

# The Aircraft Pfandbrief

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With the entry into force of the Pfandbrief Act Amendment in March 2009 German Pfandbrief legislation has been supplemented by an additional class of Pfandbriefe, which had been strongly requested by German aircraft financiers: The implementation of the Aircraft Pfandbrief had been rejected during the legislative procedure of the Pfandbrief Act in 2004/05 following discussions by the finance committee of the German parliament. But it was requested to reconsider the possibilities for an introduction of the Aircraft Pfandbrief in the next revision of the Pfandbrief Act.

The provisions of the Aircraft Pfandbrief are very similar to the existing legislation regarding Ship Pfandbriefe. The very few deviations derive from the underlying differences between the ship and aircraft finance business.

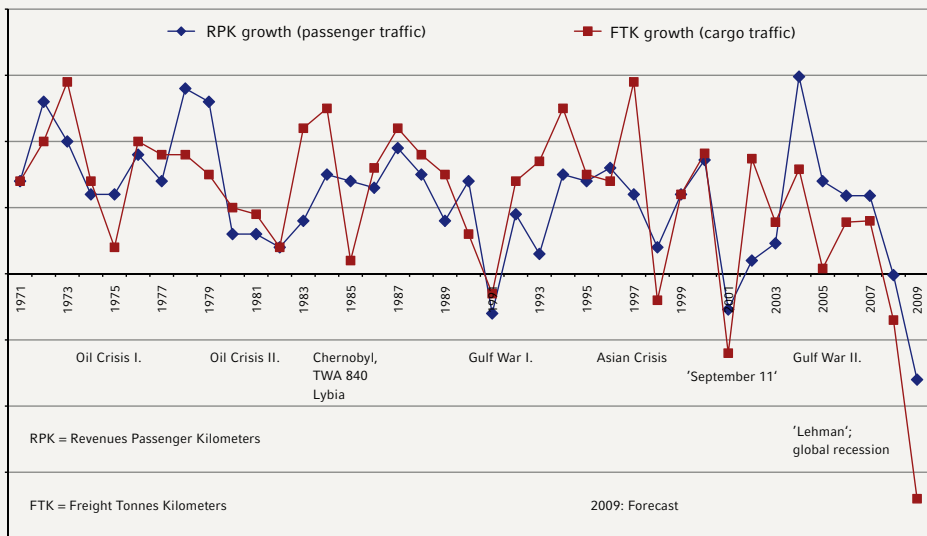
German credit institutions have been deeply involved in aviation finance since the 1980s. Among the ten largest aircraft finance lenders worldwide (in terms of portfolio volume), there are five German banks, four of which are Pfandbrief Banks.

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## Current Market and Outlook

Like many other sectors, the aviation industry is closely linked to the general economy and tends to be very cyclical. History shows that external events and global crises often have an impact on the aviation industry.

### DEVELOPMENT OF GLOBAL PASSENGER AND FREIGHT TRAFFIC IN CONTEXT OF EXTERNAL IMPACTS



Source: IATA Economics

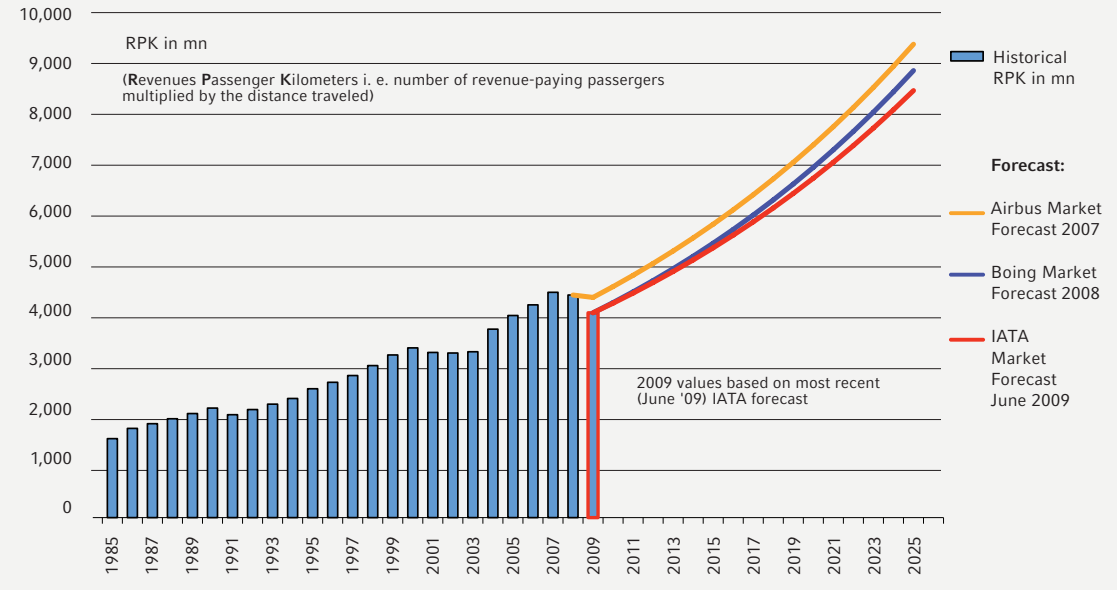
Following a remarkable boom period with records in terms of aircraft orders and deliveries during the years 2004 to 2007, the market calmed down in the first half of 2008. In the autumn of 2008 the manufacturers started to revise their plans to further increase aircraft production and began to defer or cancel aircraft deliveries. Measured in the aviation-specific 'revenue passenger kilometers' (i.e. the relationship between the actual number of passengers and the available capacity, RPKs), aircraft passenger traffic saw an increase for twelve consecutive years (with the exception of the year 2002). RPKs started to remain static in 2008. In the second half of 2008 this development was outpaced by the global financial crisis, causing a reduction of RPKs of 5.2%. One important reason for this is the significant decrease in business travel, which is an important element of the aviation industry's performance.

Modern aircraft types, which form the core of the portfolios of German aircraft financiers, have in general remained unaffected by the crisis. The reduction of capacity and the permanent grounding of aircraft has become an issue for old aircraft almost exclusively, i.e. aircraft which had been fully depreciated and are net of financing.

The current market situation will slow down but not stop the long-term growth trend in the aviation industry. It is anticipated that the market will return to the pre-crisis long-term growth path. According to experts, passenger travel will increase by 5.9% per annum and cargo traffic by 6.7% per annum until 2025. Forecasts of the manufacturers and independent experts predict a demand of up to 30,000 new aircraft within the next 20 years, which equals to a financing volume of circa 3,2 trillion US-Dollars. This forecast is primarily based upon two premises:

- The first reason is the increasing population in Asia coupled with a relatively strong growth of the economy throughout the region (not only in countries such as China and India, but also importantly in other countries such as Singapore and Malaysia). Despite the fact that these countries are also affected by the economic crisis, the long-term forecasts still expect a remarkable degree of economic growth. It is therefore expected that the combination of the key factors (i.e. ‘increasing population’ and ‘growing economy’) will lead to a per annum increase in air traffic demand of between 7% and 9%.
- Secondly, a significant portion of the world’s aircraft fleet is scheduled to be replaced before 2025. This demand for replacement mirrors one of today’s most relevant core trends in the aviation industry: Overhead and operational costs are of major importance within the airline industry. The forthcoming years will show a remarkable demand for those aircraft types that satisfy the most recent requirements regarding weight reduction, enhanced aerodynamic and best efficiency in fuel consumption. Currently these requirements are met by aircraft types which form the core fleet of the German aircraft financiers, like the Airbus A320-, A330- and the Boeing B737- and B777 families. Beyond that there are obviously those aircraft models, which have just been introduced to the market (like the Airbus A380) or will be introduced in the near future (like the Boeing “Dreamliner” B787 or the Airbus A350).

## FORECAST: DEVELOPMENT IN GLOBAL AVIATION



### Aircraft as Cover Pool Asset

#### Aircraft are generally categorised into the following four classes:

The first group are the so-called widebody aircraft, i.e. very large aircraft which are used on long-haul and intercontinental routes. The second segment consists of the so-called narrow bodies, like the Boeing B737 and the Airbus A320 models. These aircraft are used for short- and mid-haul distances, i.e. primarily for continental traffic. The third class consists of 'regional jets' and 'turbo props', which are short-haul aircraft, used especially for feeder traffic purposes. The main regional jet manufacturers are Bombardier (Canada), Embraer (Brazil) and ATR (France/Italy). The last relevant class to be mentioned are cargo aircraft, which are either special types of the larger Airbus and Boeing aircraft or converted passenger aircraft.

The stability and sustainability of aircraft values played an important role in the process of the implementation of the Aircraft Pfandbrief. The preceding (and until then) most severe crisis in the aviation industry during the years 2001 to 2003 clearly proved the robustness of aircraft values. That crisis had been remarkable due to the cumulative occurrence of several incidents (which were even severe taken individually): September 11, the Iraq war and the SARS epidemic, coupled with a cyclical downturn in the aviation industry caused by the structural changes within the major US airlines. Amongst those aircraft types constituting the core fleet of German aircraft financiers the decrease in aircraft values during the years 2001 to 2003

turned out to be moderate: The values of four year old Boeing B737-800 aircraft only dropped by 3.3% and in case of four year old Airbus A320-200 aircraft by 17.7%. By contrast, values of those aircraft types which at that point in time did not represent the then current requirements of modern aircraft suffered more severely. In the years succeeding the crisis the values of many types of relevance to German aircraft finance banks managed to recover, and in some cases values even rose above the pre-crisis level.

Aircraft values are determined by specialised appraiser firms, some of which have been in the business since the 1960's. The valuations are based upon complex methods and procedures, employing extensively harmonised terminology. The appraisers founded an aircraft appraisal association named 'International Society of Aircraft Trading' ('ISTAT'), which promotes the harmonisation of valuation standards and the certification of aircraft appraisers. It should be mentioned in particular that the valuation of aircraft values is drawn upon empirical data. Due to the advanced degree of standardisation and the fact that aircraft can be put in service with airlines worldwide, there is a uniform global market for aircraft. Appraisers regularly have access to the actual prices of sale and purchase transactions and are therefore in a position to base their appraisals and predictions on real market values with global validity, which enables a high degree of precision.

The Pfandbrief Act addresses the normal age-related depreciation of aircraft values in accordance with the Ship Pfandbrief legislation, which means that the mortgaging of aircraft that are subject to a Pfandbrief cover pool is limited to a maximum age of 20 years.

### **The Aircraft Finance Industry – Relevant Participants**

Airlines play the key role in the aircraft finance industry, since it is airlines who use the financed equipment and generate the cash-flows necessary to repay the loans. However, compared to the 1980s/90 it is nowadays significantly less common that airlines actually own the aircraft they are flying so that the relevance of direct airline financings has decreased considerably. By now, aircraft leasing in the form of short-, mid- and long-term lease contracts has become very important. Approximately one third of the global fleet of circa 20,000 aircraft is under operating lease, that is to say leased by lessors to the airlines. The large commercial leasing firms dominate this market: About one third (circa 2,300 aircraft) of the global operating lease fleet is owned by the top two lessors GECAS and ILFC; the ten largest leasing companies own and lease out more than two thirds of all leased aircraft (combined circa 4,200 aircraft).

## The Secondary Market

The secondary market has developed into a significant component of the aviation industry. In 2005 experts predicted an annual volume of twelve billion US-Dollars of commercial secondary market aircraft finance transactions for the period 2005 to 2025. For the 2005 to 2008 period, this volume was considerably exceeded. There are basically three scenarios for sale and purchase transactions relating to used aircraft:

- Firstly, for certain market participants, aircraft are commodity assets which means that the original aircraft acquisition from the manufacturer already occurs with the intention to sell the asset profitably within a short- or mid-term period. This approach is typical for large leasing companies.
- Secondly, the secondary market becomes very important in connection with airline fleet restructurings resulting from the opening of new or the closing of existing routes or the increase or decrease of capacities.
- Thirdly, aircraft are frequently sold in the context of airline restructurings or liquidations.

Normally, insolvent airlines are taken over by other airlines in order to assume the valuable airport slots and routes of the bankrupt carrier. Nevertheless, take-overs often lead to a fleet downsizing. To the extent such dispensable equipment is demanded in the market (and German aircraft financiers focus on these models), sorted-out aircraft are likely to be placed with economically stronger airlines sooner rather than later. Looking at the current decade only, several recognised and big airlines had to file for bankruptcy, amongst them for example US Airways, Delta Airlines, United Airlines, Air Canada, Swissair or Sabena. German aircraft financiers were involved in each of those cases and in most of the instances sorted-out aircraft were brought back into service within a reasonable period. Aircraft are assets offering flexible utilisation options which derive firstly from the advanced degree of standardisation of aircraft types, secondly from the harmonised air traffic regulations and thirdly from the high level of market transparency. If an interested party is looking for a particular aircraft type, potential sellers can be traced very easily and it does not require extensive efforts to customize an aircraft for the specific needs of a new airline.

## The Collateralisation of Aircraft Finance Loans

The key security instrument for the Pfandbrief Act is the German aircraft mortgage, which was copied from the German ship mortgage. The provisions of the German Law on the Rights in Aircraft are almost identical to the laws governing ship mortgages (which in turn largely follow the laws on real estate mortgages).

The international recognition of aircraft mortgages is of highest importance given that aircraft are operated worldwide and could be seized anywhere for enforcement purposes either by the mortgagee itself or by other creditors. The location of an aircraft seizure need not be the same as the state of aircraft registration (whose laws are usually relevant for the effective creation of the aircraft mortgage). The so-called 'Geneva Aircraft Mortgage Convention', which has been ratified by more than 90 countries so far, was concluded in 1948 in order to safeguard the international recognition of security rights in aircraft. Each treaty state commits to recognise other treaty state's national aircraft mortgages and, due to the number of ratifications, the aircraft finance industry has benefited from a certain level of legal certainty for many decades. A further improvement was achieved with the entry into force of the so-called "Cape Town Convention" in 2006, which is a completely new type of international treaty. The idea of this convention goes beyond the mere recognition of national mortgages as it contemplates the creation of independent 'international security interests'. These 'international interests' can be recorded in an 'international register' and have to be recognised among the treaty member states. The international 'Cape Town Register' is run entirely on an electronic basis and is therefore available 24 hours a day, which allows for an independence from opening hours of classic registers and from time zones. The Cape Town Convention has (as at 31 July 2009) been ratified by 29 countries. Upon having reached a higher level of ratifications the legal certainty within the aircraft finance industry will be further improved. In reliance upon an enhanced legal position, the US export credit agency Ex-Im Bank has for some time been offering a discount on the guarantee premium, if an aircraft to be financed will be registered in a Cape Town Convention member state.

It is common practice that the position of lenders in aircraft finance transactions is supplemented by additional security: The rights of lessors under the aircraft leasing contracts are assigned to the banks which generally allows for a quicker post-default access to the aircraft compared to the isolated exercise of the rights under a mortgage. It is furthermore customary to assign the claims against the insurers and the rights in relation to the manufacturer warranties. This additional collateral is available to the Pfandbrief investor as cover assets (§ 26b par. 5 Pfandbrief Act).

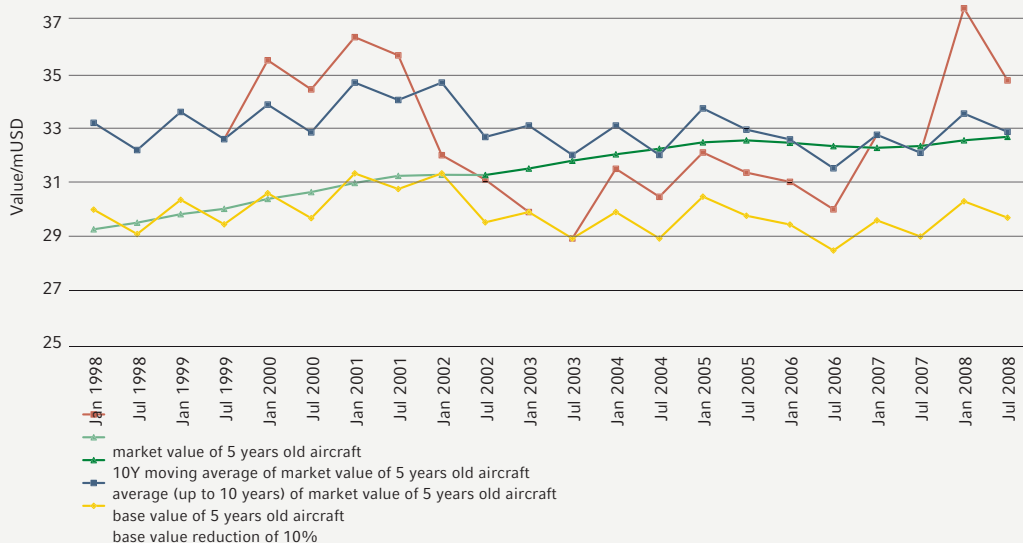
## Mortgage Lending Value and Lending Limit

The Regulation on the Determination of Mortgage Lending Values of Aircraft (Aircraft MLV Regulation) entered into force just about two months after the Pfandbrief Act Amendment. As in case of the parallel regulation for the determination of Ship Mortgage Lending Values (Ship MLV Regulation) the Aircraft Mortgage Lending Value is to be defined on the basis of a three-fold 'upper limit model': The first upper limit is to be ascertained on the basis of the current market value, which is to be assessed in accordance with the standard industry approach (see § 4 par. 2 sent. 1 Aircraft MLV Regulation, § 26d par. 2 sent. 3 Pfandbrief Act). The second upper limit is to be determined on the basis of the average of market values from the preced-

ing ten years applicable to such specific or a similar aircraft type. Unlike the initial two limits the third type of cap differs from the Ship MLV Regulation conceptually: Instead of the actual aircraft purchase price, which is neither transparent nor meaningful in the aviation industry for various reasons, the so-called 'value of balanced market conditions and average state of repair' is used to assess the third upper limit of the mortgage lending value (§ 11 Aircraft MLV Regulation). This value is to be determined via the standardised industry term 'Base Value'. The Base Value is an aircraft value ascertained on the basis of an assumed market environment providing for a balanced relationship between offer and demand. The Base Value constitutes an appropriate third upper limit for the determination of the Aircraft Mortgage Lending Value, as the Base Value is demonstrably non-volatile, non-fluctuating and sustainable.

In accordance with the concept of the Ship MLV Regulation, the Base Value must be reduced by 10% if the historical aircraft data is available for a period of less than ten years only (§ 4 par. 2 sent. 2 Aircraft MLV Regulation). The actual lending limit is capped (as it is for real estate or ship loans) at 60% of the Aircraft Mortgage Lending Value.

#### A320-200: MARKET VALUE, BASE VALUE AND 10Y AVERAGE OF MARKET VALUE OF 5 YEAR OLD AIRCRAFTS



### Summary

The Aircraft Pfandbrief offers interesting opportunities for portfolio diversification. Aircraft are assets with firm and robust values given the fact that they can be used by a worldwide airline customer range. This leads to very good remarketing possibilities which have been tested in various economic and aviation industry crises. The cover pool of an Aircraft Pfandbrief offers a premium class protection for the interests of a Pfandbrief investor. Due to their sustainable stability of value, aircraft are ideal cover assets for the equally robust Pfandbrief.