

LEASING: A FINANCING ALTERNATIVE FOR SMEs?

A University Thesis Presented to the Faculty
of
IMADEC University

In Partial Fulfillment
of the Requirements for the Degree
Executive Master of Business Administration

By
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August, 2007

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1 Executive Summary

Micro, small and medium-sized enterprises (SMEs) are the engine of the European economy. They are an essential source of job, create entrepreneurial spirit and innovation in the EU and are thus crucial for fostering competitiveness and employment¹. The European Union published a new definition for SMEs in the year 2003. The reason lies apart from a standardization of the term SME particularly with the importance and necessity of supporting the SMEs from an overall economic view.

Efforts targeted at the SME sector are based on the premises that SMEs are the engine of economic development². One of the perennial problems of SMEs is the access to capital. The solution of this problem however did not improve substantially in the last years. Fundamental structural changes on the financial markets by Basel II and the development from a bank-oriented to a capital market-oriented financing culture are not favorable for the access to capital of SMEs. Regarding the business size and thus the resulting capital requirement of SMEs a direct entrance to the capital market is mostly not possible – indirect entrances over financing forms and their financing companies are necessary cause of this.

Leasing as a form of SME financing can result in such an indirect entrance to the capital market. This especially because

- (i) the increase of the European leasing business is driven by SMEs and
- (ii) the securitization of leasing portfolios increases.

¹ Günter Verheugen in European Commission. "The new SME definition: User guide and model declaration." Brussels: Enterprise and Industry Publications, 2005.

² Beck, Thorsten and Demirguc-Kunt, Asli. "Small and medium-size enterprises: Access to finance as a growth constraint." *Journal of Banking & Finance*, 30 (2006): 2932.

The basic Asset Backed Securities (ABS) structure of a portfolio of leases with SMEs requires capital-market oriented leases and as well capital-market oriented leasing company. In fact the result is than an appropriate comprehensive business model of leasing companies.

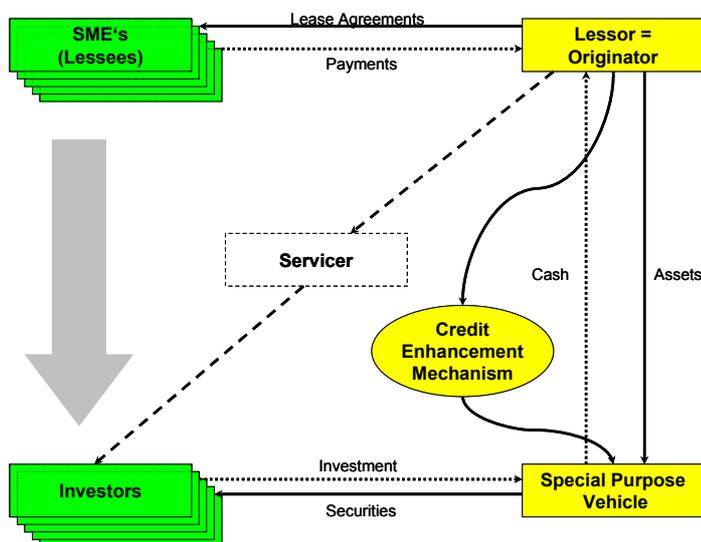


Figure 1: Capital Market Entrance for SMEs via Leasing

This thesis follows the question, how this business model must be structured on the basis of the SME, over the leasing company and also from the view of the investors at the capital market. The chapters of this thesis therefore anticipate the final result of a securitization of a leasing portfolio based on SME leases. Therefore it light up both the way from the SME over a lease to the capital market and vice versa.

Starting point of this thesis is in chapter 2 a general description of leasing in Europe. The legal and fiscal basic conditions as well as Basel II represent here the frameworks for leasing.

The SMEs are already today one of the most important factors of growth for the European leasing market. The strategic adjustment (i) of the bank-owned leasing companies and (ii) of the captive leasing companies concerning the financing of SMEs is discussed in chapter 3.

Chapter 4 concerns itself with leasing from the view of the SMEs and works out, why leasing is an interesting financing alternative from view of the strategic financial management.

The crucial role in the whole process is owned by the individual leasing company. This company must perfectly combine the capital market-orientation and the customer focus. For the SMEs a fast decision-making process and a high-quality service are of greatest importance. This must be organized by the leasing company in a way that the credit risk is arranged optimally in accordance with the requirements of the capital markets. In chapter 5 a structure of a leasing company is compiled, which can fulfill all these requirements.

Thus now – as in chapter 6 described – it is possible to securitize a portfolio of leases highly efficient. Apart from the possible kinds of securitization special attention is paid to the rating methodologies and as well to the impacts of Basel II on the securitization of leasing portfolios.

Thus the cycle from the individual SME, over the leasing company to investors at the capital market is closed.

2 Aspects of Leasing in Europe

The term *leasing* is not uniformly defined and used in the literature. A lease is an agreement whereby the lessor conveys to the lessee in return for a payment or series of payments the right to use an asset for an agreed period of time³. This is at present the valid definition of leasing in accordance with IAS. The question about definition – in particular according to tax law questions – cannot lead away however across the fact that leasing has a historically unique development.

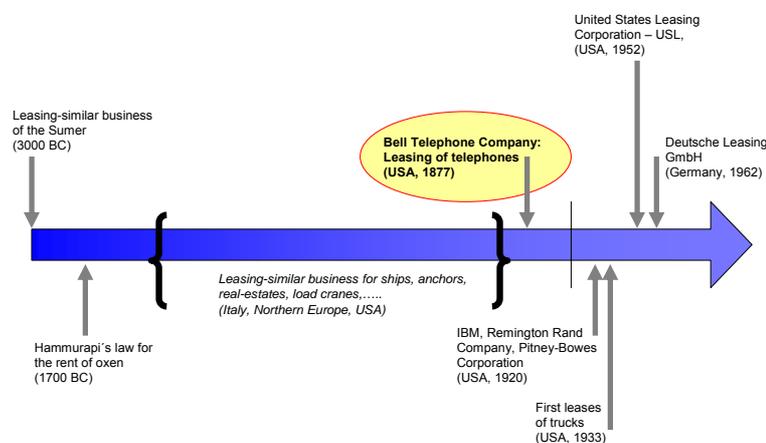


Figure 2: Historical Development of Leasing

Leasing has its roots already in the antiquity. The Sumer had done leasing-similar business already 3000 BC. The first renting business concerning law originates from Babylonia and is dated approximately 1700 BC. Aristotle stated that the wealth exists rather in the use as in the property⁴.

³ International Accounting Standard IAS 17 – definitions 17.3

⁴ Marek, Michael. "Geschichte des Leasing – Abriss einer beeindruckenden Entwicklung." Working Paper No. 73, University Paderborn, October, 2001, 4

Until the 19th century leasing-similar business was locked again and again. This business laid to a substantial part in the range of the navigation, where loading cranes, anchors or even whole ships were leased. With beginning of the industrialization the meaning of leasing increased especially in Great Britain and the United States.

As birth of the modern financing product leasing the year 1877 is considered. In this year Bell Telephone Company (USA) began to lease and not to sell their telephones. In the mid of the 1920s other companies like IBM followed this example. Leasing was at that time seen as a purely vendor-oriented business that protected the licenses and obtained the profits.

In 1933 the first leases of trucks were concluded. Cause of the small offer during the Second World War car- and vehicle-leasing experienced a large upswing. Starting point of this development were also here again the United States, where 1942 a subsidiary of the General Motors Group offered leasing on a regular base⁵.

1952 the establishment of the United States Leasing Corporation (USL) takes place in San Francisco. The USL is considered historically as the first leasing company. Afterwards the establishment of further companies took place in the USA. These first companies were extremely successful and fast growing. Therefore this idea found already soon imitators in other free market oriented countries.

In 1962 several companies were created in Germany (Deutsche Leasing GmbH, Maschinen-Miete GmbH, Deutsche Anlagen-Leasing GmbH and

⁵ Marek, Michael. "Geschichte des Leasing – Abriss einer beeindruckenden Entwicklung." Working Paper No. 73, University Paderborn, October, 2001, 7

Mietfinanz GmbH). In Austria BACA-Leasing and LD-Leasing are ranked among the first leasing companies active at the market.

2.1 Development of the European Market

In the first phase of Leasing in Europe many small leasing companies were founded. The focus of these companies lay in the covering of regional markets and companies.

Although the economical background was very positive in Europe, the importance of the product leasing remained rather small. The background for investment financing was nevertheless given, this above all through

- (i) the low equity ratios of the companies and as a result of this the small possibilities for self financing
- (ii) the obligation of the enterprises to strengthen their investments especially under the increasing international competition
- (iii) fiscal measures to boost the economy and to promote investments

Nevertheless it did not succeed to place the product leasing successfully at the market. Rather leasing got relatively rapidly a substantial image problem. This after the slogan: who gets no more credit is getting leasing. Leasing became cause of this quasi a product, which is used as rescue anchor for illiquid companies. This image problem surely worked until the 1990s as a brake of further development of the European leasing markets.

On the other hand the straight fiscal advantages became a driver. In some European countries these fiscal benefits were pronounced much more in relation to other financing products. This lead to a situation, that the tax authorities were sometimes the most important sales promoter of leasing⁶.

⁶ Jagersma, Pieter Klaas. „Leasing: a distinctive competitive strategy.“ *Holland Business Publications*, October 28, 1999, accessed December 28, 2006; available from <http://om.htp.net/asp/artikelen/8.asp?aid=8>, Internet.

This both aspects led however to the effect that also the internal and sometimes as well the external development of the leasing companies itself (e.g. regarding marketing, competition and service quality) started partly only in the last years. Particularly compared with other financial services products leasing is also today still underdeveloped in some of these points.

In the 70's leasing could be strengthened in the market. Between 1970 and 1980 the leasing business in Germany increased by 800% (regarding the new leasing volume). Particularly by the increasing activities of the banks in context of their subsidiaries and participations the leasing business received new impulses. The banks made an improvement of the refinancing possibilities, also a larger number of reestablishments and a better capitalization in this time⁷. This trend was strengthened also by

- (i) the increasing right and law security and
- (ii) the increased offer of mid- and long-term leases.

In this time also the establishment of the national leasing associations took place. In the year 1972 Leaseurope as a head-organization of the European national leasing associations was founded in Brussels.

Starting from the 80's car- and vehicle-leasing was forced and became a more and more important factor for the leasing industry. Further emphasis was in particular with the development of new customer segments and an improvement of the internal processes of the leasing companies. A surely crucial impulse for the entire leasing industry was and is the opening of Eastern Europe and Russia. Leasing developed in the CEE-area rapidly to an important financing instrument. Especially Austrian banks and leasing companies noticed this chance and set thereby crucial new impulses in this countries.

⁷ Marek, Michael. "Geschichte des Leasing – Abriss einer beeindruckenden Entwicklung." Working Paper No. 73, University Paderborn, October, 2001, 12

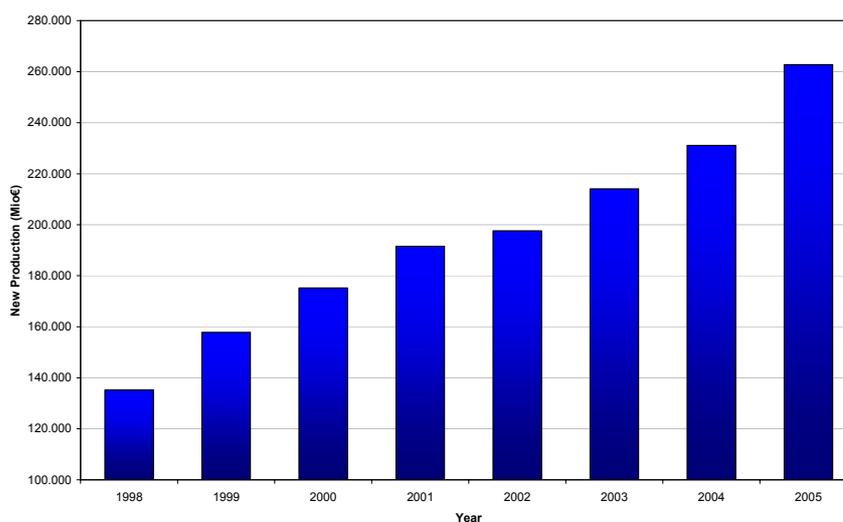


Figure 3: Total Leaseurope Market - New Production⁸

	1998	1999	2000	2001	2002	2003	2004	2005
Austria	3.541	3.867	4.530	4.292	4.587	5.059	6.117	6.712
Belgium	2.555	2.834	3.081	3.219	3.398	3.451	3.501	3.845
Bulgaria								485
Czech Republic	2.037	2.180	2.497	2.990	3.441	3.412	3.397	3.992
Denmark	1.777	2.172	2.914	2.744	2.835	2.606	3.085	4.290
Estonia	213	209	384	439	661	734	731	962
Finland	620	654	742	839	905	2.616	2.864	3.200
France	18.525	22.602	24.856	26.876	26.563	25.743	26.915	28.776
Germany	32.653	37.659	38.200	45.500	44.000	43.650	44.410	49.270
Greece				1.250	1.500	1.965	2.360	2.794
Hungary	882	1.217	1.334	1.921	2.231	2.771	3.076	4.731
Italy	17.163	21.879	26.742	32.261	37.559	32.222	38.040	44.160
Marocco	265	340	460	491	508	503	585	738
Netherlands	3.379	3.772	3.583	4.421	4.244	4.314	4.387	4.539
Norway	1.546	1.489	1.785	2.436	2.508	2.227	2.757	3.536
Poland	1.648	2.162	2.050	2.081	2.093	2.542	3.116	4.047
Portugal	2.593	3.457	3.797	3.794	3.356	3.331	4.227	4.889
Romania				607	625	706	841	1.102
Russia							1.556	2.759
Slovenia	240	373	480	573	677	996	1.094	1.478
Slowak Republic	466	390	553	828	947	1.042	1.130	1.485
Spain	6.402	8.049	8.489	9.661	9.671	11.715	13.980	17.439
Sweden	4.324	3.430	5.116	5.691	4.491	3.916	4.673	6.450
Switzerland	3.050	3.657	4.405	5.276	5.319	4.952	4.635	5.292
United Kingdom	31.293	35.422	39.225	33.401	35.479	53.618	53.651	55.774
Total	135.172	157.814	175.223	191.591	197.598	214.091	231.128	262.745

Table 1: Total Leaseurope Market - New Production (Mio€)⁹

For years leasing grows in Europe more strongly than the growth rate of the overall economic investments. It is surely questionable, if this development will

⁸ Source: Leaseurope – Statistics, accessed December 19, 2006. Available from www.leaseurope.org/pages/statistics/stat.asp, Internet.

⁹ Source: Leaseurope – Statistics, accessed December 19, 2006. Available from www.leaseurope.org/pages/statistics/stat.asp, Internet.

take place further in the future. As crucial points for the further growth are very often called

- (i) the increasing competition pressure on leasing companies leads to increasing mergers and concentration processes within the leasing industry
- (ii) the leasing companies tries to open new market segments (e.g. leasing of immaterial assets, PPP)
- (iii) the intensification of the advisory and servicing activities in the context of full-service and the search for innovative financing and service concepts
- (iv) the ability to improve of the general structural changes in the industries

Generally it applies today that leasing companies are quite considered as innovative and partly also as trendsetters on the capital goods markets. Nevertheless the questions arise whether the search for new ideas and concepts should take place at the customer itself and the possibilities that are offered by the capital markets. The product leasing itself did not change fundamental in the last years – the structure of the customers and their surrounding legal, economic and competition environments changed a lot. These new surrounding conditions must be optimally used under integration of the capital market. This is the really large challenge for the leasing industry during the next years.

2.2 Basic Structure of the European Leasing Companies

The European leasing market is shaped by leasing companies, which have either bank status or are subsidiaries from banks.

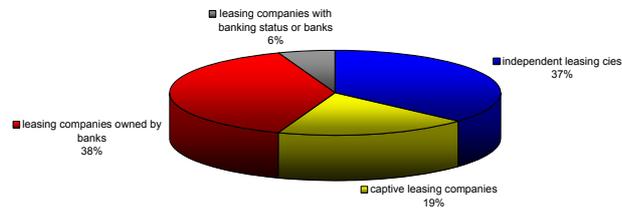


Figure 4: Leaseurope Member Companies by Profile¹⁰

With a share of 44% these dominate the market. A broad adjustment regarding its customers and products mark these leasing companies.

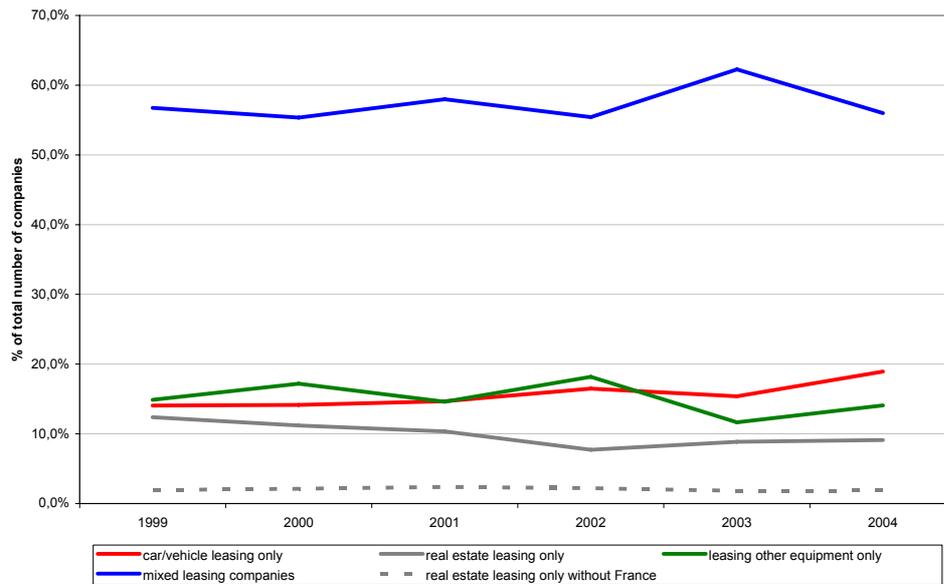


Figure 5: Leaseurope Member Companies by Activity¹¹

¹⁰ Source: Leaseurope – Statistics 2004, accessed December 19, 2006. Available from www.leaseurope.org/pages/statistics/stat.asp, Internet. Spain was not considered during this evaluation. The reason is that in Spain a banking concession is required to do leasing business. Therefore 112 out of 117 leasing companies in Spain have a banking status.

¹¹ Source: Leaseurope – Statistics, accessed December 19, 2006. Available from www.leaseurope.org/pages/statistics/stat.asp, Internet.

These companies use the branch banks of the respective parent companies apart from a direct selling above all as selling way. The integration into the respective banks is very strong. Many of these companies can be regarded also as specialized departments of a bank. This very strong integration leads also to the fact that the systems of the respective bank are in its entirety used regarding risk management, compliance, treasury etc. Depending upon the degree of the integration, therefore also the leasing processes are developed similar to the credit processes in further consequence. These societies essentially act as producer-independent leasing companies.

The captive leasing companies take an ever stronger meaning at the market. These could expand their market shares in the last years substantially. The sense of these societies is to extend the creation of value chain for the respective manufacturer or dealer and to strengthen also the customer connection. In the last years the trend can be observed that at the producer-independent leasing companies the new business shrinks relatively, while within the range manufacturer renting and manufacturer leasing the new business grow¹². This is connected with the fact that ever more financings are closed directly at the point of sale with the manufacturer or supplier.

A further trend at the leasing market is the expansion of the product range of the individual leasing companies. Leasing companies lock in the meantime also business, which does not represent traditional leasing; however it lies on the level of their authority as financial investment and service expert¹³. Examples are for this in the range car financing above all vehicle park management or full

¹² Institut für Wirtschaftsforschung an der Universität München. „Mobilien-Leasing in Deutschland und Europa weiter auf Wachstumskurs“. Ifo Schnelldienst Nr. 23/2004. Accessed February 12, 2007; available from http://www.bdl-leasing-verband.de/download/presse/publikationen/pdf/1.4_ifo-sonderdruck_12-2004.pdf; Internet, 4.

¹³ Institut für Wirtschaftsforschung an der Universität München. „Besseres Investitionsklima stärkt Leasingwachstum“. Ifo Schnelldienst Nr. 23/2005. Accessed February 12, 2007; available from <http://www.bdl-leasing-verband.de/download/presse/publikationen/pdf/ifo-sonderdruck-komplett.pdf>; Internet, 12.

service leasing, in the range real estates above all facility management and construction consulting and in the range movable asset leasing asset management. Straight one in the large volume business gives it a trend to structured financing or fund conceptions and thus actually to products and tasks of the investment banking.

2.3 Kinds and General Trends of Leasing Products

General the following global trends are to be determined in Austria and as well at the European leasing market:

- car leasing provides for growth of the leasing market
- equipment and real estate leasing are volatile markets

	Mio€				%				2002-2005 (average)
	2002	2003	2004	2005	2002	2003	2004	2005	
Car/Vehicle leasing	2.212	2.551	3.040	3.218					
private customer	864	988	1.122	1.135	39,1%	38,7%	36,9%	35,3%	37,5%
commercial customer	1.330	1.524	1.894	2.055	60,1%	59,7%	62,3%	63,9%	61,5%
public sector	18	39	23	28	0,8%	1,5%	0,8%	0,9%	1,0%
direct sales	542	581	770	866	24,5%	22,8%	25,3%	26,9%	24,9%
trade	1.160	1.310	1.487	1.547	52,5%	51,4%	48,9%	48,1%	50,2%
banks	364	463	559	594	16,5%	18,2%	18,4%	18,4%	17,9%
insurance companies	131	174	199	188	5,9%	6,8%	6,6%	5,9%	6,3%
internet	1	1	1	0	0,0%	0,1%	0,0%	0,0%	0,0%
miscellaneous	13	21	22	22	0,6%	0,8%	0,7%	0,7%	0,7%
Equipment leasing	820	1.008	1.658	1.413					
private customer	54	13	10	15	6,6%	1,3%	0,6%	1,0%	2,4%
commercial customer	703	913	1.425	1.286	85,8%	90,6%	86,0%	91,0%	88,3%
public sector	62	81	223	113	7,6%	8,1%	13,5%	8,0%	9,3%
direct sales	434	585	916	787	53,0%	58,0%	55,2%	55,7%	55,5%
trade	103	138	166	211	12,6%	13,7%	10,0%	14,9%	12,8%
banks	252	265	558	396	30,7%	26,3%	33,7%	28,0%	29,7%
insurance companies	8	4	4	6	1,0%	0,4%	0,2%	0,4%	0,5%
internet	0	0	0	0	0,0%	0,0%	0,0%	0,0%	0,0%
miscellaneous	22	16	14	13	2,7%	1,5%	0,8%	0,9%	1,5%
Real-estate leasing	1.281	1.335	1.168	1.414					
private customer	2	7	7	25	0,2%	0,5%	0,6%	1,8%	0,8%
commercial customer	974	951	892	1.031	76,0%	71,2%	76,4%	72,9%	74,2%
public sector	305	377	269	357	23,8%	28,3%	23,0%	25,3%	25,1%
direct sales	732	978	714	928	57,1%	73,2%	61,1%	65,6%	64,3%
trade	16	1	46	24	1,3%	0,1%	3,9%	1,7%	1,7%
banks	526	239	318	342	41,0%	17,9%	27,2%	24,2%	27,6%
insurance companies	0	0	11	1	0,0%	0,0%	0,9%	0,1%	0,3%
internet	0	0	0	0	0,0%	0,0%	0,0%	0,0%	0,0%
miscellaneous	7	117	79	119	0,6%	8,7%	6,8%	8,4%	6,1%

Table 2: Austrian Leasing Market¹⁴

¹⁴ Source: Association of Austrian Leasing Companies – Statistics, accessed December 19, 2006. Available from www.leasingverband.at, Internet.

2.3.1 Car/Vehicle Leasing

The European leasing market is on product level dominated by car/vehicle leasing. More than 50% of the entire leasing business is allotted already by car/vehicle leasing. This is all the more remarkable, as the leasing market does not develop similarly to the European new cars market. Car/vehicle leasing grew continuously in the last years - independently of partial weak developments on the cars market (based on new permissions). Leasing is the clearly preferred procurement and financing form for vehicles ¹⁵ and provides thereby for growth at the leasing market.

The product car/vehicle leasing develops ever more from a pure financing product to a comprehensive service package around the car. In particular products approximately around vehicle park management/fleet management are characterized by a high market growth. Here apart from the financing also service achievements (tire, maintenance) and services (insurance, Hotlines for drivers) are offered. So far these achievements were offered only for large enterprises, then this change now toward private ones and SME's. Also the acquisition of new customers - for example fleet management concepts for police and military – give new impulses for the further development of car/vehicle leasing.

2.3.2 Equipment Leasing

By equipment leasing colloquially the leasing of machines for production is understood. This definition is however not any longer completely correct. This above all therefore, since within the largest range of the economy - the service sector - more investments are transacted clearly than within the range of the processing and production sector. Simultaneous the primary sector of the

¹⁵ Institut für Wirtschaftsforschung an der Universität München. „Besseres Investitionsklima stärkt Leasingwachstum“. Ifo Schnelldienst Nr. 23/2005. Accessed February 12, 2007; available from <http://www.bdl-leasing-verband.de/download/presse/publikationen/pdf/ifo-sonderdruck-komplett.pdf>; Internet, 6.

economy (energy and water supply, mining industry and agriculture) become ever insignificantly. The leasing growth of the equipment leasing is therefore carried essentially also by the service sector. For different, partly also non-economic reasons, the government use equipment leasing not as much as all other economic sectors¹⁶. Growth within the range equipment leasing is thus ensured by the service sector. Here in particular following assets and/or industries play a special role:

- (i) The computer and data communication area as well as the area of telecommunications grow for some years very strongly and offer therefore also to the leasing companies the possibility of participating at the brisk expansion of these economic sectors and economic goods¹⁷.
- (ii) The investments in air, water and rail-mounted vehicles offer for the leasing companies the possibility of the specialization in big-ticket, structured financings, where the asset is the main collateral.
- (iii) The world-wide strongly growing market for medical technology.

In many of these ranges above all also producer-independent leasing companies can obtain strong increases. Reason for this is above all the specialized knowledge from different ranges, necessary for it, such as law, taxes, accounting and Treasury. This justifies also the partial trend to large volume – big ticket - leasing financings. But not only machines and equipment are in the future of importance but also the leasing of immaterial economic goods. Thus leasing financings for example of in copyright matters patentable works such as cinema and television films already took place.

¹⁶ Institut für Wirtschaftsforschung an der Universität München. „Mobilen-Leasing in Deutschland und Europa weiter auf Wachstumskurs“. Ifo Schnelldienst Nr. 23/2004. Accessed February 12, 2007; available from http://www.bdl-leasingverband.de/download/presse/publikationen/pdf/1.4_ifo-sonderdruck_12-2004.pdf; Internet, 8.

¹⁷ Institut für Wirtschaftsforschung an der Universität München. „Mobilen-Leasing in Deutschland und Europa weiter auf Wachstumskurs“. Ifo Schnelldienst Nr. 23/2004. Accessed February 12, 2007; available from http://www.bdl-leasingverband.de/download/presse/publikationen/pdf/1.4_ifo-sonderdruck_12-2004.pdf; Internet, 6.

2.3.3 Real-estate Leasing

The real estate leasing is characterized by a substantial volatility. Thus it is also very heavily to estimate the future development of this leasing product¹⁸. A substantial driver of real estate leasing in the past was the financing of trading class places particularly in the range food trade and building trade markets. Here a certain saturation of the market is to be observed in Western Europe in the last years. On the other hand the straight expansion to Eastern Europe leads also to a boom on the leasing markets there. Real estate leasing generally stands in particular in strong competition with real estate funds. A chance for real estate leasing offers the financing of the public sector. Under the dictation of the empty public cashes the so far still underdeveloped instrument „PPP“ (Public Private Partnership) - the private financing and execution of public infrastructure projects – will be used more frequently¹⁹.

2.4 Accounting Treatments of Leases

The International Accounting Standards (IAS) and the US Generally Accepted Accounting Principles (US-GAAP) both affect the regulations for the balancing process of leasing contracts²⁰. IAS 17.3 defines a lease as “an agreement whereby the lessor conveys to the lessee in return for a payment or series of payments the right to use an asset for an agreed period of time”. IAS 17 and FAS 13, which were developed some 25-30 years ago, make a clear classification of leasing contracts into:

¹⁸ Institut für Wirtschaftsforschung an der Universität München. „Besseres Investitionsklima stärkt Leasingwachstum“. Ifo Schnelldienst Nr. 23/2005. Accessed February 12, 2007; available from <http://www.bdl-leasing-verband.de/download/presse/publikationen/pdf/ifo-sonderdruck-komplett.pdf>; Internet, 12.

¹⁹ Institut für Wirtschaftsforschung an der Universität München. „Mobilen-Leasing in Deutschland und Europa weiter auf Wachstumskurs“. Ifo Schnelldienst Nr. 23/2004. Accessed February 12, 2007; available from http://www.bdl-leasing-verband.de/download/presse/publikationen/pdf/1.4_ifo-sonderdruck_12-2004.pdf; Internet, 8.

²⁰ Association of Austrian Leasing Companies. “Guidelines on the balancing of leasing contracts for Lessees in accordance with IAS & US-GAAP”, accessed March 14, 2007. Available from www.leasingverband.at/download/leitfaden_eng.pdf, Internet, 1.

- Finance lease (also known as capital lease)
- Operating lease

2.4.1 Finance Lease versus Operating Lease

Lease accounting isn't just for accountants and analysts²¹. The question whether a leasing contract is a finance lease or an operate lease is of crucial importance for the balance of the leasing contract. Clarifying this question must take place at the beginning of the leasing term, from which follows that no changes can be made in retrospect. For clarifying which kind of leasing is present, IAS uses the economic viewpoint ("substance over form"), while with US GAAP the formal arrangement of the leasing relationship is the middle of attention (FAS 13,6)²².

Both IAS and US-GAAP call the following indicators, which lead to a classification as financing leasing:

- (i) transfer of ownership / title passes at the end of the lease term (IAS 17.8a)
- (ii) presence of a favourable purchase option from view of the lessee – a so called bargain purchase option (IAS 17.8b)
- (iii) The term of the leasing agreement covers the predominant or major part of the economic service life of the leasing asset (IAS 17.8c). In US-GAAP the predominant or major part is specified with 75% or greater of the asset's estimated economic service life.
- (iv) The present value of the minimum leasing payments settled at the beginning of the leasing agreement essentially corresponds to the market value of the leased asset (IAS 17.8d). In US-GAAP the

²¹ Hirst, Eric and Pratt, Jamie. "A Manager's Guide to Financial Reporting and Value Creation". Vienna: IMADEC University, January, 2007, 361.

²² Casey, Angelika and Kunz, Detlef and Prachner, Gerhard. "IAS – US GAAP – HGB – Rechnungslegung im Vergleich". Wien: Manzsche Verlags- und Universitätsbuchhandlung, 2002, 90.

present value of the minimum leasing payments must be equal to at least 90% of the market value.

- (v) Special leasing, whereby the leased asset can be used only by the lessee, without substantial changes are made (IAS 17.8e). US-GAAP does not recognise this rule.

In addition to those criteria mentioned above, IAS 17.9 takes some more points into consideration when classifying a lease as a finance lease (like contract prolongation, residual value risk, cover of losses in case of early termination).

2.4.1.1 Operating Lease

An operating lease is an agreement to obtain the services of an asset for a period that generally represents only a small part of the asset's useful life. At the end of this period the lease may or may not be extended²³. This means that the substantive economic value will remain with the lessor at the end of the lease term.

Net assets from an operating leasing are to be reported by the lessor in tangible assets and be depreciated over the economic service life. Rentals or lease payments are seized linear over the leasing term and are recorded as rent revenue on the lessor's income statement. Because net assets are to be recorded only from the lessor and cause of the lessee recognizes no asset or liability, this financing is therefore for the lessee "off balance sheet".

²³ Grinblatt, Mark and Titman, Sheridan. "Financial Markets and Corporate Strategy". 2nd ed. New York: McGraw-Hill Irwin, 2002, 523.

2.4.1.2 Finance Lease

In a financial lease the lease agreement extends over most of the asset's useful life²⁴. This means that a finance lease is the economic equivalent of purchasing the asset from the lessor on credit terms. From this it follows further that financing leasing describes those leasing contracts, which have an addition of the leased asset to the lessee's balance sheet and in consequence therefore this is a "on balance sheet" financing.

The lessor has to balance a leasing receivable valued of the amount of net investment. This is defined as sum of the total future minimum leasing payments less not yet realized interest yields. The receipts of payment from the investment are divided in such a manner into redemption and a share of interest that constant periodic interest charges are obtained. The application of the net investment method is to be used compellingly.

2.4.2 Future Trends within IAS and FAS

In July 2006 the International Accounting Standards Board (IASB) and the United States Financial Accounting Standards Boards (FASB), in line with the request from investors and other financial reporting constituents, agreed to add a leasing project to their agenda²⁵. It is a joint project by the two boards and involves reconsideration of all aspects of lease accounting. The project is expected to lead to a fundamental revision of the way that lease agreements are treated in the financial statement both of lessees and of lessor's.

The first meeting of the working group was held on February 15, 2007. Sir David Tweedie, chairman of the IASB said one of his ambitions was "actually

²⁴ Grinblatt, Mark and Titman, Sheridan. "Financial Markets and Corporate Strategy". 2nd ed. New York: McGraw-Hill Irwin, 2002, 523.

²⁵ International Accounting Standards Board. "IASB and FASB announce membership of International Working Group on Lease Accounting". December 7, 2006, accessed March 14, 2006; available from <http://iasb.org/news/press+releases/>, Internet.

flying in an aircraft that's on an airline's balance sheet before I die"²⁶. The main topic is that with certain types of leases the costs are not fully reflected in the financial statements. This lead to the fact that investors can not see the full extent of a company's debt profile. After the first part of the project a discussion paper is expected to be published in 2008.

2.4.3 National Accounting Standards

Beside IAS and US-GAAP especially for SMEs the national accounting regulations are still of great importance in Europe. It is however here expressly pointed out that a securitisation of leasing needs the use of international accounting standards for the respective leasing companies. In most countries the accounting of leasing business orients itself at the regulations in the respective tax law. The according to commercial law treatment takes place following the fiscal allocation criteria²⁷. It is to be particularly made certain here that the term financing leasing can differ from the internationally used term financing leasing.

2.5 Tax Treatments of Leases

The European leasing market was shaped for a long time of the fact that in case of leasing financing fiscal advantages were given. These advantages were in particular in the range investment assistance, in premature depreciation possibilities or in special cross border structures using advantages of 2 or more countries (e.g. US tax leases, French tax lease or double dip constructions). In the last years this was however less and less the case. This also by the fact of

²⁶ Grant, Jeremy and Jopson, Barney. "Companies' balance sheets set to get a new lease of life". Financial Times, February 21, 2007.

²⁷ Casey, Angelika and Kunz, Detlef and Prachner, Gerhard. "IAS – US GAAP – HGB – Rechnungslegung im Vergleich". Wien: Manzsche Verlags- und Universitätsbuchhandlung, 2002, 89.

intensified harmonization of the tax law and accounting standards in the European Union.

Nevertheless the general question arises whether fiscal advantages are possible by leasing. The answer of this question is only possible if the costs of owning are compared with the costs of leasing.

$$\text{Cost of owning} = \text{debt repayment} + \text{interest}$$

The cost of owning an asset consists of debt repayment and interest. To simplify the equation it is necessary to mention that

- (i) the asset is funded over the economic life of the asset
- (ii) the amortization is assumed to be identical to the economic depreciation

Under economic depreciation the sum of loss in market value as it ages plus the cost of maintaining is understood²⁸. In a competitive leasing market the costs of the lessor, who owns the asset, must be passed to the lessee, who rents the asset. In the case that the depreciation of the leased asset also equals we can say that

$$\text{Lease payment} = \text{debt repayment} + \text{interest}$$

This implies that a lessor who can take advantage of accelerated depreciation – depreciation for tax purposes at a rate that initially occurs faster than economic depreciation would profit from the lease²⁹. As a result we can say that for low tax bracket investors, it is often cheaper to lease an asset than to buy it.

²⁸ Grinblatt, Mark and Titman, Sheridan. “Financial Markets and Corporate Strategy”. 2nd ed. New York: McGraw-Hill Irwin, 2002, 523.

²⁹ Grinblatt, Mark and Titman, Sheridan. “Financial Markets and Corporate Strategy”. 2nd ed. New York: McGraw-Hill Irwin, 2002, 524.

2.6 Impact of Basel II on Leasing

Basel II became in the last years also for the leasing industry of great importance. Since the start for the development of a new capital adequacy guideline in the year 1999 also the national leasing federations and Leaseurope are involved into this process strongly. This especially to make clear the specifications and characteristics of leasing business and leasing portfolios opposite loans and loan portfolios in particular and to explain differences also scientifically.

The definition of leasing in Basel II orients itself at the definitions of IAS 17, the international accounting standard for leasing. Thus it comes to an equalization of accounting standards and bank-legal regulations. It is foreseeable that thereby also medium-term the leasing products offered at the market adapts them strengthened at IAS guidelines. The national leasing definitions in the tax law will lose thereby surely in the future at meaning.

The Portfolio of most leasing companies is to add to the so-called „retail leases exposures “. For these portfolios the so-called „standardised approach“ has to be used. This leads to the fact that most European leasing companies will use this at the beginning. This is clearly an advantage for the leasing industry, since the IRB-approach would just be feasible with high costs due to the mostly small portfolios.

Basel II means to regard leasing business with a uniform approach for the first time for the leasing industry entirely. This begins already at the organization of the individual process steps and here particularly during the credit decision. The view and evaluation of risks of the single business and the Portfolios are however surely the centre of attention. Basel II forces to concern itself the leasing industry with these topics. The statement alone that leasing compared with a loan is lower-risk sufficient must in further consequence be proven for each leasing portfolio. The meaning of Controlling and risk management in the

individual leasing companies rose therefore also in the last years substantially. Nevertheless it is to be still stated that leasing companies have a substantially lower standard compared to banks and in the next years a substantial catching up need here is given surely.

For SMEs Basel II in the media is represented again and again as death of the middle class. The argument for this statement reads mostly that Rating raises the price of the credits and lets the financing capacity shrink. On the part of the leasing industry an important chance is seen here, since these argue that leasing is not reflected in the balance-sheet and thus also not in the Rating of an enterprise. The Rating of an enterprise remains accordingly unchanged therefore. This is a bare sales argument of the marketing departments of leasing companies. In the course of the rating procedure of an enterprise the leasing financings are very probably analyzed and considered accordingly. Leasing very probably changes therefore the rating. The better provision of security of the lessor by the owner position at the economic goods is also in Basel II on my view the only permissible argument with a comparison between leasing and credit.

Basel II brings thus in summary both for the lessor and the lessee in relation to today crucial differences. It is however not only the legal regulation, which bring these changes with itself, but rather the developments of the capital market and the need for information over risks and chances risen of leasing business.

3 SMEs and the Leasing Industry

There are 19 million small and medium-sized enterprises in the European Union representing 99,8% of all EU enterprises and employing more than 74 million people. These enterprises are a source of employment, innovation, entrepreneurship and growth³⁰.

3.1 Definition of SMEs

The SME definition that is currently in use in the European Union was adopted with the Commission Recommendation 96/280/EC. This present regulation was specified in the year 1996. At present on a revision of this regulation is worked, in order to carry for the new economic developments and to prevent abuse (for example for state aids).

SME definition					
	Number of employees less than (unchanged from the 1996 recommendation)	Recommendation 96/280/EC		UPDATED: annual balance sheet total or annual turnover not exceeding	
		BALANCE SHEET	or TURNOVER	BALANCE SHEET	or TURNOVER
MEDIUM-SIZED ENTERPRISE	250	€27 million	€40 million	€43 million	€50 million
SMALL ENTERPRISE	50	€5 million	€7 million	€10 million	€10 million
MICRO-ENTERPRISE	10	€27 million	€40 million	€2 million	€2 million

Figure 6: SME definition³¹

³⁰ European Union. "Definition of Small and Medium-Sized Enterprises". Accessed May 5, 2007, available from http://ec.europa.eu/enterprise/consultations/sme_definition/index.htm, Internet.

³¹ Source: http://ec.europa.eu/enterprise/library/enterprise-europe/issue8/articles/de/enterprise04_de.htm

3.2 Relevance of SMEs for the European Leasing Market

SMEs are already alone due to the large number of great importance for the European leasing market. In Austria there are 150.657 enterprises, from those however only 400 employ more than 500 persons (this constitute however scarcely 30% of persons employed)³². A similar picture is to be observed also in all other European states.

The large number of small and medium-sized enterprises means naturally also for the leasing companies a high potential of customers. This is in particular recognizable with the car/vehicle leasing. Each of these enterprises needs vehicles - thus here a special market penetration of leasing can be recognized. But also in the fields of equipment and real estate leasing these enterprises play an important role. The financing of production plants and machines by means of leasing is the centre of attention here. Leasing takes over here ever more the role of the classical bank loan and displaces this increasingly.

³² Source: „WKO-Beschäftigungsstatistik in der Kammersystematik, 2006“

4 Leasing as a Financing Instrument for SMEs

The leasing financing is a modern, simple, flexible and economical financing, with a typically high cost-performance ratio. The decision over the kind of the financing depends both on computing able and on not computing able advantages, whereby the special need and the special situation of the lessee give the excursion³³.

4.1 Arguments for a Financing by Means of Leasing

4.1.1 100% Financing

With leasing the leased out economic goods are the centre of the financing. This means that leasing orients itself in principle at the value process and to the repurchase value of the economic goods. In principle therefore only an under stocking - which arise from differences between the repayment of the financing and the prognosticated market values of the object – must be covered by an appropriate debt servicing capacity of the lessee. As a result of the combination between so-called object value covering and the soil quality however the possibility arises to finance up to 100% of the acquisition value from economic goods. Only if these two factors do not lead to a sufficient security of the leasing commitment from view of the lessor, the lessee must put up part of the investment in the form of own resources (for example by down payments).

Here it is to be noted anyhow that the lessor has a stronger provision of security by the full and unrestricted vested title at the leasing object compared to other ways of financing. This applies not only at the end of the leasing duration but also in case of an abnormal termination of the leasing contract because of

³³ Verband österreichischer Leasinggesellschaften. "Leasing in Austria". March 2003, accessed May 5, 2007; available from <http://www.leasingverband.at/Download/LeasingInOesterreich.pdf>, Internet, 55.

default. The direct access to the leasing object and thus the possibilities of the utilization of the object for market values has here an important influence.

Therefore the sufficiency can in most cases be taken by the taking in of additional collateral distance and be found with the vested title³⁴.

4.1.2 Service Life-dependent Financing Term

Thus the fact that the lessor is also owner of the leased out economic goods the duration of the leasing contract also dependent on the service life of the economic goods. The service life depends however mostly not on the technical life span, but on and here in particular according to tax law. The moreover one there are regulations or accounting standards in most countries concerning the minimum and maximum leasing duration.

For the lessee it arises as a result of the fact that a too short financing duration and thus a possibly arising liquidity problem can be to a large extent avoided. Furthermore it is mostly ensured that the leasing duration corresponds to the actual service life of the asset in the enterprise.

4.1.3 Expenditure and/or Expenditure Range

For the leasing expenditure in the profit and loss statement of the lessee there are different possibilities. These result from the fact that the height of the residual value can be specified within the fiscal basic conditions and the accounting standards. The height of the leasing instalments and concomitantly the expenditure can be arranged by the appropriate choice of the lease term and the residual value according to the needs of the lessee.

³⁴ Verband österreichischer Leasinggesellschaften. "Leasing in Austria". March 2003, accessed May 5, 2007; available from <http://www.leasingverband.at/Download/LeasingInOesterreich.pdf>, Internet, 55.

4.1.4 Tax Advantages

The charged leasing-payments are deductible within the legal basic conditions as operating expenditure. Beyond that in many countries arise again and again possibilities for further tax benefits, which are strongly connected with the possibilities of the depreciation of the asset.

4.1.5 Flexibility Increase

Due to the effect of a 100% subject-related financing without direct outside indebtedness one can react more rapidly to changes relating to the balance-sheet or market-caused requirements, which also lead to a higher potential of modernization³⁵.

4.1.6 Liquidity Procurement

A special kind of the financing is a sale-and-lease-back. Here economic goods of the fixed assets are sold to the leasing company and leased afterwards again back. Thus bound capital in the fixed assets can be set free and supplied the lessee with additional liquidity. Of view of the leasing company a large restraint consists with such transaction which leads thus into a particularly intensive examination. In particular the motivation for such a transaction is in every detail examined.

4.1.7 Additional Services

Apart from the financing by the leasing companies mostly a multiplicity of additional performances and services is offered. These include assistance when selection and procurement the economic goods is made, to the insurance of the leasing article, and advice about the utilization. Ever more into the foreground move products, with which maintenance and service of the leasing article during

³⁵ Verband österreichischer Leasinggesellschaften. "Leasing in Austria". March 2003, accessed May 5, 2007; available from <http://www.leasingverband.at/Download/LeasingInOesterreich.pdf>, Internet, 56.

the leasing duration are likewise assumed. By all these services above all SME's profit, since the leasing companies due to the large number of customers profits from appropriate quantity discounts and at least partly passes on this to the lessee. The most comprehensive services are offered with the vehicle and the real estate.

4.2 Leasing versus Purchase

For an enterprise naturally mostly the question arise which kind of the financing is the more favourable and the more efficient. In case of leasing therefore the comparison with a purchase is offered to whereby however in further consequence this purchase is financed with a loan. If one now compares leasing with a loan the following differences has to be mentioned:

	Leasing	Loan
Contracting party	Supplier = vendor Lessor = buyer Lessee = use	Lender Borrower
Owner of asset	Lessor	Borrower, possible reservation of title by the lender/supplier
Entering asset in the balance sheet	Lessor	Borrower
Balance sheet profit and loss account	Lessee does not enter fixed assets nor liability in the balance sheet, lease instalments are completely booked as expenditure as far as tax regulations allow	Borrower enters fixed assets and credit debt in balance sheet. The credit instalments are split into capital redemption not considered as expenditure and interests
Financing volume	Total investment (total financing)	Frequently only partial financing
Own funds	Deposit payments or prepayments of lease instalments possible	Reduce the required credit volume
Duration of financing	Primary lease term maximum 90% of the economic lifetime	No fiscal or accounting standards limitations
Residual value	Stipulation of residual	Theoretically possible,

	Leasing	Loan
	value for the amount of expected sales proceeds or market value at end of term	rarely done in practice
Remaining debt with premature expiry of contract	Financial mathematical calculation of capital due minus fair value (sales proceeds) of asset	Financial mathematical calculation of capital due no connection with asset
Fiscal incentives for investment	Lessor is entitled	Borrower is entitled
Additional services	Assistance in product evaluation, favourable prices and insurance packages, full service products	Additional services related to asset are uncommon with credit financing

Table 3: Leasing versus Loan³⁶

³⁶ Verband österreichischer Leasinggesellschaften. "Leasing in Austria". March 2003, accessed May 5, 2007; available from <http://www.leasingverband.at/Download/LeasingInOesterreich.pdf>, Internet, 15 (English version).

5 Structure of a Capital Market-oriented Leasing Company

The securitisation of a leasing portfolio presupposes that the leasing company corresponds to the requirements of the capital market. These requirements essentially result from the high need for information by investors, from the topic of a high creation of confidence of third and not least also from legal requirements. In principle therefore a capital market-oriented leasing company must have very open and complete information and communication, in order to be able to follow the high need of compliance and reporting. To note it is also that the evaluation of leasing companies and their portfolios via analysts takes place in case of a securitisation. In the course of such a transaction it is anyhow given that analysts thus also evaluate certain qualitative factors surrounding lessor's operation and financial management³⁷. Beyond that the product and the administration of the portfolio are judged by current methods and techniques. Hence it follows that the products, processes and structure of a capital market-oriented leasing company must be „state of the art“.

5.1 Operations and Management

5.1.1 Legal Environment

Most European leasing companies are subsidiaries of banks. Already from this aspect it results that the basic legal environment which apply to banks are also valid for these leasing companies and concomitantly to the product leasing. Banks stand by their nature in a special public interest, whereby an abundance of legal regulations are and will be still developed. It is generally to be stated however independently of this fact that the meaning of internal control systems and their characteristics constantly grow³⁸. This in particular

³⁷ Standard & Poor's. "Equipment Leasing Criteria." New York: Standard & Poor's, 1999, 7

³⁸ KPMG. "Risiken & Risikomanagement bei Leasinggesellschaften". KPMG Vienna, March 7, 2007, 3.

- (i) Enterprise-internally for leading organs and management for the controlling of the enterprise
- (ii) Enterprise-externally for the creation of confidence of investors, creditors, etc.

The question about information, control and openness is for a functioning capital market of essential importance. Only by it, investors can be found on a long-term basis and the confidence into capital market products can be increased. It is therefore also for the legislator of crucial importance to ensure this protection. This must be however in a way that no obstructing overcompensation takes place and on the other hand the confidence and control are ensured.

In US the Sarbanes Oxley (SOX) act was set into force after various balance sheet scandals (above all "Enron"). SOX is essentially to point out significant deficiencies in an enterprise and to ensure an efficient financial reporting. It can be surely said the fact that an overregulation is present here and also the costs by far exceeds the use. But this kind of regulation trend given by the US is also at least partly converted in the European Union and the EU as well continued to make a further development. The 4th and 7th European Union guideline serves to increase the transparency of off-balance transactions. The moreover also the disclosure of the management practices used by the enterprise is to be improved.

For leasing companies of great importance is the 8th European Union guideline. This was issued on May 17, 2006 and must be converted into national law by the member states till June 29, 2008. This guideline is valid for enterprises of public interest which includes credit institutes. This means however also that this guideline is to be converted and valid automatically also for leasing companies. A goal is the delimitation of financial and operational risks by the installation of auditing teams and effective internal control systems.

Beyond that the rules and regulations of the supervision of financial market authorities or central banks are naturally binding also for leasing companies. In Austria - as also in all other European countries - the financial market authority (FMA) defined a minimum standard for the loan business and other businesses with address loss risk on April 13, 2005. This is not a law or a regulation – this is just a recommendation of the authority. On the other hand it acts over minimum standard - the financial market authority actually assumes that these are at least fulfilled by each leasing company. These minimum standards are for

- (i) the advancement of the credit risk management
- (ii) aims the delimitation loss risk
- (iii) the avoidance of interest conflicts
- (iv) the increase of the efficiency of internal processes and operational sequence.

5.1.2 Leasing Workflow

In September 2000 the "Principles for the Management of Credit Risk" as a part of the Basel II framework were published. In further consequence based on this framework the minimum requirements for the loan business were derived and published. Among their core contents rank the separation of certain functions in the banks and a clearly defined credit process. Thus a clear structure and organization of a credit institute can be derived. Since also leasing companies should fulfil these minimum requirements for the loan business, it is of great importance to be led up the bank-specific structures to leasing-specific structures. This must be done also with consideration of the different kinds and business models of leasing companies. It is however generally like that that the structures and process in the different market segments (large-ticket, middle-ticket, and small-ticket) are identical in principle.

KPMG developed a business model for leasing companies on basis of these minimum requirements and called this KPMG-approach „leasing workflow “.

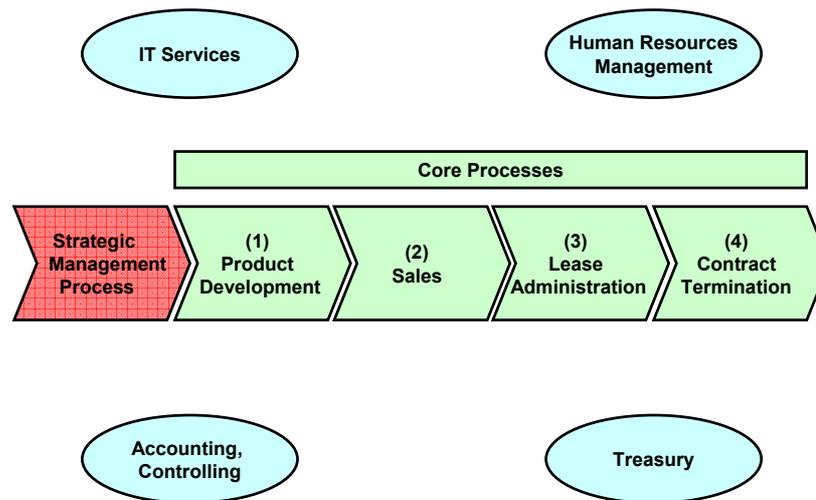


Figure 7: KPMG Approach "Leasing-workflow"

The strategic management process must give the strategic frameworks for a leasing company. Here the total control of the enterprise and the definition from strategic basic conditions take place. This essentially means

- (i) the organization of the company and their processes
- (ii) the definition of the risk strategy regarding products, industries, countries, selling ways etc.

The entire processes and the organization must be arranged with consideration of a function separation and an authority order. Here a separation from market and market monitoring is absolutely necessary. This means that with risk-relevant business two approving votes of the ranges market and market monitoring must be present. Further it is substantial that an independent monitoring of the portfolio risks takes place as well as an independent report system outside of the range market. This functionality is also often called credit risk controlling.

The processes are divided into further consequence into core processes and servicing processes. The servicing processes do not have direct connection

with the leasing business - they are neutral functions, which are present in each enterprise. By this servicing functions fall human resources, IT-services, accounting, treasury or internal revision. By the core processes the leasing-specific processes are to be understood. By this fall

- (i) The sales process consisting of classical sales functions, risk classification by rating or scoring, definition of financing conditions (especially margins) and the production of the leasing contract itself. Here it is of great importance that for each selling way a corresponding processes is provided. This especially in particular with indirect selling ways, since analysts are here particularly critical. A lessor should have established underwriting and review criteria for vendors and of broker³⁹.
- (ii) The leasing contract administration and the associated collateral administration. To it however also efficient billing and collection procedures and early risk recognition procedures belong. Also the very important question when and how delinquent obligors are notified must be answered.
- (iii) The treatment of problem contracts and the reorganization management of these products.
- (iv) The leasing contract completion and the associated utilization of leased assets.

5.1.3 Risk Controlling and Risk Management

One of the reasons why the minimum standard for the loan business were established is for the advancement of the credit risk management. There is no doubt that there is an economic and legal pressure for a leasing company to establish an efficient risk management. Basel II obligates the leasing company to introduce a durably risk management regarding the place, use and value of the leased assets. Furthermore it has to be an independent department responsible for the leasing companies approach to risk.

³⁹ Standard & Poor's. "Equipment Leasing Criteria." New York: Standard & Poor's, 1999, 12

Therefore it is necessary to classify each contract and/or customer by rating or scoring before signing the lease agreement and also periodically during the lease term. Small-ticket lessor uses therefore a credit scoring model while mid- or large-ticket lessor rely more on financial statement analysis.

Generally it can be mentioned that a correct use of IAS und US-GAAP gives a very good basis for an efficient and powerful risk reporting⁴⁰. The internal reporting should be addressed to an independent senior manager, who is member of the executive board. The reporting should be about the overall exposure and overall risk strategy and should monitor as well the separation of front-middle-back office. The communication of risk to shareholders should also be mentioned. But to do such an efficient risk reporting, which is a must for a capital-market oriented leasing company, it is necessary to analyze deeply the risk of an individual lease and the risk of a portfolio of leases.

5.2 Risk Assessment of an Individual Lease

Risk is the uncertainty of the future cash value of an investment on the investors' (lessor) horizon date⁴¹. This general definition of risk applies naturally also to the leasing business. However immediately arise the principle question, whether leasing is subject to other risks or risk mechanism than other, comparable financing instruments.

The leasing company as owner of leased out assets, has a different legal position than for example a loan which is secured by retention of title of the financed asset. This aspect often leads to the conclusion of empirical studies that Leasing is a low-risk activity and collaterals play a major role in reducing

⁴⁰ KPMG. "Risiken & Risikomanagement bei Leasinggesellschaften". KPMG Vienna, March 7, 2007, 35.

⁴¹ Choudhry, Moorad. "An introduction to value-at-risk." 4th ed. Chichester: John Wiley & Sons Ltd., 2006, 2

risk in the case of lease portfolios⁴². This view is however too simplified, since individual aspects of credit risk are examined, but not the whole business model of a leasing company is regarded.

But especially in the whole business model itself the largest differences and concomitantly causes for risks of a lease are lying. Thus it makes substantial differences in which (i) market segment (small, middle, big) a leasing company is active or (ii) selling structures (direct sales versus indirect sales) exist. Only with the topic "selling structure" this can be described in detail. Standard & Poor's represents the following opinion: Credit and legal risk is potentially greater when using indirect origination sources like vendors and brokers⁴³.

In spite of the importance of leasing financing, little is known empirically about its credit risk⁴⁴. This thesis cannot give a complete answer to this question. A possible step to a better understanding is the deepening occupation with the topic risk of leasing business. However a beginning must be selected here, which covers and understands completely the business model of a leasing company. In order to be able to accomplish this, the risk of an individual lease must be defined.

The following risks can be enumerated by an individual lease:

- Legal risk
- Market risk
- Credit risk

These risks are described and discussed in detail on the following pages.

⁴² Schmit, Mathis and Degouys, C. - Delzelle, D. – Stuyck, J. – Wautelet, F. "Credit Risk in the Leasing Business – A case study of low probability of default." Leaseurope, April 3, 2003, accessed January 3, 2006; available from www.leaseurope.org/pages/matters_of_concern/, 4

⁴³ Standard & Poor's. "Equipment Leasing Criteria." New York: Standard & Poor's, 1999, 11

⁴⁴ Schmit, Mathias. "Credit risk in the leasing industry." *Journal of Banking & Finance*, 28 (2004), 811

In the literature very often another further risk is called – the residual value risk. The residual value represents especially with operating leases a crucial factor in the calculation of the lease payments and thus of this in the competitive ability of the leasing company. Residual value is an accounting term that describes the assumed value of equipment at the time such equipment comes off lease⁴⁵. Since it concerns cause of tax and accounting reasons only an accepted value, this leads automatically to the residual value risk. The residual value risk is the lessor's exposure to potential loss due to the fair value of the asset declining below its residual estimate at lease inception⁴⁶. From a purely accounting aspect the residual value risk is of large importance because it effects very much the profit and loss statement of a leasing company. But from a total view of the business model this risk is a part of the topic recovery and is assigned and treated therefore within the credit risk.

5.2.1 Legal Risk

A lease deal consists in principle of several contract systems. In the classical form this is represented as a triangle relationship between supplier, lessor and lessee.

⁴⁵ Standard & Poor's. "Equipment Leasing Criteria." New York: Standard & Poor's, 1999, 19

⁴⁶ Pirotte, Hugues and Schmit, Mathias and Vaessen, Celine. "Credit Risk Mitigation Evidence in Auto Leases: LGD and Residual Value Risk." January 12, 2004, accessed January 4, 2006; available from www.solvay.edu/en/research/documents/, Internet, 9

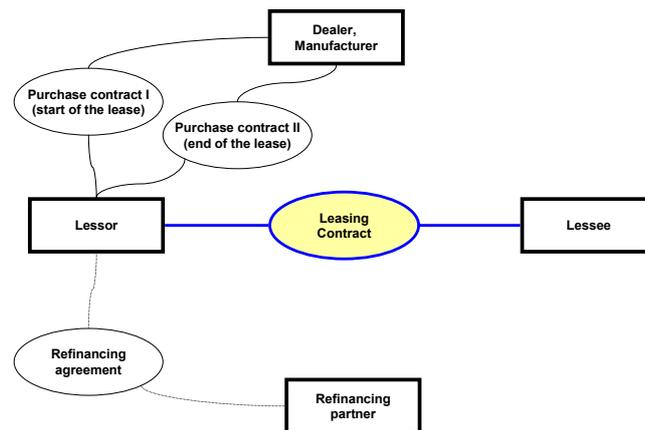


Figure 8: Basic Structure of Contracts with a Lease Deal

This representation is to be contradicted. This therefore, since for the completion of a simple operating leasing at least 4 contracts with 4 involved parties are necessary:

- Purchase contract with the supplier of the assets which can be leased afterwards
- Lease agreement between lessor and lessee
- Purchase contract with the buyer of the asset at the end of the lease term
- Agreement with a refinancing partner regarding the funding of the lease

Without a doubt also this is a very much simplifying representation. In practice still substantially more contracting parties can be involved. Nothing the despite is also here already evident that the contractual organization of a lease deal is of substantial importance. In addition it comes still that beside the elements of the financing also the fiscal, civil and accounting aspects are duly considered.

Exactly from the extent and the kind of consideration of these multiple and unfortunately partly different aspects now the legal risk is a result. The legal risk of a lease can be defined as a risk, which arises from the extent, contents and interpretation possibilities of the documentation and cause of this directly or indirectly effects the cash-value of the underlying leasing agreement.

Therefore the following risks had to be mentioned in the contractual regulation with a high transparency:

- (i) risks with immediate effect on the cash-value of a lease
 - *Impairment use of the leased asset*, which result from damage events (fire, storm, water, machine break etc.) or by bad actions (theft, suppression etc.). Here it also must be considered that it can come especially by SMEs to further consequences from operating interruptions. Generally risks of this kind can be covered by appropriate insurances. In the context of the leasing contract also mostly an obligation of the lessee takes place for the conclusion of such insurances.
 - *Events such as natural catastrophe, war or strike*, which do not make possibly a use of the object or leads to a coincidental loss of the leased asset.
 - *Cash loads of the lessor*, that results from taxes or external costs. These are over-rolled mostly to the lessee by a general clause in the lease agreement.
 - *Changes of the tax legislation and jurisdiction* after signing of the contract. The lease agreement is closed on basis of the legal situation with conclusion of the contract. In the course of the lease it can come however to changes. This can lead to unplanned direct or indirect costs, or can have influence on the calculation parameters of the leasing instalment (lease-term and/or residual value).
- (ii) risks with effects on the cash-value of a lease at the end of the lease-term, particularly on the residual value regardless of a normal or early termination of the lease agreement
 - *Reduced market value* of the leased asset through not accomplished repairs or maintenance. This risk can be strengthened by official editions or arrangements. With a multiplicity of assets these risks can be at least partly covered in the form of service or maintenance contracts.
 - *Physical and legal access* to the leased asset.
- (iii) risks without direct effects on the cash-value of a lease

- *Problems as a result of different legislation especially with cross border leases.*
- *Changes of the civil law.*
- *Changes of the national or international accounting regulations.*

The contractual regulation and formulation of these points are of crucial importance for the quality of the leasing business. In practice within the range small- and middle-ticket leases standardized contracts are used. Individually treaty systems or individually changed standardized contracts are used almost within the range of big-ticket and sometimes middle-ticket leases.

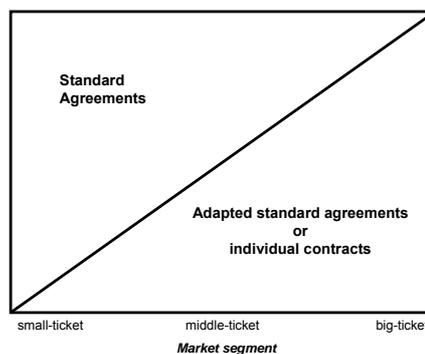


Figure 9: Degree of Contractual Complexity

The use of standard agreements leads to a legal risk for the entire leasing portfolio. This will be rather small probably however, since the leasing companies exchange and copy the contracts among themselves. The use of individual contracts leads to a legal risk with individual lease deals. Here it is all a question of the quality, as and whether an examination of this documentation takes place via external advisors. It is however anyhow necessary that a leasing company has exact guidelines concerning its contract system. They should have regulations for their change, constant up-dating and control apart from an explicit enumerating of the used documents also. It has also to be mentioned

that only a direct sales gives the lessor full control over underwriting, structuring and documentation process⁴⁷.

From view of the SME it is crucial to recognize, that the leasing company tries to transfer all the risks to the lessee. Especially in case of larger leases and therefore individual documentation it is important that the lessee receives professional support by external advisors. Lessees use for this normally tax counsels covering therefore the topics taxes and accounting. It is recommended however that also appropriate contract lawyers are consulted on the part of the SME. Noteworthy is, that still many tax counsels and attorneys completely underestimate the topic leasing and therefore as a result the SME cannot come to efficient negotiation results regarding risk taking and sharing.

5.2.2 Market Risk

By market risk one understands the liquidity risk, the interest rate risk and the foreign currency risk. The controlling of these risks has to take place in the Treasury of an enterprise. The Treasury has to contribute however also to a substantial result improvement, by optimization of the decisions concerning the funding of a leasing company.

The majority of the leasing companies argue however that there are none of these risks in their companies. But completely risk free are just duration and interest-congruent closed active and passive positions (closed positions) of a leasing company⁴⁸.

Fact is that the 44% bank-owned leasing companies in Europe have no direct liquidity risk, since this is managed by the respective bank. Also the captive

⁴⁷ Standard & Poor's. "Equipment Leasing Criteria." New York: Standard & Poor's, 1999, 12

⁴⁸ Beer, Artur und Goj, Wolfram. „Zinsrisikomanagement mit Ablaufbilanz und Barwertmethode.“ Stuttgart, Deutscher Sparkassenverlag, 1996, 13

leasing companies will have a similar situation. But for the remaining 37% European leasing companies the procurement of appropriate funding possibilities and the associated liquidity risk represents nevertheless a large challenge. An interest rate risk is almost excluded by the period-congruent refinancing from all societies. Same generally applies to the foreign exchange risks.

Nevertheless especially by individual large business the market risks should not generally or in particular be ignored. A regular reporting in combination with the use of appropriate tools should be a standard by each leasing company.

5.2.3 Credit Risk

By the term credit risk the following risks are understood in the literature:

- *Credit spread risk*, which is the risk of financial loss resulting from changes in the level of credit spreads used in the marketing-to-market of a product
- *Credit default risk*, which is the risk that an issuer of debt (obligor) is unable to meet its financial obligations and will default

Credit default risk is usually of greater importance and is cause of this normally almost exclusively treated under the term credit risk. In further consequence of this thesis, this is regarded for leasing.

Credit Value-at-risk considers credit risk in a mark-to-market framework. It arises from changes in value due to credit events (changes in obligor credit quality including defaults, upgrades and downgrades). In the leasing industry, credit risk is generally defined as the risk of losses generated by the default of the lessee⁴⁹.

⁴⁹ Schmit, Mathis and Degouys, C. - Delzelle, D. – Stuyck, J. – Wautelet, F. “Credit Risk in the Leasing Business – A case study of low probability of default.” Leaseurope, April 3, 2003, accessed January 3, 2006; available from www.leaseurope.org/pages/matters_of_concern/, 8

If one speaks about credit risk, then the question in principle arises whether one speaks about the risk of a certain time period of a financing or a certain point of life of a financing. To measure the credit risk of a default event, one has to clearly define what such an event exactly is⁵⁰. Normally in the leasing industry the contracts will be defined as defaulted when the company has decided to cancel the agreement because the lessee has not paid the scheduled rentals (interest and/or principal). With this kind of procedure it is the respective of the leasing company to determine, when this default event occurs. This leads however with a general, abstract view to the fact that a uniform and comparable statement between leasing companies is not possible. For this reason the definition of default events by the rating agencies should be consulted. Moody's define the following default events:

- A missed or delayed interest or principal payment, including payments made within a grace period.
- Filing for bankruptcy and related triggers that block the timely payments of interest and principal.
- Consummation of a distressed exchange, for example, when the issuer offers a new security with a diminished financial obligation, involving significant economic losses.

From my experience it is not known by me that there is at least a leasing company in Austria, which uses this very much restrictive definition. Rather it is that there are several possibilities for an early termination of the leasing company mentioned as a default event in the leasing agreements. These refer apart from the lessee's rating also to the usage of the leased out assets. In practice these defined events are not of importance, since these contractual possibilities are actually hardly used by the leasing companies.

It is necessary therefore in further consequence to combine the theoretical considerations about credit risk with the specific situation of the leasing

⁵⁰ Felsenheimer, Jochen and Gisdakis, Philip and Zaiser, Michael. „Active Credit Portfolio Management.“ Weinheim: WILE-VCH Verlag, 2006, 197

business. This further view must be done with the focus SME and securitization - and thus capital market-oriented aspects.

5.2.3.1 Probability of Default

The probability of default (P_D) is the likelihood that lease installments and other in the lease agreement agreed payments will not be repaid within a year and cause of this the lease falls into default. The credit history of the lessee and nature of investment are taken into account to calculate the probability of default.

Many bank-owned leasing companies use the internal rating methods owned by their parent companies. These ratings reflect the degree of credit risk on an entity, either generally or in relation to a particular obligation⁵¹. One of the benefits of these rating methods is that the internal rating could be mapped directly to the rating of external rating agencies such as Standard & Poors, Moody's or Fitch.

Another possibility especially for smaller tickets leasing is the use of a scoring-tool. Hereby external sources like Dun & Bradstreet, Creditreform etc. are linked with leasing relevant parameters. The use of different parameters than a score value is the result. It is very common that the results are shown by a traffic light whereby green means that the lease can be signed; yellow means that a further evaluation of the lessee or the deal is necessary (e.g. down-payments, shorter lease-term, and additional collaterals) and red means no deal. Also within scoring systems credit risk aspects are analyzed. The big disadvantage is that the mapping of the score to an internal risk grade which has an associated probability of default is very difficult.

⁵¹ Deacon, John. "Global Securitisation and CDOs." Chicester: John Wiley & Sons Ltd., 2004, 15

In general I recommend that a capital-market oriented leasing company knows exactly the probability of default of its customers by an internal rating or scoring and that these internal ratings could be transferred directly to the rating of external rating agencies.

5.2.3.2 Gross Loss

Gross loss⁵² is most popular amongst academics and rating agencies because of its simplicity and access to data. Also for a leasing agreement it is relatively simple to calculate the gross loss and in further consequence to use this amount for accounting purposes. Especially for rating companies it is often a great advantage and a better understanding if the full remaining contract balance due is written off at the time of default. The gross loss is the total due amount of a defaulted lease.

$$\text{Gross loss} = \text{Total Due}$$

The total due amount consists of the outstanding capital and the total overdue amounts.

$$\text{Total due} = \text{capital outstanding} + \text{total overdue}$$

For a lease the capital outstanding (CO) can be split into its components (i) present value of the annuity (PV_A) and (ii) residual value (RV).

$$CO = PV_A + RV$$

Beside of the annuity (A), the number of periods (n) and the interest rate (r) has to be mentioned. Normally lease payments are calculated as an annuity due, which is an annuity whose payments are made at the beginning of each period – this is expressed with the multiplication by (1+r).

$$CO = A \times \frac{1 - (1+r)^{-n}}{r} \times (1+r) + RV$$

The total overdue amount consists of the number (x) of overdue lease installments before the termination of the contract. Beside of the interest for late payment, costs of reminders and other costs regarded by overdue payments have to be recognized. It is much more difficult to calculate these costs in

⁵² also known as gross LGD (loss given default)

general, so we use ε as a variable. Now we can rewrite the formula for the gross loss of lease ($GLGD_{Lease}$):

$$GLGD_{Lease} = A \times \frac{1 - (1 + r)^{-n}}{r} \times (1 + r) + RV + x \times A + \varepsilon$$

$$GLGD_{Lease} = A \times \left(\frac{1 - (1 + r)^{-n}}{r} \times (1 + r) + x \right) + RV + \varepsilon$$

We can see clearly that the GLGD of a lease is influenced mainly by the residual value of the leased asset and the number of overdue lease installments before the termination of the contract. We have said that residual value is a part of the topic recovery and will be discussed in this chapter. Thus just the number of overdue lease installments (x) can be discussed briefly. It is clear know that the GLGD's of a leasing company can be directly influenced by its processes and organization. With this result it is further clear that a part of the credit risk of a lease transaction is directly influenced by the operational risk of the company.

5.2.3.3 Recovery

As a general definition recoveries are obtained from collaterals, guarantees, late payments and so on. When discussing credit risk this is very important because loss severity will be primarily influenced by the nature of collateral, valuation of collateral and liquidity of local market for collateral⁵³. To measure the recovery normally the recovery rate (RR) is used. The recovery rate depends on the discounted recovered amounts (R) and the outstanding amount on the date of default, which we defined a gross loss given default (GLGD) before. Or in other words, the percentage of the original loan that is received back is known as the recovery rate⁵⁴.

$$RR = \frac{R}{GLGD}$$

⁵³ Deacon, John. "Global Securitisation and CDOs." Chichester: John Wiley & Sons Ltd., 2004, 78

⁵⁴ Choudhry, Moorad. "An introduction to value-at-risk." 4th ed. Chichester: John Wiley & Sons Ltd., 2006, 125

Recovery and recovery rates are a main research topic in the field of credit risk. Cause of this a huge number of empirical research regarding loan portfolios is available. One important result of some of these researches is that during a recession, recovery rates tend to be low, while in a strong growth environment recoveries are higher on a average⁵⁵.

For the leasing industry recovery plays a major role. As we have seen in the general discussion of credit risk, the ownership of the leased asset is the biggest difference of a lease from a loan. If this is really an advantage of leasing, this must clearly be seen in the recovered amounts or recovery rates. Some results of empirical studies show recovery rates above 100%. Such rates are not irrelevant since they are due to the fact that the resale value of the leased asset can sometimes be higher than the outstanding amount at default⁵⁶. But this is not a general fact.

The leased asset has an economic fair value also if a lease agreement is terminated because of a default event. But there are several uncertainties when a leased asset is sold by the leasing company during the planned lease term. These uncertainties which are also known as value inherent in the asset arise from:

- Liquidity of sale and timing of sale
- Re-lease markets for the leased assets
- Market resale value (secondary market value) or re-lease rates
- Situation of the manufacturer and servicer
- Risk regarding the physical and legal access to the asset

⁵⁵ Felsenheimer, Jochen and Gisdakis, Philip and Zaiser, Michael. „Active Credit Portfolio Management.“ Weinheim: WILE-VCH Verlag, 2006, 121

⁵⁶ Schmit, Mathias and Stuyck, Julien. „Recovery Rates in the Leasing Industry.“ Leaseurope, September, 2002, accessed January 4, 2006; available from www.leaseurope.org/uploads/matter/, Internet, 16

To give some examples for the above mentioned point just think about the problems to sell a business jet after 9/11 or the sale of a harvester just after the harvest.

Beside the disposition of the leased assets recoveries are also obtained from guarantees, other collaterals, and late payments or can be generated through hard servicing or the exercise of various legal remedies. So for a general approach we can say that in the leasing industry we have a recovery by the leased asset (R_A) and by other recoveries (R_O).

$$R_{Lease} = R_A + R_O \text{ or } RR_{Lease} = \frac{R_A + R_O}{GLGD_{Lease}}$$

To estimate or better to know the future fair values and cause of this the estimated recovery is of crucial importance for the leasing industry.

5.2.3.3.1 Traditional Recovery Estimation

The estimation of residual values is accomplished mostly by specialized employees in the risk management of a leasing company. In individual cases also external specialists (above all technicians) are consulted as external consultants. In the course of residual value estimation one tries to estimate the market values after a certain number of periods.

Financed Asset	max. service life [months]	residual value [12 months]	residual value [24 months]	residual value [36 months]	residual value [48 months]	residual value [60 months]	residual value [72 months]	residual value [84 months]
Excavators/Wheeled Excavators/Cater Pillar	108	70	60	50	40	30	20	10
Excavators/Wheeled Excavators/Furukawa	108	65	55	45	35	30	20	10
Excavators/Wheeled Excavators/Hyundai	108	65	55	45	35	30	20	10
Excavators/Wheeled Excavators/Komatsu	108	65	55	45	35	30	20	10
Excavators/Wheeled Excavators/Liebherr	108	70	60	50	40	30	20	10
Excavators/Wheeled Excavators/O&K	108	65	55	45	35	30	20	10
Excavators/Wheeled Excavators/Volvo	108	65	55	45	35	30	20	10
Excavators/Wheeled Excavators/Hitachi neu	108	65	55	45	35	30	20	10
Excavators/Wheeled Excavators/sonstige Hersteller neu	108	65	55	45	35	30	20	10
Printing Machine/Heidelberger Druck PM / GTO	120	70	60	50	45	40	35	30
Printing Machine/Heidelberger Druck SM 74, SM 102	120	70	60	50	45	40	35	30
Printing Machine/HD QM 46	96	55	45	35	25	15	10	5
Printing Machine/HD XL 105	120	80	70	60	55	45	40	35
Printing Machine/HD CD 74, CD 102	120	75	60	50	45	40	35	30
Printing Machine/Kodak Nexpress	40	40	35	30	25	20	15	10
Printing Machine/HD Digimaster	96	67	45	27	17	10	0	
Printing Machine/MAN Roland (Hersteller) neu	108	75	55	43	33	25	20	15
Printing Machine/König + Bauer (Hersteller) neu	108	75	55	43	33	25	20	15
Printing Machine/Komori neu	108	70						
Printing Machine/Ryobi neu	108	70	60	50	40	30	20	10
Printing Machine/sonstige Hersteller/Neu	108	70	45	30	20	15	10	8
Office Furniture/Steelcase	84	50						0
Office Furniture/Sonstige Hersteller neu	120	20						

Table 4: List of Estimated Residual Values⁵⁷

From this results then a residual value curve, which is confronted to the GLGD and so the estimated exposure at default at any time of the leasing contract can be calculated.

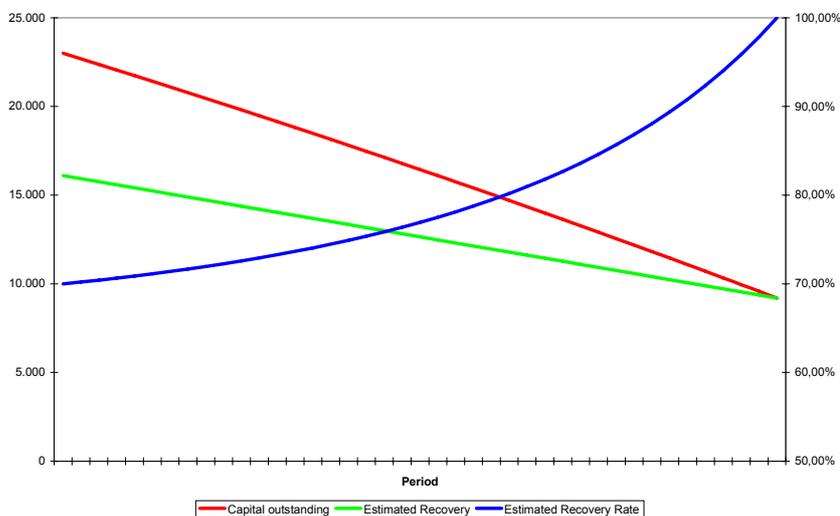


Figure 10: Estimated Recovery Rate⁵⁸

⁵⁷ Data base of residual values, SüdLeasing

⁵⁸ Calculation based on an average car lease with: financing amount 23.000, residual value 9.200, lease term 40 months, interest rate 6%, estimated market value of the asset at the start of the lease 16.100 and 9.200 at the end of the lease, monthly linear depreciation of the estimated market value

In the case of this method however a serious bias arises as a result of the use of percentages. Hereby arise the question which amount is used as base factor for this calculation. If one consults the purchase price, then the negotiation result regarding the purchase price flows into the computation and reduce not logically comprehensibly the future market price. On the other hand list prices than alternative computation basis are missing for many economic goods.

Apart from the use of percentages a second much larger problem results. This lies in the fact that no statistic probability and thus predictability is contained in this model. Each amount appears to be absolute. This leads to the fact that economic goods, which do not occur in large numbers of items, are generally more badly evaluated.

The quality depends now therefore on the degree of the specialization of the leasing company and the number of financed assets. This leads to the fact that car leasing companies with few, very standardized assets have advantages. Universal leasing companies working mainly in the field of equipment and machinery do not have the necessary know-how for each financed asset.

This theoretical approach can be seen in various empirical studies. Points like this have been worked out:

- The recovery rate tends to decrease substantially with the age of the lease contracts⁵⁹.
- The integration of other types of collateral assets than cars and trucks show a much wider diversity⁶⁰.

⁵⁹ Schmit, Mathis and Degouys, C. - Delzelle, D. – Stuyck, J. – Wautelet, F. “Credit Risk in the Leasing Business – A case study of low probability of default.” Leaseurope, April 3, 2003, accessed January 3, 2006; available from www.leaseurope.org/pages/matters_of_concern/, 15

⁶⁰ Pirotte, Hugues and Schmit, Mathias and Vaessen, Celine. “Credit Risk Mitigation Evidence in Auto Leases: LGD and Residual Value Risk.” January 12, 2004, accessed January 4, 2006; available from www.solvay.edu/en/research/documents/, Internet, 16

- Recovery rates tend to increase with the age of the contract until a certain point in time, after which the rates decrease sharply⁶¹.

These statements do not suggest that the advantage of a leasing financing is in its know-how concerning object evaluation. Nevertheless this is the crucial advantage of leasing.

5.2.3.3.2 Recovery Estimation using Beta Estimating Technique

A way out of this dilemma has to be found - and the advantages of the asset as collateral has to be considered more by using statistic methods. This means a stronger specialization of the leasing companies. This would lead to reinforcement of know-how - however an appropriate data set must be available from statistic view.

For this purpose we assume that the residual value or future fair market value follows a beta distribution. The normal distribution requires the standard deviation. We need estimates of the maximum, minimum and the most likely value for the beta distribution⁶². Thus we define

a = minimum value, b = maximum value

m = most likely value (mode)

In a further step the variance for the uniform distribution and the expected mean can be calculated. The modified-beta distribution uses the maximum and

⁶¹ Schmit, Mathias and Stuyck, Julien and Duchemin, Stephanie. "Credit Risk Issues in the Automotive Leasing Industry." February 2003, accessed January 4, 2006; available from www.leasefoundation.org/pdfs/baselii/, Internet, 4

⁶² O'Donell, Brendan and Hickner, Michael and Barna, Bruce. "Economic Risk Analysis – Using Analytical and Monte Carlo Techniques." Spring 2002, accessed January 8, 2006; available from www.chem.mtu.edu/~crowl/CM4861/RiskAnalysisArticle.pdf; Internet, 96.

minimum inputs to calculate variance based on the following PERT (Program Evaluation and Review Technique) simplified formulas⁶³:

$$\mu = \frac{a + 4m + c}{6}$$

$$\sigma^2 = \frac{(b - a)^2}{12}$$

This technique could be used now to estimate the residual value of an individual asset.

Excavators/Wheeled Excavators/Liebherr
Purchase Price € 100.000,00

Period	Traditional RV estimation	Tradition RV	Optimistic Cost (a)	Most Likely Cost (m)	Pessimistic Cost (b)	Expected Value (μ)	Variance (σ ²)	Std Dev (σ)	Estimates 99%	Estimates 50/50	Estimates 1%
12	70.00%	70.000,00	75.000,00	70.000,00	65.000,00	70.000,00	2.777.777,78	1.666,67	66.122,75	70.000,00	73.877,25
24	60.00%	60.000,00	68.000,00	60.000,00	48.000,00	59.333,33	11.111.111,11	3.333,33	51.578,84	59.333,33	67.087,83
36	50.00%	50.000,00	62.000,00	50.000,00	34.000,00	49.333,33	21.777.777,78	4.666,67	38.477,04	49.333,33	60.189,62
48	40.00%	40.000,00	46.000,00	40.000,00	23.000,00	38.166,67	14.694.444,44	3.833,33	29.249,00	38.166,67	47.084,33
60	30.00%	30.000,00	36.000,00	30.000,00	12.000,00	28.000,00	16.000.000,00	4.000,00	18.694,61	28.000,00	37.305,39
72	20.00%	20.000,00	24.000,00	20.000,00	6.000,00	18.333,33	9.000.000,00	3.000,00	11.354,29	18.333,33	25.312,38
84	10.00%	10.000,00	13.000,00	10.000,00	2.500,00	9.250,00	3.062.500,00	1.750,00	5.178,89	9.250,00	13.321,11

Table 5: Beta Estimation of an Excavator

As a result we can have estimates of the future residual value depending on the risk situation. The risk situation now can be defined by the leasing companies itself. This means that with more likely asset the companies can take more risk and due to this can use for example a 50/50 estimate. If the leasing company has no experience a 90% estimate can be used.

As shown in the following figure now there is a broad area of possible future fair market values in a specific period.

⁶³ O'Donell, Brendan and Hickner, Michael and Barna, Bruce. "Economic Risk Analysis – Using Analytical and Monte Carlo Techniques." Spring 2002, accessed January 8, 2006; available from www.chem.mtu.edu/~crowl/CM4861/RiskAnalysisArticle.pdf; Internet, 96.

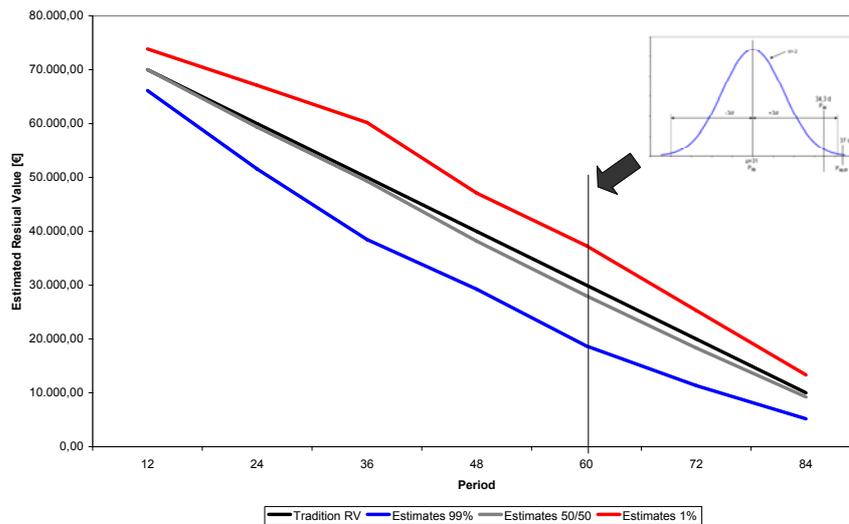


Figure 11: Residual Value using Beta Estimating Technique

5.2.3.3.3 Exponential Function for Estimated Recoveries

So far we concerned us with the determination of the future fair values of the leased assets. Independently of the selected methodology for the estimation it is now possible to set up a mathematical function. If one regards graphically the future residual values, one states rapidly that it concerns mathematically a natural exponential function. An exponential function possesses generally the function equation⁶⁴:

$$y = f(x) = e^x$$

If one uses now the estimated residual value data as y and the respective period as x , one receives a function for the computation of the estimated residual value and thus the estimated recovery of the leased asset (R_A).

$$R_A = \alpha \times e^{-\beta \times n}$$

The factors α and β are a result from the data analysis of the respective asset.

⁶⁴ Gal, Thomas (ed.). „Mathematik für Wirtschaftswissenschaftler“. Berlin-Heidelberg: Springer-Verlag, 1983, 37.

5.2.3.4 Loss Given Default

The loss given default or net loss is simple the gross loss or gross loss given default minus the recovery.

$$LGD_{Lease} = GLGD_{Lease} - R_{Lease} \text{ or } LGD_{Lease} = GLGD_{Lease} \times (1 - RR_{Lease})$$

We can now rewrite this equation using our results to estimate the loss given default of an individual lease:

$$GLGD_{Lease} = A \times \frac{1 - (1+r)^{-n}}{r} \times (1+r) + RV + x \times A + \varepsilon$$

$$R_{Lease} = R_A + R_O = \alpha \times e^{-\beta \times n} + R_o$$

$$LGD_{Lease} = \underbrace{A \times \frac{1 - (1+r)^{-n}}{r} \times (1+r) + RV}_{\text{Present value out-standing annuity}} + \underbrace{x \times A}_{\text{residual value}} - \underbrace{\alpha \times e^{-\beta \times n}}_{\text{\# of out-st. annuities}} - \underbrace{R_o}_{\text{estimated recovery asset}} + \underbrace{\varepsilon}_{\text{unknown factors}}$$

As a result we see that the loss given default of a lease is a function of

- The present value of the outstanding annuity
- The residual value of the lease
- The number of outstanding annuities
- The estimated recovery of the leased asset
- Factors which can not be forecasted like other recoveries and additional interest or costs

5.2.4 Risk Adjusted Pricing of an Lease

The past views on the credit risk of an individual lease permit the calculation of risk-adjusted leasing installments. The leasing installment is to be specified in such a way that the present value of the expected return flows $E(PV(LR^*))$ corresponds to the purchasing costs of the leased asset (PC) (or the calculation basis of the lease agreement).

$$E(PV(LR^*)) = PC$$

It is possible to compute these values also in case of a default, whereby the following principle pattern are used.

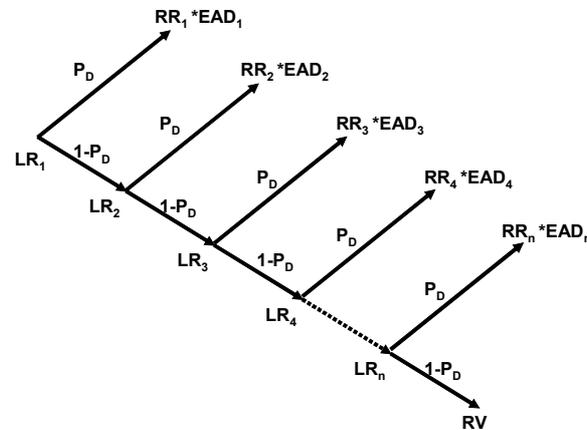


Figure 12: Principles of Risk-adjusted Pricing

A price model for leases can be developed by the use of the appropriate formulas of the previous sections of this thesis. In the context of this thesis this topic is not discussed in more detail.

5.3 Risk Assessment of a Portfolio of Leases

Our previous analysis was focused on single lease credit risk using various approaches. In the following we concentrate on the portfolio loss distribution. Optimizing credit or leasing portfolios requires knowledge of this loss distribution⁶⁵. This knowledge is the basis for securitized structures and gives us the allowance to securitize a leasing portfolio.

A portfolio approach is based on that fact that the credit risk to each lessee across the portfolio are re-stated on an equivalent basis and aggregated in order to be treated consistently, regardless the underlying asset class or type of lease. For a deeper understanding of the leasing portfolio sub-portfolios

⁶⁵ Felsenheimer, Jochen and Gisdakis, Philip and Zaiser, Michael. „Active Credit Portfolio Management.“ Weinheim: WILE-VCH Verlag, 2006, 120

according to the asset category can be analyzed. Also the main goal of a portfolio approach is to measure the credit event and here especially default and recovery. The other main topic regarding portfolio risk is to know detailed the risks of concentration.

The loss given default of a portfolio can be computed by the sum of the loss given default divided by the total amount due.

$$LGD_{portfolio} = \frac{\sum_{i=1}^n LGD_n}{Total_amount_due}$$

In further consequence the loss rate of a portfolio equals the sum of the individual loss given default divided by the total outstanding exposure.

5.3.1 Recovery Treatment

The importance of the topic recovery was already described in preceding chapters. So far this topic was regarded however on the basis of an individual leasing agreement. Now the question arises, which conclusions regarding recoveries of leasing portfolios can be stated and how this can be used for the securitization of leasing portfolios.

It applies to verify here whether recovery rates of leasing portfolios are actually higher than those from loan portfolios. For this purpose in a first step the recoveries of a loan portfolio must be examined more closely. The analysis of recoveries of loan portfolios belongs in the last years to the most important empirical investigations concerning the topic credit risk. There is available therefore a multiplicity of investigations and studies. For the purposes of this thesis a very current study of Bruch and Gonzales-Aguado from the year 2006 is used and summarized in following table.

		Avg [%]	Std [%]
Seniority	Senior Secured	42,26	25,76
	Senior Unsecured	36,86	23,54
	Senior Subordinated	32,73	23,66
	Subordinated	34,17	23
Industry	Building	32,19	30,32
	Consumer	35,56	22,89
	Energy	37,65	17,09
	Financial	36,91	25,99
	Leisure	46,03	27,77
	Manufacturing	35,78	22,89
	Mining	35,05	18,67
	Services	33,41	25,83
	Telecom	31,53	21,14
	Trasportation	38,99	24,01
	Utility	46,93	28,14
	Others	38,01	23,44

Table 6: Recovery Rates by Seniority and Industry⁶⁶

Notice that the empirical studies generally exhibit the same results and tendencies. All the results show, that higher seniority and more collaterals lead to a higher recovery rate. In the used study the recovery of a senior secured loan (42%) is much higher than for example the recovery of a senior subordinated loan (33%). The standard deviation is for all four seniority classes nearly the same. If we take a look into the different industries we can see an inhomogeneous picture of recovery rates. Just from the point of the recovery rates we can say that there are more risky industries.

⁶⁶ Bruche, Max and Gonzalez-Aguado, Carlos. "Recovery Rates, Default Probabilities and the Credit Cycle". Working Paper, London School of Economics, November 28, 2006, 29.

For the leasing industry several studies regarding credit risk and recovery rate were made by Schmit. Most of these studies were done on the behalf of Leaseurope. They were used during the discussions regarding the preparation of Basel II. With these studies the leasing industry tried to arguee that leasing is a low risk business.

	WRR 1		WRR 2	
	Avg [%]	Std [%]	Avg [%]	Std [%]
Automotive leasing	69	38	80	36
Office Equipment	34	33	45	37
Medical Equipment	72	33	77	37
Other Equipment	60	42	68	42

Table 7: Recovery Rates by Type of Asset⁶⁷

As we know, the recovery rate is divided into a recovery by the leased assets (WRR 1) and other recoveries (WRR 2). Compared with the recovery rates by seniority it can be seen that the rates for leasing are significant higher. Also the standard deviation is higher, which means that the recovery rates are not such homogenous than the loan rates. The recovery rate of leasing depends also on the type of the leased assets. But also this result is in line with our expectations.

5.3.2 Diversification

Diversification reduces risk, thereby reducing the amount of capital needed to cushion against risk, and increasing the returns of the leasing business⁶⁸. Lease portfolios have a number of sources of diversification – different lessees, different asset types, assets coming off lease at different times in the economic cycle, and tax benefit and tax payment periods occurring at different times⁶⁹.

⁶⁷ Schmit, Mathias. "Credit risk in the leasing industry." *Journal of Banking & Finance*, 28 (2004): 820.

⁶⁸ Walker, Townsend. "Managing lease portfolios: how to increase income and reduce risk". Hoboken: John Wiley & Sons Inc., 2006, 122.

⁶⁹ Walker, Townsend. "Managing lease portfolios: how to increase income and reduce risk". Hoboken: John Wiley & Sons Inc., 2006, 121.

5.3.2.1 Correlation

The correlation of two independent variables is of great importance by analyzing leasing portfolios. A parameter to measure the strength between two variables is the covariance $Cov(A,B)$. Using the covariance the equation for the correlation coefficient is

$$\rho_{AB} = \frac{Cov(A,B)}{\sigma_A \times \sigma_B}$$

The correlation coefficient is always between -1 and +1 and can be interpreted as following:

- (i) Correlation coefficient of “+1”: no diversification, risks are effected by exactly the same factors
- (ii) Correlation coefficient of “-1”: total diversification, risks move in opposite directions in response to a change in the same factors
- (iii) Correlation coefficient of “0”: risks are affected by entirely different economic and financial events so they have no relation

Several risks of a portfolio can now be computed and analyzed. To know the correlation lead to a better understanding of the portfolio and the risk that is taken. There are some correlations which are taken into account normally – like the correlation of credit quality moves across obligors.

The correlation between probability of default and recovery rate is of special importance. This because the reason that if there is a correlation the risks are affected exactly by the same factors. Recovery rate and probability of default are normally treated as two independent variables. Also in the leasing industry for assets with a well-developed secondary market, no significant correlation is to be found in the studies from Leaseurope. It has to be mentioned that in these studies just assets with well-developed and large secondary markets were analyzed. It seems that within smaller secondary markets and assets which are not used very common other results of the correlation can be expected. Beside of this is important to know that there is a volatility of correlation coefficients.

5.3.2.2 Relationship between Lessees and Leased Assets

There is no doubt that there is a relationship between lessee industries and the equipment used by those industries⁷⁰. Relationship automatically in mathematical terms means that there is a correlation which is between 0 and +1. If this is completely true it must be possible to generate a well diversified and risk less (because hedged) portfolio of leases. To check, if this relationship is really existing it is necessary to step into a more detailed analysis.

The relationship between lessees and leased assets depends on the leasing segment. The importance of the lessees in the portfolio depends on the size of the total portfolio (number of contracts), number of costumers and the number of industries in which the lessees are engaged. On the other hand the importance of the leased assets depends on the number of producers, different types or models, targeting industries, size and existence of secondary markets and general kind of products. Here it is also important to know whether on product is or can be a substitute to another product. There is a big difference whether a leasing portfolio consists just of small-ticket or middle-ticket or big-ticket leasing or a mixed portfolio of a universal leasing company.

If we assume that there is the largest number of different producers and types/models of lease able assets in the segment of middle-ticket leasing and less in the segments of small- and big-ticket we can draw the following figure.

⁷⁰ Walker, Townsend. "Managing lease portfolios: how to increase income and reduce risk". Hoboken: John Wiley & Sons Inc., 2006, 122.

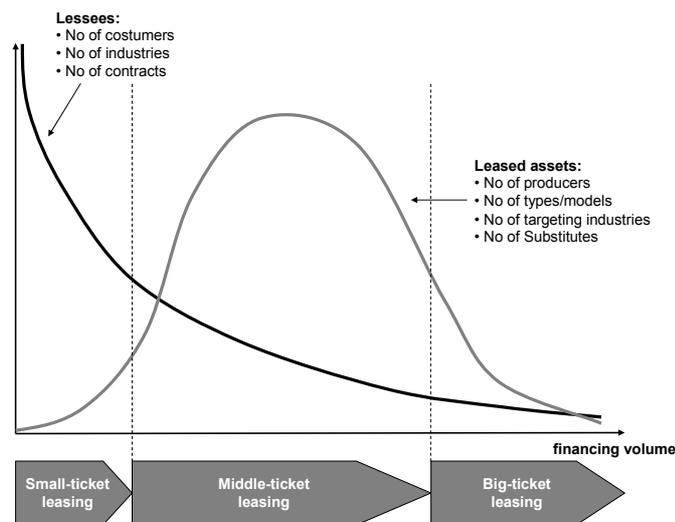


Figure 13: Lessees and Leased Assets

Small-ticket leasing equals mainly the market for car leasing. Cause of this the average financial amount is between € 22.000 – 25.000 with a relative short lease-term between 3 – 5 years. To run this business efficient it is necessary to have a large number of contracts. To reach this target it is a matter of fact that the lessees are widely diversified (private persons, firms of different industries) and on the other side the lease administration has to be standardized. In this field we can also find well established large secondary markets. The number of different producers is relatively low and the products are not substitutes to each other. In this field of leasing one can find specialized companies which are often affiliated with the producer. Mainly because of the well diversified portfolio of lessees the correlation between lessees and leased assets is expected to be low. This means also that such a portfolio tend to have a low risk.

On the opposite site of the financing volume we can find the big-ticket leasing. The assets which can be leased in this segment are aircrafts, ships, large real estates, industry plants...). The number of contracts and as well of lessees in a portfolio is relatively low. The underlying long-term⁷¹ leasing agreements and

⁷¹ Aircrafts 5 – 15 years, ships and rolling stock 7 – 25 years, real estates 10 – 30 years

structures are individually structured for a specific lease deal. This high individualization is just possible when the investment of the lessee is assessed very deeply and cause of this by market specialist. As a result we can expect a very high correlation between the lessee and the leased asset. But because these deals are structured individually the foreseen risks can be managed by hedging strategies.

The widest segment is the middle-ticket leasing⁷². In this field you can find the equipment leasing with large number of different machines. Here you find mostly the situation that the lessee and the leased asset is part of the same industry (printing machine for printing company).

If we compare now the expected correlation (ρ) between lessees and leased assets we find the following:

small-ticket leasing (automotive leasing)	middle-ticket leasing (equipment leasing)	big-ticket leasing
E(ρ): -1 ~ 0	E(ρ): 0 ~ +1	E(ρ): +1

If we just take a look on these expected correlations we can see that a middle-ticket leasing portfolio maybe bears more risks than a small-ticket leasing portfolio. From this view in a big-ticket leasing portfolio the risk of the lessee is affected by exactly the same factors than the leased asset. But I assume that because of this reason big-ticket leasing portfolios are hedged very well.

5.3.3 Value at Risk

One of the main parts of portfolio assessment is to formulate the value at risk (VaR) on an instrument, position or portfolio. Value at risk is a measure of how the market value of a portfolio is likely to decrease over a certain time period under usual conditions. With this the maximum amount that could be lost over a

⁷² Average lease-term 3 – 10 years

given time horizon can be computed. VaR cannot anticipate changes in the composition of the portfolio – it reflects the riskiness of the portfolio based on the current composition.

For calculating or estimating the VaR a variety of models exist. All the models are based on historical data as a best estimator for future changes. As an input data like the leasing exposure, obligor default rates, obligor default volatilities and recovery rates are used. The most popularized model at the moment is the variance-covariance model. This is used since the early 1990s when J.P. Morgan published the RiskMetrics Technical Document. The methodology is working in the following steps:

- Step 1: establish the exposure profile for each obligor
- Step 2: volatility of each exposure from defaults, upgrades and downgrades
- Step 3: taking into account the correlations between each of the events (defaults, upgrades and downgrades)

Other models which are used are historical simulation and Monte Carlo simulation. Historical simulation is the simplest and most transparent method. It is assuming that the asset return in the future will have the same distribution as in the past. Drawbacks are the requirement for a large market database and the computationally intensive calculation. In a Monte Carlo simulation the future returns are more or less randomly simulated. To do this exactly a correct market model is necessary. The required computational effort is non-trivial. Because of this the Monte Carlo simulation is normally just used for complicated securities like options.

5.3.4 Efficient Portfolio by Portfolio Theory

A leasing portfolio could also be measured and structured with instruments known from portfolio theory. Thus it had to be defined that

- Return (r) is the expected return of a portfolio of leases
- Standard deviation (σ) is a measure of risk of a portfolio of lease

Generally one could say that the risk of a portfolio of leases equals the proportion of each lease and their covariance. The portfolio model approach will tell the combinations that achieve the objectives at minimum risk⁷³.

One way of measuring the risk of portfolio is to use the Sharpe ratio. The Sharpe ratio (SR) measures the portfolio's excess return relative to the total variation of the portfolio and is named after Nobel Laureate William Sharpe⁷⁴.

$$SR = \frac{r_{Portfolio} - r_{risk-free}}{\sigma_{Portfolio}}$$

For the purpose measuring a lease portfolio we could now substitute the risk-free rate with the cost of funds (C). If we now build a tangent with the efficient frontier we can find the optimal portfolio at point E.

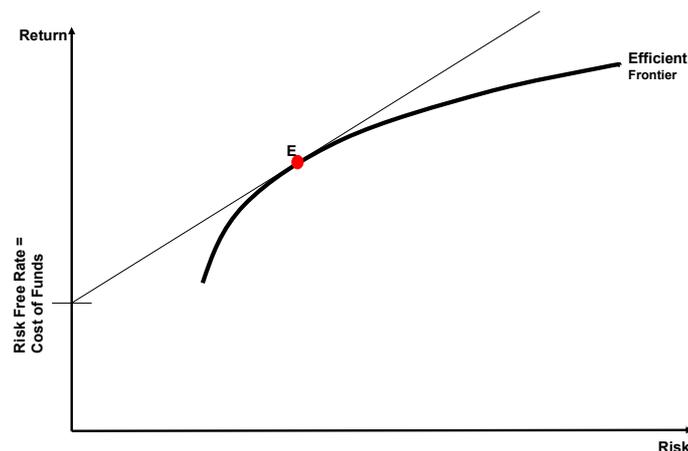


Figure 14: Efficient Frontier

⁷³ Walker, Townsend. "Managing lease portfolios: how to increase income and reduce risk". Hoboken: John Wiley & Sons Inc., 2006, 157.

⁷⁴ Felsenheimer, Jochen and Gisdakis, Philip and Zaiser, Michael. „Active Credit Portfolio Management.“ Weinheim: WILE-VCH Verlag, 2006, 433.

To calculate this point we had to use a so-called modified Sharpe ratio (MSR):

$$MSR = \frac{r_{Portfolio} - C}{\sigma_{Portfolio}}$$

Using the Sharpe ratio we could measure the efficiency of the portfolio of leases. All other aspects of modern portfolio theory and capital-asset-pricing-model (CAPM) could be used as well. A leasing company which is using this methodology is able to create the following benefits:

- Reducing the cost of capital
- Increasing return of new lease
- Measuring the benefits of hedging

5.3.5 Hedging a Leasing Portfolio

Also in a well-known managed and monitored leasing portfolio certain risks still remain. So the question arises how to increase returns by decreasing especially credit and equipment risk by the use of hedging instruments.

Credit risk can be hedged by using credit default swaps (CDS). This is one of the most widely used credit derivatives. It is an agreement between a protection buyer and a protection seller whereby the buyer pays a periodic fee in return for a contingent payment by the seller upon a credit event (such as a default) happening in the reference entity.

The means and markets to hedge equipment risk are much less developed than those for credit risks⁷⁵. The following methods and instruments are used:

- (i) selling the equipment for delivery at the end of the lease term
- (ii) selling the right to buy (purchase option) the equipment
- (iii) remarketing or buy-back agreements
- (iv) residual value insurance

⁷⁵ Walker, Townsend. "Managing lease portfolios: how to increase income and reduce risk". Hoboken: John Wiley & Sons Inc., 2006, 169.

6 Securitization of Leasing Portfolios

In the past chapters the product and the meaning of leasing as well as the evaluation of risks were lit up in detail. Here a special meaning was paid attention quasi to the assets of the balance-sheet of the lessor. Now however the question arises, how a modern and a capital market oriented leasing company refinance themselves.

In the case of a closer occupation with the question of the refinancing of a leasing company one comes also automatically to the topic "Securitization"⁷⁶. This surely also therefore since such products experience a veritable boom. Europe has seen tremendous growth in new issuance of ABS since the introduction of the Euro in January 1999⁷⁷. Banks and financial institutions in several countries in Europe have increased their issuance significantly, now undertaking lease deals as well⁷⁸.

In a first step dealing with securitization one had to clarify what is meant by securitization? Generally speaking, the aim of securitization is to transform illiquid assets into securities⁷⁹. The term securitization is used to represent the process whereby assets are pooled together, with their cash flows, and converted into negotiable securities to be placed into the market. These securities are backed or secured by the underlying assets and are generally defined as Asset Backed Securities (ABS). Theoretically, any financial assets producing cash flows (receivables, residential and commercial mortgages,

⁷⁶ The concept of asset securitization was introduced in the US financial system in the 1970s, when the Government National Mortgage Association issued securities backed by a pool of loans, represented by residential mortgages.

⁷⁷ Deacon, John. "Global Securitisation and CDOs." Chicester: John Wiley & Sons Ltd., 2004, 9

⁷⁸ Deacon, John. "Global Securitisation and CDOs." Chicester: John Wiley & Sons Ltd., 2004, 9

⁷⁹ Caselli, Stefano and Gatti, Stefano. "Structured Finance – Techniques, Products and Markets". Berlin: Springer, 2005, 5.

credit card receivables, and other consumer and commercial loans) can be securitized⁸⁰.

Because also a leasing business produces cash flow, leasing is also suitable for securitization. In the following chapter is represented, on the basis of a classical refinancing of a leasing company, the topic securitization of leasing in the detail.

6.1 Classical Refinancing of Leasing Companies by Bank Loans

The classical refinancing of leasing companies takes place by means of bank loans in the following structure:

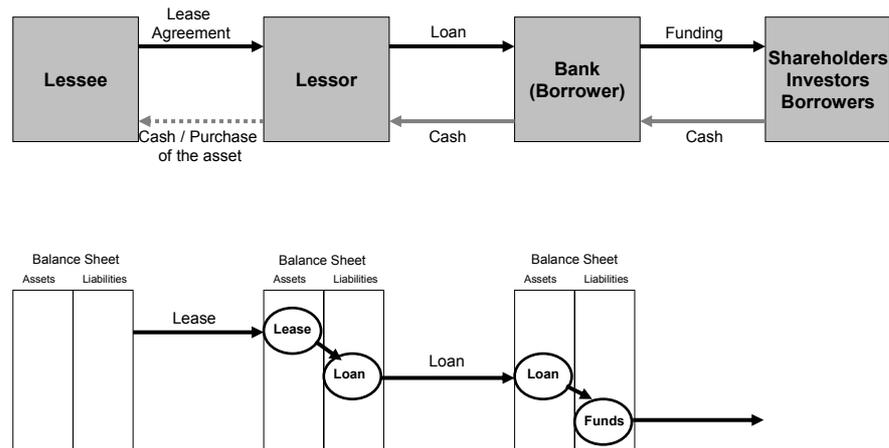


Figure 15: Refinancing of Lease with a Loan

The leasing company closes this with a bank a credit agreement. Since a majority of the leasing companies are subsidiaries of banks, the granting of loan takes place mostly via the respective parent bank. For the 100% subsidiaries of

⁸⁰ Caselli, Stefano and Gatti, Stefano. "Structured Finance – Techniques, Products and Markets". Berlin: Springer, 2005, 6.

banks therefore also the question of collaterals is mostly not or only in small measure necessary.

If the credit should be taken up with a third, independent bank, the granting of credit depends naturally on the Rating of the leasing company. If this should be not sufficient, then additional collateral must be brought on the part of the leasing company. For this above all the following structures are used:

- Delivery of declarations of guarantee or letters of patronage on the part of the shareholders of the leasing company
- Silent assignment of the leasing instalments - here is mostly a percentage of the loan amount specified by the bank which has to be covered by a similar part assignment of the respective leasing portfolio. If the soil quality of the leasing company is well then the percentage to be covered lies under 100%, otherwise also more than 100% can be transferred. Since it concerns a undisclosed assignment, the lessee does not notice this transaction unless the scheduled payments of the loan by the leasing company are done properly.
- Forfeiting of the lease instalments of the lessor to banks or for this specialized financial institution.

This form of the refinancing is very clear and simple for the leasing company. The interest rate of the credit is mostly bound at EURIBOR or LIBOR or it is a fixed interest rate. The margins are appropriate for example in Austria between 20 and 50 basis points. The duration of the individual credit orients itself at individual leasing contracts or on a package of leasing contracts which is refinanced. By it, it is to be represented that this structure leads mostly to a period-congruent refinancing of the leasing company.

The advantage of this kind of the refinancing lies for the leasing company above all

- In the simple calculation of the costs and associated high cost transparency

- In the simple completion and representation in the financial accounting
- In the high flexibility, since an extension or a reduction of the refinancing partners can be accomplished at any time

The disadvantages are in the fact that with a mother daughter relationship the charged interest-rate margins do not correspond to the soil quality and the Rating of the leasing company in particular, but are often used as control instrument for accountings of profit. The quality of the leasing portfolio and the associated possibly better soil quality as the self-soil quality of the leasing company flow into the price formation of the credit in no way. Thus the situation often develops that the credit conditions for leasing companies are expensive compared with capital market-oriented refinancing. This cost bears in further consequence the lessees.

6.2 Refinancing by Asset Securitization

6.2.1 Basic Structure of a Securitization

With an ABS structure the financing takes place via sales of a diversified pool of homogeneous leasing businesses to a special created purpose company (SPV). The assignment of the leasing contracts takes place quietly. Administration and collection are accomplished against fee further by the lessor.

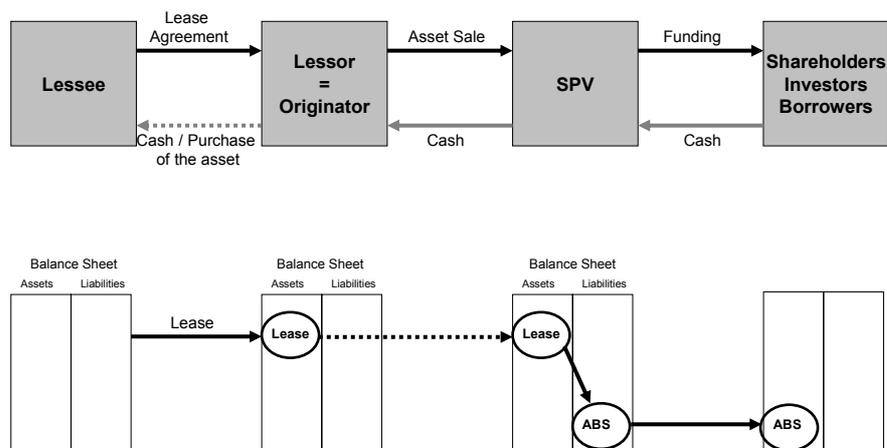


Figure 16: Refinancing of a Lease by Asset Securitization

Interest and amortization payments on the ABS are derived from the cash-flow of the leasing contract. The lessor is not responsible for losses. The SPV does not have own debt servicing capacity; as collateral the pool of leasing contracts, whose credit quality is enhanced by additional collateral (credit Enhancement), serves the investors.

6.2.2 Goals and Use for the Lessor

As already mentioned in the previous chapters, ABS is an efficient and internationally recognized financing form. Straight leasing is particularly suitable for ABS, since most leasing companies have suitable pools of leasing contracts. Naturally the use of a refinancing is placed here by means of ABS for the SME's into the foreground. Nevertheless the following advantages arise as a result of such a transaction for the leasing company also isolated seen.

Equity Management

An ABS financing does not have any effects on the equity of the leasing company. This remains unchanged by the transaction. Especially in an

expansion of the leasing company equity can quasi be recycled now by an ABS financing. This leads mostly also to an increase of the ROE by the thereby higher yield possibilities.

Risk Management

The credit risk can be better managed by a securitization of the leasing portfolios thus regarding industries, regions and total portfolio. Partly the leasing company can develop thereby also active hedging strategies.

Balance-sheet Management:

The securitization of leasing leads, as described in figure 16, also to a change of the balance structure at the leasing company. Appropriate liquidity is generated by the active-lateral sales. This is used on the part of the leasing company for the reduction by bank commitments. Thus it comes automatically to a reduction of the debt ratio of the leasing company. This reduction can reduce the costs of the bank financing in the future likewise.

It completely generally comes thus to an improvement of profitability's and financial indices of the leasing company. With an appropriate size of the Portfolios the leasing company can accomplish now also an active balance management. By it aimed the transmission of loss risks and the dismantling are to be understood from concentration risks to. By an ABS financing the leasing company is put also into the position to steer the organization of the yield character (interest earnings versus commission earnings) and the yield timing better.

6.2.3 True Sale Requirement

It is important to notice that securitization is realized through a true sale of assets by the lessor to a separate company (SPV). The true sale mechanism allows a company to isolate a group of financial assets, separating the risk of

the firm as a whole from the risk associated with the securitized assets⁸¹. Exactly how a true sale is effected will depend on the requirements of the legal system⁸².

The requirements of a “true sale” are defined on the part of the supervisory authorities. Here it comes constantly to advancement and an adjustment in the individual countries, why this theme is not to be received further here.

Rather however the question about the requirements of a securitization of leasing contracts arises. Too all only a legal transferability of the demands for leasing must be given. Here the question arises whether an agreement of the lessee is needed. The sale is in principle effected as quiet assignment, with which previous information or agreement is not necessary on the part of the lessee. Nevertheless there can be restrictions of transfer or transfer prohibitions, which are to be considered anyhow in the leasing contract. Actually if the agreement of the lessee should be necessary for the sales, the documentation is extremely difficult at least from administrative view and leads also most likely to substantial internal auxiliary costs.

The organization of the leasing instalments leads mostly to regular and well to prognosticating payment streams, whereby straight by leasing a substantial requirement of securitization is fulfilled. A crucial role plays however here the residual value. Here the question in principle arises whether the residual value of a leasing business corresponds to an obligation of the lessee. This is to be answered with, if there is a purchase obligation on the part of the lessee. If this should not be given, the residual value does not represent an obligation. In this

⁸¹ Caselli, Stefano and Gatti, Stefano. “Structured Finance – Techniques, Products and Markets”. Berlin: Springer, 2005, 9.

⁸² Deacon, John. “Global Securitisation and CDOs.” Chicester: John Wiley & Sons Ltd., 2004, 37.

case the structure is to be adapted to these conditions. A goal is anyhow the avoidance of the transmission of potential writing-off losses with financing leasing.

6.2.4 Debt Instruments used for ABS Deals

The SPV must finance the purchase of the leasing portfolio. Here is the basic idea that the international money and capital markets are used. The use of these markets takes place due to the structure independently of the legal form of the leasing company. The only more decisive is the structure of the sold leasing portfolio. From view of the leasing company therefore their refinancing is made also without own rating by the capital market. Here one concerned now at the crucial point for SME, since indirectly by the way leasing their financing is made even in further consequence by means of the capital market.

The SPV finances the purchase by the expenditure of securities (commercial papers, medium term notes, bonds) or by the admission of a credit. The question which form of securities is used can be answered directly by the size of the securitized leasing portfolio.

	Bond	Commercial Paper	Loan
Public effect	high	variable	low
Individual adjustment	yes	to a large extent	yes
Minimum volume	large	medium	small
Transaction costs	large	medium	low
Rating	yes	yes/no	no
Lead time	6 months	3 months	3 months

Table 8: Comparison of Securities and Loan

6.2.5 Motivation of Investors

The motivation of investors can be shortly summarized by the following points:

- Highly rated securities
- Fast growing and very liquid ABS-market
- Interesting interest rates
- Automatically diversified portfolio
- Availability of historical data material for the entire portfolio
- Trust in emitter and servicer

6.2.6 Replenishment Structure

A further advantage for leasing companies can be seen in replenishment structures. A replenishment structure allows further sales of leasing contracts during an agreed time period. So the transaction costs can be used more efficient because the costs of preparation of the transaction could be divided into a longer time period. To allow further sales parameters had to be defined exactly. The new purchased leasing contracts must fulfil these parameters and requirements. So the quality level of the securitized portfolio remains constant during the replenishment periods.

6.3 Credit Enhancements

The quality of the leasing portfolio must be determined for each transaction on the basis of historical data. Thus results in principle the rating of a transaction. In order to improve and obtain this into a very good rating, which leads to a reducing of the transaction in price, it is to be taught necessarily to work with so-called credit enhancements. By credit enhancements one understands generally all measures, which contribute to the debt servicing capacity improvement of the leasing portfolio.

The amount of the credit enhancements depend on the desired rating and the quality of the portfolio. The quality of the portfolios results here particularly due to the following parameters:

- Historical amount and variability of loss and distortion frequency
- Customer concentration
- Possible cyclic payment history of the customers
- Financial strength of the leasing company

Credit enhancements can be placed by third side (external credit enhancement) or indirectly come out from the structure (internal credit enhancement). Under external credit enhancements one understands above all:

- Letter of credits by a bank or insurance company, to guarantee the security issuance
- Insurance contracts
- Special guarantees from a third party

External credit enhancements means however mostly a rising of the price of the transaction. Cause of this reason it is mostly tried to work with internal credit enhancements. Also here arise naturally costs, but which are mostly directly covered at the leasing company. These are however partial smaller than third costs and can be calculated better also on the part of the leasing company. Under internal credit enhancement one understands above all:

- Excess spread or spread accounts: a first loss is covered by the gross spread earned on the leasing receivables, less the costs of funding, expenses and losses.
- Over collateralisation: the value of the sold leasing receivables is higher than the raised funding. Excess cash flows will then be used to cover potential losses⁸³.
- deferred purchase price, which will be written off to the extent that the receivables do not perform

⁸³ Caselli, Stefano and Gatti, Stefano. "Structured Finance – Techniques, Products and Markets". Berlin: Springer, 2005, 14.

- cash collateral or reserve funds which might be created in order to cover potential underpayments from the lessee⁸⁴

Another increasingly popular way of realising extra proceeds is the use of different tranches.

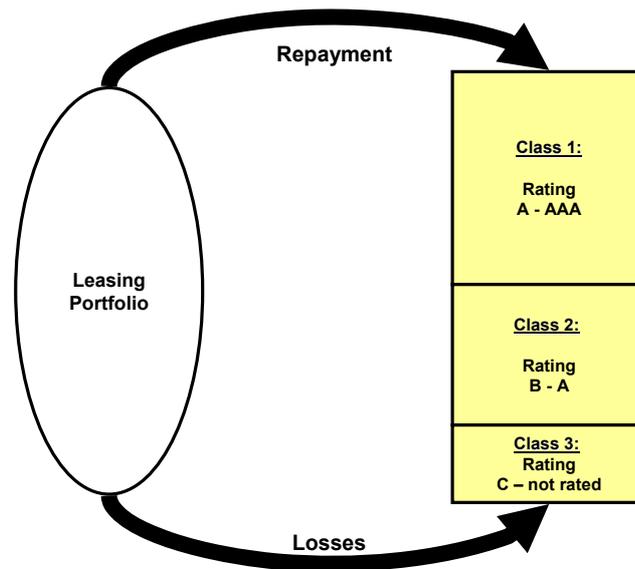


Figure 17: Credit Enhancement by Tranches

The entire portfolio is divided in tranches according to the rating. These different types of securities (senior, subordinated) have different risk/return characteristics. Senior securities are characterized by a lower risk, higher rating and lower return. Interest and amortization payments serve the senior tranches first, while payment losses serve the subordinated tranches first. The more largely the portion of the senior tranches is, the smaller is also the interest rate.

⁸⁴ Caselli, Stefano and Gatti, Stefano. "Structured Finance – Techniques, Products and Markets". Berlin: Springer, 2005, 14.

6.4 Types of ABS Structures

6.4.1 Single-seller Structure for Large Portfolios

6.4.1.1 Traditional ABS Structure

The leasing company sells a suitable portfolio of leases to the special purpose vehicle (SPV). Special purpose vehicle (SPV) or special purpose entity (SPE) is a global term. An SPV is either a trust or a company⁸⁵.

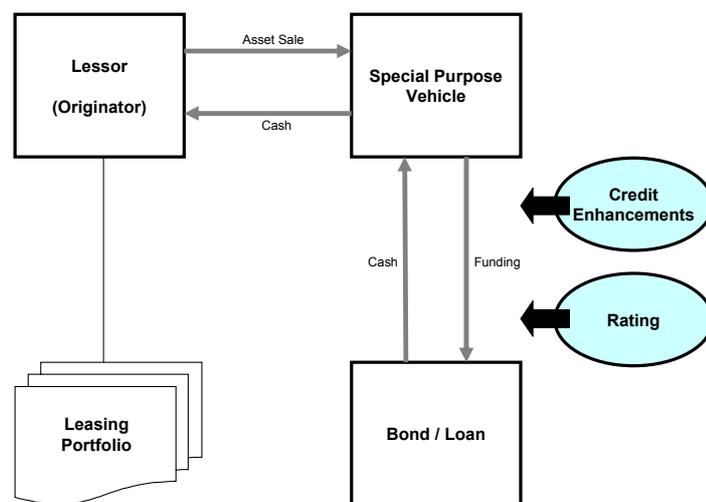


Figure 18: Single-Seller ABS-Structure

The SPV is a solvent special purpose company, whose exclusive enterprise article exists in the financing of the purchase of the leasing portfolio. The SPV aims a first-class rating classification, which is why credit enhancements are used for the support. The SPV emitted in further consequence bonds or commercial papers or takes up loans under own name and rating. If it is necessary cross currency swaps or interest rate swaps are also added to the transaction so that all they needs of the leasing company as originator are satisfied.

⁸⁵ Tavakoli, Janet M. „Collateralized debt obligations and structured finance: new developments in cash and synthetic securitization”. John Wiley & Sons, Hoboken, New Jersey, 2003, 47.

Generally there are two types of structures known:

- Pass-through structures: pass through all of the principal and interest payments of assets to the leasing company
- Pay-through structures: allow for reinvestment of cash flows, restructuring of cash flows, and purchase of additional assets⁸⁶

6.4.1.2 Collateralized Debt Obligations (CDOs)

Collateralized debt obligations are a type of asset-backed securities. In a CDO a portfolio of assets (bonds, loans, leases, and receivables) is gathered together and used to create a new set of fixed income securities. The technique is equal as for classical asset-backed securities. But a common feature of all CDOs is that they consist of several classes of equity and debt tranches with respect to seniority in bankruptcy or default by one or more of the underlying assets⁸⁷. A CDO might typically issue four classes of securities designated as senior debt, mezzanine debt, subordinate debt, and equity. Any losses from the portfolio of assets are applied to the later classes of debt before being applied to earlier ones. As a result from one basket of bonds or loans, a range of products are created ranging from the risky equity debt to the relatively risk less senior debt.

6.4.2 Multi-seller Structure for Small and Mid-sized Portfolios

To structure a single-seller structure efficiently by means of costs and benefits the size of the securitized portfolio has to be more than EUR 200 million. This order of magnitude is often not reached however. Thus it came also to the development of multi-seller structures, where the securitization of smaller portfolios (starting by EUR 30 million) is possible. In this structure the SPV is a

⁸⁶ Tavakoli, Janet M. „Collateralized debt obligations and structured finance: new developments in cash and synthetic securitization”. John Wiley & Sons, Hoboken, New Jersey, 2003, 47.

⁸⁷ Regner, Sigrid. “Credit Risk Transfer by Securitization: New Perspectives for Smaller Banks with SME Loan Portfolios?”. University Theses, IMADEC University, Vienna, September, 2004, 11.

so-called conduit. This conduit purchases assets of most diverse companies and branches and confirms these assets by securitization in further consequence. Mostly a separation comes between the conduit and the SPV for reasons of minimizing the risk. The financing of the purchases takes place here mostly by Commercial Papers.

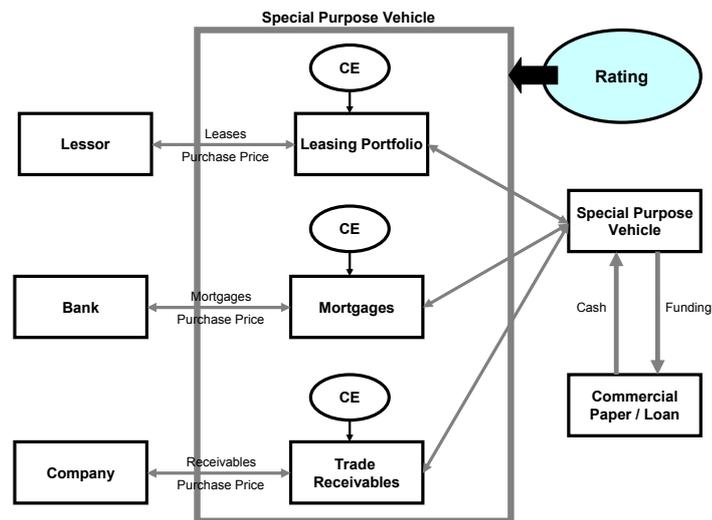


Figure 19: Multi-Seller ABS-Structure

The establishment of conduits takes place on initiative of the banks, in order to put to its customers a platform for securitization⁸⁸. In the role of the arranger the bank supports during the structuring and generates in such a way fees.

6.4.3 Synthetic Securitization

A synthetic securitization is a structure with two or more different stratified risk positions or tranches that reflect different degrees of credit risk where credit risk of an underlying pool of exposures is transferred, in whole or in part, through the use of funded (e.g. credit-linked notes) or unfunded (e.g. credit default

⁸⁸ Stadler, Wilfried (ed.). "Die neue Unternehmensfinanzierung – strategisch finanzieren mit bank- und kapitalmarktorientierten Instrumenten". Redline Wirtschaft, Redline GmbH, Frankfurt, 2004, 266.

swaps) credit derivatives or guarantees that serve to hedge the credit risk of the portfolio⁸⁹.

6.5 Rating Methodologies for Securitization

A substantial component of an ABS-structure is the rating. Generally a credit rating is a formal opinion given by a rating agency of the credit risk for investors in a particular issue of debt securities⁹⁰. The rating depends in case of a portfolio of leases on the quality of the leases and the credit enhancements. In order to assess credit enhancement levels, it is necessary to estimate the cumulative losses that a pool may exhibit over the life of a transaction⁹¹.

In further consequence it is decisive also for the pricing of the transaction.

The determination of the rating takes place in the course of a due diligence of the leasing company. In principle here the following ranges of topics are submitted by an intensive examination and evaluation:

- The criteria of granting a lease
- The quality of the portfolio of leases
- Soft-facts and qualitative factors regarding the leasing company

The criteria of granting a lease and thus in connection standing guidelines are the basis for the first part of the rating. The leasing company must represent here in particular the transparency of the process of decision making.

The analysis of the historical data of the portfolio represents the most important part. Contents here are in particular the analysis of delays with payments and

⁸⁹ Oesterreichische Nationalbank. "Appendix B: Securitization Framework in Basel II". November, 2004, accessed June 3, 2007; available from http://www.oenb.at/en/img/appendix_b_englisch_06122004_tcm16-23500.pdf; Internet, 2.

⁹⁰ Choudhry, Moorad. "An introduction to value-at-risk." 4th ed. Chichester: John Wiley & Sons Ltd., 2006, 121

⁹¹ Standard & Poor's. "Equipment Leasing Criteria." New York: Standard & Poor's, 1999, 7

losses. The most important point to know is that the quality of historic data that can be provided by the originator is crucial⁹². In order to be able to supply the historical data, the leasing company must have an efficient EDP. The historical data ideal-proves supplied over the last 60 months broken down. Only if the data during this period regarding portfolio size, watering, overdue nesses, and losses are available it can be correctly analyzed. The rating agencies needs anyhow the following data:

- Monthly development of the leasing portfolio
- Monthly turnover data
- Monthly receipts of payment
- Height of the waterfalls (e.g. credit notes, discount payments)
- Age structure of the overdue amounts
- Customer concentrations and appropriate ratings

As already several times mentioned the topic recovery plays a major role within the question about losses of leases. From it naturally great importance results also for the rating. Depending upon kind and size of the individual leases there is a different entrance here. With large individual lease like aircrafts, ships and trains the analysis takes place on an individual "loan-by-loan-analysis". In case of leasing portfolios with a large number of single contracts and a large number of customers the portfolio credit rating approach takes place. Not only the amount, calculation and organization of the residual value of the lease will be examined. Rather also the leasing-financed economic goods in detail are regarded. The rating agencies concern itself in the course of its analyses likewise with the remarketing and marketability of the leased assets. They are trying to answer the question which value is inherent in the asset. Thus the rating agencies also discuss whether this values are influenced by macroeconomic factors or external events (e.g. like 9/11). Less importance is attached to the value of the other collaterals (like payment guarantees), due to

⁹² Deacon, John. "Global Securitisation and CDOs." Chicester: John Wiley & Sons Ltd., 2004, 109

its low value, and its high associated repossession and remarketing costs as a percentage of the collateral value⁹³.

As last component of the rating qualitative factors, which are also often called soft facts, are consulted. It is in fact not possible to completely enumerate these factors – among the most important factors or influences rank here however:

- Accounting rules and procedures for defaults and recoveries
- Internal rewrite and payment deferral procedures
- Depreciation policies
- Market segments and products
- Goals and competitive strategy
- Company history and management experience

Naturally also some topics can develop in the course of the rating, which will have also an influence on the structure of the deal. A very often arising problem is the question how to handle concentration risks of the portfolio. These can be avoided by the following measures:

- Determination of a maximum credit amount by debtor
- Dispersion by a set of debtors
- Regional diversification of the portfolio
- Consideration and dispersion of different leased assets

A further question develops with such leasing contracts, with which on the part of the leasing company a service or maintenance agreement is offered at the same time. On the part of the rating agencies the question how to handle these contracts is answered relatively pragmatically as follows:

- If the credit rating of the lessor or originator is better than the rating of the funding instrument, then the service and maintenance contracts are serviced by the lessor also during the ABS deal.

⁹³ Deacon, John. "Global Securitisation and CDOs." Chichester: John Wiley & Sons Ltd., 2004, 109

- If the credit rating of the lessor is less than the rating of the funding instrument, then the commitment from another entity who is willing to take these service or maintenance contracts is necessary.

6.6 Expiration of a Transaction

The securitization of a leasing portfolio is a quite complex transaction and lasts between 2 and 6 months depending upon size and kind of the ABS-structure. Following timetable represents guidance for the process.

(1)	Suggestion on the structuring and pricing on the basis of a first analyse by the invited banks
(2)	Signing of a mandate agreement with the structuring bank
(3)	Detailed analysis of the leasing portfolio and the leasing company (due diligence)
(4)	Development of the optimal transaction structure
(5)	Determination of the suitability criteria for the purchase of leases
(6)	Definition of the height and the kind of credit enhancements
(7)	Elaboration of the treaty systems and tuning on characteristics in the structure
(8)	Rating of the transaction by the rating agency or agencies
(9)	Signing of the necessary agreements and documentation
(10)	Sales of the leases and disbursement of proceeds of sale
(11)	Emission of securities
(12)	Monthly reporting

Table 9: Phases of a Transaction

The costs of such a transaction play naturally during decision making a substantial role. The costs divide into an up-front fee and a program fee. Basis for the computation of the up-front fee is the maximum value of the transaction.

With its costs of structuring, consultants, legal opinion, asset audit, true sale opinion and ratings are covered. The program fee is computed mostly by the respective outstanding volume of the deal and essentially covers the cost of the administration of the single purpose entity.

6.7 Impacts of Basel II

The occupation with Basel II leads also automatically to the changes within the banking industry. The role of the banks changed themselves in the last decades importantly – from pure credit grantors to financial intermediate. Into the 1970's the principle applied that companies "requested" loans and banks then "granted" loans⁹⁴. Banks focused thus to grant loans to companies and held these loans up to the maturity in the books. Aspects of risk were not the center of attention for banks. Rather goals like market growth and shares were shaped by the banks. In the last two decades it came however to a change of trend. In particular through an increased yield pressure on banks began a stronger argument with the topic credit risk and its management.

In particular by new methods regarding credit risk management therefore the business model of banks changes. With this change also the attitude of the banks changes opposite customers. It takes place therefore a reorientation of the credit markets through:

- Risk-adequate pricing of loans
- Visible opportunities for risk/yields of the markets
- Tradable credit risk for the optimization of the loan portfolios and further growth

The strategic adjustment of the banks changed itself there today that information and information gathering became the crucial competitive

⁹⁴ Stadler, Wilfried (ed.). "Die neue Unternehmensfinanzierung – strategisch finanzieren mit bank- und kapitalmarktorientierten Instrumenten". Redline Wirtschaft, Redline GmbH, Frankfurt, 2004, 100.

advantage for banks and thereby successful business relations with companies⁹⁵.

6.7.1 Lump-sum View of Basle I

The key provision of Basle I is, that a bank has a minimum capital requirement of 8% of loans to corporates. These 8% has to cover the risk for unexpected losses which are not covered by adequate collaterals. Basle I make no differences in credit quality of the debtor. These ignored differentiations of credit risks were in fact one of the main critiques of Basle I. Moral hazard and adverse selection was the result of these view.

6.7.2 Capital Requirements in Basel II

One of the principal purposes of Basel II is to prevent the transverse subsidization from good to weak loans. Thus also the main points of criticisms of Basle I should be eliminated by Basel II. With Basel II a risk near arrangement of the capital requirement is to be achieved. The height of necessary capital in the bank balance sheet depends on the risk of the obligor. Thus the bank-internal rating gets great importance in the future. Basel II permits the following approaches of the credit risk:

- Standardised approach: use of external ratings to establish the probability of default. For very good ratings the necessary minimum capital requirement is lower (20% or 50%); versus for bad ratings it is higher (150%). If a company has no external rating the minimum capital requirement remains at 8% and thus there is no difference to Basle I. In fact the most European companies do not have an external rating and cause of this Basel II has no influence to the costs of borrowing to the SME's.

⁹⁵ Stadler, Wilfried (ed.). "Die neue Unternehmensfinanzierung – strategisch finanzieren mit bank- und kapitalmarktorientierten Instrumenten". Redline Wirtschaft, Redline GmbH, Frankfurt, 2004, 114.

- Internal ratings-based approach (basic or advanced approach): the bank can use an internal credit risk assessment and cause of this an internally determined probability of default. The probability of default and exposure of default are used in further consequence to calculate the risk by using statistical methods. This calculated risk is the basis for the minimum capital requirement.

Beside of the minimum capital requirement Basel II has a much wider approach than Basel I. Generally Basel II is based on the three pillar concept:

- Pillar 1: minimum capital requirement dependent upon default risk
- Pillar 2: supervisory review process to ensure reliable risk measurement
- Pillar 3: greater disclosure of risk positions

Basel II is a range of topics, which reflects the change of the bank world again. In the framework therefore only a short overview is to be given to this thesis, which has a direct influence on the securitization of leases and leasing portfolios.

6.7.3 Basel II Securitization Framework

The rising importance of securitization can also be seen in the key regulatory development arising from the Basel II framework. Securitization has received considerable attention because it is one of the areas, where the Basel I approach has become clearly outdated⁹⁶. Banks must apply the securitization framework for determining regulatory capital requirements on exposures arising from securitizations. Hereby the economic substance is more important than its legal form. The approach (standardized or IRB) for the underlying securitized exposure must be the same approach for securitizations.

⁹⁶ Oesterreichische Nationalbank. "Appendix B: Securitization Framework in Basel II". November, 2004, accessed June 3, 2007; available from http://www.oenb.at/en/img/appendix_b_englisch_06122004_tcm16-23500.pdf; Internet, 1.

6.8 Market-outlook for the Securitization of SME Leases

ABS originally spread in the United States strongly. In Europe ABS-transactions could become generally accepted particularly in United Kingdom since the 1980's. In the last years however also in rest of Europe the volume of transactions increased strongly. Trigger for this was in particular the euro. The euro in combination with the liberalization of the markets in Europe led to a fast growth in the last years.

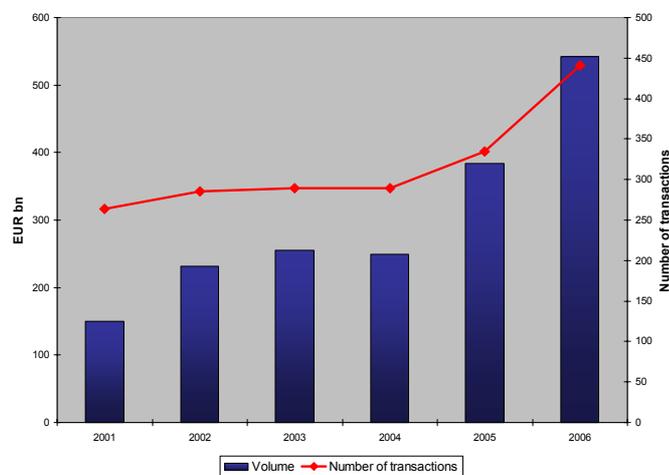


Figure 20: Development of the Securitisation Volume and Number of Transactions in Europe since 2001⁹⁷

The European ABS market could be described as following:

- Very positive and dynamic in recent years
- Strong increase in volume and number of transactions
- Increase in the number of originators
- High demand for more complex structures such as collateralized debt obligations

⁹⁷ Source: KfW Bankengruppe - http://www.kfw.de/EN_Home/Loan_Securitisation/European_Securitisation_Market/index.jsp

- Market dominated by residential mortgage backed securities
- United Kingdom dominate the scene with 35% of the transaction volume

Naturally this relatively strong market growth favors also the indirect access of the SME's to the capital market. In particular the large banks are meanwhile very active with the securitization of SME loans.

Date	Bank	Name of deal	Cash or synthetic	Collateral	Amount
December 2005	ABN Amro	Smile 2005	Synthetic	Dutch SME loans	EUR 6.75 bil
February 2007	ABN Amro	Smile Securitization 2007	Cash	Dutch SME loans	EUR 4.9 bil
December 2005	Barclays	Gracechurch Corporate Loans Series 2005-1	Synthetic	UK midsize corporates	GBP 5 bil
January 2007	Barclays	Gracechurch Corporate Loans Series 2007-1	Synthetic	UK SME loans	GBP 3.5 bil
February 2007	Credit Suisse	Clock Finance	Synthetic	Swiss SME loans	CHF 4.8 bil
July 2005	Deutsche Bank	GATE SME CLO	Synthetic	SME loans	EUR 1.5 bil
February 2007	HSBC Trinaus	HEAT 3	Cash	SME loans	EUR 314 mil

Table 10: Recent Hedging Transactions by Large Banks⁹⁸

Naturally here the question arises to what extent a SME will actually profits by these transactions in the form of more favourable pricings and conditions. Nothing the despite indirectly by loans the entrance to the capital market is given to SME's. Also with leasing a similar development is to be observed. However in the leasing industry the securitization is not yet so far common. It can be seen that there is a strong rise in some countries (like Italy) under their basic conditions.

⁹⁸ Gibson, Michael S. „Credit Derivatives and Risk Management“. May 22, 2007. Accessed June 3, 2007; available from <http://www.frbatlanta.org/invoke.cfm?objectid=34D21EA2-5056-9F12-122F01FFD7DD8E71&method=display>; Internet, 5.

Issuers	Market Sector	Country	Maturity Date	Currency	Original Amount	Coupon Rate	Class
Absolute Funding S.r.l. - Locat Leasing Series 2001A	Equipment Leasing/Loans	Italy	15.06.2013	EUR	400.000.000	3 mth Euribor + 20bps	
Intesa Lease Sec. S.r.l.	Equipment Leasing/Loans	Italy	31.12.2015	EUR	378.870.000	3 mth Euribor + 20bps	Class A
Lease Assets Backed Securities II BV	Consumer	Netherlands	08.10.2012	EUR	408.402.194	4,75%	Class B
Lease Assets Backed Securities III BV	Consumer	Netherlands	11.08.2013	EUR	270.000.000	4,50%	Class B
Lease Investment Flight Trust	Aircraft Finance	US	15.07.2031	USD	400.000.000	LIBOR + 39bps	Class A-1
Lombarda Lease Finance 1 S.r.l.	Auto Leases, Equipment Leasing/Loans	Italy	30.07.2011	EUR	66.400.000	3 mth Euribor + 35 bps	Class A1
Lombarda Lease Finance 2 S.r.l.	Auto Leases, Consumer, Equipment Leasing/Loans	Italy	30.10.2015	EUR	576.500.000	3 mth Euribor + 36 bps	Class A
Lombarda Lease Finance 3 S.r.l.	Auto loans, Equipment Leasing/Loans	Italy	31.10.2015	EUR	350.000.000	3 mth Euribor + 47bps	Class A2
Lombarda Lease Finance 4 S.r.l.	Equipment Leasing/Loans	Italy	30.01.2022	EUR	1.034.000.000	3 mth Euribor + 15bps	Class A
Mecenate Leasing S.r.l.	Equipment Leasing/Loans	Italy	22.07.2016	EUR	140.100.000	3 mth Euribor + 28bps	Class A2
Pegasus Aviation Lease Securitization	Aircraft Finance	US	25.03.2029	USD	285.000.000	N/A	Class A-1
Pegasus Aviation Lease Securitization II	Aircraft Finance	US	25.03.2015	USD	381.000.000	LIBOR + 62.5bps	Class A-1
Pegasus Aviation Lease Securitization III	Aircraft Finance	US	15.07.2031	USD	197.000.000	LIBOR + 58bps	Class A-2
Volkswagen Car Lease (VCL) No 7 Ltd	Auto Leases	Germany	31.12.2009	EUR	582.300.000	1 mth Euribor + 8 bps	Class A
Volkswagen Car Lease (VCL) No 8 Ltd	Auto Leases	Germany	N/A	EUR	940.000.000	N/A	Class A

Table 11: Issuer List ABS Leases⁹⁹

The number of transactions within the leasing industry is at present still small but visible. Most leasing companies, who accomplish such deals, are today only or mainly working in the field of automotive leasing. Here with all considerable market participants (like GE Capital, Volkswagen, Ford Credit, GMAC and so on) ABS-transactions are accomplished. This is necessary otherwise a refinancing of these bank-independent leasing companies is not to be guaranteed on a long-term basis and the dependence from banks would be too large. At those leasing companies who are subsidiaries of banks, ABS-transactions are at present still extremely un-common. It is probably like that the simpler refinancing by bank loans has still advantages. Differently expressed, the margin pressure still is too small that here a reorientation process takes place.

⁹⁹ Source: Fitch Ratings available on http://www.fitchratings.com/corporate/sectors/issuers_list_struct.cfm?sector_flag=1&marketsector=2&detail=&searchText=leas&pageJumpTo=; Internet.

7 Conclusions and Recommendations

The small and middle-sized enterprises are the engine of the European economy. The financing structure of these enterprises is traditionally characterized by small equity and high debt. Debt financing plays often a substantial role. In the ranges of asset financing often leasing has substituted the role of loans in the last decades. One can therefore state that the SME's are the engine of the leasing industry.

In addition, the product leasing changed also very much. In the beginnings it was characterized by a bad image and was often sold exclusively over tax benefits. Now leasing develops ever more apart from a pure financing to a product with a high component of additional services. A multiplicity of manufacturers and suppliers recognized leasing as product for the increase of the sales. Pioneer is here surely the automotive industry.

The increasing significance leads however naturally also to institutional evolution. Here in particular the topic of the balance sheet treatment leasing agreements has to be mentioned. The accounting standards for leasing will surely change in the next years. The trend here goes clearly in the direction that all measurable tangible and intangible assets of a company have to be shown in the balance-sheet.

By the increasing number of leasing contracts however also the leasing industry must adjust itself to changes. During the last years here the trend to more professionalism is to be observed. The question of the evaluation and utilization of the leased assets is the crucial point in the risk management and in addition for the competition of a leasing company. Information is for a leasing company just like for a bank one of the keys to success.

The fast and dynamic development of the European capital market will not wait for the leasing companies. The classical refinancing of leasing companies by

bank loans or factoring will belong to the past in some years. Pioneers for new modern refinancing forms are today already the bank-independent automotive leasing companies. They use securitization as a method of refinancing using the capital market and beyond that they get the ability to offer their customer's attractive leasing products.

Of course these leasing companies have the advantage of a very homogenous product and customer structure. This stands contrary to bank near universal leasing companies, which offer its customer a wide range of different leasing products. Here however the technological advancement takes place in the range credit risk and risk management. For this reason it is only a question of time since also the universal leasing companies use securitization as a major source of refinancing.

This form of the refinancing of leasing companies will facilitate indirect access to the capital market for SME's in last consequence via leasing. The large liquidity of the capital markets will provide also the SME's therefore via leasing with liquidity and allows making investments. Thus also by the securitization of leasing portfolios the economic cycle in the sense of Schumpeter should be closed, since financing and innovation make possible a growth of the economy.

APPENDIX

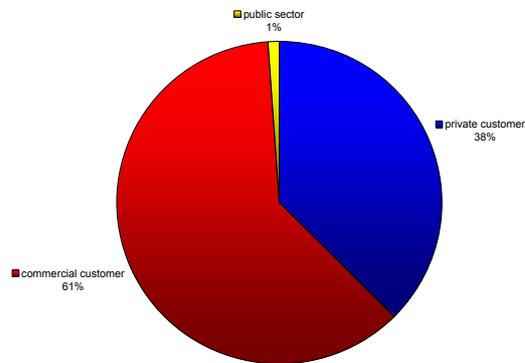


Figure 21: Car/Vehicle Leasing in Austria by Customer¹⁰⁰

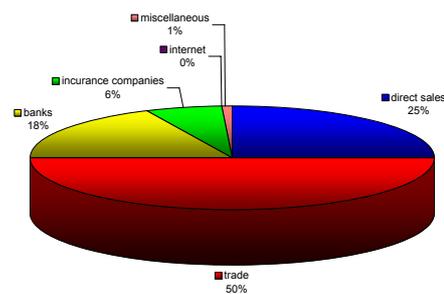


Figure 22: Car/Vehicle Leasing in Austria by Point of Sale¹⁰¹

¹⁰⁰ Source: Association of Austrian Leasing Companies – Statistics, accessed December 19, 2006. Available from www.leasingverband.at, Internet.

¹⁰¹ Source: Association of Austrian Leasing Companies – Statistics, accessed December 19, 2006. Available from www.leasingverband.at, Internet.

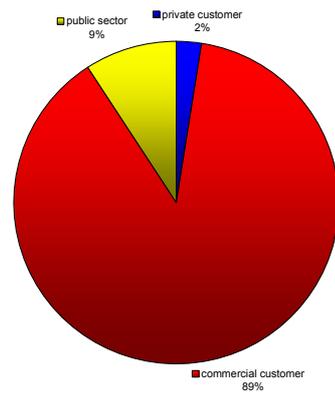


Figure 23: Equipment Leasing in Austria by Customer¹⁰²

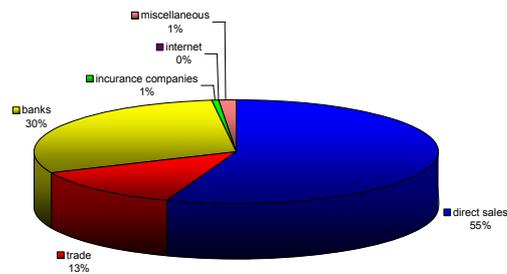


Figure 24: Equipment Leasing in Austria by Point of Sale¹⁰³

¹⁰² Source: Association of Austrian Leasing Companies – Statistics, accessed December 19, 2006. Available from www.leasingverband.at, Internet.

¹⁰³ Source: Association of Austrian Leasing Companies – Statistics, accessed December 19, 2006. Available from www.leasingverband.at, Internet.

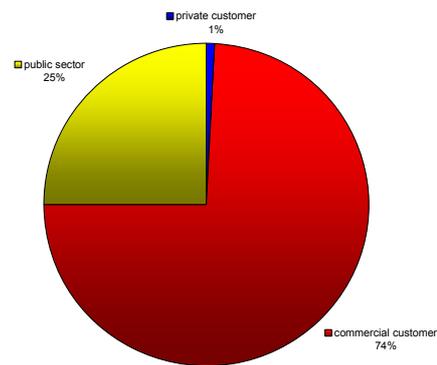


Figure 25: Real-Estate Leasing in Austria by Customer¹⁰⁴

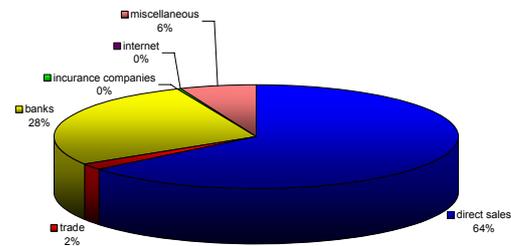


Figure 26: Real-estate Leasing in Austria by Point of Sale¹⁰⁵

¹⁰⁴ Source: Association of Austrian Leasing Companies – Statistics, accessed December 19, 2006. Available from www.leasingverband.at, Internet.

¹⁰⁵ Source: Association of Austrian Leasing Companies – Statistics, accessed December 19, 2006. Available from www.leasingverband.at, Internet.

Bibliography

Association of Austrian Leasing Companies. “Guidelines on the balancing of leasing contracts for Lessees in accordance with IAS & US-GAAP”, (accessed March 14, 2007), available from www.leasingverband.at/download/leitfaden_eng.pdf, Internet.

Association of Austrian Leasing Companies – Statistics, (accessed December 19, 2006), available from www.leasingverband.at, Internet.

Beer, Artur und Goj, Wolfram. „Zinsrisikomanagement mit Ablaufbilanz und Barwertmethode.“ Stuttgart, Deutscher Sparkassenverlag, 1996.

Beck, Thorsten and Demirguc-Kunt, Asli. “Small and medium-size enterprises: Access to finance as a growth constraint.” *Journal of Banking & Finance*, 30 (2006): 2931-2943.

Bruche, Max and Gonzalez-Aguado, Carlos. “Recovery Rates, Default Probabilities and the Credit Cycle”. Working Paper, London School of Economics, November 28, 2006.

Casey, Angelika and Kunz, Detlef and Prachner, Gerhard. “IAS – US GAAP – HGB – Rechnungslegung im Vergleich”. Wien: Manzsche Verlags- und Universitätsbuchhandlung, 2002.

Caselli, Stefano and Gatti, Stefano. “Structured Finance – Techniques, Products and Markets”. Berlin: Springer, 2005.

Choudhry, Moorad. “An introduction to value-at-risk.” 4th ed. Chichester: John Wiley & Sons Ltd., 2006.

Deacon, John. "Global Securitisation and CDOs." Chicester: John Wiley & Sons Ltd., 2004.

European Commission. "The new SME definition: User guide and model declaration." Brussels: Enterprise and Industry Publications, 2005.

European Union. "Definition of Small and Medium-Sized Enterprises". (Accessed May 5, 2007), available from http://ec.europa.eu/enterprise/consultations/sme_definition/index.htm, Internet.

Felsenheimer, Jochen and Gisdakis, Philip and Zaiser, Michael. „Active Credit Portfolio Management.“ Weinheim: WILE-VCH Verlag, 2006.

FMA/OeNB. „Best Practice im Risikomanagement von Verbriefungen“. Leitfadenreihe Kreditrisiko, Band 1, May 7, 2004.

FMA/OeNB. „Ratingmodelle und Validierung“. Leitfadenreihe Kreditrisiko, Band 2, July 9, 2004.

FMA/OeNB. „Kreditvergabeprozess und Kreditrisikomanagement“. Leitfadenreihe Kreditrisiko, Band 3, July 9, 2004.

Gal, Thomas (ed.). „Mathematik für Wirtschaftswissenschaftler“. Berlin-Heidelberg: Springer-Verlag, 1983.

Gibson, Michael S. „Credit Derivatives and Risk Management“. May 22, 2007, (accessed June 3, 2007); available from <http://www.frbatlanta.org>; Internet.

GiroCredit. "Treasury – Risikosteuerung durch Finanzmarktprodukte." Wien: GiroCredit Bank AG der Sparkassen, September, 1996.

Grant, Jeremy and Jopson, Barney. "Companies' balance sheets set to get a new lease of life". *Financial Times*, February 21, 2007.

Grenadier, Steven. "Leasing and credit risk". *Journal of Financial Economics*, 42 (1996): 333-364.

Grinblatt, Mark and Titman, Sheridan. "Financial Markets and Corporate Strategy". 2nd ed. New York: McGraw-Hill Irwin, 2002.

Grunert, Jens and Weber, Martin. "Recovery Rates of Bank Loans: Empirical Evidence for Germany". March, 2005. Accessed March 17, 2007. Available from <http://kreditwesen.uni-muenster.de/assettypes/SimplePage/>, Internet.

Hartmann-Wendels, Thomas. "Kreditrisikomanagement von Leasing-Gesellschaften". Jahreshauptversammlung Forschungsinstitut für Leasing, November 16, 2006.

Hirst, Eric and Pratt, Jamie. "A Manager's Guide to Financial Reporting and Value Creation". Vienna: IMADEC University, January, 2007.

Institut für Wirtschaftsforschung an der Universität München. „Mobilien-Leasing in Deutschland und Europa weiter auf Wachstumskurs“. Ifo Schnelldienst Nr. 23/2004. Accessed February 12, 2007; available from http://www.bdl-leasing-verband.de/download/presse/publikationen/pdf/1.4_ifo-sonderdruck_12-2004.pdf; Internet.

Institut für Wirtschaftsforschung an der Universität München. „Besseres Investitionsklima stärkt Leasingwachstum“. Ifo Schnelldienst Nr. 23/2005. Accessed February 12, 2007; available from <http://www.bdl-leasing-verband.de/download/presse/publikationen/pdf/ifo-sonderdruck-komplett.pdf>; Internet.

Institut für Wirtschaftsforschung an der Universität München. „Investitionswelle trägt Leasingwachstum“. Ifo Schnelldienst Nr. 23/2006. Accessed February 12, 2007; available from <http://www.bdl-leasing-verband.de/download/presse/publikationen/pdf/ifo-sonderdruck-2006.pdf>; Internet.

International Accounting Standards Board. “IASB and FASB announce membership of International Working Group on Lease Accounting”. December 7, 2006, accessed March 14, 2006; available from <http://iasb.org/news/press+releases/>, Internet.

Jagersma, Pieter Klaas. „Leasing: a distinctive competitive strategy.“ *Holland Business Publications*, October 28, 1999, accessed December 28, 2006; available from <http://om.htp.net/asp/artikelen/8.asp?aid=8>, Internet.

KPMG. “Risiken & Risikomanagement bei Leasinggesellschaften”. KPMG Vienna, March 7, 2007.

Leaseurope. “Leaseurope’s Involvement in the Field of Capital Adequacy – the Capital Requirements Directive’s Treatment of Leasing and Work Towards Implementation”. Leaseurope, Brussels, Newsletter June, 2006.

Leaseurope – Statistics, accessed December 19, 2006. Available from www.leaseurope.org/pages/statistics/stat.asp, Internet.

Marek, Michael. “Geschichte des Leasing – Abriss einer beeindruckenden Entwicklung.” Working Paper No. 73, University Paderborn, October, 2001.

O’Donell, Brendan and Hickner, Michael and Barna, Bruce. “Economic Risk Analysis – Using Analytical and Monte Carlo Techniques.” Spring 2002, accessed January 8, 2006; available from www.chem.mtu.edu/~crowl/CM4861/RiskAnalysisArticle.pdf; Internet.

Oesterreichische Nationalbank. "Appendix B: Securitization Framework in Basel II". November, 2004, accessed June 3, 2007; available from http://www.oenb.at/en/img/appendix_b_englisch_06122004_tcm16-23500.pdf; Internet.

Pirotte, Hugues and Schmit, Mathias and Vaessen, Celine. "Credit Risk Mitigation Evidence in Auto Leases: LGD and Residual Value Risk." January 12, 2004, accessed January 4, 2006; available from www.solvay.edu/en/research/documents/, Internet.

Regner, Sigrid. "Credit Risk Transfer by Securitization: New Perspectives for Smaller Banks with SME Loan Portfolios?". University Theses, IMADec University, Vienna, September, 2004.

Schmit, Mathias. "Credit risk in the leasing industry." *Journal of Banking & Finance*, 28 (2004): 811-833.

Schmit, Mathis and Degouys, C. - Delzelle, D. – Stuyck, J. – Wautelet, F. "Credit Risk in the Leasing Business – A case study of low probability of default." Leaseurope, April 3, 2003, accessed January 3, 2006; available from www.leaseurope.org/pages/matters_of_concern/, Internet.

Schmit, Mathias and Stuyck, Julien. „Recovery Rates in the Leasing Industry.“ Leaseurope, September, 2002, accessed January 4, 2006; available from www.leaseurope.org/uploads/matter/, Internet.

Schmit, Mathias and Stuyck, Julien and Duchemin, Stephanie. "Credit Risk Issues in the Automotive Leasing Industry." February 2003, accessed January 4, 2006; available from www.leasefoundation.org/pdfs/baselii/, Internet.

Skora, Richard. "Modern Portfolio Credit Risk Modeling". Presented at: GARP meeting in New York, October 19, 1998.

Stadler, Wilfried (ed.). "Die neue Unternehmensfinanzierung – strategisch finanzieren mit bank- und kapitalmarktorientierten Instrumenten". Redline Wirtschaft, Redline GmbH, Frankfurt, 2004.

Standard & Poor's. "Corporate Ratings Criteria." New York: Standard & Poor's, 2001.

Standard & Poor's. "Equipment Leasing Criteria." New York: Standard & Poor's, 1999.

Tavakoli, Janet M. „Collateralized debt obligations and structured finance: new developments in cash and synthetic securitization". John Wiley & Sons, Hoboken, New Jersey, 2003.

Verband österreichischer Leasinggesellschaften. "Leasing in Austria". March 2003, accessed May 5, 2007; available from <http://www.leasingverband.at/Download/LeasingInOesterreich.pdf>, Internet.

Walker, Townsend. "Managing lease portfolios: how to increase income and reduce risk". Hoboken: John Wiley & Sons Inc., 2006.