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CHINA'S CAPITAL STOCK SERIES BY REGION AND SECTOR

by

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1 Introduction

China's economic reforms and subsequently rapid growth for three decades (1978-2007) have attracted a lot of attention both inside and outside the country. As a result, a vast literature has emerged.[1] While working on China's economic statistics, researchers have confronted a major problem, ie. no capital stock data are reported in the Chinese statistical system. Subsequently, researchers have attempted to derive China's capital stock data by themselves. Zhang (1991), He (1992) and Chow (1993) are examples of earlier studies on capital stock estimates and economic growth in China. Zhang and He represent two of the pioneering studies conducted by scholars inside China. Their capital stock estimates are based on the statistics of "accumulation" defined under the traditional Material Product System (MPS) in China.[2] The latter was replaced by the UN-adopted System of National Accounts (SNA) in the earlier 1990s and subsequently reporting of the "accumulation" information was discontinued in 1993. Chow (1993) is one of the earlier studies published in English. His study covered the period of 1952-1985. He derived capital stock series for five economic sectors ie. agriculture, industry, construction, transportation and commerce. Chow's empirical estimations were based on data of national income, accumulation of fixed assets and circulating funds. He also derived an estimate of capital stock in agriculture by using data of the original value of

[1] Examples include the World Bank (1997), Maddison (1998), Woo (1998), Bramall (2000), Wang and Fan (2000), Young (2003), Wu (2004, 2008) and Garnaut and Song (2004, 2005).
[2] Zhang and Zhang (2003) also used the accumulation data. Wu (1993) presented some discussion comparing MPS with SNA (System of National Accounts).

fixed assets. It is well known that data on "accumulation" or "original value" of fixed assets suffer from the serious problem of double-accounting (eg. Chen et al. 1988).

Li et al. (1995) derived capital stock series by using the values of fixed and current assets. Their estimates suffer from the same problem as those in Chow (1993). Subsequently, Borensztein and Ostry (1996) and Woo (1998) applied the same database compiled by Li et al. (1995). More recent works include Hu and Khan (1997), World Bank (1997), Maddison (1998), Chow and Li (2002) and Holz (2006). Those studies cited so far mainly focused on capital stock estimates at the national level. There is a lack of investigation at the regional and sector levels.[3] The objective of this study is to review previous methods as well as findings and employs the recently released national accounts figures to derive capital stock series for China's thirty-one regions and three economic sectors (i.e. agriculture, manufacturing and services) within each region. A review of the general methods of capital stock measurement is presented in Section 2. This is followed by discussion of the approach employed for the construction of capital stock series for three sectors in China's regional economies in Section 3. The estimation results and discussion are presented in Sections 4 and 5, respectively. Finally summary remarks are reported in the concluding section (Section 6).

2 Capital Stock Measurement Techniques

The approach of estimating capital stock values in this study belongs to the category of the conventional perpetual inventory method. The value of capital stock is estimated using gross investment or capital formation data in each year. Symbolically, the estimation technique can be expressed as

$$K_{ij,t} = (1-\delta_{ij})K_{ij,t-1} + \Delta K_{ij,t} \qquad (1)$$

[3] Chow (1993) did report estimates for five sectors (agriculture, industry, construction, transportation and commerce) and Wu (1995) considered three sectors (agriculture, urban state and rural industry). More recently, Zhang (2008) and Wu (2008) provided capital stock estimates for China's regional economies.

where $K_{ij,t}$ is the real value of capital stock for the i[th] sector of the j[th] region or economy in the t[th] year, $\Delta K_{ij,t}$ the real value of incremental capital stock or gross capital formation and δ_{ij} the rate of depreciation. Given the initial capital stock, $K_{ij,0}$, for the i[th] sector of the j[th] region or economy, Equation (1) can then be converted into

$$K_{ij,t} = \Sigma_0^t (1-\delta_{ij})^k \Delta K_{ij,t-k} + K_{ij,0}(1-\delta_{ij})^t \quad (2)$$

It is clear in Equation (2) that the value of capital stock can be computed if the initial value of capital stock, $K_{ij,0}$, and the rate of depreciation, δ_{ij}, are known. For the latter, researchers have resorted to various sources such as national accounts, accounting records at the firm level, findings in the existing literature and ad hoc assumptions. As a result, different rates of depreciation have been used, ranging from 3.6 to 17.0 per cent (Table 1). Thus, the choice of the rate of depreciation is itself controversial. This study proposes an alternative approach to derive the rates of depreciation for the Chinese regions and economic sectors. In particular, different rates for each sector of China's regional economies are computed. This is the first of its kind in the literature.

As for the derivation of the initial value of capital stock, various approaches have been employed as well. Subsequently, different results have been derived (Table 1). While Chow (1993) provided detailed information and conducted sensitivity analysis, Li et al. (1995) and Maddison (1998) did not elaborate how they estimated the initial value, to cite a few. The main approaches employed in the literature are surveyed in the following section. [4] In general, the existing literature has used four categories of techniques in estimating the initial value of capital stock (Wu 2008). They are here called the backcasting, the integral, the growth rate and other approaches, respectively.

[4] Qian and Smyth (2006) also estimated regional capital stock with 1990 being treated as the initial year. They summed up "fixed assets accumulation" for all years from 1949 to 1989 as the initial value of capital stock and then assumed a rate of depreciation of 5% to estimate regional capital stock up to the year 2000.

Table 1 Selected Rates of Depreciation and Initial Values of Capital Stock

Authors	Depreciation rates (%)	Initial value in 1952 (billion yuan in 1952 prices)
Zhang (1991)	n.a.	200.0[b]
He (1992)	n.a.	50.8[b]
Chow (1993)	n.a.	175.0
Hu and Khan (1997)	3.6	175.0
World Bank (1997)	4.0	n.a.
Perkins (1988)	5.0	200.6
Woo (1998)	5.0	n.a.
Meng and Wang (2000)	5.0	180.0[c]
Wang and Yao (2003)	5.0	175.0
Chow and Li (2002)	5.4[a]	221.3
Young (2003)	6.0	n.a.
Maddison (1998)	17.0	n.a.
Wu (2004)[d]	7.0	n.a.
Zhang (2008)[d]	9.6	n.a.

Notes [a] This rate was applied for the period of 1978-1998 only.
[b] These numbers are cited in Zhang (2008).
[c] This is 1953 value in 1980 prices.
[d] Wu (2004) and Zhang (2008) are regional studies. Wu's approach is similar to this paper. Thus no initial values of capital stock are needed. Zhang assumes that the initial value of capital stock in 1952 is equal to the value of fixed investment divided by 10%.
n.a. = not available.

The backcasting approach

According to the backcasting method, the data series for $\Delta K_{ij,t}$ in Equation (2) are backcasted to the year 1900 using data available and thus the time-series sample has more than 100 observations. Accordingly, Equation (2) is expanded to

$$K_{ij,t} = \Sigma_0^{t-1901}(1-\delta_{ij})^k \Delta K_{ij,t-k} + (1-\delta_{ij})^{t-1900} K_{ij,1900} \quad (3)$$

Equation (3) implies that, given the value of capital stock in 1900, $K_{ij,1900}$, and an appropriate rate of depreciation, a capital stock series for each sector or region can be

derived. Due to capital decay and the long time horizon, $K_{ij,1900}$ can be assumed to be zero. This is reasonable as the life span of capital is far shorter than 100 years and, in particular, as most studies of the Chinese economy only cover the recent decades ie. the reform period. Thus, extending the data series to the year 1900 avoids the estimation of the initial value of capital stock.

The integral approach

The core of this technique is that the value of capital stock in the initial year is assumed to be the sum of all past investments. Symbolically,

$$K_{ij,0} = \int_{-\infty}^{0} \Delta K_{ij,t} dt = \frac{\Delta K_{ij,0} e^{\theta}}{\theta} \tag{4}$$

where $\Delta K_{ij,t} = \Delta K_{ij,0} e^{\theta(t+1)}$, and θ and $\Delta K_{ij,0}$ are estimated by linear regressions using the investment series available. Among the existing studies, Wu (2000) adopted this approach. Obviously, capital decay is not taken into consideration in the integral approach of estimating the initial value of capital stock. In practice, this approach tends to overestimate the growth of capital stock. For example, Wu (2000) derived an average real annual rate of growth of 21.5 per cent for the Chinese economy during the period of 1981-1995. This figure is twice as big as the estimates derived by other authors. It is 8.86 per cent during 1978-1995 according to Maddison (1998) and 7.90 per cent during 1979-1995 according to the World Bank (1997), for instance. Furthermore, in order to apply this approach, one must have investment data which are suitable for regression analysis. This could be difficult in some cases.

The growth rate approach

This approach is based on the assumption that the function of investment is to replace depreciation of old capital and create new capital to maintain growth (Harberger 1978). Thus, the following equations are obtained

$$\Delta K_{ij,1} = (\delta_{ij} + g_{ij}) K_{ij,0} \quad \text{or} \tag{5}$$

$$K_{ij,0} = \frac{\Delta K_{ij,1}}{(\delta_{ij} + g_{ij})} \tag{6}$$

Equation (5) implies that the incremental capital stock or realized investment in period 1 is the sum of the depreciated capital stock from period 0 and new capital stock created. The latter is assumed to grow at the constant rate of g_{ij} which is often replaced by the average growth rate of the incremental capital stock in the initial period, say, five years. In practice, authors have also used the rate of growth of investment or GDP when incremental capital stock data are not available. Young (2003) and Islam et al (2006) followed this approach for their work on China.[5] Other applications include Nadiri and Prucha (1996) on the US and Miyagawa et al (2004) on Japan. The main advantage of this approach is its simplicity and can hence be applied to small samples.

Other Approaches

Apart from the backcasting, integral and growth rate approaches, several other methods have also been proposed in the literature and are broadly called the "other approaches" here. Examples include Perkins (1988) who assumed that the capital-output ratio was three in the year 1953, and Chow (1993) who relied on the statistics of "accumulation of fixed assets". He (1992) and Zhang and Zhang (2003) employed similar raw data as

[5] Islam et al (2006) also assumed the rate of depreciation to be 3% during 1952-1978, 4% during 1979-1992 and 5% during 1993-2002.

Chow (1993) did.[6] In addition, Holz (2006) applied official depreciation values and rates of depreciation to generate capital stock series for the period of 1978-2003.

As pointed out earlier, there are some capital stock estimates for China at the national and regional level. This study extends the literature and for the first time presents estimates of capital stock series for the sectors within the Chinese regions.

3 Measuring Regional and Sectoral Capital Stock

The objective of this section is to estimate capital stock for three sectors within China's regions. The approach employed falls into the category of the conventional perpetual inventory method. Three tasks must be completed first. These include the choice of deflators, estimation of region-and-sector-specific rates of depreciation and determination of the initial value of capital stock.

The first task is to find a time-varying and sector-specific price index for all regions which is used to convert investment values into real terms. Such an index is not available in the official statistics until recent years.[7] For this purpose, sector-specific price indices for Chinese regions since 1978 are obtained using the following formulae

$$P_{ijt}^{con} = Y_{ijt}^{cur} / Y_{ijt}^{con} \tag{7}$$

where P_{ijt}^{con}, Y_{ijt}^{cur} and Y_{ijt}^{con} represent price indices in constant prices, income in current prices and income in constant prices for the ith sector of the jth region at period t. Y_{ijt}^{con} is defined as

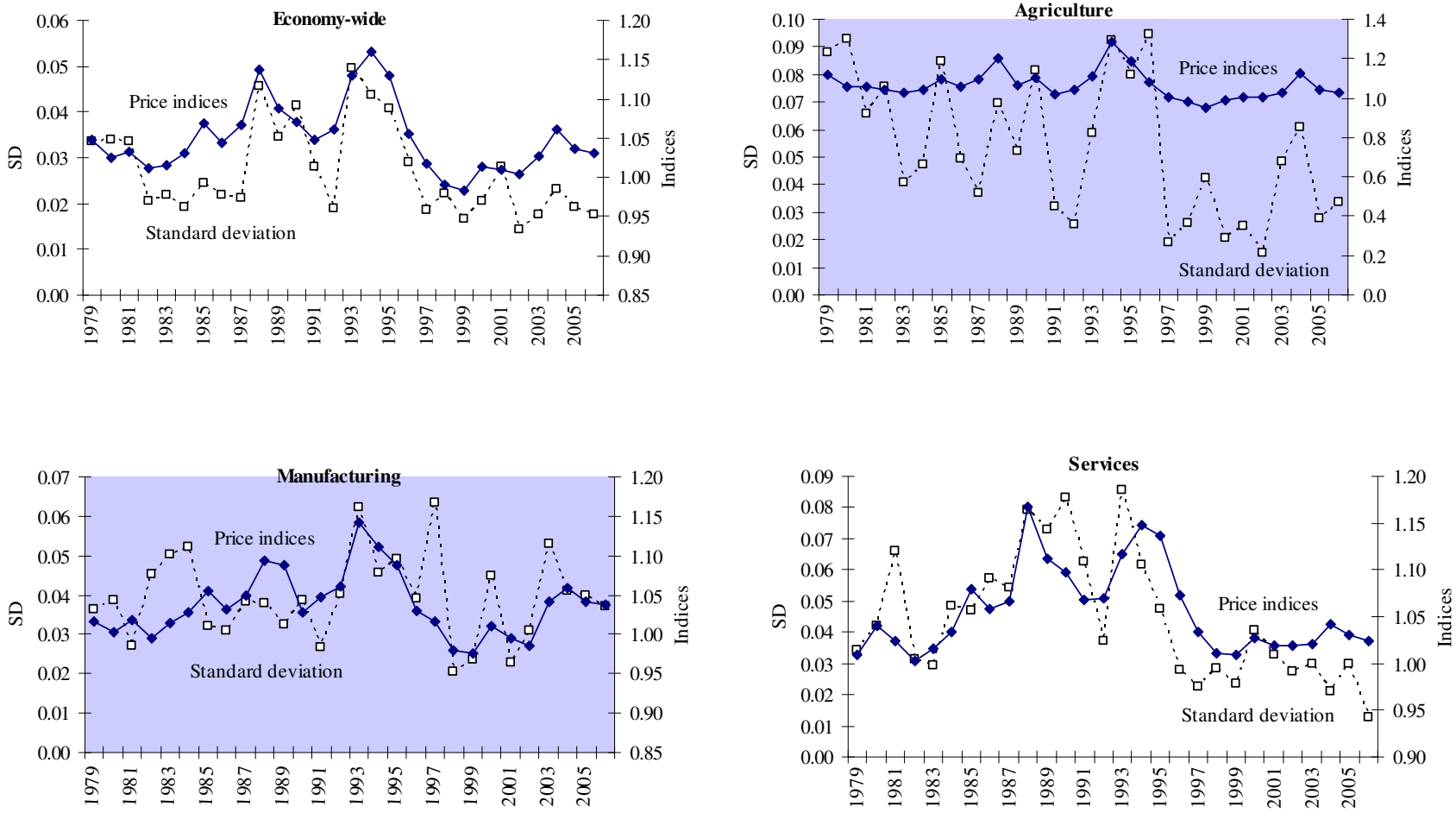
[6] Detailed descriptions are available in Zhang (2008).
[7] Several price indices such as regional CPI are available from 1978 onwards while this study needs sector-specific price information too.

$$Y_{ijt}^{con} = Y_{ij0}^{cur} \prod_{0}^{t} (1 + r_{ijk}) \qquad (7)$$

where r_{ijk} is the real rate of growth in income in the i[th] sector of the j[th] region in the k[th] year and Y_{ij0}^{cur} the initial income at current prices for. These data sets are available from 1978 onwards for all regions and sectors. The derived region-and-sector-specific price indices are then used for the estimation of capital stock of each sector in every region. As a result, GDP and capital stock data are expressed in 1978 constant prices.[8]

The mean and standard deviation of the derived regional price indices are plotted in Figure 1. Several observations are worth noting. First, during 1978-2006, there were two main price hikes in late 1980s and mid-1990s. Associated with these hikes was considerable regional variation in prices during the same periods. Second, there is some evidence of price convergence in the past decade as shown by the relatively lower values of standard deviation in Figure 1. Third, there is variation among the sectors as well. Thus, empirical analyses applying a single deflator for all regions and sectors can be misleading.

[8] It is noted that researchers have attempted to derive their own deflators for samples which are much smaller than the one used in this chapter and which involve either sectoral or nation-wide statistics only (eg. Chen et al. 1988 and Woo et al. 1994). Zhang (2008) derived price deflators using implicit deflators of fixed capital formation. The latter has however many missing observations which have to be filled by using other price indices as Zhang et al did.



Source: author's own estimates.

Figure 1 Standard Deviation (SD) of Regional Price Indices, 1979-2006

The second task is to derive an appropriate rate of depreciation for each sector within the regions. The latter has been assumed to be the same for all regions in the existing literature with the exception of Wu (2008). To remove this assumption, following Wu (2008), a simulation process is here adopted to generate different rates of depreciation for the sectors of the regions. This is the first of such exercise in the literature. The National Bureau of Statistics (various issues) has released the values of depreciation for each sector in the regions since 1978. The simulation process begins by assuming a rate of depreciation for each sector of the regions and then searches for an optimal rate (via repetitive computations) so that the estimated values of depreciation (using the optimal rate) match the actual values of depreciation.[9] The final simulation results are presented in Table 2. In general, the rate of depreciation is high in the more developed regions and low in the less developed regions The three municipal cities (Beijing, Tianjin and Shanghai) also show relatively low rates of depreciation. This may be due to the fact that these cities have relatively large service sectors in which the rates of depreciation are small than those in the manufacturing sectors according to Table 2. It is interesting to note that the overall mean of the regional and sectoral rates of depreciation is about 4.2 per cent which is close to the rates used by Hu and Khan (1997) and the World Bank (1997) and the mean estimated by Wu (2008). Thus, the application of a rate of depreciation of 7 per cent in Wu (2004), 9.6 per cent in Zhang (2008) and 17 per cent in Maddison (1998) would lead to the underestimation of China's capital stock. [10]

[9] The searching process stops when the two sets of values converge. For example, in this paper, the process stops when the difference of two values is less than 0.001%. It should be noted that the simulation process could introduce a time dimension allowing for time-varying rates of depreciation. This is more complicated and beyond the scope of this study.

[10] Maddison (1998) assumes that capital has a life span of 25 years which effectively implies a rate of depreciation as high as 17 per cent and that after 25 years, less than 1% of the original value remains.

Table 2 Rates of Depreciation (%) in the Chinese Economy

Regions	Agriculture	Manufacturing	Services	Average	Wu(2008)
Beijing	1.4	5.7	3.2	4.0	3.4
Tianjin	1.0	5.7	3.1	4.3	3.7
Hebei	1.6	6.1	3.5	4.5	4.3
Shanxi	1.2	6.1	3.6	4.7	4.0
I-Mongolia	1.6	5.0	6.1	4.6	4.3
Liaoning	1.6	7.0	6.3	6.1	5.8
Jilin	1.6	7.0	6.3	5.7	5.1
Heilongjiang	1.6	7.0	6.3	6.2	6.0
Shanghai	0.6	4.8	2.7	3.6	3.4
Jiangsu	2.3	4.2	5.5	4.5	4.2
Zhejiang	2.3	5.3	3.5	4.3	4.0
Anhui	1.6	6.1	3.5	4.2	5.0
Fujian	1.6	6.4	3.5	4.6	4.5
Jiangxi	1.6	6.1	3.5	4.1	3.7
Shandong	2.7	7.0	4.1	5.4	5.0
Henan	1.6	6.1	3.5	4.3	4.1
Hubei	1.6	4.7	5.2	4.5	4.5
Hunan	1.6	5.8	5.2	4.7	4.5
Guangdong	2.3	7.0	5.5	6.0	6.9
Guangxi	2.5	3.7	3.5	3.3	3.3
Hainan	1.6	2.3	3.5	2.5	2.2
Chongqing	1.5	7.0	3.5	4.6	5.0
Sichuan	1.5	7.0	3.5	4.5	4.6
Guizhou	1.3	4.6	3.5	3.4	2.8
Yunnan	0.8	3.5	3.5	2.9	2.7
Tibet	0.6	2.6	3.5	2.6	4.2
Shaanxi	1.8	3.7	3.5	3.4	3.3
Gansu	1.8	3.8	3.2	3.2	2.7
Qinghai	0.6	2.6	3.5	2.7	2.4
Ningxia	1.8	3.2	3.2	3.0	2.8
Xinjiang	1.9	3.0	2.7	2.7	2.6
Mean	1.6	5.2	4.0	4.2	4.0

Source: author's owner estimates. The "average" rates are the GDP-weighted means of regional rates.

The third task deals with the estimation of the initial value of capital stock. For this purpose, the growth rate approach discussed in the preceding section, i.e. equation (6), is employed here. After the completion of the three tasks, capital stock series for the sectors within the Chinese regions can be estimated using equation (2). The estimation results are discussed in the following sections.

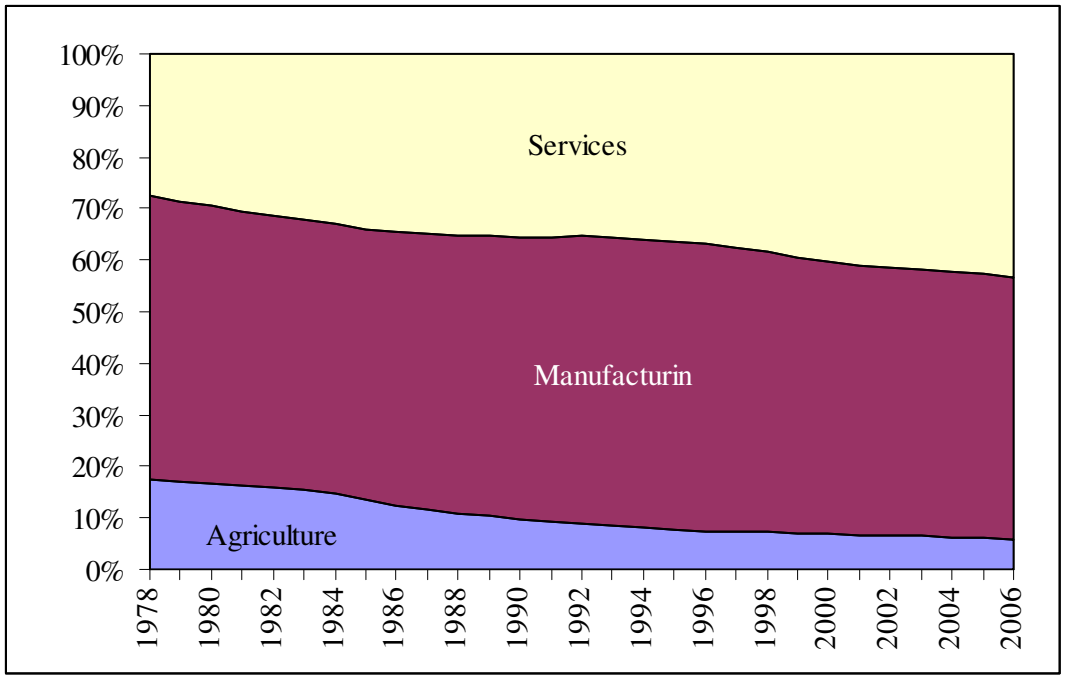
4 Estimation Results

According to the estimates (not shown), China has enjoyed a steady rate of growth (11% per annum) in capital accumulation since the initiative of economic reform in 1978.[11] Among the 31 Chinese regions, in terms of the value of capital stock, Jiangsu, Shandong, Zhejiang and Shanghai were in turn the top four regions in 2006 though Guangdong had the largest share in 1978 and 1990. As expected, the top four regions have achieved above average growth in capital accumulation during 1978-2006, that is, 13% in Jiangsu, Shandong, and Shanghai and 14% in Zhejiang. The western regions have shown a declining trend in capital endowment.[12] The group's share declined from 27.2% in 1978 to 20.9% in 1990 and 17.7% in 2006 even though there was a substantial increase in investment in the region since 1999.

At the sector level, the general trend is that the service sector is expanding while agriculture shrinks (Figure 2). Though declined slightly, the manufacturing sector still dominates the Chinese economy. However, during 1978-2006, the service sector has shown the trend of rapid catch-up.

[11] The estimated dataset is available in the appendix.

[12] The western regions covered under the "go-west" program initiated in 1999 include China's 12 administrative areas i.e. five autonomous regions (Guangxi, Inner Mongolia, Ningxia, Tibet and Xinjiang), six provinces (Gansu, Guizhou, Qinghai, Shaanxi, Sichuan and Yunnan) and one municipality (Chongqing).



Source: Author's own estimates

Figure 2 Capital Stock Shares in the Sectors

For a comparison with the estimates by other authors, the growth rates of the derived capital stock in some periods are illustrated in Table 3. According to this table, the estimate of capital stock in this paper is slightly higher than others cited with the exception of Zhang (2008). It should be pointed out that the numbers in both Zhang (2008) and this paper are based on the arithmetic means of the estimates of regional capital stock data. However, the estimated rate of growth per annum is still below the rate of 11.5 per cent for Singapore, 13.7 per cent for South Korea and 12.3 per cent for Taiwan during the period of 1966-90 (Dougherty and Jorgenson 1996). The lower estimates derived by other authors are debatable. The explanation may lie in the estimation of the initial capital stock value and the choice of the rate of depreciation. For example, while the World Bank (1997) used a rate of 4 per cent, Maddison (1998) assumed an average asset life of 25 years, equivalent to an annual rate of depreciation of 17 per cent.

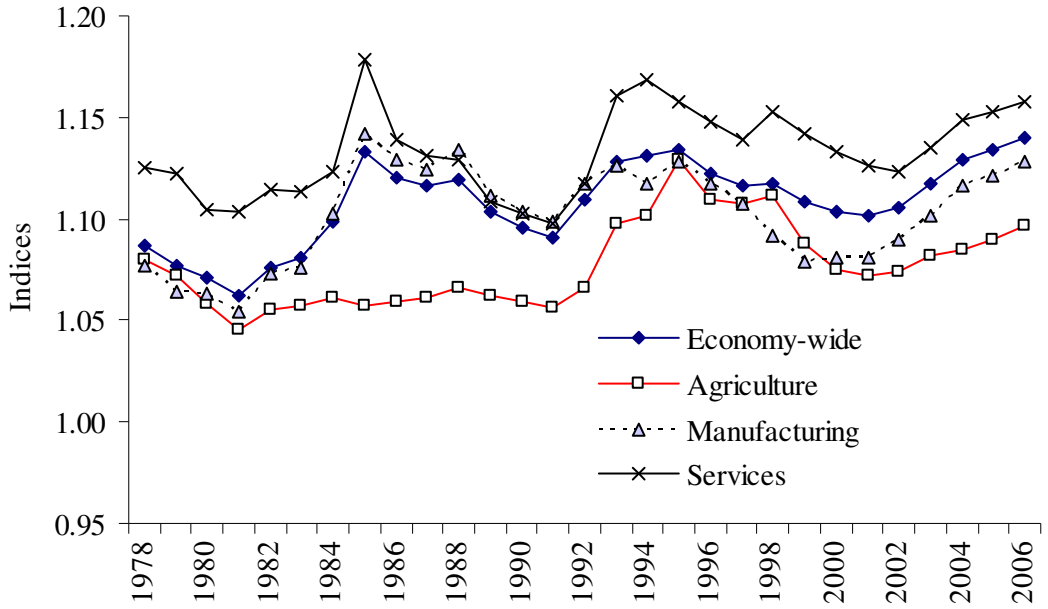
Table 3 Growth Rates of China's Capital Stock

Sources	Periods	Growth rate (%)
Li et al. (1995)	1979-90	9.15
Hu and Khan (1997)	1979-94	7.70
World Bank (1997)	1979-95	7.90
Maddison (1998)	1978-95	8.86*
Zhang (2008)	1979-90	10.27
	1979-95	10.85
	1979-05	11.79
This paper	1979-90	9.71
	1979-95	10.49.
	1979-06	11.09

* Non-residential capital only.

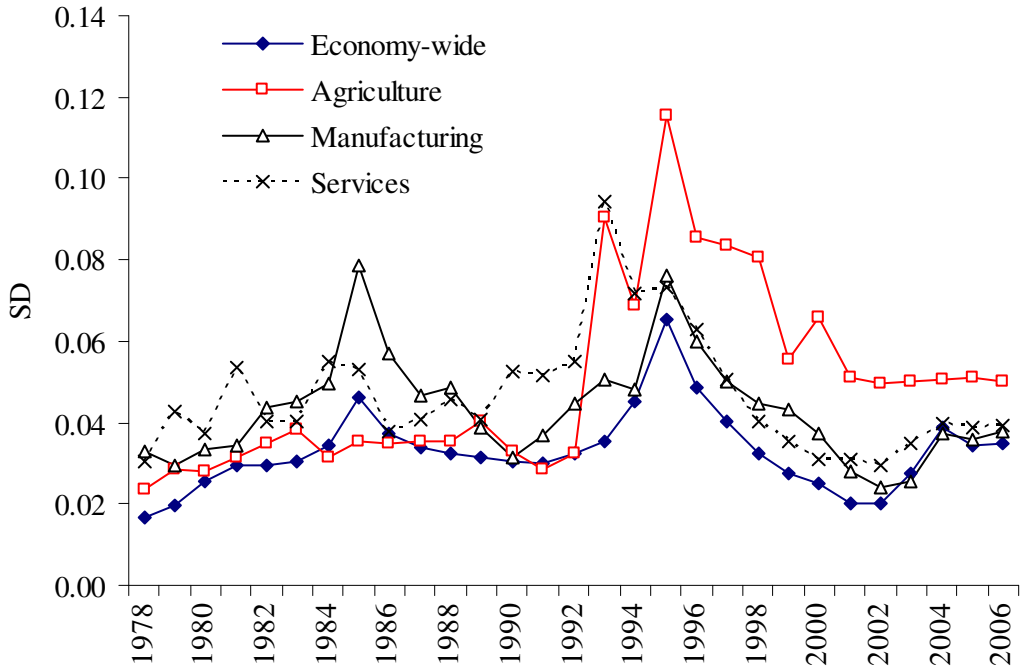
5 Capital Formation and Regional Disparity

Regional disparity and hence convergence have for years been a lively debated question in China. This question can also be explored in terms of capital stock formation among the regions. Figure 3 illustrates the movement of the mean rates of growth in regional capital stock. At the earlier stage of economic reform, similar growth in capital stock was achieved in agriculture and manufacturing and at the national level. The service sector was an exception. However, during the entire decade of the 1980s, agriculture lagged behind the rest of the economy. The gap has begun falling only since the early 1990s.



Source: Author's own calculation.

Figure 3 Average Rates of Growth in Capital Stock, 1978-2006



Source: Author's own calculation.

Figure 4 Standard Deviation of Capital Stock Growth Rates, 1978-2006

Regional disparity and hence convergence can be examined using the values of standard deviation as shown in Figure 4. Several points are worthy to be mentioned. First, disparity in regional capital formation became worse off immediately after the launch of economic reform in 1978. It peaked in mid-1980s and went through a period of improvement for several years. Second, regional disparity deteriorated following the economic takeoff immediately after the "Southern Tour" by Deng Xiaoping in 1992. Third, regional disparity reached the highest level in the mid 1990s. This is followed by a period of convergence. There is however more regional difference in terms of regional growth in agricultural capital stock in the last decade.

6 Conclusion

In summary, this paper presents a review of the literature and techniques in capital stock measurement and introduces an alternative approach to estimate capital stock series for the three sectors in China's thirty-one regional economies. This approach overcomes the problem in the existing literature of assuming ad hoc rates of depreciation. In particular, it allows for different depreciation rates for the sectors (agriculture, manufacturing and services) in the regions. The derived capital stock data series are important resources for research on the Chinese economy.

A preliminary examination of the estimated dataset shows that capital stock has expanded substantially among the sectors within China's regional economies. However, in terms of capital endowment, manufacturing still dominates the economy while agriculture is rapidly declining and the service sector is steadily rising. Furthermore, the estimated capital stock series can also shed some light on the debate of regional disparity in China. It is found that regional disparity in terms of capital formation became worse off at the earlier stage of economic reform and in the first half of the 1990s. This may be due to

regional variation in responding to reform initiatives at the beginning of economic reform and again after the "southern tour" by Deng Xiaoping in 1992. There is some evidence of regional convergence, particularly in the past decade. This may be the result of the implementation of the "go-west" program since 1999. However, how effective this program has been needs a more detailed investigation.

Finally, it is should be pointed out that empirical application of the estimated capital stock series in this study is subjected to several qualifications. First, while the use of sector-and-region-specific rates of depreciation is a major advance in this study, dynamic issues are ignored. That is, the rates could vary over time. Second, due to the non-existence of land markets and hence private land ownership, in particular, rural land market and ownership, land values are not incorporated into the estimates of capital stock. Third, before economic reform began, many Chinese enterprises were located in the interior areas which are often far away from the border regions for strategic reasons during the cold-war era. Since the beginning of economic reforms in 1978, many of those enterprises have been relocated to the coastal regions or closer to the source of raw materials. These relocation activities may affect regional/sectoral capital stock values and are not reflected in the derived statistics.

References

Borensztein, E. and J.D. Ostry (1996), "Accounting for China's Growth Performance", American Economic Review (Papers and Proceedings) 86, 225-28.

Bramall, C. (2000), Sources of Chinese Economic Growth, 1978-1996, Oxford and New York: Oxford University Press.

Chen, K., H.C. Wang, Y.X. Zheng, G.H. Jefferson and T.G. Rawski (1988), "Productivity Change in Chinese Industry, 1953-85", Journal of Comparative Economics 12, 570-91.

Chow, G.C. (1993), "Capital Formation and Economic Growth in China", Quarterly Journal of Economics 108, 809-42.

Chow, G.C. (2006), "New Capital Estimates for China: Comments", China Economic Review 17, 186-92.

Chow, G.C. and Kui-Wai Li (2002), "China's Economic Growth: 1952-2010", Economic Development and Cultural Change 51, 247-56.

Dougherty, C. and D.W. Jorgenson (1996), "International Comparisons of the Sources of Economic Growth", American Economic Review (Papers and Proceedings) 86 (2), 25-9.

Garnaut, Ross and Ligang Song (eds) (2004), China: Is Rapid Growth Sustainable? Canberra: Asia Pacific Press.

Garnaut, Ross and Ligang Song (eds) (2005), The China Boom and Its Discontents, Canberra: ANU E Press and Asia Pacific Press.

Harberger, A.C. (1978), "Perspectives on Capital and Technology in Less developed Countries" in Contemporary Economic Analysis edited by M. J. Artis and A. R. Nobay, London: Croom Helm.

He, Juhuang (1992), "Estimates of Our Country's Capital", (Shuliang Jingji yu Jishu Jingji Yanjiu) Quantitative and Technical Economics 8, 24-7.

Holz, C.A. (2006), "New Capital Estimates for China", China Economic Review 17, 142-85.

Hu, Zuliu. F. and Mohsin S. Khan (1997), "Why Is China Growing So Fast?", IMF Staff Papers 44, 103-31.

Islam, N., E. Dai and H. Sakamoto (2006), "Sources of Growth" in Economic Growth, Transition and Globalization in China edited by Yanrui Wu, Cheltenham and Northampton: Edward Elgar Publishing.

Li, Jingwen, Gong Feihong and Zheng Yisheng (1995), "Productivity and China's economic growth, 1953-1990", in Productivity, Efficiency and Reform in China's Economy edited by K.Y. Tsui, T.T. Hsueh and Thomas G. Rawski, Hong Kong: Chinese University of Hong Kong.

Maddison, A. (1998), Chinese Economic Performance in the Long Run, Paris: OECD Development Centre.

Meng, L. and Xiaolu Wang (2000), "Assessment of the Reliability of China's Economic Growth Statistics", monograph, National Economic Research Institute, Beijing.

Miyagawa, T., Y. Ito and N. Harada (2004), "The IT Revolution and Productivity Growth in Japan", Journal of the Japanese and International Economies 18, 362-89.

Nadiri, M. I. and I. R. Prucha (1996), "Estimation of the Depreciation Rate of Physical and R&D Capital in the U.S. Total Manufacturing Sector", Economic Inquiry 34, 43-56.

National Bureau of Statistics (various issues), China Statistical Yearbook, Beijing: Statistical Publishing House of China.

Nehru, V. and A.M. Dhareshwar (1993), "A New Database on Physical Capital Stock: Sources, Methodology and Results", Revista de Analisis Economico 8, 37-59.

Perkins, D. (1988), "Reforming China's Economic System", Journal of Economic Literature 26, 601-45.

Qian, Xiaolei and Russell Smyth (2006), "Growth Accounting for the Chinese Provinces 1990-2000: Incorporating Human Capital Accumulation", Journal of Chinese Economic and Business Studies 4(1), 21-38.

Wang, X.L. and Gang Fan (eds) (2000), The Sustainability of China's Economic Growth, Beijing: Economic Sciences Press.

Wang, Y. and Y.D. Yao (2003), "Sources of China's Economic Growth 1952–1999: Incorporating Human Capital Accumulation", China Economic Review 14, 32–52.

Woo, Wing Thye (1998), "Chinese Economic Growth: Sources and Prospects", in The Chinese Economy edited by M. Fouquin and F. Lemoine, Economica Ltd, Paris.

Woo, Wing Thye, Wen Hai, Yibiao Jin and Gang Fan (1994), "How Successful Has Chinese Enterprise Reform Been? Pitfalls in Opposite Biases and Focus", Journal of Comparative Economics 18, 410-37.

World Bank (1997), China 2020: Development Challenges in the New Century, the World Bank, Washington, DC.

Wu, Harry X (1993), "The 'Real' Chinese Gross Domestic Product (GDP) for the Pre-reform Period 1952-77", Review of Income and Wealth 39, 63-86.

Wu, Yanrui (1995), "Productivity growth, Technological Progress and Technical Efficiency Change in China: A Three-Sector Analysis", Journal of Comparative Economics 21, 207-29.

Wu, Yanrui (2000), "Is China's Economic Growth Sustainable: A Productivity Analysis", China Economic Review 11, 278-96.

Wu, Yanrui (2004), China's Economic Growth: A Miracle with Chinese Characteristics, London and New York: RoutledgeCurzon Press Limited.

Wu, Yanrui (2008), Productivity, Efficiency and Economic Growth in China, London and New York: Palgrave Macmillan.

Young, A. (2003), "Gold into Base Metals: Productivity Growth in the People's Republic of China during the Reform Period", Journal of Political Economy 111, 1220-61.

Zhang, Jun (2008), "Estimation of China's Provincial Capital Stock (1952-2004) with Applications", Journal of Chinese Economic and Business Studies 6(2), 177-96.

Zhang, Jun and Yuan Zhang (2003), "Reestimates of China's Capital Stock", (Jingji Yanjiu) Journal of Economic Research 7, 35-43.

Zhang, Junkuo (1991), "Systemic Analysis of Economic Efficiency during the 5th Five Year Plan", (Jingji Yanjiu) Journal of Economic Research 4, 8-17.

Appendix

The following tables present China's capital stock estimates by region and sector for the period of 1977-2006 (Table K). The numbers are expressed in constant prices (the base year is 1978 and the unit is 100 million yuan). The three sectors are agriculture (A), manufacturing (M) and services (S). The regions are in turn numbered as follows

Beijing	1	Tianjin	2	Hebei	3
Shanxi	4	Inner Mongolia	5	Liaoning	6
Jilin	7	Heilongjiang	8	Shanghai	9
Jiangsu	10	Zhejiang	11	Anhui	12
Fujian	13	Jiangxi	14	Shandong	15
Henan	16	Hubei	17	Hunan	18
Guangdong	19	Guangxi	20	Hainan	21
Chongqing	22	Sichuan	23	Guizhou	24
Yunnan	25	Tibet	26	Shaanxi	27
Gansu	28	Qinghai	29	Ningxia	30
Xinjiang	31				

For the convenience of research, gross regional product (GRP) by sector is also presented (Table Y) and expressed in constant prices (the base year is 1978 and the unit is 100 million yuan).

Table K China's capital stock estimates by sector and region, 1977-2006

K	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
A01	20.8	23.1	24.6	25.5	26.2	27.0	28.0	29.0	30.6	31.6	32.4	33.3	34.4	35.6	37.1
A02	21.5	22.3	24.2	24.7	25.5	27.8	31.8	34.0	35.1	37.1	38.8	42.8	45.0	48.1	51.5
A03	60.9	66.5	72.7	76.6	77.0	85.9	89.3	93.8	93.8	94.3	93.8	96.9	98.7	101.6	104.3
A04	66.8	72.6	77.0	80.7	82.6	85.7	90.0	92.0	92.5	94.1	97.8	102.4	107.5	114.4	119.4
A05	15.5	17.0	18.6	19.7	21.1	23.1	25.6	28.9	31.8	34.3	36.9	40.4	44.0	47.7	51.8
A06	25.9	28.2	29.7	30.6	31.3	31.9	33.0	35.2	37.9	40.9	43.7	47.0	50.5	54.2	57.8
A07	4.4	5.0	5.5	6.1	6.5	7.1	7.3	7.6	8.0	8.2	8.6	9.2	9.8	10.3	11.2
A08	58.8	63.6	67.8	72.4	77.2	82.5	91.4	101.2	106.4	117.2	127.4	136.5	145.5	156.4	158.4
A09	33.8	35.5	37.3	39.9	43.8	45.2	48.4	49.6	51.9	53.9	54.5	55.8	57.5	58.8	60.5
A10	53.0	58.1	62.9	67.1	71.6	76.0	80.1	86.0	91.8	96.7	102.8	109.4	114.6	121.5	128.5
A11	148.0	154.9	156.9	159.5	161.2	163.2	164.6	169.2	173.7	173.6	173.1	172.0	171.4	173.0	173.7
A12	62.5	66.9	71.4	75.7	79.4	84.3	88.5	94.4	103.7	114.7	128.4	144.4	160.7	174.9	188.6
A13	19.6	21.1	22.4	24.1	25.5	27.2	28.9	30.9	33.5	36.0	39.6	42.3	45.1	48.5	52.5
A14	32.7	35.3	37.7	39.9	41.8	43.9	46.4	49.4	53.0	57.1	61.7	67.4	72.8	76.6	81.0
A15	81.4	89.8	103.3	115.2	124.3	129.5	133.1	143.6	149.3	153.4	163.3	169.3	176.6	189.3	206.8
A16	57.0	63.1	68.7	73.4	73.5	74.0	78.7	83.6	82.9	87.0	93.2	100.9	102.3	104.1	107.6
A17	25.6	27.4	29.0	30.3	31.0	32.2	33.4	35.1	37.4	39.7	42.1	44.2	45.7	47.6	49.5
A18	61.4	65.0	67.7	69.5	69.4	70.0	69.8	71.6	72.0	74.4	76.4	77.4	81.9	83.5	86.4
A19	173.5	187.3	200.7	213.9	226.9	239.5	252.0	264.2	276.1	287.8	299.3	310.5	321.6	332.4	343.0
A20	47.6	51.2	54.0	56.2	58.2	60.3	61.6	61.9	64.5	66.6	68.3	70.8	71.9	73.4	75.5
A21	3.1	3.5	3.9	4.3	4.8	5.4	6.1	6.9	7.7	8.7	9.9	11.1	12.6	14.2	15.7
A22	8.4	8.9	9.6	10.3	11.0	11.9	12.8	13.9	15.1	16.5	18.0	19.6	21.5	23.5	25.8
A23	152.4	159.1	164.2	169.4	172.9	176.9	181.0	186.5	196.2	203.5	211.2	220.9	229.6	241.7	251.4
A24	102.8	111.2	118.8	123.6	125.3	127.5	130.2	134.2	136.8	139.7	142.6	146.2	151.0	155.8	159.2
A25	171.1	181.1	190.6	199.9	208.2	218.6	228.0	241.3	255.5	269.7	283.6	299.9	317.5	334.8	358.0
A26	0.9	1.0	1.2	1.3	1.4	1.6	1.8	2.0	2.2	2.5	2.8	3.1	3.5	3.9	4.3
A27	48.5	52.3	55.1	56.6	58.7	66.4	75.8	82.8	91.2	102.0	112.8	122.9	136.4	141.4	148.2
A28	22.6	24.6	26.3	27.6	28.6	29.9	31.4	33.5	36.1	39.2	42.0	45.2	49.2	53.1	57.0
A29	29.7	30.8	32.1	32.7	33.2	34.0	34.7	35.5	36.9	37.9	39.3	40.5	41.3	42.2	43.3
A30	3.9	4.3	4.6	4.9	5.2	5.4	5.7	6.2	6.9	7.6	8.5	9.6	11.4	13.1	14.0
A31	34.5	38.3	42.4	45.9	47.3	48.7	49.9	52.8	55.0	57.6	60.5	65.4	69.6	74.0	79.1

K	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A01	39.1	38.7	40.0	41.0	41.8	42.9	43.2	43.3	43.6	43.7	43.5	43.5	43.5	43.6	43.8
A02	53.1	55.8	58.1	61.4	65.6	69.3	71.2	74.1	76.0	78.6	80.3	82.7	85.6	88.9	92.8
A03	110.6	164.3	204.4	239.3	289.0	339.1	396.9	442.1	488.9	529.9	583.5	643.8	709.2	780.5	864.6
A04	126.7	134.2	141.1	143.1	147.1	159.2	169.7	175.9	183.4	189.9	200.8	215.6	231.3	253.3	279.6
A05	57.7	65.0	74.9	80.4	96.5	110.0	129.2	154.7	171.9	193.5	221.6	263.2	318.8	399.6	493.4
A06	62.0	68.3	73.6	87.0	95.9	104.2	116.5	126.2	134.9	145.4	157.2	173.1	191.8	214.4	241.9
A07	12.2	13.5	17.3	23.8	34.3	50.1	69.9	77.8	76.4	82.8	87.3	92.9	99.2	108.2	122.7
A08	161.9	164.4	180.8	217.9	254.7	288.7	337.1	385.0	389.8	412.4	446.7	478.4	517.9	562.0	615.8
A09	62.9	64.8	69.5	71.4	73.6	74.9	75.9	77.2	79.1	80.9	81.8	83.0	84.4	86.0	87.6
A10	138.2	148.1	163.4	181.7	204.8	234.0	265.9	302.0	338.4	374.6	410.6	455.8	509.2	568.9	637.1
A11	173.6	173.1	180.2	199.3	228.7	254.2	296.7	324.6	365.3	370.6	374.9	383.3	393.9	404.8	418.0
A12	205.5	227.6	258.1	287.4	307.8	327.8	351.3	372.8	386.3	401.0	416.8	434.3	455.5	481.8	513.7
A13	57.1	63.8	70.4	77.7	86.3	98.8	114.3	131.3	157.5	190.1	229.6	273.6	321.0	368.3	424.9
A14	87.9	96.5	104.5	117.4	130.9	150.1	168.7	181.0	202.5	207.9	212.6	219.9	228.8	239.0	251.4
A15	221.0	243.9	268.0	320.9	371.8	425.0	482.6	540.5	598.1	651.2	722.3	805.8	904.9	1020.1	1150.0
A16	118.3	146.6	179.7	243.1	298.9	364.0	433.1	510.2	588.6	667.9	756.1	860.9	976.8	1118.0	1296.4
A17	52.1	63.2	73.3	79.7	87.2	97.6	117.8	145.7	188.4	221.2	252.4	283.2	315.0	349.1	391.1
A18	90.8	100.4	118.7	145.1	156.3	175.4	194.8	211.4	233.5	256.0	275.4	296.6	319.2	344.2	376.2
A19	353.4	361.2	371.0	381.0	393.7	403.8	416.9	427.3	439.1	444.5	447.5	453.3	460.7	471.1	483.0
A20	78.9	85.6	91.5	106.5	117.1	130.7	136.7	143.2	148.2	153.5	162.5	172.7	184.2	199.2	218.0
A21	18.0	20.4	22.2	33.6	35.7	38.6	42.5	48.3	55.7	63.4	70.9	79.5	88.9	99.7	111.7
A22	28.4	31.2	34.4	36.8	41.9	47.6	55.9	58.8	63.9	70.5	77.1	85.9	94.9	105.3	117.5
A23	263.0	278.6	291.2	301.9	314.2	322.0	329.6	346.6	355.7	362.8	370.5	379.9	389.5	402.1	417.9
A24	162.7	165.7	168.0	172.2	176.2	179.0	184.2	190.7	194.5	196.3	196.4	196.9	197.7	198.8	200.4
A25	386.1	386.5	386.8	388.3	390.9	393.9	398.0	407.5	405.0	410.8	420.6	433.9	449.0	469.3	492.9
A26	4.9	5.4	6.3	7.2	8.2	9.1	10.1	11.2	12.0	12.8	13.9	15.4	17.9	20.5	23.9
A27	154.6	164.5	177.6	186.4	194.2	203.6	213.1	220.0	234.0	251.3	275.1	305.9	340.8	377.1	424.3
A28	61.2	65.1	69.8	75.5	82.1	89.0	92.6	97.4	101.4	105.1	109.5	114.3	119.5	126.1	134.1
A29	44.5	45.7	48.4	49.5	49.5	50.4	51.1	51.9	52.7	53.9	56.6	59.9	62.8	66.1	69.9
A30	15.1	16.4	16.7	17.2	19.2	20.3	23.1	25.3	26.1	29.5	33.5	38.5	43.9	50.1	56.6
A31	87.1	98.4	115.0	136.1	154.7	177.5	204.9	222.6	236.0	259.7	288.9	318.7	354.6	394.1	443.3

K	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
M01	108.1	116.7	126.5	139.5	147.1	153.6	167.8	188.4	227.1	275.9	329.3	380.9	429.0	476.9	531.4
M02	106.8	115.0	121.8	133.9	139.5	156.6	159.9	173.2	195.5	229.7	262.0	307.5	355.8	401.3	473.0
M03	425.4	438.7	447.6	453.3	454.3	449.6	456.6	481.2	512.9	549.8	588.6	651.7	697.8	754.3	820.4
M04	125.3	134.7	139.7	146.6	149.7	158.0	173.1	199.0	238.7	287.3	326.5	368.1	409.2	450.3	486.2
M05	76.8	83.8	91.6	96.7	101.3	109.4	121.4	137.1	156.8	174.3	192.2	222.2	248.8	275.5	301.1
M06	350.6	363.6	375.7	380.2	381.4	387.0	402.2	436.8	488.8	552.2	621.6	713.3	791.4	874.0	958.4
M07	195.2	207.7	212.2	217.2	219.2	224.6	233.3	249.8	275.9	303.7	342.0	387.5	427.9	480.7	525.8
M08	194.8	205.5	217.5	228.3	243.5	270.0	298.5	328.2	370.2	406.5	445.9	485.3	534.5	583.6	615.5
M09	209.8	223.1	244.4	270.4	302.5	343.6	383.5	444.9	561.2	697.5	815.7	984.5	1146.7	1308.7	1462.5
M10	360.4	399.1	439.9	488.5	532.8	591.5	649.4	733.3	842.6	990.4	1134.0	1278.2	1420.6	1579.5	1757.4
M11	120.4	140.1	147.2	158.5	170.2	187.9	203.3	235.6	333.2	405.3	485.3	578.6	661.6	762.8	843.8
M12	88.0	98.1	108.1	119.8	128.9	151.9	184.3	233.3	297.1	370.1	435.6	495.3	544.7	588.2	621.2
M13	62.0	68.6	74.3	81.7	89.3	98.6	107.4	119.3	139.0	165.3	197.5	236.4	269.7	302.1	345.1
M14	156.3	170.0	187.5	201.6	212.7	226.4	241.8	262.2	290.1	322.7	360.6	409.8	454.4	492.8	536.8
M15	176.3	188.6	202.7	220.8	239.2	262.6	285.8	324.1	404.7	485.2	606.4	766.4	919.7	1023.3	1171.3
M16	204.7	225.5	244.8	268.6	291.6	322.1	373.4	430.3	509.8	579.0	658.1	768.1	876.6	980.9	1096.9
M17	175.7	194.2	211.0	223.9	239.6	264.2	290.9	329.4	382.1	437.3	501.8	588.4	651.5	727.4	813.7
M18	135.5	147.8	157.6	164.0	169.9	180.9	196.0	222.2	244.3	279.9	319.3	367.6	415.2	465.5	514.3
M19	446.4	494.8	547.8	605.8	669.3	738.9	815.2	898.8	990.6	1091.4	1201.9	1323.3	1456.6	1603.1	1763.9
M20	164.0	173.8	179.9	186.3	193.3	198.4	206.3	216.9	235.3	255.5	279.5	310.0	334.9	355.9	375.1
M21	238.2	238.7	239.5	240.7	242.3	244.1	246.4	249.1	252.1	255.6	259.6	263.9	268.8	270.2	271.3
M22	56.4	61.1	66.3	72.3	79.0	86.6	95.1	104.6	115.2	127.1	140.4	155.2	171.8	190.2	210.7
M23	193.7	213.3	220.6	227.9	231.2	237.8	246.6	260.8	314.2	328.3	352.1	380.1	398.3	453.4	484.4
M24	62.9	69.9	75.3	80.1	85.3	90.7	95.7	104.1	117.4	132.4	153.0	177.0	201.3	223.5	246.5
M25	84.1	92.0	100.6	108.9	115.2	123.8	131.9	144.0	158.3	174.5	195.9	218.0	241.8	265.0	300.2
M26	2.0	2.2	2.4	2.7	3.0	3.3	3.8	4.3	4.9	5.6	6.5	7.5	8.7	10.1	11.7
M27	196.9	206.1	216.0	225.3	233.6	244.4	255.9	273.8	306.6	354.1	398.2	458.7	524.7	589.0	649.1
M28	280.7	286.4	291.5	293.8	295.6	298.9	303.3	309.1	319.6	335.5	351.1	371.6	398.3	427.1	458.2
M29	69.7	73.4	77.9	81.6	84.2	88.7	92.3	97.7	105.5	112.0	121.5	130.7	137.9	144.5	152.5
M30	74.3	77.8	81.3	83.8	85.0	87.1	89.8	93.9	100.6	108.3	115.6	123.8	129.7	138.2	145.6
M31	90.8	96.5	101.9	109.1	115.8	125.9	137.2	152.6	170.0	189.3	211.6	238.3	268.2	301.6	345.0

K	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
M01	618.2	746.6	908.3	1009.8	1081.4	1118.9	1181.8	1251.0	1314.5	1332.2	1361.2	1396.3	1441.7	1525.8	1627.3
M02	558.6	638.2	713.0	806.7	913.8	1023.0	1113.3	1211.7	1314.7	1425.7	1535.2	1672.9	1848.8	2051.7	2294.1
M03	942.0	1024.1	1138.3	1288.7	1458.1	1644.7	1857.8	2102.1	2352.6	2563.3	2784.5	3047.1	3365.0	3713.4	4135.5
M04	533.9	589.1	644.4	694.9	738.3	789.1	852.6	916.6	1003.2	1082.9	1184.4	1315.0	1471.6	1687.0	1943.2
M05	339.0	388.5	442.0	499.4	547.4	597.1	638.6	661.9	694.0	721.7	782.2	890.3	1052.7	1291.4	1566.8
M06	1049.4	1187.9	1336.1	1463.2	1586.2	1717.7	1812.4	1908.5	2019.3	2163.7	2340.8	2599.2	3067.4	3574.7	4218.2
M07	572.1	624.0	671.7	733.0	801.7	854.7	889.7	928.0	1003.5	1070.8	1164.9	1286.8	1433.7	1632.1	1975.2
M08	664.7	712.1	750.2	785.0	830.1	879.4	933.1	953.2	999.8	1070.9	1155.6	1230.9	1333.0	1448.5	1595.2
M09	1658.6	1873.0	2088.0	2365.2	2719.7	2975.9	3180.6	3371.9	3681.5	4037.3	4356.7	4745.2	5208.1	5739.5	6347.9
M10	2086.6	2540.6	2998.7	3494.2	4009.6	4520.0	5108.8	5736.3	6464.3	7196.0	8163.5	9401.0	10939.0	12599.1	14451.7
M11	1009.4	1243.7	1473.6	2126.7	2790.9	3509.7	4253.4	4913.2	5608.4	5910.2	6329.9	6913.4	7627.8	8415.4	9267.5
M12	662.8	716.1	811.9	942.1	1082.2	1228.4	1350.9	1418.7	1512.6	1568.5	1687.5	1820.1	2015.3	2247.5	2522.1
M13	402.9	493.5	608.9	732.1	874.3	1044.7	1246.7	1466.4	1676.9	1894.7	2083.9	2303.9	2560.6	2808.7	3138.0
M14	609.3	702.3	771.6	801.7	812.4	849.4	877.6	917.7	935.1	986.7	1067.7	1188.6	1333.5	1489.6	1669.7
M15	1397.4	1723.8	2050.8	2434.6	2882.7	3405.0	3976.7	4562.2	5267.8	5980.0	6708.3	7493.5	8476.7	9609.5	10897.2
M16	1221.7	1349.0	1458.3	1573.3	1722.2	1885.9	2043.6	2197.9	2364.9	2531.1	2687.8	2867.7	3120.8	3423.0	3814.9
M17	919.4	1035.4	1230.6	1483.3	1752.5	2063.8	2319.3	2585.4	2877.4	3132.7	3423.9	3716.5	4085.5	4461.3	4922.3
M18	570.2	648.3	713.9	770.5	837.4	926.6	1010.2	1088.9	1177.6	1288.8	1439.3	1595.8	1796.4	2009.3	2272.9
M19	1940.6	2280.9	2494.7	2772.3	3073.8	3296.7	3511.1	3706.6	3928.2	4104.8	4547.3	5127.9	5826.3	6729.4	7743.3
M20	411.4	458.0	520.7	597.0	647.1	678.8	729.2	768.5	819.4	870.5	950.1	1044.3	1160.9	1316.3	1513.6
M21	281.9	297.6	309.2	328.0	342.8	351.0	356.8	364.7	368.1	375.6	387.6	402.1	419.2	439.6	461.7
M22	233.5	258.9	287.2	339.1	377.3	435.0	477.7	490.1	516.2	553.5	611.6	695.3	798.8	922.4	1058.1
M23	528.4	584.3	683.1	758.9	812.4	877.9	934.1	978.0	1027.9	1096.5	1191.5	1305.8	1439.3	1601.3	1808.8
M24	271.3	296.4	328.3	362.6	418.7	477.8	518.3	571.5	633.8	703.5	773.1	852.0	938.0	1031.8	1135.4
M25	349.9	397.1	444.3	503.1	563.5	620.4	661.2	677.0	701.4	799.9	846.0	910.5	988.1	1098.7	1230.7
M26	13.7	16.0	18.4	22.4	27.4	31.5	36.2	42.2	48.4	53.2	62.2	72.2	89.8	108.7	132.9
M27	683.3	741.1	810.0	872.1	929.5	1002.1	1077.1	1163.1	1275.6	1392.2	1518.4	1684.2	1881.4	2100.8	2354.8
M28	494.6	531.1	568.5	608.1	653.6	708.3	775.4	832.7	892.6	967.4	1040.9	1123.9	1213.4	1326.7	1450.3
M29	160.8	172.0	177.0	189.8	209.9	234.0	259.7	284.8	297.7	325.2	357.8	396.6	436.2	477.9	522.3
M30	152.8	159.3	165.9	172.5	182.9	193.3	201.0	213.2	227.6	247.7	269.4	297.0	327.8	366.5	406.4
M31	399.4	449.0	508.6	562.7	620.4	663.4	711.1	757.2	801.9	852.5	913.9	991.9	1077.2	1166.7	1261.8

K	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
S01	79.0	90.7	107.0	124.1	140.1	153.0	174.8	209.8	264.3	325.7	417.0	516.4	631.1	739.9	823.7
S02	99.4	107.5	121.3	132.2	137.9	139.3	157.3	172.8	211.2	241.4	261.2	289.3	306.2	317.0	318.5
S03	129.8	143.8	163.0	180.5	192.5	221.5	259.2	295.7	358.9	410.6	461.1	498.6	565.0	635.9	703.8
S04	70.2	78.1	86.2	92.8	102.7	114.0	126.7	149.8	179.8	196.2	224.7	246.1	266.0	284.8	298.0
S05	39.1	45.3	52.0	56.6	60.8	67.7	77.3	89.5	105.2	119.2	133.2	154.9	175.7	198.8	222.0
S06	109.3	124.4	141.8	155.1	166.6	184.0	205.2	236.1	277.9	323.1	381.0	445.7	500.9	555.3	616.0
S07	34.3	38.1	42.0	46.9	52.2	59.8	65.9	77.5	93.0	106.3	116.5	127.8	140.5	155.9	174.1
S08	82.9	88.8	95.9	102.2	111.2	124.1	139.2	133.4	162.6	196.0	231.0	267.0	296.5	329.8	360.1
S09	160.5	178.9	184.5	206.0	229.9	262.5	274.6	298.1	347.9	409.3	483.2	571.8	659.5	705.1	741.0
S10	115.1	126.5	139.1	152.2	168.0	203.4	247.1	312.1	398.1	496.5	615.4	773.9	901.7	1036.2	1188.8
S11	99.5	115.6	126.7	142.6	158.7	175.9	191.4	218.9	291.4	331.6	384.1	437.8	476.9	548.4	584.9
S12	15.5	18.1	20.6	23.1	25.6	28.7	31.2	35.0	42.5	48.3	56.9	70.9	82.4	106.5	136.8
S13	51.2	59.6	68.0	77.5	87.0	98.2	109.9	123.5	142.2	163.3	181.9	199.2	217.2	235.1	257.0
S14	64.4	70.4	78.1	83.4	88.0	93.4	99.3	107.3	117.1	129.5	142.5	158.7	173.4	184.7	199.3
S15	198.0	231.9	257.5	290.3	313.1	351.8	399.2	447.5	493.2	546.7	600.7	647.5	695.9	765.7	848.6
S16	51.9	62.3	80.0	99.9	131.4	145.8	175.3	206.8	250.0	293.2	342.5	394.3	457.8	520.4	586.6
S17	78.9	88.9	102.9	110.8	123.3	142.6	161.0	188.3	228.2	266.1	298.4	334.9	358.8	393.6	420.1
S18	127.5	138.6	149.4	160.6	174.0	189.0	205.3	208.5	238.7	265.9	298.6	336.3	349.1	360.8	383.5
S19	286.5	319.2	355.2	394.7	438.1	485.8	538.3	596.1	659.7	729.8	806.9	891.9	985.5	1088.7	1202.4
S20	45.0	49.5	56.3	64.5	74.1	82.7	90.4	98.9	114.3	131.2	145.8	156.6	167.1	174.3	189.1
S21	68.8	77.4	86.6	96.4	106.8	118.0	129.9	142.6	156.2	170.8	186.5	203.2	221.2	235.5	251.4
S22	19.1	21.4	24.1	27.4	31.4	36.1	41.8	48.6	56.7	66.4	78.0	91.8	108.2	127.8	151.0
S23	218.0	247.0	269.3	290.2	310.5	334.3	360.1	391.6	454.3	489.6	531.0	576.8	606.2	653.7	676.5
S24	23.9	26.6	29.0	32.1	34.9	40.1	45.4	53.2	65.0	75.8	84.4	92.5	99.3	104.0	111.0
S25	28.5	32.4	36.8	40.5	45.1	50.0	54.8	62.1	71.0	79.6	82.0	89.7	97.5	105.1	115.4
S26	3.4	3.7	4.1	4.6	5.2	5.9	6.7	7.7	9.0	10.4	12.2	14.3	16.8	19.8	23.4
S27	53.8	61.1	72.4	77.1	83.9	91.7	95.7	107.6	131.8	140.4	160.0	178.4	201.9	218.7	239.8
S28	87.5	96.8	105.4	111.2	114.9	119.4	127.6	136.8	149.3	167.0	184.9	206.1	233.1	256.6	278.1
S29	19.4	21.8	24.3	25.7	26.9	29.1	31.1	33.2	38.2	41.8	46.7	50.7	52.4	54.6	57.0
S30	17.5	19.7	21.9	23.7	25.0	27.1	29.8	33.2	38.7	44.9	52.0	59.4	67.0	73.1	81.4
S31	27.7	32.5	38.3	43.9	53.6	64.0	74.1	84.7	102.4	116.2	131.6	150.3	172.9	193.5	211.1

K	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
S01	917.5	1043.7	1207.2	1434.2	1619.9	1830.4	2041.3	2260.3	2450.7	2685.2	2932.5	3204.9	3512.4	3929.2	4374.8
S02	334.1	368.7	422.3	468.9	516.9	576.6	662.6	735.6	820.9	922.4	1048.7	1204.1	1398.7	1617.8	1874.3
S03	755.5	836.8	948.0	1104.9	1283.2	1516.2	1782.6	2080.8	2391.4	2765.0	3129.8	3546.3	4071.7	4649.4	5322.2
S04	316.7	352.8	400.7	444.2	494.1	537.7	619.2	695.3	764.2	846.9	933.5	1052.6	1211.7	1430.1	1682.8
S05	256.4	304.4	341.2	379.7	425.8	475.8	542.0	622.0	721.4	823.9	946.1	1133.6	1412.3	1831.0	2321.1
S06	689.3	799.7	902.5	984.9	1062.8	1128.8	1223.9	1326.4	1448.9	1577.3	1730.4	1946.9	2271.1	2652.8	3130.8
S07	190.1	214.6	262.7	304.0	361.7	401.3	464.6	554.5	623.8	709.5	800.7	911.3	1046.2	1234.3	1552.5
S08	397.5	440.7	492.9	539.1	593.7	648.7	732.2	813.9	913.7	1000.7	1108.9	1206.7	1335.7	1492.0	1684.6
S09	806.7	921.1	1126.3	1376.4	1662.2	1984.4	2303.9	2603.4	2879.5	3173.6	3500.6	3898.8	4363.3	4896.9	5496.0
S10	1384.2	1623.9	1907.6	2217.5	2546.6	2880.4	3285.6	3725.7	4182.1	4685.5	5174.0	5823.1	6691.2	7592.4	8563.7
S11	637.9	732.8	847.7	1132.7	1443.6	1756.7	2105.3	2513.5	2922.1	3096.3	3295.6	3570.5	3912.2	4290.4	4712.9
S12	182.1	260.8	347.8	450.2	595.4	752.8	921.0	1096.0	1274.7	1487.1	1692.6	1912.5	2207.9	2560.4	2967.7
S13	288.7	340.9	426.5	531.9	649.7	770.5	903.3	1037.5	1174.3	1318.2	1488.8	1680.3	1902.5	2123.5	2399.4
S14	222.2	248.1	295.6	357.7	442.7	528.9	632.2	742.5	850.6	976.1	1128.8	1343.1	1600.0	1877.7	2205.4
S15	943.8	1050.1	1171.7	1276.7	1409.1	1565.2	1738.3	1932.2	2145.3	2385.0	2647.3	2961.4	3379.6	3845.6	4354.3
S16	686.7	764.5	883.9	1013.7	1171.0	1347.2	1569.6	1811.6	2073.0	2360.6	2691.1	3027.4	3478.2	4050.5	4755.2
S17	453.5	520.8	604.6	709.0	842.7	1008.1	1215.3	1437.3	1642.9	1859.8	2054.4	2258.1	2516.5	2788.0	3119.9
S18	420.3	463.5	527.2	599.7	687.5	768.4	867.5	983.8	1103.1	1239.1	1382.1	1534.7	1734.5	1959.4	2233.8
S19	1327.7	1425.3	1626.2	1816.6	2019.6	2218.8	2456.9	2724.2	2967.5	3256.0	3485.4	3802.1	4184.4	4725.8	5326.9
S20	216.6	256.3	299.1	339.9	386.0	431.8	490.1	551.1	613.9	686.5	759.3	846.9	959.8	1097.4	1273.0
S21	279.4	312.3	358.1	381.6	406.2	433.9	466.1	500.0	538.0	576.6	616.3	662.8	715.9	778.2	852.0
S22	178.7	211.7	250.9	293.5	348.0	412.5	497.1	601.1	715.6	845.3	992.5	1183.9	1416.7	1678.3	1967.1
S23	705.8	780.1	837.2	889.3	984.6	1097.5	1256.6	1414.0	1589.0	1777.0	1987.4	2230.3	2511.6	2852.8	3272.6
S24	121.5	139.7	150.4	176.2	193.8	220.4	267.9	317.0	375.9	453.6	539.1	632.6	732.1	844.4	967.9
S25	129.6	197.0	271.4	338.2	415.9	515.8	639.3	764.8	891.4	998.6	1126.6	1294.5	1497.7	1779.8	2106.1
S26	27.6	32.8	43.0	57.4	65.1	75.1	85.0	96.1	108.4	122.5	142.0	173.8	223.0	271.8	335.1
S27	274.2	330.3	381.3	449.2	524.7	584.8	673.2	765.6	873.8	999.3	1141.1	1331.1	1557.9	1813.2	2152.2
S28	299.4	328.7	359.8	396.7	440.0	491.0	551.1	635.5	724.1	825.9	944.9	1075.8	1227.2	1418.8	1640.3
S29	59.4	62.2	67.8	72.8	78.7	85.3	94.2	105.2	127.1	149.4	173.8	201.9	231.1	264.5	302.2
S30	91.0	104.3	116.7	128.7	137.6	148.7	165.8	184.4	209.2	233.8	264.4	304.0	349.5	404.4	463.3
S31	240.5	299.3	363.7	404.4	432.3	485.2	558.7	614.5	669.8	743.6	821.1	931.8	1066.8	1226.7	1420.0

Table Y China's gross regional product by sector, 1978-2006

GRP	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
A01	5.6	5.9	6.5	7.8	8.9	9.5	10.2	10.8	10.8	12.3	13.6	13.8	14.3	14.8
A02	5.0	5.9	5.9	4.7	5.3	5.7	7.1	8.5	9.2	9.8	10.5	11.7	12.3	12.7
A03	52.2	54.4	53.0	55.8	66.8	79.5	85.7	87.5	85.1	86.4	87.2	90.4	95.6	98.0
A04	18.2	19.6	17.2	20.8	25.7	26.4	31.6	26.0	25.1	24.3	25.2	27.0	30.4	26.6
A05	19.0	20.4	15.5	22.0	26.0	27.3	31.1	35.5	32.6	34.8	40.8	38.8	48.3	50.2
A06	32.4	34.6	36.0	35.3	37.6	48.2	50.6	42.5	47.5	50.4	53.8	51.5	59.0	61.5
A07	24.0	22.1	21.8	25.0	28.0	41.2	43.0	37.6	39.3	45.3	46.8	38.8	53.0	53.0
A08	41.0	38.1	42.7	43.9	47.3	58.9	60.1	52.5	61.9	59.1	57.7	51.7	73.3	68.3
A09	11.0	10.9	10.9	10.9	13.7	13.7	17.2	13.4	13.4	13.0	13.6	13.6	14.2	14.3
A10	68.7	84.4	75.6	85.3	99.0	106.1	119.8	118.8	125.2	125.8	131.2	127.6	128.9	123.9
A11	47.1	52.2	50.8	53.2	61.9	58.1	69.4	70.7	73.5	74.2	73.5	73.7	75.6	81.6
A12	53.8	59.6	55.9	71.0	72.8	73.5	85.5	93.3	100.8	98.6	94.8	96.9	101.2	78.1
A13	23.9	25.1	28.6	31.0	33.1	34.7	38.2	40.2	41.1	45.4	46.6	51.1	51.9	57.0
A14	36.2	41.8	42.1	46.4	52.1	52.2	57.1	61.2	61.9	67.5	69.3	72.0	76.6	79.3
A15	75.1	81.2	89.2	95.0	105.2	122.1	144.4	147.5	146.6	157.5	157.2	156.2	164.6	187.9
A16	64.9	66.0	72.0	80.5	80.9	105.3	111.1	112.0	103.1	120.5	117.4	128.2	135.1	131.6
A17	61.1	72.7	63.1	71.5	82.8	82.4	94.3	102.1	105.5	108.8	103.2	108.6	116.7	111.0
A18	59.8	63.9	63.2	67.6	76.4	79.2	84.5	87.6	92.1	94.8	92.6	97.9	101.1	106.7
A19	55.3	59.0	66.5	69.5	80.4	80.4	91.2	96.8	102.3	109.9	115.3	123.6	132.7	139.8
A20	30.9	32.6	36.7	37.6	44.6	44.2	43.3	45.5	48.1	50.8	47.7	53.6	58.1	63.2
A21	8.7	9.3	9.4	11.1	13.9	14.6	16.0	16.3	17.5	19.1	19.8	20.4	22.3	24.2
A22	24.8	26.9	28.2	29.9	32.1	34.0	36.2	39.7	43.9	43.0	44.0	46.1	49.4	52.7
A23	82.2	89.1	93.6	97.8	110.2	118.5	129.3	135.0	136.3	140.3	143.1	147.2	155.1	159.6
A24	19.4	20.0	20.0	22.0	27.1	28.3	33.5	33.1	35.1	36.1	35.8	38.0	38.7	43.8
A25	29.5	27.4	30.1	32.9	37.1	38.6	43.9	46.9	45.9	49.4	53.2	54.9	59.6	60.3
A26	3.4	3.5	4.9	6.6	5.9	5.4	5.8	6.6	6.0	6.1	6.5	6.8	7.2	7.0
A27	24.7	26.9	29.4	33.4	35.6	36.1	40.6	40.3	42.2	42.9	45.2	48.2	50.7	54.2
A28	13.2	11.5	14.3	13.4	15.6	19.1	21.2	23.0	24.5	26.1	28.1	29.8	31.3	31.8
A29	3.7	3.9	3.8	3.6	4.1	4.4	5.0	5.4	5.9	6.1	6.0	6.2	6.4	6.5
A30	3.1	2.8	3.3	4.0	4.1	4.9	5.6	6.0	6.4	5.9	6.5	6.9	7.1	7.3
A31	14.0	15.4	16.3	18.8	20.9	23.4	26.6	30.1	32.5	36.0	37.2	37.9	44.0	48.9

GRP	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
A01	15.2	15.7	16.1	14.8	14.3	14.5	14.7	15.0	15.6	16.4	17.2	17.7	18.1	17.9	18.0
A02	12.8	13.7	14.5	15.4	16.6	17.9	19.1	19.1	19.8	21.1	22.4	23.7	24.9	26.0	26.9
A03	97.4	101.7	113.7	123.5	130.3	137.3	145.8	152.1	159.9	168.4	177.4	188.3	200.9	213.4	224.0
A04	30.0	32.8	34.3	35.6	39.7	37.8	41.7	34.8	38.5	37.1	42.1	45.0	47.1	44.5	46.8
A05	52.3	54.9	56.6	58.9	71.4	72.9	77.4	78.2	80.2	81.8	85.4	90.4	101.0	110.2	116.4
A06	64.1	70.9	72.4	76.0	85.5	86.6	97.9	102.9	101.3	108.0	117.1	125.5	135.5	146.1	156.2
A07	53.9	58.1	63.9	67.1	78.2	77.8	88.2	89.4	86.7	90.7	96.4	102.1	110.3	121.2	126.3
A08	73.1	76.3	81.8	87.3	96.8	102.8	101.7	104.8	101.4	108.4	116.2	119.0	133.5	145.2	157.6
A09	14.3	14.0	14.4	15.3	16.0	16.7	17.1	17.4	18.0	18.6	19.1	19.6	18.6	16.9	17.1
A10	137.1	140.6	148.0	168.1	181.1	190.1	194.1	203.1	211.0	217.3	223.3	222.9	236.3	243.0	255.2
A11	82.1	86.0	89.8	96.6	100.9	105.4	108.8	112.4	117.5	123.1	128.6	133.2	138.2	140.3	144.7
A12	91.3	102.1	105.2	123.5	133.1	145.4	149.2	161.1	163.1	167.7	169.5	158.7	172.3	175.3	186.5
A13	63.1	69.0	75.4	82.6	89.9	97.1	103.5	109.4	112.2	116.2	119.3	123.3	128.7	134.1	137.4
A14	83.9	85.3	90.1	94.6	102.7	109.7	105.5	111.8	119.4	124.4	129.9	133.4	144.1	153.5	163.4
A15	188.3	199.8	214.4	233.6	249.0	250.1	264.3	276.7	287.2	299.3	306.6	323.6	346.1	362.9	381.8
A16	133.6	147.5	149.4	167.2	186.1	200.2	214.2	229.7	240.0	253.2	264.6	258.0	291.0	312.8	335.6
A17	120.1	127.1	136.0	148.2	154.8	165.4	164.4	167.6	171.8	176.0	179.6	189.9	202.3	210.4	221.1
A18	110.4	115.2	121.4	129.3	137.3	145.7	147.0	151.9	157.8	164.1	168.4	174.4	187.3	198.0	207.5
A19	147.7	151.4	156.0	164.5	172.5	180.6	187.5	194.8	199.3	203.7	212.4	217.1	226.0	237.1	247.1
A20	71.4	71.1	75.4	87.1	93.4	103.9	110.9	119.4	119.6	123.7	132.7	138.0	145.5	155.8	165.9
A21	26.6	29.4	33.2	37.1	39.1	42.0	45.5	50.4	55.6	61.0	66.5	72.5	78.3	83.0	90.6
A22	53.6	56.3	59.3	62.4	65.5	67.8	69.4	69.7	70.7	72.3	75.2	78.4	82.1	85.8	81.1
A23	166.9	175.5	183.2	193.3	203.3	214.3	223.1	230.2	237.8	243.0	254.7	268.7	284.6	299.9	307.7
A24	43.4	45.1	46.8	47.9	49.7	51.8	52.6	54.4	56.3	57.0	58.2	60.9	64.1	67.5	70.6
A25	62.1	63.6	65.5	68.8	72.4	75.7	78.0	81.5	86.1	89.4	92.9	98.0	103.2	109.5	116.9
A26	7.2	7.7	8.0	8.3	8.7	9.0	9.2	9.6	9.8	10.1	10.6	11.0	11.5	12.2	12.6
A27	55.8	60.4	58.6	60.9	66.7	66.5	71.4	69.8	72.5	73.9	76.5	79.6	86.5	93.2	100.1
A28	33.6	36.6	38.8	40.1	44.0	43.2	45.4	45.2	45.9	49.3	52.2	55.1	58.3	61.7	65.0
A29	6.8	6.7	7.0	6.9	7.2	7.4	7.7	7.8	7.5	7.9	8.3	8.6	8.9	9.3	9.7
A30	7.0	7.4	7.6	7.7	9.1	9.4	10.3	10.7	10.5	11.2	11.9	12.2	12.6	13.0	13.8
A31	51.6	52.1	58.0	60.8	62.9	69.7	74.8	76.8	80.5	82.7	86.8	94.0	99.3	105.8	111.8

GRP	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
M01	77.4	85.9	94.6	88.7	98.7	112.2	130.2	144.0	147.6	154.6	173.3	188.8	190.7	205.3
M02	57.5	63.5	70.8	75.7	78.4	83.1	96.8	107.0	112.9	122.3	131.7	129.2	130.6	137.8
M03	92.4	99.6	102.0	98.5	101.9	107.4	131.6	155.4	167.7	192.5	224.9	236.8	246.5	271.2
M04	51.5	55.9	57.6	53.7	60.0	72.5	85.7	97.0	104.9	112.2	120.1	125.7	127.5	135.5
M05	26.4	28.6	32.4	31.2	36.7	40.3	44.4	48.1	50.7	54.2	60.3	63.3	62.9	69.8
M06	162.9	168.3	185.1	174.0	178.3	194.0	231.9	275.2	284.9	317.4	354.5	360.2	349.3	364.4
M07	43.0	47.5	51.4	52.3	54.7	58.5	68.8	77.6	80.7	95.8	116.0	111.4	109.1	115.4
M08	106.6	115.8	125.2	129.9	136.1	139.0	161.5	181.4	166.7	190.5	193.6	215.3	209.7	232.1
M09	211.1	229.2	243.0	254.9	266.6	286.8	315.5	362.2	376.7	404.6	442.6	449.7	462.3	493.7
M10	131.1	140.4	165.9	178.1	188.4	217.2	256.1	328.0	359.4	424.5	500.1	502.6	529.7	576.8
M11	53.5	63.1	83.4	92.8	97.3	112.4	139.4	188.6	215.0	251.1	292.0	294.4	309.7	366.0
M12	40.5	44.4	49.8	52.0	59.2	69.4	87.0	105.9	119.3	128.7	148.3	155.4	166.5	182.8
M13	28.2	30.9	36.5	40.3	43.6	46.8	56.3	69.4	78.4	86.2	107.9	113.2	122.3	149.2
M14	33.1	38.3	42.9	42.3	43.5	49.8	60.3	72.2	77.4	82.8	96.4	100.9	103.4	115.6
M15	119.4	126.9	142.1	146.6	154.9	166.6	196.1	232.3	257.2	301.1	369.5	395.7	424.0	483.4
M16	69.5	78.2	91.7	92.8	98.5	111.8	128.6	150.4	171.5	186.2	223.7	218.3	223.3	253.0
M17	63.7	72.1	89.0	90.3	94.6	103.9	129.9	162.0	170.4	189.7	215.7	220.2	218.0	242.2
M18	59.8	66.6	74.0	74.1	78.6	91.7	100.6	114.3	123.1	138.8	159.6	161.5	169.0	183.3
M19	86.6	90.9	105.5	118.6	130.5	144.6	170.0	205.2	220.5	274.1	337.7	363.1	409.1	508.9
M20	25.8	27.3	29.1	30.7	32.2	34.5	39.2	46.6	55.1	61.7	67.1	66.5	70.8	82.0
M21	3.7	3.4	3.2	3.0	3.4	3.6	5.2	7.0	7.1	7.7	9.2	10.5	11.6	14.0
M22	30.8	34.2	37.3	39.3	42.1	45.7	55.0	58.0	61.7	67.8	75.6	77.2	82.6	90.1
M23	65.6	72.8	80.6	81.9	89.5	100.5	114.0	134.5	143.3	160.8	182.9	187.9	194.5	212.9
M24	18.7	22.0	22.9	23.3	25.5	31.3	38.8	43.7	42.8	49.8	56.4	58.6	62.1	64.3
M25	27.6	29.7	32.7	33.4	38.8	42.9	48.5	56.2	61.0	68.3	82.6	86.3	94.8	103.2
M26	1.8	2.0	2.0	1.5	2.4	2.4	2.1	2.3	1.5	1.6	1.6	1.9	2.1	2.3
M27	42.1	43.3	46.0	44.3	48.1	52.7	63.2	77.0	81.6	90.4	113.0	116.2	118.3	133.2
M28	39.0	41.0	40.1	34.5	37.3	42.2	47.7	54.1	59.6	61.0	69.5	76.3	80.4	87.6
M29	7.7	7.1	8.7	8.0	8.9	9.7	10.8	12.5	13.4	13.8	17.0	16.9	17.3	18.0
M30	6.6	7.4	7.6	6.8	7.3	8.1	9.2	11.3	12.0	13.1	14.8	16.5	16.9	17.5
M31	18.4	20.5	21.4	21.2	22.1	24.7	28.3	33.1	36.1	37.8	43.5	45.4	48.5	56.7

GRP	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
M01	230.2	260.1	296.8	319.6	339.5	367.0	402.2	450.5	501.8	549.5	595.6	667.1	780.5	859.6	949.8
M02	153.6	173.4	198.8	226.9	259.2	289.6	310.9	347.3	387.3	437.0	499.6	589.7	706.3	830.7	977.8
M03	327.3	407.8	476.8	550.2	641.5	737.1	827.0	914.7	1007.1	1090.6	1206.0	1378.6	1582.6	1826.9	2102.8
M04	154.4	174.1	194.1	220.1	245.1	277.8	303.3	333.2	361.1	400.1	459.9	536.8	631.0	733.3	846.2
M05	80.5	91.8	103.8	115.2	128.3	146.3	160.3	176.3	197.0	218.4	252.6	322.5	396.1	534.2	671.6
M06	413.6	482.2	548.8	587.7	633.6	700.1	753.3	817.3	904.8	972.6	1067.9	1199.3	1391.2	1628.6	1931.6
M07	136.4	160.0	169.0	188.6	213.2	232.1	249.9	276.9	363.8	404.2	446.7	509.7	587.3	655.4	766.8
M08	247.0	268.4	292.1	321.9	355.7	391.6	430.7	463.5	508.9	559.8	620.8	694.7	784.3	883.4	997.3
M09	578.6	675.3	771.2	885.3	983.6	1087.8	1177.0	1283.0	1408.7	1577.7	1768.7	2053.4	2359.4	2630.7	2954.3
M10	760.8	938.4	1151.9	1337.9	1503.2	1693.0	1898.3	2112.6	2357.5	2615.5	2973.0	3485.0	4081.5	4733.9	5491.3
M11	458.3	610.4	778.0	920.9	1063.7	1200.1	1329.2	1480.1	1653.8	1836.5	2082.3	2431.9	2831.0	3190.6	3646.9
M12	216.9	270.4	316.4	351.8	402.1	453.3	497.3	534.3	585.0	640.8	715.1	810.7	929.7	1088.5	1276.8
M13	191.8	260.7	345.7	405.4	463.6	538.4	605.1	674.5	749.7	825.9	939.8	1086.8	1248.4	1410.4	1650.1
M14	142.2	183.3	196.1	202.0	228.9	264.4	293.7	312.8	333.8	376.8	446.5	555.0	658.3	770.8	896.5
M15	621.6	796.0	934.6	1066.2	1213.8	1368.1	1533.2	1718.1	1923.7	2135.2	2454.6	2866.9	3418.8	4030.2	4703.2
M16	317.3	387.4	471.2	552.3	640.6	710.7	776.0	836.6	935.0	1027.1	1145.9	1341.2	1558.8	1832.5	2156.9
M17	282.4	329.5	391.5	454.5	525.1	595.5	662.1	716.1	781.6	859.1	946.1	1042.8	1184.6	1364.7	1581.7
M18	222.0	262.4	302.8	343.7	399.8	452.9	505.0	552.0	610.5	673.4	746.8	840.1	975.4	1094.4	1274.9
M19	679.3	925.9	1163.9	1381.6	1555.6	1756.3	1974.1	2183.3	2445.3	2707.0	3077.9	3702.7	4398.8	5060.0	5915.1
M20	105.0	152.2	193.7	210.4	229.9	244.7	276.0	294.2	318.6	344.1	383.0	438.9	514.0	608.8	726.3
M21	19.3	29.0	33.9	32.0	32.7	34.6	37.7	40.7	43.8	47.7	53.8	64.3	74.6	87.2	104.4
M22	109.4	132.9	157.9	180.9	202.8	227.9	244.1	269.3	297.5	332.7	378.6	439.1	510.3	576.1	673.5
M23	258.3	310.2	363.9	417.7	469.1	534.8	589.3	615.2	682.9	766.9	876.6	1021.2	1202.0	1418.3	1702.0
M24	73.9	83.9	93.8	103.7	116.7	131.1	146.6	165.9	178.5	195.3	221.1	250.5	286.1	322.4	368.2
M25	120.5	137.0	160.7	182.3	203.3	224.8	245.4	262.5	277.7	288.6	315.5	347.5	391.7	423.4	495.4
M26	2.5	2.9	3.8	6.4	5.8	6.6	8.0	9.6	11.1	13.1	15.8	17.9	20.0	24.7	30.4
M27	145.1	166.9	194.3	223.8	252.5	284.3	323.5	363.6	404.0	449.3	509.4	589.9	688.5	797.2	911.2
M28	96.6	109.7	121.8	133.9	147.9	162.7	177.0	192.1	211.4	231.5	255.2	285.1	320.1	362.2	413.6
M29	19.4	22.3	24.1	26.4	29.0	32.1	35.6	39.0	43.4	50.0	58.3	67.9	79.1	91.7	106.2
M30	19.7	22.3	24.3	27.5	30.1	32.6	35.2	38.6	44.3	49.3	55.6	65.9	75.7	87.2	102.7
M31	67.8	76.8	84.6	94.3	101.7	107.0	113.1	120.7	131.1	141.8	152.2	169.9	193.7	221.6	246.4

GRP	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
S01	25.8	29.2	34.6	36.7	43.2	51.4	62.5	65.2	82.6	97.8	109.2	108.7	123.9	140.0
S02	20.1	21.5	23.4	24.5	25.8	29.6	37.3	40.5	43.0	45.7	45.9	50.1	58.4	62.7
S03	38.5	40.4	45.4	47.7	56.7	63.7	70.0	82.1	90.1	105.5	126.6	138.8	151.4	183.5
S04	18.3	21.1	23.4	24.2	28.2	31.0	40.8	47.2	51.6	54.5	60.9	64.2	69.7	77.3
S05	12.7	14.7	18.1	18.7	22.7	26.5	33.9	45.1	54.3	61.1	63.1	67.3	69.4	74.9
S06	33.9	37.7	41.4	49.5	56.3	64.8	77.5	93.4	112.5	140.4	159.7	174.5	182.9	201.5
S07	15.0	16.6	18.4	19.2	21.1	25.2	29.4	37.4	44.2	54.2	64.7	73.4	66.6	75.2
S08	27.2	28.2	31.9	33.6	37.3	38.3	43.6	52.3	63.0	71.0	98.3	108.9	106.4	120.4
S09	50.8	52.3	63.9	69.6	78.9	86.6	99.4	114.0	120.8	131.6	148.1	158.7	167.1	181.3
S10	49.4	52.3	53.1	62.6	69.1	78.5	90.0	106.2	126.7	147.9	207.2	230.4	246.4	293.2
S11	23.1	25.0	28.2	35.6	42.0	48.7	58.6	69.9	81.6	90.5	99.4	94.3	95.6	120.1
S12	19.7	21.0	24.9	27.9	35.2	41.7	50.8	61.5	70.8	80.5	86.7	95.4	90.5	104.8
S13	14.3	14.1	17.7	24.2	27.6	29.4	36.5	45.1	44.9	54.7	60.0	66.4	74.0	82.5
S14	17.7	20.7	20.3	22.2	25.1	27.5	32.5	39.5	45.6	49.7	58.1	64.5	67.9	76.1
S15	31.0	32.3	38.4	42.9	54.6	67.5	77.9	89.5	97.3	113.8	124.7	128.2	129.1	149.7
S16	28.6	34.2	43.5	49.4	53.9	70.7	78.3	103.3	112.1	138.5	151.5	167.1	178.5	197.0
S17	26.2	29.9	33.2	34.9	42.4	47.3	59.2	66.5	73.3	81.2	92.8	101.4	116.4	134.3
S18	27.3	29.8	31.4	35.6	38.3	41.4	47.9	60.9	69.5	79.2	89.2	93.7	97.3	107.5
S19	43.9	50.4	60.6	64.3	69.8	75.1	83.8	107.8	132.4	153.5	170.7	180.9	205.1	241.8
S20	19.2	18.9	20.9	25.7	28.5	30.5	35.2	39.1	36.6	40.6	46.3	45.9	48.5	55.7
S21	4.0	4.3	4.7	5.3	6.7	7.2	8.6	10.1	11.0	13.4	15.4	16.2	18.3	21.9
S22	11.7	12.9	14.2	15.5	17.8	20.5	25.1	28.6	31.6	36.0	39.3	43.2	44.9	50.1
S23	36.9	41.7	49.3	52.9	57.9	67.7	79.2	92.5	103.5	116.3	123.5	126.0	144.5	163.3
S24	8.5	9.4	10.5	11.5	13.0	14.6	16.8	19.8	23.9	27.4	31.5	32.6	34.1	37.9
S25	12.0	13.8	14.1	16.6	20.0	22.6	26.9	32.2	34.6	41.6	49.5	55.0	58.9	65.7
S26	1.4	1.7	1.7	2.1	2.1	2.2	5.2	5.8	5.8	5.7	5.8	6.4	7.0	7.3
S27	14.2	17.6	19.0	20.5	23.7	26.7	32.5	42.6	50.4	58.8	75.2	76.4	79.8	80.4
S28	12.5	13.6	17.4	17.9	18.5	20.3	24.1	28.5	35.6	43.5	51.3	56.0	59.7	64.3
S29	4.2	3.4	4.4	5.3	6.0	6.9	8.0	8.7	9.4	10.4	10.0	10.3	10.8	11.7
S30	3.3	3.6	4.0	4.2	5.1	6.0	6.7	8.1	9.1	10.9	12.3	12.8	13.5	14.7
S31	6.8	8.1	9.5	10.8	12.6	15.0	17.1	21.4	25.8	29.6	33.4	37.9	42.4	49.1

GRP	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
S01	157.5	178.1	204.8	246.8	279.9	316.8	348.9	385.8	435.6	492.7	558.2	618.5	699.5	790.5	901.9
S02	71.9	80.3	92.9	109.5	126.4	143.3	161.9	176.3	194.8	217.5	242.2	270.9	303.0	338.3	375.9
S03	223.0	260.0	295.5	338.8	382.8	430.7	476.3	519.2	573.2	636.3	701.5	771.7	868.9	983.7	1124.4
S04	88.2	100.0	110.2	124.0	138.8	157.5	173.5	190.2	209.1	235.4	261.8	302.4	350.3	389.5	419.1
S05	85.3	98.6	114.4	130.6	146.7	167.6	192.2	216.6	247.9	286.3	330.2	377.9	461.0	544.5	630.6
S06	229.0	261.7	290.8	313.4	339.8	371.0	400.3	436.0	477.8	532.8	593.0	662.3	733.2	793.3	872.6
S07	85.8	94.6	109.3	121.2	135.5	158.1	171.0	187.4	209.3	230.1	253.3	274.3	304.4	345.8	406.0
S08	128.8	138.6	150.5	164.0	179.3	202.1	225.3	247.6	276.8	301.2	331.9	365.4	399.4	442.4	497.3
S09	203.0	230.8	268.2	305.0	360.2	424.6	487.5	552.8	627.5	686.4	761.3	829.8	946.8	1051.9	1178.1
S10	370.0	463.0	515.7	592.4	677.3	772.7	872.5	960.0	1067.4	1189.6	1327.5	1491.5	1691.3	1943.5	2244.8
S11	148.2	171.9	199.0	235.3	261.4	288.9	322.8	354.7	396.7	443.2	504.0	576.4	657.0	756.9	872.0
S12	119.2	138.5	169.0	197.3	225.9	253.3	280.7	315.8	352.0	395.4	446.9	510.8	583.2	646.1	716.5
S13	99.0	117.1	132.3	151.0	173.1	198.1	219.4	241.1	265.2	289.6	316.3	347.1	384.5	432.5	501.7
S14	90.7	101.6	116.9	132.9	150.4	171.5	192.9	213.6	235.8	254.4	271.9	292.1	320.7	355.3	390.5
S15	174.1	208.9	252.0	294.7	331.5	379.4	421.9	461.2	509.3	566.5	628.3	699.6	785.7	899.2	1029.5
S16	218.9	244.3	276.4	312.7	351.5	392.8	429.8	469.9	513.0	566.0	622.3	684.9	755.8	852.8	962.8
S17	157.0	180.8	203.3	228.7	254.5	288.9	322.0	357.6	398.7	441.6	491.7	544.6	602.4	673.5	765.8
S18	122.6	142.2	157.9	174.6	197.1	220.0	245.3	273.3	303.1	335.2	370.4	406.3	449.0	509.6	569.2
S19	287.1	335.0	396.7	454.6	506.8	561.1	619.4	688.8	779.7	873.3	982.4	1093.5	1224.7	1392.2	1578.7
S20	65.0	74.8	82.8	92.0	99.5	106.8	117.3	128.7	146.0	163.2	182.8	201.1	222.6	248.1	278.3
S21	38.2	44.0	47.0	48.9	51.6	55.2	59.7	63.9	69.5	75.6	82.0	88.4	97.4	107.3	119.2
S22	63.0	73.5	89.0	103.3	118.7	135.9	155.3	167.9	183.9	200.6	219.0	239.6	264.6	297.1	338.7
S23	185.9	210.0	233.1	257.4	286.7	312.5	349.4	381.6	421.2	465.5	512.5	564.2	625.7	692.1	773.7
S24	42.7	49.0	53.8	58.8	64.2	70.1	77.5	83.2	94.6	107.4	117.5	129.4	144.9	165.2	185.5
S25	74.5	87.2	100.0	115.3	132.6	148.9	164.2	179.5	198.2	221.5	246.8	269.4	303.9	338.6	369.7
S26	8.3	10.5	13.2	14.9	20.1	23.5	27.2	30.8	34.6	40.2	45.8	52.7	60.7	66.6	74.8
S27	93.4	104.1	111.3	120.2	130.9	150.3	166.4	189.1	212.0	235.8	261.7	287.4	315.2	347.1	390.1
S28	72.5	80.5	91.8	106.3	122.4	140.2	158.5	180.9	203.9	226.3	251.7	281.8	318.4	359.2	399.1
S29	12.8	14.3	15.8	17.6	19.4	21.4	23.3	25.6	28.5	31.5	34.8	38.3	42.2	46.5	51.4
S30	16.7	18.2	20.0	22.2	23.9	26.8	29.7	33.7	37.6	41.4	45.3	50.0	55.0	59.8	65.3
S31	56.8	66.9	77.1	85.5	92.3	101.3	111.0	124.7	139.7	156.7	172.9	194.2	216.6	236.9	269.1