

ECO 301Y1:

Economic History of Later Medieval and Early Modern Europe, 1250 - 1750

Topic No. 4 [6]: Money and Economic *Conjuncture* in Late-Medieval Europe: Monetary and Price Changes (Inflation and Deflation), and Economic Crises during the 14th and 15th Centuries

Revised: 6 September 2006

READINGS: arranged, by topic section, in the chronological order of original publication. The more important readings are indicated by asterisks (*).

A. General Studies in Monetary History: Monographs and Collections of Essays

1. W.A. Shaw, The History of Currency, 1252-1894 (London, 1896), pp. 1-60. Rather outdated, but useful in a few places.
2. Earl Hamilton, Money, Prices, and Wages in Valencia, Aragon, and Navarre, 1351 - 1500 (Cambridge, Massachusetts: Harvard University Press, 1936).
- * 3. Marc Bloch, Esquisse d'une histoire monétaire de l'Europe (Paris: Cahiers des Annales nos. 9, 1954), especially pp. 40-83.
- * 4. Sir Albert Feavearyear, The Pound Sterling: A History of English Money (2nd rev. edn. by E. V. Morgan, London, 1963), pp. 1-45.
5. Pierre Vilar, Oro y moneda en la historia, 1450-1920 (Barcelona, 1969); reissued in translation as Or et monnaie en histoire, 1450-1920 (Paris, 1969); and as History of Gold and Money, 1450-1920 (London, 1976). See especially chapters 2 and 3.
6. E. Fournial, Histoire monétaire de l'occident médiéval (Paris, 1970). Despite its title, almost entirely on France.
7. Eliyahu Ashtor, Les métaux précieux et la balance des paiements du Proche-Orient à la basse époque (Paris, 1971).
8. C.H.V. Sutherland, English Coinage, 600-1900 (London, 1973), chapters 6 and 7, pp. 66-85.
- * 9. Philip Grierson, Les Monnaies du moyen âge (Paris, 1976), pp. 205- 99.
10. Nicholas J. Mayhew, ed., Coinage in the Low Countries (800 - 1500): The Third Oxford Symposium on Coinage and Monetary History, British Archeological Reports, BAR International Series 54 (Oxford, 1979):

- (a) N. J. Mayhew, 'The circulation and imitation of Sterlings in the Low Countries,' pp. 54 - 68.
 - (b) Frans and Willem P. Blockmans, 'Devaluation, coinage and seignorage under Louis de Nevers and Louis de Male, counts of Flanders, 1330-84,' pp. 69 - 94.
 - (c) John H. Munro, 'Monetary Contraction and Industrial Change in the late-medieval Low Countries, 1335 - 1500,' pp. 95 - 162.
 - (d) Pierre Cockshaw, 'La politique monétaire den Flandres des ducs de Bourgogne de la maison de Valois, 1384 - 1430,' pp. 163-9.
 - (e) Peter Spufford and Peter Woodhead, 'Calais and its mint,' pp. 171 - 202.
 - (f) H. Enno Van Gelder, 'Coins and accounts in the eastern Netherlands,' pp. 203-15.
11. Artur Attman, The Bullion Flow Between Europe and the East, 1000-1750 (Goteborg, Acta Regiae Societatis Scientiarum et Litterarum Gothoburgensis: Humaniora no. 20, 1981), pp. 7-29, 61-7, 104-24.
- * 12. John F. Richards, ed., Precious Metals in the Later Medieval and Early Modern Worlds (Durham, N.C., 1983):
- (a) Thomas Walker, 'The Italian Gold Revolution of 1252: Shifting Currents in the Pan-Mediterranean Flow of Gold', pp. 29-52.
 - (b) Louise Robert, 'Monetary Flows--Venice 1150 to 1400', pp. 53 -78.
 - (c) Harry Miskimin, 'Money and Money Movements in France and England at the End of the Middle Ages', pp. 79-96.
 - (d) John Munro, 'Bullion Flows and Monetary Contraction in Late-Medieval England and the Low Countries', pp. 97-158.
 - (e) Jere Bacharach, 'Monetary Movements in Medieval Egypt, 1171-1517', pp. 159-82.
 - (f) John F. Richards, 'Outflows of Precious Metals from Early Islamic India', pp. 183-207.
 - (g) John Deyell, 'The China Connection: Problems of Silver Supply in Medieval Bengal', pp. 207-30.
 - (h) Philip Curtin, 'Africa and the Wider Monetary World, 1250-1850', pp. 231-68.

13. John Day, ed., Études d'histoire monétaire, XIIe-XIXe siècles (Université de Paris VII, Lille, 1984):
- (a) Frederic Lane, 'Exportations vénitiennes d'or et d'argent de 1200 à 1450', pp. 29-48. Reprinted in Frederic C. Lane, Studies in Venetian Social and Economic History, ed. Benjamin Kohl and Reinhold Mueller, Variorum Reprints CS 247 (London: Variorum Reprints, 1987).
 - (b) Nicholas Mayhew, 'Les frappes de monnaies et hausse des prix en Angleterre de 1180 à 1220', pp. 159-78.
 - (c) Reinhold Mueller, 'Chome l'ucciello di passeggio': la demande saisonnière des espèces et le marché des changes à Venise au moyen âge', pp. 195-220.
 - (d) Pedro Roqué, '153 000 florins d'or d'Aragon, de 1414 à 1428: Avatars politiques et avatars monétaires en Sardaigne médiévale', pp. 221-48.
 - (e) John Munro, 'Monnayage, monnaies de compte et mutations monétaires au Brabant à la fin du moyen âge', pp. 263-94.
 - (f) Nicolas Morard, 'Florins, ducats et marc d'argent à Fribourg et à Genève au XVe siècle (1420-1481)', pp. 295-34.
 - (g) Peter Spufford, 'Le rôle de la monnaie dans la révolution commerciale du XIIIe siècle', pp. 355-96.
14. Eddy Van Cauwenberghe and Franz Irsigler, eds., Münzprägung, Geldumlauf und Wechselkurse / Minting, Monetary Circulation and Exchange Rates, Akten des 8th International Economic History Congress, Budapest, Trierer Historische Forschungen vol. 7 (Trier, 1984):
- (a) Natalie Fryde, 'Silver, Recoinage and Royal Policy in England, 1180-1250', pp. 11-30.
 - (b) John H. Munro, 'Mint Outputs, Money, and Prices in Late-Medieval England and the Low Countries', pp. 31-122.
 - (c) Eddy Van Cauwenberghe and Didier Haencaert, 'Mintage and Coin Circulation in the Southern Low Countries (14th-18th Centuries): Some Theoretical Considerations', pp. 151-80.
 - (d) Franz Irsigler, Rainer Metz, and Christian Reinicke, 'Zur Rekonstruktion des Geld- und Wahrungssystems im niederrheinischen Raum, 1350-1800', pp. 201-19.
- * 15. Frederic C. Lane and Reinhold Mueller, Money and Banking in Medieval and Renaissance Venice, Vol. I: Coins and Moneys of Account (Baltimore, 1985), especially Part III: 'The Genesis and Persistence of Bimetallism,' pp. 257 - 492.

- * 16. Peter Spufford, Handbook of Medieval Exchange (London: Royal Historical Society, 1986), Introduction, pp. xix - lx.
- * 17. Robert Lopez, The Shape of Medieval Monetary History (London: Variorum Reprints, 1986).
- * 18. John Day, The Medieval Market Economy (Oxford, 1987): collected essays, some of which have been translated into English for the first time:
- (a) 'The Great Bullion Famine of the Fifteenth Century,' pp. 1 - 54.
 - (b) 'The Question of Monetary Contraction in Late Medieval Europe,' pp. 55 - 71.
 - (c) 'The Decline of a Money Economy: Sardinia Under Catalan Rule,' pp. 72 - 89.
 - (d) 'Late Medieval Price Movements and the 'Crisis of Feudalism',' pp. 90 - 107.
 - (e) 'The Fisher Equation and Medieval Monetary History,' pp. 108 - 15.
 - (f) 'Monetary Colonialism in the Medieval Mediterranean,' pp. 129 - 40.
 - (g) 'The Monetary Circulation in Tuscany in the Age of Dante,' pp. 129 - 40.
 - (h) 'Money and Credit in Medieval and Renaissance Italy,' pp. 141 - 61.
 - (i) 'Crises and Trends in the Late Middle Ages,' pp. 185 - 223.
- * 19. Peter Spufford, Money and Its Use in Medieval Europe (Cambridge, 1988). Especially Part III, chapter 12: 'The Late Middle Ages: the Victory of Gold,' pp. 267 - 396; chapter 13, 'The Scourge of Debasement', pp. 289-318; chapter 14, 'The Money of Europe around 1400', pp. 319-338; and in particular, chapter 15: 'The Bullion-Famines of the Later Middle Ages,' pp. 339-62.
20. Françoise Dumas-Dubourg, Le monnayage des ducs de Bourgogne, Institut supérieur d'archéologie et d'histoire de l'art (Louvain-la-Neuve, 1988).
21. Eddy Van Cauwenberghe, ed., Precious Metals, Coinage, and the Changes of Monetary Structures in Latin-America, Europe and Asia (Late Middle Ages - Early Modern Times) (Leuven University Press, 1989):
- (a) Eddy Van Cauwenberghe and Rainer Metz, 'Coinage and the Coin (Money) Stock: Problems, Possibilities and First Results (the Southern Low Countries, 1334 - 1789), pp. 7 - 24.
 - (b) John H. Munro, 'Petty Coinage in the Economy of Late-Medieval Flanders: Some Social Considerations of Public Minting,' pp. 25 - 57.

- (c) Michael North, 'Bullion Transfer from Western Europe to the Baltic and the Problem of Trade Balances: 1550 - 1750,' pp. 67 - 64.
22. Carlo M. Cipolla, Money in Sixteenth-Century Florence (Berkeley: University of California Press, 1989).
23. Harry Miskimin, Cash, Credit, and Crisis in Europe, 1300 - 1600 (London: Variorum Reprints, 1989).
- a) 'Price Movements and Specie Debasement in France, 1295 - 1395,' from Yale Economic Essays, 1 (1961), 233-73.
- b) 'Two Reforms of Charlemagne? Weights and Measures in the Middle Ages,' from The Economic History Review, 2nd ser., 20 (1967), 35-52.
- c) 'The Economic Depression of the Renaissance,' with R.S. Lopez, from The Economic History Review, 2nd ser., 14 (1962), 408-26.
- d) 'Le problème de l'argent au moyen âge,' from Annales: Économies, sociétés, civilisations, 17 (1962), 1125-30.
- e) 'The Last Act of Charles V: The Background to the Revolts of 1382,' from Speculum, 38 (1963), 433- 42.
- f) 'The Legacies of London: 1259 - 1330,' from H.A. Miskimin, D. Herlihy, and A. Udovitch, eds., The Medieval City (New Haven, 1977), pp. 209-27.
- g) 'Monetary Movements and Market Structure: Forces for Contraction in Fourteenth- and Fifteenth-Century England,' from Journal of Economic History, 24 (1964), 470-90.
- h) 'England to Egypt, 1350 - 1500: Long-Term Friends and Long-Distance Trade,' with R.S. Lopez and A. Udovitch, in M.A. Cook, ed., Studies in the Economic History of the Middle East (Oxford, 1970), pp. 93-128.
- i) 'The Enforcement of Gresham's Law,' from Credito, banche e investimenti, secoli XIII-XX: Atti della quarta Settimana di Studio (Prato, 14-21 aprile 1972), Istituto Internazionale di Storia Economica 'Francesco Datini' (Florence, 1985), pp. 147-61.
- j) 'Money, the Law, and Legal Tender,' from Georges Depeyrot and Tony Haeckens, eds., Rythmes de la production monétaire, de l'Antiquité à nos jours: Actes du Colloque international Paris, 10-12 janvier 1986, Numismatica Lovaniensia 7 (Louvain-la-Neuve, 1987), pp. 697-705.
- k) 'Money and Money Movements in France and England at the End of the Middle Ages,' from John Richards, ed., Precious Metals in the Later Medieval and Early Modern Worlds (Durham, N.C., 1983), pp. 79-96.

- l) 'L'or, l'argent, la guerre dans la France médiévale,' from Annales: Économies, sociétés, civilisations, 40 (1985), 171-84.
 - m) 'Agenda for Early Modern Economic History,' from Journal of Economic History, 31 (1971), 172-83.
 - n) 'Population Growth and the Price Revolution in England,' from The Journal of European Economic History, 4 (1975), 179 - 86.
 - o) 'The Impact of Credit on Sixteenth-Century English Industry,' from Fredi Chiapelli, ed., The Dawn of Modern Banking (New Haven, 1979), pp. 275-89.
24. Michael North, ed., Geldumlauf, Währungssysteme und Zahlungsverkehr in Nordwesteuropa, 1300 - 1800: Beiträge zur Geldgeschichte der späten Hansezeit, Quellen und Darstellungen zur hansischen Geschichte, new series, vol. 35 (Cologne-Vienna, 1989):
- (a) Peter Berghaus, 'Hansisches Geld in Westfalen,' pp. 7-18.
 - (b) J. S. Jensen, 'Lübecker und Hamburger Münzen in dänischen Schatzfunden, 1450 - 1660,' pp. 19 - 24.
 - (c) Erik Aerts, 'Der Geldumlauf in den Burgundischen Niederlanden im 15. Jahrhundert,' pp. 25 - 44.
 - (d) Franz Irsigler, 'Währungen im oberlothringischen Raum, 1350 - 1600: Ein Projektbericht,' pp. 75 - 92.
 - (e) Eddy Van Cauwenberghe, 'Die Münzproduktion in den Niederlanden, 14. - 18. Jahrhundert,' pp. 93 - 108.
 - (f) Peter Spufford, 'Münzverschlechterung und Inflation im spätmittelalterlichen und frühneuzeitlichen Europa,' pp. 109 - 26.
 - (g) Stuart Jenks, 'Hartgeld und Wechsel im hansish-englischen Handel des 15. Jahrhunderts,' pp. 127 - 66.
25. Michael North, Geldumlauf und Wirtschaftskonjunktur im südlichen Ostseeraum an der Wende zur Neuzeit (1440-1570), Kieler Historische Studien vol. 35 (Sigmaringen: Jan Thorbecke Verlag, 1990), especially chapter 3, 'Gold und Silber als Bestandteile des Geldumlaufs,' pp. 85-104.
26. Michael North, ed., Kredit im spätmittelalterlichen und frühneuzeitlichen Europa, Quellen und Darstellungen zur hansischen Geschichte, new series. Vol. 37 (Cologne-Vienna, 1991).
- (a) Giuseppe Felloni, 'Kredit und Banken in Italien, 15. - 17. Jahrhundert,' pp. 9 - 24.

- (b) Natalie Fryde, 'Die Kaufleute aus Cahors im England des 13. Jahrhunderts,' pp. 25 - 38.
 - (c) John Munro, 'Die Anfänge der Übertragbarkeit: einige Kreditinnovationen im englisch-flämischen Handel des Spätmittelalters (1360-1540),' pp. 39 - 70.
 - (d) Stuart Jenks, 'Kredit im Londoner Aussenhandel um die Mitte des 15. Jahrhunderts,' pp. 71 - 102.
 - (e) Klaus-Joachim Lorenzen-Schmidt, 'Kaufmanskredite in nordwestdeutschen Städten im 15. und 16. Jahrhundert,' pp. 121 - 32.
 - (f) Rudolf Holbach, '“Im auff arbeit gelihen”: zur Rolle des Kredits in der gewerblichen Produktion, 13. - 16. Jahrhundert,' pp. 133 - 58.
 - (g) Henryk Samsonowicz, 'Die Rolle des Kredits im Wirtschaftsleben des mittelalterlichen Polen,' pp. 159 70.
 - (h) Troels Dahlerup, 'Kirche und Kredit: ein Beitrage zur Geldwirtschaft im spätmittelalterlichen und frühneuzeitlichen Dänemark,' pp. 171 - 80.
27. Roberto Lopez, I monetieri del primo medioevo: la più antica aristocrazia professionale laica che la storia ricordi, Rassegna di studi del civico musea archeologico e del civico gabinetto numismatico di milano, no. 48 (Milan, 1991).
28. John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum, 1992): with original pagination.
- (a) 'An Economic Aspect of the Collapse of the Anglo-Burgundian Alliance, 1428-1442,' from English Historical Review, 85 (1970), pp. 225-44. [No. 1].
 - (b) 'An Aspect of Medieval Public Finance: The Profits of Counterfeiting in the Fifteenth-Century Low Countries,' from Revue belge de numismatique et de sigillographie, 118 (1972), pp. 127-48. [No. 2]
 - (c) 'Billon - Billoen - Billio: From Bullion to Base Coinage,' from Revue belge de philologie et d'histoire, 52 (1974), pp. 293-305. [No. 3]
 - (d) 'Bullionism and the Bill of Exchange in England, 1272-1663: A Study in Monetary Management and Popular Prejudice,' from Fredi Chiappelli, Center for Medieval and Renaissance Studies, UCLA, ed., The Dawn of Modern Banking (New Haven and London, 1979) pp. 169-239. [No. 4]
 - (e) 'Mint Policies, Ratios, and Outputs in England and the Low Countries, 1335-1420,' from Numismatic Chronicle, 141 (1981), pp. 71-116 [no. 5]
 - (f) 'Bullion Flows and Monetary Contraction in Late-Medieval England and the Low Countries,' from John F. Richards, ed., Precious Metals in the Later Medieval and Early Modern Worlds (Durham, N.C., 1983), pp. 97-158.

[No. 6]

- (g) ‘Monnayage, monnaies de compte, et mutations monétaires au Brabant à la fin du moyen âge,’ from John Day, ed., Études d'histoire monétaire. XIIe-XIXe siècles (Université de Paris VII, Lille, 1984) pp. 263-94. [No. 7]
 - (h) ‘Deflation and the Petty Coinage Problem in the Late-Medieval Economy: The Case of Flanders, 1334 - 1484,’ from Explorations in Economic History, 25 (October 1988), pp. 387-423. [No. 8]
29. Christopher Challis, ed., A New History of the Royal Mint (Cambridge: Cambridge University Press, 1992).
- a) Ian Stewart, ‘The English and Norman Mints, c.600-1158,’ pp. 1-82.
 - b) N.J. Mayhew, ‘From Regional to Central Minting, 1158-1464,’ pp. 83-178.
 - c) Christopher Challis, ‘Lord Hastings to the Great Silver Recoinage, 1464 - 1699,’ pp. 179-397.
30. John F. Chown, A History of Money: From AD 800 (London and New York: Routledge, 1994). Rather superficial and disappointing.
31. Michael North, Das Geld und seine Geschichte: vom Mittelalter bis zur Gegenwart (Munich: C.H. Beck, 1994).
32. John Day, Monnaies et marchés au moyen âge, Comité pour l'histoire économique et financière de la France (Paris, 1994). Many of these essays are also contained in English versions in his collection listed above.
- (a) ‘Prix agricoles en Méditerranée à la fin du XIVe siècle (1382),’ pp. 1-28 [republished from Annales: Économies, sociétés, civilisations, 23 (1968), 629-56.]
 - (b) ‘La circulation monétaire en Toscane au temps de Dante,’ pp. 29-39 [republished from Annales: Économies, sociétés, civilisations, 23 (1968), 1054-1066.]
 - (c) ‘La grande famine monétaire du XVe siècle,’ pp. 41-82 [republished in translation from ‘The Great Bullion Famine of the Fifteenth Century,’ Past & Present, no. 79 (1978), pp. 3-54.]
 - (d) ‘“Crise du féodalisme” et conjoncture des prix à la fin du Moyen Âge,’ pp. 83-100 [republished from Annales: Économies, sociétés, civilisations, 34 (1979), 305-18.]
 - (e) ‘Contraction monétaire et déclin économique aux XIVe-XVe siècles,’ pp. 101-16 [republished in translation from ‘The Question of Monetary Contraction in Late Medieval Europe,’ Nordisk Numismatisk Arsskrift (1981): special issue, ed. Jorgen Steen Jensen, Coinage and Monetary Circulation in the Baltic Area, c. 1350 -c.1500, pp. 12-29.]

- (f) ‘Monnaie et crédit dans l'Italie de la Renaissance,’ pp. 117-36 [republished in translation from ‘Moneta metallica e moneta creditizia,’ in Ruggiero Romano and Ugo Tucci, eds., Economia naturale, economia monetaria, Storia d'Italia Annali 6 (Turin: Einaudi, 1983), pp. 337-60.]
- (g) ‘Colonialisme monétaire en Méditerranée au Moyen Age,’ pp. 137-48 [republished from Acte du IIe Colloque International de l'Histoire: Économies méditerranéennes: Équilibres et Intercommunications, XIIIe-XIXe siècles, Vol. I (Athens, 1985), pp. 305-19.]
- (h) ‘Les frappes de monnaie en France et en Europe aux XIVe-XVe siècles,’ p. 149-90 [republished from G. Depeyrot and Tony Hackens, eds., Rythmes de la production monétaire, de l'Antiquité à nos jours (Louvain, 1987), pp. 537-77.]
- (i) ‘Marchands et banquiers au Moyen Age,’ pp. 191-212 [republished in translation from ‘Mercanti e banchieri dal XII al XV secolo,’ in Nicola Tranfagli and Massimo Firpo, eds., La Storia: I grandi problemi dal Medioevo all'Età Contemporanea, Vol. II: Medioevo (Turin: UTET, 1988), pp. 207-25.]
- (j) ‘Crises et conjonctures à la fin du Moyen Age,’ pp. 213-50 [republished in translation from ‘Crisi e congiunture nei secoli XIV-XV,’ in Nicola Tranfagli and Massimo Firpo, eds., La Storia: I grandi problemi dal Medioevo all'Età Contemporanea, Vol. II: Medioevo (Turin: UTET, 1988), pp. 145-73.]
- (k) ‘Les monnaies de compte médiévales et le problème de l'étalon,’ pp. 251-70 [republished in translation from ‘The Problem of the Standard in Medieval Coinage Systems,’ in Mario Gomes Marques and D.M. Metcalf, eds., Problems of Medieval Coinage in the Iberian Area, Vol. III (Santerem, 1988), pp. 461-83.]
- (l) ‘L'histoire de la monnaie dans les écrits de Marc Bloch,’ pp. 271-82
[republished in translation from ‘The History of Money in the Writings of Marc Bloch,’ in Mario Gomes Marques and D.M. Metcalf, eds., Problems of Medieval Coinage in the Iberian Area, Vol. II (Avila, 1986), pp. 15-27.]
33. Glyn Davies, A History of Money: From Ancient Times to the Present Day (Cardiff: University of Wales Press, 1994), chapter 4, pp. 138-74.
34. Michael North, ed., Von Aktie bis Zoll: Ein historische Lexikon des Geldes (Munich: Verlag C.H. Beck, 1995). An encyclopedia-dictionary of monetary-financial terms, concepts, ideas, institutions, etc.
35. Elizabeth Gemmill and Nicholas Mayhew, Changing Values in Medieval Scotland: A Study of Prices, Money, and Weights and Measures (Cambridge and New York: Cambridge University Press, 1995).
36. David Hackett Fischer, The Great Wave: Price Revolutions and the Rhythm of History (Oxford and New York: Oxford University Press, 1996), pp. 10-70. To be used

with great care. See my review of this book on the internet: *EH.Net Review* <ehreview@eh.net>, 24 February 1999.

37. S. M. H. Bozorgnia, The Role of Precious Metals in European Economic Development from Roman Times to the Eve of the Industrial Revolution, Contributions in Economics and Economic History no. 192 (Westport, Connecticut, and London: Greenwood Press, 1998). *Note*: Beware of this book, which is truly a very, very bad book. See my (rather hostile) review in The Journal of Economic History, 59:4 (December 1999), 1090-91.
38. Joel Kaye, Economy and Nature in the Fourteenth Century: Money, Market Exchange and the Emergence of Scientific Thought, Cambridge Studies in Medieval Life and Thought, 4th series 35 (Cambridge and New York: Cambridge University Press, 1998).
39. Jean Favier, Gold and Spices: the Rise of Commerce in the Middle Ages, trans. Caroline Higgitt (London and New York: Holmes and Meier, 1998). Translation of Jean Favier, De l'or et des épices: Naissance de l'homme d'affaires au moyen âge (Paris: Librairie Arthème Fayard, 1987). Not all that good, but it does have some interesting chapters. See my lukewarm review in The International History Review, 21:4 (December 1999), 976-78.
40. Thomas Sargent and François Velde, The Big Problem of Small Change (Princeton and Oxford: Princeton University Press, 2002).
41. Diana Wood, ed., Medieval Money Matters (Oxford: Oxbow Books, 2004):
 - a) James L. Bolton, 'What is Money? What is a Money Economy? When Did a Money Economy Emerge in Medieval England?', pp. 1-15.
 - * b) Richard Britnell, 'Use of Money in Medieval England', pp. 16-30.
 - * c) Martin Allen, 'The English Currency and the Commercialization of England Before the Black Death', pp. 31-50.
 - * d) Pamela Nightingale, 'Money and Credit in the Economy of Late Medieval England', pp. 51-71.
 - * e) Nicholas H. Mayhew, 'Coinage and Money in England, 1086 - 1500', pp. 72-86.
42. Om Prakash, Bullion for Goods: European and Indian Merchants in the Indian Ocean Trade, 1500 - 1800 (New Delhi: Manohar, 2004).
43. Ian Blanchard, Mining, Metallurgy and Minting in the Middle Ages, Vol. 3: Continuing Afro-European Supremacy, 1250 - 1450: African Gold Production and the Third European Silver Production Long-Cycles (Stuttgart: Franz Steiner Verlag, 2005)
44. Petr Vorel, Monetary Circulation in Central Europe at the Beginning of the Early Modern

Age: Attempts to Establish a Shared Currency as an Aspect of the Political Culture of the 16th Century, Univerzita Pardubice Filozofická fakulta, Monographica VI (Pardubice, 2006). Not readily accessible.

45. Angela Redish. 'Recent Contributions to the History of Monetary and International Financial systems: A Review Essay', European Review of Economic History, 10:2 (August 2006), 231-48. Includes medieval monetary history.

B. Particular Studies on Late-Medieval Monetary Problems and Crises:

1. Émile Bridrey, La Théorie de la monnaie au XIVe siècle: Nicole Oresme: étude d'histoire des doctrines et des faits économiques (Paris, Giard et Brière, 1906).
2. Adolphe Landry, Essai économique sur les mutations des monnaies dans l'ancienne France de Philippe le Bel à Charles VII (Paris, 1910).
3. Georges Bigwood, Le régime juridique et économique du commerce de l'argent dans la Belgique du moyen âge, 2 vols. (Brussels, 1921-22).
4. Hans Van Werveke, 'De economische en sociale gevolgen van de muntpolitiek der graven van Vlaanderen (1337 - 1433),' Annales de la Société d'Emulation de Bruges, 74 (1931), 1 - 15; reprinted in his Miscellanea Mediaevalia (Ghent, 1968), pp. 243-55.
5. Henri Laurent, La loi de Gresham au moyen âge: essai sur la circulation monétaire entre la Flandre et le Brabant à la fin du XIVe siècle (Brussels, 1933), pp. 3-36.
6. Henri Laurent, 'Crise monétaire et difficultés économiques en Flandre aux XIVe et XVe siècles', Annales d'histoire économique et sociale, 5 (1933), 156-60.
7. Hans Van Werveke, 'De Vlaamse munthervorming van 1389-1390,' Nederlandsche Historiebladen, 1 (1938), 336-47; reprinted in his Miscellanea Mediaevalia (Ghent, 1968), pp. 268-80.
8. A. Girard, 'Un phénomène économique: la guerre monétaire, XIVe-XVe siècles', Annales: E.S.C., 2 (1940).
9. Carlo Cipolla, Studi di storia della moneta: i movimenti dei cambi in Italia dal secolo XII al secolo XV (Pavia, 1948).
- * 10. Hans Van Werveke, 'Currency Manipulation in the Middle Ages: The Case of Louis de Male, Count of Flanders,' Transactions of the Royal Historical Society, 4th ser. 31 (1949), 115-127, reprinted in his Miscellanea Mediaevalia (Ghent, 1968), pp. 255-67.
- * 11. Edouard Perroy, 'À l'origine d'une économie contractée: les crises du XIVe siècle', Annales: E.S.C., 3 (1949), 167-82, republished in translation as 'At the Origin of a Contracted Economy: The Crises of the 14th Century', in Rondo Cameron, ed., Essays in French Economic History (1970), pp. 91-105

12. F. Graus, 'La crise monétaire du XIV^e siècles', Revue belge de philologie et d'histoire, 29 (1951), 445-54.
- * 13. Michael Postan, 'The Economic Foundations of Medieval Society', Jahrbücher für Nationalökonomie, 161 (1951), republished in his collection Essays on Medieval Agriculture and General Problems of the Medieval Economy (Cambridge, 1973), pp. 3-27;
- * 14. Michael Postan, 'The Trade of Medieval Europe: the North', in M.M. Postan and E. Rich, eds., Cambridge Economic History of Europe, Vol. II: Trade and Industry in the Middle Ages (1952), pp. 191-216; subsequently reprinted in his collection Medieval Trade and Finance (Cambridge, 1973), pp. 160-85. See also the later, revised edition of this essay in M.M. Postan and Edward Miller, eds., The Cambridge Economic History of Europe, Vol. II (Cambridge, 1987), pp. 240-66.
15. Hans Van Werveke, 'Munt en politiek: De Frans-Vlaamse verhoudingen vóór en na 1300,' Bijdragen voor de geschiedenis der Nederlanden, 8 (1953), 1-19; reprinted in his Miscellanea Mediaevalia (Ghent, 1968), pp. 209-26.
16. A. Grunzweig, 'Les incidences internationales des mutations monétaires de Philippe le Bel', Le moyen âge, 59 (1953), 117-72.
- * 17. Johan Schreiner, 'Wages and Prices in the Later Middle Ages', Scandinavian Economic History Review, 2 (1954), 61-73. (Chiefly on England).
18. Gino Luzzatto, 'L'oro e l'oro e l'argento nella politica monetaria veneziana dei secoli XIII-XIV,' in Studi di storia economia veneziana (Padua, 1954).
- * 19. W.C. Robinson, 'Money, Population, and Economic Change in Late Medieval Europe', Economic History Review, 2nd ser. 12 (1959), 63-76.

Read also the 'Note', by Michael Postan, following Robinson's article, as a rejoinder, on pp. 77-82. Postan's anti-monetarist views are further enlarged in his essays above, nos. 1 and 2.
20. Harry Miskimin, 'Le problème de l'argent au moyen âge', Annales: E.S.C., 17 (1962), 1125-30. Reprinted in Harry A. Miskimin, Cash, Credit and Crisis in Europe, 1300-1600 (London: Variorum Reprints, 1989), no. IV.
21. Harry Miskimin, Money, Prices, and Foreign Exchange in Fourteenth-Century France (New Haven, 1963).
- * 22. Carlo M. Cipolla, 'Currency Depreciation in Medieval Europe', Economic History Review, 2nd ser. 15 (1963), 413-33; reprinted with a few changes in Sylvia Thrupp, ed., Change in Medieval Society: Europe North of the Alps, 1050-1500 (1964), pp. 227-36.
- * 23. Harry Miskimin, 'Monetary Movements and Market Structures: Forces for Contraction in

- 14th and 15th Century England', Journal of Economic History, 24 (1964), 470-90. Reprinted in Harry A. Miskimin, Cash, Credit, and Crisis in Europe, 1300-1600 (London: Variorum Reprints, 1989), no. VII.
24. Edward Ames, 'The Sterling Crisis of 1337-1339,' Journal of Economic History, 25 (1965), 496-552, reprinted in Roderick Floud, ed., Essays in Quantitative Economic History (Oxford, 1974), pp. 36-58.
25. R. Cazelles, 'Quelques reflexions à propos des mutations monétaires de la monnaie royale française (1295-1360)', Le moyen âge, 72 (1966), 83-105, and 251-78.
- * 26. Andrew Watson, 'Back to Gold -- and Silver', Economic History Review, 2nd ser. 20 (1967), 1-34.
27. E.W. Bovill, The Golden Trade of the Moors, 2nd edn. (London, 1968), pp. 13-44, 79-131.
- * 28. Harry Miskimin, The Economy of Early Renaissance Europe, 1300-1460 (1969; reissued Cambridge, 1976), pp. 25-32, 132-50.
29. Peter Spufford, Monetary Problems and Policies in the Burgundian Netherlands, 1433-1496 (Leiden, 1970), chapter 3, 'Currency,' pp. 55 - 73; chapter 4, 'La guerre monétaire,' pp. 74 - 129.
30. Marian Malowist, 'Quelques observations sur le commerce de l'or dans le Soudan occidentale au moyen âge', Annales: E.S.C., 25 (1970), 1630-36.
31. John Munro, 'An Economic Aspect of the Collapse of the Anglo-Burgundian Alliance, 1428-1442,' English Historical Review, 85 (1970), 225-44. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no. I.
- * 32. R.S. Lopez, H.A. Miskimin, and A.L. Udovitch, 'England to Egypt, 1350-1500: Long-Term Trends and Long-Distance Trade', in M.A. Cook, ed., Studies in the Economic History of the Middle East (London, 1970), pp. 93-128. Reprinted in Harry A. Miskimin, Cash, Credit, and Crisis in Europe, 1300-1600 (London: Variorum Reprints, 1989), no. VIII.
33. Eliyahu Ashtor, Les métaux précieux et la balance des paiements du Proche-Orient a la basse époque (Paris, 1971).
34. C. C. Patterson, 'Silver Stocks and Losses in Ancient and Medieval Times,' Economic History Review, 2nd ser. 25 (1972), 205-35.
34. John Munro, 'An Aspect of Medieval Public Finance: The Profits of Counterfeiting in the Fifteenth-Century Low Countries', Revue belge de numismatique, 118 (1972), 127-48. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no. II.
- * 35. John Munro, Wool, Cloth, and Gold: The Struggle for Bullion in Anglo-Burgundian Trade,

1340-1478 (Brussels and Toronto, 1973), especially chapter 1: 'Late Medieval Monetary Policies and the Economics of Bullionism'. (Some of the views expressed here on the late-medieval monetary question have been modified in later publications).

36. John Munro, 'Billon-Billoen-Billio: From Bullion to Base Coinage', Revue belge de philologie et d'histoire, 52 (1974), 293-305. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no. III.
- * 37. Nicholas Mayhew, 'Numismatic Evidence and Falling Prices in the Fourteenth Century', Economic History Review, 2nd ser. 27 (1974), 1-15.
38. Nicholas Mayhew, 'The Monetary Background to the Yorkist Recoinage of 1464-1471', British Numismatic Journal, 44 (1974), 62-73.
39. Mavis Mate, 'High Prices in Early Fourteenth-Century England: Causes and Consequences', Economic History Review, 2nd ser. 28 (1975), 1-16.
40. Eliyahu Ashtor, A Social and Economic History of the Near East in the Middle Ages (London, 1976), pp. 319-31.
- * 41. Frederic C. Lane, 'The First Infidelities of the Venetian Lire,' in H. A. Miskimin, David Herlihy, and A.L. Udovitch, eds., The Medieval City (New Haven and London: Yale University Press, 1977), pp. 43 - 64. Reprinted in Frederic C. Lane, Studies in Venetian Social and Economic History, ed. Benjamin Kohl and Reinhold Mueller, Variorum Reprints CS 247 (London: Variorum Reprints, 1987).
42. T.H. Lloyd, 'Overseas Trade and the English Money Supply in the Fourteenth Century', in Nicholas Mayhew, ed., Edwardian Monetary Affairs, 1279-1344, British Archeological Reports, BAR International Series, no. 36 (Oxford, 1977), pp. 96-124.
43. Michael Prestwich, 'Currency and the Economy of Early Fourteenth-Century England', in Nicholas Mayhew, ed., Edwardian Monetary Affairs, 1279-1344 (British Archeological Reports, BAR International Series, no. 36 (Oxford, 1977), pp. 45-58.
44. Herman Van der Wee, 'Prices and Wages as Development Variables: A Comparison between England and the Southern Netherlands, 1400-1700', Actae Historiae Neerlandicae, 10 (1978), 58-78.
45. Mavis Mate, 'Coping with Inflation: A Fourteenth-Century Example', Journal of Medieval History, 4 (1978), 95-106.
46. Mavis Mate, 'The Role of Gold in the English Economy, 1338-1400', Numismatic Chronicle, 138 (1978), 26-41.
- ** 47. John Day, 'The Great Bullion Famine of the Fifteenth Century', Past and Present, no. 79 (May 1978), 1-54. Reprinted in John Day, The Medieval Market Economy (Oxford:

Basil Blackwell, 1987), pp. 1-54.

48. John Day, 'The Decline of a Money Economy: Sardinia Under Catalan Rule,' in Studi in memoria di Fedrigo Melis, 3 vols. (Florence, 1978), Vol. III, pp. 155-76. Reprinted in John Day, The Medieval Market Economy (Oxford: Basil Blackwell, 1987), pp. 72-89.
49. Reinhold Mueller, 'The Role of Bank Money in Venice, 1300-1500,' Studi Veneziani, new ser. 3 (1979), 47-96.
50. Michael Prestwich, 'Early Fourteenth-Century Exchange Rates,' Economic History Review, 2nd ser. 32 (1979), 470-82.
51. John Munro, 'Monetary Contraction and Industrial Change in the Late Medieval Low Countries, 1335-1500', in Nicholas Mayhew, ed., Coinage in the Low Countries, 880-1500: Third Oxford Symposium on Coinage and Monetary History, British Archeological Reports, International Series No. 54 (Oxford, 1979), pp. 95-162, especially pp. 95-110.
- * 52. John Munro, 'Bullionism and the Bill of Exchange in England, 1272-1663: A Study in Monetary Management and Popular Prejudice', in Fredi Chiappelli, Center for Medieval and Renaissance Studies, UCLA, ed., The Dawn of Modern Banking (New Haven and London, 1979), pp. 169-239. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no.IV.
- * 53. Clyde Reed, 'Price Movements, Balance of Payments, Bullion Flows, and Unemployment in the Fourteenth and Fifteenth Centuries', Journal of European Economic History, 8 (1979), 479-87. Followed by:

Harry Miskimin, 'A Response to Professor Reed', pp. 487-94.
54. John Day, '“Crise du Féodalisme” et conjoncture des prix à la fin du moyen âge', Annales: E.S.C., 34 (1979), 305-18. Reissued in translation as 'Late Medieval Price Movements and the “Crisis of Feudalism” ', in John Day, The Medieval Market Economy (Oxford: Basil Blackwell, 1987), pp. 90 - 107.
55. Guy Blois, 'Sur la monnaie et les prix à la fin du moyen âge', Annales: E.S.C., 34 (1979), pp. 319-24. A response to the previous article by John Day, concluding with a rejoinder by John Day.
56. John Munro, 'Mint Policies, Ratios, and Outputs in England and the Low Countries, 1330-1420', Numismatic Chronicle, 141 (1981), 71-116. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no. V.
57. John Day, 'The Question of Monetary Contraction in Late Medieval Europe', Nordisk Numismatisk Arsskrift: Nordic Numismatic Journal, 1981: Coinage and Monetary Circulation in the Baltic Area, c. 1350 - c. 1500 (Copenhagen, 1981), pp. 12-29.

Reprinted in John Day, The Medieval Market Economy (Oxford: Basil Blackwell, 1987), pp. 55-71.

58. Angus MacKay, Money, Prices and Politics in Fifteenth-Century Castile, Royal Historical Society (London, 1981). Disputes John Day's views about a supposed interruption or diminution of African gold supplies in the later 14th century.
- * 59. Carlo M. Cipolla, The Monetary Policy of Fourteenth-Century Florence (Berkeley, 1982).
60. Michael Prestwich, 'The Crown and the Currency: The Circulation of Money in Late Thirteenth and Early Fourteenth-Century England', Numismatic Chronicle, 142 (1982), 51-65.
61. Jere Bacharach, 'Monetary Movements in Medieval Egypt, 1171-1517', in John F. Richards, ed., Precious Metals in the Later Medieval and Early Modern Worlds, (Durham, N.C. 1983), pp. 159-82.
62. Harry Miskimin, 'Money and Money Movements in France and England at the End of the Middle Ages,' in John Richards, ed., Precious Metals in the Later Medieval and Early Modern Worlds (Durham: Carolina Academic Press, 1983), pp. 79 - 96. Reprinted in Harry A. Miskimin, Cash, Credit and Crisis in Europe, 1300-1600 (London: Variorum Reprints, 1989), no. XI.
63. Louise Robbert, 'Monetary Flows: Venice 1150 to 1400,' in John Richards, ed., Precious Metals in the Later Medieval and Early Modern Worlds (Durham, N.C., 1983), pp. 53-78.
- * 64. John Munro, 'Bullion Flows and Monetary Contraction in Late-Medieval England and the Low Countries', in John F. Richards, ed., Precious Metals in the Later Medieval and Early Modern Worlds (Durham, N.C., 1983), pp. 97-158. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no. VI.
65. John Munro, 'Medieval Monetary Problems: Bimetallism and Bullionism', Journal of Economic History, 43 (March 1983), 294-98.
- * 66. John Munro, 'Mint Outputs, Money, and Prices in Late-Medieval England and the Low Countries', in Eddy Van Cauwenberghe and Franz Irsigler, eds., Münzprägung, Geldumlauf und Wechselkurse/ Minting, Monetary Circulation and Exchange Rates, Trierer Historische Forschungen, vol. 7 (Trier, 1984), pp. 31-122.
67. John Munro, 'Monnayage, monnaies de compte et mutations monétaires au Brabant à la fin du moyen âge', in John Day, ed., Études d'histoire monétaire, XIIe-XIXe siècles, (Lille, 1984), 263-94. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no. VII.
68. Reinhold Mueller, ''Chome l'ucciello di passeggio': la demande saisonniere des especes et le marché des changes à Venise au moyen âge,' in John Day, ed., Études d'histoire

monétaire, XIIIe - XIXe siècles (Lille, 1984), pp. 195-220.

- * 69. Harry Miskimin, Money and Power in Fifteenth-Century France (New Haven and London, 1984).
70. Reinhold Mueller, 'Guerra monetaria tra Venezia e Milano nel quattrocento,' La zecca di Milano: Atti del Convegno internazionale di studio Milano, 9-14 maggio 1983 (Milan, 1984), pp. 341-55.
71. John Day, 'The Fisher Equation and Medieval Monetary History,' in Mario Gomes Marques, ed., Problems of Medieval Coinage in the Iberian Area (Sanartem, 1984), pp. 139 - 46. Reprinted in John Day, The Medieval Market Economy (Oxford: Basil Blackwell, 1987), pp. 108-17.
72. John Day, 'Colonialisme monétaire en Méditerranée au moyen âge,' Actes du IIe colloque internationale d'histoire: Economies méditerranéennes: équilibres et intercommunications, XIIIe - XIXe siècles (Centre de recherches néohelléniques, Athens, 1985), pp. 305 - 19. Reprinted in translation as 'Monetary Colonialism in the Medieval Mediterranean,' in John Day, The Medieval Market Economy (Oxford: Basil Blackwell, 1987), pp. 116-28.
73. Harry Miskimin, 'L'or, l'argent, et la guerre dans la France médiévale,' Annales: E.S.C., 40 (1985), 171 - 84. Reprinted in Harry A. Miskimin, Cash, Credit and Crisis in Europe, 1300-1600 (London: Variorum Reprints, 1989), no. XII.
- * 74. Frederic Lane and Reinhold Mueller, Money and Banking in Medieval and Renaissance Venice, Vol. I: Coins and Moneys of Account (Baltimore and London, 1985), especially Part III: 'The Genesis and Persistence of Bimetallism,' pp. 257 - 492.
75. Reinhold C. Mueller, 'La crisi economica-monetaria veneziana di metà quattrocento nel contesto generale,' in Aspetti della vita economica medievale, Atti del Convegno di Studi nel X Anniversario della morte di Federico Melis Firenze-Pisa-Prato, 10-14 marzo 1984 (Florence, 1985), pp. 541 - 556.
76. A.R. Bridbury, 'Thirteenth-Century Prices and the Money Supply,' Agriculture History Review, 33 (1985), 1-21.¹
- * 77. Michael Bordo, 'Money, Deflation, and Seigniorage in the Fifteenth Century,' Journal of Monetary Economics, 18 (1986), 337 - 46.
78. John Munro, 'Political Muscle in an Age of Monetary Famine: A Review,' Revue belge de philologie et d'histoire, 64 (1986), 741 - 46. A review of Miskimin's Money and Power in Fifteenth Century France (1984).

¹ On this, see also P.D.A. Harvey, 'The English Inflation of 1180-1220', Past and Present, no. 61 (1973), 3-30

- * 79. Nicholas J. Mayhew, 'Money and Prices in England from Henry II to Edward III,' Agricultural History Review, 35 (1987), 121 - 32. In reply to Bridbury (1985).
80. John Day and Huguette Bertand, 'Les frappes de monnaies en France et en Europe aux XIVe - XVe siècles,' in Georges Depeyrot, Tony Hackens, and Ghislaine Moucharte, eds., Rythmes de la production monétaire, de l'antiquité à nos jours (Louvain-la-Neuve, 1987), pp. 537-77.
81. Carlo M. Cipolla, La moneta a Firenze nel cinquecento (Bologna, 1987).
82. Carlo M. Cipolla, La moneta a Milano nel quattrocento: monetazione argentea e svalutazione secolare (Rome, 1988).
- ** 83. Peter Spufford, Money and Its Use in Medieval Europe (Cambridge, 1988). Part III: 'The Late Middle Ages,' pp. 267 - 396; and in particular, chapter 15: 'The Bullion-Famines of the Later Middle Ages,' pp. 339-62.
- * 84. John Munro, 'Deflation and the Petty Coinage Problem in the Late-Medieval Economy: the Case of Flanders, 1334 - 1484,' Explorations in Economic History, 25 (October 1988), 387 - 423. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no. VIII.
85. John Munro, 'Petty Coinage in the Economy of Late-Medieval Flanders: Some Social Considerations of Public Minting,' in Eddy H. G. Van Cauwenberghe, ed., Precious Metals, Coinage and the Changes of Monetary Structures in Latin-America, Europe and Asia (Late Middle Ages - Early Modern Times), (Leuven: Leuven University Press, 1989), pp. 25 - 56.
86. Nathan Sussman, 'Missing Bullion or Missing Documents: A Revision and Reappraisal of French Minting Statistics: 1385 - 1415,' Journal of European Economic History, 19 (Spring 1990), 147 - 62.
- ** 87. Pamela Nightingale, 'Monetary Contraction and Mercantile Credit in Later Medieval England,' Economic History Review, 2nd ser. 43 (November 1990), 560 - 75.
- * 88. John Munro, 'Die Anfänge der Übertragbarkeit: einige Kreditinnovationen im englisch-flämischen Handel des Spätmittelalters (1360 - 1540),' in Michael North, ed., Kredit im spätmittelalterlichen und frühneuzeitlichen Europa, Quellen und Darstellungen zur Hansischen Geschichte, vol. 37 (Cologne-Vienna: Böhlau Verlag, 1991), pp. 39 - 69.
89. John Munro, 'The Central European Mining Boom, Mint Outputs, and Prices in the Low Countries and England, 1450 - 1550,' in Eddy Van Cauwenberghe, ed., Money, Coins, and Commerce: Essays in the Monetary History of Asia and Europe from Antiquity to Modern Times (Leuven: Leuven University Press, 1991), pp. 119-83.
91. Frank Williams, 'Monetary Institutions in Agenais from the Establishment to the

- Disappearance of the Agen Mint,' Journal of European Economic History, 20:3 (Winter 1991), 569 - 613. [From A.D. 1040 to 1789].
92. Harry A. Miskimin, 'Missing Bullion or Missing Documents: A Rejoinder,' and Nathan Sussman, 'A Reply,' Journal of European Economic History, 20:3 (Winter 1991), 673 - 682.
93. Herman Van der Wee, The Low Countries in the Early Modern World, translated by Lisabeth Fackelman (London, Variorum, 1993). Collected essays. See the following:
- (a) 'Monetary Policy in the Duchy of Brabant, Late Middle Ages to Early Modern Times,' pp. 167-82. [From H. Van den Eerenbeemt, ed., Het geld zoekt zijn weg (the Van Lanschot-Lectures on Banking in Brabant), in Bijdragen tot de geschiedenis van het zuiden van Nederland (Tilburg, 1987), pp. 37-58.]
 - (b) 'Credit in Brabant, Late Middle Ages to Early Modern Times,' pp. 183-97. [From H. Van den Eerenbeemt, ed., Het geld zoekt zijn weg (the Van Lanschot-Lectures on Banking in Brabant), in Bijdragen tot de geschiedenis van het zuiden van Nederland (Tilburg, 1987), pp. 59-78.]
 - (c) 'Prices and Wages as Development Variables: A Comparison between England and the Southern Netherlands, 1400-1700,' pp. 223-41. [From Actae Historiae Neerlandicae, 10 (1978), 58-78.]
 - (d) 'Typology of Crises and Structural Changes in the Netherlands, 15th to 16th Century,' pp. 245-63. [From Annales: Économies, sociétés, civilisations, 18 (1963), 209-25.]
94. Erik Aerts, 'Metal Loss in the Monetary Circulation of the Southern Low Countries (Fifteenth-Eighteenth Centuries). Sources and Methods,' in Erik Aerts, Brigitte, Henau, Paul Jannsens, and Raymond Van Uytven, eds., Studia Historiae Oeconomica: Liber Alumnorum Herman Van der Wee (Leuven, 1993), pp. 41-58.
95. Nathan Sussman, 'Debasements, Royal Revenues, and Inflation in France during the Hundred Years' War, 1415 - 1422,' The Journal of Economic History, 53 (March 1993), 44 - 70.
96. Harry A. Miskimin, 'Once More Unto the Breach,' Journal of European Economic History, 22:2 (Fall 1993), 403-10. A reply to Nathan Sussman's attack on his late-medieval French mint figures.
97. Shaul Zabon, 'The French Mint Production Debate: A New Approach,' Journal of European Economic History, 22:3 (Winter 1993), 627-28.
98. Nathan Sussman, 'Once More Unto the Breach: A Reply,' Journal of European Economic History, 23:2 (Fall 1994), 389-96. Another reply to Miskimin.
99. Richard A. Goldthwaite and Giulio Mandich, Studi sulla moneta fiorentina, secoli XIII -

XVI (Florence: Leo S. Olshki, 1994).

100. Alan M. Stahl, 'Office-Holding and the Mint in Early Renaissance Italy,' Renaissance Studies, 8:4 (1994), 405-15.
- 100. John H. Munro, 'Patterns of Trade, Money, and Credit,' in Thomas A. Brady, jr., Heiko O. Oberman, and James D. Tracy, eds., Handbook of European History, 1400-1600: Late Middle Ages, Renaissance and Reformation, Vol. I: Structures and Assertions (Leiden/New York/Cologne: E.J. Brill, 1994), pp. 147-95.
101. Richard A. Goldthwaite and Giulio Mandich, Studi sulla moneta fiorentina, secoli XIII - XVI (Florence: Leo S. Olshki, 1994).
- * 102. Nicholas J. Mayhew, 'Population, Money Supply, and the Velocity of Circulation in England, 1300 - 1700,' Economic History Review, 2nd ser., 48:2 (May 1995), 238-57.
103. Elizabeth Gemmill and Nicholas Mayhew, Changing Values in Medieval Scotland: A Study of Prices, Money, and Weights and Measures (Cambridge and New York: Cambridge University Press, 1995). See chapter 1, 'Price Trends in Medieval Scotland,' p. 8-24; and chapter 6, 'Prices and the Scottish Economy, 1260-1540,' pp. 361-81.
- * 104. Harry A. Miskimin, 'Silver, not Sterling: A Comment on Mayhew's Velocity,' and N.J. Mayhew, 'Silver, Not Sterling: A Reply to Prof. Miskimin,' The Economic History Review, 2nd ser., 49:2 (May 1996), 358-61.
105. Ernst Juerg Weber, ' 'Imaginary' or 'Real' Moneys of Account in Medieval Europe? An Econometric Analysis of the Basle Pound, 1365 - 1429,' Explorations in Economic History, 33:4 (Oct. 1996), 479-95.
106. David Hackett Fischer, The Great Wave: Price Revolutions and the Rhythm of History (Oxford and New York: Oxford University Press, 1996), pp. 10-70. To be used with great care. See my review of this book on the internet: *EH.Net Review* <ehreview@eh.net>, 24 February 1999.
107. George Selgin, 'Salvaging Gresham's Law: The Good, the Bad, and the Illegal,' Journal of Money, Credit, and Banking, 28:4 (November 1996, part 1), 637-49.
108. Arthur J. Rolnick, François R. Velde, and Warren E. Weber, 'The Debasement Puzzle: An Essay on Medieval Monetary History,' Journal of Economic History, 56:4 (December 1996), 789-808. To be used with care (translation: I disagree strongly with this article).
- *109. John Hatcher, 'The Great Slump of the Mid-Fifteenth Century,' in Richard Britnell and John Hatcher, eds., Progress and Problems in Medieval England (Cambridge and New York: Cambridge University Press, 1996), pp. 237-72.

- *110. Pamela Nightingale, 'England and the European Depression of the Mid-Fifteenth Century,' The Journal of European Economic History, 26:3 (Winter 1997), 631-56.
- 111. Arthur J. Rolnick and Warren E. Weber, 'Money, Inflation, and Output under Fiat and Commodity Standards,' Journal of Political Economy, 105:6 (December 1997),
 - 112. Thomas Sargent and Bruce D. Smith, 'Coinage Debasements and Gresham's Laws', Economic Theory, 10:2 (1997), 197 - 226.
 - 113. Nathan Sussman, 'The Late Medieval Bullion Famine Reconsidered,' Journal of Economic History, 58:1 (March 1998), 126-54.
 - 114. S. M. H. Bozorgnia, The Role of Precious Metals in European Economic Development from Roman Times to the Eve of the Industrial Revolution, Contributions in Economics and Economic History no. 192 (Westport, Connecticut, and London: Greenwood Press, 1998).
- Note:* Beware of this book, which is truly a very, very bad book. See my review in Journal of Economic History, 59:4 (December 1999), 1090-91.
- 115. Joel Kaye, Economy and Nature in the Fourteenth Century: Money, Market Exchange and the Emergence of Scientific Thought, Cambridge Studies in Medieval Life and Thought, 4th series 35 (Cambridge and New York: Cambridge University Press, 1998).
 - 116. Thomas J. Sargent and François R. Velde, 'The Big Problem of Small Change', Journal of Money, Credit, and Banking, 31:2 (1999), 137-61.
 - 117. François R. Velde, Warren E. Weber, and Randall Wright, 'A Model of Commodity Money, with Applications to Gresham's Law and the Debasement Puzzle', Review of Economic Dynamics, 2:1 (1999), 291-333.
 - 118. Şevket Pamuk, A Monetary History of the Ottoman Empire, Cambridge Studies in Islamic Civilization (Cambridge and New York: Cambridge University Press, 2000).
 - 119. John Munro, 'A Maze of Medieval Monetary Metrology: Determining Mint Weights in Flanders, France and England from the Economics of Counterfeiting, 1388 - 1469', The Journal of European Economic History, 29:1 (Spring 2000), 173-99.
 - 120. Alan M. Stahl, Zecca: The Mint of Venice in the Middle Ages, The American Numismatic Society (Baltimore and London: The Johns Hopkins University Press, 2000).
 - 121. Martin Allen, 'Ecclesiastical Mints in Thirteenth-Century England', Thirteenth Century England, VIII, Proceedings of the Durham Conference 1999, ed. by Michael Prestwich, Richard Britnell, and Robin Frame (Boydell Press, 2001), pp. 113-22.
 - 122. Martin Allen, 'The Volume of the English Currency, 1158 - 1470', The Economic History Review, 2nd ser., 54:4 (November 2001), 595-611.

- *123. Thomas Sargent and François Velde, The Big Problem of Small Change (Princeton and Oxford: Princeton University Press, 2002).
124. John Munro, 'Gold, Guilds, and Government: The Impact of Monetary and Labour Policies on the Flemish Cloth Industry, 1390-1435', Jaarboek voor middeleeuwse geschiedenis, 5 (2002), 153 - 205.
- *125. John H. Munro, 'Wage-Stickiness, Monetary Changes, and Real Incomes in Late-Medieval England and the Low Countries, 1300 - 1500: Did Money Matter?', Research in Economic History, 21 (2003), 185-298.
126. John Munro, 'Money, Wages, and Real Incomes in the Age of Erasmus: The Purchasing Power of Coins and of Building Craftsmen's Wages in England and the Southern Low Countries, 1500 - 1540', in Alexander Dalzell and Charles G. Nauert, Jr., eds., The Correspondence of Erasmus, Vol. 12: Letters 1658 - 1801, January 1526-March 1527 (Toronto: University of Toronto Press, 2003), Appendix: pp. 551-699.
- * 127. John Munro, 'The Monetary Origins of the 'Price Revolution': South German Silver Mining, Merchant-Banking, and Venetian Commerce, 1470-1540', in Dennis Flynn, Arturo Giráldez, and Richard von Glahn, eds., Global Connections and Monetary History, 1470 - 1800 (Aldershot and Brookfield, Vt: Ashgate Publishing, 2003), pp. 1-34.
128. Paul Latimer, 'The Quantity of Money in England, 1180-1247: a Model', The Journal of European Economic History, 32:3 (Winter 2003), 637-59.
129. Martin Allen, 'English Coin Hoards, 1158 - 1544', British Numismatic Journal, 72 (2003), 24-84.
- *130. Diana Wood, ed., Medieval Money Matters (Oxford: Oxbow Books, 2004):
- a) James L. Bolton, 'What is Money? What is a Money Economy? When Did a Money Economy Emerge in Medieval England?', pp. 1-15.
 - b) Richard Britnell, 'Use of Money in Medieval England', pp. 16-30.
 - c) Martin Allen, 'The English Currency and the Commercialization of England Before the Black Death', pp. 31-50.
 - d) Pamela Nightingale, 'Money and Credit in the Economy of Late Medieval England', pp. 51-71.
 - e) Nicholas H. Mayhew, 'Coinage and Money in England, 1086 - 1500', pp. 72-86.
- *131. Ian Blanchard, Mining, Metallurgy and Minting in the Middle Ages, Vol. 3: Continuing Afro-European Supremacy, 1250 - 1450: African Gold Production and the Third European Silver Production Long-Cycles (Stuttgart: Franz Steiner Verlag, 2005): Part I, 'European Precious Metal Production and Trade: Silver, Gold and Mercury',

pp. 923-1107.²

132. Boško Bojović, 'Entre Venise et l'Empire ottoman: les métaux précieux des Balkans (XV^e - XVI^e siècle)', Annales: Histoire, Sciences sociales, 60:6 (Nov-Dec. 2005), 1277-97.
133. John Munro, 'Builders' Wages in Southern England and the Southern Low Countries, 1346 - 1500: a Comparative Study of Trends in and Levels of Real Incomes', in Simonetta Caviococchi, ed., L'Edilizia prima della rivoluzione industriale, secc. XIII-XVIII, Atti delle "Settimana di Studi" e altri convegni, no. 36, Istituto Internazionale di Storia Economica "Francesco Datini" (Florence, 2005), pp. 1013-1076.
134. Oliver Volckart and Nikolaus Wolf, 'Estimating Financial Integration in the Middle Ages: What Can We Learn from a TAR Model', Journal of Economic History, 66:1 (March 2006), 122-39.
135. John Munro, 'Money, Prices, and Wages in Fourteenth-Century England: Before and After the Black Death', in Troels Dahlerup and Per Ingesman, eds., Changes and Crises in Late Medieval and Early Modern Europe, The Royal Danish Academy of Sciences and Letters (Copenhagen, forthcoming).

C. Medieval Coinage Debasements: Causes and Consequences:

1. Borrelli de Serres, Les variations monétaires sous Philippe le Bel (Chalon-sur-Saône, 1902).
2. A. Girard, 'Un phénomène économique: la guerre monétaire, XIVE-XVe siècles,' Annales: E.S.C., 2 (1940).
3. Hans Van Werveke, 'Currency Manipulation in the Middle Ages: The Case of Louis de Male, Count of Flanders,' Transactions of the Royal Historical Society, 4th ser, 31 (1949), 115-127, reprinted in Van Werveke, Miscellanea Medievalia (Ghent, 1968), pp. 255-67.
4. F. Graus, 'La crise monétaire du XIVE siècles,' Revue belge de philologie et d'histoire, 29 (1951), 445-54.
5. A. Grunzweig, 'Les incidences internationales des mutations monétaires de Philippe le Bel,' Le moyen âge, 59 (1953), 117-72.

² The first two volumes in this series are:

Ian Blanchard, Mining, Metallurgy and Minting in the Middle Ages, vol. I: Asiatic Supremacy, 425 - 1125 (Stuttgart: Franz Steiner Verlag, 2001).

Ian Blanchard, Mining, Metallurgy and Minting in the Middle Ages, vol. II: Afro-European Supremacy, 1125 - 1225 (African Gold Production and the First European Silver Production Long Cycle) (Stuttgart: Franz Steiner Verlag, 2001).

6. R. Cazelles, 'Quelques réflexions à propos des mutations de la monnaie royale française (1295-1360),' Le moyen âge, 72 (1966), 83-105, and 251-78.
7. Joseph J. Spengler, 'Coin Shortage: Modern and Premodern', National Banking Review, 3 (1966), 201-16.
8. John Munro, 'An Aspect of Medieval Public Finance: The Profits of Counterfeiting in the Fifteenth-Century Low Countries', Revue belge de numismatique, 118 (1972), 127-48. Reprinted in John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum Reprints, 1992), no. II.
9. John Munro, Wool, Cloth, and Gold: The Struggle for Bullion in Anglo-Burgundian Trade, 1340-1478 (Brussels and Toronto, 1973), especially chapter 1: 'Late Medieval Monetary Policies and the Economics of Bullionism'. (Some of the views expressed here on the late-medieval monetary question have been modified in later publications).
10. John Munro, 'Monetary Contraction and Industrial Change in Late-Medieval Low Countries, 1335-1500,' in Nicholas Mayhew, ed., Coinage in the Low Countries, 880-1500: Third Oxford Symposium on Coinage and Monetary History, British Archeological Reports, International Series no. 54 (Oxford, 1979), pp. 95-161. On the impact of war-induced coinage debasements and competitive monetary-bullionist policies on the wool and cloth trades.
11. John Munro, 'Mint Policies, Ratios, and Outputs in England and the Low Countries, 1330-1420', Numismatic Chronicle, 141 (1981), 71-116.
12. Thomas J. Sargent, 'A Model of Commodity Money', Journal of Monetary Economics, 12:1 (1983), 163-87.
13. John Munro, 'Monnayage, monnaies de compte et mutations monétaires au Brabant à la fin du moyen âge', in John Day, ed., Études d'histoire monétaire, XIIe-XIXe siècles (Université de Paris VII, Lille, 1984), pp. 263-94.
14. John Munro, 'Deflation and the Petty Coinage Problem in the Late-Medieval Economy: the Case of Flanders, 1334 - 1484,' Explorations in Economic History, 25 (October 1988), 387 - 423.
15. Peter Spufford, Money and Its Use in Medieval Europe (Cambridge, 1988): chapter 13, 'The Scourge of Debasement', pp. 289-318.
16. John Munro, Bullion Flows and Monetary Policies in England and the Low Countries, 1350 - 1500 (London: Variorum, 1992): with original pagination.
 - (a) 'An Economic Aspect of the Collapse of the Anglo-Burgundian Alliance, 1428-1442,' from English Historical Review, 85 (1970), pp. 225-44. [No. 1].
 - (b) 'An Aspect of Medieval Public Finance: The Profits of Counterfeiting in the Fifteenth-Century Low Countries,' from Revue belge de numismatique et

- de sigillographie, 118 (1972), pp. 127-48. [No. 2]
- (c) ‘Billon - Billoen - Billio: From Bullion to Base Coinage,’ from Revue belge de philologie et d'histoire, 52 (1974), pp. 293-305. [No. 3]
- (d) ‘Mint Policies, Ratios, and Outputs in England and the Low Countries, 1335-1420,’ from Numismatic Chronicle, 141 (1981), pp. 71-116 [no. 5]
- (e) ‘Bullion Flows and Monetary Contraction in Late-Medieval England and the Low Countries,’ from John F. Richards, ed., Precious Metals in the Later Medieval and Early Modern Worlds (Durham, N.C., 1983), pp. 97-158. [No. 6]
- (f) ‘Monnayage, monnaies de compte, et mutations monétaires au Brabant à la fin du moyen âge,’ from John Day, ed., Études d'histoire monétaire, XIIe-XIXe siècles (Université de Paris VII, Lille, 1984) pp. 263-94. [No. 7]
- (g) ‘Deflation and the Petty Coinage Problem in the Late-Medieval Economy: The Case of Flanders, 1334 - 1484,’ from Explorations in Economic History, 25 (October 1988), pp. 387-423. [No. 8]
17. Nathan Sussman, ‘Debasements, Royal Revenues, and Inflation in France during the Hundred Years' War, 1415 - 1422,’ The Journal of Economic History, 53 (March 1993), 44 - 70.
18. George Selgin, ‘Salvaging Gresham’s Law: The Good, the Bad, and the Illegal,’ Journal of Money, Credit, and Banking, 28:4 (November 1996, part 1), 637-49.
19. Arthur J. Rolnick, François R. Velde, and Warren E. Weber, ‘The Debasement Puzzle: An Essay on Medieval Monetary History,’ Journal of Economic History, 56:4 (December 1996), 789-808. To be used with care (translation: I disagree strongly with this article).
20. Arthur J. Rolnick and Warren E. Weber, ‘Money, Inflation, and Output under Fiat and Commodity Standards,’ Journal of Political Economy, 105:6 (December 1997),
21. Thomas Sargent and Bruce D. Smith, ‘Coinage Debasements and Gresham’s Laws,’ Economic Theory, 10:2 (1997), 197 - 226.
22. François R. Velde, Warren E. Weber, and Randall Wright, ‘A Model of Commodity Money, with Applications to Gresham’s Law and the Debasement Puzzle,’ Review of Economic Dynamics, 2:1 (1999), 291-333.
23. Thomas J. Sargent and François R. Velde, ‘The Big Problem of Small Change,’ Journal of Money, Credit, and Banking, 31:2 (1999), 137-61.
24. Thomas J. Sargent and François R. Velde, The Big Problem of Small Change (Princeton and Oxford: Princeton University Press, 2002).

25. John Munro, 'Gold, Guilds, and Government: The Impact of Monetary and Labour Policies on the Flemish Cloth Industry, 1390-1435', Jaarboek voor middeleeuwse geschiedenis, 5 (2002), 153 - 205.

D. Mining: Special Studies on Silver and Gold Mining

1. John U. Nef, 'Silver Production in Central Europe, 1450-1618', Journal of Political Economy, 49 (1941), 575-91.
- ** 2. John U. Nef, 'Mining and Metallurgy in Medieval Civilization', in M.M. Postan, ed., Cambridge Economic History of Europe, Vol. II: Trade and Industry in the Middle Ages (1952), pp. 456-69. Reissued in M.M. Postan and Edward Miller, eds., The Cambridge Economic History of Europe, Vol. 11: Trade and Industry in the Middle Ages, revised edn. (1987), pp. 696-734.
3. D. Kovacevic, 'Les mines d'or et d'argent en Serbie et en Bosnie médiévales', Annales: E.S.C., 15 (1960), 248-58.
4. Marian Malowist, 'Problems of the Growth of the National Economy of Central Eastern Europe in the Late Middle Ages', Journal of European Economic History, 3 (1974), 331-57.
- * 5. Hermann Kellenbenz, ed., Precious Metals in the Age of Expansion (Stuttgart, 1981), especially:
 - (a) Oszkar Paulinyi, 'The Crown Monopoly of the Refining Metallurgy of Precious Metals and the Technology of the Cameral Refineries in Hungary and Transylvania, 1325-1700, with Data and Output', pp. 27-39.
 - (b) Sima Cirkovic, 'The Production of Gold, Silver, and Copper in the Central Parts of the Balkans from the 13th to the 16th Century', pp. 41-69.
 - (c) Hermann Kellenbenz, 'Final Remarks: Production and Trade of Gold, Silver, Copper, and Lead from 1450 to 1740', pp. 307-61.
6. Philippe Braunstein, 'Innovations in Mining and Metal Production in Europe in the Late Middle Ages.' Journal of European Economic History, 12 (1983), 573-91.
7. Ekkehard Westermann, 'Zur Silber- und Kupferproduktion Mitteleuropas vom 15. bis zum frühen 17. Jahrhundert: über Bedeutung und Rangfolge der Reviere von Schwaz, Mansfeld und Neusohl,' Der Anschnitt: Zeitschrift für Kunst und Kultur im Bergbau, 38 (May-June 1986), 187 - 211.
8. John Munro, 'The Central European Mining Boom, Mint Outputs, and Prices in the Low Countries and England, 1450 - 1550,' in Eddy Van Cauwenberghe, ed., Money, Coins, and Commerce: Essays in the Monetary History of Asia and Europe from Antiquity to Modern Times (Leuven: Leuven University Press, 1991), pp. 119-83.

9. Ekkehard Westermann, 'Über Wirkungen des europäischen Ausgriffs nach Übersee auf den europäischen Silber- und Kupfermarkt des 16. Jahrhunderts,' in Armin Reese, ed., Columbus: Tradition und Neuerung, Forschen-Lehren-Lernen: Beiträge aus dem Fachbereich IV (Sozialwissenschaften) der Pädagogischen Hochschule Heidelberg, Vol. 5 (Idstein, 1992), pp. 52 - 69.
10. Ian Blanchard, International Lead Production and Trade in the 'Age of the Saigerprozess': 1460-1560 (Stuttgart: F. Steiner Verlag, 1995).
11. Ian Blanchard, Mining, Metallurgy and Minting in the Middle Ages, vol. I: Asiatic Supremacy, 425 - 1125 (Stuttgart: Franz Steiner Verlag, 2001).
12. Ian Blanchard, Mining, Metallurgy and Minting in the Middle Ages, vol. II: Afro-European Supremacy, 1125 - 1225 (African Gold Production and the First European Silver Production Long Cycle) (Stuttgart: Franz Steiner Verlag, 2001).
13. John Munro, 'The Monetary Origins of the 'Price Revolution': South German Silver Mining, Merchant-Banking, and Venetian Commerce, 1470-1540', in Dennis Flynn, Arturo Giráldez, and Richard von Glahn, eds., Global Connections and Monetary History, 1470 - 1800 (Aldershot and Brookfield, Vt: Ashgate Publishing, 2003), pp. 1-34.
14. Ian Blanchard, Mining, Metallurgy and Minting in the Middle Ages, vol. III: Continuing Afro-European Supremacy, 1250 - 1450 (Stuttgart: Franz Steiner Verlag, 2005).

QUESTIONS ON MONETARY PROBLEMS

1. How did western Europe obtain its gold and silver supplies in the 13th, 14th, and 15th centuries?
2. What were the consequences for the monetary system of adoption of gold coinages by northern European countries in the 14th century?
3. Did western Europe suffer from an increasing scarcity of precious metals in the late Middle Ages? If so, when did this scarcity begin, in your view--begin to become a serious problem: in the late 13th, early 14th, late 14th, or 15th centuries?
4. If there was such a scarcity, what were its causes? Was the scarcity more serious in gold or in silver coinages?
5. What were the chief motivations for coinage debasements in the 14th and 15th centuries: fiscal or monetary? Did they reflect, remedy, or aggravate monetary scarcities? What were the economic consequences of coinage debasements?
6. What problems did European mining for precious metals encounter in the late Middle Ages? How were these problems eventually remedied?
7. Did western Europe suffer a balance of payments deficit in the late Middle Ages? How, when, and why?
8. What was the relationship between population and money? Between depopulation and monetary scarcity, particularly in terms of the Miskimin thesis? Defend or attack the Miskimin thesis.
9. In sum: did late medieval Europe experience monetary crises? How were they manifested? How were they caused, and finally remedied? What were their economic and social consequences?
10. In the recent past, the American economist and historian Peter Temin published a provocative book entitled *Did Monetary Forces Cause the Great Depression* (New York, 1976) -- referring, of course, to the Great Depression of 1929-39.

For our purposes, therefore, the question may be rephrased as: 'Did Monetary Forces Cause the 'Great Depression' of the Later Middle Ages?' An important difference, however, is that nobody seriously disputes the fact that western economies suffered from a severe depression in the 1930s; but economic historians still hotly dispute the issue of a 'depression' in the later Middle Ages. Thus an answer to this question partly depends on your view of macro-economic changes in the late-medieval economy. Consider also the following two questions.

11. In particular, were the monetary problems of late-medieval Europe a contributing cause or merely a reflection, a passive reaction to, the economic contraction of this era? If a cause of that contraction, a primary or merely a secondary cause?
12. If western Europe, or more particularly north-western Europe, suffered from periodically severe deflation in the later Middle Ages, what then were the specific economic consequences of deflation: in agriculture, industry, and trade? Did deflation matter? What impact did inflation have upon the factor costs for labour (wages), land (rents), and capital (interest)?

Table 1

The Mint Outputs of England and the Low Countries, in 25-Year Totals, 1300-24 to 1575-99: in Kilograms of Pure Silver and Gold, and in Aggregate Money-of-Account Values (Pounds Sterling and Livres Gros Flemish)

Years (25)	ENGLAND		LOW COUNTRIES *			
	Silver kg.	Gold kg.	Current £ sterling	Silver kg.	Gold kg.	Current £ gros F1.
1300-24	403,029	nil	1,260,746			
1325-49	37,602	3,951	291,054			
1350-74	121,629	43,379	2,335,905	155,772	46,449	1,725,341
1375-99	7,462	9,594	442,228	79,172	11,940	843,621
1400-24	18,932	27,312	1,387,601	96,180	529	451,471
1425-49	87,707	6,926	738,082	103,899	17,675	1,652,668
1450-74	68,352	11,557	1,096,728	54,444	6,964	759,957
1475-99	33,655	6,767	632,349	153,645	4,624	1,750,654

Bruges and Antwerp**

1475-99				134,650	4,432	1,542,807
1500-24	59,090	18,979	1,569,081	47,789	13,768	1,728,074
1525-49	247,248	21,993	4,666,444	70,280	8,664	1,401,535
1550-74	305,288	5,356	3,580,657	280,958	12,260	4,078,004
1575-99	287,644	4,348	2,924,852	144,398	1,263	2,222,801

*** Mint output data for the Low Countries:**

- (a) Flanders only, 1350-1419;
- (b) Flanders, Brabant, Namur, Hainaut, and Holland-Zeeland, 1420-1499;
- (c) Bruges and Antwerp only, 1500-1599.

No Flemish mint data are available before 1334; and for such 25-year totals, the Flemish data commence therefore in 1350. Brabantine mint data are available from the 1370s, but are not included here until 1420, from which time Brabant becomes fully part of the Flemish monetary orbit, so that values of Brabantine mint outputs can be accurately recorded in terms of Flemish pounds (£) gros. Similarly the mints of Holland-Zeeland, Namur, and Hainaut became part of the Flemish-Burgundian monetary system only from the 1420s (when their mint records first become available).

** For 1475-99, Ghent and Mechelen mint outputs are also included in the totals for Bruges and Antwerp. From 1500, we currently have processed continuous mint data only for Antwerp and Bruges -- which were certainly the two leading mints of the southern Low Countries.

Table 2

Twenty-Five Year Means of the Values of Aggregate Coinage Outputs and of the Composite Price Indices in England and the Low Countries, 1300-24 to 1575-99

Years	ENGLAND			LOW COUNTRIES ^a					
	Mint Outputs in £ sterling	Price Indices 1450-74= 100	s.d.*	TOTAL	FLANDERS Mint Outputs in £ gros Flemish	BRABANT Price Indices 1450-74= 100	s.d.*	Price s.d.* Indices	
1300-24	50,430	121.5	33.85						
1325-49	11,642 ⁺	102.0	15.66						
1350-74	93,436	135.6	17.40	69,014	89.8	22.99			
1375-99	17,689	108.0	12.37	33,745	108.3	18.00			
1400-24	55,504 ⁺	108.1	11.47	18,059	99.4	12.68	74.3	10.10	
1425-49	29,523	106.2	17.05	66,107	122.3	23.49	107.1	15.10	
1450-74	43,869 ⁺	100.0	7.58	30,398	100.0	11.76	100.0	10.24	
1475-99	25,294	103.2	18.27	70,026	143.5	46.05	139.8	34.16	
				Antwerp and Bruges*					
1475-99			61,712	143.5	46.05	139.8	34.16		
1500-24	62,763	114.0	18.97	69,123			140.0	26.46	
1525-49	186,658 ⁺	166.5	29.18	56,061			187.8	22.24	

1550-74	143,226 ⁺	285.8	40.76	163,120	316.7	65.53
1575-99	116,994	391.2	94.90	88,912	655.6	208.10

^a **Low Countries:** Flanders only 1350-1420; Low Countries: Flanders, Brabant, Namur, Hainaut, Holland-Zeeland, 1420-1499;

^b **Antwerp and Bruges:** with Mechelen and Ghent, 1475-99; Antwerp and Bruges alone, 1500-99.

* standard deviations from the mean.

⁺ Periods with extensive debasements and/or recoinages in England.

Table 3:
English Price-Relatives, Quinquennial Means

1300-04 to 1495-99

Mean of Prices 1450 - 74 = Base 100

Years	Grains	Dairy	Indust.	Compos.	G/Comp	D/Comp	I/Comp
1300-04	105.5	93.3	86.6	94.3	111.88	98.94	91.83
1305-09	117.9	93.9	94.0	101.6	116.04	92.42	92.52
1310-14	119.9	120.7	113.1	114.2	104.99	105.69	99.04
1315-19	225.1	128.9	101.4	164.9	136.51	78.17	61.49
1320-24	156.8	122.0	104.6	132.2	118.61	92.28	79.12
1325-29	117.3	107.6	103.3	110.9	105.77	97.02	93.15
1330-34	141.8	102.3	95.1	117.4	120.78	87.14	81.01
1335-39	89.4	95.2	96.5	93.1	96.03	102.26	103.65
1340-44	92.5	86.4	84.1	88.4	104.64	97.74	95.14
1345-49	105.2	100.7	90.1	100.2	104.99	100.50	89.92
1350-54	147.1	109.8	124.9	128.4	114.56	85.51	97.27
1355-59	123.4	104.3	158.5	125.1	98.64	83.37	126.70

1360-64	163.0	122.5	140.7	143.0	113.99	85.66	98.39
1365-69	142.5	121.7	149.5	136.2	104.63	89.35	109.77
1370-74	152.3	137.5	144.2	145.2	104.89	94.70	99.31
1375-79	106.7	109.6	131.9	112.8	94.59	97.16	116.93
1380-84	113.3	103.8	117.3	110.5	102.53	93.94	106.15
1385-89	96.2	106.3	107.4	102.2	94.13	104.01	105.09
1390-94	113.0	101.6	106.2	107.3	105.31	94.69	98.97
1395-99	112.1	105.5	99.7	107.0	104.77	98.60	93.18
1400-04	129.8	104.4	100.8	114.3	113.56	91.34	88.19
1405-09	102.5	102.7	107.5	103.6	98.94	99.13	103.76
1410-14	111.6	106.9	110.4	109.5	101.92	97.63	100.82
1415-19	122.9	108.1	108.5	113.9	107.90	94.91	95.26
1420-24	104.4	90.9	103.2	99.3	105.14	91.54	103.93
1425-29	106.8	99.5	110.6	105.4	101.33	94.40	104.93
1430-34	129.7	98.2	108.1	113.6	114.17	86.44	95.16
1435-39	130.1	99.3	104.9	113.5	114.63	87.49	92.42
1440-44	97.2	105.2	105.0	102.0	95.29	103.14	102.94
1445-49	91.0	99.7	102.0	96.7	94.11	103.10	105.48

1450-54	104.0	99.2	95.7	100.6	103.38	98.61	95.13
1455-59	90.9	96.6	101.2	95.1	95.58	101.58	106.41
1460-64	100.7	97.2	99.2	99.2	101.51	97.98	100.00
1465-69	104.1	110.5	103.3	106.2	98.02	104.05	97.27
1470-74	100.2	96.6	100.7	98.8	101.42	97.77	101.92
1475-79	89.9	76.5	101.3	87.2	103.10	87.73	116.17
1480-84	144.0	116.7	102.7	128.9	111.71	90.54	79.67
1485-89	97.6	99.1	106.2	100.0	97.60	99.10	106.20
1490-94	105.9	110.3	101.5	105.4	100.47	104.65	96.30
1495-99	92.9	98.4	99.3	94.5	98.31	104.13	105.08

Weighting of the Phelps-Brown and Hopkins Composite English Price Index:

Farinaceous:

wheat, rye, barley, peas, barley malt 42.5%

Dairy, Meat, Fish:

butter, cheese, mutton, beef, herrings 37.5%

Industrial Products:

charcoal, candles, oil, canvas/linen,
shirting, woollen cloth

20.0%

Table 4:
Flemish Price-Relatives, Quinquennial Means
1350-04 to 1495-99
Mean of Prices 1450 - 74 = Base 100

Years	Grains	Dairy	Indust.	Compos.	G/Comp	D/Comp	I/Comp
1350-04	68.2	57.6	38.7	58.6	116.38	98.29	66.04
1355-59	90.3	87.8	44.3	80.2	112.59	109.48	55.24
1360-64	110.1	93.1	55.1	93.1	118.26	100.00	59.18
1365-69	115.9	104.7	68.5	102.4	113.18	102.25	66.89
1370-74	124.0	110.6	101.6	114.8	108.01	96.34	88.50
1375-79	114.8	121.3	110.0	116.1	98.88	104.48	94.75
1380-84	107.4	120.5	109.7	112.5	95.47	107.11	97.51
1385-89	124.8	137.0	111.7	126.4	98.73	108.39	88.37
1390-94	96.9	105.7	89.7	98.5	98.38	107.31	91.07
1395-99	88.3	92.3	80.1	88.1	100.23	104.77	90.92
1400-04	95.9	80.3	85.3	88.3	108.61	90.94	96.60
1405-09	104.5	89.8	101.6	98.7	105.88	90.98	102.94
1410-14	99.1	85.1	103.1	95.0	104.32	89.58	108.53
1415-19	113.2	105.4	104.2	108.6	104.24	97.05	95.95

1420-24	102.6	113.3	103.5	106.6	96.25	106.29	97.09
1425-29	124.6	111.6	110.2	117.1	106.40	95.30	94.11
1430-34	142.1	118.1	115.5	128.3	110.76	92.05	90.02
1435-39	166.3	113.9	115.6	137.7	120.77	82.72	83.95
1440-44	129.2	111.8	116.6	120.6	107.13	92.70	96.68
1445-49	102.2	112.2	112.8	107.8	94.81	104.08	104.64
1450-54	96.8	101.8	110.4	101.3	95.56	100.49	108.98
1455-59	123.0	106.9	105.6	113.9	107.99	93.85	92.71
1460-64	94.7	91.8	95.7	93.9	100.85	97.76	101.92
1465-69	90.7	99.6	96.5	95.0	95.47	104.84	101.58
1470-74	94.8	99.8	91.9	96.0	98.75	103.96	95.73
1475-79	117.9	113.9	94.6	111.8	105.46	101.88	84.62
1480-84	202.2	132.6	99.9	157.2	128.63	84.35	63.55
1485-89	178.8	162.9	133.0	164.0	109.02	99.33	81.10
1490-94	207.8	148.9	182.0	181.9	114.24	81.86	100.05
1495-99	89.3	91.1	151.3	102.4	87.21	88.96	147.75

Weighting of the Flemish Composite Price Index (Munro)

Farinaceous:

wheat, rye, barley, peas, barley malt	44.8%
---------------------------------------	-------

Dairy Products:

butter and cheese	35.1%
-------------------	-------

Industrial Products:

coarse woollen cloth	20.1%
----------------------	-------

Table 5. Silver and Gold Coinage Outputs of the Mints of France, Flanders/Burgundian Low Countries, and England in Kilograms of Pure Metal and in Constant Pounds Sterling Values in 25-Year Totals, 1346-70 to 1471-95

Years	FRANCE		FLANDERS-BURGUNDIAN LOW COUNTRIES		ENGLAND with Calais		TOTAL in Constant Pounds Sterling*
	Silver (pure) in kilograms	Gold (pure) in kilograms	Silver (pure) in kilograms	Gold (pure) in kilograms	Silver (pure) in kilograms	Gold (pure) in kilograms	
1346-1370	136,648	24,969	167,878	44,104	128,908	42,433	6,478,936
1371-1395	21,133	12,242	64,574	12,565	7,162	11,656	1,929,922
1396-1420	84,490	7,743	75,064	2,225	10,289	17,673	1,847,002
1421-1445	106,506	13,155	158,125	17,724	96,059	18,003	3,499,399
1446-1470	6,536	961	24,318	6,716	59,209	9,654	1,094,649
1471-1495	16,880	1,695	163,868	4,324	31,639	7,682	1,410,638
Mean	62,032	10,128	108,971	14,610	55,544	17,850	2,710,091

* Combined values of a kilogram of pure gold and a kilogram of pure silver, based upon their corresponding values in English pounds sterling between 1351 and 1411, when the English coinage and mint prices remained unaltered.

a. Value of 1 kilogram of pure gold = £43.092 sterling. b. Value of 1 kilogram of pure silver = £3.862 sterling

Sources: Harry A. Miskimin, *Money, Prices, and Foreign Exchange in Fourteenth-Century France* (New Haven, 1963); Harry A. Miskimin, *Money and Power in Fifteenth-Century France* (New Haven and London, 1984); John Munro, 'Bullion Flows and Monetary Contraction in Late-Medieval England and the Low Countries,' in John Richards, ed., *Precious Metals in the Later Medieval and Early Modern Worlds* (Durham, North Carolina, 1983), pp. 97-158.

Table 8

**Silver Outputs from the Major South German-Central European Mines
in kilograms of fine metal, in quinquennial means: 1471-75 to 1546-50**

Years	SAXONY Est. Total in kg.	THURINGIA Est. Total in kg.	BOHEMIA Joachimsthal in kg.	BOHEMIA Kutna Hora Kasperska Hora in kg.	SLOVAKIA Fugger- Thurzo kg in kg.	HUNGARY Nagybanya Körmöcbanya in kg.	TYROL: Schwaz in kg.	TOTAL Estimated in kg.
1471-75	4,360.94			4,500.00			4,112.50	12,973.44
1476-80	10,317.46			4,250.00			7,354.00	21,921.46
1481-85	3,743.30			4,000.00		1,800.00	9,745.80	19,289.10
1486-90	2,770.04			3,750.00		3,523.00	12,751.00	22,794.04
1491-95	3,757.33			3,500.00	1,957.12	3,523.00	12,422.75	25,160.21
1496-00	4,641.69			3,250.00	1,957.12	3,795.86	12,094.50	25,739.17
1501-05	8,979.23			3,000.00	2,870.47	4,068.70	11,766.25	30,684.65
1506-10	7,416.41	4,626.19		2,750.00	3,990.76	4,341.57	11,438.00	34,562.92
1511-15	6,925.10	5,713.42		2,500.00	3,632.11	4,614.43	11,109.75	34,494.81
1516-20	5,189.14	6,079.43	3,970.00	2,250.00	1,983.07	4,887.29	10,781.50	35,140.43
1521-25	3,701.18	6,301.73	9,703.24	2,000.00	2,486.46	5,160.14	10,453.25	39,806.00
1526-30	3,425.12	7,889.16	13,795.32	2,000.00	2,269.15	5,433.00	10,125.00	44,936.74
1531-35	6,663.07	6,300.90	16,554.81	2,000.00	2,269.15	5,433.00	10,125.00	49,345.92
1536-40	14,973.18	5,734.07	13,248.01	3,947.00	2,243.58	5,433.00	10,125.00	55,703.84
1541-45	7,739.26	6,144.00	10,936.85	3,997.00	2,141.55	5,433.00	9,963.49	46,355.16
1546-50	4,131.66	6,576.20	10,936.85	700.00	2,141.55	5,433.00	9,963.49	39,882.76

Table 9: Central European Copper Production and Exports: in Kilograms of Fine Copper
with exports to Venice and Antwerp, in quinquennial means: 1491-95 to 1536-40

	Total Outputs Estimated in kg	Exports: Total kg	To Venice kg	To Venice Percent	To Antwerp kg	To Antwerp Percent
1491-95	1,980,746					
1496-00	2,704,948	1,390,392.34	446,742.23	32.13%	72,545.07	5.22%
1501-05	3,041,820	1,403,347.49	409,357.78	29.17%	453,686.44	32.33%
1506-10	4,770,333	1,627,846.98	184,642.02	11.34%	819,753.42	50.36%
1511-15	5,654,047	1,659,584.86	60,358.63	3.64%	968,521.36	58.36%
1516-20	5,203,097	1,388,953.66	29,544.60	2.13%	606,520.05	43.67%
1521-25	5,341,702	1,434,963.13	66,809.17	4.66%	488,633.13	34.05%
1526-30	5,275,248	1,062,740.62	54,876.61	5.16%	625,457.93	58.85%
1531-35	4,628,886	1,008,644.47	111,652.65	11.07%	543,443.92	53.88%
1536-40	4,336,708	1,207,783.75	150,543.95	12.46%	593,242.84	49.12%