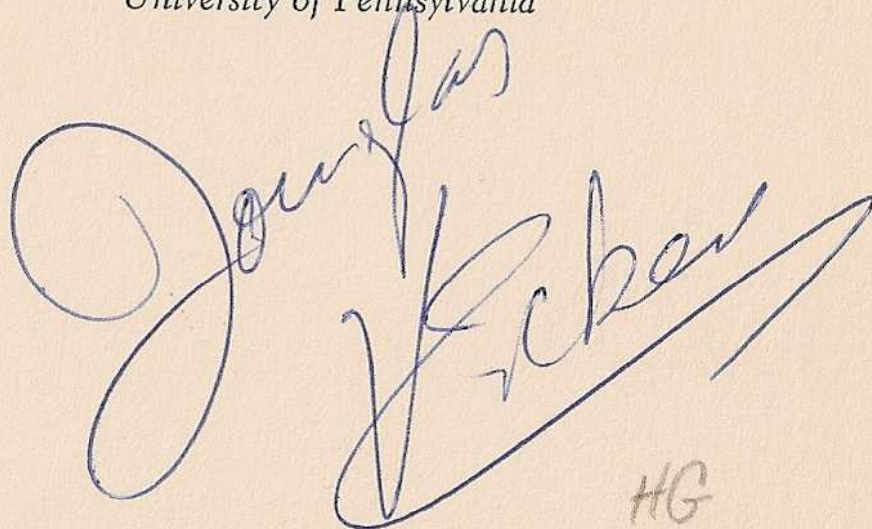


Studies in the Theory of Money 1690–1776

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Jacob Vanderlint

Jacob Vanderlint's place in the history of economic analysis is due to his single essay *Money Answers All Things*, first published in 1734.¹ The essay did not attract a great amount of attention following its publication and it has received only minor recognition in the subsequent historical literature. Interesting claims have been made by some of Vanderlint's rehabilitators,² but his place in the development of monetary theory has not been fully examined. Apart from its significance for "scientific socialism"³ and for a study of the roots of physiocracy, Vanderlint's work calls for re-examination, in a historico-theoretical review of the eighteenth-century literature, on the level of the money-flow analysis.

Vanderlint was not a monetary inflationist in the same sense as John Law and others of the paper-money and bank-money advocates of the eighteenth century. He argued, indeed, for a *restriction* of banking activities on the grounds that an overissue of "paper effects" could well have disturbing influences on the state of trade.⁴ He was concerned, however, with the distressed conditions of unemployment and poverty which he saw all too clearly around him, and he found the "cause . . . chiefly, if not solely owing to too great scarcity of money amongst the people in general."⁵ "The flux and reflux of trade" he said, "is all governed by money."⁶ It was money "on which trade floats."⁷ And "plenty of money never fails

1. *Money Answers All Things* (London, 1734, Johns Hopkins University reprinted, ed. Hollander, 1914).

2. *Vide ibid.*, pp. 3-4.

3. Mrs. Rhys Davids in *Palgrave's Dictionary of Political Economy* (ed.

H. Higgs, 1925), Vol. III, p. 610.

4. *Op. cit.*, p. 156. Cf. *Ibid.*, p. 94 n.: ". . . every man should be his own banker . . ."

5. *Ibid.*, p. 148.

6. *Ibid.*, p. 160.

7. *Ibid.*, p. 49.

to make trade flourish."⁸ Such propositions as these account for the general argument of *Money Answers All Things* that the supply of money needed to be increased as part of the solution of the existing difficulties. But it is not in a theory of monetary inflation, in the sense of Law and Berkeley, that the essay's primary importance resides.

Vanderlint's work, from one viewpoint of interpretation, is significant for the method of analysis which it used to explain the monetary-economic process. The method sprang from broader concepts than those of static relations of economic forces. It involved also an examination of the *working out* of new and different relations following a disturbance or change in the economic system. It envisaged varying connections of what might be referred to as macro-analytical variables, such as employment, prices, rents, and wages. And in the description of these the essay became, in effect, a broadly based macro-dynamic analysis.

II

The unemployment thesis

Vanderlint's principal concern was with the existing conditions of unemployment and poverty and with what he saw as the wasteful dissipation of economic resources. Specifically, his objective was "to give full employment to all the people."⁹ "The wants of mankind," he had said, "are sufficient to give full employment to all that must get their living by their diligence and labour."¹⁰ In theoretical terms the essay set out to establish a number of hypotheses relating to the description of the level of economic activity.

That the great basis of trade may be established by principles, as solid and perspicuous, as those rules by which your particular affairs are directed. And then it will be no greater difficulty to account for the changes and turns the trade of nations takes than it is, by your exact and excellent method of accounts, to shew all the turns any of your particular affairs take.¹¹

In the theoretical and deductive scheme of the essay, the analysis of policy issues as Vanderlint saw them was based on "principles" and "maxims" and "causes." "I find considerations on the use, necessity, increase, and diminution of money amongst the people,"

8. *Ibid.*, p. 16.

9. *Ibid.*, p. 146.

10. *Ibid.*, p. 79.

11. *Ibid.*, pp. 7-8.

he said, "will best explain this momentous affair . . ." ¹² His objective was to "lay down and illustrate some principles relating to money, which I think deserve to be regarded as maxims." ¹³ The fifteen such "principles" which Vanderlint advances contain a summary of his attitude to the current problems in the theory of money and a discussion of his general expansion hypothesis.

The general argument of the essay was a monetary one. "Money (i.e., gold and silver)" was "the sole medium of trade." ¹⁴ And it was argued, in terms suggestive of the causal processes which characterize the work, that

Plenty of money never fails to make trade flourish; because, where money is plentiful, the people in general are thereby enabled, and will not fail to be as much greater consumers of everything, as such plenty of money can make them. ¹⁵

The causality was from the circulation of money, *via* consumption expenditures, to the maintenance of a higher and more satisfactory level of production and activity. This was important for Vanderlint's expansion thesis.

On an alternative view, however, the economic problem as Vanderlint described it was one of an unbalanced allocation and utilization of productive resources which, in the nature of the case, led to a general underemployment of the resources of the economy as a whole.

. . . too few of the people are employed in cultivation of land . . . and consequently too many in all trades, manufactures, and professions; whence these being thus overstocked with numbers, must needs be depressed and embarrassed; as they certainly are, in reference to the great end of them, which is solely profit. ¹⁶

The situation can be summarized in the following way. Relatively speaking, the produce of the land was scarce; ¹⁷ its price was accordingly high; ¹⁸ consequently the subsistence wage of labor was high; ¹⁹ the minimum supply price of manufactures was therefore high; ²⁰ the demand for them was at the same time deficient and manufacturing industries and all nonagricultural trades were de-

12. *Ibid.*, p. 12.

13. *Ibid.*, p. 12.

14. *Ibid.*, p. 12. Parenthesis in original.

15. *Ibid.*, pp. 16-17.

16. *Ibid.*, pp. 11-12.

17. *Ibid.*, pp. 17-18.

18. *Ibid.*, pp. 11, 17-18.

19. *Ibid.*, p. 16.

20. *Ibid.*, p. 16.

pressed owing to the resulting squeeze of profits;²¹ and unemployment was structurally high.²² The thing that was needed if profit margins were to be restored and industry and trade reactivated was a general all-round lowering of the cost structure. The crux of this problem was the subsistence level of wages. It was at this point that Vanderlint proposed his solution. The subsistence level of wages was to be lowered by increasing the output of agriculture, and this was to be accomplished by increasing the area of land under cultivation.²³ A dynamic chain of reactions would thereby be set in motion to achieve the desired end of a healthier level of trade and activity.

One of the several summaries of this chain of relationships is given in the seventh of the fifteen "principles":

All things . . . are the produce of the ground originally . . . The more land therefore shall be improved and cultivated, etc. the greater will the plenty of all things be . . . and the greater the plenty becomes this way, the cheaper will every thing be.

And thus will money become plentiful, because less money will purchase everything, in just the same proportion as the plenty of everything shall reduce the prices, by the increase of everything in respect of the demand. And if this method be sufficiently persued, the plenty may be increased so much as to make victuals and drink half the price that they are at now; which will make the price of the labour of working people much lower; for the rates of labour are always settled and constituted of the price of victuals and drink: And all manufactures will be vastly cheaper; for the value of all manufactures is chiefly constituted of the price or charge of the labour bestowed thereon.²⁴

21. *Ibid.*, p. 12, and cf. p. 145 n.

22. *Ibid.*, pp. 12, 99, and *passim*.

23. The remedy proposed involved a lowering of the money wage subsequent upon the lowering of the prices of subsistence wage goods. The remedy did *not* involve a lowering of real wages. It envisaged, in fact, a raising of real wages as the effects of the proposed policy worked their way through the economic system. Cf. *ibid.*, p. 99 n. The then current suggestion that real wages should be reduced by reducing existing money wages was explicitly rejected as "unnatural, and impossible to answer the end." *Ibid.*, p. 141.

24. *Op. cit.*, pp. 15-16. Vanderlint

here follows John Locke in several respects; e.g., the subsistence theory of wage levels and the labor cost theory of value. Cf. Chapter 4, *supra*. Hollander in *op. cit.*, p. 3, notices Vanderlint's general indebtedness to Locke and remarks that he took his title from Locke's *Further considerations* . . . The title is, in fact, a quotation from *Ecclesiastes* X:19, and we have already pointed out its frequent use in the pamphlets on money in this period. The text Vanderlint chose for his title page, and for the final sentence of the essay, was *Proverbs* X:15, "The destruction of the poor is their poverty."

In this statement of the relationships envisaged, however, a proposition emerges which remains, in a significant sense, a damaging assumption of Vanderlint's theoretical system. This is the proposition that an increase in the supply of money means something different from what it had meant for the other "inflationists" of this period, and from what ordinary usage might be taken to indicate. Making money more plentiful did not mean simply increasing its physical volume or the actual supply. Money was understood as being more plentiful precisely because the general price level of commodities had become lower. Money was more plentiful because it was worth more, because the real value of the existing stock of money was higher.

This, however, was not the final theoretical concept relative to the size of the supply of money. Vanderlint's work contained at this point what we might call a theoretical duality. In one view an increase in the supply of money meant an increase in the real value of the existing stock of money in the manner just indicated, and in another view it was taken to mean an increase in the physical volume of money in the more usual sense. In the same context Vanderlint points out that as a result of the policy measure proposed,

we shall be enabled to make and export our manufactures at lower prices . . . whence the cash of the nation will certainly increase, by raising the value of our exports above the value of our imports; that is, the balance of trade will thus be in our favour, or money will thus be made plentiful.²⁵

What is important, however, is that Vanderlint appears to ascribe a logical or causal, as well as a temporal, priority to the first mentioned meaning of increasing the money supply. "If this method be sufficiently persued" he said, the desired objective of economic revival and re-employment would be achieved. In so far as Vanderlint relied on any such proposition as this, of course, his argument as a whole contained a damaging circularity. The hiatus was that in accepting the statement as an adequate hypothesis and proposal for economic policy, no suggestion was made as to how the proposed increase in the cultivation of land and in agricultural production was to be financed, or how the profitability of individual agricultural producers was to be maintained. The problem was that of lowering the cost functions in the economy. This was to be accomplished by an induced fall in the money costs of a subsistence level

25. *Op. cit.*, p. 16.

of wages. The essay takes account of "the late invention of erecting workhouses for the poor"²⁶ and contains suggestions for employing the poor in agriculture rather than allowing them to clutter up the manufacturing trades.²⁷ And suggestions are made also²⁸ that "the working people can and will do a great deal more work than they do, if they were somewhat better encouraged . . ."²⁹ But the additional stimuli to effort seem to depend finally on the workers being "somewhat better encouraged by their wages."³⁰ The issue, in other words, remains the same as before and there is still the unsolved and unanalyzed problem as to how the proposed increase in labor and production was to be financed.

But given the fact that Vanderlint envisaged also an increase in the actual amount of money in circulation, in what sense, we may ask, was the higher level of monetary circulation relevant, in theoretical terms, for the analytical propositions of the essay? The answer moves clearly on three distinct levels. Firstly, there is the question of the way in which a higher level of monetary circulation transmits its reactivating influences to a higher level of employment and trade activity; secondly, the ways are examined in which monetary demand and employment can migrate between the non-agricultural sector of the economy on the one hand and the agricultural sector on the other; and thirdly, the notion is erected of the macro-dynamic equilibrium to which the monetary forces which might be set in motion can move the economy.

On the level of the first of these questions, Vanderlint understood the link between a change in the flow of money and a change in employment to be an induced change in the level of consumption expenditures. In this he followed the significant thesis of Barbon, North, Mandeville, and Berkeley. "Where money is plentiful," Vanderlint had argued, "the people in general are thereby enabled, and will not fail to be as much greater consumers of everything, as such plenty of money can make them."³¹ "Trade" he saw, "intirely depends on, and terminates wholly in the consumption of things."³² "Instead of urging the people to be less consumers, things should be made so plentiful, that they might be greater consumers, that business might increase and not abate amongst the people."³³

26. *Ibid.*, p. 21.

27. *Ibid.*, pp. 59, 60, 64-65 n.

28. Recalling Berkeley's attempts to take the perversity out of the supply curve of effort.

29. *Op. cit.*, p. 119. Cf. *ibid.*, p. 117.

30. *Ibid.*, p. 120.

31. *Op. cit.*, pp. 16-17.

32. *Ibid.*, p. 30.

33. *Ibid.*, p. 29.

In order to lift the economy from an underemployment situation, a greater, not a lesser, amount of consumption spending was required. To instance the case, Vanderlint examined the contrary argument:

Now if the people must retrench, they must do some or all of these things: viz, wear fewer and worse cloaths etc., eat less and worse victuals; imploy fewer or no servants; occupy less houseroom . . . and spend little or no money in any pleasure or diversion . . . Now would not this lessen the consumption of everything and hinder many from supporting themselves and families, by making so much less business amongst the people, and thereby greatly increase the number of poor.³⁴

The argument had been advanced that the depression in English trade and manufacturing activities compared with those of neighboring countries was due to a relatively higher wage rate in England and that in order to redress the situation money wages should be cut.³⁵ Vanderlint's objection to this was based on the fact that income receivers were also income spenders; wage earners were also consumers. It was clear in his view that the cost level must be reduced. But this

must not be done by making the poor fare harder, or consume less than their reasonable wants in that station require; for they being the bulk of mankind would in this case affect the consumption of things in general so mightily, that there would be a want of trade and business amongst the other part of the people, which will affect the rents so much the more as the people in this way shall be distressed.³⁶

Cumulative and depressing effects would follow a reduction of consumers' expenditures. But the question of consumption spending was not relevant only to the notion of the aggregate *level* of monetary demand. It was relevant also to the question of the *structure* of total demand and to the possibility of the migration of monetary outlays from one sector of economic activity to another. This latter conception accordingly provided the second level on which Vanderlint examined the principles of monetary circulation and the economic significance of sustained monetary demand.

34. *Ibid.*, p. 28.

35. *Ibid.*, p. 141.

36. *Op. cit.*, p. 64 n. Cf. also p. 145 n. for a further indication of the

way in which a deficiency of demand would induce a profit squeeze and thus unemployment in the manufacturing trades.

III

The structure of demand and activity

The final of Vanderlint's fifteen "principles" contains the key to the central thesis of the essay and to the dynamic conception of the economic process which Vanderlint envisaged:

If all the gentlemen in the nation would lower their rents, at the request of the people, this could not answer the end; because the demand for the fruits of the earth, which the land at present cultivated can produce, is and will continue to be so great, if the people be not diminished, as necessarily to keep the price higher than the money circulating amongst them will well enable them to pay for them.³⁷

Here, on first appearance, we are confronted with a confusing proposition that the demand for commodities might well be such under certain circumstances as to maintain their prices "higher than the money circulating among them will well enable them to pay." What is the relevance of this proposition to Vanderlint's general thesis of macro-economic equilibrium? What is the "end" which the measure proposed, namely the reduction of money rents, "could not answer"? These are the questions necessary to the understanding of Vanderlint's central dynamic theorem.

In the first place, the passage referred to is not simply stating contradictory propositions in the theory of the value of money. Vanderlint is here pointing out that even if rents were to be reduced as suggested, the existing supply of money would still be inadequate to maintain agriculture at the supposed new profitable level of operation as well as, *and at the same time*, resuscitate and support the profitable operation of the remaining sectors of the economy. In the situation given, the mere reduction of money rents would not be sufficient to stimulate the economy out of the generally depressed situation in which it stood. For even if the lands under farm were by this means brought to full capacity production, even if the existing slack in agricultural production were fully taken up, the supply of subsistence necessities would still be small in relation to the demand for them and their price level would still be high. This in turn would maintain the subsistence level of money

37. *Ibid.*, pp. 19-20. This proposition, which will be examined further in the following text above, appears to have given a good deal of trouble

in the critical and interpretative literature. Monroe, in *Monetary Theory before Adam Smith*, p. 200, dismisses it as "puzzling."

wages at something higher than the desired level. The effect would then be that too large a portion of the existing and attenuated money supply would be drawn off for utilization in the agricultural sector, leaving too little for profitable activation in the remaining sectors of the economy. This is the fundamental intention of the essay at this point. If too much money is, by reason of necessity, absorbed in one sector, too little must remain in the other sectors of the economy, causing a reduction in money turnovers there and a consequent depression of prices and profits. Vanderlint elaborates the concept of the competition of the sectors for money, and the migration of outlays between them, in several ways. We take as an example the following case.

Owing to the demand for the agricultural land which was at that time enclosed and available for farming, money rents had been forced to a relatively high level, taking account of the failure of the annual rate of land enclosures and cultivation to keep pace with the annual rate of growth of the population. Unless land enclosures and cultivation were increased as the population increased

there must continually be greater numbers subsisted on the produce of the same land which was before cultivated, and this will increase the demand for the produce, and enhance the price of it, whilst the increasing people must employ themselves solely, in trades, manufactures etc. to enable them to subsist: Whence it must needs come to pass, that trades, manufactures, etc. will soon be so overstocked, that all the increase of the people can't be subsisted this way, seeing the necessaries of life, for which they all ultimately work, will all the while be growing dearer, and the people less able to purchase them . . . I take this to be very much our present case . . .³⁸

The high level of rents had forced a disproportionately high amount of labor into the nonagricultural sector of the economy, with the debilitating effects just described. An overproduction of manufactured goods was faced with a deficiency of demand for them. And Vanderlint's argument was that a reduction in the rents (supply price) of agricultural land would not in itself remedy the situation. This could not "answer the end," "until many more of the people are employed in cultivation etc. to lessen the numbers of poor, and make greater plenty . . ."³⁹ The problem was one of a reallocation of resources away from secondary to primary production. In

38. *Ibid.*, p. 34.

39. *Ibid.*, p. 20.

other words, Vanderlint wanted an *extensive* as well as an *intensive* increase in primary production; not only an intensive increase by the utilization of existing surplus capacity, but an extensive increase by the enclosure of additional wastelands and the employment in cultivating them of the existing unemployed labour resources. By this means the prices of necessities would be depressed, with consequent beneficial effects on subsistence money wage rates, and ultimately industrial profits, as argued before.

Therefore the natural way to lower the rents, can only be, by putting such very great tracts of waste land into cultivation, as may make farms abound; which will lower, and make the rents easy, and will employ the people, not in cultivation only, *but in every kind of manufacture, trade and calling.*⁴⁰

The ultimate conception is that the expansionary forces set in motion should carry the productive apparatus of the economy not only to full employment in agriculture, but also in "every kind of manufacture, trade and calling." But to complete the description of the process on which this depends it is necessary to show that not only is there involved a shift of resources in this way, but a shift also of monetary demand. The following argument envisages the migration of money outlays:

Suppose corn etc. were considerably advanced (in price) to enable the farmers to pay their rents; what must become of the trading part of the nation,⁴¹ who already, with justice, complain they can hardly get money to support themselves, at the present rates of things? And how much more would the poor and their calamities increase, by such a rise of necessities, together with the still greater decay of trade it must occasion; since if the prices of things were to be advanced, the people in general for want of money must, if possible, be still less consumers and consequently make just so much less business amongst them, who have already much too little?⁴²

It is in this direction that we find the explanation of the earlier and seemingly paradoxical statement that prices may be higher than the money in circulation is able to maintain. They may be

40. *Ibid.*, p. 20. Our italics.

41. Or, as we have said, the non-agricultural sector.

42. *Op. cit.*, p. 21. We note also that, in addition to the question of the migration of money outlays, Vanderlint emphasized the fact that

following the exodus of cash, occasioned, for example, by an unfavorable balance of trade, there would be a *general* deficiency of monetary demand in *all* sectors, with a consequent "abatement of consumption." Cf. *ibid.*, pp. 145, 36 ff.

higher in one sector than the amount of money in circulation can permanently maintain, consonant with a continued high level of activity throughout all remaining sectors of the economy. The same argument may be observed in repeated passages in Vanderlint's essay.⁴³

In this way Vanderlint erects a chain of causal economic relationships: increase the supply of agricultural produce—lower the prices of necessities—lower the money wage level—lower the cost of manufactures—increase the level of exports and the balance of trade—increase the supply of bullion—increase demand for all kinds of production—increase the level of employment in all sectors of the economy. This is in essence a macro-dynamic argument describing a movement toward a macro-equilibrium in which both the general level of prices and the level of trade activity are different from what they were before the inception of the process. Vanderlint has brought together in one and the same process analysis the possibility of changes in both the level of prices and the level of trade. As such he stands, for the historian of thought, in the line of development between Locke and Hume. This is the measure of the importance of his position.

43. Cf. pp. 18, 22, 23: "For the *proper value* of anything is really no other, than what the money circulating among the people will enable them to pay: nor can any greater value be *long* supported by any means whatsoever" [our italics]. Cf. pp. 26-27 and *passim*. It is in this context that Vanderlint elaborates the notion of the equilibrium position of the economy. "But it will be asked, how we shall know when the prices of things are at this proper value," *ibid.*, p. 23. "I answer, that as the price of labour is always constituted of the price of necessities, and the price of all other things chiefly of the price of labour; whenever the price of necessities is such, that the labouring man's wages will not, suitably to his low rank and station, as a labouring man, support such a family, as is often the lot of many of them to have, the price of necessities being then evidently so

much too high, every thing else is so too; or then may the prices of things justly be said to be above this proper value," *ibid.*, p. 24. And as for the operation of the adjusting forces: "There is a proper point, *at which it will stop of itself*; which is this: Whenever the wages of the labouring man, and the price of necessities are made so near equal, that he can, suitably to that low rank in life support such a family as he, in common with all human kind, chiefly came into this world to raise . . . the rents the lands will then bear is that proper and fit rent, which will enable the gentlemen to purchase more of everything than any larger rents can enable them to do," *ibid.*, p. 26. Our italics. The stopping point of the process will be a position of full employment of labor at a subsistence level of wages. At this point the stimulating force of land enclosures can be safely stopped.

IV

The theory of interest

Throughout his essay Vanderlint made only one or two isolated references to the question of the rate of interest. The most important of these is in his discussion of the effects of the proposals we have already considered:

The full and sufficient execution of this proposal, will prevent too great a reduction of the interest of money; because the continual enclosing and improving so much waste land . . . will not only make abundance of estates to be purchased, which are now not worth one fourth, perhaps, of what they will be when improved, but will raise such vast quantities of produce, and consequently manufactures, to invest that money in, which the government may from time to time be paying off; which money, if this way be not provided for employing and investing it, must again come to market to find interest; whereby the plenty of money, seeking interest, will be so great, that interest must sink.⁴⁴

Interest is determined by the conditions of demand for and supply of loan money. The passage recalls Locke's statement that interest is "the price of the hire of money." But Vanderlint does not give to the discussion of interest the same theoretical significance as did Locke. He does, however, appear to have a clear notion of the demand for loan capital arising from the profitability of the various lines of employment. There is also a clear idea, as in the following passage, of the profit opportunity varying inversely as does the total amount of capital invested in any particular line.

Besides, peace lowering the interest of money brings many more people into trade, who either cannot live on the reduced interest of their money or are not satisfied to do so, and therefore enter on trade to improve their money to better advantage. And having abundance of money to employ, must needs take a great deal of business from those that had it before, by doing business at such less profit than it was before done, that they may employ the large sums they bring into trade.⁴⁵

Not only is there the suggestion of a diminishing efficiency of invested capital but also that of the possible migration of capital between lines of investment in order to maintain a maximum interest return.

44. *Op. cit.*, p. 104.

45. *Ibid.*, p. 32.

V

The value of money and the practice of banking

Vanderlint's theory of the value of money was again a supply-and-demand theory. The value of money was determined by the same forces as determined value in general.

The plenty or scarcity of any particular thing, is the sole cause whence any commodity or thing can become higher or lower in price; or, in other words, as the demand is greater or less in proportion to the quantity of any thing, so will such thing, whatsoever it is, be cheaper or dearer.⁴⁶

And the argument is extended as follows:

The prices of the produce or manufactures of every nation will be higher or lower, according as the quantity of cash circulating in such nation is greater or less, in proportion to the number of people inhabiting such nation . . . If the people increase, and the cash doth not increase in like proportion, the prices of things must fall; for all the people must have necessaries, to procure which they must all have money: This will divide the same quantity of cash into more parts, that is, lessen the parts; and then it's evident they can't pay so much for their necessaries, as when the same cash divided into fewer parts, makes the parts greater.⁴⁷

The relation which is here raised between the supply of money and the size of the population has, it is true, more than one possible interpretation. One of the possible meanings is that, as the population increases and money is divided among more people, there is an effective increase in the public's demand to hold money as a proportion of real income or, in other words, as a proportion of the flow of goods and services. This would imply that the effective velocity of circulation of the money supply will be reduced. Should this be so and the size of the flow of goods remain unchanged, prices will fall. The whole proposition is in the Lockean form of the comparative static quantity equation.

The other possible meaning is that as population increases, the supply of goods and services will increase in like proportion also. In view of Vanderlint's concern throughout his essay with the conditions of the supply of commodities in varying circumstances, it is conceivable that the idea of supply was intended in this context also. In such a case, however, the suggestion of proportionality is

46. *Ibid.*, p. 15.

47. *Ibid.*, pp. 13-14.

not clearly supported and would not appear to be warranted. Similarly, Vanderlint argued that if the money supply increased at a greater rate than the increase in population then prices would rise, and he suggested (in anticipation of Cantillon) that in such a case part of the inflow of excess money should be sterilized in the form of plate and ornaments.⁴⁸

Vanderlint, like Locke, defines money as "gold and silver," and in so far as his essay envisaged a change in the actual volume of money it envisaged a change in the country's supply of these monetary metals. Like Law, however, he recognized that bank notes and other "paper effects" will have the same effects on the price level as money proper, so long as they are widely accepted as money:

Banking . . . where more cash notes are circulated, than all the cash the bankers are really possessed of will immediately answer and make good; I say, so long as this credit is maintained, it hath the same effect, as if there was so much more cash really circulating and divided amongst the people.⁴⁹

He goes on to point out that raising the price level as compared with that of other countries will in turn induce an unfavorable balance of payments. At this and other points Vanderlint gives a clear view of what we have referred to in other places as an international self-balancing monetary mechanism.⁵⁰

In the matter of what was effectively money, as distinct from his own idea as to what should be properly defined as money, Vanderlint was abreast of the opinion of his time. In the matter of banking, however, he was opposed to the position which John Law had taken shortly before him. Vanderlint argued against the practice of banking chiefly on the ground that it tended to maintain an artificially high price level, failing to see the logical implication of his own previous argument that in so far as paper did circulate as money it could be effective in lifting the economy out of its depressed level of activity. Vanderlint was here, however, confronted by a fundamental problem in mercantilist monetary theory: the problem of integrating into a single body of analysis the effects of money operations on both the price level and the volume of trade, taking account of the need to maintain at one and the same time external balance and prosperous internal economic ac-

48. *Ibid.*, p. 94.

49. *Ibid.*, pp. 14-15.

50. Cf. *ibid.*, pp. 48-49.

tivity. Locke, it has been seen, had established definitional relationships between the money supply and the level of trade on the one hand, and between money and prices on the other. Law had treated of the former in something of a theoretical system. Each of these writers had a clear understanding of the latter relationship, and Vanderlint went some distance toward showing the possibility of simultaneous changes in the dependent variables in both cases. A genuine and complete synthesis, however, was, at this stage of the development of the theory, still awaited. Its realization was approached more closely in the ensuing decades of the eighteenth century.
