances. Their surplus on the total balance of payments was partially held in the form of gold and silver reserves and used to pay for the Asian imports. If there was no further replenishment or if the rate of replacement was slower than that of the outflow to the East Indies, the total European stock of precious metals would of course have declined. But such a contraction need not have had very serious effects on money supply and prices in view of the accumulating stocks built up before the rise of North European trade to the Indies.[41] A further possibility is that the down-turn in the production of American silver, so clearly

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JOHN CONDUITT, printed in W. A. SHAW, *Select Tracts and Documents Illustrative of English Monetary History 1626-1730* (London, 1896), p. 212-3.

[40] For a brief period Japan was a major source of silver for the Dutch Company. The profits from the international trade of Asia, in which the Dutch actively took part, provided another source of finance. See T. RAYCHAUDHURI, *Jan Company in Coromandel, 1605-1690* (The Hague, 1962), p. 87.

[41] On stocks of gold and silver in this period, see F. P. BRAUDEL and F. SPOONER, *Prices in Europe from 1450 to 1750*, in E. E. Rich and C. H. Wilson, ed., « The Cambridge Economic History of Europe » (Cambridge, 1967), IV, 445.

visible in the middle years of the seventeenth century, did not represent a secular trend and that mining activities may have recovered later.

We have now established a set of economic relationships in contemporary European trade based on three unknown variables: the size of Dutch and English balance of payments surpluses in relation to total inter-European trade, the current stocks of precious metals, and finally the rate of their replenishment. The financial impact of East India trade on European economies can be understood fully only through a more intensive study of these relationships. From what has been said so far, it is clear that the development of European trade with Asia cannot be treated as an isolated event in history. It was an integral part of a much larger movement of expansion which was responsible in time for forging entirely new forms of economic ties between Europe and the peripheral areas.[42] When the Industrial Revolution changed the technological balance in favour of the western countries during the nineteenth century, the existence of a world-wide nexus of trade greatly facilitated their attempt to maximize economic gain through increased specialization. In our period we are still at some distance from the pattern of colonial trade brought about by the unbalanced growth of industrial productivity. The international exchange of commodities followed a much more random design, although the lines of geographical zones and demarcations were becoming fairly evident.[43]

The use of precious metals in our period for internal currencies as well as for international trade and payments meant that the stability of the European monetary system depended to a large extent on a number of related factors, such as the bimetallic ratios in one country and another, the relative movements in the rates of exchange and the level of internal prices. For example, variations

[42] For a theoretical treatment of European expansion in the early modern period, see IMMANUEL WALLERSTEIN, *The Modern World System: Capitalist Agriculture and the Origins of the European World-Economy in the Sixteenth Century* (New York and London, 1974).

[43] For an analysis of the structural features of early modern trade, see F. MAURO, *Towards an "Intercontinental Model": European Overseas Expansion between 1500 and 1800*, « The Economic History Review », 2nd series, 14. 1: (August 1961).

in the price of silver affected the officially-fixed bimetallic ratios and through the bullion dealers' arbitrage operations caused considerable movements of precious metals between different European countries. Since such movements were also the cause and effect of adverse balance of trade, capital transfers, and the debasement of coinage and were closely connected with the movements in the rates of exchange, the operations of the East India Company as one of the single largest purchasers of bullion and specie had serious political as well as financial implications. As Thomas Prior remarked in 1729: « It would be a great advantage to Commerce, if Gold and Silver bore the same Proportion in Value to one another in all parts of the World ».[44] A plea for bimetallism which went unheeded at all times.

The relative value of gold and silver and the cost of extraction in the mines producing the two metals are indeed the two permanent components in the spectrum of causes that determine their supply.[45] As the centres of production were historically always few in number and unevenly located in space, the geographical distribution of the metals was also likely to be highly uneven. Even before the discovery of the Spanish American mines, gold and silver moved from one region to another in response to a charge in the bimetallic ratio. Between A.D. 970 and 1250, for example, the output of silver coins in Islamic mints declined drastically.[46] While the Middle East was going over to a gold standard, Europe was coining mostly silver. It has been suggested that the ratio of gold to silver in this period was 1:12 in the west, 1:14 in the Islamic countries, and 1:18 in Byzantium. As a result, gold moved eastward and silver in the opposite direction.[47] But from the middle of the thirteenth

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[44] *Observations on Coin in General*, printed in McCULLOCH, *A Select Collection of Tracts on Money*, p. 301.

[45] For a study of the cost of production and related problems see P. J. BAKEWELL, *Silver Mining and Society in Colonial Mexico: Zacatecas 1546-1700* (Cambridge, 1971).

[46] A. M. WATSON, *Back to Gold - and Silver*, « The Economic History Review », second series, 20. 1: 1-34 (April, 1967).

[47] For a discussion of the causal factors see PHILIP GRIERSON, *The Monetary Reforms of "Abd al-Malik"*, « Journal of the Economic and Social History of the Orient », 3. 3: 241-64 (October, 1960); and C. CIPOLLA, *Sans Mahomet, Charlemagne est inconcevable*, « Annales, Economies, Sociétés, Civilisations », 17. 1: 130-6 (Janvier-Février, 1962).

century the flow was reversed, and the Muslim world began to return to silver. During the sixteenth century as American silver flooded into Europe, the traditional gold-silver ratio of 1:12 could no longer be held, and by the beginning of our period in 1660 it stood at about 1:16 in Spain.

Contemporary monetary experts were never tired of pointing out the consequence to Spanish national finance of the low price of silver. Newton, Conduitt, the latter's successor at the Royal Mint, Uztariz, all pointed to the debasement of Spanish currency and the outflow of silver from the peninsula.[48] In the late seventeenth and early eighteenth century the monetary system of England experienced very similar effects, which had important repercussion on the East India Company's trade. For one of the economic phenomena of our time was the divergence in the bimetallic ratio within Europe, between the leading trading nations, Spain, Portugal, France, Holland, and England. The result of this divergence was felt through a rise or fall in the price of uncoined bullion above or below the mint price. The exact meaning of these changes is made clear in Table 1. In the 1660s the market price of both gold and silver in London was slightly above par. But the variations were only in the order of 1 to 3 per cent, and East India Company

TABLE 1

THEORETICAL IMPLICATIONS OF A CHANGE IN GOLD AND SILVER PRICE

Pg = price of gold
Ps = price of silver

1	$\frac{dPg}{dPs} = \pm 1$,	no change in the ratio of gold to silver; currency uniformly devalued or revalued upward.
2	$\frac{dPg}{dPs} > 0 < 1$,	gold more valuable than silver; bimetallic ratio is rising.
3	$\frac{dPg}{dPs} > -1 < 0$,	gold less valuable than silver; bimetallic ratio is falling.

[48] *Report of the Officers of the Mint about the preservation of the Coyne*, 17 July 1702; CONDUITT, *Observations Upon Gold and Silver Coins*, printed in SHAW, *Select Tracts and Documents*, p. 154, 214; UZTARIZ, *The Theory and Practice of Commerce*, II, 10.

at least experienced little difficulty in obtaining its necessary supply of precious metals. The gold-silver ratio again was above par, the official mint ratio being 1:15.072, thus indicating that the public demand for gold was stronger than that of silver. The estimated output figures from the mint tends to confirm this hypothesis. During the two decades from 1660 to 1679 the total amount of gold coined at the mint was £ 135,000 while the coinage of silver was £ 311,000.[49] The period of relative stability in English monetary affairs came to an end abruptly in 1692, although the silver coinage was being progressively clipped and debased for some time before. The market price of silver rose rapidly between 1692 and 1696, when it stood at 33.8 per cent above par. With the recoinage of William III the price fell precipitately, only to start rising again from 1699. The gold price also rose in these years, but at a slower rate, which lowered the bimetallic ratio.

It is clear from the Company's letters and minute books that the period from 1691 to 1716 witnessed a great shortage of silver. It is tempting to identify this "silver famine" with the famous downturn in the production and supply of the metal in the Spanish Indies . The scarcity of silver in Europe during the concluding years of the Wars of Spanish Succession appears to have coincided with a similar crisis in the supply of silver in the eastern branch of the Spanish Empire. The amount of silver minted in Mexico City between 1693 and 1705 exhibits a great many fluctuations and there was a slight downward trend, if indeed we can attach much reliance on the estimated figures.[50] However, there are two arguments against the view that there was a general European crisis in the supply of silver. According to a graph of bimetallic ratio drawn by Spooner and Braudel, the European average seems to have risen just at this period.[51] Secondly, recent research has put forward evidence that

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49 J. K. Horsefield, *British Monetary Experiments 1650-1710* (London, 1960), Appendix 4, p. 262.

50 W. Howe, *The Mining Guild of New Spain and its Tribunal General 1770-1821* (Cambridge, Mass., 1949), Appendix A, p. 454.

51 Fernand Braudel and F.C. Spooner, *Prices in Europe from 1450 to 1750*, in E. E. Rich and C. H. Wilson, ed., « The Cambridge Economic History of Europe (Cambridge, 1967), IV, Figure 5, p. 459.

disproves the theory of contracting silver supplies from the American mines and shows that in the second half of the seventeenth century the quantities reaching Spain had recovered to the level previously reached.[52] The East India Company's own Committee of Treasure treated the scarcity of silver as being caused by interruption to supplies due to the state of war in Europe, and this is an explanation that we must accept for the time being until further research on the arrival of American treature in Europe proves conclusively what the real situation was.

IV

Jean-Baptiste Tavernier, whom Gibbon described as the wandering jeweller who had read nothing but had seen so much and so well, aptly devoted a whole chapter to the description of the gold and silver trade of India and its currency practices. His accounts, supported by more detailed evidence available in the records of the trading companies, indicate the existence of a fairly sophisticated monetary system which the Mughals had established in large parts of India. Not only did most of the important trading towns possess a mint for the coining of silver or copper money but the Indian bullion dealers had carried to a high level the intricate art of testing and establishing the intrinsic worth of various foreign coins imported into the country.[53] Thomas Rolt, the English chief of the Surat Factory, testified to their expertise when he observed in 1682 that the Surat shroffs « are certainly the greatest masters of their art of any people in these parts of the world.[54] The Company's servants had learnt from practical experience that the Indian shroffs or bankers, apart from being skilled traders in precious metals, also wielded considerable financial powers. On monetary matters they could exercise almost a monopoly influence: in the words of a Masulipatam factor, it was a strange abuse that the

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52 MICHEL MORINEAU, *D'Amsterdam à Séville*, « Annales », 23. 1: 178-98 (Janvier-Février 1968).

53 TAVERNIER, *Travels in India*, I, 13.

54 Surat to Court, 23 January 1682, Original Correspondence, vol. 41, par. 13, p. 5.

shroffs of India had the power to raise or lower the price of bullion as they pleased.[55] However, in the Mughal mints which were open to *free* coinage the Company had in theory a practical remedy against the shrewdness of the *sarrafs*, though the exactions and oppression of the mint *daroghas* [mintmasters] were denounced as bitterly.[56]

The basis of the Mughal currency system was the silver rupee which was both money of account and a current coin. Gold was also coined in a fixed ratio to silver, but its currency for transaction purposes was limited, as the value of gold coins, known as *muhr* or *ashrafi*, was determined by the market price of gold in term of silver. Thus the currency standard in areas of Mughal rule can be said to have been unambiguously based on silver. But on the coast of Malabar and much of southern India the gold standard of former Hindu kingdoms still prevailed, and it was silver which bore a fluctuating value in relation to the money of account, the gold pagoda. In Malabar the Venetian sequins also passed current and difficulties were experienced by the English in attempting to make their payments in Spanish pistoles and Imperial ducats.[57] The acceptability of certain types of coins for commercial transactions in Asia was closely related to the confidence on their intrinsic metallic content which merchants were prepared to place, as it eliminated the bullion dealer and the need for laborious and time-consuming examination and assaying of every individual coin-type. In the Yemen and in Persia, the two areas of the middle East, where the East India Company had to establish currency parities, the standard was silver-based. At Mokha accounts were kept in the form of an imaginary coin known to the Europeans as a "country dollar" which had an exchange value of 121 for every 100 Spanish dollars.[58] The coinage of Persia was more complicated; but during our period there were two current silver coins: the *shahi* and the *abbasi*. The latter was worth four of the former,

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55 Factory Records Miscellaneous, 7 January 1667, vol. 3, p. 5.

56 The term "free" is used here in the sense that anyone could go to the mint and have his bullion coined on payment of a standard mint charge.

57 Factory Records Miscellaneous, 20 September 1670, vol. 2, p. 106; Factory Records Surat: Diary, 29 August 1672, vol. 3, p. 15.

58 Court to Mokha, 10 November 1721, Despatch Book, vol. 101, para. 19, p. 6.

and the reales of eight passed for 13 shahis.[59] Further east from India the Spanish dollar was generally accepted for commercial payments in Java, Sumatra, and other islands of the Indonesian archipelago, which was relatively late in developing an independent currency system. In China, on the other hand, the reale had bullion value only, and its sale in the Chinese trading ports was very similar to the method adopted in India. The Canton supracargoes, for example, sold their silver in 1730 at the rate of 121oz. 2dwt. (94 per cent fine) for every 100 tales. The latter was a weight (liang) and its equivalent in pure silver was treated in the Company's account books as money of account valued at 6s. 8d.[60]

Thus from the Red Sea to the Pacific wherever the Company's servants went (with the exception of southern India of course) they met with coins and money of account whose value was fixed in silver. But it is equally evident that no matter what the official mint price of silver was, its real value was determined by the normal demand for money. In India, where the Mughal rulers took great pains to maintain the weight and the standard of fineness of their coinage, the rupee in theory was worth more than its bullion value, as was to be expected in a well-regulated monetary system. But one of the strange features of the Indian financial practices of this period was the premium commanded by rupees of the current year's mintage over the issues of previous years.[61] The rate of premium charged for freshly-minted coins in fact reflected the commercial demand for money supply and therefore the market price of bullion silver. An unduly high rate would obviously cause bullion or the old worn coins to be taken to the mints for recoinage. If the value of the rupee, which was after all the established legal currency of the Mughal Empire, could vary in this manner, it was to be expected that the value of gold, coined or uncoined, would also fluctuate. Whether it did so or not in reality depended to a

59 TAVERNIER, *Travels in India*, I, 20.

60 Factory Records China: Canton Diary, 7 August 1730, vol. 30, p. 32. For Chinese weights and currency see MORSE, *East India Company in China*, I, 68-9; LIEN-SHENG YANG, *Money and Credit in China* (Cambridge, Mass., 1952).

61 The premium was known as the *batta* and the rupee of current mintage as sicca. For a discussion of the premium see I. HABIB, *The Currency System of the Mughal Empire, 1556-1707*, « Medieval India Quarterly », 4. 1-2: 1-21 (1961).

great extent on the commercial conditions of particular areas and the state of gold and silver supplies. A report on the local trade of Bengal dated 1661 stated that gold either in coins, bars, or in the form of dust was saleable at all times, « there being much less difference in the price than silver which rises and falls a great deale more . . . according as ye Batty goes on Sicca Rupees ».[62] The instability in the relative price of gold and silver, to which this particular example refers, must be treated as the crucial factor regulating the bimetallic flows into and out of India. It is certain that the shift in the balance between gold and silver in the Company's export of treasure during the period as a whole was due to the monetary changes in Asia. In 1729 Thomas Prior claimed that the ratio of gold to silver was such in the Indies as to give the latter a premium of 40 per cent over its corresponding gold price in England. The difference in fact was greatly exaggerated by him. His own calculations indicate that the actual ratio of gold to silver in London, taking the current market price of silver, was 1:14.159 as against the official mint ratio of 1:15.072. In 1719, a year of intense silver scarcity in Madras, the Spanish reales were sold there at a price, in terms of gold, which gave a ratio of 1:12.759 or a premium of only 10 per cent over the London price.[63] But it should be pointed out that, though Prior's actual observations were at fault, the general drift of his argument was sound.

V

Some comments on the price movements in Europe and India: 1660 to 1760

In the summer of 1753 Charles Manningham and William Frankland, the Company's warehousekeepers in Calcutta, carried

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[62] « Mr. Kenns & c. advices about Bengall & c. in the year 1661 being writt from Cassumbuzar », B.M. Additional Manuscript 34, 123, p. 42.

[63] *Observations on Coin in General*, printed in McCULLOCH, *A Select Collection of Tracts on Money*, p. 302. *RFSG. The Diary and Consultation Book of 1719*, 30 April 1719, p. 62. For the purpose of our calculations we have taken 1 reale as 0.89561 oz. English standard of 11/12 fine; the new Madras pagoda at the current market price was reckoned as 0.10524 oz. standard gold of 22 carat. See the « Report of the Committee of Treasury », 24 December 1675, Despatch Book, vol. 88, p. 229.

out a review of the whole method of procuring goods in Bengal. During the course of their analysis, they observed: « That the price of every kind of provisions & necessaries of Life is greatly enhanced in value to what it was 10 or 20 years since is a melancholy truth. Of course the charge of Manufacturing as likewise the price of many Materials must & ever will bear a proportion to the Rate Provisions. These are circumstances that have been considered in all our Contracts of late years & must have due weight the present season in whatever manner the Investment is provided ».[64] In dealing with the phenomenon of price rises, this is as far as the contemporary business analysis went. It is perhaps significant that the two officials should have attributed the price increases which took place in Bengal from the early 1740s to a condition of real scarcity. The frequent "irruption of the Marrattoes" and the consequent wars were held to be the main instruments of bringing ruin and depopulation to the province, which the harsh financial policy of the Nawab's government did nothing to alleviate.

The passage quoted above typically reveals the concern of practical men with the immediate consequence of a change in the relative values of economic products. The reasoning behind the actual explanation of these alterations was invariably cast in terms of real entities, of commodity and labour inputs.[65] In the vast mass of correspondence, diaries, and other papers of the Company's servants in India one never comes across an explanation of price changes based on the quantity theory of money. All that one finds is the eternal triangle: the price of textiles rises because the cost of cotton yarn and foodgrains has risen, the latter are in short supply because either there is a bad harvest or some political catastrophe. Yet, the theorists have been busy in Europe since the middle of the sixteenth century in drawing a link between the volume of currency in circulation and the *level* of prices. Adam Smith, and Richard Cantillon fifty years before him, had especially emphasized the relationship which the contemporaries saw between the discovery

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64 Bengal Public Consultations, 7 June 1753, vol. 26, p. 164-5.

65 For an earlier analysis of this kind see Madras to Court, 31 January 1734, *RFSG: Despatches to England 1733-35*, para. 9, p. 19-20; Madras to Court, 31 August and 2 September 1734, *Ibid.*, para. 34, p. 42.

of the American silver mines and the fall in the real value of precious metals.[66] As we have seen, there were writers who even went so far as to predict that the continued export of silver to the Indies would eventually raise the price level there also.[67] The reason why the members of the East India Directorate, some of whom were expert authorities on monetary and financial matters, failed to see even a theoretical connexion between the massive export of treasure from Europe and the price level in Asia is something of a minor mystery.

Is it possible to believe that their silence sprang from a conviction or indifference grounded on the fact that in real life situations it was extremely difficult to perceive the "Price Revolution" and to relate it to a possible increase in money supply? [67] But with the weight of quantitative evidence before us, we at least are bound to ask ourselves if there was in fact a long-term rise in prices during the century of our study. From his analysis of English wheat prices in the years from 1570 to 1640, Adam Smith concluded —with a measure of confidence not available to modern historians— that « about 1636 the effect of the discovery of the mines of America in reducing the value of silver appears to have been completed, and the value of that metal seems never to have sunk lower in proportion to that of corn than it was about that time ».[68] We do not propose to enter into the current controversy concerning the nature of the price rise in Europe during the sixteenth and early seventeenth centuries. It is quite apparent from the graph of broadcloth prices that from 1660 to 1760 the series remained virtually stationary. When a linear trend line is fitted to the data by the least-squares method, it shows an annual decline of £ 0.03.[69] The

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[66] See *The Wealth of Nations*, Vol. I, bk. XI, p. 200; *Essai sur la nature du commerce en général*, ed. H. Higgs (London, 1931), p. 160.

[67] For a discussion of these problems see CARLO M. CIPOLLA, *The so called "Price Revolution": Reflections on "the Italian Situation"*, and ALEXANDRE R.E. CHABERT, *More about the Sixteenth Century Price Revolution*, printed in Peter Burke, ed., *Economy and Society in Early Modern Europe: Essays from Annales* (London, 1972).

[68] *The Wealth of Nations*, Vol. I, bk. I, ch. XI, p. 201-2.

[69] It must be pointed out here that in the price series that are being analysed, we come across the problem of missing values. In order to overcome it, we adopted the method of least-squares linear interpolation. After the first run, the zero values were

most noticeable feature of the cloth prices is the sharp rise which occurs in the 1690s. For its cause we do not have to look beyond the great debasement of English currency in those years. The second series of our export prices, the moving average for lead, presents greater irregularities than in the case of cloth. But the statistical analysis of the series fails completely to detect any evidence of a secular trend. The price movements of the East India Company's exports seem to suggest that the contemporary belief in the dwindling effect of American silver from the middle of the seventeenth century was well justified.

There still remains the question of Indian prices. The attempt to extend the analogy of the influx of American silver and the European "Price Revolution" to the Mughal Empire inevitably tends to founder because of a lack of adequate quantitative information. For the purpose of throwing some light on this difficult problem, we have selected five individual price series. The commodities concerned are raw silk, saltpetre, and cotton textiles purchased by the Company in Gujarat, Coromandel, and Bengal. The weighted moving average of these series is supplemented by a histogram of rice prices in Bengal from 1712 to 1760.[70] There is no doubt that the price curves of all five import goods exhibit similar movements. The actual amplitude and phase of the fluctuations might vary from one series to another, but the general synchronic trends are clearly visible, as is also a gradual rise over the period as a whole. The evidence of a fairly sustained and marked increase is particularly strong for raw silk and Bengal textiles during the years from 1720 to 1760. This was precisely the period when the foreign trade of the province underwent a phenomenal increase and bullion, imported by the European Companies, poured into the Imperial mints. That there was an expansion in the economic activity of Bengal and in the money supply is certain. Beyond this, it is not possible to determine conclusively

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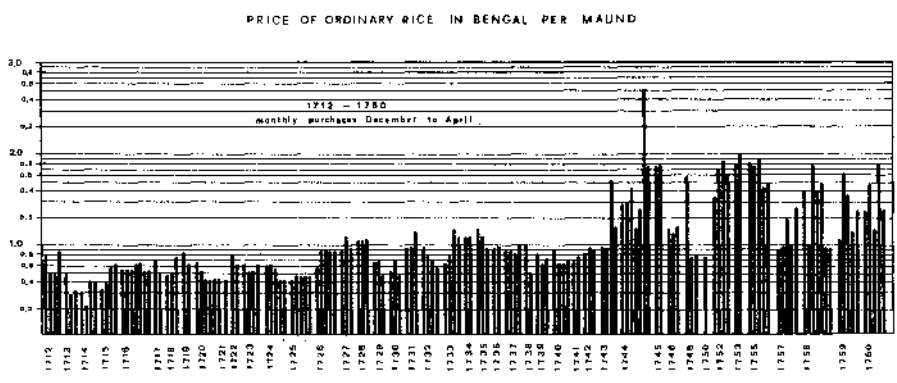
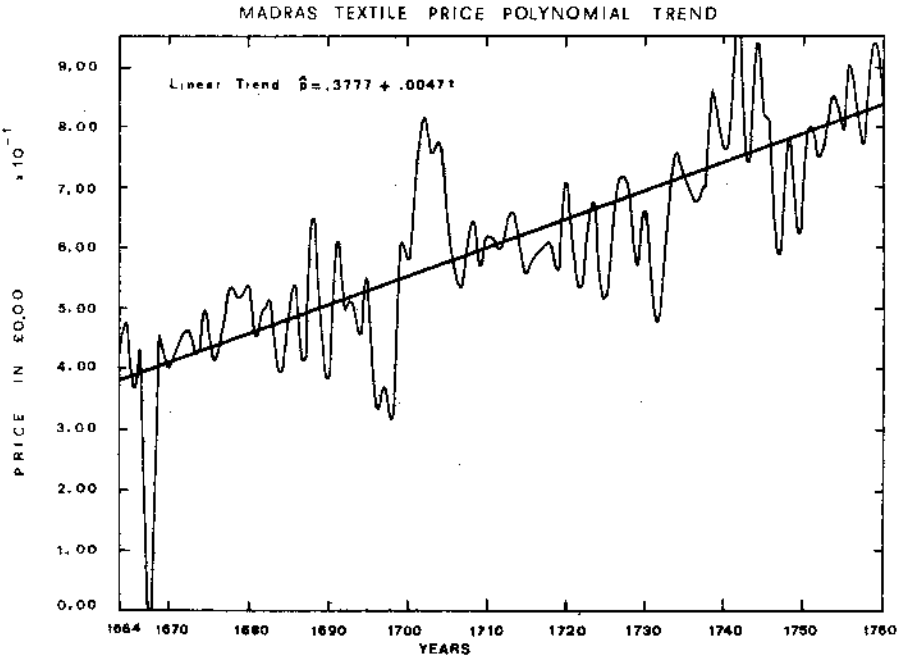
replaced with the predicted values and the series recomputed. This "two-stage" procedure enables us to stabilize the moving-average.

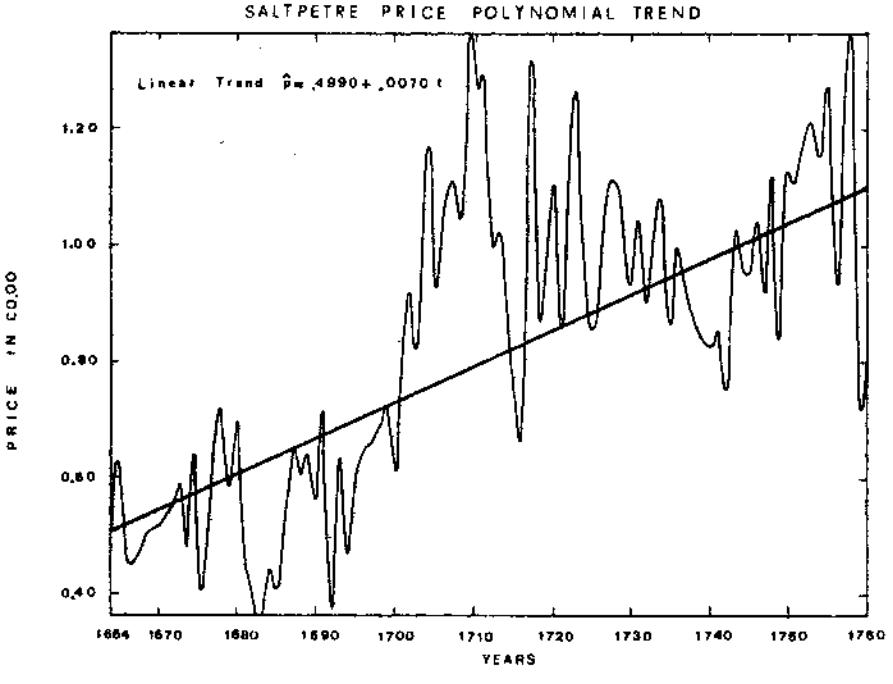
[70] The series is compiled from the Ledgers and Journals of Bengal accounts department of the Company. The rice was regularly purchased in the interior wholesale markets for shipment to Madras and St. Hellena.

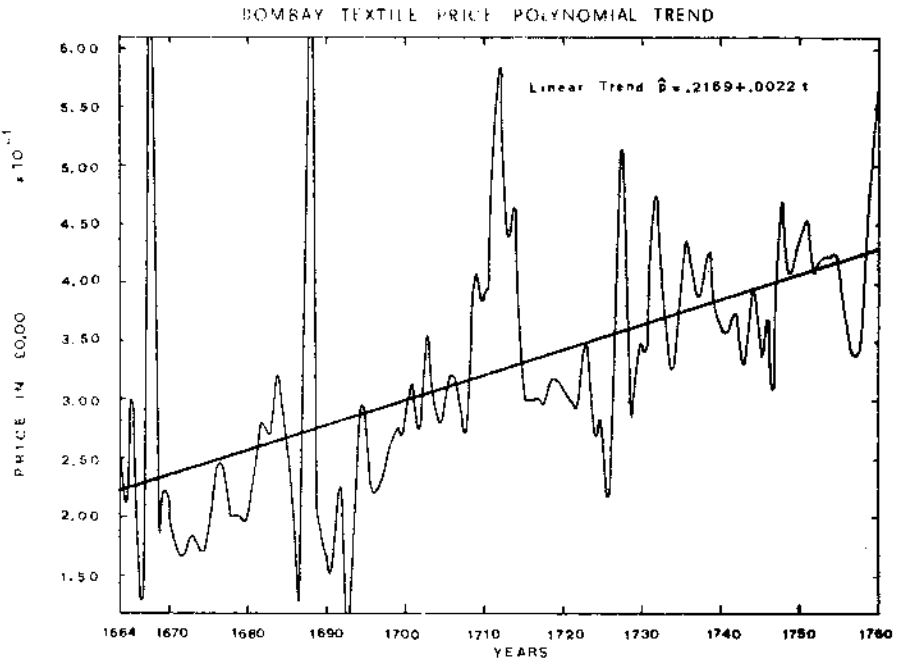
whether the rise in the price of these particular export-oriented commodities was caused by competition among buyers or whether some deep-seated monetary changes were at work. From the histogram of rice prices we can see that up to 1742 there was little tendency for the level to rise, though there were individual years of high prices. But from 1743 there is a dramatic jump and by the early 1750s the prices had nearly doubled. This was the rise observed and commented upon by Manningham and Frankland in 1753 and ascribed by them to the deteriorating economic effects of the Maratha invasions. Do we need to look for any other explanation?

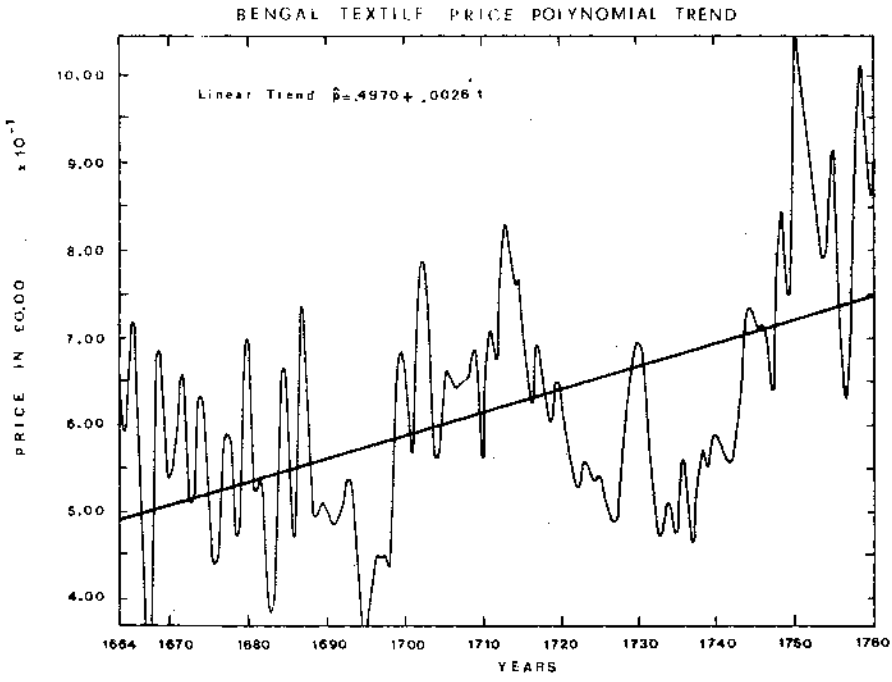
APPENDIX

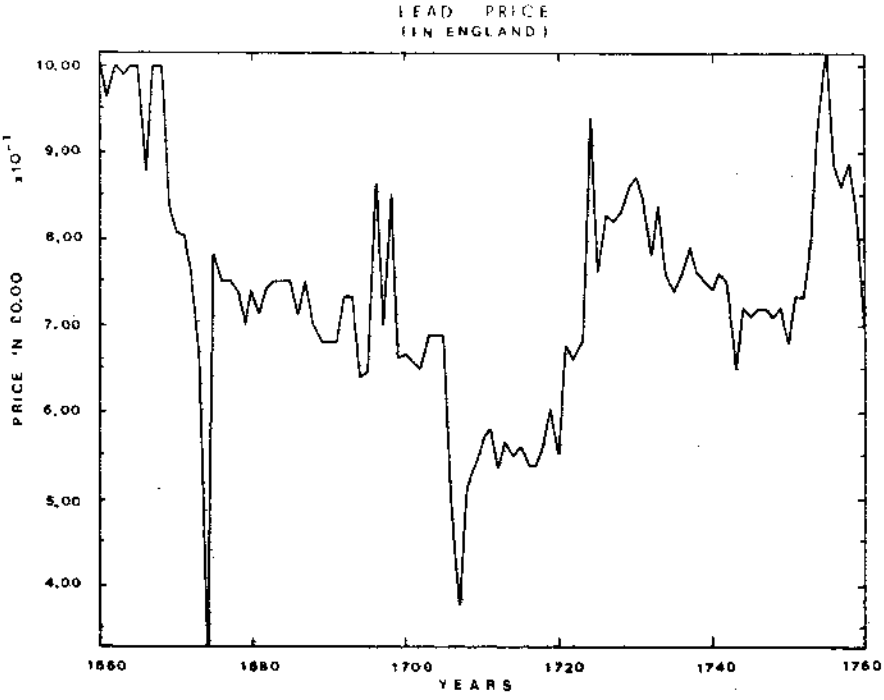


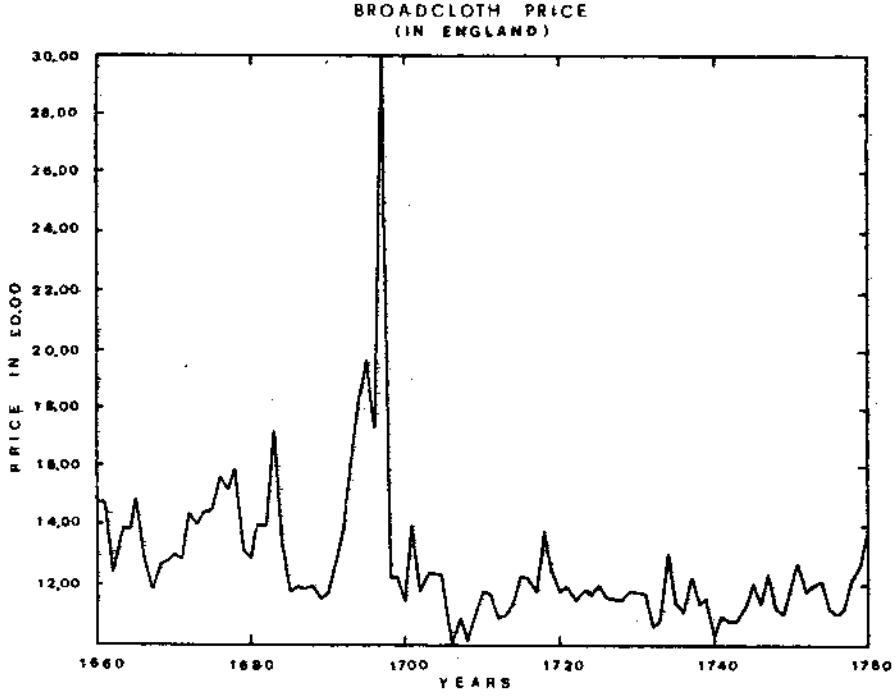

MADRAS TEXTILE PRICE POLYNOMIAL TREND
Linear Trend $\hat{p}$=.3777 + .0047t
PRICE IN £0.00 x10⁻¹
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
1664 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760
YEARS

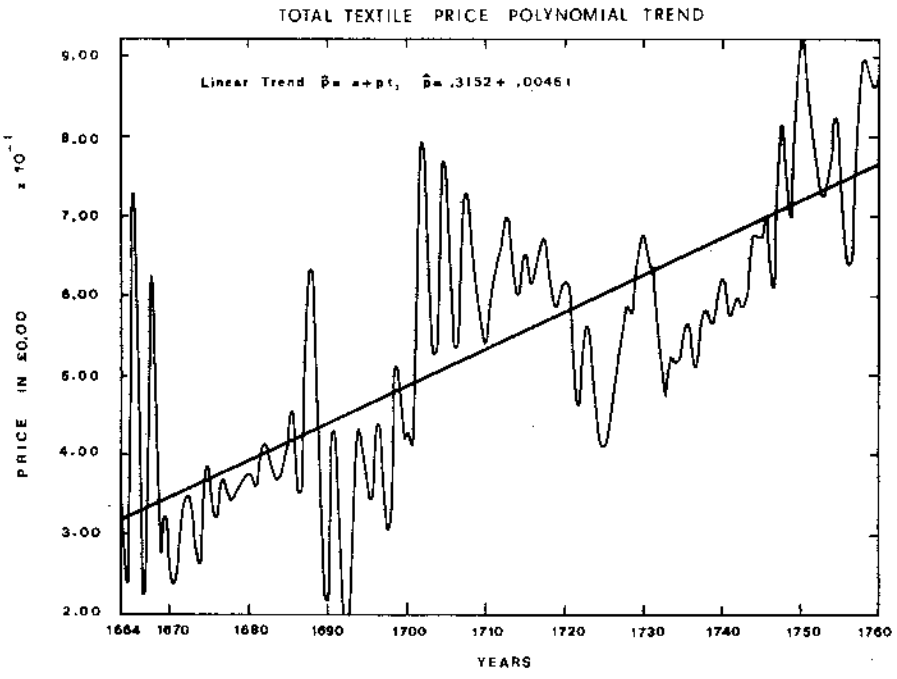

SALTPETRE PRICE POLYNOMIAL TREND
Linear Trend $\hat{p}$= .4990+ .0070 t
PRICE IN £0.00
1.20
1.00
0.80
0.60
0.40
1664 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760
YEARS

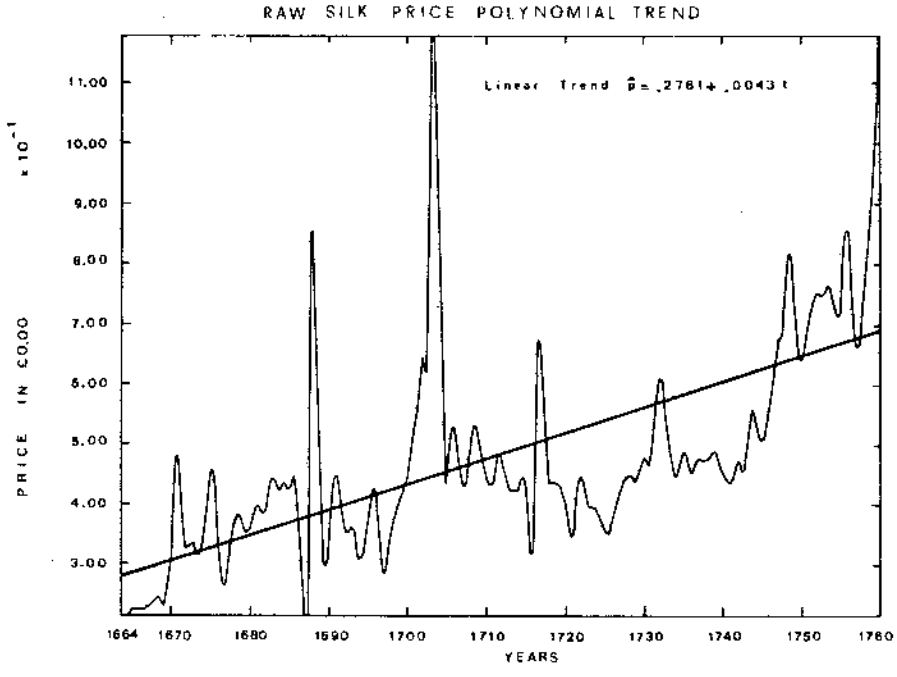

BOMBAY TEXTILE PRICE POLYNOMIAL TREND
Linear Trend p̂ = .2169 + .0022 t
PRICE IN £0,00 x 10⁻¹
6.00
5.50
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1664 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760
YEARS


BENGAL TEXTILE PRICE POLYNOMIAL TREND
Linear Trend p̂ = .4970 + .0026 t
PRICE IN £0,00 x 10⁻¹
10,00
9,00
8,00
7,00
6,00
5,00
4,00
1664 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760
YEARS


LEAD PRICE
(IN ENGLAND)
PRICE IN £0.00 ×10⁻¹
10.00
9.00
8.00
7.00
6.00
5.00
4.00
1660
1680
1700
1720
1740
1760
YEARS


BROADCLOTH PRICE
(IN ENGLAND)
PRICE IN £0.00
30.00
28.00
26.00
24.00
22.00
20.00
18.00
16.00
14.00
12.00
1660
1680
1700
1720
1740
1760
YEARS


TOTAL TEXTILE PRICE POLYNOMIAL TREND
Linear Trend $\hat{p} = a + pt$; $\hat{p} = .3152 + .0046t$
PRICE IN £0.00 x 10^{-1}
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1664 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760
YEARS


RAW SILK PRICE POLYNOMIAL TREND
Linear Trend $\hat{p} = .2761 + .0043t$
PRICE IN £0.00 x 10^{-1}
11.00
10.00
9.00
8.00
7.00
6.00
5.00
4.00
3.00
1664 1670 1680 1690 1700 1710 1720 1730 1740 1750 1760
YEARS

MODEL OF TRADE BALANCE BETWEEN TWO COUNTRIES: MATHEMATICAL PROOF

The proof of the equation is as follows. The single good which is both consumed and exported is denoted by Y. The rate of change in Y is

$$R = \frac{1}{Y}\frac{dY}{dt}; \qquad rP = \frac{1}{P}\frac{dP}{dt}; \qquad \pi = \frac{P_1}{P_2}.$$

The export of Country 1 and 2,

$$X_1 = f(\pi, Y_2), \qquad X_2 = f\left(\frac{1}{\pi}, Y_1\right).$$

The price elasticity,

$$N_1 = \frac{\pi}{X_2}\frac{\partial X_2}{\partial \pi}, \qquad N_2 = -\frac{\pi}{X_1}\frac{\partial X_1}{\partial \pi}.$$

The income elasticity,

$$E_1 = \frac{Y_1}{X_2}\frac{\partial X_2}{\partial Y_1}, \qquad E_2 = \frac{Y_2}{X_1}\frac{\partial X_1}{\partial Y_2}.$$

Country 1's export ratio or real balance is defined:

$$T_1 = \frac{P_1X_1}{P_2X_2} = \frac{\pi X_1}{X_2}.$$

$$\frac{dT}{dt} = \frac{d}{dt}\left(\frac{\pi X_1}{X_2}\right) = \frac{X_2X_1\dfrac{d\pi}{dt} + X_2\,\pi\dfrac{dX_1}{dt} - \pi X_1\dfrac{dX_2}{dt}}{X_2^2} \tag{1}$$

$$= \frac{1}{X_2^2}\left[X_2\left(X_1\frac{d\pi}{dt} + \pi\frac{dX_1}{dt}\right) - \pi X_1\frac{dX_2}{dt}\right]$$

$$\pi\frac{dX_1}{dt} = \pi\frac{\partial X_1}{\partial \pi}\frac{d\pi}{dt} + \pi\frac{\partial X_1}{\partial X_2}\frac{\partial X_2}{dt}. \tag{2}$$

$$\pi X_1\frac{dX_2}{dt} = \pi X_1\left(\frac{\partial X_2}{\partial t}\frac{d\pi}{dt} + \frac{\partial X_2}{\partial X_1}\frac{dY_1}{dt}\right) \tag{3}$$

Substituting (2) and (3) into (1)

$$\frac{dT}{dt} = \frac{1}{X_2^2}\left[X_2\left(X_1\frac{d\pi}{dt} + \pi\frac{\partial X_1}{\partial \pi}\frac{d\pi}{dt} + \pi\frac{\partial X_1}{\partial Y_1}\frac{dY_1}{dt}\right) - \pi X_1\left(\frac{\partial X_2}{\partial \pi}\frac{d\pi}{dt} + \frac{\partial X_2}{\partial Y_1}\frac{dY_1}{dt}\right)\right]$$

$$= \frac{\partial X_1}{X_2}\left(r\pi - N_2r\pi + E_2R_1 - N_1r\pi - E_1R_2\right), \tag{1}'$$

where

$$r\pi = \frac{1}{\pi}\frac{d\pi}{dt}, \qquad r\pi = rP_1 - rP_2$$

$$\frac{dT}{dt}\frac{1}{T} = RT_2 = (N_1 + N_2 - 1)\,(rP_2 - rP_1) + E_2R_2 - E_1R_2.$$