Financial Crisis and Aviation Leasing Markets: The emergence of China

ATRS World Conference 2009 Paper

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Contents

Abstract

Could Chinese Banks give a breath of life to the finance aviation industry during the current financial crisis? In this paper the author analyses financial performance of the main Chinese Banks and reviews the new rules issued in China regarding leasing activities. By drawing upon the well developed theories of macroeconomics, an analytical framework is offered to understand and anticipate 2 key variable trends in lessors investment business cases (i.e. interest rates and aircraft prices). This study analyses the potential impacts of the financial crisis on aircraft leasing/financing from China and measure the potential of Chinese Banks to turn current crisis into an opportunity. The empirical evidence shows that Chinese Banks have been achieving very positive financial results while keeping a lack of revenue diversification. Macroeconomic models suggest a "more likely" future scenario of lowering interest rates and aircraft price due to the economic situation. Therefore, Chinese banks face a good opportunity to play an important role in aircraft financing and set up the base towards a leading position among Aircraft Leasing players during the next decades. The potential emergence of China leasing market could be a key future scenario to be taken into account as part of the airline strategy and management decisions.

KEY WORDS

Gross Domestic Product, interest rate, leasing, lessor, aircraft current market value, foreign reserves.

Introduction

From 1980 to 2008 the number of aircraft under operating lease increased at over 13% GARG to 6.500 aircraft equivalent to 35% of the world fleet (Ascend, 2008). To choose between either "buy or lease" an aircraft is an airline's key management decision when managing fleet capacity and risk of ownership. Indeed, aviation is a highly cyclical/GDP correlated industry, thereby economic downturns could put real pressure on airlines. Lower passenger numbers imply lower fleet needs, affecting directly aircraft leasing providers (Lessors). The particularity of the current crisis is that it is "finance driven" so affecting directly lessors financing and their "finance and leverage" driven parent companies, a double whammy. Economic data shows that China is in a better liquidity position than most of the Western economies. Under such a scenario, China could search to enhance its market share - particularly on the domestic market. But could a country like China help to "weather the current storm"? The future will probably involve China turning the crisis into an opportunity by becoming a key player on the leasing markets.

This paper aims to measure the potential of Chinese banks to participate more actively on the operating lease market and/or aircraft financing deals by analysing their financial performance over the latest 5 years.

To describe and try to estimate the future economic situation, the majority of researchers use econometric models based on macroeconomic data with a strong focus on the economy. This paper goes further by using the macroeconomic tools as a framework to asses the strategic market opportunity and estimate key leasing providers' variables such as interest rates and highly correlated GDP/aircraft price.

Background

During the last 10 years the Chinese economy has been growing at an impressive average yearly rate of 9.03 %; and could continue growing at an average rate of 7.6% per year. Indeed, China could become the world's largest economy by 2041 (Goldman Sachs 2003, global economics, paper No 99)

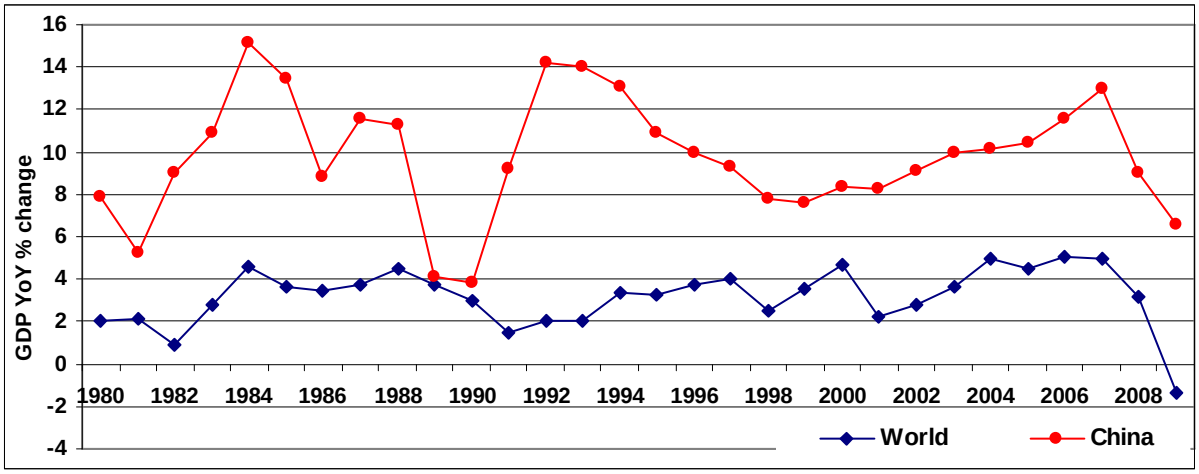
China's Macroeconomic policy has led the country to increase its foreign currency reserves to U$1,95 trillions by the end of 2008 (see figure 1) from where U$ 200 billions are managed by China Investment Corporate Ltd (CIC), the country's state foreign currency investment company created in 2007. On the other hand, Chinese Banks are among the top 20 world companies and have substantially improved their balance sheets. Indeed, China Banking Regulatory Commission (CBRC) issued new management rules for financial leasing companies, allowing local and overseas banks to set up financial lease companies which could help to provide close to U$ 400 billions required to buy and/or finance more than 3.000 aircraft that China will need in the next 20 years.

Due to the financial liquidity crisis the cash rich position of China, coupled with the lack of Chinese banks' revenue diversification, presents an interesting scenario for China to become an important player in the aviation lease market

Economic situation

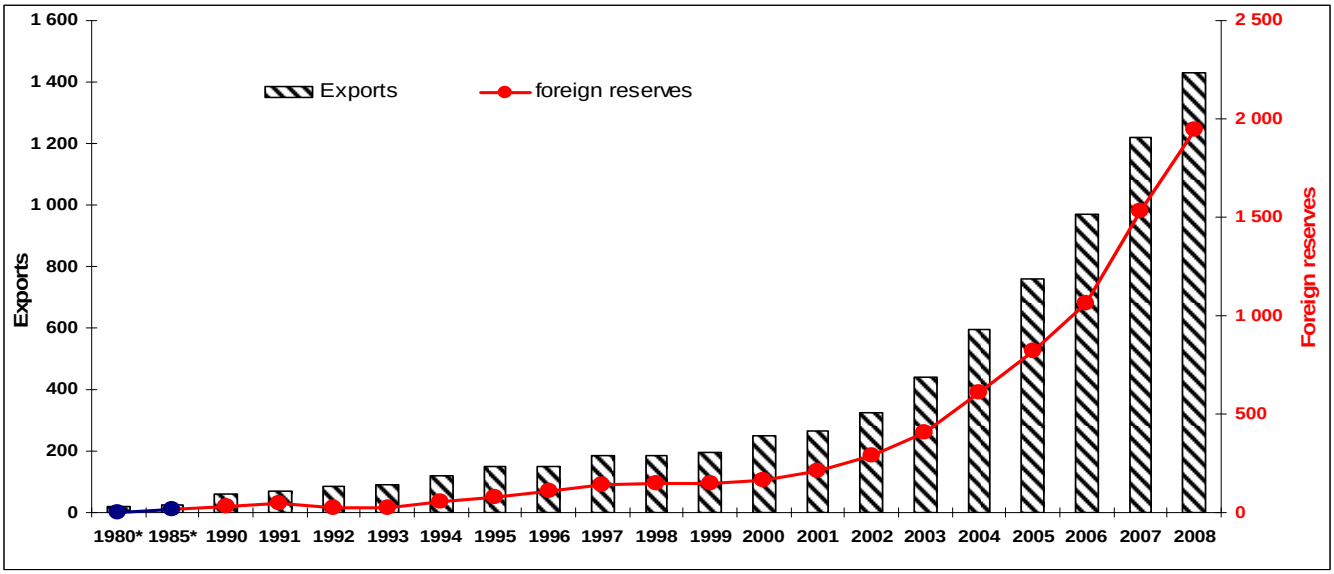
The dramatic fall in US real estate prices after a continuous growing trend (exceeding the value of its future incomes), triggered a global financial crisis which has shaken the confidence of developed and developing countries alike, so undermining the very blueprint of financial and macro policies that underlie the western capitalist systems. In an effort to contain the crisis, the authorities in the US and many European governments have taken unprecedented steps of providing extensive liquidity, giving assurances to bank depositors and creditors that include blanket guarantees, and structuring bail-out programs that include taking large ownership stakes in financial institutions, in addition to establishing programmes for direct provision of credit to non-financial institutions. In the short term the direct impact will be a negative world GDP growth in 2009 (figure 1).

Figure 1: World and China GDP YoY % change
(Source: Based on IMF and China National Bureau of Statistics data)



Since free market reforms in 1978 China's GDP has grown an average 9.9 % a year. The country is the second largest economy in the world with a GDP of $10.8 trillion (2007) when measured on a purchasing power parity basis. In 2007, the nation accounted for 11% of the gross world product, according to the International Monetary Fund. Indeed, China is likely to grow at a rate above 6% in 2009; in spite of the financial crisis context.

Figure 2: China foreign reserves and exports (US$ Billions)
(Source: Based on SAFE & China Ministry of Foreign Trade data)



An explosive GDP growth led the country's big trade surplus and foreign direct investment inflows so a continuous foreign reserves growth trend in China. From figure2 it is possible to see the dramatic increase in both exports and foreign exchange reserves, notably the last six years. It is worthwhile to note that China has been proposing that global reliance on the US dollar as a reserve currency should be reduced. China has been diversifying away from the dollar since 2005, when it broke the renminbi's peg to the US currency and officially marked it to a basket of currencies, but it still holds more than two-thirds in US dollar--denominated assets by most estimates.

As its trade surplus and foreign currency reserves ballooned in recent years, Beijing continued to buy US Treasury bonds while raising the proportion of purchases of other currencies and gold - China has quietly almost doubled its gold reserves to become the world's fifth-biggest holder of the precious metal.

Indeed, the US$ 1.945 bn (2008) foreign reserves could be used as a powerful economic tool to counter balance global recession impacts such as weaker international demand and/or a slowdown in the local property market. For instance, on November 2008 the State Council, China's cabinet, authorised US$586bn (or 15% of China's GDP) of investment on infrastructure and social welfare. Investments will focus on low-income housing, water, electricity, disaster relief and transport, therefore benefiting the aviation industry in the medium and long term, notably airports. Overall, such stimulus of 15% of China's GDP over 5 years could lift the country's growth by around 3% per year.

Investment Saving/Liquidity preferences Model (IS/LM)

In order to determine interest rates potential future scenario, the IS/LM model will be used as framework. It establishes the relationship between nominal interest rates and real output in the goods and services market (i.e. real GDP – see figure 1) and the money market.

The IS schedule shows interest rates as a function of GDP (Y). The IS model is used to represent the locus of all equilibria where total spending (consumer spending + planned private investment + government purchases + net exports) equals an economy's total output (Y). The IS can represent the equilibria where total private investment equals total saving, where the latter equals consumer saving plus government saving (the budget surplus) plus foreign saving (the trade surplus). Either way, in equilibrium, all spending is desired or planned; there is no unplanned inventory accumulation. The level of real GDP (Y) is determined along this line for each interest rate.

Thus the IS schedule is a locus of points of equilibrium in the "real" (non-financial) economy. Given expectations about returns on fixed investment, every level of interest rate (r) will generate a certain level of planned fixed investment and other interest-sensitive spending: lower interest rates encourage higher fixed investment and the like. A higher level of income is needed to generate a higher level of saving (or leakages) at a given interest rate. Alternatively, the multiplier effect of an increase in fixed investment raises real GDP. Both ways explain the downward slope of the IS schedule. In sum, this line represents the line of causation from falling interest rates to rising planned fixed investment (etc.) to rising national income and output.

In this equation, the level of G (government spending) and T (taxes[1]) are presumed to be exogenous, meaning that they are taken as a given. In an open economy, net exports (exports, X, minus imports, M) is part of the IS equation

$$GDP = Y = C + I + \overline{G} + (\overline{X} - I\overline{M}) . \quad \textbf{(1)}$$

$$GDP = Y = c\overline{TR} + c(1-t)Y + \overline{I} - br + \overline{G} + (\overline{X} - I\overline{M}) \quad \textbf{(1a)}$$

Where:

$$\overline{A} = c\overline{TR} - \overline{T} + \overline{I} + \overline{G} + \overline{X} - \overline{IM} \quad \textbf{(2)}$$

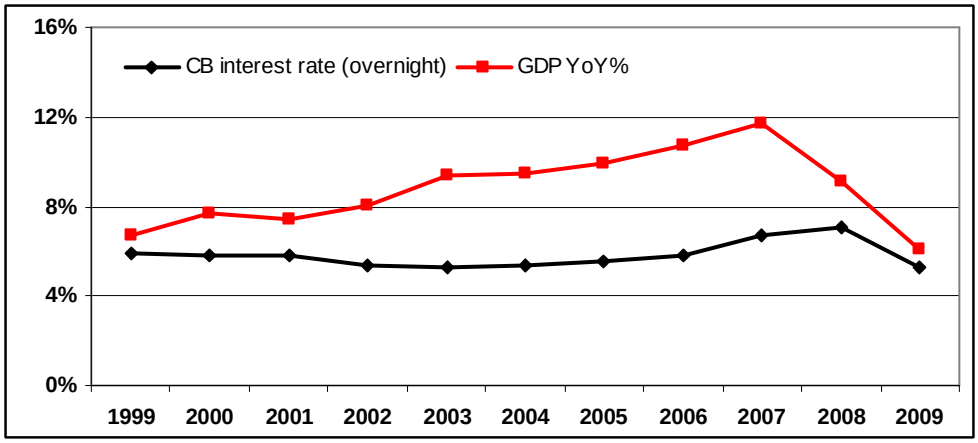
[1] There is a tax (t) that is a function of the level of income

$$Y = \alpha_G (\overline{A} - br) \quad \textbf{(1b)}$$

where $\alpha_G = \frac{1}{1-c}$

From equation (1b) it is possible to see that the GDP (Y) of equilibrium depends on the interest rate (r) so a decrease in GDP by way of decrease in exports (X) or consumption (C) both part of $\overline{A}$ could be compensated by a decrease on interest rate (r). This situation is show in figure XX for the Chinese economy

Figure 3: China GDP YoY % change vs. Central Bank overnight rate
(Source data: China National Bureau if Statistics and The People's Bank of China)



From figure 3 it is possible to see that People Bank of China overnight reference rate follows the China GDP growth trend. From equation 1b it is possible to estimate a more likely scenario of lowering interest rates if China's economy continues deteriorating. This situation seems quite probable due to the latest deterioration in Chinese exports, real estate and consumption as consequences of world credit turmoil.

Liquidity preferences and Money Supply (LM)

The LM schedule can be represented as an upward-sloping curve representing the role of finance and money. As such, the LM function is the equilibrium point between the liquidity preference function (willingness to hold cash balances instead of securities) and the money supply function which is determined by the central bank decisions and willingness of commercial banks to loan money. Though the money supply is related indirectly to interest rates, in the short run, money supply in effect is perfectly inelastic with respect to nominal interest rates. Mathematically, the LM curve is defined as

$$M / P = L(r,Y) \textbf{ (3)}$$

The supply of money is represented as the real money balance M/P (as opposed to the nominal balance M), with P representing the price level, equals the demand for money L, which is some function of the interest rate and the level of income.

Holding all variables constant, the intersection point between the liquidity preference and money supply functions constitute a single point on the LM curve. Recalling that for the LM curve, interest rate is plotted against the real GDP whereas the liquidity preference and money supply functions plot interest rates against quantity of cash balances), that an increase in GDP shifts the liquidity preference function rightward and that the money supply is constant, independent of GDP - the shape of the LM function becomes clear. As GDP increases, the negatively sloped liquidity preference function shifts rightward. Money supply, and therefore cash balances, are constant and thus, the interest rate increases. It is easy to see therefore, that the LM function is positively sloped.

$$L = \frac{\overline{M}}{\overline{P}} = kY - hr \qquad \text{k,h} > 0 \quad \textbf{(4)}$$

The demand of money depends directly of the GD (Y) level and interest rates (r)

Therefore the interest rate of equilibrium (r_0)

$$r_O = \frac{k}{h}\gamma\overline{A} - \frac{1}{h + kb\alpha_G}\frac{\overline{M}}{\overline{P}} \textbf{ (5)}$$

Where $\gamma = \dfrac{\alpha_G}{1 + k\alpha_G \dfrac{b}{h}}$

From equation (5) we can deduct that an economy that face a decrease in demand by way of fall in consumption (C) or exports (X), it should lower interest rate (r_0) in order to stimulate the demand so as to keep the equilibrium. This situation is likely to happen in both world and Chinese markets.

Regulatory situation in China

China is an important counterexample to the findings in the law, institutions, finance, and growth literature: Neither its legal nor financial system is well developed, yet it has one of the fastest growing economies (Allen, J. Qian & M. Qian 2004). Foreign banks with operations in China ranked the regulatory environment as by far the most difficult aspect of the Chinese bank Industrywhich is not only perceived as a burden but also by far the most important driver of change in the Chinese banking market (Deutsche Bank research, 2009)

In the past decades China has pursued an impressive course of creating a market-based financial system and opening it up to international financial markets, which has a parallel development of increased globalisation. Starting from a state-run banking system in which the People's Bank of China (PBC) had served as the monopoly supplier of financial services since 1948, the transition from a centrally-planned system to what has been termed a socialist market economy commenced in the late 1970s. This included the termination of the PBC's banking monopoly and subsequently the creation of state-owned commercial banks, credit cooperatives and other state-owned financial firms. In the 1990s, the liberalisation process was accelerated, featuring the establishment of the stock exchanges in Shanghai and Shenzhen and the adoption of basic legal frameworks for the operation of banks and the issue and trading of financial securities. In 1999, reform of the financial system was further reinforced, following the crisis in the domestic banking system and the need to digest heavy write downs and legacy bad assets. This resulted in the establishment of a separate regulatory and supervisory regime, composed of the China Banking Regulatory Commission (CBRC), the China Securities Regulatory Commission (CSRC) and the China Insurance Regulatory Commission (CIRC), alongside the PBC as the institutional backbone of the financial system. These institutional changes were complemented by an overhaul of the existing legal framework and the adoption of a series of new laws and administrative measures governing the banking and securities industries. Gradual opening up of the domestic system to the international financial industry is due to government strategy for transferring external expertise and bringing stronger competition and to the country membership of the World Trade Organisation. Agreements that the Chinese authorities negotiated with foreign countries before the country's December 2001 entry into the trade body require the gradual opening of the banking, insurance and fund-management sectors. Other sources of change to the financial sector are attributable to the rise of domestic investment banks and securities brokers, the re-incorporation of Hong Kong and Macau under Chinese sovereignty and official efforts to manage bad bank debts through specialised asset managers.

Indeed, China has been growing its international engagements and bilateral work on regulatory cooperation. There is a heavy list of key accomplishments (see appendix A) that are testimony to Chinese ambitions to become a more global integrated player. The two most important of China's bilateral initiatives are the EU-China Macroeconomic and Financial Markets Regulatory Dialogue (FMRD), which was launched in 2005 by the European Commission and the Chinese Ministry of Finance, and the U.S.-China Strategic Economic Dialogue (SED) between the US Treasury and the Chinese Ministry of Finance formed in late 2006, which follows a broad approach to explore long-term strategic economic issues, including exchange and savings rates, developing efficient innovative service sectors, and exploratory discussions on a bilateral investment agreement. In contrast, FMRD, has taken a more focused approach, with a view to greater cooperation and convergence in regulatory and supervisory practices.

Other developments are underway that will change the face of China's banking sector. Among them, the reform of Agricultural Bank of China (ABC) is yet to be fully carried out. The first step has begun with the announcement of a USD 19 bn capital injection from the government. ABC reform is one of the government's top priorities. Its reform plan may look different to the other big 3 banks, as ABC's function as a key lender to the rural population cannot be weakened, but the goal of commercial independence will be the same. No timing of reform has been given, and it may be delayed yet again due to the current adverse global financial environment. In addition to ABC reform, mergers and consolidation of rural sector banks and co-operatives will take place to improve overall rural sector efficiency. The role of Postal Savings Bank (PSB) activities in lending against deposits will likely be expanded, playing a greater role in financial intermediation in the rural areas. Reform is underway to separate the policy lending function of China Development Bank (CDB) from its commercial lending. Other policy lending banks, Agriculture Development Bank of China and China EXIM Bank, will likely follow suit.

Leasing

The China Banking Regulatory Commission issued new Management Rules for Financial Leasing Companies, which were issued on January 23rd 2007. The rules, which took effect on March 1st 2007, replaced earlier rules published in 2000 and lowered the minimum required registered capital for financial leasing companies to Rmb100m from Rmb500m. The rules also permitted local and overseas commercial banks to set up financial leasing companies, provided they complied with a set of requirements, including a capital-adequacy ratio of no less than 8%, total assets of no less than Rmb8bn, and being profitable for two consecutive years. This marked a reversal from the crackdown in the late 1990s, when banks had been ordered to leave the financial leasing business after they had been found raising funds illegally and engaging in speculative investments, especially in the stock markets. It was expected that commercial banks, once they had entered the financial leasing business, would soon come to dominate the industry, given their deep pockets.

Most leasing customers appear to be in textiles, light industry and transport. In recent years, leases have taken diversified forms. including sale and leasebacks, leverage leases, entrusted leases, subleases and management leases, to cope with different demands. There has been increasing demand for domestically produced equipment and for sales and purchases counted in local currency, because of the improved quality of domestic equipment and sales promotion of products made by multinational companies in China. With the increase in China's investment overseas, export leasing is on the agenda. In order to avoid the type of bad-debt accumulation that characterised earlier leasing deals, the State Development Planning Commission and the State Administration of Foreign Exchange stipulated in an April 1996 circular that all financial leasing for trade transactions, except for aircraft leases, requires authorisation under the state's medium- to long-term borrowing plan. Chapter 14 of the Contract Law regulates financial leases. Regulations specify that the lessor is required only to warrant the lessee.s right to possession and use of the leased item. The lessor bears no liability if the leased item does not conform to the contract, unless the lessee has relied on the lessor in determining the item or the lessor has interfered in the selection of the item.

Tax consequences. Income from financial leasing is treated in the same way as interest income. Interest payments are deductible if incurred in connection with business activity. The deduction is subject to the approval of the local authorities.

Foreign invested leasing companies

The Ministry of Foreign Trade and Economic Co-operation (now the Ministry of Commerce.MOFCOM) issued regulations for foreign-invested leasing companies in 2001. Under these rules, all foreign-funded leasing concerns must be set up as businesses carrying limited liability and classified as financial leasing companies or non-financial leasing companies. A foreign financial leasing company must have registered capital of at least US$10m (lowered from US$20m in new rules that also made it possible for foreigners to set up wholly owned financial leasing companies). In joint efforts to form foreign-funded companies, the Chinese partner must have had total assets valued at no less than Rmb400m one year prior to its application. The foreign partner must have assets valued at a minimum of US$400m and must have been engaged in the business for at least five years. In addition, a Chinese partner must contribute no less than 20% of the new venture's registered capital. For non-financial leasing firms, the minimum amount of registered capital allowed is US$5m, 20% of which should come from its Chinese founder. The Chinese partner must have had assets worth no less than Rmb100m one year before it applies to set up the company. The foreign partner should have total assets of no less than US$50m and three years experience in the leasing business.

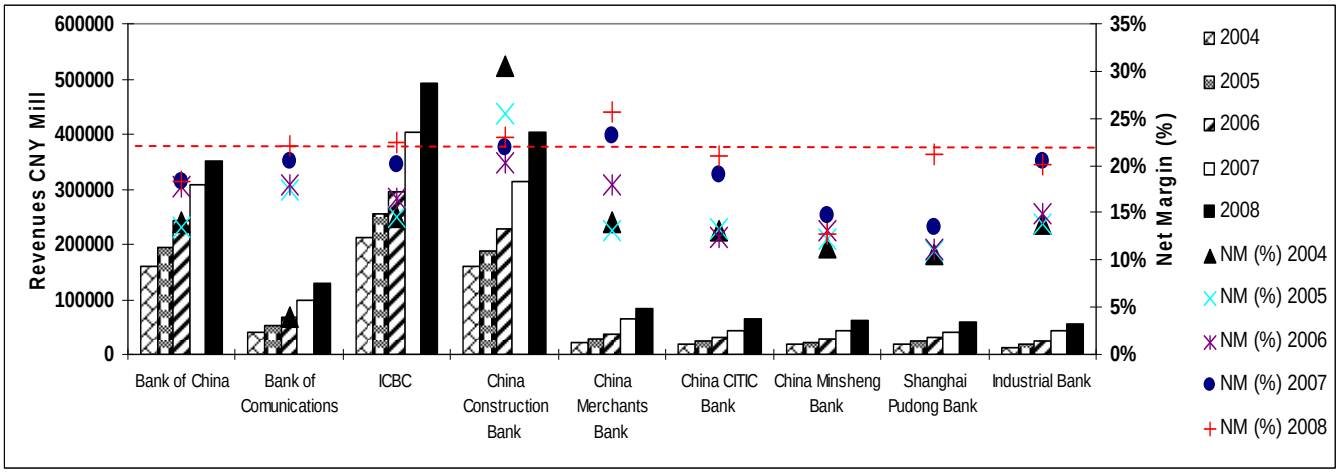
Chinese banks situation

China's financial system is dominated by a large but underdeveloped banking system. China's domestic banking system is made up of five state-owned commercial banks, two private banks, 12 joint-stock commercial banks, and urban and rural co-operative banks. The five large banks dominate the sector, accounting for 52.6% of total assets of Rmb52.6trn of all banks and financial institutions and also 52.6% of all deposits of Rmb49.6trn at end-March 2008, according to the China Banking Regulatory Commission.

According to The Banker (August 2008), these banks' return on assets ranged from 0.54% (for Agricultural Bank of China) to 1.53% (for China Construction Bank) in 2007.Although, its newly established Shanghai Stock Exchange (SHSE hereafter) and ShenZhen Stock Exchange (SZSE hereafter) have been growing very fast since their inception in 1990, their scale and importance are still not comparable to other channels of financing, in particular the banking sector, for the entire economy.

The key banks have gone through internal reform, namely through capital injections from the state or new shareholders, ownership and internal structural changes which include having foreign strategic partners, and listing on the stock market. Through the reform measures, the banking sector as a whole has emerged stronger and generally enjoys improved financial fundamentals such as their Credit Adequacy Ration (CAR)

Figure 4: Chinese banks revenues and profitability
(Source: Based on Reuters data)



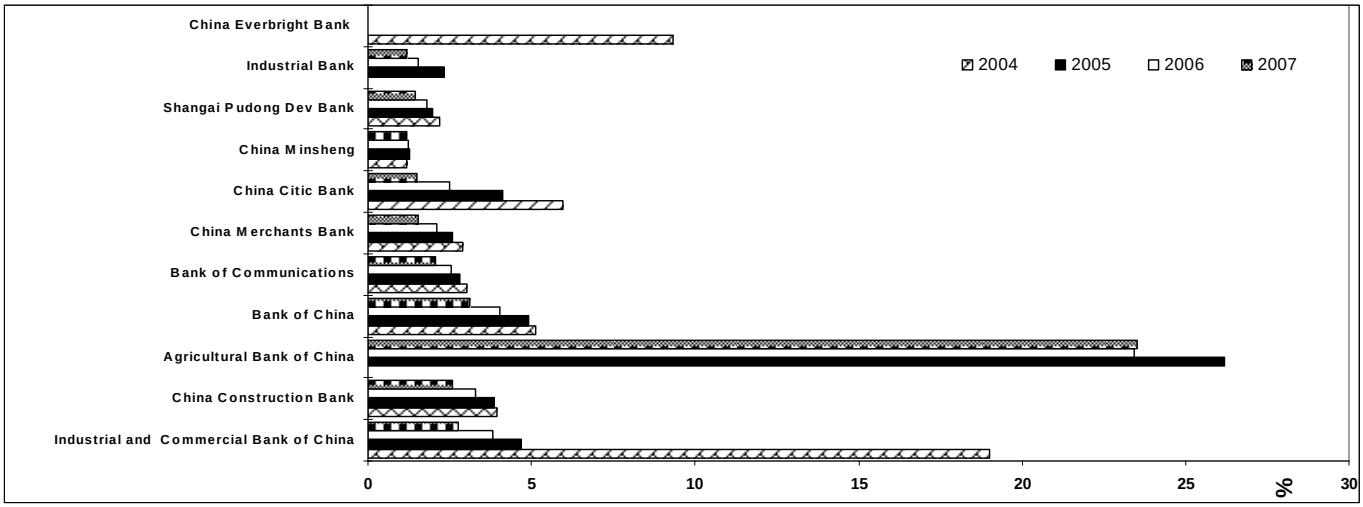
Since almost all key banks are better capitalised and able to offload the bulk of non-performing assets off their balance sheets, years of strong loan growth ensued as these banks lent aggressively and grew their balance sheets again. Outstanding loans grew more than 200% during 2000-08. Nominal loan and nominal GDP both grew around 165% from end-2000 to end-2007. Despite efforts to slow bank lending in recent years, the loan/GDP ratio still stood above 100%. The most recent data shows that loan growth at end-2008 stood at almost 19% yoy, up from 16% at end-2007. This marks a reversal of credit policy, since prior to the worsening of the global financial crisis the Chinese authorities had been tightening monetary policy and asked banks to restrain loan growth. However, as the Chinese economy was slowing down progressively as reflected by 6.8% yoy GDP growth in Q4 compared to 11.2% in Q4 2007, the authorities switched to aggressive monetary easing and asked banks to continue lending.

Joint-stock banks have been the most aggressive. Their share of total banking sector assets climbed to 14% at end-2007, the second largest behind the state-owned banks (53%). Joint-stock bank assets grew at the dizzying pace of 33% in 2007, compared to the sector's average of 20% (state-owned banks 16%).

City commercial banks have also seen strong asset growth (29% in 2007), accounting for over 6% of the banking sector's total assets.

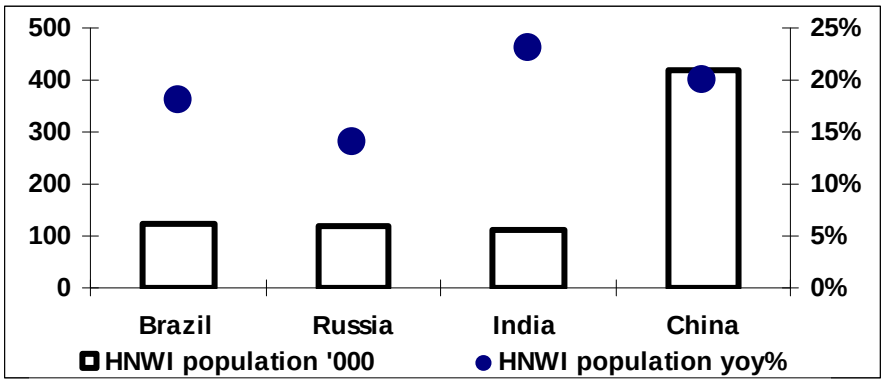
In terms of sector activities, consumer lending has seen strong growth in recent years. The share of consumer loans in total loans is estimated to have approached 20% in 2007. The largest component of consumer loans is mortgage loans, which account for more than 80% of consumer loans. Although the banking sector has in recent times reported rising profit growth (see figure 5), profitability as measured by return on assets remains modest at 0.9% in 2007. One of the factors constraining banks' profitability is China's regulated interest rates, resulting in very tight net interest margins. Furthermore, net interest income remains the main revenue source. Fee-based income from credit cards and wealth management products has been growing but still makes up a small portion of banks' earnings only. For instance non-interest income for ICBC, CCB and BOC are 12,8%, 12,7 % and 19,9% respectively while US counterparts such as Bank of America and Citigroup are 50 %. Non –interest income is estimated to contribute around 20% of total revenue for Chinese banks; therefore big potential to move to other "less-explored" business such as transport finance as a way of improve diversification and profitability.

Figure 5: Chinese banks non performing loans % (NPL)
(Source: Based on The Banker data)



From figure 5 it is possible to see the importance of non performing loans among the big Chinese banks; although a dramatic improvement during the last years The official NPL ratio stood at 6.2% at end-2007, down from 16.6% in Q1 2004. The downward trend in NPL ratios has been driven by the transfer of impaired assets to special asset management companies and strong loan growth, which lowers the ratio despite NPLs remaining large in absolute terms. In absolute terms NPLs have declined significantly since 2004, but they rose slightly again in Q4 2007 to RMB 1,268.4 bn (USD 185.4 bn).

Figure6: BRIC's High Worth Net Individuals population & YoY % change
(Source: Based on DB research data)

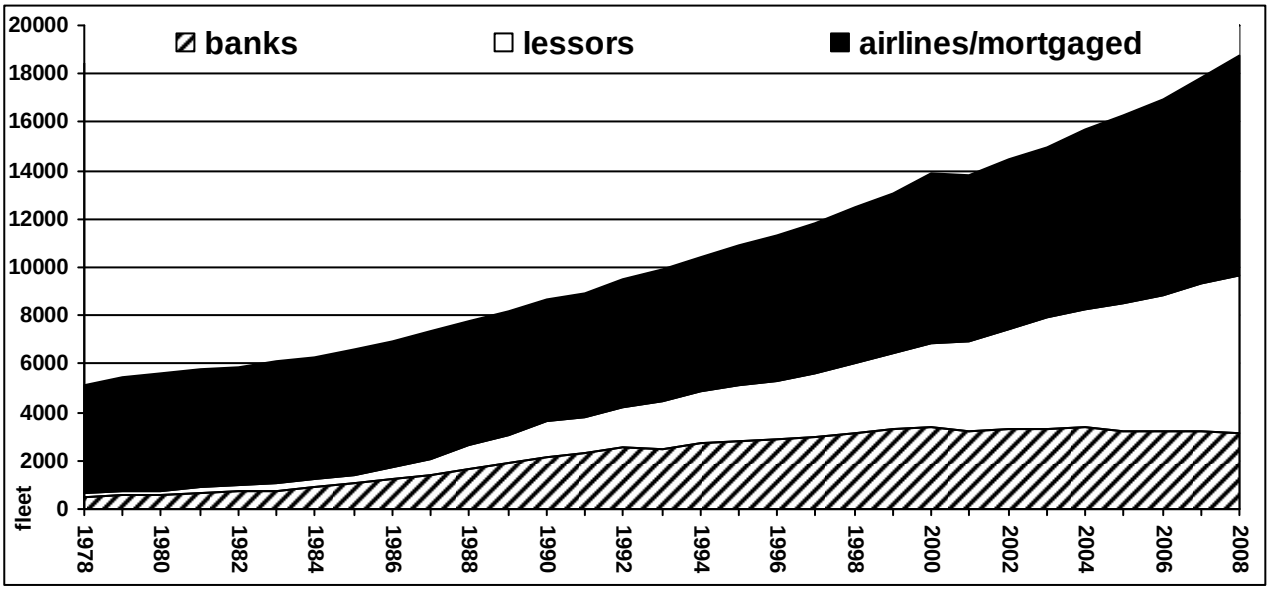


Apart from credit cards and mortgage lending, wealth management has enjoyed strong growth in China. The number of high net worth individuals (HNWI) in China is estimated to be the highest in non-Japan Asia at more than 400,000. Although, foreign banks have, at least up to the period before the global financial crisis in 2008, enjoyed advantages over local banks due to their international network and established brand names. Nevertheless, It is possible to foresee a good long term source of funding potential to aircraft financing trough Chinese banks by using HNWI high yield looking money. Positive examples have been tested in other parts of the world such as the so called KG market in Germany where healthy professional invest in shares of big tickets assets like A380 aircrafts.

Chinese banks and leasing activities

Industrial and Commercial Bank of China and the Bank of Communications set up financial leasing firms, both with registered capital of Rmb2bn, in November 2007. The following month, the China Construction Bank (CCB) launched CCB Financial Leasing Corp, a joint venture with Rmb4.5bn in registered capital, with CCB holding 75.1% and Bank of America the rest. China Minsheng Banking Corp established an Rmb3.2bn leasing firm in April 2008, holding an 81.25% share, while the investment unit of the Tianjin Free Trade Zone in the northern port city of Tianjin held the rest in the company. Also in April 2008, China Merchants Bank established an Rmb2bn leasing company in Shanghai. In June 2008, China Development Bank set up an Rmb7.5bn financial leasing company in Shenzhen, the largest player in the field so far. Bank of China was not immediately considering a domestic leasing company, focusing instead on overseas expansion after it acquired Singapore Aircraft Leasing Enterprise, Asia.s largest aircraft leasing company, in December 2006. Indeed, aircraft ownership from banks and leasing companies has seen a dramatic increasing during the last 30 years as it possible to see in figure 7

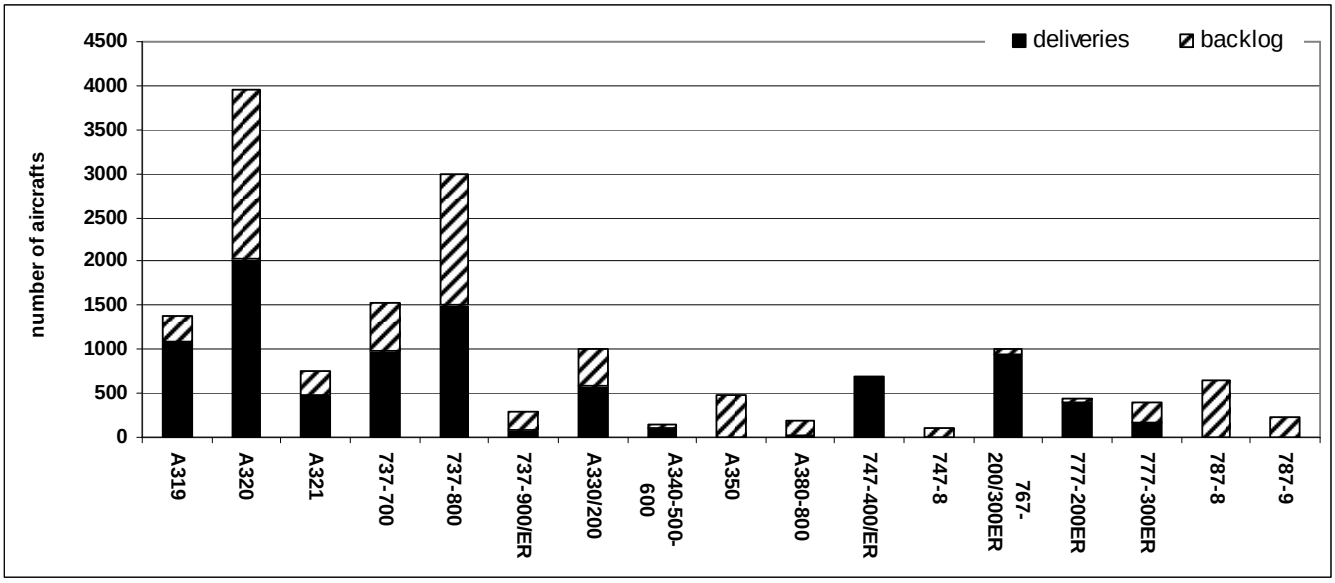
Figure 7: Ownership of the airline fleet
(Source: Ascend)



Aircraft prices trend

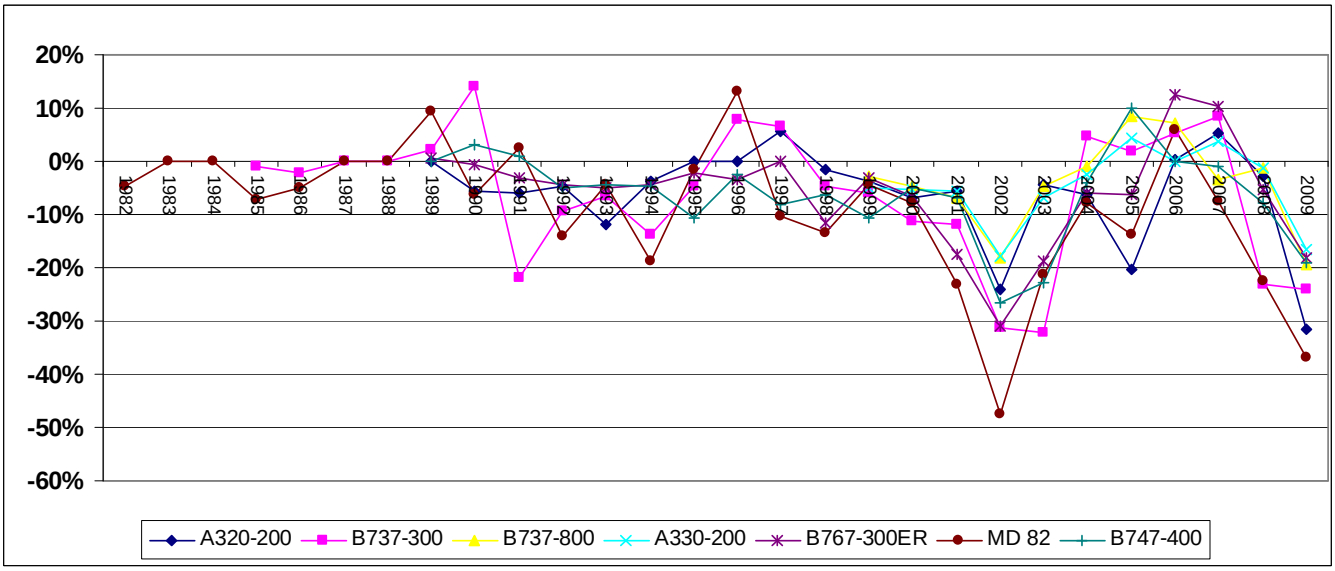
Figure 8 (see data on appendix C) shows deliveries and backlog numbers for main aircrafts models as December 2008. These aircrafts are those that reached at least the 100 aircraft order threshold and still under production

Figure 8: Aircraft deliveries[2] and backlog
(Data source: Airline business 2009)



From figure 8 we can see that the "most popular produced aircraft" are A320 and 737-800 for narrow bodies and A330 and B747-400 and 767-200/300 ER for wide bodies, hence the most representatives of the market situation.(the reference pool hereafter).

Figure 9: Aircraft Current Market Values YoY % Ch
(Data source: Ascend)

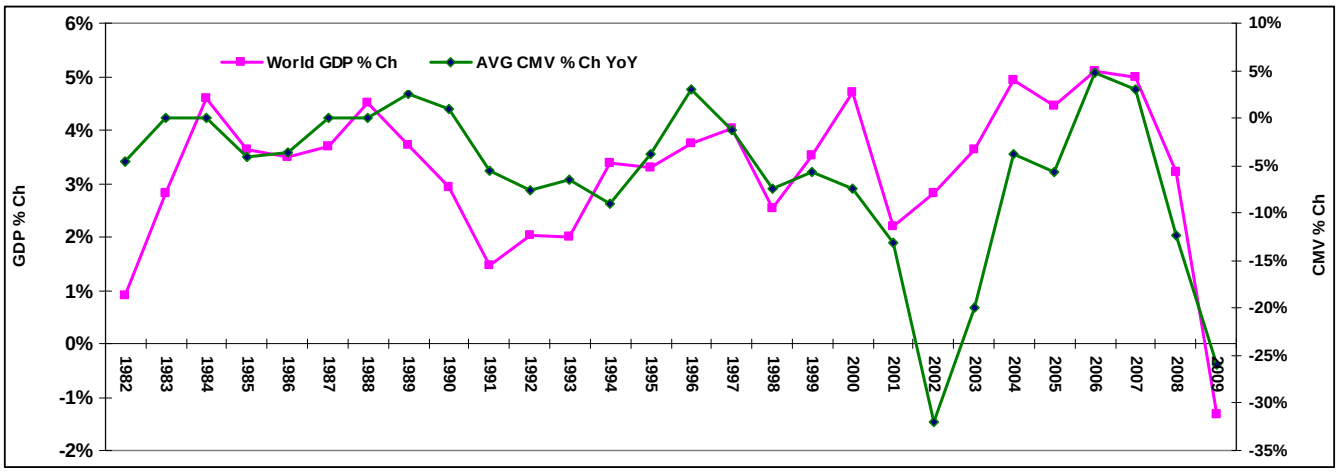


[2] Over 100 aircrafts

In order to analyses the aircraft price and value trend, it is necessary to have a pool of aircraft that includes the most representatives aircraft models (see figure 8) within the longest possible period of time. Although not under production, Boeing 737-300 and Boeing MD 82 are also included on the reference pool so as to extent the period of analysis, back to 1982.

From figure 9 it is possible to see the cyclical behaviour of aircraft prices measured by annual changes in current market value (CMV) - aircraft value in "today's market conditions" of a half life aircraft[3] with baseline specifications, year on year percentage of change. It is possible to note that in terms of the trend, both narrow and wide bodies follow similar patterns.

Figure 10: Aircraft Current Market Values (average) vs. GDP (YoY % Ch)
(Data source: Ascend)



Furthermore, by comparing the CMV average trend of the aircrafts within the pools and the world GDP behaviour (see figure 10). It is possible to see that aircraft prices mirror the GDP rate of growth trend with a large correlation coefficient of 0.53 (see equation 6 on appendix D)

[3] 'Half-Life' represents the mid-point between major overhauls on an aircraft's key components: airframe, engines, APU, llanding gear plus half of cycle life used up on engine Life Limited Parts (LLPs)

Conclusion

Financial crisis have been translated into a global economic slowdown that is likely to affect all countries throughout the world. Therefore, the Chinese economy will also suffer from the current crisis mainly by way of a drop in exports so affecting its 2 digit GDP growth rate. Nevertheless, particularities of China's economy such as big foreign reserves, currency exchange control and capital controls place the country in a more favourable position than most of the countries to better weather the current storm by using counter cyclical tools to stimulate its GDP through government expenditure increases, decreased taxes and lower interest rates, these potential scenarios are supported by the IS-LM economic model framework and latest data analysis.

Chinese banks' exposure to the global credit turmoil is limited when set against Chinese banks' capital size. Only a handful of large leading banks have direct exposure to toxic credits in the US. Losses and provisions for losses have largely been accounted for and the final impact has been lower profits for these banks. Fortunately, China's domestic liquidity and interbank funding have been able to function despite virulent global credit turmoil thanks to the presence of large domestic savings that have been the key source of funding for Chinese banks. Nevertheless, the general liquidity environment is tighter as the external surplus, particularly from foreign investment inflows, is getting smaller. The recent cuts in interest rate and bank reserve requirements reflect that the PBC's concern has shifted from controlling excess liquidity to providing sufficient liquidity.

Due to WTO membership and as an attempt to bring external expertise to the local market, China has been opening up its financial system, therefore a more market oriented regulation has been put in place so benefiting local banks and also leasing activities (e.g. by lowering capital requirements to set up a leasing company).

Although in the short term it was possible to see deterioration in the main aircraft current market values, in line with the high correlation found between GDP growth and aircraft values; Chinese banks and/or Lessors could find a long term incentive to focus on aircraft rather than other types of goods. The main reasons are that aircraft retain their residual value better through their mobility and earning capability and are good hedge against inflation. It is also worthwhile to note that manufacturers such as Airbus decided to build an assembly line in Tiajin motivated by a big backlog of A320/330 with Chinese airlines.

All together: aircraft needs for the next 20 years, a “better than the others” liquidity position of Chinese banks and good profitability trends, more market oriented regulation trends, lowering interest rates, aircraft prices and aircraft investment benefits. These factors place Chinese banks in a good position to weather the storm in the aviation finance industry and turn the crisis into an opportunity by using this strategic opportunity to become key players in the aircraft financing and lease market in the long term. The current crisis environment could be used to gain markets and also build the necessary technical expertise. Nevertheless, although aviation is an international industry, there is a likely world tendency for Banks to refocus on national interest due to Government pressure that could come after big bailouts which used tax-payers money. China Government could follow this behaviour due to its presence in the main banks and its aim to stimulate the local economy and state owned businesses. Hence, it is quite likely that the Chinese aviation finance industry will be focusing, at least in the short term, on aircraft financing deals mostly for Chinese carriers (e.g. ICBC leasing finance lease deals 2009: 3 A320s for Spring Airlines and 3 A320s for Shenzhen Airlines), which doesn’t exclude using the big funding potential for foreign carriers/deals in the long term - probably as part of Chinese long term leasing /financing strategy. For instance, Bank of China bought Singapure Aircraft Leasing Enterprise (now BOC Aviation) and beat strong bids from Allco, DAE capital and Standard Chartered. Indeed, Chinese banks can be found on several different consortia bidding for ILFS and RBS Aviation and are one of the few capable of closing large sale and leaseback deals (e.g. BOC with Air France and Southwest)

On the other hand, forecasts say that by 2025 BRIC economics could be half the size of the G6 under the assumption that BRICs maintain policies and develop institutions that are supportive of growth. Then, coupled with what has been outlined in previous paragraphs and considering that China is the main protagonist in this group, it is possible to foresee new aircraft financing structures “made in China” if proper regulation and market development and incentives are put in place so as to take advantage of market potential. For instance the dramatic increase of High Income level people could present an excellent funding landscape to create structures like the so called German KG market but made in China.

In the 1970s US Banks dominated the airfinance market. In the early 1980s French, German and British were key. In the late 1980s and 1990s Japanese banks and Germans led the market. French banks have dominated much of the start of this century but in years to come the emergence of China in the aviation leasing and aircraft financing markets is a key trend to be taken into account by airline managers, who can find here a potential source of financing and/or a leasing provider, and by aircraft manufacturers to secure deliveries under the current liquidity crisis environment that is affecting airlines and some aviation banks.

Appendix A: Key events in China's financial market regulation

1948 Establishment of People's Bank of China (PBC) as monobank

1951 Renminbi (RMB) introduced

1979 PBC banking monopoly ends

1980 Assumption of seats at World Bank and IMF

1981 First issuance of treasury bills

1982 First issuance of local enterprise bonds

1984 PBC assumes role of central bank

1985 Approval of first foreign bank offices

1986 Membership in ADB

1988 Bankruptcy Law

1990 Establishment of Shanghai Securities Exchange

1991 Establishment of Shenzhen Securities Exchange

1992 Establishment of China Securities Regulatory Commission

1995 Commercial Bank Law

1995 PBC formally confirmed as China's central bank

1996 Membership in BIS

1998 Establishment of China Insurance Regulatory Commission

1999 Ninth National People's Congress designates financial reform as national policy reform goal

2001 Membership in WTO

2002 Introduction of QFII scheme

2003 Law on Banking Regulation and Supervision

2003 Establishment of China Banking Regulatory Commission

2004 Law of the People's Bank of China (amended)

2004 Administrative Measures on the Supervision of the Banking Industry

2004 Commercial Banking Law (amended)

Appendix B: Legal framework of China's financial market

Institutional and product licensing, conduct of business rules and prudential standards are governed by the legal framework that has been increasingly refined over the past decade.

The laws of most immediate importance for conducting financial activities are:

— the Banking Law
— the Funds Law
— the Insurance Law
— the Securities Law

Additional framework rules around financial services are contained in

— Anti-Money Laundering Law
— Regulation on the Administration of Futures Trading
— the Banking Regulation Law
— the Banking Supervision Law
— the Commercial Bank Law
— the Company Law
— the Foreign Exchange Administration Regulation
— the Measures on Administration of Domestic Securities Investment of Qualified Foreign Institutional Investors

Implementation of these laws takes the form of rules, notices, guidelines and decrees issued either by the State Council or by one of the regulatory institutions.

At a broader level, the operative activities of financial firms are also covered by the general economic and commercial law of China, including

— the Anti-Monopoly Law
— the Corporate Bankruptcy Law
— the Enterprise State-Owned Assets Law

— the Foreign Economic Contract Law

— the Partnership Enterprises Law

— the Property Law

— the Regulation on Foreign-Funded

Mergers and Acquisitions

— the Sino-Foreign Cooperative Joint Venture Law

Appendix C: Aircraft orders* and deliveries

		Total since launch		
	A/C model	**orders**	**deliveries**	**backlog**
Narrowbodies (NB)	A319	1385	1090	295
(category A)	A320	3955	2036	1919
	A321	751	488	263
	737-700	1524	988	536
	737-800	3002	1506	1496
	737-900/ER	294	91	203
Widebodies (WB)	A330/200	1012	587	425
	A340-500-600	139	115	24
	A350	483	0	483
	A380-800	198	13	185
	747-400/ER	698	691	7
	747-8	106		106
	767-200/300ER	1002	933	69
	777-200ER	430	404	26
	777-300ER	394	169	225
	787-8	644		644
	787-9	223		223

*Above 100 orders and still in production (i.e. category A)

NB	**orders**	**deliveries**
Total category A	10911	6199
Cat A as of total NB	**97%**	**96%**
Total all models	11198	6481
WB	**orders**	**deliveries**
Total category A	5329	2912
Cat A as of total NB	**82%**	**74%**
Total all models	6498	3938

Appendix D: Correlation coefficient

(6)

$$r = \frac{\sum XY - \frac{\sum X \sum Y}{N}}{\sqrt{\left(\sum X^2 - \frac{(\sum X)^2}{N}\right)\left(\sum Y^2 - \frac{(\sum Y)^2}{N}\right)}}$$

References

Abeyratne R., (1998), The proposed International Aeronautical Monetary Fund, Journal of Air Transportation World Wide Vol 3 No 1.

Airbus (2007), Global Market Forecasts 2007-2027.

Allen F., Qian J., Qian M. (2005), Law, Finance, and Economic Growth in China, Journal of Financial Economics 77 57-116.

Ascend (2009), View Point, Issue 25.

Bank of China Limited (2008), Interim Report, Beijing.

Cull R., Xu L.C. (2005),, Institutions, Ownership, and Finance: The Determinants of Profit Reinvestment among Chinese Firms, Journal of Financial Economics 77 117-146.

Deutsche Bank (2009), China's Financial Markets – a Future Global Force, Frankfurt.

Evans W. (2008), Challenging Confucius: Western Banks in the Chinese Credit Card Market, Kelley School of Business, Business Horizons 51, 519-527.

Gillick, J., (1999) The Impact of Citizenship Considerations on Aviation Financing, Handbook of Airline Finance. McGraw-Hill, New York.

Goldman Sachs (2003), Global Economics, paper No 99, Dreaming with BRICs: The Path to 2050.

He W., Lyles M. (2008), China's Outward Foreign Direct Investment, Kelley School of Business, Business Horizons 51, 485-491.

Lyles M. (2008), Understanding China in Transition, Business Horizons 51, 457-461.

The Economist Intelligence Unit (2005), Country Finance China, New York.

The Economist Intelligence Unit (2006), Country Finance China, New York.

The Economist Intelligence Unit (2007), Country Finance China, New York.

The Economist Intelligence Unit (2008), Country Finance China, New York.

Werner, F., (1999) Leverage and Airline Financial Management, Handbook of Airline Finance. McGraw-Hill, New York.