

**ECO 2210Y**

**Topics in the Economic and Social History of Later Medieval and Renaissance Europe, 1250 - 1600**

**Topic No. 9: Money and Economic Conjuncture in Late-Medieval Europe: Monetary Forces and Economic Crises during the 14th and 15th Centuries**

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### **C. MINING: Special Studies on Silver and Gold Mining**

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### **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)**

<b>Years (25)</b>	<b><u>ENGLAND</u></b>		<b><u>LOW COUNTRIES</u> *</b>			
	<b>Silver kg.</b>	<b>Gold kg.</b>	<b>Current £ sterling</b>	<b>Silver kg.</b>	<b>Gold kg.</b>	<b>Current £ gros F1.</b>
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
				<b><u>Bruges and Antwerp**</u></b>		
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 <sup>a</sup>			BRABANT	
	Mint Outputs in £ sterling	Price Indices 1450-74=100	s.d.*	Mint Outputs in £ gros Flemish	Price Indices 1450-74=100	s.d.*	Price Indices	s.d.*
1300-24	50,430	121.5	33.85					
1325-49	11,642 <sup>+</sup>	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 <sup>+</sup>	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 <sup>+</sup>	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
				<u>Antwerp and Bruges*</u>				
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 <sup>+</sup>	166.5	29.18	56,061			187.8	22.24
1550-74	143,226 <sup>+</sup>	285.8	40.76	163,120			316.7	65.53
1575-99	116,994	391.2	94.90	88,912			655.6	208.10

<sup>a</sup> **Low Countries:** Flanders only 1350-1420; Low Countries: Flanders, Brabant, Namur, Hainaut, Holland-Zeeland, 1420-1499;

<sup>b</sup> **Antwerp and Bruges:** with Mechelen and Ghent, 1475-99; Antwerp and Bruges alone, 1500-99.

\* standard deviations from the mean.

<sup>+</sup> 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**

<b>Years</b>	<b>Grains</b>	<b>Dairy</b>	<b>Indust.</b>	<b>Compos.</b>	<b>G/Comp</b>	<b>D/Comp</b>	<b>I/Comp</b>
<b>1300-04</b>	105.5	93.3	86.6	94.3	111.88	98.94	91.83
<b>1305-09</b>	117.9	93.9	94.0	101.6	116.04	92.42	92.52
<b>1310-14</b>	119.9	120.7	113.1	114.2	104.99	105.69	99.04
<b>1315-19</b>	225.1	128.9	101.4	164.9	136.51	78.17	61.49
<b>1320-24</b>	156.8	122.0	104.6	132.2	118.61	92.28	79.12
<b>1325-29</b>	117.3	107.6	103.3	110.9	105.77	97.02	93.15
<b>1330-34</b>	141.8	102.3	95.1	117.4	120.78	87.14	81.01
<b>1335-39</b>	89.4	95.2	96.5	93.1	96.03	102.26	103.65
<b>1340-44</b>	92.5	86.4	84.1	88.4	104.64	97.74	95.14
<b>1345-49</b>	105.2	100.7	90.1	100.2	104.99	100.50	89.92
<b>1350-54</b>	147.1	109.8	124.9	128.4	114.56	85.51	97.27
<b>1355-59</b>	123.4	104.3	158.5	125.1	98.64	83.37	126.70
<b>1360-64</b>	163.0	122.5	140.7	143.0	113.99	85.66	98.39
<b>1365-69</b>	142.5	121.7	149.5	136.2	104.63	89.35	109.77
<b>1370-74</b>	152.3	137.5	144.2	145.2	104.89	94.70	99.31
<b>1375-79</b>	106.7	109.6	131.9	112.8	94.59	97.16	116.93
<b>1380-84</b>	113.3	103.8	117.3	110.5	102.53	93.94	106.15
<b>1385-89</b>	96.2	106.3	107.4	102.2	94.13	104.01	105.09
<b>1390-94</b>	113.0	101.6	106.2	107.3	105.31	94.69	98.97
<b>1395-99</b>	112.1	105.5	99.7	107.0	104.77	98.60	93.18

<b>1400-04</b>	129.8	104.4	100.8	114.3	113.56	91.34	88.19
<b>1405-09</b>	102.5	102.7	107.5	103.6	98.94	99.13	103.76
<b>1410-14</b>	111.6	106.9	110.4	109.5	101.92	97.63	100.82
<b>1415-19</b>	122.9	108.1	108.5	113.9	107.90	94.91	95.26
<b>1420-24</b>	104.4	90.9	103.2	99.3	105.14	91.54	103.93
<b>1425-29</b>	106.8	99.5	110.6	105.4	101.33	94.40	104.93
<b>1430-34</b>	129.7	98.2	108.1	113.6	114.17	86.44	95.16
<b>1435-39</b>	130.1	99.3	104.9	113.5	114.63	87.49	92.42
<b>1440-44</b>	97.2	105.2	105.0	102.0	95.29	103.14	102.94
<b>1445-49</b>	91.0	99.7	102.0	96.7	94.11	103.10	105.48
<b>1450-54</b>	104.0	99.2	95.7	100.6	103.38	98.61	95.13
<b>1455-59</b>	90.9	96.6	101.2	95.1	95.58	101.58	106.41
<b>1460-64</b>	100.7	97.2	99.2	99.2	101.51	97.98	100.00
<b>1465-69</b>	104.1	110.5	103.3	106.2	98.02	104.05	97.27
<b>1470-74</b>	100.2	96.6	100.7	98.8	101.42	97.77	101.92
<b>1475-79</b>	89.9	76.5	101.3	87.2	103.10	87.73	116.17
<b>1480-84</b>	144.0	116.7	102.7	128.9	111.71	90.54	79.67
<b>1485-89</b>	97.6	99.1	106.2	100.0	97.60	99.10	106.20
<b>1490-94</b>	105.9	110.3	101.5	105.4	100.47	104.65	96.30
<b>1495-99</b>	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**

<b>Years</b>	<b>Grains</b>	<b>Dairy</b>	<b>Indust.</b>	<b>Compos.</b>	<b>G/Comp</b>	<b>D/Comp</b>	<b>I/Comp</b>
<b>1350-04</b>	68.2	57.6	38.7	58.6	116.38	98.29	66.04
<b>1355-59</b>	90.3	87.8	44.3	80.2	112.59	109.48	55.24
<b>1360-64</b>	110.1	93.1	55.1	93.1	118.26	100.00	59.18
<b>1365-69</b>	115.9	104.7	68.5	102.4	113.18	102.25	66.89
<b>1370-74</b>	124.0	110.6	101.6	114.8	108.01	96.34	88.50
<b>1375-79</b>	114.8	121.3	110.0	116.1	98.88	104.48	94.75
<b>1380-84</b>	107.4	120.5	109.7	112.5	95.47	107.11	97.51
<b>1385-89</b>	124.8	137.0	111.7	126.4	98.73	108.39	88.37
<b>1390-94</b>	96.9	105.7	89.7	98.5	98.38	107.31	91.07
<b>1395-99</b>	88.3	92.3	80.1	88.1	100.23	104.77	90.92
<b>1400-04</b>	95.9	80.3	85.3	88.3	108.61	90.94	96.60
<b>1405-09</b>	104.5	89.8	101.6	98.7	105.88	90.98	102.94
<b>1410-14</b>	99.1	85.1	103.1	95.0	104.32	89.58	108.53
<b>1415-19</b>	113.2	105.4	104.2	108.6	104.24	97.05	95.95
<b>1420-24</b>	102.6	113.3	103.5	106.6	96.25	106.29	97.09
<b>1425-29</b>	124.6	111.6	110.2	117.1	106.40	95.30	94.11
<b>1430-34</b>	142.1	118.1	115.5	128.3	110.76	92.05	90.02
<b>1435-39</b>	166.3	113.9	115.6	137.7	120.77	82.72	83.95
<b>1440-44</b>	129.2	111.8	116.6	120.6	107.13	92.70	96.68
<b>1445-49</b>	102.2	112.2	112.8	107.8	94.81	104.08	104.64
<b>1450-54</b>	96.8	101.8	110.4	101.3	95.56	100.49	108.98

<b>1455-59</b>	123.0	106.9	105.6	113.9	107.99	93.85	92.71
<b>1460-64</b>	94.7	91.8	95.7	93.9	100.85	97.76	101.92
<b>1465-69</b>	90.7	99.6	96.5	95.0	95.47	104.84	101.58
<b>1470-74</b>	94.8	99.8	91.9	96.0	98.75	103.96	95.73
<b>1475-79</b>	117.9	113.9	94.6	111.8	105.46	101.88	84.62
<b>1480-84</b>	202.2	132.6	99.9	157.2	128.63	84.35	63.55
<b>1485-89</b>	178.8	162.9	133.0	164.0	109.02	99.33	81.10
<b>1490-94</b>	207.8	148.9	182.0	181.9	114.24	81.86	100.05
<b>1495-99</b>	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	136648	24969	167878	44104	128908	42433	6478936
1371-1395	21133	12242	64574	12565	7162	11656	1929922
1396-1420	84490	7743	75064	2225	10289	17673	1847002
1421-1445	106506	13155	158125	17724	96059	18003	3499399
1446-1470	6536	961	24318	6716	59209	9654	1094649
1471-1495	16880	1695	163868	4324	31639	7682	1410638
<b>Mean</b>	<b>62032</b>	<b>10128</b>	<b>108971</b>	<b>14610</b>	<b>55544</b>	<b>17850</b>	<b>2710091</b>

\* 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 6: 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	THURINGIA	BOHEMIA	BOHEMIA	SLOVAKIA	HUNGARY	TYROL:	TOTAL
5 -yr pr.	Est. Total	Est. Total	Joachimsthal	Kutna Hora	Fugger-	Nagybanya	Schwaz	Estimated
				Kasperska Hora	Thurzo kg	Körmocbanya		
	in kg.	in kg.	in kg.	in kg.	in kg.	in kg.	in kg.	in kg.
1471-75	4,360.94			4,500.0			4,112.50	12,973.44
1476-80	10,317.46			4,250.0			7,354.00	21,921.46
1481-85	3,743.30			4,000.0		1,800.0	9,745.80	19,289.10
1486-90	2,770.04			3,750.0		3,523.0	12,751.00	22,794.04
1491-95	3,757.33			3,500.0	1,957.12	3,523.0	12,422.75	25,160.20
1496-00	4,641.69			3,250.0	1,957.12	3,795.9	12,094.50	25,739.11
1501-05	8,979.23			3,000.0	2,870.47	4,068.7	11,766.25	30,684.65
1506-10	7,416.41	4,626.19		2,750.0	3,990.76	4,341.6	11,438.00	34,562.92
1511-15	6,925.10	5,713.42		2,500.0	3,632.11	4,614.4	11,109.75	34,494.88
1516-20	5,189.14	6,079.43	3,970.00	2,250.0	1,983.07	4,887.3	10,781.50	35,140.44
1521-25	3,701.18	6,301.73	9,703.24	2,000.0	2,486.46	5,160.1	10,453.25	39,806.06
1526-30	3,425.12	7,889.16	13,795.32	2,000.0	2,269.15	5,433.0	10,125.00	44,936.77
1531-35	6,663.07	6,300.90	16,554.81	2,000.0	2,269.15	5,433.0	10,125.00	49,345.92
1536-40	14,973.18	5,734.07	13,248.01	3,947.0	2,243.58	5,433.0	10,125.00	55,703.84
1541-45	7,739.26	6,144.00	10,936.85	3,997.0	2,141.55	5,433.0	9,963.49	46,355.15
1546-50	4,131.66	6,576.20	10,936.85	700.0	2,141.55	5,433.0	9,963.49	39,882.70

