

# China's business cycles since 1979: a chronology and comparative analysis\*

James Laurenceson<sup>\*#</sup> and Corrine Dobson, China's business cycles since 1979: a chronology and comparative analysis. East Asia Economic Research Group Discussion Paper No. 17, August 2008, School of Economics, University of Queensland, Brisbane.

## Abstract

The path to emerging as the world's second largest economy (in PPP terms) has not been a smooth one. This paper seeks to provide a detailed chronology of China's business cycles since 1979. It also considers whether their volatility has changed over time, and how their volatility compares with those in the world's largest and third largest economies, the U.S and Japan. In the process, several puzzles relating to China's business cycles are observed that warrant further research attention.

**JEL codes** – E32

**Key words** – China, business cycles

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# The authors would like to thank Kam Ki Tang and participants at the 20<sup>th</sup> Annual Conference of the Association for Chinese Economic Studies (Australia), held at James Cook University, Townsville, 10-11 July, 2008 for valuable comments on an earlier draft of this paper. Thanks also to Zhao Yong for excellent research assistance. Any errors are our own.

## 1. Introduction

2008 marks the 30<sup>th</sup> anniversary of the policy initiatives announced at the Third Plenum of the 11<sup>th</sup> Central Committee of the Chinese Communist Party that began China's transition to a market economy. With the average annual growth rate in real GDP since this time being nearly 10 per cent, the trend performance of China's economy has been nothing short of exceptional. It is therefore not surprising that much scholarly effort has been devoted to analysing this outcome. Growth accounting studies, such as Kuijs and Wang (2006), have sought to explain the extent to which the trend rate of real GDP growth can be accounted for by growth in factor inputs such as labour and capital versus growth in total factor productivity (TFP). Others, such as Tseng and Zebregs (2002), have sought to pinpoint the drivers of trend growth such as domestic deregulation, openness to international trade and investment, and urbanisation. However, as Brandt and Zhu (2000, p.422) astutely observed, "The high average growth rate enjoyed by China since 1978 conceals a marked cyclical pattern". The path to emerging as the world's second largest economy (in PPP terms) has not been a smooth one. While China's exceptional trend performance has been the subject of much scholarly attention, the fluctuations around this trend have been marginalised by comparison. This lack of attention manifests itself in some very basic ways. For example, to the best of our knowledge there exists no comprehensive chronology, official or otherwise, of China's business cycles during the reform period. There are certainly studies that assign dates to business cycles, but as will be discussed in section 2, each adopts a largely ad hoc approach to their identification and so the dates conflict with one another. This state of affairs sits in stark contrast to the world's other major economies. For example, in the U.S, the National Bureau of Economic Research's (NBER) Business Cycle Dating Committee catalogues in great detail

business cycle fluctuations back to 1857. Having the most accurate possible chronology of business cycles is the necessary starting point for an analysis into them. Unfortunately, this seems to have been lost on much of the existing literature that discusses business cycles in the case of China. How can one begin to explain the factors that have contributed to a given business cycle when one is not sure when the cycle began and finished? Or of even greater concern, one might try to assign causes to a “business cycle” when a more systematic investigation shows that one does not even exist in the underlying data. The relative lack of academic attention given to business cycles in China also sits in contrast to the attention the Chinese Government pays to short run fluctuations in aggregate economic activity. The Chinese Government’s commitment to achieving a real GDP growth of at least eight per cent *each* year for the purposes of maintaining social stability is well known and explains why negative macroeconomic shocks, such as the slowdown in export growth that accompanied the Asian financial crisis, are met with a swift policy response.

At the outset, it is necessary to clarify exactly what we mean by a business cycle in this paper. In the study of business cycles, semantics are important. According to the NBER, a business cycle features a period of positive growth in aggregate economic activity, labelled an expansion phase, followed by a period of negative growth, labelled a contraction or recession phase. The turning point from a contraction (expansion) phase to an expansion (contraction) phase is designated as a trough (peak). By this definition, China has yet to experience a business cycle during the reform period because while the growth rate in real GDP has not been smooth, it has never turned negative, at least according to official statistics. For this reason, we avoid using the terms expansions and contractions in this paper. However, as discussed in Harding

and Pagan (2002), the above “classical” definition of a business cycle differs considerably from the one that appears nowadays in most macroeconomics textbooks. The modern approach is to conceptualise business cycles as being the fluctuations in real GDP around trend real GDP. This approach does not require that a business cycle include a period when aggregate output declines; a period when it is below trend is sufficient. This modern approach is the one we adopt in this paper, as do other studies that comment on China’s business cycles, albeit this is often not made explicit. Fluctuations above and below the trend are typically expressed in the form of an output gap, which shows the percentage deviation in observed real GDP from estimated trend real GDP. Periods that feature positive (negative) output gaps are referred to as booms (slumps). A peak (trough) in a boom (slump) period occurs when the positive (negative) output gap is at its maximum.

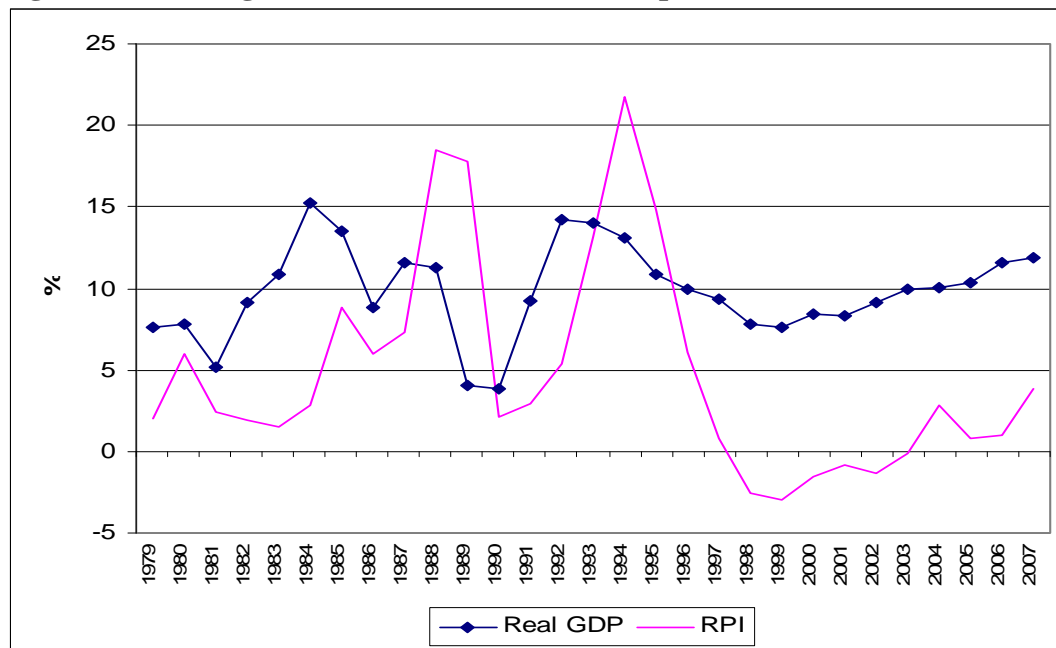
This paper has two basic objectives. The first is to provide a detailed chronology of China’s business cycles since 1979. The second is to consider whether the volatility of China’s business cycles has changed over time, and to compare their volatility with those experienced in the world’s other leading economies, the U.S and Japan. Section 2 critically reviews those existing studies that have assigned dates to China’s business cycles. Section 3 presents the methodology and data we use to identify and analyse business cycles in this paper. Section 4 presents and discusses the results. Section 5 makes concluding comments.

## **2. Literature review**

There exist several insightful studies, such as Brandt and Zhu (2000), that have theorized regarding the sources of China’s business cycles. We return to some of

these when discussing the results in section 4. Here we focus on critically reviewing those studies that have assigned dates to China's business cycles. With just one exception that we are aware of, existing studies that chronicle China's business cycles do so through a visual inspection of macroeconomic data series, such as the annual growth rate in real GDP or in the price level, as proxied by the retail price index (RPI). These two series are shown in Figure 1 for the period 1979-2007. Khor (1991) inspected the annual growth rates of two series - real GNP and the RPI – and concluded that the Chinese economy experienced three business cycles over the period 1978-1990: the first from 1978-1982, the second from 1984-1986 and the third from 1986 to the end of the dataset. Yu (1997) inspected the annual growth rates of four series - money aggregates, bank credit, industrial output and the retail price index – and concluded that the Chinese economy had experienced four business cycles over the period 1978-1994: the first from 1978-1983, the second from 1984-1986, the third from 1987-1990 and the fourth from 1991 to the end of the dataset. Oppers (1997) inspected the annual growth rate of real GDP and concluded that the Chinese economy had experienced four business cycles over the period 1978-1996: the first from 1979-1981, the second from 1982-1986, the third from 1986-1990 and the fourth from 1991 to the end of the dataset. A very recent study, Gong and Lin (2008), also used a visual inspection of the growth rate in real GDP and the price level to conclude that only one business cycle was experienced over the period 1990-2003.

**Figure 1. Annual growth rate – real GDP, retail price index (RPI)**



Source – China National Bureau of Statistics

In terms of providing a chronology of China's business cycles, the above studies suffer several shortcomings. Firstly, it is not clear why data series other than real GDP are used identify business cycles. By definition business cycles deal with fluctuations in economic activity at the aggregate level, and so real GDP is the most conceptually compelling series on which to focus. Fluctuations in monetary aggregates may help to determine short run real GDP, and inflation may respond to the real GDP output gap, but this does not mean that business cycles should be dated based on these other series. Secondly, while a visual inspection of a data series such as the annual growth rate of real GDP might reveal apparent business cycles during periods of heightened cyclical volatility, it is far less able to do so during less volatile periods. For example, by simply inspecting Figure 1, the researcher would be hard pressed to identify any business cycles during the period 1998-2007. Thirdly, the criteria used to identify business cycles are not explicitly stated and this invites an ad hoc approach being

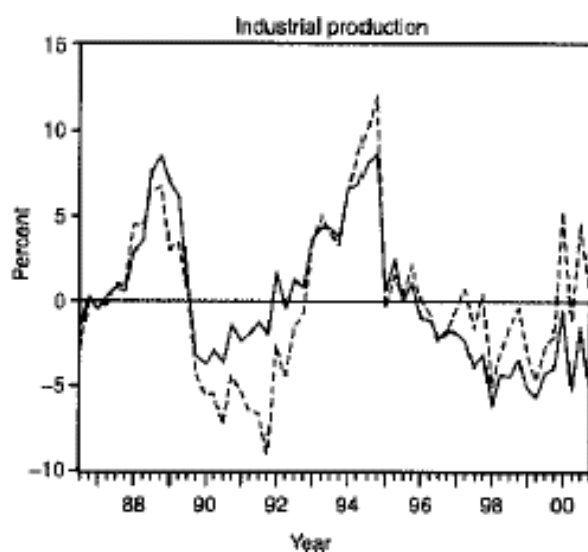
taken. For example, how are the trend and cyclical components of the series obtained? On what basis are the peaks and troughs in the series chosen? The consequences of an ad hoc approach to business cycle identification being taken are readily apparent in the conclusions drawn. For example, Oppers (1997) concluded that the first growth cycle ended in 1981. However, according to Khor (1991) it ended in 1982, while according to Yu (1997) it ended in 1983. Oppers (1997, p.5) stated that in his study cycles were assumed to start in the first year of increasing growth and end in the last year of decreasing growth. However, an exception is made in the case of 1986, "...where the turnaround in activity in the middle of the year was taken as the beginning of the third cycle". This highlights a further limitation in all of the above studies in that they use data at annual frequency to date business cycle fluctuations that are short run in nature. Moving beyond their shortcomings with respect to dating business cycles, another limitation of these studies is that they make no comment on characteristics of business cycles, such as their volatility, i.e., the size of the output gap. This is related to the ad hoc approach taken to their identification. If the trend and cyclical components of the real GDP series are not extracted in a systematic manner, it becomes impossible to comment on characteristics such as volatility.

A study that does address several of these shortcomings is Zhang and Wan (2005). This study covers the period 1985-2001 and the output series that forms the basis of their analysis is industrial output, which is available at monthly frequency. This is then used to construct a series of seasonally-adjusted observations at quarterly frequency. The trend component of the industrial output series is obtained in a systematic manner through the use of a Hodrick-Prescott (H-P) filter (this is discussed more detail later). The fluctuations around this trend are then expressed in the form of

an output gap. The above innovations make this study a significant improvement upon those conducted earlier. The authors concluded that over the period 1985-2000 the Chinese economy experienced three business cycles: the first from 1985/86-90, the second from 1991-1996 and the third from 1997 to the end of the dataset. However, the opportunity for further improvement exists beyond simply updating Zhang and Wan's analysis. Firstly, it is not known why the authors truncated the first six years of the reform period. It may be related to issues of data availability. Secondly, as the authors themselves note, using industrial output to proxy for fluctuations in aggregate economic activity is not ideal from a conceptual perspective. This choice might also have been dictated by data availability. Thirdly, while the trend and cyclical components are obtained in a systematic way using a H-P filter, business cycle identification retains an ad hoc element. In particular, the criteria used to identify turning points are not stated. For example, the broken line in Figure 2 shows the output gap the authors obtained when they applied the H-P filter to the seasonally-adjusted, industrial output series. Based on this the authors concluded that only one business cycle occurred between 1997 and 2001. However, during this period the output gap alternates between positive and negative values on several occasions. Why each such fluctuation is not counted as a business cycle is not clear. It may be that the slump and boom phases were deemed to be less than some minimum necessary duration, or that the size of the output gap was deemed too small.



**Figure 2. China's Industrial Output output gap**



Source – Zhang and Wan (2005, p.456)

### 3. Data and methodology

For our analysis of China's business cycles, we assemble a real GDP series covering the entire reform period at a quarterly frequency. We prefer to use real GDP rather than industrial output because the former is a conceptually more appealing measure of aggregate economic activity than the latter. We are also fortunate compared with earlier studies in that, at this time of writing, an official, real GDP series at quarterly frequency was available for a 14-year period from 1995Q1 to 2008Q1. The quality of China's official GDP statistics has been the subject of debate. Rawski (2001), for example, expressed concerns that real GDP growth rates had become overstated. However, more recently, *The Economist* (2008a) contended that nowadays most economists consider China's real GDP statistics to be, if anything, understated. Other eminent China-economy scholars, such as Chow (2006), have argued that China's official statistics are by and large accurate, at least by the standards of developing countries. It is certainly the case that China's official real GDP statistics have now

entered countless econometric studies and so we see no particular reason to exclude their usage of this occasion. In the absence of official figures, real GDP for the period from 1979Q1-1994Q4 is sourced from Abeyasinghe and Rajaguru (2004). They arrived at quarterly real GDP growth rate estimates for China and four ASEAN countries using a modified version of the Chow-Lin procedure. The basic idea behind the Chow-Lin procedure is to make use of some higher frequency, GDP-related data series, such as monetary aggregates and trade, to formulate a predictive equation by running a regression of annual real GDP on annual related series. The quarterly figures of the related series can then be used to predict the quarterly real GDP figures. Since their publication, these estimates have been used by several studies, such as Girardin (2005), needing to capture fluctuations in economic activity at the aggregate level for a period longer than that which is covered by official data.

The next step is to seasonally adjust the real GDP in levels series. Seasonal adjustment is done using the U.S Census Bureau's X-12 procedure (Findley, et al, 1998).

The cyclical and trend components of the series are then obtained using two different procedures. Multiple methods are used in a bid to ameliorate concerns expressed by the likes of Harding and Pagan (2002) that the business cycles identified using a given de-trending procedure might reflect properties peculiar to the procedure rather than actually being present in the underlying data. The first procedure used is the H-P filter (Hodrick and Prescott, 1997). Simply put, the H-P filter is an algorithm that chooses a set of smooth values for a given time series. These smoothed values are then taken to represent the trend in that series. In the past decade the H-P filter has emerged as the

standard approach for estimating the trend in economic time series. While alternative filters have since been proposed, and the H-P filter has been criticised on several grounds such as its end of sample properties, it is likely to remain one of the standard approaches to estimating the trend (Ravn and Uhlig, 2002). The second procedure we use is one of the more recently proposed alternatives to the H-P filter - the Baxter-King (B-K) band-pass filter (Baxter and King, 1999). Band-pass filters are a different class of filters known as frequency filters. The B-K filter isolates the cyclical component of a time series by specifying a range for its duration. For example, in the case of business cycles, most economists are interested in cycles that last between 6 quarters and 32 quarters (Mills, 2003). Cycles shorter than 6 quarters might simply reflect noise in the series while cycles longer than 32 quarters are deemed too long to contain any relevant business cycle information. Accordingly, in this paper the filter allows cycles that last between 6 and 32 quarters to “pass through”, i.e., these are extracted, while cycles shorter or longer in duration are filtered out. While a discussion of these filters in the above conceptual terms is sufficient for the purposes of this paper, those readers seeking more technical detail can refer to Mills (2003). Once the cyclical and trend components in the real GDP are estimated using the above filters, output gaps can then be calculated.

#### **4. Results**

Figure 3 shows the output gap series found in China’s real GDP series using the H-P filter, the B-K filter, as well as the arithmetic average between the two. While both filters search the entire series from 1979Q1-2008Q1, the manner in which the B-K filter extracts the cyclical component means that the output gap series is only available for the period 1982Q1-2005Q1. There is an obvious correlation between the

two output gap series; the correlation coefficient between them is 0.98. While the correlation between the two series is high, there is some difference with respect to the degree of business cycle volatility that is implied. For this reason, we prefer to use the average series as our final metric for business cycle identification and as the focus for our discussion of business cycle characteristics. Based on this average series, Figure 4 shows periods when real GDP was above and below the trend, i.e., periods of boom and slump. Boom periods are represented by (+)1 while slump periods are represented by (-)1. Before 1982Q1 and after 2005Q1, these periods are based solely on the output gap series obtained using the H-P filter. We do not put any weight in the large positive output gap that emerged in 2008Q1 in light of the known end of sample problems associated with the H-P filter.

Four troughs are evident in the average series. These occurred at 1983Q1, 1986Q2, 1991Q2 and 2004Q3. One could debate whether 1986Q2 deserves to be identified as a trough. The output gap series obtained using the H-P filter was below trend for just one quarter. However, we label it a trough, albeit a shallow one, based on the fact that the average series being below trend for 4 quarters. Three peaks are evident. These occurred at 1985Q2, 1988Q3 and 1994Q2. Another potential peak at 1998Q4 is discounted on the basis that the average series only became positive for just this one quarter. The output gap series obtained using the B-K filter never became positive.

The above dates for peaks and troughs correspond closely to known macroeconomic developments in China during the reform period. For example, in September 1988 the central government initiated an austerity program in response to rising inflation and this corresponds to the second peak identified in the series. This program, in

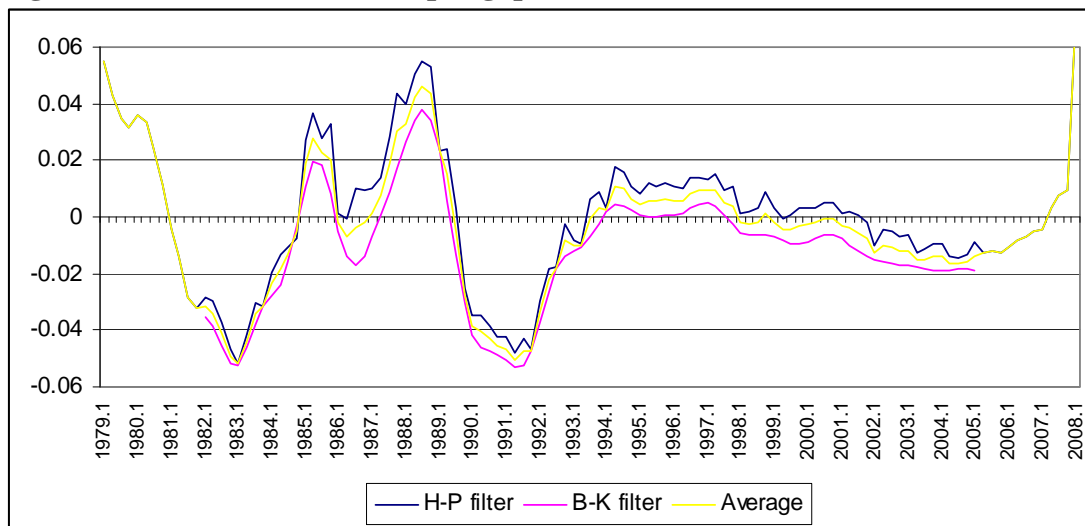
conjunction with the Tiananmen Square incident in June 1989, shattered confidence in China's economic reform program. Figure 3 shows the output gap falling sharply from 4.63 per cent in 1988Q3 into negative territory by 1989Q3. The effects of Deng Xiaoping's "Southern Tour" in early 1991, which Zhao (1993, p.739) described as, "...the most dramatic political incident to occur between Tiananmen crackdown in June 1989 and the Fourteenth Party Congress in October 1992", are also evident. This event is widely credited with restoring confidence in the economic reform program and Figure 3 identifies 1991Q2 as a trough after which the negative output gap disappears rapidly.

The benefits of identifying business cycles using data at quarterly frequency are readily apparent. For example, whereas Oppers (1997) speculated that the economy emerged from a trough during 1986, Figure 3 confirms this and pinpoints the trough as occurring in 1986Q1, although Figure 4 shows it took until 1987Q1 for real GDP to rise above the trend.

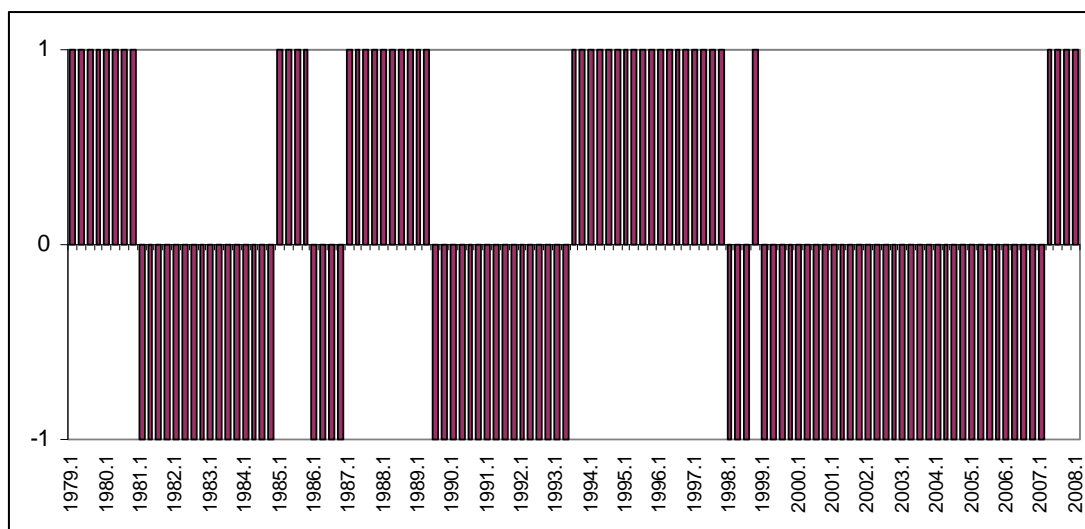
Aside from providing a detailed chronology of China's business cycles, Figure 3 also shows changes in the volatility of business cycles over time. Most obviously, it shows a dramatic decline in volatility in the second half of the reform period compared with the first. The largest positive output gap during the entire period was in 1988Q3, at 4.63 per cent. The largest negative output gap was in 1983Q1, at 5.20 per cent. This was closely followed by the negative output gap in 1991Q2, at 5.06 per cent. In contrast, the positive output gap at the peak in 1994Q2 was just 1.10 per cent and the negative output gap at the following trough in 2004Q3 was just 1.64 per cent.

The average output gap between 1993Q1-2008Q4 was 70 per cent less than between 1979Q1-1992Q4.

**Figure 3. China's real GDP output gap**



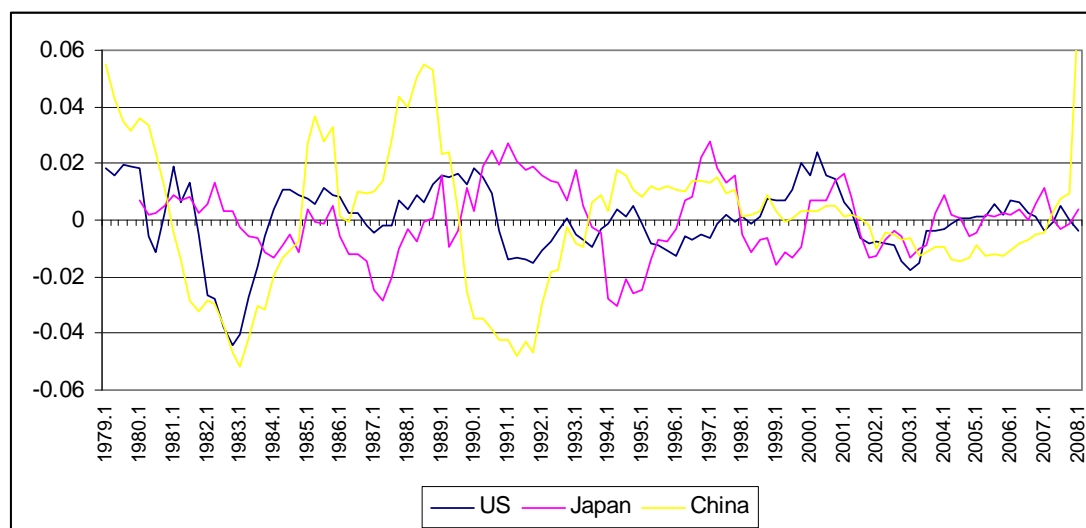
**Figure 4. Periods of above and below trend real GDP**



To put China's business cycles in a comparative perspective, a seasonally-adjusted, real GDP series at quarterly frequency was also assembled for the world's largest and third largest economies (in PPP terms), the U.S and Japan. This data was sourced from the International Monetary Fund's, *International Financial Statistics*. In the case

of the U.S, a data series was available from 1979Q1, whereas for Japan it was only available from 1980Q1. The output gaps series for the U.S, Japan and China, all obtained using the H-P filter, are shown in Figure 5. The most striking observation is that while business cycle volatility was noticeably greater in China up to around 1993, thereafter it has been on par with the U.S and Japan. Since 1992, real GDP in all three countries has basically fluctuated within a 2 per cent band around trend real GDP.

**Figure 5. Real GDP output gap – US, Japan and China**



The above findings raise several puzzles, which we briefly comment upon here but largely commend to future research. The first puzzle is to explain how China has been able to so successfully reduce business cycle volatility during the second half of the reform period. Existing literature offers some clues. In particular, several studies have theorized regarding the sources of business cycle fluctuations in the 1980s and these theories might also provide useful insights into why volatility has declined in more recent decades. The standard explanation for business cycles in the 1980s relates to the central government's administrative controls over prices. While prices in some

sectors of the economy were liberalized early on in the reform period, such as in light manufacturing, those in basic industries, such as raw materials, energy and transportation, continued to be set at below market levels. This gave local governments and local government-controlled firms little incentive to invest in these industries. At the same time, the decentralisation in decision-making authority that was a hallmark of the early stages of the reform period meant that the former credit plan became largely indicative rather than compulsory, and local government officials acquired considerable influence over the lending decisions of local branches of China's big state banks. The end result was that state banks tended to channel funds away from investment in basic industries and they subsequently became growth bottlenecks. This forced the central government itself to invest in them to raise capacity. However, as funds in state banks had been diverted to the projects preferred by local government officials and firms, which were situated in sectors where price liberalization had occurred, the central government had to rely mainly on money creation to finance these investments. The combination of fixed asset investment in both price-liberalized and non-liberalized sectors, and the monetary financing that made this possible, resulted in spikes in both output and inflation. During such episodes, the central government was forced to reinstate a rigid credit plan in order to reign in inflation. This caused credit to firms outside the plan to dry up, leading to sharp falls in the growth rate of aggregate output. This perspective implies that business cycles would become less volatile if administrative controls over prices were liberalized. While the central government continues to control certain prices, notably those related to energy, the general trend has certainly been towards greater liberalization, or at least fixing prices at closer to market-clearing levels. Rumbaugh and Blancher (2004) contend that by the mid-1990s, the domestic prices of most



traded goods had converged with international prices. And as part of its WTO accession program in 2001, China agreed to lift price controls on a further 128 items ranging from sugar to gold jewellery. The implication of this price liberalization is that one source of business cycle volatility that existed in the first half of the reform period dissipated in the second half. Brandt and Zhu (2000) offer a related, but distinct hypothesis. They argue the fundamental cause of business cycles in the first half of the reform period lay in the central government's commitment to maintaining employment in China's state sector. Because the state sector was less efficient than the emerging non-state sector, maintaining employment in the former required resource transfers in the form of cheap credits from state banks and money creation. When the credit plan became indicative, banks began diverting funds to the more efficient non-state sector. While this increased output growth, it also forced the government to rely more heavily on money creation to finance transfers to the state sector, thus fueling inflation. The solution the government embarked upon was to temporarily mandate a return to a rigid credit plan. However, the ultimate solution lay in scaling back their commitment to support the state sector. Such a program began in earnest in the mid-1990s in the form of the "grasping the large, letting go of the small" policy, which resulted in millions of state sector workers being made redundant, but at the same time greatly reducing the size of transfers to the state sector. Again, the implication is that a source of business cycle volatility that existed in the first half of the reform period dissipated in the second half. While the above theories help to explain why business cycle volatility may have fallen, a puzzle nonetheless remains. This is because not only has volatility fallen, it has fallen to the extent that for the past 15 years it has been comparable with that experienced in the world's other leading economies, the U.S and Japan. Yet in contrast to these countries, China's

institutional structure remains far from what most economists would consider to be ideal for the purposes of smoothing business cycles. For example, China does not have a flexible exchange rate regime, it lacks complete, deep and unfettered financial markets, and also lacks an independent central bank. Some authors, such as Yu (2001), have credited China's detailed system of capital controls with shielding it from the worst effects of events such as the Asian financial crisis. However, capital controls alone would seem an inadequate explanation of the above puzzle since while they have continued to be present, they have been far from effective (Gunter, 2004).

A second puzzle relates to explaining changes in the sensitivity of the price level to changes in the output gap. Specifically, this sensitivity appears to have been increasing. For example, when the positive output gap peaked at more than 4.5 per cent in 1988, Figure 1 shows the rate of increase in the RPI was 18.5 per cent. However, in 1994 when the positive output gap peaked at only just over 1 per cent, the RPI increased by 21.7 per cent. Similarly, when the negative output gap exceeded 5 per cent in 1983 and 1991, the growth rate in the RPI slowed to 1.5 per cent and 2.9 per cent, respectively. However, China actually experienced deflation when the output gap was only mildly negative from 1998-2003. One reason for the apparent increase in sensitivity of prices to the output gap likely relates to the more extensive use of administratively set prices in the first half of the reform period. This meant that open inflation was not allowed to emerge, albeit at the cost of goods shortages and rampant black markets. Cheng and Hou (1997), for example, argue that the inflationary episode in 1994 was largely a structural rather than monetary phenomenon that followed a step price reform intended to adjust relative price ratios to the equilibrium level.

## 5. Conclusion

While most studies that have analysed China's economy at the aggregate level have focused on its trend performance, this paper sought to focus attention on the fluctuations around this trend. In particular, it set out to provide a detailed chronology of China's business cycles since 1979 and to shed light on whether business cycle volatility had changed over time and how it compared with that experienced by the world's other leading economies. The analysis found that during the reform period China has only experienced three complete business cycles. It was also shown that there has been a dramatic decline in business cycle volatility during the second half of the reform period compared with the first. These findings raised several puzzles. In the second half of the reform period, how was China able to achieve such a stunning reduction in business cycle volatility, which placed it on par with other leading economies, despite it lacking institutions that most economists consider vital to achieving such an outcome? Why has the relationship between the price level and changes in the output gap apparently become more sensitive over time? It was highlighted that the move toward market-determined prices likely features heavily in the explanation to both of these puzzles. Nonetheless, we feel the above puzzles continue to warrant further research attention.

Looking forward, it appears that China's impressive record of limiting business cycle volatility over the past 15 years or so will be increasingly tested. As the trade surplus began to swell in the mid-2000s, and the government persisted with a heavily managed exchange rate, it has been increasingly difficult for the monetary authorities to keep money supply growth in check. Aside from conducting vigorous open market

operations, the chief tool used by the authorities to take liquidity out of the financial system has been to raise the reserve requirement for banks, which now stands at 17.5 per cent. This is, by far, the highest amongst the world's leading economies. Interest rates have also been increased but only modestly and they remain negative in real terms. China's monetary authorities rely less on interest rate adjustments than do those in developed countries because the monetary transmission channel is decidedly weaker in the absence of market-determined interest rates and complete and deep financial markets. Given that the required reserve ratio cannot be raised much further without seriously damaging bank profitability, which is already low by international standards, the authorities are running out of monetary policy options. Reflecting this, 2008 has seen a massive increase in hot money moving into China betting on a sharp appreciation of the RMB. This has made the task of containing the growth rate in the money supply even more difficult. *The Economist* (2008b) reported that in the first five months of 2008, China's foreign exchange reserves, which were already the world's largest, swelled by an estimated massive \$393 billion, only 30 per cent of which was attributable to the trade surplus and inflows of foreign direct investment. Much of the remainder is thought to reflect hot money inflows. Increasing interest rates at this stage might serve only to further fuel hot money inflows. As of May, the money supply was increasing at an annual rate of 17.4 per cent. This is only marginally higher than the People's Bank of China's target rate of 15 per cent. The annual rate of inflation was also down marginally from the previous month and stood at 7.7 per cent. However, whether the spike in hot money flows in the first half of 2008 translates into a surge in inflation in the second half and beyond remains to be seen. What seems certain is that if China is to achieve ongoing success in limiting business cycle volatility to date, an institutional framework more conducive to

achieving this outcome will increasingly be required.

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