Price Movements, Balance of Payments, Bullion Flows, and Unemployment in the Fourteenth and Fifteenth Centuries *

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The health of the Western European economy during the later Middle Ages has long been a topic of vigorous debate among economic historians. Lack of statistical data, however, has made this issue difficult to resolve. As a result, recent medieval research has turned away from the issue of aggregate welfare, and turned instead to an analysis of income distribution. Toward this end, Harry A. Miskimin and others have argued, on the basis of known relative price movements, that fourteenth and fifteenth century income distribution shifted in favour of urban localities at the expense of rural areas; [1] and in favour of Southern Europe at the expense of Northern Europe.[2] In addition, Miskimin expands these arguments to include inferences about changes in the monetary stocks of the different areas and thereby to explain the deflation occurring in England during this period.[3] These monetary aspects of his analysis

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[1] H. A. MISKIMIN, *The Economy of Early Renaissance Europe, 1300-1460* (Englewood Cliffs: Prentice-Hall, Inc., 1969), p. 90. R. S. LOPEZ, H. A. MISKIMIN, and A. VDOVITCH, "England to Egypt, 1300-1500: Long-Term Trends and Long-Distance Trade," *Studies in the Economic History of the Middle East*, M. A. Cook, editor (London: Oxford University Press, 1970), pp. 97-98. B. H. SLICHER VAN BATH, *The Agrarian History of Western Europe*, A.D. 500-1850 (New York: St. Martins' Press, 1963), p. 123.

[2] MISKIMIN, "The Economy of Early Renaissance Europe, 1300-1460", pp. 136-144. LOPEZ, MISKIMIN, VDOVITCH, "England to Egypt, 1300-1500: Long-Term Trends and Long-Distance Trade," pp. 101-106.

[3] See the above references to Miskimin's work. Also see MISKIMIN, "Monetary

ultimately lead to a claim of increased unemployment.[4] This paper will attempt to show that none of the above conclusions is upheld by the known evidence or by economic theory. First, however, some background data for the period will be briefly discussed.

A summary glance at the available population and aggregate output data for the fourteenth and fifteenth centuries makes it clear why direct evidence of depression or prosperity has not been forthcoming.

The least controversial aspect about demographic change in this period is that the population decline associated with the Black Death appears to have continued for at least a century. More open to question are the extent of the population decline and the time of eventual recovery. For England, J.C. Russell places the pre-Black Death peak population at 3.7 million, then sees a fall to 2.1 million in 1430 and a complete recovery by the early seventeenth century.[5] M.M. Postan, on the other had, shows that equally reasonable assumptions can yield an estimate of the pre-Black Death peak of between six and eight million. In addition he notes that recent research suggests recovery did not begin until the early sixteenth century.[6]

Given such an impressive and enduring fall in population, it is not surprising that R.S. Lopez and H.A. Miskimin have been able to find scattered evidence of declining trade volumes and falling levels of domestic capital and industry in the period 1300-1500.[7] By their own admission, however, the data reported by these authors is of "dubious accuracy" and agricultural output, the dominant output of the period, "almost entirely escapes statistical measurement." As for the data on per capita production and personal income, Miskimin despairs that these statistics are "virtually non-existent."[8]

In contrast to the above-noted lack of data on outputs and population, price data are both abundant and unambiguous. The later Middle Ages witnessed a rise in real wages, a fall in real rents, a relative increase in manufacturing prices over agricultural, and a worsening of the terms of trade between Northern European exports and imported goods from Southern Europe.[9]

Movements and Market Structure-Forces for Contraction in Fourteenth and Fifteenth Century England," *The Journal of Economic History*, XXIV (1964), pp. 470-490.

[4] MISKIMIN, "Monetary Movements and Market Structure-Forces for Contraction in Fourteenth and Fifteenth Century England," p. 490; "Agenda For Early Modern Economic History", *The Journal of Economic History*, XXXI (1971), p. 182.

[5] J. C. RUSSELL, *British Medieval Population* (Albuquerque, 1948), pp. 263-264, 269-270.

[6] M. M. POSTAN, *The Medieval Economy and Society* (Harmondsworth: Penguin, 1975), pp. 31-34, 43.

[7] R. S. LOPEZ and H. A. MISKIMIN, "The Economic Depression of the Renaissance," *Economic History Review*, 2nd series, XIV (1962), pp. 408-26.

[8] MISKIMIN, *The Economy of Early Rennaissance Europe*, 1300-1460, p. 106.

[9] *Ibid.*, pp. 29, 138. See also LEOPOLD GENICOT, "Crisis: From the Middle Ages

This state of knowledge predisposes a price inference approach to the issue of income distribution. The terms of trade movement in favour of manufacturing goods is used to infer a balance of payments deficit on the part of English rural areas in their trade with urban areas. Similarly, the relative rise in the price of goods imported from Southern Europe is used to infer a balance of payments deficit on the part of Northern Europe. Given these balance of payments movements, claims of a bullion outflow from rural to urban areas and from Northern Europe to Southern Europe follow directly.

I. Theoretical Problems

The logical basis for these inference derives from the hypothesis that the cause of the relative price movements was a relative shift in demand. Specifically, in the case of the terms of trade shift in favour of manufactured goods, Miskimin, borrowing from Postan, postulates a relative shift in demand in favour of manufactures and against agricultural products as a result of population decline.[10] With these shifts in demand it follows that total revenue in manufacturing rises and that total revenue in agriculture falls, or that the balance of payments moves in favour of manufacturing and the towns.[11] In addition, however, these demand shifts imply that manufacturing production increased both absolutely and relative to agricultural production. The implication of an absolute increase contradicts Miskimin's own findings of a general contraction.[12] The relative increase is inconsistent with the argument spelled out below which concludes that manufacturing output fell relative to agricultural output and that the balance of payments implication is indeterminate.

Relative shifts in supply offer a more consistent explanation of the observed movement in relative product prices. The argument involves accepted changes in labour productivity and relative population decline. The traditional assumptions of diminishing returns in agriculture and constant returns in manufacturing, in conjunction with the known population decline, imply increasing output per worker in agriculture and constant output per worker in manufacturing. Higher mortality rates and therefore greater population decline in urban areas

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to Modern Times," *The Cambridge Economic History of Europe*, 1, 2nd edition (Cambridge: Cambridge University Press, 1966), pp. 678-94.

[10] Miskimin, "Monetary Movements and Market Structure-Forces for Contraction in Fourteenth and Fifteenth Century England," p. 490.

[11] It is implicitly assumed here that most manufacturing activity took place in the towns. The relocation of the cloth industry to the countryside in the twelfth and thirteenth centuries raises some doubts about the extent to which total revenue accruing to the manufacturing sector and to the towns are identical.

[12] See footnote (7).

than rural areas[13] together with the relative productivity gains in agriculture imply a greater reduction in the supply of manufacturing output than of agricultural output. The resulting relative abundance of agricultural output could thus explain the terms of trade shift in favour of manufacturing. Balance of payments inferences, however, are now indeterminate. In arithmetic terms the issue is whether the ratio of manufacturing receipts to agricultural receipts (i.e. Pm.Qm/Pa.Qa) rose or fell. Available data indicates that in England, for example, Pm/Pa rose by approximately 16 percent between the decade 1401-1410 and the decade 1471-1480.[14] The source of ambiguity is our lack of knowledge over the decline in Qm/Qa. Was it more or less than 16 percent? To the extent that demand shifts occurred in favour of the manufacturing sector, the more likely is the conclusion of a balance of payments movement in favour of urban areas. The point to be emphasized, however, is that the observed movements in relative product prices offer no independent rationale for inferring movements in unmeasured balance of payments accounts between rural and urban localities.

Examination of the types of good traded between Northern and Southern Europe shows that the goods of the North tended to be extractive — "often they were raw or semi-finished materials or food goods" — to a greater extent than the goods of the South.[15] Consequently the diminishing returns — constant returns assumptions of the above supply shift argument are met, and the relative rise in the prices of goods exported from Southern Europe can be explained in similar fashion to the relative rise in manufacturing prices over agricultural within Northern Europe.

One further theoretical point needs to be mentioned with regard to the supply shift argument presented above. Notice that the relative price implications of the analysis depend critically on the exact relation between the two demand elasticities and the shifts in supply. The more equal are the former and the less equal the latter, the more likely is the theoretical implication that manufacturing prices will rise relative to agricultural prices. Postan partially recognizes this ambiguity when he argues that a supply shift is inconsistent with the fact that foodstuffs with inelastic demand (grain) fell in price relative to foodstuffs with elastic demand (butter).[16] He ignores, however, the possibility of relative supply shifts. Butter production involved a relatively fixed proportionate use of inputs, all of which were elastic in supply to the butter sector because of its relatively small size. In contrast, grain production was characterized by a variable proportion production process involving the inputs of labour and land, both

[13] See the discussion in A. R. Bridbury, "The Black Death," *Economic History Review*, XXVI (1973), pp. 591-92.

[14] E. H. Phelps-Brown and Sheila V. Hopkins, "Wage-Rates and Prices: Evidence for Population Pressure in the Sixteenth Century," *Economica*, n.s. XXIV (1957), p. 306.

[15] Miskimin, *The Economy of Early Renaissance Europe, 1300-1460*, pp. 123-29.

[16] Postan, "Note", *Economic History Review*, 2nd series, XII (1959), p. 80.

of which were inelastic in supply to the grain sector. As a result butter production was not subject to the degree of diminishing returns found in grain production, and therefore, the supply of butter would be expected to decrease more than that for grain, given a decrease in population. The relative abundance of grain explains its greater fall in price.

II. Empirical Problems

Examination of the empirical evidence offered in support of the balance of payments hypotheses yields results equal in ambiguity to the theoretical inferences drawn from the relative price data.

No independent evidence is put forth in support of the rural-urban income shift. In the case of the proposed balance of payments deficit incurred by England and other Northern countries, Miskimin admits that while " economic conditions tended to produce a drain of precious metals from Northwestern Europe... no direct statistical evidence allows us to know its magnitude ".[17] The " economic conditions " he refers to are population decline and relative price movements. But in the preceding analysis we have seen that these phenomena are incapable of yielding definitive balance of payments inferences. Viewed in this light, Miskimin's admission that direct measurements of bullion flows is impossible forces his arguments to rest on two data offered as indirect evidence: 6 English coinage figures, and " the almost universal contemporary outcry regarding the loss of bullion and the consequent inadequacy of the domestic money supplies of the nations concerned ".[18] Below, the adequacy of this evidence is examined.

The argument used to relate mint output levels to balance of payments accounts is drawn from the observation that historically an extremely high percentage of the English coinage derived from resmelted foreign coin (more than 90 percent in the years 1304-1325). From this, Miskimin concludes that evidence of declining mint outputs after 1360 infers a worsening balance of payments and a consequent bullion outflow. There are several difficulties with this analysis. For example, there is the problem of the precise specification of the historical relationship between coinage minted from remelted foreign coin and balance of payments deficits. It might be argued that the coinage figures reflect only changes in English export receipts and therefore provide no evidence of a worsening balance of payments independent of data on imports. Clearly, if the link between mint output and bullion flows is to be forged, a detailed analysis of the foreign exchange markets and decision-making processes for mint outputs must be made.

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[17] Miskimin, *The Economy of Early Rennaissance Europe, 1300-1460*, pp. 138-39.
[18] *Ibid.*

Suppose, however, in spite of the above reservation, we accept the hypothesis that declining coinage outputs reflect a decline in export receipts minus import expenditures. Even if true, this hypothesis does not imply that England became a deficit country or even that her exports fell in value relative to her imports. The issue now depends on whether England was initially (i.e., before the decline in mint outputs) a surplus or a deficit nation. If a surplus country, then all that is implied by the coinage figures is that the surplus became smaller, but not necessarily negative. Moreover, since trade volumes are known to have declined spectacularly in the later Middle Ages,[19] a narrowing of the difference between export and import expenditures is consistent with their ratio remaining constant.[20] Without benefit of direct statistical measures of England's balance of payments account, her status as a deficit or surplus nation in the first half of the fourteenth century is unknown.

Turning to the second piece of evidence used to infer bullion flows — contemporary complaint about a dearth of money accompanied by legislation enacted to restrict the outflow of English coin — we are confronted again with problems of interpretation. The legislation can be explained in part by the common historical pattern of increased government intervention in the private sector during periods of population decline and contracting markets.[21] But let us grant that the "war of monies" legislation was passed in response to a monetary shortage attested to by contemporary complaints. The English deflation in the later Middle Ages is by itself *prima facie* evidence of a monetary shortage. It is, however, incorrect to thereby conclude that the cause of the monetary shortage was a bullion outflow resulting from a worsening balance of payments. Alternative explanations for the monetary shortage include the collapse of domestic mining outputs due to technological obstacles,[22] and increased demand for money resulting from higher per capita incomes.[23] At present there exists no way to choose between these three hypotheses or to measure their relative importance.

It is the conclusion of the above discussion that neither the trend in English

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[19] See footnote (7).

[20] Consider the following numerical example. Let the original value of exports equal £ 1,000 per year and the original value of imports equal £ 900 per year. If both decline by 50%, the original surplus of £ 100 per year will also decline by 50% even though the ratio of export to import values remain constant.

[21] For some theoretical reasons behind this phenomenon see DOUGLASS C. NORTH and ROBERT PAUL THOMAS, "An Economic Theory of the Growth of the Western World," *Economic History Review*, 2nd series, XXIII (1970), pp. 5-12.

[22] MISKIMIN, "Monetary Movements and Market Structure-Forces for Contraction in Fourteenth and Fifteenth Century England," p. 471. GENICOT, "Crisis: From the Middle Ages to Modern Times," p. 699.

[23] CARLO M. CIPOLLA, "An Economic Depression in the Renaissance?" *Economic History Review*, 2nd series, XVI (1964), p. 524.

coinage outputs nor the existence of legislation attempting to reduce the export of bullion can be used to infer balance of payments deficits and international bullion flows.

III. Deflation and Unemployment

This section will consider the argument that, whatever its cause, the English deflation of the later Middle Ages can be used to infer increasing levels of unemployment. It has been argued that since recent history provides measurable correlations between deflation and unemployment, the known deflation of the fourteenth and fifteenth centuries can be used as an indicator of rising unemployment levels during that period.[24] Several reasons argue against the acceptance of this inference.

The first is that the deflation of the Middle Ages was extremely mild compared to recent experience. Using the price index for a composite unit of English consumables constructed by E. H. Phelps-Brown and Sheila V. Hopkins,[25] a price decline of fifty-six percent can be calculated for the later Middle Ages. From the peak year of 1370 (index reading = 184) prices fell sporadically to a low in 1477 (index reading = 81). On an annual basis, this amounts to a price decline of approcimately .8 percent per year. In contrast, the United States deflation from 1929 to 1933 yielded an annual price decline of 7 percent.[26] These statistics showing that the two deflations were incomparable in severity, raise doubts that they can be compared as indicators of unemployment.

The second reason is that in recent times, even severe deflations have not always resulted in unemployment. As a case in point, Peter Temin's [27] comparison of the 1839-1843 United States' deflation with the 1929-33 deflation reveals that while the former was characterized by a larger decline in money stock (34% vs. 27%) and a larger decline in prices (42% vs. 31%), it was not characterized by decreased production [28] or employment. Temin's explan-

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[24] In a similar vein, Miskimin argues, via Keynesian macro-economic analysis, that the inflation of the sixteenth century returned England to a state of full employment. Miskimin, "Agenda for Early Modern Economic History," pp. 182-3.

[25] E. H. Phelps-Brown and Sheila V. Hopkins, "Seven Centuries of the Price of Consumables Compared with Builders' Wage-rates," *Economica*, n.s., XXII (1956), pp. 311-12.

[26] U. S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1956* (Washington, D.C., 1960), p. 116.

[27] Peter Temin, *The Jacksonian Economy* (New York: W. W. Norton, 1969), pp. 155-165.

[28] For the period 1839-43 real gross national product is estimated to have increased by 16%. For the period 1929-33 it is estimated to have fallen by 30%. Temin, *The Jacksonian Economy*, p. 157.

ation for this contrast is that the United States in the early nineteenth century was still a nation of small farmers and that under such circumstances declining demand induces a reduction of price rather than of output and employment.[29] It is difficult to argue that the economy of England in the later Middle Ages more closely resembled the United States of the 1930's than of the 1830's. More reasonably, the effects of deflation might be expected to conform to the earlier U.S. experience.

IV. Conclusion

It is the argument of this paper that price history has failed to shed light on rural-urban income distribution, international balance of payments, and unemployment in fourteenth and fifteenth century Western Europe. There are no doubt some historical cases in which a price inference approach is a good substitute for direct observations on economic variables. This is not one of them.

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[29] Temin, "General Equilibrium Models in Economic History," *The Journal of Economic History*, XXXI (1971), p. 67.