GDP

*

1402 1626

GDP 0.29
8 (521)

1990 200 260
600 90
20 3 10
60% 90 0.83
GDP

China's GDP in the Ming Dynasty

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Abstract: We estimate GDP and its composition of the Chinese Ming Dynasty by using methods of modern national income accounting, in order to provide a foundation for further systemic research of Chinese economic history.   Searching through a large amount of historical literature, such as "Ming shilu", "Mingshi shihuo zhi", "Da Ming huidian", "fiscal notes in the Wanli Emporeor", and surveying the findings of quantitative economic history conducted by the pioneers in this field, we calculated the major economic variables of the Ming Dynasty between 1402 and 1626. We also compare our findings with those of the British economy before the Industrial Revolution in order to understand China's relative standing in the world economy at that time. We conclude that in most periods, the Ming Dynasty's GDP grew slowly, the average annual GDP growth rate being 0.29 ; GDP per capita did not change significantly, which maintained at the level of 8 gongshi (around 429.6 kg) wheat per capita; Measured by the purchasing power of the 1990's USD dollar, Ming Dynasty's GDP per capita was about 200 dollars with the maximal estimation being 260 dollars, which is significantly below the level of 600 dollars that Angus Maddison calculated; Agriculture's share in GDP fluctuated around 90% and handcrafts and commerce activities did not break through ceiling of 20% of total GDP;   The share of government revenue in GDP fluctuated between 3   and 10   with military expenditure accounting for 60% to 90   of central government's total expenditure. Finally, total savings were 0.83   of GDP on average, implying a slow pace of capital accumulation.
Key Words: the Ming Dynasty   GDP   Economic Structure

"　　　"
GDP

GDP

GDP

GDP

Angus
Maddison   1

1820

GDP   32.4%   50   960
1280   1700   GDP   1990   450   600
15   960

17   19

1997
20   50

1888   18

2001
1986   3   105   120   "Long-term Changes in Prices,
Wages and the Size of the Monetary Economy in Pre-industrial China,1000-1770",

18   1700   1750   1800

·   1999   57

2

50   1280   1820

                                                      GDP
                          GDP

                                                        GDP   GDP

         15 16

                                                                          GDP
GDP
                          1402 1626   1700 1760

_____

                                                        2005   4

                                                              1993   1
                                                                  "   "

220   0.29

8   521   1990   200
260   600
90
20   3
10
60%   90   0.83

GDP   GDP
GDP   GDP
GDP   1990

GDP

GDP   GDP
GDP   GDP   GDP
GDP   GDP   GDP
GDP   GDP
1.   GDP

1700 1750

1800

140   79
1381   1626

Perkins, D.H.
1400   4   2   3   7
1600   5
1600
6   7
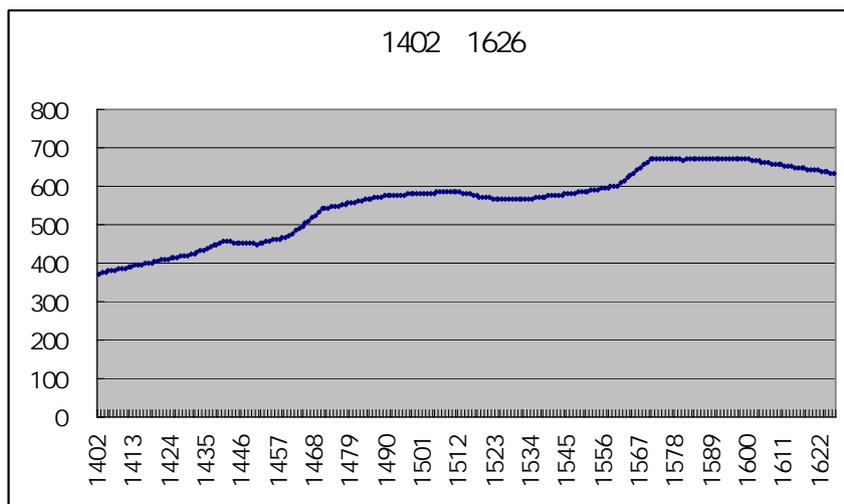Paul K. C. Liu and Kuo-shu Hwang   1400

GDP   Paul K. C. Liu and Kuo-shu Hwang
1400   10   1

1

Paul K. C. Liu and Kuo-shu Hwang, Population change and Economic Development in Mainland China since 1400, in "Modern Chinese Economic History", Edited by Chi-ming Hou and Tzongs-hian Yu, Acadimia sinica, 1977, p.81.

1985   3   125 160
(Perkins, D.H.)   : 1368   1968   1984
310
2003   20
Paul K. C. Liu and Kuo-shu Hwang ,Population change and Economic Development in Mainland China since 1400, in "Modern Chinese Economic History", Edited by Chi-ming Hou and Tzong-shian Yu, Academia sinica,1977, p.81.

37

8

2.72

1.88   256

220   240   230

1600   171520000   171601741

10

80

1560

3   8400

18.57%

225

: 1368   1968   17
1980   3   7   13
1985   23   11   19   12
1989   2   1996
1985   173   189
2002   104   109
373   396
1994   196   197

2005   5   97
92.35

391

1988   700

0.5   1

3   "The economy of the Chinese mainland : national income and economic development, 1933-1959", Princeton University Press, 1965,p.130.
1933

85　　15

2

"
"　　　　　　　　　　　　　　　10　　　　　　　　　　15
79

1933

0.85
1933
0.83

1　10

11
12%

_____

1985　　187

1987　　3　　　111
72 "　　　　　　　"
: 1368　1968　　　385

7

8

2. GDP

15 194

30%

"

"

156 106

2400

600

112

220

1991 141

194 1 15 12 139
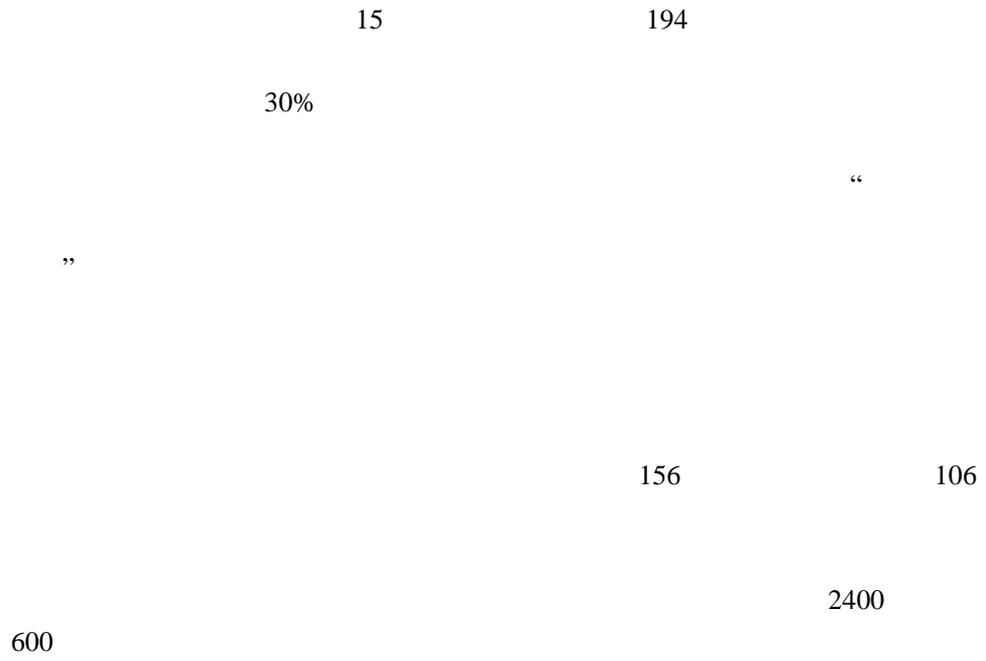
1997 518

8

1933   85   5   6

1933

1933   62

58

10   2   3
10   13690   10   15

1150   11000

127000   380000

30

2000

---

201   ·

1993   105   116

121   122   7-1

5   5.5

1.5   8   3500

203

711

50   10   10

30   106

9

3000

19   26   1393
6   24   1391

0.41
0.3   0.4   0.4
4.88

1.5
90

7
6   1760
265
200
220
31.5
"

”　　　　　“　　　　　　　　　　　　　　　　　　　”　“

”

300　　　　　　　　500

0.167　　　　　　　　　　　　　　　　　　　　90
1600　　　　　　　66914531　1600　　　　　　　　29290724

0.438

38

245　　　　　45　　5
137　　1.8　　　　　　　　　　　　　　　　15
8.9　　　　2.8　　　　8.1　　　　3.1

194

194

19　　　　“　　　30　　”　　4　6
486000　　　208000　　　　　9
•,⁻0F Ì 5⁊⁓@ †Ô⁊"€oR·ᴀ4ᴀ$2ᴨ₸⁊₁₅Đ₁ᴿÙ¾ ⁊ᴘᴋᵣ₂ℚⁱⁿ⁸> ?

1463   1402

1463

     "   "

          5817   1939

               2764   13

                         13   1939

          1933

               51   1933

                                        55

               1402   1434   "   "

10   1435

                                                                      75

                              15   1426 1434

     50   156000

               1402   1425   15   1426   1434   50

     1434   156000   1402   1434

          "   "

                                                  40
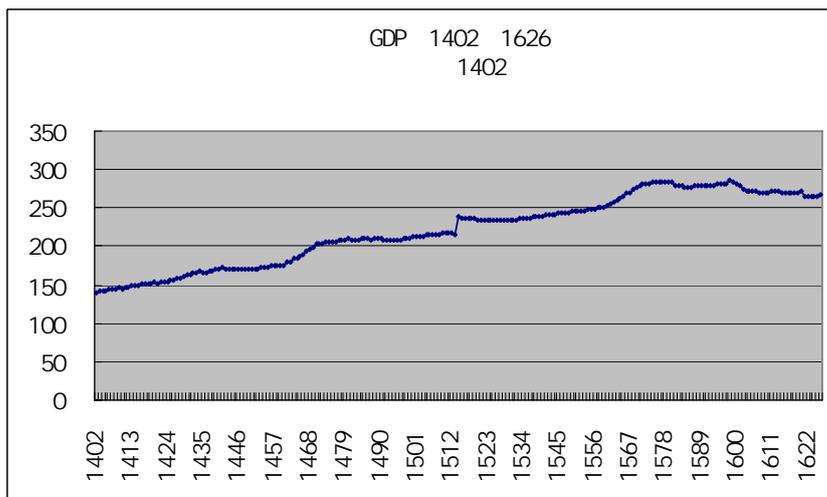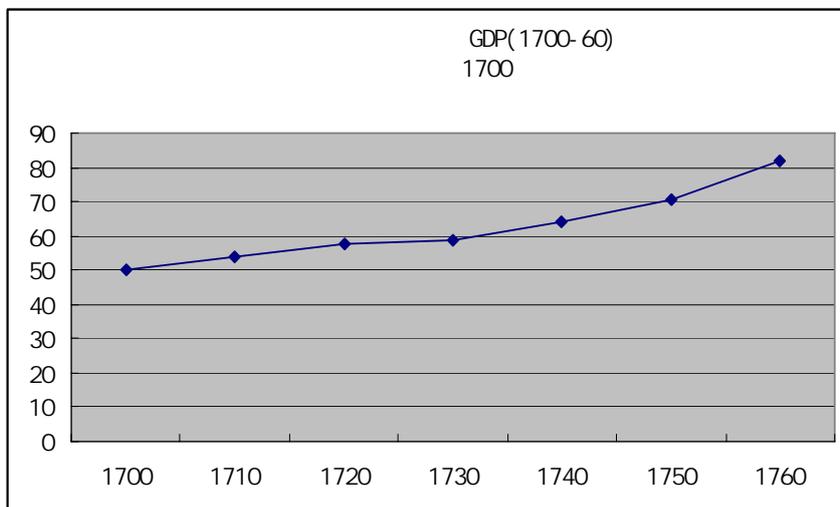

3.   GDP

     GDP

          242   "   30   2"

( )   1996

                                   6   13   3604

     8294   5817

                         715

                    53

               77

               23

                                             1957   954

                         4

                    12

1933

GDP

1480   GDP   GDP
GDP   0.07   1480   1480   12
GDP   275824477   GDP   24473786   1480
GDP   15014913   GDP   0.79%
1480   GDP   1480-1626

1480
GDP   GDP   0.07
GDP

2   1402   1626
GDP   GDP
1.4   16   2.8
2   2.6
1700   60
3

_____

C   1

254

1990   3   68
1402   1626
17   30
17   30

13

图 2   GDP

GDP 1402 1626
1402

705

1700   1760   GDP   图 2

220   GDP   2   60
        2

图 3

GDP(1700-60)
1700

Roderick Floud and Donald McCloskey "The Economic History of Britain Since 1700" New York: Cambridge University Press, 1981, p.64.

1449   1581

6   Roderick Floud and Donald McCloskey "The Economic History of Britain Since 1700" New York: Cambridge University Press, 1981 p.136.

1700 1760

20 1 1

表 1

1402 1449	0.410		1700 20	0.724	
1450 1581	0.382		1721 40	0.564	
1582 1626	-0.098		1741 60	1.308	

2 3

GDP

GDP GDP
GDP

3

4
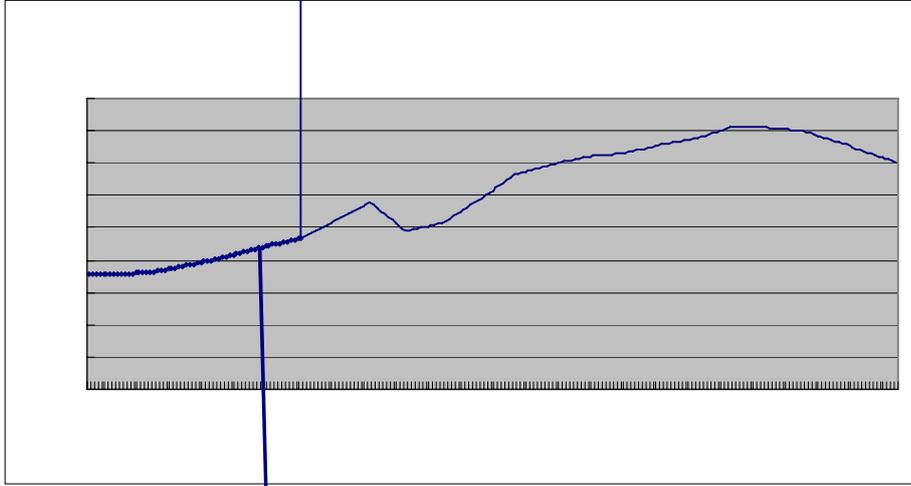
1700   1760
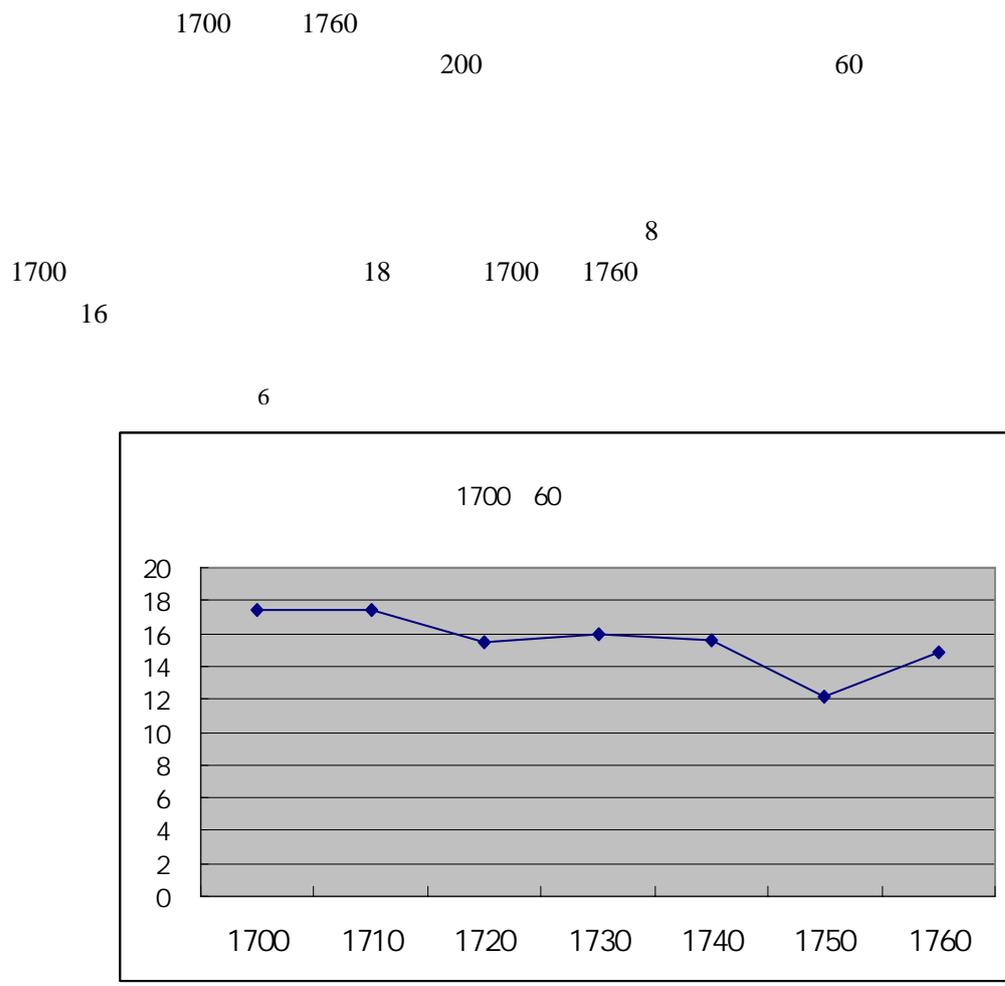
200   60

                                                        8
1700   18   1700   1760
    16

            6

1700 60

20							
18							
16							
14							
12							
10							
8							
6							
4							
2							
0							
1700	1710	1720	1730	1740	1750	1760	

            3   Floud and McCloskey, "The Economic History of Britain Since
1700" p.21   3.9
        867   1   31.1   875

    1   2   4   5   GDP
                                        16   20   17
    GDP   GDP   GDP

        1990   GDP

    1990

        1760   1860   2   Floud and McCloskey, "The Economic
History of Britain Since 1700" p.21, 136.
                1860   35   Floud and McCloskey," The Economic History of Britain Since
1700″ p.136.

1990

1990

1990

1990

1990 GDP GDP 2

1402 1990

1990 1990

2	1402 1990	
	1402	1990
	10.59 /	8.04 /
	8.472 /	2.61 /
	1 /	4.82 /
	0.004123 /	114.93 / 1000
	0.003125 /	123 /
	5 /	385 /
	0.12 /	124 /

1990

1990

GDP$_0$ GDP$_1$ 1990

P$_0$ Q$_0$ P$_1$ Q$_1$ 1990

M$_0$ S$_0$

M$_1$ S$_1$ 1990

2 P$_1$

Q$_1$ 1990

1990

GDP$_0$ P$_0$M$_0$ Q$_0$S$_0$
GDP$_1$ P$_1$M$_0$ Q$_1$S$_0$

$$GDP_1 \quad P_1M_0 \quad Q_1S_0 \quad \frac{P_1M_0}{P_1M_0 + Q_1S_0} = \frac{P_1M_0}{1+\dfrac{Q_1S_0}{P_1M_0}} \quad P_1M_0 \times \quad 1 \quad \frac{Q_1S_0}{P_1M_0}$$

1990

18

$$\frac{Q_1 S_0}{P_1\,M_0} \qquad \frac{Q_1 S_0 (S_1/S_1)}{P_1 M_0 (M_1/M_1)} = \frac{Q_1 S_1}{P_1 M_1} \times \frac{S_0/S_1}{M_0/M_1}$$

00264Tj/TT0 1 Tf5-.6212-2.768 Td(M)2832(0)Tj/T

90

10 30 70

$$\frac{Q_1 S_1}{P_1 M_1}$$ 7/747C3Tj/C21 1 Tf0 Tc

$$\frac{Q_1 S_0}{P_1\,M_0} \qquad \frac{Q_1 S_0 (S_1/S_1)}{P_1 M_0 (M_1/M_1)} = \frac{Q_1 S_1}{P_1 M_1} \times \frac{S_0/S_1}{M_0/M_1}$$

8　　　　　　　　　　　1990　　　　　　　　GDP　　　　　1700　　　1760

　　　　　　　　　　　　　　　　　　800　　　1760　　　　　1000

　　1700　　　GDP　　870　　　8　　　933

　1990

　　　　　　8　　1990　　　　　　　　　　　　　　GDP

1990　　　　　　　　　　　　GDP

1200						
1000						
800						
600						
400						
200						
0						
1700	1710	1720	1730	1740	1750	1760
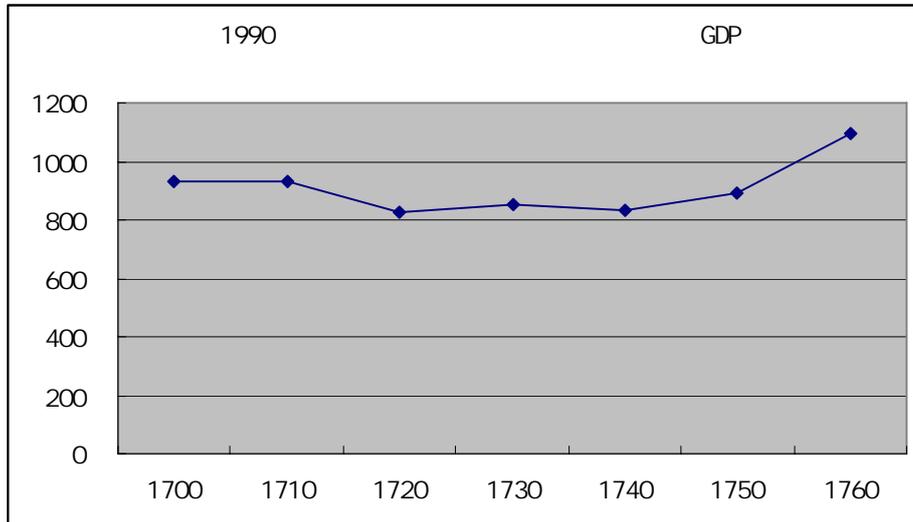
　　　　　　6　　　　　　　　　　2

Simon　Kuznets

70

　　　　　　　　　　9

1402　1626

　　　　2

　　　　　　　　　　　　　　　　　　　　1985　　160

　　　　.

9 1402 1626

90

16 90
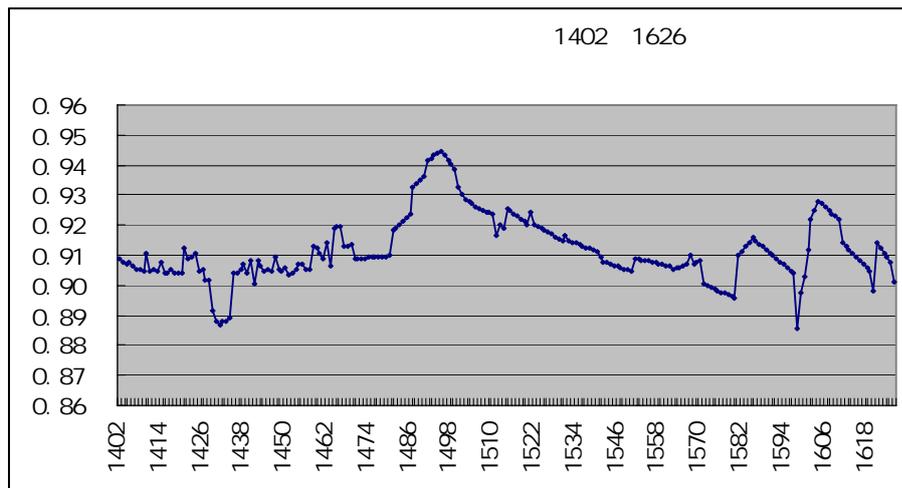
10 1700 1760

1700

40 90 1760 33

18

Ta-chung Liu and Kung-chia Yeh 20

30

65 79

10

1700 60

41
40
39
38
37
36
35
34
33
32
31

1700 1710 1720 1730 1740 1750 1760
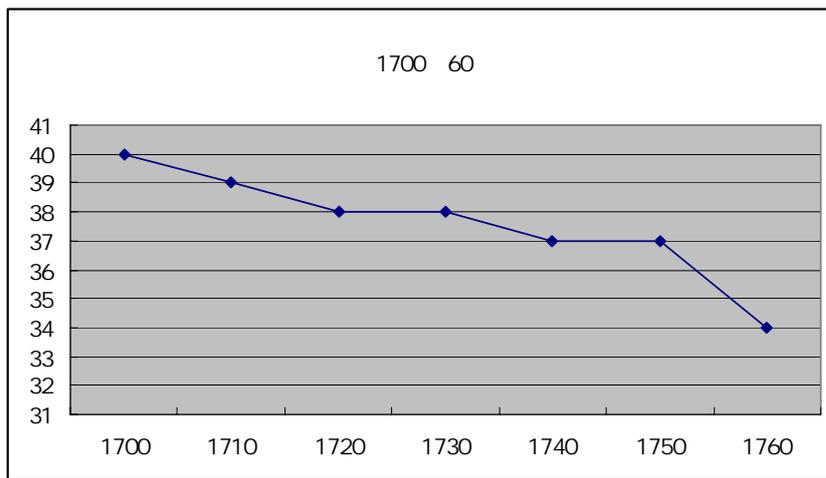
3 p.64.

15 79

1402 1626

30 40 Floud and Mccloskey ″ The Economic History of Britain Since
1700″ p.64.
Ta-chung Liu and Kung-chia Yeh, "The Economy of the Chinese Mainland", Princeton University Press, 1965,
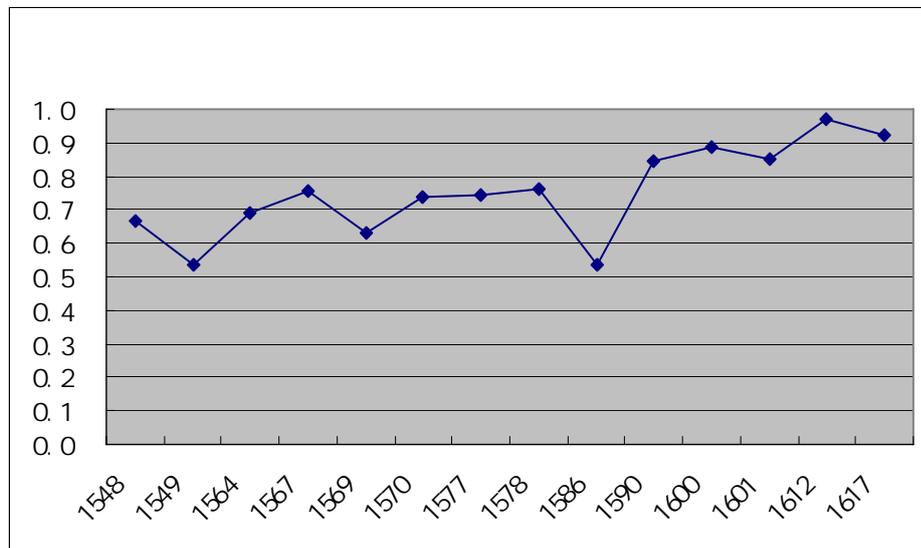pp.66-69.

1435

1435

1442

400   100

70

15　　　16　　　　　　　　4

6　　　　　　"　"
10　　　　　12　　　　　　　　　1740
9　　　1760　　　　　　　1770　　6
1740　7　　　　1770
3

12

Floud and McCloskey　"The Economic History of Britain Since 1700"　p.14.

"　"

276　　　　　　　　　　40　　　　　　　2
80

13

60   80   90

100

2.25

13

6   1   1973   12   196   197

239

240

5   Wang, Yeh-chien,Land taxation in Imperial
China, 1750-1911,Harvard University Press, 1973,pp.127-178,131-133.

Dwight H. Perkins, " Government as an Obstacle to Industrialization: The Case of Nineteenth-Century
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Roderick Floud and Donald McCloskey " The Economic History of Britain Since 1700″   p.14.

3.6

1.4 "　　　" "
"

3　　　　　　　　　3

0.389　　　　　　　0.167

0.167

"
"

2.16　　　　"　　　　　　　"

3

5

3.3

1933

90　　　　　　　10

ÐÇ　　　0

14

15

18

15   6   10

20   18
1700
3   1770   5   6

0.65   10
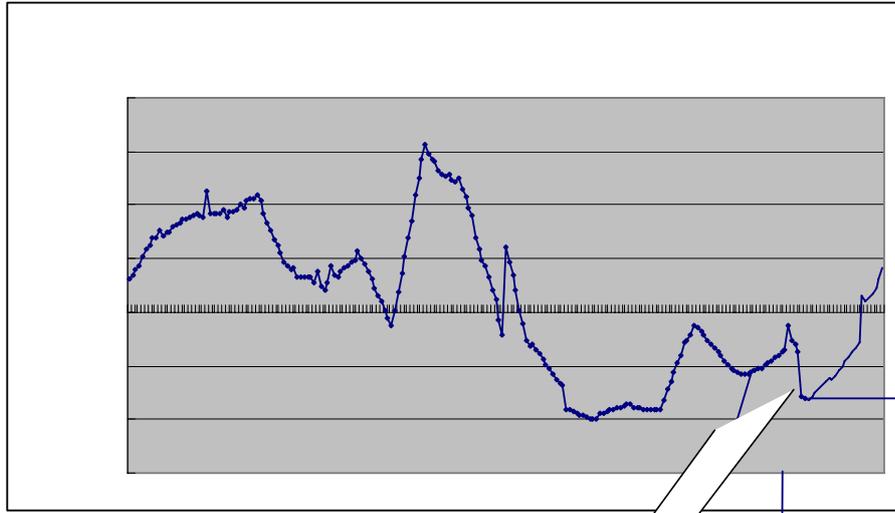
Lucas
1800
1800   1800
1800

14
2   GDP   4

1700   1750   28.1   27
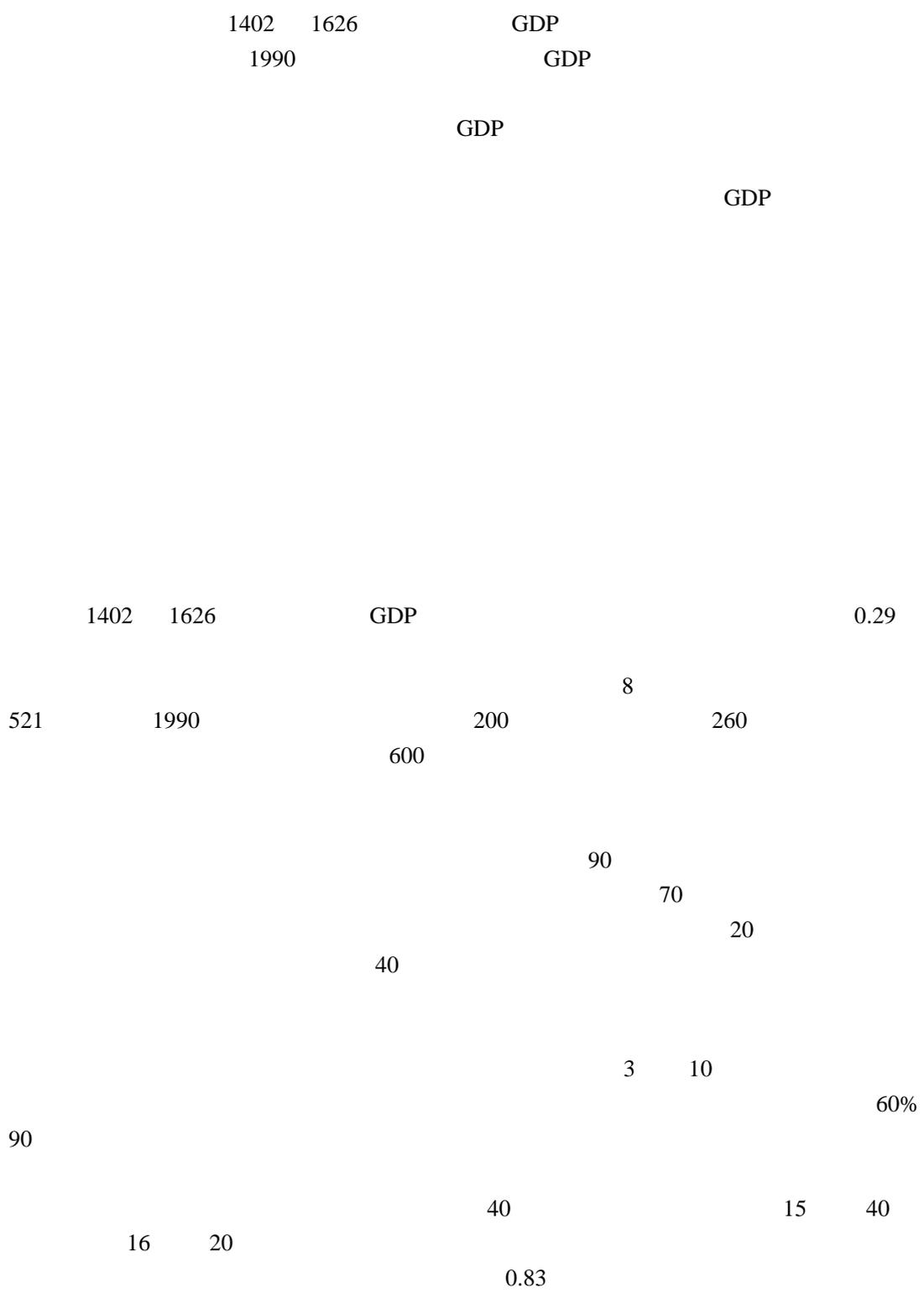60   63
398   20   30
"The
Economic History of Britain Since 1700",p.27.

Floud and McCloskey," The Economic History of Britain Since 1700", New York: Cambridge University Press, 1981, pp.2-16.

Lucas,Robert E.Jr., Industrial Revolution: Past and Future, The Region,Annual Report,Federal Reserve Bank of Minneapolis,2003.

2003   116 125

1402　1626　　　　　　GDP
1990　　　　　　　　　GDP

GDP

GDP

1402　1626　　　　　GDP　　　　　　　　　　　　　　　　0.29

8
521　　　　1990　　　　　　　　　　200　　　　　　　260
600

90
70
20
40

3　　10
60%
90

40　　　　　　　15　　40
16　　20
0.83

16   20

16   17