CHAPTER 1

Salamancans and Gerard Malynes

1.1 Salamanca School, Tudor Period

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1.1.1 Salamanca School

The originators of the purchasing power parity (PPP) theory were Spanish scholars of the sixteenth-century, the Salamanca School. As will be shown below, there can be no doubt about this assertion. Yet the Salamancan accomplishment went unnoticed in the English literature until Margorie Grice-Hutchinson (1952) authored a description of Spanish monetary theory in the 1544–1605 period, while providing translated excerpts from the writings of the scholars involved. Later, basing his comments on Grice-Hutchinson's work, Einzig (1970) also attributed the origins of the PPP theory to these sixteenth and seventeenth century Spanish writers.[1]

It was a confluence of diverse circumstances that led these scholars to develop the PPP theory. First of all, by the middle of the sixteenth century the University of Salamanca, in western Spain, was a great center of learning the seventy chairs of which, according to Grice-Hutchinson (1952, p. xi), were "filled by the best scholars of the age." Second, these scholars, as theologians and jurists, were well acquainted with the earlier,

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scholastic work on foreign exchange. Indeed, Grice-Hutchinson views the Salamancan analysis of foreign exchange as a development of the theories of the Florentine theologians Laurentius and St. Antonio.

Yet, and third, the people of the Salamanca School could not help but be interested in secular issues, among which was international commercial activity, for which Spain had become a leading center. This role of Spain was closely related to its conquests in America and the resulting flow of gold and silver to the home country. Fourth, Medieval analysis of foreign exchange had included the idea that ease (scarcity) of a money gave it a low (high) value against foreign exchange.[2] The missing link to reach the PPP theory was the quantity theory of money.[3] The empirical impetus for the quantity theory was provided in 16th-century Spain, the first country in Europe to receive large inflows of precious metals from the New World, with resultant conspicuous increases in the money supply and in prices.

It should be noted that the true contribution of New World treasure to the sixteenth-century "price revolution" is beside the point for our purposes here. No doubt, other factors were involved, including those on the real side. The *perception* of substantial increases in the coined money supply and in prices led to the formulation of the quantity-theory relationship between the two, and earliest in Spain; that is the relevant point.

Fifth, it was also clear empirically that exchange rates had become unfavorable to Spain. If exchange rates themselves were not recorded, nevertheless, according to Grice-Hutchinson, the Salamancan economists observed that the ratio of the amount of money repaid to the amount delivered was much higher for initial delivery of money to Spain from abroad than this two-way transaction beginning in the opposite direction. This relationship required an explanation, and relative supplies of money or relative price levels in Spain and foreign countries were obvious candidates.

Sixth, premiums on exchange transactions incorporating a time element (that is, on bills of exchange) had long been used as a way of escaping the Catholic Church's prohibition of usury. The Salamancans had a theological benefit in developing a theory such as PPP; variations in exchange rates could then be interpreted as non-usurious in nature and so quite consistent with Church doctrine. Grice-Hutchinson writes: "This early version of the purchasing-power parity theory…removed the taint of usury that had formerly accompanied even the most genuine exchange transaction" (1952, p. 58). Indeed, she explains the demise of the PPP

theory in the late seventeenth century as reflecting a final full toleration of exchange transactions, irrespective of their nature:

> The last traces of the medieval objection to exchange transactions (though not, of course, the dislike of usury itself) seems to have died away towards the end of the seventeenth century. . .the old purchasing-power parity theory, which had been framed to show that the premium on a bill of exchange was not necessarily a disguised form of interest on a loan, lost its *raison d'etre* and presumably died a natural death after performing a useful function for close on 150 years. (1952, p. 77)

In spite of these common circumstances, not all the Salamancan writers on exchange-rate determination put forward the PPP theory. To some extent, this may have been due to the natural development of the PPP approach from antecedent theories in an atmosphere in which the scholars had access to, and commented on, each-other's work. Another reason, no doubt, is that some Salamancans preferred to profess alternative theories of foreign exchange even while aware of the PPP approach. These other theories amounted to sophisticated treatments of the demand-and-supply and money-supply theories that developed in the Middle Ages.

Our concern here is with those Spanish writers that proposed the PPP theory itself. The earliest of these, and certainly a forerunner if not the actual founder of the PPP approach, is Azpilcueta de Navarro, writing in 1556. In any event, he is without doubt the founder of the quantity theory of money; for he writes[4]:

> other things being equal, in countries where there is a great scarcity of money, all other saleable goods, and even the hands and labour of men, are given for less money than where it is abundant... And even in Spain, in times when money was scarcer, saleable goods and labour were given for very much less than after the discovery of the Indies, which flooded the country with gold and silver. (Quoted by Grice-Hutchinson, 1978, p. 104)

The PPP theory is presented in a less direct fashion. Navarro states: "We cannot know whether an exchange transaction be just unless we know the value of both monies; since… the money must be changed at its proper value if the transaction is to be a just one." He then presents various reasons why "the value of the two moneys may diverge," among which "because of scarcity and need." Concentrating on this reason, he declares that "money, in so far as it may be sold, bartered, or

exchanged by some other form of contract, is merchandise and therefore also becomes dearer when it is in great demand and short supply."[5] He then proceeds to make the connection between the scarcity or abundance of money and the high or low level of prices, via the quantity theory of money in the passage quoted above. The result is the relative-PPP theory.

The Salamancan writers are considering coined, not paper, money. When Navarro states that "the value of the two moneys may diverge," his standard of reference must be the mint parity between the monies. The "proper value" of the exchange rate is not the mint parity, but the PPP. It is PPP that explains deviations of exchange rates from mint parities.

Though Navarro thus formulates the PPP theory in an indirect fashion, it is a complete statement of the theory in that the discussions of monetary ease and scarcity and of the quantity theory are general in nature, therefore applicable to both the domestic and foreign country.

In 1594, Domingo de Bañez stated the PPP theory quite directly:

> In places where money is scarce, goods will be cheaper than in those where the whole mass of money is bigger, and therefore it is lawful to exchange a smaller sum in one country for a larger sum in another.... one party may lawfully agree to repay a larger sum to another, corresponding to the amount required to buy the same parcel of goods that the latter might have bought if he had not delivered his money in exchange." (Cited in Grice-Hutchinson, 1952, pp. 57–58)

Again, sums of money in different currencies can be compared only via some standard, implicitly the mint parity. The exchange value of a country's money can legitimately exceed its mint parity when the money's purchasing power over commodities exceeds that of money abroad. This is a theory of absolute PPP in which currencies exchange with each other in their respective amounts that are required to purchase the same basket ("parcel") of goods. A similar presentation of PPP theory was made by Juan de Lugo in 1642:

> the excess of this unequal value which money has in different places... may also be caused by diversity in its extrinsic value. Thus, in the place to which the money is sent there may be a general scarcity of money, or more people may require it, or there may be better opportunities for doing business with it and making a profit. And, since money will there be more useful for satisfying human needs, more goods will be bought than elsewhere with the same sum of money, and therefore money will rightly

be regarded as more valuable in that place. (Quoted by Grice- Hutchinson 1978, p. 106)

Once more, a Salamancan scholar is presenting the absolute-PPP theory. The exchange rate between two currencies, expressed as a deviation from their metallic parity ("the excess of this unequal value which money has in different places"), is determined by the relative purchasing power ("extrinsic value") of the monies. (In the unquoted part of the passage, de Lugo points out that another determinant of the exchange rate is differing "intrinsic value," metallic content, of monies.)

At first consideration, it seems surprising that the PPP theory was developed not under a freely floating exchange rate, with unconstrained exchange-rate movements, but rather under a metallic standard, with the exchange rate confined within specie points. Yet, to repeat, the latter situation applied. Gold and silver coins (or bills of exchange payable in coin) were the usual medium of foreign-exchange transactions. An unconstrained floating rate for Spain would have involved paper money irredeemable in gold or silver.

However, upper and lower parity points were much wider than in later periods, providing scope for substantial exchange-rate variations. The Salamancan economists were quite aware of non-PPP influences on the exchange rate as determinants of the spread between parity points, citing such matters as differences among coins in metallic weight or fineness and costs of transporting coin or bullion. As was suggested above, the depreciation of Spanish currency against foreign exchange in the absence of (or correcting for) changes in these non-PPP influences provided an impetus for Salamancan development of the PPP theory.

1.1.2 Tudor Period

Gerrard de Malynes, writing in England at the end of the Tudor period, in 1601, presented a PPP theory of foreign exchange not unlike that of Navarro. The Salamancan had published his treatise 45 years earlier, but Malynes apparently was unaware of any Spanish predecessors. Two modern authors, Schumpeter (1954) and Kalamotousakis (1978), trace the origins of the PPP theory to Malynes.

Like Navarro, Malynes has all the ingredients of the PPP approach and leaves it to the reader to put them together. He begins with the quantity theory of money[6]:

> plentie of money maketh generally things dear, and scarcitie of money maketh likewise generally things good cheape.… According to the plentie or scarcitie of the monie then, generally things become dearer or good cheape, whereunto the great store or abundance of monie and bullion, which of late years is come from the west Indies into Christendom hath made euery thing dearer according to the increase of monie. (1601, 1924, p. 387)

This clear exposition of the quantity theory is at variance with the comments of Angell (1926, p. 13) that Malynes "has no clear idea of the quantity theory of money" and that "his lack of any form of the quantity theory led him into numerous errors." Even Schumpeter is unduly restrained in his acknowledgement of Malynes' accomplishment: "Malynes… tried, I think, to convey the genuine quantity-theory idea—though in a quite rudimentary form" (1954, p. 314).

Malynes then presents the money-supply theory of foreign exchange:

> plentie of money beyond the seas maketh the price of the exchange to rise, and scarcitie of money likewise beyond the seas maketh the price to fall: and so on the contrary with vs here in England, plenty of money maketh the price to fall, and scarcity of money maketh the price to rise. (1601; 1924, p. 397)

Malynes goes on to state the obvious but rarely expressed pedagogical point that, for this rule, "the head of the exchange resteth with vs," where "the head of the exchange is taken to bee at such a place or places where the price doth not alter" (1601; 1924, pp. 390–391). In other words, the exchange rate is defined as the number of units of foreign currency per English currency. The inverse definition, he notes, would reverse the direction of price movements in the theorem.

The quantity theory of money and the money-supply theory of foreign exchange together imply the PPP theory. The question arises whether Malynes was at all aware of this connection.

During the Tudor reign in England, exchange controls of various degrees of severity were periodically adopted and then removed.[7] It was paid of Malynes' genius as a mercantilist that, though he recommended officially fixed exchange rates supported by exchange control, he was concerned with the proper *level* at which an exchange rate should be fixed. He asserts that "the exchange for all places ought to be kept at a certaintie in price, according to value for value" (1601; 1924, p. 397).

It would be pleasing for the PPP theory if Malynes simply meant PPP for "value for value." However, what he seems to mean, rather, is the true *mint* parity. Yet the PPP theory may be deemed reached by another route; for Malynes has in mind a theory of price-level changes in response to exchange rates differing from the mint parity. As Schumpeter states: "he [Malynes] nicely explains how, if a country's currency falls below its mint par and coin flows out in consequence, then prices will fall in that country and rise abroad" (1954, p. 345). It is reasonable to project that the level at which Malynes recommended that the exchange rate be fixed was not only the mint parity but also (ultimately if not initially) the purchasing power parity, since specie flows and price-level changes (the price specie-flow mechanism) at home and abroad would make the PPP equal to the mint parity. This interpretation of Malynes' theory is certainly that of Schumpeter:

> When countries are in monetary equilibrium with reference to one another, then . . . gold is distributed between them in such a way that there is no profit in transferring any part of a country's holdings to any other country. We may express this by saying that the purchasing power of gold is internationally at par and also, from the standpoint of the inflation theory of foreign exchange, that this parity and its variations are the (immediately) determining factors in the foreign-exchange market. This Purchasing-Power Parity theory, or some rudimentary form of it, goes far back and can … certainly be attributed to Malynes. (1954, p. 737)

By the "inflation theory of foreign exchange," Schumpeter means precisely the PPP theory; for he writes: "We may label as Relative Inflation the variations in the value of a country's monetary unit, in relation to the value of other countries' monetary units, and speak accordingly of an Inflation Theory of Foreign Exchange" (1954, p. 736).

Malynes can thus be interpreted as seeing a role for the PPP theory whether the exchange rate is floating or fixed. Under a floating rate, PPP determines the exchange rate via the quantity theory of money and the money-supply theory of foreign exchange. Under a fixed rate, that is, one confined within specie points, the price specie-flow mechanism operates to change countries' price levels until countries' relative price levels (absolute PPP) equal the mint parity.[8]

Malynes does not draw the conclusions himself for either proposition, probably because of his overconcern with defects in the international

payments mechanism, to the neglect of completing his basic arguments. For example, Wu (1939) points out that Malynes sometimes seems to assume price inelasticity of demand for England's exports, while Schumpeter (1954) sees Malynes as observing (unhappily) an unfavorable terms of trade for his home country.

Notes

1. Yet recognition of the Spanish accomplishment remains sparse in the literature. All else that I could find are one-sentence acknowledgements by Myhrman (1976), Isard (1978), and Officer (1976a). The only subsequent analysis of the Salamancan contribution is provided by Grice-Hutchinson (1978) herself in a study of Spanish economic thought over a much longer time period.

   Grice-Hutchinson notes that the School of Salamanca had been discovered earlier in the non-English literature, notably by J. Larraz (Spanish), writing in 1943. She mentions as his predecessors A. E. Sayous (French) in 1928 and Alberto Ullastres Calvo (Spanish) in 1942.
2. "Scholastic writers noticed the effect of the scarce or plentiful money supplies on exchange rates…Outstanding among them was Pegolotti's book, written about 1340, and Uzzano's book, written about a century later. Both of them were aware of the influence of the monetary scarcity (strettezza) or ease (larghezza) on exchange rates" (Einzig, 1970, p. 94).
3. "[A] statement of the PPP theory would have to involve going beyond the money-supply influence on exchange rates to that of the price level. A quantity theory of money, even in rudimentary form, would be required, which these and other writers of the time failed to have" (Officer, 1982, p. 29).
4. Historians of economic thought generally attribute origination of the quantity theory to Jean Bodin, who published his work in 1568. Schumpeter (1954) is apparently unaware of de Navarro, though he refers to later Salamancan writers on the topic.
5. All quotations are from Grice-Hutchinson's translation (1952, pp. 91–94).
6. Quotations are from Malynes' *A Treatise of the Canker of England's Commonwealth* (1601), as excerpted in Tawney and Power (1924).
7. A history of these exchange controls is provided by Einzig (1970, ch. 14).
8. With a spread between upper and lower parity points, there is no tendency for the exchange to settle mid-way, at the mint parity itself. While Malynes did not state this point, the Salamancan writers understood it; for them, PPP is the exchange-rate determinant within the spread.

   [There are two extensions to the first sentence of this note. First, with asymmetrical gold points (for example, due to differential costs of import and export gold arbitrage—see Officer, 1996, pp. 179–180), mint parity

and the spread midpoint differ (see Sect. 23.2.3). Second, under ideal assumptions, "the critical exchange rate at which there is zero speculative demand and supply of foreign exchange is the midpoint of the spread, not the mint parity" (Officer, 1996, p. 197). However, the critical exchange rate need not be the PPP. In general, this critical exchange rate, the spread midpoint, and mint parity differ from each other and from the PPP exchange rate. For normative use of the critical exchange rate, see Sects. 21.2 and 23.2.3.]

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1.2 Malynes, Gerard De (fl. 1586–1623)

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A merchant of English parentage, born in Antwerp at an unknown date, Malynes was a commissioner of trade in the Low Countries about 1586. He came to London and was frequently consulted on commercial questions by the Privy Council in the reigns of Elizabeth I and James I. He became an assay master at the mint and obtained a patent to supply farthings; he was imprisoned for a time, complaining later that he had been ruined by being paid in his own coins! He also served as a spy for England. Called on by the standing commission on trade for evidence on the state of the coinage, he published a series of pamphlets on money and prices. A mercantilist and a bullionist, he was heavily influenced by Scholastic literature.

Malynes viewed individual commodity prices as determined by demand and supply. However, he was more interested in the price level, governed by the quantity of money (Malynes 1601a, 1603). An expanding money supply, associated with a rising price level, decreased interest rates and stimulated the economy (1601a, 1622a). Therefore Malynes viewed usury as at best a necessary evil (see Muchmore 1969, p. 346) and, above all, opposed any export of specie whatsoever.

Rejecting the balance of trade theory, Malynes charged that 'bankers' (exchange dealers) controlled the exchange rate (1601a, 1622a, b, 1623). By their incorporation of usury in the price of a bill of exchange and through speculation, they conspired to undervalue sterling, leading to a deterioration in England's terms-of-trade ('overbalancing') and a specie outflow (1601a, 1622a, 1623). But overvalued sterling would not lead to a specie inflow, because the export proceeds would be spent on luxury imports (1601a). Yet Malynes (1601a) has a theory of price level changes in response to exchange rates differing from mint parity and money flowing between countries—a price specie-flow mechanism, marred only by the assumption of inelastic demand. His solution to the twin problems of specie outflow and terms of trade deterioration is comprehensive exchange control with enforced exchange dealings at rates fixed at mint parities (Malynes 1601a, 1622a, b; Muchmore 1969, pp. 347–348).

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