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**A CASHFLOW-AT-RISK APPROACH TO LEASING INDUSTRY:
EMPIRICAL EVIDENCE FROM THE TURKISH LEASING
SECTOR**

Doktora Tezi

CÜNEYT AKPINAR

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CÜNEYT AKPINAR

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İSTANBUL, 2012

ABSTRACT

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The study aims at introducing a risk management framework for the Turkish leasing industry and analyzes the impact of the new leasing legislation in terms of potential risk and returns. The study is an integrated one that employs a holistic approach to the leasing sector. Leasing is an alternative financing means, in particular, for SMEs. Since SMEs are locomotive of economic growth and stability, financing is always attached great importance. However, with technological development, typical financial tools are not sufficient to support economic activities. As well as its profitability, leasing industry also harbors some risks. Main risks are liquidity risk, due to the nature of the assets (heavily its property, plant and equipment) and the mismaturity in the balance sheets. With global change, rapid development, and intense competition, industry becomes riskier. Therefore, it is crucial to study risk management from the perspective of the lessor. The study employs a new risk quantifying methodology, namely Cash Flow-at-Risk methodology. This is a significant contribution of the study. In addition, a new legislative framework in Turkey is expected to introduce operational leasing in addition to financial leasing for BRSA supervised financial leasing companies. Accordingly, the study also employs sensitivity analysis to measure potential impact of the introduction of operational leasing, partially or fully by the financial leasing companies. The study concludes that an optimal

allocation of financial and operational leasing would balance the risk and returns in the leasing industry over the long-term.

FOREWORD

I would like to acknowledge the assistance of many people without whom this research would not be successfully completed. First of all I would like to express my deepest appreciation and gratitude to my thesis advisor Prof. Dr. Cemal İBİŞ for his continuous help, support, encouragement and guidance. His tremendous experience contributed to this research.

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ÖZ

GENEL BİLGİLER

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Bu çalışma Türkiye’de finansal kiralama sektörü için bir risk yönetimi çerçevesi oluşturmayı ve yeni finansal kiralama kanununun getiri ve nakit akışı riski yönünden potansiyel etkilerini ölçümlemeyi amaçlamaktadır. Çalışma leasing endüstrisine bütüncül bir yaklaşım getiren entegre bir çalışma olmuştur. Leasing özellikle KOBİ’ler için alternatif bir finansman yöntemidir. KOBİ’lerin ülke ekonomisinin büyümesi ve istikrarındaki lokomotif rolü düşünüldüğünde konunun önemi daha da artmaktadır. Ancak teknolojideki ilerlemeye paralel olarak mevcut finansman olanakları ekonomik aktiviteyi desteklemekte yeterli olamayabilmektedir. Leasing şirketleri yüksek karlı kurumlar olabildikleri gibi, aynı zamanda önemli riskleri de içermektedir. Özellikle aktiflerin doğası (çoğunlukla makine, ekipman ve gayrimenkul) ve bilançodaki vade uyumsuzluğu sebebiyle önemli likidite riski barındırmaktadır. Değişen küresel koşullar, hızlı büyüme ve yoğun rekabet sektörü daha da riskli hale getirmektedir. Dolayısıyla leasing şirketleri açısından risk yönetimini analiz etmek büyük önem arz etmektedir. Bu çalışma Riske Maruz Nakit Akışı metodu başlığında yeni bir metodoloji uygulamakta ve literatüre önemli bir katkı sağlamaktadır.

Türkiye’de yürürlüğe girmesi beklenen yeni leasing kanunu finansal leasing firmalarının aynı zamanda operasyonel leasing de yapabilmesini mümkün kılacaktır. Bu çalışma duyarlılık analizleri kullanarak finansal leasing şirketleri tarafından tamamen ya da kısmi olarak operasyonel leasing işlemlerinin de uygulanmasının risk ve getiri açısından etkilerini analiz etmektedir. Çalışma, operasyonel ve finansal leasing yöntemlerinin her ikisinin de kullanıldığı optimal bir dağılımın uzun vadede karlılık ve risk arasındaki dengeyi sağlayacağı sonucuna varmaktadır.

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ABBREVIATIONS

AMT	: Alternative Minimum Tax
BIS	: Bank for International Settlements
BRSA	: Banking Regulation and Supervision Agency
CB	: Central Bank
CFAR	: Cash Flow-at-Risk
EBIT	: Earnings Before Interest and Tax
EBIT/TA	: Earnings Before Interest and Tax to Total Assets Ratio
EBITDA	: Earnings Before Interest, Taxes, Depreciation and Amortization
FAS	: Financial Accounting Standards (US)
FASB	: Financial Accounting Standards Board (US)
FIDER	: Financial Leasing Association
GARCH	: Generalized Autoregressive Conditional Heteroskedasticity
GDP	: Gross Domestic Product
IFRS	: International Financial Reporting Standards
IRS	: Internal Revenue Service (US)
ISE	: Istanbul Stock Exchange
ITC	: Investment Tax Credit
MACRS	: Modified Accelerated Cost Recovery System
NERA	: National Economic Research Associates, Inc.
NPL	: Net Penetration Level
OTC	: Over-the-Counter
SMEs	: Small to Medium Sized Entrepreneurs
TRA	: Tax Reform Act
UK	: United Kingdom
US	: United States
VAR	: Value-at-Risk
VAT	: Value Added Tax

INTRODUCTION

Economic progress in the early 1900s generated an increased attraction towards equipment leasing in the 20th century. As a consequence, leasing began to emerge as an alternative finance to acquire equipment. Since 1970s, the leasing industry grew considerably throughout the world. Economic stimulus packages, tax law changes, accounting changes, changes in lease structures in the 1970s and 80s, only challenged the industry to reinvent itself, continuing its upward slope profitability and volume level. The percentage of capital acquisition by leasing versus other methods of financing equipment has grown every year.

Until the 1970s, there was no accounting standard for leasing in most countries, except for the U.S. At that time, lease contracts were generally accounted for as rental agreements and were treated accordingly, as in the case of operating leases. With increasing need for standardization and growing pressure coming from the users of financial statements, many countries reviewed their lease accounting methods to achieve higher standards. Tax advantages and reduced cost of capital are the most common advantages that are referred to in the context of a financing vehicle while improved risk sharing and operating efficiencies are the most known motivations regulated by most countries. Indeed, the general legislative framework is mostly led by the U.S., although each country has their own treatments, especially in the context of tax regulations.

On the other hand, Turkey as an emerging market has a growth potential in need of capital to stimulate her stable growth tendency. However, Turkish financial system is still dominated by the banking industry. Furthermore, strict regulatory policies that were introduced to the leasing sector as of 2006 by the Banking Regulatory and Supervisory Board (BRSA) and the elimination of Value Added Tax (VAT) incentives in 2007 resulted in a significant contraction and consolidation in the Turkish leasing industry. While there were 83 financial leasing companies in Turkey before 2006, the consolidation in the sector brought the number of companies to 31 as of December 2011.

In line with global benchmarks, a new legislative framework had been prepared in Turkey, which will be effective following its approval by the Parliament. The new legislation, together with recently introduced tax incentives, is expected to increase the leasing volume and the penetration levels in Turkey, while broadening the product range. Some of the most important terms in the new legislation are as follows; financial leasing firms will have the authority to perform not only financial (capital) leasing but also operational leasing, new products such as Sale & leaseback operations will be introduced, definition of goods subject to leasing is enlarged, the obligation to draw up contracts at notaries will be removed, term restriction regarding the expiry of contracts will be removed and the term of the contract will be freely determined by the relevant parties. In addition, “Financial Leasing Firms’ Association” with a public authority status will be established, at which all financial leasing contracts will be registered, enabling better monitoring of the industry.

Accordingly, leasing industry in Turkey is at a turning point concerning the legal framework and growth potential. Leasing has gained an increasing importance since domestic savings are not sufficient to support investments and subsequently businesses are not able to meet finance needs. However, no data are available to predict future gains or losses to prepare the industry. Moreover, liquidity management is critical to own and lease technologically developed equipment because of rapid globalization and intense competition. There is a tendency of consolidation in the sector. Merger and acquisition of banks affect the sector due to ownership structure. That’s why it is significant to adopt a risk management framework and measure the readiness level of the industry. In addition, it is also crucial to analyze expected effects of the new legal framework. Hence, taking into account of theoretical and empirical studies, following problem statements are developed:

1. Would it be possible to adopt a cash flow risk management framework for the leasing industry and analyze its readiness to the expected changes?
2. What is the expected maximum loss for financial leasing companies under the current legal framework?

3. What is the expected maximum loss for operational leasing companies after the new legal framework is introduced?

4. What is the expected maximum loss for companies running both financial and operational leasing when the new legal framework is introduced?

The rest of the study is as follows. First chapter attempts to give a picture of financial system and the roles of financial intermediaries. After highlighting basic functions of financial system, financial institutions are presented in general.

Second chapter develops a general discussion on leasing by means of literature review. The chapter aims at laying out historical development and prospecting future of leasing globally. Literature distinguishes two distinct classes of leasing; financial and operational. Therefore, a discussion on similarities and differences of leasing types is also provided here. Furthermore, other leasing classifications are also of concern in the chapter.

It is of paramount significance of the researcher that legal framework is to be changed in Turkey. Hence, evaluation of global accounting standards may possibly shed some light on the issue. The main distinction here is based on the ownership of the leased assets. Thus, accounting standards are discussed on behalf of the lessor and the lessee.

Third chapter focuses on domestic leasing industry. Upon providing a historical perspective, contemporary issues are based at the core of discussion. This chapter, also, hosts a SWOT analysis of Turkish leasing industry, which necessarily reveals that the sector is prospecting and is in need of a new legislation. Therefore, the discussion is extended on draft of new legislation. In short, expected effects, pros and cons of the new draft legislation are handled with a perspective of major industry player.

Methodological approaches to risk management are thoroughly evaluated in the next chapter. The main objective of the study is to adapt a value-at-risk

methodology to leasing industry. Therefore, value-at-risk literature is initially presented, and then cash-flow-at-risk methodology is discussed.

Fifth chapter is devoted to the application of cash-flow-at-risk methodology to the leasing industry. After introducing the model, historical NERA CFAR model is employed in the Turkish leasing sector. Findings are displayed in the chapter. Also, industry and company-specific applications are provided to show risk and return analysis via different implications of three cases prepared with regard to the draft legislative framework.

In conclusion, risk management as a readiness tool for the industry is discussed. Answers to research problem statements are sought and future recommendations as well as limitations are presented.

CHAPTER ONE

FINANCIAL SYSTEMS: A GENERAL REVIEW

Financial system is just a mechanism in which resources are transferred from the ones who save through the ones in need whilst leading to harmonization between savings and investments made by different actors in terms of maturity, quantity and yield-to-maturity. Aim of transfer is ensuring realization of transactions among actors in order. It also aims at optimization. Furthermore, financial system facilitates economic activities and provides productive use of financial products.

Since leasing is a part of financial system, it is deemed necessary to explain the system in detail. This chapter, therefore, focuses on financial system in general. An overview is initially provided, and then basic functions of the system are reviewed.

1.1. FINANCIAL SYSTEMS

Financial system comprises three basic elements as financial instruments, intermediaries and markets. Figure-1 depicts basic elements displaying relationships. Financial markets, in the economies that saving and investment decisions are made by different authorities, compile dispersed funds and channel through investments with higher return.

A financial market is a market where financial instruments are traded. Fabozzi (2002, p.8) discusses major economic functions of financial markets and emphasizes the determination of the price of the traded asset. Furthermore, markets are characterized by the interactions of buyers and sellers. For instance, financial markets provide a mechanism for an investor to sell a financial instrument.

Lenders or savers, in one hand, are principal agents in the system, feeding system with funds. On another hand, borrowers, in general businesses are in shortage of

fund to generate business. Primary function of a financial system is to facilitate the transfer of sources from lenders to borrowers (Boot and Thakor, 1997, p.693). The arrows in the figure show two routes flowing from lenders to borrowers.

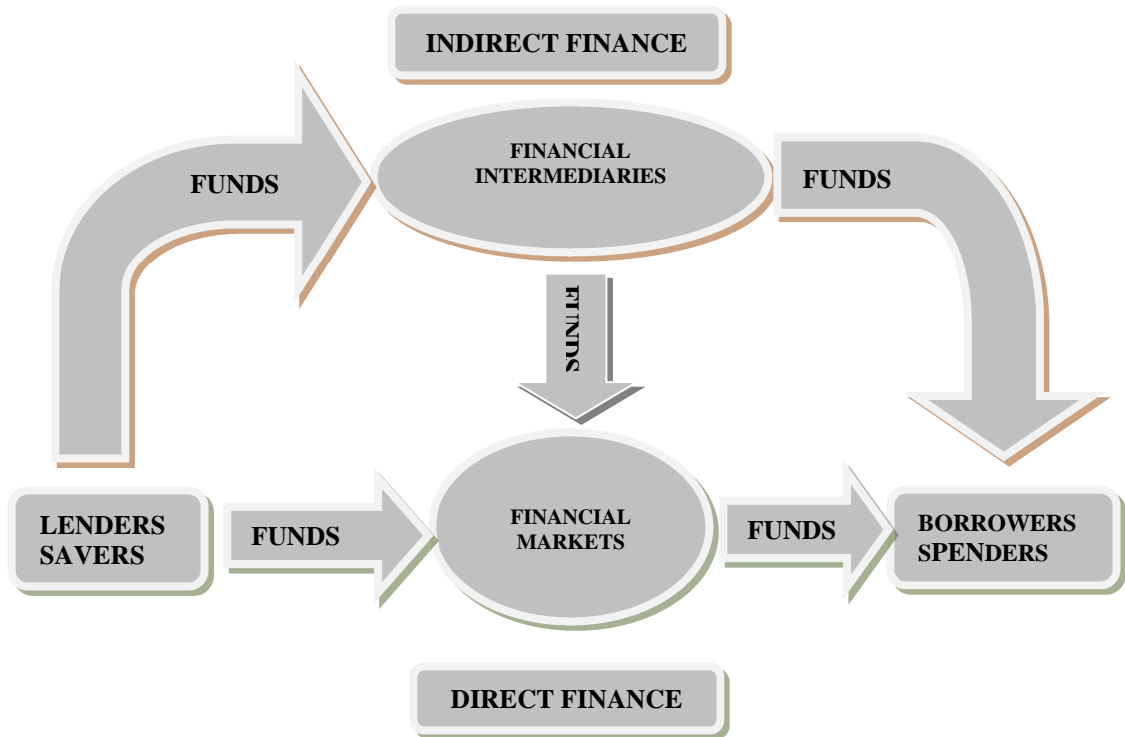


Figure 1 Financial System

Source: Miskhin, Frederick S. (2004). **The Economics of Money, Banking and Financial Markets**, Seventh Edition, Pearson Adison Wesley, p.21.

Households have the choice of depositing their savings with financial intermediaries, or lending directly to firms, or investing it on the international capital market (Chakraborty and Ray, 2006, p.338). In the first route at the bottom, borrowers borrow funds directly from lenders. Direct lending to firms is made through the purchase of tradeable securities like corporate bonds and equities. Financial instruments are issued by borrowers to attract funds.

In the alternative route at the top, financial intermediaries facilitate the process. Financial intermediaries, such as banks, obtain their supply of loanable funds from households.

Financial instruments include, but not limited to, conventional ones such as coins, banknotes, notes and stocks as well as new instruments like swaps, futures, debits, credits, bills, asset-backed securities and options. Likewise, financial intermediaries are banks, bankers, insurance companies, stock exchanges, leasing and factoring companies.

A financial system transfers resources between households and firms, as lender and borrower, respectively. However, governments also play a significant role in the system. They are both major borrowers and lenders. For instance, they borrow during crises or recession while they issue many funds as sovereignty.

Governments may affect the financial markets as many actors playing different roles in financial systems (Merton, 1990, p.264):

- As a market participant following the same rules for action as other private-sector trans actors, such as with open-market operations.
- As an industry competitor or benefactor of innovation, by supporting development or directly creating new financial products or markets such as index-linked bonds or all-savers accounts.
- As a legislator and enforcer, by setting and enforcing rules and restrictions on market participants, financial products and markets such as up-tick rules, margin requirements, circuit breakers, patents on products.
- As a negotiator, by representing its domestic constituents in dealings with other sovereigns that involve financial markets.
- As an unwitting intervener, by changing general corporate regulations, taxes and other laws or policies that frequently have significant unanticipated and unintended consequences for the financial-services industry.

Financial intermediaries assume a significant responsibility that financial system displays an active role in financial transactions such as knowledge acquisition, efficient corporate control and risk diversification. Financial systems are generally categorized into two groups as financial markets (i.e. non-bank based financial systems) and bank-based financial systems. Indeed, categorization is made according to channels used in funds transfers and financial instruments used in finance. Whether ratio of banks in the system is higher, it is called bank-based financial system. In case ratio of capital market institutions is higher, market-based financial system is understood.

Vitols (2001b) attempts to compare the systems according to financial assets and involvement degree of government. In bank-based systems, the bulk of financial assets and liabilities consist of only bank deposits and direct loans. In market-based systems, securities that are tradable in financial markets are the dominant form of financial asset. Bank-based systems appear to have an advantage in terms of providing a long-term stable financial framework for companies. Market-based systems, in contrast, tend to be more volatile but are better able quickly to channel funds to new companies in growth industries. A second key distinction between financial systems is the degree to which the state is involved in the allocation of credit.

Table 1 Financial Systems Categorization

Non-Financial Sector	Subsector	Preference for:	
		Banks	Markets
Company Sector	SMEs (Traditional)	+	
	SMEs (High Tech)		+
	Large Firms (High Debt)	+	
	Large Firms (Low Debt)		+
Household Sector	High Income		+
	Middle Income	+	
	Low Income	+	
Pension Policy	Pay-As-You-Go	+	
	Company Reserves	+	
	Capitalized Systems		+

Chakraborty and Ray (2006, p.331) distinguish between bank-based financial systems and market-based financial systems based upon their involvement with investment projects. Banks are typically engaged in project selection, monitoring firms

and identifying promising entrepreneurs. On the other hand, investment through the purchase of tradable securities comprises very little subsequent involvement in a firm's investment decisions.

There is no definite evidence which performs better; however, a bank-based system outperforms a market-based one along other dimensions (Chakraborty and Ray, 2006). According to researchers, bank-based systems are more supporter and facilitator for broad-based industrialization.

Table 2 Financial Systems Characteristics

Regime Characteristics:	Liberal Market-Based Regimes	Nonliberal Bank-Based Regimes
Most Strictly Regulated Sector	Banks	Capital Markets
Constraints on Large Investors	Rule-Based	Incentives for "Responsible Behavior"
Advantages for Smaller Investors	Transparency	Stability
Orientation of Financial Institutions	Predominantly For-Profit	Mix of For-Profit and Nonprofit
Monetary Policy	Stability-Oriented to Avoid Asset Inflation	Potential for Pursuit of Developmentalist Goals

1.1.1. Bank-Based Financial Systems

Bank-based approach asserts that improved and sound banking industry is more successful in the transactions. Similarly, literature supports the idea that because of gaps in the transactions banks are not necessarily affected negatively as markets are. In other words, banks are more successful with regard to control and financing industry (Levine, 2004, p.19). In other words, banking systems is expected to avoid some of the information deficiencies associated with securities markets (Mayer, 1990, p.308). Bank monitoring partially resolves the agency problem in this sense (Chakraborty and Ray, 2006).

In bank-based systems such as those in Japan, France and Germany, risk management can be achieved through intertemporal smoothing (Allen and Santomer,

2001, p.13). Financial intermediaries eliminate risk by investing in short term liquid assets.

As Mayer (1990) explicitly states that a primary rationale for the existence of banks is that they perform screening and monitoring functions at a less cost than individual investors can undertake. In accordance with this function, resource allocation, credit availability, and terms of loans may all be superior under a bank-based in comparison with a non-banked based financial system (Mayer, 1990, p.308). However, Chakraborty and Ray (2006, p.330) mention that bank monitoring resolves moral-hazard problems at the level of the firm. They state that firms with lower marketable collateral and higher incentive problems borrow from banks, while wealthier firms rely on unintermediated market-finance.

Levine (2000, p.399) advocates that bank-based financial systems succeed in channeling funds through productive investments in initial phases of economic growth with poor regulations, in particular. In the systems, banks ask borrowers to invest in projects with higher return probability and quicker pay-back period. Thus, bank-based financial systems allow greater participation in manufacturing activities, by providing external finance to a larger number of entrepreneurs (Chakraborty and Ray, 2006, p.350).

Sound financial systems reveal that tacit knowledge is quickly transferred into open one, thus investor show less effort. Banks, however, alleviates problems based on tacit knowledge and long-range intra-industry relationship. In particular, in less improved and not well-organized financial systems, banks are better means to monitor firms and decrease moral hazard problems (Levine, 2000, p.400).

Allen and Santomer (2001, p.13) point out a significant feature of financial markets that they allow high returns in good times and there is an incentive for individual investors to withdraw their funds from banks and put them in markets instead.

1.1.2. Market-Based Financial Systems

Chakraborty and Ray (2006, p.332) conclude that when agency problems are not particularly severe, or when monitoring is expensive, a market-based financial system emerges. Market-based financial systems include basic payment systems through which virtually all transactions clear and the capital markets which include the money, fixed-income, equity, futures, and options markets and financial intermediaries (Merton, 1990).

Financial arrangements in market-based financial system arise to assess potential investment opportunities, exert corporate control, facilitate risk management, enhance liquidity, and ease savings mobilization (Levine, 2002).

Market-based financial system approach assumes that efficient capital market institutions like exchanges and mutual funds have positive effect on stable economy. In keeping with this assumption, it is noteworthy that market-based financial system provides more diversified and rich risk management tools. In addition, transaction costs may be lower in a non-banked based financial system, and taxation may be in favor of market-based sources of capital (Mayer, 1990, p.308).

Another distinct feature of a market based system is that the agents trade claims on the risky asset (Allen and Santomer, 2001, p.13). Here, cross-sectional risk sharing becomes correspondingly more important. Because in market-based financial systems intertemporal smoothing by intermediaries is ruled out by competition from financial markets (Allen and Santomer, 2001, p.14).

Another claim is that market-based financial system performs better by promoting derivatives and technologic innovation. This approach also recognizes that the very important fact about banks is that they lead to decrease in market efficiency by means of restricting investments in new areas as well as they establish social network and close relationships, thus keep companies away from competition.

1.2. BASIC FUNCTIONS OF FINANCIAL SYSTEMS

Importance of financial systems stem from functions they perform. Financial system plays a mediating role between savers whose funds wait idle and borrowers who finance real sector investments. Efficiency in resource distribution may be provided by channeling funds through areas with higher returns.

Merton and Bodie (1995) advocate that financial intermediation changes rapidly and varies across borders while financial functions have a more stable structure. There is not a definite categorization on financial functions. Some (Levine, 2004, p.5; Halıcıoğlu, 2007) group basic functions of financial systems into five categories while some (e.g. Merton and Bodie, 1995) describe six functions. We follow a five-group categorization:

- Efficient capital allocation by knowledge generation for possible investments,
- Transformation savings into investments,
- Reduction in monitoring and controlling costs,
- Risk diversification and risk management,
- Easing trade of goods and services.

1.2.1 Knowledge Generation and Efficient Capital Allocation

As Merton (1990, p.263) asserts that the core function of the financial system is to facilitate the allocation and deployment of economic resources, both spatially and across time, in an uncertain environment. Because it is not an easy process for household savers to evaluate market conditions, it is deemed as a primary function.

A second point to note is that process would be expensive for individuals to gather information on the efficiency of the market. On the other side, borrowers have more and right information, respectively. To this extend, that results in information asymmetry among lenders and borrowers. Levine (1997, p.695) argues in a similar vein

that information asymmetry leads borrowers to treat involuntarily during investment process while assessing investment options.

Fabozzi (2002, p.8) distinguishes two sorts of costs associated with transactions; search costs and information costs. High cost of information gathering hinders transfer of capital to areas with higher returns. Information costs are costs associated with assessing the amount and the likelihood of the cash flow expected to be generated. Search costs represent the money spent to advertise one's intention to sell or purchase a financial instrument, and the value of time spent in locating counterparty.

Merton (1990, p.264) explains four potential costs of financial activities:

- Direct costs to participants, such as fees for using the markets or costs of filings,
- Distortions of market prices and resource allocations,
- Transfers of wealth among private party participants in the financial markets,
- Transfers of wealth from taxpayers to participants in the financial markets.

Financial intermediaries determine the most valuable investment opportunities concerning savings allocation since they are professionals, and create less cost in credibility evaluation of fund seekers in relative with an average small-size investor (Khan, 2000, p.6).

Another point to stress is that financial intermediaries increase capital productivity by means of financing risky investments but promising higher returns by information acquisition. In case financial intermediaries do not function, investors need to burden high costs individually in order to assess firms in need of fund and determine economic conditions.

Given many investors in short of capital, which is limited in nature, financial intermediaries ensure that capital allocation is effectively realized because they channel funds through secure investments via producing better information (Greenwood and Jovanovic, 1990, p.1076).

Merton and Bodie (1995) distinguish six core functions related to capital allocation:

- To provide ways of clearing and settling payments to facilitate trade.
- To provide a mechanism for the pooling of resources and for the subdividing of shares in various enterprises.
- To provide ways to transfer economic resources through time, across borders, and among industries.
- To provide ways of managing risk.
- To provide price information to help coordinate decentralized decision-making in various sectors of the economy.
- To provide ways of dealing with the incentive problems created when one party to a transaction has information that the other party does not or when one party acts as agent for another.

1.2.2. Channeling Savings Through Investments

Collecting savings from a great number of savers and then allocating is not a cost-efficient process due to asymmetric information and transaction costs. Improvement in financial intermediating motivates savings collection and channeling those through investments while costs are burdened by intermediaries. Process of collecting and channeling savings can be observed as direct and indirect finance (Mishkin, 2004).

Direct finance is the case that those having surplus fund interact with those in short of fund without interference of financial intermediaries. In other words, the ones

in short of fund acquire needed capital in payment for issuing securities or document qualified for debt and returned to lender at the end of maturity. Businesses raise funds directly from lenders in financial markets.

Indirect finance is, however, a market condition that financial institutions purchase financial assets issued by lenders and then sell securities issued by themselves to borrowers. Indirect finance involves financial intermediating activities.

The most effective function of financial intermediation is contribution to economic stability by channeling idle funds through productive fields. Nonetheless, it is particular of importance to found legal and governing infrastructure that provides possibilities leading to evaluation process tailored to market requirements to realize positive outcomes (Orhan and Erdoğan, 2005, p.25).

1.2.3. Monitoring Investments and Decrease in Investment Costs

A third function of a financial system to be stressed significant is reduction in investment costs. Decrease in investment costs initially results from intermediation costs. Cost decrease means productivity increase in financial sector.

In parallel with development in finance sector, competition created by diversified financial services provided by financial institutions reduces costs, decreasing borrowing interests. Provided that financial system decreases intermediation costs, a large part of savings is easily channeled through areas with higher returns and system proves productiveness (Darrat, 1999, p.33).

Lenders would like to monitor how the borrower manages capital, and they have a tacit effect capital allocation. Shareholders and lenders ask top management to maximize firm values. Subsequently, savers demand financing business in case of increased capital productivity and efficiency (Jensen, 1976, p.305).

Financial institutions control whether resources are used effectively by monitoring firms itself and managers. Financial system provides a capital accumulation by monitoring function (Levine, 2004, p.667). Auditing process is costly, and it may also negatively affect investment decisions. Financial system reduces auditing cost by

financial intermediaries and regulations. Hence, savers are motivated to contribute to investments. Economic efficiency is a natural product of increase in investment (Boyd and Smith, 1992, p.409).

1.2.4. Risk Diversification and Management

Among basic characteristics of financial markets, uncertainty and risk related to environmental uncertainty is more evident. Financial system presents investors different investment opportunities to reduce risk (Miskhin, 2004, p.32). Elements of financial system, i.e. banks, stock markets and other intermediaries, perform risk diversification function with financial instruments. During portfolio management, financial intermediaries invest in not only companies in the same economic activity but also different geography, sector and securities. To this end, spreading risk by allocation of capital to different instruments provides balance between profit and loss.

Risk diversification does not refer to as investment distribution to different fields. Financial system, however, leads savings to different investment opportunities to decrease embedded risks (Devereux and Smith, 1994, p.535; Mishkin, 2004, p.32). High risk propensity of high return investments in relative to low return ones creates differences in risk perceptions of savers. Unless regulations for risk diversification and portfolio management exist, risk averse savers invest their limited capital in low-return but secure project instead of high-return ones. On the other side, improved financial intermediation services and diversified risk tools lead savers to finance riskier projects. New and high technology investments redistribute savings, resulting in positive effects on economic growth (King and Levine, 1993, p.717).

1.2.5. Easing Trade of Goods, Services, Contracts

Financial system facilitates exchange of funds by introducing new financial instruments that financial markets require as a consequence of rapid technologic changes. Specialization and technologic development reduce transaction costs of financial intermediation, thus positive contributions to economic growth. Decrease in transaction costs facilitates trade of goods and services, and increases productivity (Greenwood and Smith, 1997, p.150).

1.3. FINANCIAL INSTITUTIONS

Financing businesses by self-capitalization is the desired state for economies as well as businesses themselves (Söyler, 2007, p.15). A must of sustainable economic growth for developed and developing countries is existence of a financial system comprising efficiently functioning financial institutions.

Intense competition and higher pays lead developed countries to produce high-tech products, thus resulting in finance need problem. The need of finance introduces new innovative solutions as financial techniques and institutions. In a similar vein, less developed or developing countries are to create new finance alternatives to compete and integrate with developed industries.

Mishkin's (2001) analysis of the financial market and institutions provides a good example of financial structure. The researcher discovered eight puzzles to understand how the financial system works (pp.182-185).

- Stocks are not the most significant source of businesses.
- Businesses do not use issuing marketable debt and equity securities as a primary way of financing.
- Indirect finance is many times more important than direct finance.
- Banks are the main sources for businesses to get financed.
- Financial system is needed to be heavily regulated.
- Only large, well-established corporations have access to securities markets to get financed.
- Collateral is a main characteristics of debt contracts.
- Debt contracts are legal documents that mandate substantial restrictions on borrower.

Financial intermediating has been dominated by banks; however, in parallel with development in the soundness of financial market, new intermediaries have assumed roles in the market. As Allen and Santomer (2001, p.5) imply that the share of assets held by banks declined and proportion of financial assets held in the form of nonbank institutions grew in the last decades. Nonbank institutions include, but not limited to, mutual funds, stock and bond markets, insurance companies, factoring leasing and consumer finance. Hereafter, financial intermediaries are shortly described and main functions of those are explained.

1.3.1. Banking

A bank is a collection of traders who form a body to provide deposit funding, and coordinate their actions regarding the borrower (Boot and Takor, 1997, p.702). Banks are significant agents as a solution to moral hazard problem of financial markets leading to monitor problems (Boot and Takor, 1997, p.726). Moreover, asymmetric information problems lead small businesses, in particular, to banks as they hardly obtain credit in public debt markets.

Banking system transforms a longer-term asset into a shorter-term one. On one hand, the bank gives the borrower a loan for the length of time sought, and on the other hand, it provides the investor/depositor a financial asset for the investment horizon on demand (Fabozzi and Peterson, 2003, p.55). To this end, the role of the bank is qualitative asset transformation as a depository institution.

1.3.2. Lease

A lease is a contractual agreement providing the use but not the ownership of an asset. Productivity is based on the use not on the ownership (ct. Söyler, 2007:21), but on the economic use of assets. Through a lease contract, a firm buys the right to use an asset for a specified period of time, rather than buying the asset itself. Brealey and Myers (2000, p.735) defines leasing as a rental agreement involving a series of payments for a period of a year or more. In a similar vein, IAS17, the international accounting standard for leases, where a lease is defined 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”.

Leasing contracts can be applied to different types of movable and immovable goods, such as property, plant and equipment. European Leasing Association asserts that the simple term lease covers a myriad of different contract types, the common feature of which is that the lessor retains the ownership of the leased asset throughout the life of the contract (European Leasing Association, online). To this end, leasing is used interchangeably with equipment rental credit, long term rent, equipment rental and financial leasing (Söyler, 2007:22).

A great deal of research has been devoted to classification of leases. If the lease is short-term or cancellable, it is called operational lease (Brealey and Myers, 2000, p.736). Likewise, if the lease last for the economic life of asset or presents no opportunity to be cancelled, it is a financial lease.

There are two main parties involved in a lease contract. The lessor is the party which holds the title to the asset and the lessee is the party who uses the asset for a specified period of time in exchange for a specified rent payable to the lessor. Critical to the leasing agreements, legal ownership (retained by the lessor) is separated from the economic use of the asset (held by the lessee).

Most of the academic research argues that lease contracts and loan agreements are substitutes to each other (e.g. Marston and Harris, 1988, Adedeji and Stapleton, 1996, Yan, 2006). Brealey and Myers (2000, p.736) stress that a financial lease is not different from borrowing money. In fact, lessors are mostly no different players than the loan-providers themselves as most commercial and investment companies, as well as financing companies run active leasing operations.

Manufacturers can benefit from leasing contracts for market segmentation and better pricing of the option (Hendel and Lizzeri, 2002). Furthermore, leasing contracts offered by a competitive industry lead to efficient allocations eliminate adverse selection problem (Hendel and Lizzeri, 2002, p.117).

Generally speaking, it can be concluded that the leasing provides capital which is used for investment purposes. This in turn translates into a healthy economy, generates employment, and promotes innovation. To this end, it would be proper to state that leasing plays an imperative role in the economic development and growth and contributes a major share in the GDP by supporting in channelizing of funds (Pakhtusov and Bay, 2006). Leasing is discussed in the following chapter in details.

1.3.3. Consumer Finance

Consumerism behavior resulted in increases in household income and wealth (Ryan, Trumbull and Tufano, p.461). These trends drove demand for many products and services, including financial products and services (Ryan, Trumbull and Tufano, p.461). A summary of reasons why consumer finance is demanded from 2001 to 2010 is shown in the table below. Percentages display a stable picture; however, education in total has an ascending trend while demand for vehicles financing use has descended by 2010.

Table 3 Consumer Finance, Purpose of Debt

Purpose of debt	2001	2004	2007	2010
Primary residence				
Purchase	70.9	70.2	69.5	69.5
Improvement	2.0	1.9	2.3	1.9
Other residential property	6.5	9.5	10.8	10.5
Investments excluding real estate	2.8	2.2	1.6	2.0
Vehicles	7.8	6.7	5.5	4.7
Goods and services	5.8	6.0	6.2	5.7
Education	3.1	3.0	3.6	5.2
Other	1.1	.6	.5	.4
Total	100	100	100	100

Source: Bricker, Kennickell, Moore and Sabelhaus, 2012, p.69.

Firms responded with innovations that offered consumers more choices. Consumer finance is one of those innovative tools of the modern economy as well as electronic banking, credit and debit cards, mutual funds, mortgages.

Consumers make use of this sort of finance to buy certain items like furniture or car, to make some improvements to housing, to refinance small debts (Mishkin,

2001, p.325). Consumer finance is now a significant area of banking. But there are some significant differences between banks and consumer finance. State Development Agency (SDA) (2007, p.111) lists those as;

- Consumer finance companies provide credit to consumer by arranging installments of goods and services to be purchased by customer from contractors who work with financial companies in a regular basis instead of offering it in cash.
- Consumer finance companies are not delegated to collect deposits.
- Consumer finance companies cannot issue letter of warranty.

Yet, consumer finance provides consumers financial flexibility. Ryan et al. (p.466) identify four major trends in consumer finance. First number of products is more as a consequence of demand, innovation, and changing firm boundaries. And these companies may be owned by either separate corporations or banks. Second, more people have access to financial products that consumers broadly participate in the financial activities. Third, by changing in sales and marketing strategies, increases in consumer responsibility have been witnesses in consumer finance. Finally, interest rates applied to consumer finance is presumably higher than other sources. Consumer finance companies take on more bad credits because customers who cannot obtain credit from other sources ask for credits.

1.3.4. Mutual Funds

Mutual funds are one of fastest growing areas of financial intermediary (Gruber, 1996). Mutual fund, as a financial intermediary, pools the funds of market participants and uses those funds to buy a portfolio of securities such as stocks and bonds (Fabozzi and Peterson, 2003, p.55). Gruber (1996) reports that mutual funds are the second largest investment tools, just falling short of commercial banks and ahead of insurance companies, as of 1994.



Figure 2 Cumulative Performance of Carmignac Patrimoine, The Largest Mutual Fund in Europe
Source: MPI, 2010.

Financial intermediaries channel small investment resources through selling investors shares (Mishkin, 2001, p.325). Transaction costs are mainly decreased by high volume purchases of securities. High volume transactions also provide risk diversification. Decrease in transaction costs and spreading risk attract small investors. Gruber (1996) adds professional management and customer service as other incentives to go with mutual funds.

1.3.5. Hedge Funds

The last two decades witnessed a growing interest on hedge funds (Fung and Hsieh, 2000; Goetzmann and Ross, 2000). According to Fung and Hsieh (2000) researchers, main reason seems to be that hedge funds are typically organized as private vehicles not in the responsibility of financial markets regulators. Likewise, Goetzmann and Ross (2000) list a number of factors as historically high risk-adjusted returns relative to other investments, the relaxation of regulatory constraints on hedge-fund investment and the growth of global markets and opportunities for skill-based investing.

Hedge funds employ opportunistic trading strategies on a leveraged basis (Fung and Hsieh, 2000). Hedge funds can and do make use of short selling, derivatives, and options, all of which are complex and potentially nonlinear in payoffs (Kambhu, Schuermann and Stiroh, 2007, p.2). They make liberal use of leverage, be it directly through the use of debt or indirectly through leverage embedded in derivatives (Kambhu, et.al., 2007, p.2).

Definition of hedge funds may differ according to research topic. For instance, hedge fund is a special form of mutual fund (Mishkin, 2001, p.325). But hedge funds have much more flexibility than mutual funds (Goetzmann and Ross, 2000, p.2). What makes it different from mutual fund are estimated asset on the order of USD200 billion, minimum investment requirement between USD100,000 and USD20 million, and commitment for long periods of time. On the other hand, Fung and Hsieh (2000) relates hedge funds with commodity funds. According to Goetzmann and Ross (2000) hedge funds are investment companies that actively trade in marketable securities. In short, we may contend that hedge funds are largely unregulated, private pools of capital (Kambhu, et.al., 2007).

Although hedge funds are sort of aggressive investment companies, they do differ from other market participants in some other important ways such as their use of a wide range of complex trading strategies and instruments, opacity to outsiders, and their compensation structure (Kambhu, et.al., 2007).

Another distinctive feature of hedge funds is hedge funds returns are almost entirely a function of the manager's ability to identify and capture transitory trading opportunities (Goetzmann and Ross, 2000, p.3). In this sense, hedge fund managers typically develop focused knowledge of particular markets, securities and institutions. Because they can invest in a broad array of assets and pursue many investment strategies such as global macro, market neutral equity, convertible arbitrage, or event-driven (Kambhu, et.al., 2007). Hedge fund managers are arguably better positioned to deliver performance compared to investment managers who rely purely on stocks, bonds or assets gaining value (Man, 2012). A comparison of hedge funds generating

strong returns while also protecting capital with other two long-term assets is depicted in the graph below.

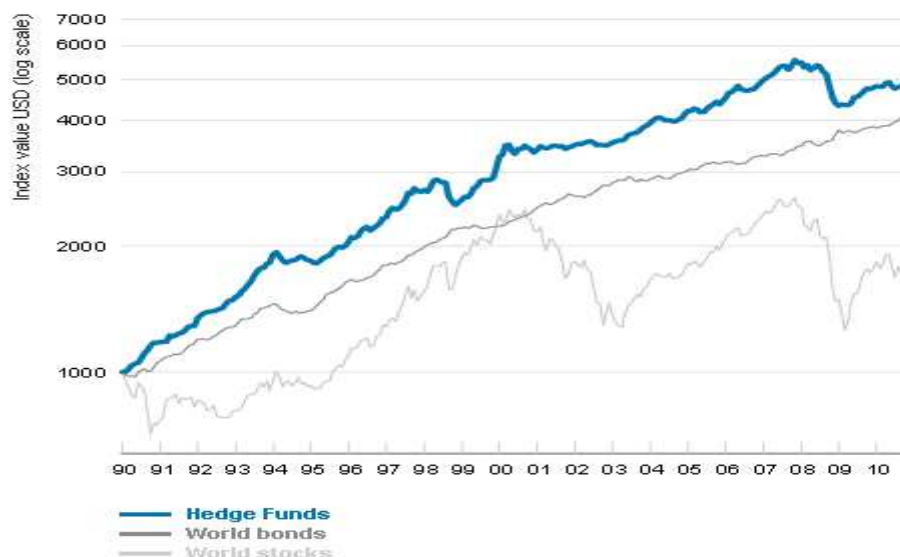


Figure 3 Alternative Investments - Returns in both Rising and Falling Markets

Source: Man, 2012,

In parallel with risks inherited in the managers' behaviors, some incentives are introduced such as compensation based on both scale and absolute performance through a dual fee structure (Kambhu, et.al., 2007, p.2). Since management fee is very high, aggressive investment strategies are encouraged.

1.3.6. Insurance Companies

Insurance companies are the classic example of a financial intermediary offering risk protection. They sell protection against loss in value of human capital, physical property and financial assets (Merton and Bodie, 1995, p.338). Financial losses may be large relative to financial resources in hand. However, a great deal of financial losses is resulted from certain events that could be avoided by insurance mechanism. The life insurance company invests and manages the funds, building up these funds for the eventual payout of insurance policy benefits (Fabozzi and Peterson, 2003, p. 67).

Insurance companies provide customized products and services that do not lend themselves to the standardization necessary to support a liquid market (Merton and

Bodie, 1995). Insurance companies provide ways to transfer economic resources through time, across geographic regions, and among industries (Merton and Bodie, 1995, p.338). However, some requirements should be covered in order to benefit from insurance (Skees and Barnet, 1999, p.425-426):

- There needs to be a large number of exposure units. The larger number of exposure units exist, the more accurate predictions of future losses can be provided.,
- Losses should not be occurred due to act of management.
- Loss must be acceptable within a given level of reliability.
- Average frequency and average severity of losses shall be calculated to develop a premium rate.
- Premiums are to be affordable. That's to say, premiums need to be economically feasible.

1.3.7. Factoring

Factoring is an activity based on transferring of rights of short-term receivables related to credits made to domestic or international sales to a third party called a factor or a factoring company.

Factoring companies are generally a subsidiary or a department of banks or other financial institutions. Factoring requires large working capital, know-how and common information acquisition capacity.

Domestic Transactions/Checks as

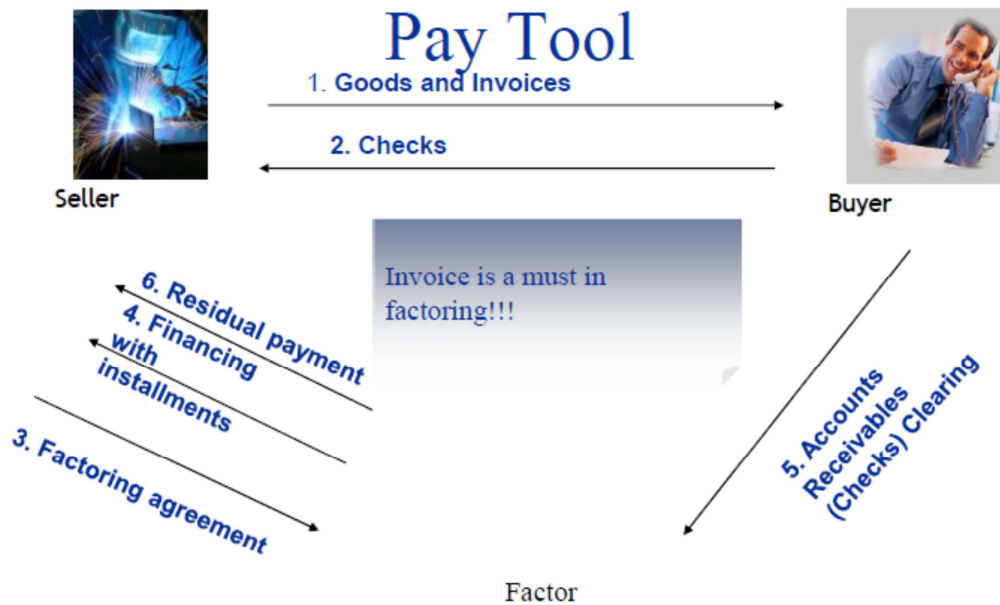


Figure 4 Relationships among Parties in Factoring

Factor immediately turns payments of receivables into liquid assets and makes pre-payment to customer. Because customer does not want to wait on the maturity date, invoice is transferred to factor. That's to say, factor takes on the responsibility of claims on customer. The figure below shows relationship among customer, factor, and buyer.

Factoring is most common in such industries that are characterized by many small producers and retailers who have not established long lasting relationships with each other (Brealey and Myers, 2000, p.892). Clothing and toy industries are good examples for factoring. SDA (2007, p.100) clarifies the reason behind SMEs' concern on factoring. Factoring facilitates export, provides opportunity to ensure full payment of exports and to benefit in advance payments as well as factoring makes domestic resources available to reuse and presents time and effort savings to collect receivables.

CHAPTER TWO

LEASING: A LITERATURE REVIEW

2.1. HISTORICAL PERSPECTIVE

The basic concept of leasing dates back to at least 1800 B.C., when the Babylonian King Hammurabi described the transaction in his Code of laws, stating that the use-rather than ownership-of equipment is what produces health (Encyclopedia of Business, online). However, history of leasing may be led to Sumers at 2000 B.C. that they had leased agricultural tools, land and water rights, animals (Halladay and Amembal, 1995, p.4). Similarly, Fenikes leased ships and ranches.

Leasing, as of its contemporary context, first appeared in the United States in the 1700's to finance the use of horse-drawn wagons. By the mid-1800's, railroad tycoons, battling to extend their private railroads across the country, required tremendous amounts of new capital (Taylor, 1998). Most banks, however, considered railroad financing risky and refused to lend to the emerging transportation industry. Locomotives, cars and other railroad equipment had to be financed using new and creative methods - the forerunners of the equipment lease. Accordingly, transportation equipment dominated the leasing world for two centuries, beginning with horses, buggies and wagons in the early 18th century to barges, railroad cars and locomotives in the late 19th century.

The 1870's in particular saw an important transformation in the process with the introduction of what is now termed a true lease, allowing the lessor to retain the equipment at the end of the lease. The transformation was realized when companies began to act as lessors for the equipment by leasing it out while maintaining the title to it. Often, the lessees would be shippers who wanted control over their shipments without the responsibilities of ownership. So the operating leasing or true lease concept

was introduced. Meanwhile, other manufacturers were looking for additional ways to sell their merchandise. Manufacturers took advantage of lending opportunities, making sales more attractive to customers by offering leasing plans with payment installations.

In the 20th century, economic progress in the early 1900's generated an increased attraction towards equipment leasing. Many citizens during the 1920's enjoyed the lending market to obtain what they could not immediately afford.

In the 1950's, consumers started to demand a vast array of goods. They asked for speed, convenience, and mobility. Manufacturers utilized leasing to help overhaul old operations quickly and create new facilities for the production of new products like televisions, advanced communications equipment and airplanes. As a consequence, leasing began to emerge as an alternative finance to acquire equipment (Contino, 2002). The introduction of the first corporation dedicated primarily to leasing, the U.S. Leasing Corp., was in 1954. Vendors began to understand the benefits of leasing their equipment to customers through third party corporations or in-house programs. Related finance laws started to change and adapt to meet the rising demand for equipment financing.

Leasing industry exploited opportunities in Europe; in particular England and Germany, following the U.S. Japan industry also welcomed leasing as an alternative finance method. 1970s introduced leasing to Brazil, Malaysia, Mexico, Korea, Taiwan, Israel, and India, respectively (Söyler, 2007, p.22).

Until the 1970s, there was no accounting standard for leasing in most countries, except for the U.S. (Cooke and Curuk, 1996). At the time, lease contracts were generally accounted for as rental agreements and were treated accordingly, as in the case of operating leases. With increasing need for standardization and growing pressure coming from the users of financial statements, many countries reviewed their lease accounting methods to achieve higher standards.

Since 1970s, the leasing industry grew considerably throughout the world. Economic stimulus packages, tax law changes, accounting changes, changes in lease structures in the 1970s and 80s, only challenged the industry to reinvent itself, continuing its upward slope profitability and volume level. The percentage of capital

acquisition by leasing versus other methods of financing equipment has grown every year.

In mid-90's, companies were leasing everything from airplanes to televisions and furniture. In the U.S. leasing became the most common way to finance plant and equipment for manufacturing companies. Towards this end, the equipment leasing industry plays a major role in the financial market (Contino, 2002). International Finance Corporation, real sector actor of World Bank, has a significant role in making financial lease worldwide provided that it pioneered establishing financial lease companies in Colombia, Jordan, Korea, Philippines, Sri Lanka, Thailand and Uruguay (Söyler, 2007:22).

Around 80% of all businesses reported to lease some kind of equipment, and overall a little less than a third of all business equipment in value were leased. The invention of the “e-lease” in 1990s also contributed significantly to the volume increases. According to Leaseurope data since the attack on the World Trade Center Sep 11, 2001 leasing industry did shrink for a second year running (2008 and 2009). Overall, leasing volumes for the top 50 countries in 2009 fell to USD550bn which represents a 23.5% decline. It is obvious that 2008 global crisis affected much of the sector (see Figure 5); therefore, a severe decline was experienced following the crisis. Aftermath, a movement towards incline has been observed and 2010 volume reached to USD617bn.

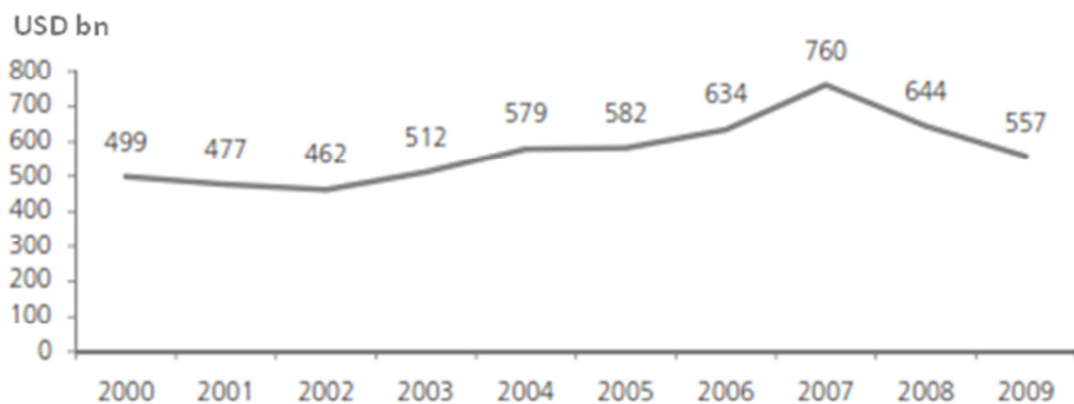


Figure 5 World Leasing Volume (1990-2009)

Source: **World Leasing Yearbook, 2011.**

The relative importance of leasing and its contribution to the economy can be expressed in terms of what is referred to as a "penetration rate". This is calculated by taking new leasing business as a proportion of investment to calculate the share of investment financed by leasing (European Leasing Association, online). A general outlook of countries worldwide is displayed in the table below. It is obvious that penetration rates in developed economies either stay stable or descend while those in emerging economies have an ascending tendency. Leasing is often considered to be a more accessible means of finance than traditional debt. This is particularly true for those countries with low current returns but with high growth opportunities, such as Brazil, Russia, China, and India.

Table 4 Leasing Market Penetration (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
USA	32,0	32,0	32,3	29,4	28,7	28,1	30,9	30,9	30,9	30,0	31,7	31,0	31,1	31,1	29,9	28,9	27,7	26,0	16,4	17,1
Japan	9,0	7,7	7,5	8,1	8,9	9,4	9,5	8,9	9,2	9,5	9,1	9,2	9,3	8,7	8,7	9,3	9,3	7,8	7,2	7,0
Germany	10,7	10,5	10,4	11,1	10,9	11,5	13,3	13,6	14,7	15,1	14,8	13,5	9,8	21,7	15,7	18,6	23,6	15,5	16,2	13,9
Korea	16,1	21,5	20,0	23,0	26,2	30,0	25,5	28,3	13,1	2,9	2,4	1,6	3,9	4,4	5,6	7,7	9,4	n/a	10,5	4,4
UK	20,3	23,0	16,6	19,0	15,8	17,9	24,0	19,2	15,0	15,9	13,8	14,4	15,3	14,2	9,4	14,5	12,7	11,6	20,6	17,6
France	17,3	16,8	14,6	13,1	13,0	15,2	15,2	12,4	17,0	15,7	9,2	13,7	12,9	15,4	9,0	11,7	11,0	12,0	12,2	3,1
Italy	21,3	15,8	11,5	10,8	13,1	16,8	16,8	10,9	12,3	12,4	12,3	10,4	8,6	7,6	11,4	15,1	15,2	11,4	16,9	10,0
Brazil	1,0	4,0	8,0	10,0	20,0	20,5	16,1	20,7	20,7	12,5	11,4	7,6	3,6	3,8	7,7	13,5	16,9	19,0	23,8	n/a
Canada	9,3	10,4	11,0	12,8	14,0	15,9	16,1	15,7	22,0	22,0	22,5	22,0	20,2	22,0	23,3	23,9	22,0	22,0	19,6	14,0
Australia	25,8	16,6	20,3	22,1	21,8	22,3	20,0	26,0	25,0	25,4	20,0	20,0	20,0	20,0	20,0	20,0	18,0	14,2	10,0	10,0
Sweden	15,4	22,3	26,3	20,0	20,0	27,0	28,0	28,0	20,0	17,5	12,9	9,2	13,0	11,6	12,7	11,8	11,8	14,3	19,4	17,5

Source: World Leasing Yearbook, 2011.

When the regional distribution of leasing volume analyzed Europe represents the biggest part in the World.

Table 5 Volume and Growth by Region (2008-09)

Rank by volume	Region	Annual volume (USD bn)	Growth 2008-09 (%)	Percentage of world market volume 2008	Percentage of world market volume 2009
1	Europe	211,5	-32,2	42,6	37,9
2	N. America	190,8	-15,6	30,8	34,2
3	Asia	112,7	-9,1	16,9	20,2
4	L. America	30,2	-44,3	7,4	5,4
6	Aus/NZ	6,5	-6	0,9	1,2
5	Africa	5,7	-41	1,3	1
Total		557,4			

Source: World Leasing Yearbook, 2011.

According to Leaseurope data, European Leasing Market Volume for 2011 indicating new leasing business in Europe is EUR211.5bn. These results show that European lessors decreased their business volume at the second consecutive year. New leasing business decreased across all assets segments.

When country data are analyzed, it is observed that there is still significant growth potential for the operating leasing, especially in emerging countries. Data below show the penetration level of leased assets in CEE countries. Haiss and Kichler (2009, p.6) underline that the current turmoil in CEE financial markets reinforces the need to know the various streams of debt. However, higher demand for investment in the region leads Eastern European leasing market to experience very high growth rates in recent years (Haiss and Kichler (2009, p.6-7).



Figure 6 Penetration Level in the Leasing Industry of Emerging Markets

Source: White Clarke Global Leasing Report 2011

2.2. CONCEPTUAL DISCUSSION

In theory, any company in the financing business is accepted as a potential lessor of equipment. Banks and independent leasing companies are, therefore, major players in leasing industry.

As Contino (2002) states, competitive nature of equipment leasing and the expertise required, however, urges only certain types of organizations to involve in the leasing market. Furthermore, leasing companies who can buy equipment in quantity, service it efficiently, and have the opportunity to sell equipment at a good value usually specialize in specific equipment (Brealey and Myers, 2000, p.735).

Whatever form of lease is, there are some basic characteristics that are observed in lease contracts. First of all, there is a lessee (user) and a lessor (owner). Contino (2002, p.4) describes any equipment user as a prospective lessee.

Contino (2002) also defines users ranging from multinational corporations, to sole proprietorships, to individuals using equipment for personal reasons. Potential lessors are classified into five categories as individuals, independent leasing companies, lease brokers, captive leasing companies, and banks.

Independent leasing companies provide a major source of equipment lease financing. There are two types of independent leasing companies; the ones that merely buy and lease equipment to the user and those that provide nonfinancial services to lessees in addition to the equipment financing like maintenance or advice on the equipment's operation and design (Contino, 2002). The former is called finance leasing companies whilst the latter is as service leasing companies. Superiority of the latter to former is limited activity in such an equipment or industry as computers and construction that those reduce leasing risks because of intense specialization (Contino, 2002, p.5).

Lease brokers work with a certain fee amounted to 0.75% to 8.0% of the lease cost, which is typically paid for by the lessor (Contino, 2002). Basic function of brokers is to match lessees with lessors in convenient conditions. One of the assets brokers own is market knowledge of the industry. Once brokers perform the activities on a continual base, they are well aware of current lease rates, industry specific needs of both lessors and lessees, and documentation. They facilitate documentation and speed up many transactions.

Brealey and Myers (2000, p.735) address lessors as equipment manufacturers. Contino (2002) refers to equipment vendors setting up their own leasing companies as captive leasing companies. Attractive lease rates because of lower profit margin may be best advantage of captive leasing companies in relative to other industrial players.

There are also some drawbacks about banking functions in the leasing industry. First, banks, one of major industrial player, generally prefer net leases because those leases provide the least risk and most similarity to their lending activity (Contino, 2002). Because leasing is not a basic task of banks, there is a risk of termination in case

banks incur any financial difficulties. Banks are not inclined to take on risks coherent with equipment and lessee, thus they charge larger rates.

Wealthy individuals are other sources of leasing. A few innovative leasing companies and investment bankers have developed attractive investment programs for individuals which will make them an increasing part of the equipment financing business (Contino, 2002).

Second, lessee makes commitment to pay lessor installments at a specific date. Third, in case a lease contract is terminated, the leased equipment is to be returned to lessor.

2.2.1. Incentives to Leasing

Although, there is a common understanding that the leasing and debt are substitutes to each other; the relationship between the two and the exact degree of substitutability is yet unresolved in empirical studies. While some research suggests that leasing and credit taking are substitutes, leasing does not seem to be used as an alternative means of financing if legal and institutional conditions are weak (Haiss and Kichler, 2009, p.5).

Ang and Peterson (1984), for example, define the relation between leasing and debt as complementarily rather than substitutability, referring it as the “leasing puzzle”. They advocate that greater use of debt is associated with greater use of lease. However, more recent studies (e.g. Yan, 2006) show that empirical findings are still mixed and that most techniques still suggest that leases and debt are substitutes rather than complements. The researcher reports that “*in those firms with more growth options or larger marginal tax rates, or in those firms paying no dividends, the substitutability is more pronounced.*” (2006).

Contino (2002, p.2) discusses the issue from perspective of both the lessor and the lessee. In case both have the same borrowing rate capabilities, researcher contends that leasing may not be the most economic way for a lessee to acquire equipment it needs. Thus, the lessor should be able to use available tax benefits as ownership, accept

them as a lease profit ingredient, and also arrange rental reduced so as to pass them on to a lessee. To summarize, leases and debt may be accepted as substitutes when the cost of debt increases with leases or vice versa (Yan, 2006, p.710).

Table 6 Comparison of Alternatives

Types of Corporate Liabilities	Operating Lease	Financial Lease	Secured debt	Ordinary debt	Subordinated debt	Preferred stock	Common stock
Priority of claim	Highest ←————→ Lowest						
Can default trigger bankruptcy	Yes					No	
Control rights	Right to use the asset		Rights limited to covenants in contract			Rights limited to covenants and voting rights of	Rights limited to voting
Legal ownership	No		Yes				
Economic ownership	No	Yes					
Tax shields: Cash flows	Full lease payment deductible	Interest part lease payment deductible	Interest payment deductible			Dividend not deductible	
Depreciation	No	Asset financed by financial lease, debt or equity is depreciated by economic owner					
Additional tax incentives	Not entitled	Entitled to tax incentives attached to the financed asset					

Source: Contino, 2002.

Literature suggests different incentives in choosing leasing over a purchase agreement or a debt financing. Leasing is preferred to debt by those companies who face agency costs. Lease finance is a good tool when a firm is experiencing informational asymmetry problems. Moreover, leasing is thought to be used as a tool to overcome the credit rationing faced by some companies.

On the other side, leasing might increase a firm's debt capacity. According to Hull and Hobard (1980, p.631), following reasons might affect a firm's debt capacity:

- Imperfect knowledge on the part of lenders (this may be a contributory factor long after lessees are legally required to disclose all long-term commitments),

- Leasing is less risky to a financial institution than debt secured on the leased asset because it is generally more inexpensive and easier to repossess the asset in the event of default.

- The lessor has a share in the residual value of the asset.

- The lessor may be liable to some third party claims for losses arising out of the use of the equipment.

Most advantages are grouped either as an alternative financial tool or as an alternative ownership for the use of an asset. Tax advantages and reduced cost of capital are the most common advantages that are referred to in the context of a financing tool while improved risk sharing and operating efficiencies are the most known motivations that are referred to in asset usage. Below is a summary of the main advantages of a leasing contract when compared to a purchase and/or debt financing.

Advantages of leasing with regard to the lessee are listed below. Halladay and Amembal(1995, p.25) break the reasons to seven major categories as technological, financial reporting, cash management, income tax, ownership, flexibility and convenience, and economic.

From the perspective of lessee, leasing contracts offer significant tax advantages in many countries since lessees can offset their full lease payments against income before tax, compared to only interest payments on conventional debt financing. Many governments grant tax incentives to leasing because they recognize that it enables start-ups and small to medium sized entrepreneurs (SMEs) to access financing for investment.

In addition, lease transaction amortizes the principal like debt. However, only the “used-up” part of the asset during the lease term is amortized instead of the total value of the asset.

Next, leasing provides additional means of financing for SMEs for capital financing and new technology. Since equipment is subject to technological

obsolescence because of rapid change, leasing aids the lessee to hedge against related risks (Halladay and Amembal, 1995, p.26).

Leasing also represents an effective way to reach those companies whose financial needs cannot be met by conventional loan-financing. Because banks mostly prefer to lend larger scale companies with well-developed balance sheets and good credit track-records. Smaller scale businesses with no strong credit history often find it difficult to access to bank financing. The leasing companies focus on the lessee's ability to generate cash flow to service the lease payments, rather than relying on its credit history, asset base or capitalization. Accordingly, it creates new opportunities for those companies which lack a good credit track record but prove a strong cash flow attached to the project in hand. Sharpe and Nguyen (1995) argue that other "financial contracting" costs also might favor leasing over borrowing. High information asymmetry, reduction in information costs and other contracting costs are among the savings that can be reached through a leasing agreement, after which cost of capital comes down and leasing can serve as an arbitrage vehicle.

Furthermore, since the leasing contracts can be customized to meet the cash flow needs of the lessee, it creates more flexibility. Eades and Marston (2002) also suggest that their study shows that the option to purchase, renew, sublet and cancel are among the most frequently reported lease characteristics, all of which provide significant flexibility and value for lessees. Brealey and Myers (2000, p.737) argue that leases seem expensive are really not priced high because of cancellation option.

Moreover, SMEs rarely have additional assets for the collateral required by conventional banks. In leasing contracts, security for the transaction is provided by the asset itself. Since there is no need for additional collateralization, leasing is preferred from the convenience point of view and can be arranged more quickly and simply.

Leasing usually finances a higher percentage of the asset, compared to a loan financing, often with low or no down payment. Particularly, captive leasing companies and financial leasing companies offer better opportunities on behalf of leasing an asset.

The asset financed through a lease is depreciated over the life of the lease, rather than its economic life. Aggregate periodic lease rental payments (interest related financing costs and payments against principal) can be booked by the lessee as a business expense to shield against tax liability on income earned. Accordingly, the discounted present value of cash disbursements over the term of the lease is lower compared to the discounted present value of payments associated in acquiring an asset via bank-financing.

Furthermore, leasing decisions are sometimes made to avoid a user's internal capital budget restrictions (Contino, 2002, p.13). Capital equipment purchases above a certain amount require a manager to obtain prior approval of Board of Directors, which may be difficult or impossible. If the equipment is leased, management may be able to account for the rental payments as an operating expense, even though the lease represents a long-term financing similar to a capital expenditure, to avoid the approval problem. Thus, they are able to pay lease out of the operating budget falling within their spending authority (Halladay and Amembal, 1995, p.30).

With above-mentioned method, capital budget of the lessee may also be maximized. In short, leasing also provides possible increased cash flow (Contino, 2002, p.14). It may be formulized as; *“the less the user has to pay to acquire necessary equipment, the more cash it has available.”*

Leased contracts can be used to optimize the risk profiles of the contracting parties. For example Smith and Wakeman (1985) discuss using a metering clause to create an additional operational hedging for the lessee by tying the lease payments to the intensity of the asset's use and bonding the lessee to sustain the asset's value and permitting the lessor to price discrimination. Likewise Contino(2002, p.14) emphasizes hedge function of leasing against inflation. While the lessee owns the leased asset at current rates via leasing, the lessee pays for it from future earnings.

One more advantage to stress is that once rent payments of a leasing are deemed to be an operating expense, profitability ratios make the lessee more flexible regarding its borrowing capacity (Contino, 2002, p.14). Furthermore, the lessee has

higher liquidity ratios suggesting that leasing based companies manage their operating cycles more efficiently (Lasfer, 2005, p.4).

From the perspective of the lessor, lease contracts can create tax arbitrage advantages, especially if the owner of the asset (lessor) faces a higher marginal tax rate compared to the firm that uses the asset (lessee). Eades and Marston (2002) suggest that because the owner places a higher value on depreciation tax shields, the total tax liability can be minimized by the owner acting as a lessor rather than selling the asset to the ultimate user. Brealey and Myers (2000, p.737), on the other hand, advocates that the lessor may pass on some of the tax advantages to the lessee by lowering lease payments. That's to say, depreciation tax shield may be better used by the lessor. However, Contino (2002, p.33) recalls that a change in tax laws could affect the lessor's economic return. Changes in the tax laws may affect depreciation life, depreciation method, and/or tax rate on corporate income, thus leading to a substantial positive or negative impact.

Second, leasing mostly offers the advantage of not requiring any additional collateral beyond the security of leased asset itself, and of simpler repossession procedures since the ownership of the asset is held by the lessor.

Third, because the lessor purchases the equipment directly from the supplier the funds are dedicated for one specific use and that there is no opportunity for the lessee to use the funds for other purposes.

Another advantage is on transaction costs incurred. Although leasing contracts usually have higher spreads compared to bank loans, when all costs are considered, including the cost of assigning collateral, documentation, and slower processing times by the conventional banks, leasing might offer lower transaction costs. Moreover, simpler documentation and quicker processing can keep transaction costs down, leading to higher volumes and lower costs. It is apparently clear that using a simple, standard lease contract hinders incurring large administrative, investigative and legal costs (Brealey and Myers, 2000, p.737).

Adding value and contribution to employment and welfare is another positive outcome of the lease. Investment by means of leasing leads to new employment opportunities, resulting in low unemployment and high welfare (Erol, et al., 2011, p.91).

Leasing also supports technological improvement by following new technologies and transferring them to domestic market (Erol, et al., 2011, p.91). Last but not least, the lessor may benefit from the depreciation allowance factor in a lease contract, especially in operating leases.

In addition to advantages, there are few disadvantages of the lease. For instance, the right of use is limited that the lessee needs to get permission to make any modifications. Exchange risk exposure in case installations are dollar-denoted is another disadvantage. The lessee cannot exploit junk cost of the leased equipment. One more disadvantage is that the leased equipment may not be used by third parties within contract period (Erol, et al., 2011, p.92).

2.3. FINANCIAL VS. OPERATIONAL LEASING

While leasing operations can be classified in different ways, depending on the terms, parties and computation methods; the most conventional classification talks about two main types of leasing: financial and operational.

2.3.1. Financial Leasing

Some leasing contracts last as long as the economic life of the leased equipment. To this end, asset economic life-long lease contracts are called financial leasing. Brealey and Myers (2000, p.736) call it as capital leasing or full-payout leasing.

A typical financial lease is a transaction among three parties. The lessee negotiates with equipment manufacturer and organizes paperwork. Then the lessee applies to the lessor for credit transfer. The lessor purchases the equipment and presents it into use of the lessee. The lessor pays for total amount while the lessee pays back according to lease contract terms. Transactions among the parties with regard to financial lease are depicted in Figure7.

In financial leasing, at the end of the contract the lessee becomes the legal owner of the goods. Accordingly, both the risks and benefits of the ownership right pass to the user at the end of the leasing contract and that; in general, a financial leasing operation is aimed at purchasing the asset. That's to say, in general, sum of rental payments due approximate the equipment's purchase cost (Contino, 2002). Thus, financial leasing is just a source of business financing (Brealey and Myers, 2000, p.736).

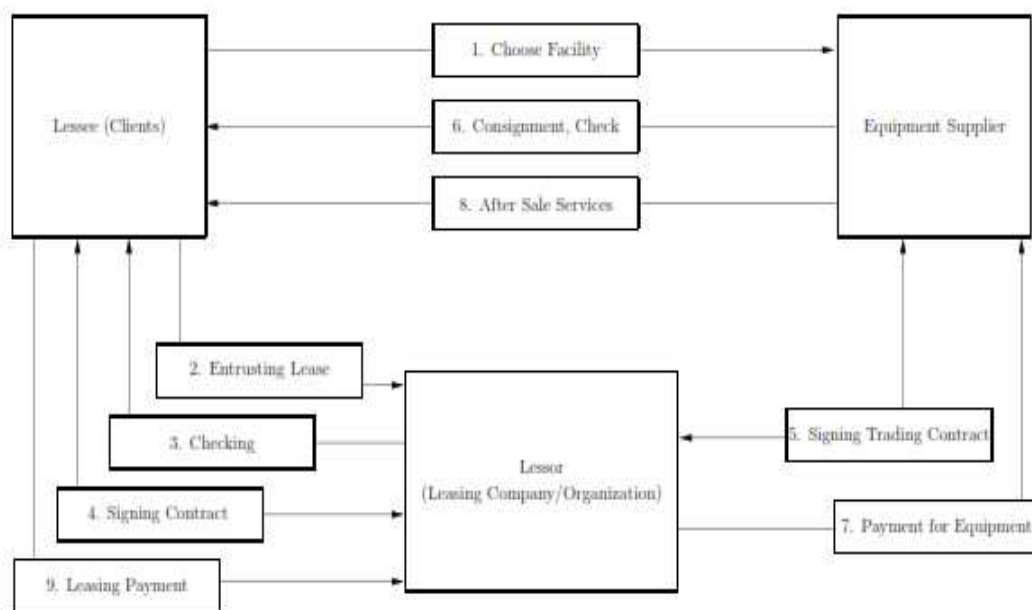


Figure 7 Financial Leasing Mechanism

Source: Tian, 2004, p.8.

Because of the large usage period or the large sums paid by the lessee, one could easily remark that lessee could consider the ownership of the asset at the end of the contract. Meanwhile, the low acquisition value of the asset at the date of the completion of the contract makes the use of the option to purchase and transfer the ownership right very likely.

In accounting terms, financial leasing is treated like a purchase. Financial leases may be considered like borrowing money (Brealey and Myers, 2000, p.736).

Finance leasing companies function in the same manner as banks or other financing companies (Contino, 2002, p.5). Finance leasing companies do not maintain an inventory. They buy the specific equipment negotiated and agreed by a lessee after agreeing on a lease with the lessee. The lessee makes all arrangements with the vendor. When the asset is placed in service, the lessor pays for it, takes title, and leases it to the lessee. Financial leases are generally paid in installments and are calculated in such a way as to cover all or virtually all of the value of the goods.

Financial leases are often used for heavy capital equipment such as airplanes, large-scale machinery as well as consumer items such as furniture and electronics. Financial lease is increasingly used in equipments in the need of small and medium size enterprises.

In sum, IASB definition of financial leases summarizes the requirements for a financial lease. IASB advocates that any transaction meeting four criteria described below is determined as a financial lease.

First, the lease contract transfers the ownership of leased equipment to the lessee before the end of the contract period. Next, the asset may be purchased by the lessee at the end of the contract period. Bargaining price is likely so far below its market value so that the lessee opt to buy the property (Contino, 2002, p.166).

Third, asset's lease period should cover at least three-fourth of estimated economic life. Finally, present value of discounted lease payments need to be at least %90 of asset's market value. However, lease payments necessarily exclude any costs related to execution such as insurance, maintenance, taxes that the lessor will pay, and any profit on those costs (Contino, 2002, p.166).

Bearing in mind four criteria mentioned by IASB, financial leases are treated as the acquisition of assets and the incurrence of obligations by the lessee. In accordance with IASB, FASB adds another criterion that it is unlikely that leased asset is employed by a third party as asset is leased for a specific need written in the contract.

Main Features of Financial OLeasing:

- Economic ownership with lessee
- Legal ownership with lessor
- Full amortization during tenor
- First preferred title to assets involved
- Price quoted as a spread over the benchmark
- Annuity payment schedule

Benefits to the Lessee:

- Customized payment in line with the cash flow
- Fixed costs, fixed tenor facilitates budget process
- Object related financing
- 100% of capital expenditure
- Non house bank related
- Full ownership at maturity
- Deal driven rather than relationship driven

2.3.2. Operational Leasing

Under an operational lease, the lessee acquires the right to use a durable good for a certain period of time, which may be long or short and not necessarily settled in advance. Operational leases do not transfer ownership (i.e. all the risks and rewards incident to legal ownership) to the lessee. Lessee is just responsible for paying committed leases during the contract.

Accordingly, unlike financial leasing, operational leasing entails, in the real sense of the word, the usage of the financed asset over a limited period of time, without taking over the risks and benefits of the owner, in general, for the particular resolve of certain activities. At the end of the term, the lessee is expected to return the assets to the lessor and the lessor takes over the risk of realizing the value that remains depreciated at the end of the contract. In other words, lessor attains the risk of outdating, outwearing, and price fluctuations.

Payments for the operational leasing of goods relate to the cost of using the tangible goods made available through an operational leasing contract. The lessor, who owns the equipment, pays all accounts and checks that it is in accordance with the agreements signed. The lessee simply receives periodic invoices for the lease. Simply, it would not be wrong to put that operating leases are accepted as current operating expenses. Furthermore, operational leases are classified as Off Balance Sheet by auditors.

Unlike a financial leasing contract, a lessee usually can cancel an operating lease given some minimum notification, without major penalty. Smaller-scale items, such as motor vehicles, computers, copiers and other office machines are usually subject to operating lease contracts.

Main Features of Operational Leasing:

- legal and economical title with lessor
- amortising down to residual value
- service components may be included
- price quoted as a spread over the benchmark + fees
- annuity payment schedule
- options possible to purchase object

Benefits to the Lessee:

- availability of assets without the burden of ownership
- allows asset play
- lower payments as residual is not amortized
- includes full service at risk for lessor
- off balance sheet treatment
- fixed price, fixed tenor

2.3.3. A Comparison between Financial and Operational Leasing

Main difference between operational lease method and financial lease method is timing (Stickney and Weil, 2000, p.542). Typical operating leases long for a few months or a few years, even some are as short as a few hours. As Contino (2002) states, now that the lessor could not earn much from operational leasing, it seeks to sell or re-lease equipment as much as possible. The danger for the lessor is obsolescence risk of the equipment. In short, due to mentioned reason, the lessor in operational leasing tries to charge higher rental rates than the one in finance leasing.

Financial leases cover at least 75% of asset's estimated economic life. Operational leases, on the other hand, do not extend over the most of the asset's economic life.

Another distinction is where decision centers. While the decision centers on "lease vs. borrow" for financial leases, operational leases are to make a choice between "lease vs. buy" alternatives (Brealey and Myers, 2000, p.743).

Cancellation option makes another difference. Operational leases have the opportunity to cancel the lease while financial leases have obligations to complete the contract. Easy cancellation provisions make operating leases attractive to users in certain situations. For example, the user may ask for newer equipment as soon as

something better comes out because of constant technological improvements (Contino, 2002). This is very typical to computers.

One more comparison is based on risk bearing. The lessor bears the risks of ownership regarding operational leases. Concerning financial leases, it is the lessee who bears the risk once they are alternative sources of financing to use desired assets for a long period and then to acquire them.

2.4. OTHER CLASSIFICATIONS OF LEASING

Other than and within two mentioned categories, there are some other variations to be mentioned. As Contino (2002, p.9) stresses that these variations are not truly understood in literature, resulting in perceiving separate types of leases rather than descriptive forms of the basic types. It would be not wrong to say that finance leases can be leveraged leases or non-leveraged leases, and in a similar vein, service leases can be financial or operating in nature. However, there exist significant differences among lease types.

2.4.1. Sale and Lease Back

Liquidation problems lead businesses to refer to sale and lease back method. Business as an asset owner in need of cash sells that asset to a financial institution, and then leases the same asset back. It is generally referred to when companies are not able to generate cash. By selling equipment and leasing it back, companies enjoys a certain amount of cash for operating capital and has the opportunity not to pay property taxes and have outdated equipment.

The lessors may also benefit from sale such that they free up funds to make other investments or lack of need for depreciation and other tax benefits (Halladay and Amembal, 1995, p.967). Likewise, the lessee may channel resources to other profitable investments and mitigate the credit risk by extending the maturity of leased equipment (Uydacı, 2006).

Halladay and Amembal (1995, p.977) list the prime candidates for a sale and leaseback transaction as companies having a large amount of debt, in short of cash,

having low reported earnings, facing tax problems, having excess tax benefits, and being a regulated sector.

As a result, as it is seen in the figure below, sale and leaseback has two separate transactions. Asset owner changes its position as lessee whilst meeting cash need. Legal ownership is transferred to lessor; however, user retains the right to use as it is.

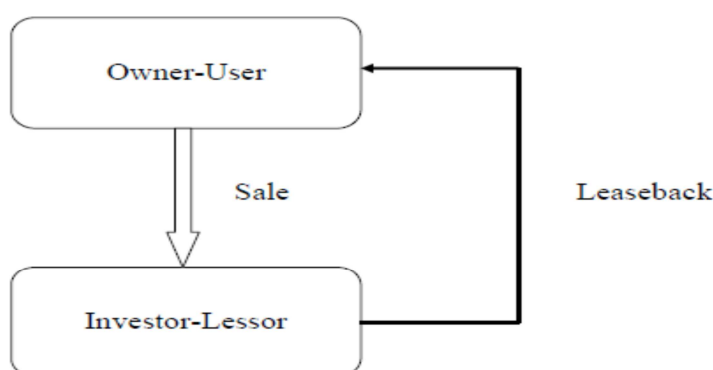


Figure 8 Sale and Leaseback

Source: Halladay and Amembal, 1995, p.967.

There occurs a difference on balance sheet of company that experiences sales and lease back. While current assets side of balance sheet increases, long term assets decrease (Egemen, 2007). In addition, a loan creates book depreciation and interest expense while a leaseback does rent expense less than the sum of those incurred in a loan (Halladay and Amembal, 1995, p.971).

What makes sale and lease-back leases are providing companies a long-term asset, providing opportunity to increase liquidity, eliminating ownership risks for lessee, and leasing assets having economically high added value (Erol, Yıldırım, and Toroslu, 2011, p.78). For instance, sale and lease-back leases are common in real estate (Brealey and Myers, 2000, p.736).

2.4.2. Sub-lease

Lessee has the rights to transfer leasing rights to third parties. After making leasing contract, the lessee has flexibility to re-lease the asset with the same terms written on the lease contract. This sort of leasing makes credit expansion and idle capacity can be evaluated.

2.4.3. Gross-Net Leasing

Leases may differ in provided services by lessor. In other words, leasing may be categorized according to meeting the leasing expenses (Uydacı, 2006; Öztaş, 2010, p.24). If the lessor pays any property taxes and duties, maintains the equipment and makes insurance, it is called gross leasing or full-service lease. Well-equipped lessors efficiently provide maintenance, but lease payments would be higher in that sense.

On the contrary, in case of net-lease, asset maintenance, insurance, and tax-pays are burden on lessee's shoulders. Brealey and Myers (2000, p.735) points out that financial leases are generally net-leases. This is also consistent with financial leasing's nature. It is noteworthy that lease contract includes costs which are to be incurred by whom (Erol, et al., 2011, p.81).

The lessor's basic responsibilities are to provide finance for purchase of the equipment, lease it to the lessee for the contract term, and not interfere with its use. In this sense, a net lease means that the fundamental ownership responsibilities, such as maintaining and repairing the equipment, paying for the necessary insurance, and taking care of property, use, and sales taxes, are placed on the lessee (Contino, 2002). Here, the lessee bears the primary risk of the equipment becoming obsolete because a net lease usually covers the economic life of leased asset.

2.4.4. Leveraged Leasing

Halladay and Amembal (1995, p.991) assert that all leases are leveraged in original; however, leveraged leasing is recognized as a specific product in leasing industry. According to Contino (2002), net finance leases are generally structured as leveraged.

If the equipment purchase is leveraged with debt, then the rents are generally enough to cover the full payment of the debt. Ford (1983, p.59) advocates that a leveraged lease is a way to provide for the full value of the interest tax savings because the tax deduction afforded interest payments is an incentive to finance a portion of the purchase price with debt.

Contino (2002, p.135) defines the leveraged lease as one of the most complex and sophisticated means for financing capital equipment in contemporary financial market. In a leveraged leasing, the lessor uses leasing contract as security for loan arranged for a certain part of leased asset, usually 60% to 80%. The lessor puts 20% to 40% of necessary funds and a third-party lender supplies the remainder. Another noteworthy point is that maturity of debt is in concordance with lease period.

The loan is generally on a non-recourse basis. The nonrecourse nature means that the lessor has no responsibility to repay even if the lessee defaults and the loan becomes uncollectible. Therefore, the lender needs to look only to the rental stream and the value of the equipment for its repayment (Contino, 2002, p.11).

The lessor assigns rental payments to the lender, including the right to the rental payments, though it holds the title of the leased asset. This does not make any changes from perspective of the lessee, but the lessor's position can be complicated (Brealey and Myers, 2000, p.736).

Although documentation related to a leveraged lease transaction tends to be expensive, leveraging probably ensures relatively lower rents on behalf of the lessee whilst maintaining its return.

However, non-leveraged leasing, which the lessor pays for the equipment from its own funds, is mostly preferred by leasing companies. There are just two actors in this type of leasing, leading to simpler and quicker transactions. It also saves time and minimizes documentation costs. On the other hand, rental payments are expected to be higher (Contino, 2002, p.11).

2.4.5. Direct-Indirect Leasing

Main difference between direct and indirect leasing types is participation of the parties in leasing agreement (Uydacı, 2006). A great large of leasing contracts are for brand new equipment. After determining the equipment, lessee asks leasing company to make purchase from manufacturer. This sort of arrangement is called indirect leasing. In short, the actors in a lease contract determine the lease type whether it is direct or indirect. Indirect leasing involves third party transactions and makes use of professional leasing companies to lease the equipment needed. On the other hand, direct leasing manufacturer performs leasing itself, with no aid provided by a leasing company.

Classifying a lease as direct finance leasing is much easier. According to Contino (2002, p.168), if a lease satisfies following criteria, it will be referred to as a direct financing lease. One or more of the criteria for lessee capital lease classification have been met, the lease does not fall within the category of direct lease, the lease does not give rise to a dealer's or manufacturer's profit, or loss, to the lessor, the collectability of the minimum lease payments is reasonably predictable, and there are no important uncertainties as to the amount of any unreimbursable costs that the lessor has yet to incur under the lease.

2.4.6. Services Leasing

There are typically two rights in a lease contract, of which one is the right of use and one is the ownership right. In service leases, the lessor just turns the right of use to the lessee, but assumes equipment ownership responsibilities. Services includes, but not limited to, maintenance, repair, insurance, record keeping, or payment of property taxes. In addition to asset financing, the lessor provides listed services. Service leases are generally characterized with their short lease terms.

2.4.7. Blanket Lease

The blanket lease relates to multiple product acquisition. Equipment users frequently purchase equipment in functional groups. For instance, in order to meet its data processing needs, a company may acquire one brand of central processing unit, a

disc drive from another company and another brand of peripheral equipment, all packaged together. The user, of course, does not want to obtain separate financing for each component; therefore, there is not one common lease contract for related multiple equipment, but one framework lease (a blanket lease) is sought.

Vendor blanket leases generate an element of control, resulting in increased sales (or avoidance of lost sales) because the lessor ensures that its product will be part of the bundled package. The lessor presents alternatives to the lessee within a given budget limit (Erol, et al., 2011, p.82).

Blanket leases are popular for some reasons. First, they save time by consolidating financing otherwise needed for each for multiple pieces of equipment acquired over a prolonged shipment period. Next, they provide lower financing costs because of economies of scale. Third, the lessee may have more flexibility over choosing the equipment.

2.4.8. Swap Leasing

A lease that allows the lessee to temporarily exchange equipment in need of major repair with properly working replacement equipment to avoid costly maintenance and repair delays (Halladay and Amembal, 1995, p.41). In addition to costs, the lessee saves much maintenance time and carries out operations (Erol, et al., 2011, p.82). Of course, lessors that carry inventory of equipment would be the most able to provide such services (Halladay and Amembal, 1995, p.41). This sort of leasing may be considered a hedge for the lessee against unexpected malfunctions (Öztaş, 2010); thus, the lessee is able to sustain production (Pektaş, 2009, p.24).

2.4.9. Upgrade Lease

Upgrade lease is similar to swap leasing. The lessee may ask for an upgrade of the leased equipment because of technological improvement (Erol, et al., 2011, p.82). Upgrade lease, in short, presents an option that allows additions to existing leased equipment to improve its capacity or efficiency; or an exchange during the lease of outmoded equipment with newer model upgraded equipment (Halladay and Amembal,

1995, p.31). The lessor has advantage to remarket obsolete equipment worldwide; therefore, the lessor has the options to upgrade the equipment or to totally change it. However, upgrade lease allows flexibility for the lessee to keep up with rapidly changing technology with the equipment on-hand.

2.4.10. Venture Lease

This type of lease mostly fit to start-ups, early-stage or late-stage companies that have no track record (Halladay and Amembal, 1995, p.961). Due to lack of information on lessee, the lessor needs to take on more risk than the other types of lease. Thus, venture leases yield higher returns compared to others (Halladay and Amembal, 1995 p.962). Also, venture lease provides opportunity more than one lessee to utilize idle capacity and share the burden of the cost of the lease (Pektaş, 2010, p.25). Lease contract comprises every detail regarding the venture and the leased asset.

2.4.11. Trial Period Lease

Trial Lease Program (up to one year) allows prospective customers to try equipment before making a final purchase or lease commitment. The trial lease is a powerful sales closing tool for potential customers who may be skeptical of either the performance or expense of the equipment. Both new and established vendors who are introducing new products often find that a trial program is the best way to increase acceptance and integration of a new product.

A customer is typically offered the standard 24, 30 or 36 month lease term, with the additional trial period added to the beginning of the term. At the end of the trial period, the standard lease terms automatically become effective unless notice has been provided. If the customer wishes to lease or return the equipment, they may exercise these options only prior to the end of the trial period. This sort of lease avails the lessee opportunity to recognize any error terms related to leased equipment (Pektaş, 2010, p.25).

If the Customer chooses to purchase the equipment, a portion of the payments are credited toward the purchase price. Past experience has indicated that if the program

is properly used, 95% of the customers continue with the lease or purchase the equipment.

Benefits to Vendor:

- Captures and increases overall sales which would be otherwise lost due to customer hesitation.
- Provides an additional tool for sales personnel when prospects are interested but want to test the performance of the equipment.
- Most initial objections are overcome when customers have actual use of the equipment.
- Accelerates market penetration and shortens the selling cycle.
- Vendor records an immediate sale, as opposed to providing extended terms or money back guarantees.

Advantages to Customers:

- Provides a method to "try it before they lease it" which greatly aids in overcoming a buyer's purchasing fears.
- Customers become confident and comfortable with their ordering decisions.
- Since the Trial Lease contains a cancellation privilege, any perceived risk is eliminated.
- Shows hesitant customers that Vendor is confident in their products and in the fit between the customers' needs and the equipment they have selected.

2.5. AN EVALUATION OF IMPORTANCE OF LEASING TO SMES

Today, in terms of the number of companies operating in Turkey, SMEs make up 99.5% of the total. Their share in industrial employment is as high as 61.1% and

their share in total value-added created in the country is close to 1/3 of the total (Yılmaz, 2003). In a similar vein, SMEs are the motor of the European economy, accounting for 99.8% of firms and 66.9% of employment in the EU-27 in 2010.

In order for SMEs to grow, access to affordable sources of finance is critical. The main problem for SMEs is to own necessary resources to make use of. Leasing provides additional means of financing for SMEs for capital financing and new technology. Leasing provides financing supply for new investment and thus result in decreasing the cost of capital (Egemen, 2007). Leasing, therefore, represents an effective way to reach those companies whose financial needs cannot be met by conventional loan-financing. Because banks mostly prefer to lend larger scale companies with well-developed balance sheets and good credit track-records. Smaller scale businesses with no strong credit history often find it difficult to access to bank financing.

SMEs with bad credit scores and balance sheets may not be awarded to loans provided by banks. However, leasing industry transfers available resources with minimum effort and cost. This also contributes to value added by SMEs. The leasing companies focus on the lessee's ability to generate cash flow to service the lease payments, rather than relying on its credit history, asset base or capitalization. Accordingly, it creates new opportunities for those companies which lack a good credit track record but prove a strong cash flow attached to the project in hand.

Leasing rather than purchasing an asset provides significant cost savings to a SME, especially one with a history of low earnings or limited access to debt financing (Ford, 1983). Leasing is, therefore, particularly attractive for SMEs with scarce financial resources because it provides them with the possibility to finance up to 100% of the purchase price of an asset, without having to offer any supplementary guarantees. SMEs can opt for leases which cover all of their asset-related needs, for example services such as insurance and maintenance of the asset.

SMEs rarely have additional assets for the collateral required by conventional banks. In leasing contracts, security for the transaction is provided by the asset itself.

Since there is no need for additional collateralization, leasing is preferred from the convenience point of view and can be arranged more quickly and simply.

Additionally, leasing also offers SMEs the flexibility to change their leased equipment at the end of the rental period, enabling them to upgrade to the latest and most energy efficient equipment. As the duration of leases is usually shorter than the useful life of equipment, this reduces the risk of equipment becoming obsolete.

Also, SMEs can better manage their working capital by spreading payments over the life of the asset and leasing enables them to use equipment without having to worry about considerations linked to ownership, such as second hand asset values or the disposal of the asset when it is no longer required.

Hence, the leasing decision in SMEs is driven more by growth opportunities than by taxation considerations. The leasing industry is, therefore, well placed to support SMEs with high growth potential and start-ups. And the most important reason for SMEs to lease is the predictability and transparency of costs.

As lessors retain ownership of the leased asset, they can provide funding to businesses when other types of lenders cannot. The recession has made it more difficult for many SMEs to rely on internal sources of capital to finance investment. As SMEs have become more reliant on external sources of funding during the financial crisis, the leasing industry has supported SMEs by providing an attractive source of funding for investment.

European Leasing Association lists the benefits of using lease finance as:

- The possibility to finance 100% of the purchase price of an asset without having to offer any supplementary guarantees which would otherwise be an additional burden for the company seeking finance,
- Allowing companies to manage their working capital by spreading payments over the life of the asset,
- Making budgeting exercises easier as lease payments are regular and usually for a fixed amount,

- Giving firms the opportunity to renew their equipment, making sure that they benefit from the latest available technologies,
- Providing other sources of finance, independent from bank loans or credit lines, thereby conveying more freedom to the lessee,
- Ensuring the lessee has a stable and certain source of funds that cannot be withdrawn as long as payments are made,
- The ability for the lessee to use equipment or other assets without having to worry about considerations linked to being an owner such as the disposal of the asset when it is no longer used,
- Providing customers will a full package - a lease can also accompanied by an array of services, including the insurance and maintenance of the asset. A wide range of services can be combined with different types of leases,
- Taking advantage of local fiscal treatment which implies that leasing can also be beneficial from a tax point of view,
- Being the only available source of funds. In certain cases, particularly for smaller companies who have high growth potential, leasing may be the only way to finance their development,
- Providing finance in circumstances when traditional bank facilities would not be granted as lessors have greater security due to the ownership of the asset. This also implies that leasing may be offered on better terms than other forms of finance.

2.6. FINANCIAL REPORTING AND ACCOUNTING TECHNIQUES ADOPTED IN THE INDUSTRY

2.6.1. IAS 17 / FASB 13

The general legislative framework is mostly led by the U.S. although each country has their own treatments, especially in the context of tax regulations. In the U.S., Financial Accounting Standards Board (FASB) issues the accounting regulations. All publicly-listed companies must comply with the GAAP (generally accepted

accounting principles) and hence they are also supposed to comply with the FASB regulations. The main leasing regulatory framework was introduced by FASB 13, which came into play in 1976. “Statement of Financial Accounting Standards No.13-Accounting for Leases”, in short referred to as FAS 13, established the standards to be followed by lessors and lessees in accounting for and reporting lease transactions.

Since FAS 13 was issued, the FASB has been invited to handle a large variety of issues concerning leasing financial accounting and reporting guidelines. As a consequence, several amendments and interpretations have been produced to clarify or improve many of the guideline’s complex issues (Contino, 2002, p.165). Each new rule is titled with a specific number.

Under IAS 17 Leases, lessors are required to classify leases as finance leases or operating leases. Finance leases are defined as leases that transfer substantially all the risks and rewards incidental to ownership. All other leases are operating leases.

Since its formal introduction in 1970s, the leasing industry has experienced phenomenal growth year over year. Meanwhile, hundreds of amendments to FASB 13 have changed the industry. Further changes are still under consideration. The primary standard for lease accounting is Statement of Financial Accounting Standards No. 13 (FAS 13), which has also been amended several times.

In a report published on June 2005 (Report and Recommendations Pursuant to Section 401(c) of the Sarbanes-Oxley Act of 2002 Arrangements with Off-Balance Sheet Implications, Special Purpose Entities, and Transparency of Filings by Issuers), the US Securities and Exchange Commission (SEC) recognized the inadequacies of the existing lease accounting standards and recommended that the FASB undertake a project to reconsider the leasing standards, preferably as a joint project with the IASB.

In July 2006, the FASB and the International Accounting Standards Board (IASB) announced the start of their joint project to comprehensively reconsider lease accounting. Bauman and Francis (2010) assert that the primary objective of the project is to develop a new lease accounting model in order to increase the transparency of leasing transactions in financial statements. For this purpose, the Boards decided to

develop a new approach that will result in the recognition of assets and liabilities identified as arising in a lease contract.

In 2008, the Boards have decided to complete the project by June 2011 (Lease Europe, 2009) and they have announced that they would need to defer any changes to lessor accounting, while continuing with the project for lessee accounting, with the stated intention to recognize an asset and obligation for all lessee leases (in essence, eliminating operating lease accounting).

The Boards propose that lessors evaluate whether the lease exposes the lessor to significant risks and benefits associated with the underlying asset. The Boards identify new system as the “performance obligation” approach, which requires the lessor to retain the underlying asset on its balance sheet, recognize a receivable for the right to receive payments, and recognize a liability related to the performance obligation (Bauman and Francis, 2010).

As mentioned in leasing taxation text of KMPG (2011), joint project of IASB/FASB covers both lessor and lessee accounting. According to the text, lease classification and income determination are two key areas that have significant impact on calculating amount and timing of taxes (KMPG, 2011, p.5).

2.6.2. Lessor Accounting

2.6.2.1. Operating Leases

Under an operating lease contract, the asset remains on the lessor's books as an owned asset and the lessor records depreciation expense over the life of the asset. The lessor records rent revenue (credit) and a corresponding debit to either cash or rent receivable.

Lessors shall present assets subject to operating leases in their balance sheets according to the nature of the asset. The depreciation policy for depreciable leased assets shall be consistent with the lessor's normal depreciation policy for similar assets, and depreciation shall be calculated in accordance with IAS 16 and IAS 38. Lease income from operating leases shall be recognized in income on a straight-line basis over

the lease term, unless another systematic basis is more representative of the time pattern in which use benefit derived from the leased asset is diminished

2.6.2.2. Financial Leases

Under a financial lease contract, lessors shall recognize assets held under a finance lease in their balance sheets and present them as a receivable at an amount equal to the net investment in the lease. The recognition of finance income shall be based on a pattern reflecting a constant periodic rate of return on the lessor's net investment in the finance lease.

The lessor credits owned assets and debits a lease receivable account for the present value of the rents (an asset, which is broken out between current and long-term, the latter being the present value of rents due more than 12 months in the future). With each payment, cash is debited, the receivable is credited, and unearned (interest) income is credited.

2.6.3. Lessee Accounting

2.6.3.1. Operating Leases

From the accounting point of view, operating lease is generally viewed as a rental. The leased equipment is not shown as an asset on the company's balance sheet. Thus, this is a method of an off-balance sheet financing. Pamukçu (2010) cites off-balance sheet financing methods as securitization of receivables and notes receivable, leasing the capital investments that require big cash outflows, establishing joint ventures or special purpose entities where chosen assets and liabilities from the balance sheet will be transferred. Off-balance sheet operations may show financial tables stronger, lower cost of capital, and provide taxation advantage (Pamukçu, 2010, p.482).

The lessor is the owner of the equipment (in regards to income tax purposes) and receives the benefits of ownership, including depreciation and tax credits. Lease payments under an operating lease shall be recognized as an expense on a straight-line basis over the lease term unless another systematic basis is more representative of the time pattern of the user's benefit.

The lessee can claim the lease payments as an operating expense deduction. Because the rental amount is designed to reflect the depreciation for the asset rather than the full cost, operational leasing provides significant cash flow advantages in particular where the assets have a longer life than the lease and where the residual value is more apparent. Operating leases allow the lessee to expense each monthly payment immediately, rather than accounting for the equipment as an asset and depreciating it over the years. The monthly payments are lower, preserving the cash flow. By this way, companies bulk up the balance sheet by accounting the equipment as an asset, while, not violating restriction on adding new conventional debt that many lenders impose on businesses.

2.6.3.2. *Financial Leases*

In financial leasing, the equipment is carried to the balance sheet and the company itself must administrate and allocate all costs and depreciations linked to the equipment in order to produce a correct picture of the overall financial implications. At the commencement of the lease term, lessees shall recognize finance leases as assets and liabilities in their balance sheets at amounts equal to the fair value of the leased property or, if lower, the present value of the minimum lease payments, each determined at the inception of the lease. Since the lease equipment is shown as an asset and corresponding liability on the balance sheet, the tax benefits of ownership may be realized by the lessee.

The discount rate to be used in calculating the present value of the minimum lease payments is the interest rate implicit in the lease, if this is practicable to determine; if not, the lessee's incremental borrowing rate shall be used. Any initial direct costs of the lessee are added to the amount recognized as an asset.

Minimum lease payments shall be apportioned between the finance charge and the reduction of the outstanding liability. The finance charge shall be allocated to each period during the lease term so as to produce a constant periodic rate of interest on the remaining balance of the liability. Contingent rents shall be charged as expenses in the periods in which they are incurred.

A finance lease gives rise to depreciation expense for depreciable assets as well as finance expense for each accounting period. The depreciation policy for depreciable leased assets shall be consistent with that for depreciable assets that are owned, and the depreciation recognized shall be calculated in accordance with IAS 16 Property, Plant and Equipment and IAS 38 Intangible Assets. If there is no reasonable certainty that the lessee will obtain ownership by the end of the lease term, the asset shall be fully depreciated over the shorter of the lease term and its useful life.

From the perspective of the lessee, this means that entire cost of the asset can usually be written off the year it is purchased and put into use. It also provides a bargain purchase at the end of the term, allowing the lessee to continue to use the asset or sell it. Through financial leasing, the larger scale lessees gain more flexibility in matching the timing of the expense with benefit. They can also keep the equipment as an operating expense and not a capital expenditure.

2.6.4. World Applications

The International Accounting Standards Board (IASB) and US Financial Accounting Standards Board (FASB) will shortly release proposed changes to the leasing standard. We expect the proposals will overhaul the current requirements in IAS 17 *Leases* and seek to reduce the differences between accounting for leases under IFRS and US GAAP. The proposals will significantly change current practice. A comparison of current legal framework of different countries is provided in Table-7.

In general, the leasing industry is developed in North America, Europe, and a few countries such as Australia, India, Japan and Korea (Amembal and Halladay, 1995, p.60). As globalization and intense competition increase, the lessors in these countries chase opportunities to move to international markets (Amembal and Halladay, 1995, p.60). On the other hand, leasing has a growing potential, but a limited basis in emerging countries (Amembal and Halladay, 1995, p.60). It is worthiness that the countries often do not have favorable accounting or tax regulations and the lessors are not able to assess the lessees' creditworthiness (Amembal and Halladay, 1995, p.60).

There is a standard for the industry. The primary focus of FASB 13 is to make a difference between a capital lease and an operating lease (Amembal and Halladay, 1995, p.242). Once the leased item is recorded on the asset side of balance sheet, it is capitalized. On the other hand, operating lease is essentially a usage agreement and the leased item does not appear on balance sheet.

Table 7 Benchmarking on International Leasing Applications

	Legal Form Regulating Establishment of Leasing Companies	Special Regulations for Establishment and Operation of Leasing Companies	Banking Oversight	Permission prior to Establishment
Austria*	No	As for Financial Institutions	No	Yes
Belgium	No	No	No but bank-based ones	Yes
Denmark	No	No	No	No
France	No but financial leasing	As for Financial Institutions	Subject to "Banking and Finance Act"	Yes
Finland	No	Some	No	No
Germany	No	No	No	No
Italy	No but financial leasing	As for Financial Institutions	No	No but financial leasing
Luxembourg	No	No	No but the ones collecting deposits	No
Netherlands	No	No	No	No
Russia	No	Law On Financial Lease	No	No
The UK	No	Leasing to Consumers to be subjected to Consumer Finance	No but the ones collecting deposits	No
Turkey	Financial Leasing Law no 3226 /corporation	BRSA regulations and Financial Leasing Law	BRSA (Financial Leasing)	BRSA (Financial Leasing)
The US	No	No	No	No

Source: www.leaseurope.org (Information on Russia, Turkey and the US is added by the researcher)

*Countries are in alphabetical order, respectively.

The main ambiguity here is how to differentiate the leases. The Boards make distinction based on the concept of substance over form (Amembal and Halladay, 1995, p.243). However, they believe that letting the debt appear off balance sheet is misleading; thus, there is an ongoing study to change the standard. Although a final standard is not expected until 2013, the Boards appear ready to require all leases, not just finance leases, to appear on the balance sheet.

According to PwC's evaluation; the key elements of the proposals to the standard and their impact on financial statements are described below.

- A 'right of use' concept will replace the 'risks and rewards concept'. Entities will recognize an asset and liability at the start of a lease.
- The distinction between operating leases and finance leases will be eliminated.
- All lease liabilities will be measured with reference to an estimate of the lease term, which may include optional extension periods.
- Contingent rentals and residual value guarantees will be estimated and included at the start of the lease.
- Lessees will be required to reassess the lease term, contingent rentals and residual value obligations at each reporting date.



Figure 9 Lease Project Timeline/Path Forward

Source: PwC, July 2010, The Overhaul of IFRS Lease Accounting

The impact on lessee financial reporting, asset financing, IT, systems and controls could be substantial in the industrial products industry where entities regularly enter into lease arrangements across all asset types, such as property, IT equipment, and vehicles.

The impacts of the changes would include the following.

- Entities leasing ‘big-ticket’ items, including real estate, manufacturing equipment, computers and information technology, would be greatly affected.
- Entities with numerous small leases, such as office equipment and auto fleets, would also be affected.
- Balance sheets would grow, leverage ratios would increase, and capital ratios would decrease.
- There will be a change to both expense character (rent expenses would be replaced with asset depreciation/amortization and interest expense) and recognition pattern (significant acceleration of total expense recognition relative to the recognition pattern under existing rules). As a result, performance measures such as earnings before interest tax (EBIT) and earnings before interest tax, depreciation and amortization (EBITDA) would change.
- Lease obligations would require ongoing remeasurement and changes to internal controls, accounting and IT systems may be necessary.
- Management’s ‘lease versus buy’ decisions may be affected, particularly if entities are planning to enter into leases primarily to achieve off balance sheet reporting. However, the cash flow, taxation and administrative benefits of leases will not be impacted by the proposals – if it makes sound business sense to lease an item today, in most cases it will continue to make sound business sense under the proposals.

CHAPTER THREE

TURKISH LEASING INDUSTRY IN RETROSPECT AND PROSPECT

In particular, domestic savings are not enough to stimulate investments and business finance requirements are, therefore, not necessarily met (Söyler, 2007, p.15). Thus, there has been significant improvement in the Turkish leasing industry throughout the last two decades. While new volumes in the sector were as low as USD200mn in the early 1990s, it came close to USD 8.5bn in 2007. However, market penetration in Turkey stayed low compared to not only developed but also many developing countries, such as Brazil, Bulgaria, Romania and Hungary.

Turkish financial system is still dominated by the banking industry. As of 2011, the share of financial leasing, factoring and consumer finance companies in total made less than 3% of the overall financial system. Likewise, share of financial leasing for real sector's capital investment between 3,5-8% for Turkey while that is 30% for the US, 23% for Canada, 16% for Germany, 11% for Italy, and about 10% for France, the UK, and Japan (Söyler, 2007:17).

While deposit banks cannot write leases directly, almost all of them have leasing subsidiaries and around 90% of the volumes are written by bank subsidiaries. Leasing companies' market shares and ownership structure is depicted in Table 8. Bank dominance is clearly observed that bank based companies occupy a large amount of total market share.

Table 8 Leasing Companies' Market Shares and Ownership Structure in Turkey 2011

Market Share (Based on Net Leasing Receivables)	Companies	Total Market Share
Equal to and larger than % 5	8 Bank based companies	% 81,6
Between % 1 and % 4,99	-5 Bank based companies -2 Independent -1 Supplier (Vendor) affiliate	% 16,1
Less than % 1	-3 Bank based companies -4 Supplier (Vendor) affiliate -3 Independent	% 2,3

Bank based leasing companies display such strength that those have capital power, market power, and liquidity power because access to financial markets is expanded and based on banks (BRSA, 2011). Nonetheless, to our knowledge no study discusses difference between types of leasing companies. And it is beyond the scope of the study.

3.1. A SWOT ANALYSIS OF LEASING INDUSTRY IN TURKEY

SWOT analysis as a strategic tool lets organizations and managers position organization according to evaluation of internal and external factors. SWOT is an acronym for strengths, weaknesses, opportunities, and threats. By means of SWOT, organizations determine opportunities to be benefited and threats to be protected as well as strengths and weaknesses in comparison with rivals, and make a comprehensive analysis in order to position themselves in the industry (Ülgen ve Mirze, 2004:67).

Analysis of external environmental factors reveal opportunities and threats for the organization. Opportunities are positive external indicators that may improve organizations whilst threats are negative ones that may hurdle or end the organization

(Ülgen ve Mirze, 2004:65). Thus organizations both reap the benefits of opportunities and take measures against threats.

Analysis of internal environmental factors reveal advantages and disadvantages of organizations related to their core competencies, culture, management and functions. In order to gain a competitive edge, organizations need to analyze their strengths and weaknesses. Strengths are positive internal indicators that may improve organizations whilst weaknesses are negative ones that may hurdle or end the organizational survival (Ülgen ve Mirze, 2004:66).

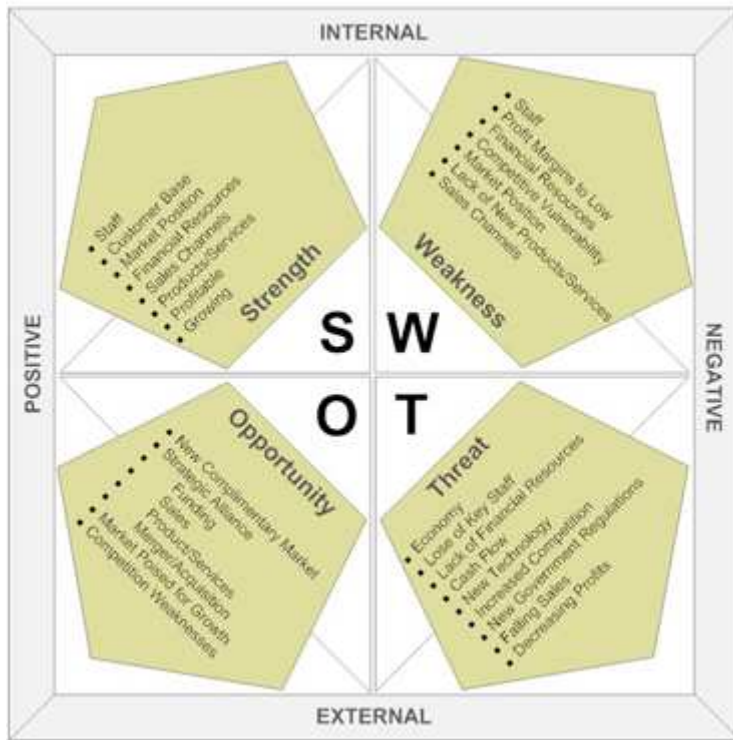


Figure 10 SWOT Analysis

Source: <http://www.bizstrategies.biz/swot-analysis.html> (2011)

3.1.1 An Outlook on Turkish Leasing Sector

Leasing was introduced to the Turkish market as of 1985 with the approval of the Financial leasing Law No. 3226. As the name states, the law regulated only financial leasing and did not include any provisions in respect to the operational leasing.

In another law published in March 6, 2007 (no 5582) financial leasing firms were also entitled to grant mortgage loans to consumers. However, as of yet, due to heavy competition by the banking sector no leasing institution provides mortgages.

Leasing industry in Turkey experienced a rapid growth since 1985 as that did worldwide. In parallel with financial liberalization and sound deepening accompanying with stable economic growth, leasing industry has also been stimulated by policy-makers. To this end, leasing has become an increasingly important method of financing capital investment in recent years.

The leasing market was largely driven by tax-based leasing until the introduction of IFRS back in 2003. With an amendment to the Tax Law in 2003 in Turkey, there have emerged some important tax implementations in financial leasing operations (Bal, 2011). Along with the amendment in the Tax Law, the lessor could allocate amortization for the goods leased and not charge the goods leased as expense, only the interest fees are regarded as expense naturally (Bal, 2011).

The switch to the IFRS accounting initially had a negative impact especially on big ticket leasing deals and on multinational clients who practically lost their taxation or off-balance sheet advantages.

Strict regulatory policies that were introduced to the sector as of 2006 by the Banking Regulatory and Supervisory Board (BRSA) and the elimination of Value Added Tax (VAT) incentives in 2007 resulted in a significant contraction and consolidation in the sector.

Historically, leasing operations in Turkey were incentivized via a minimal 1% value-added tax with the exception of certain items. However, in December 2007, the Council of Ministers has decided to increase the tax rate applied in leasing to the overall VAT level in Turkey, which is 8% to 18%. The elimination of the tax advantage resulted in significant decline in leasing volumes and in 2008 volumes came down by about 51% compared to a year ago. Koçyiğit and Kılıç (2008) investigate the impacts of VAT regulations on publicly traded leasing companies and conclude that some gain statistically significant abnormal returns before and after the event.

After strong lobbying by the industry players, the Ministry then agreed to lower the VAT rate for certain kinds of equipment such as agricultural machines and some types of construction and production machines. Although, the change was well-received by the market players, the contraction in the number of transactions was still significant.

With the impact of 2008 global crisis, contraction in the sector is exacerbated. The impact of the regulations and global crisis can be seen in total volumes and market penetration in the Table-9 below.

Table 9 Leasing Volume and Penetration Level (Global and Turkey)

Year	Global (USD bn)	Turkey (USD bn)	Penetration, Turkey (%)
2003	511	2,2	7,6
2004	579	2,9	6,1
2005	582	4,3	6,9
2006	633	5,3	7,7
2007	760	8,2	9,8
2008	644	5,3	6,6
2009	600	2,2	3,5
2010	617	4,2	3,9
2011	N/A	4,8	4,7

The history of the Turkish leasing industry may be splitted into different phases that were shaped around the developments on the legislative framework and the level of VAT.

The leasing industry registered around 50% increase per year between 2001 and 2007. However, at the end of 2007, the increase in the VAT for leased equipment from only 1% to 8% or even 18% depending on asset classification resulted in sharp decline in leasing volumes.

Despite change in VAT rates, the leasing industry continued its growth in 2010 and 2011 but obviously the growth was limited due to lack of any incentives. Now, we are at another turning point for the Turkish leasing industry.

As of December 2011, the VAT for selected leased equipments (approximately 50% of business volume) was again cut down to 1%, which is expected to bring the strong growth volumes back to the historical trends.

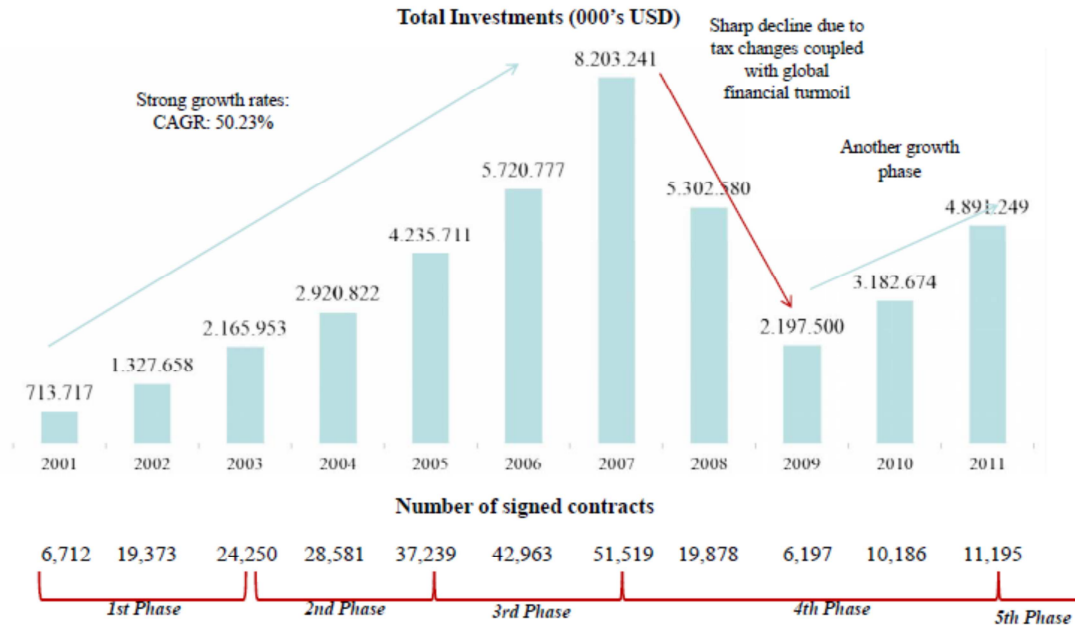


Figure 11 Growth Trend of Leasing in Turkey

Source: Fider and BRSA

1st Phase: Tax base leasing. All rentals are corporate tax deductible. Investment Incentive (up to 100% tax allowance may be reflected to lessee in pricing). 1% VAT against general VAT (over years 11% - 15% - 18%).

2nd Phase: IFRS tax accounting. No more tax base leasing. Investment incentive certificate and VAT advantageous continued.

3rd Phase: Investment incentive certificate, corporate tax allowances application ended gradually (finished by end 2008). VAT advantage of 1% against 8% or 18% continued.

4th Phase: No any special tax incentive or advantageous in leasing sector. There is a contraction in the sector due to new regulations. However, global crisis effect is also effective as it is depicted in Figure-12.

5th Phase (at the present time):1% VAT against general VAT (8%-18%)and expected new leasing Law.

As of 2010, the share of financial leasing in financial markets made about 1,20%. It is clear in Table-10 that banks dominate the financial system. Moreover, first 15 actors in the leasing industry are mainly bank subsidiaries and dominate the leasing market. Like the banking sector, Leasing companies are regulated by BRSA (Transparent and Well-regulated).

Table 10 Trends in Leasing Volumes in Turkey

Billions of TL	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	%Share
Central Bank	74,1	76,5	74,7	90,1	104,4	106,6	113,5	110,0	128,5	146,2	10,03%
Banks	216,7	255,0	313,8	406,9	499,5	581,6	732,5	834,0	1.066,7	1.217,7	83,55%
Leasing	3,8	5,0	6,7	6,1	10,0	13,7	17,1	14,6	15,7	18,6	1,28%
Factoring	2,1	2,9	4,1	5,3	6,3	7,4	7,8	10,4	14,5	15,6	1,07%
Consumer Finance Companies	0,5	0,8	1,5	2,5	3,4	3,9	4,7	4,5	6,0	8,9	0,61%
Insurance	5,4	4,2	5,6	8,7	10,2	12,6	14,3	17,8	14,3	16,3	1,12%
Pension Funds	0,0	3,3	4,2	5,7	7,2	9,5	12,2	15,7	20,8	24,6	1,69%
Brokerage Houses	1,0	1,3	1,0	2,6	2,7	3,8	4,2	5,2	7,4	9,6	0,66%
Total	303,6	349,0	411,6	527,9	643,7	739,1	906,3	1.012,2	1.273,9	1.457,5	100,00%

Source: BRSA, CB, Treasury, CMB, TurkStat

The effect of the Global Financial Turmoil on the Turkish Leasing Sector was limited, thanks to the BRSA regulations and precautions due to the crisis experience.

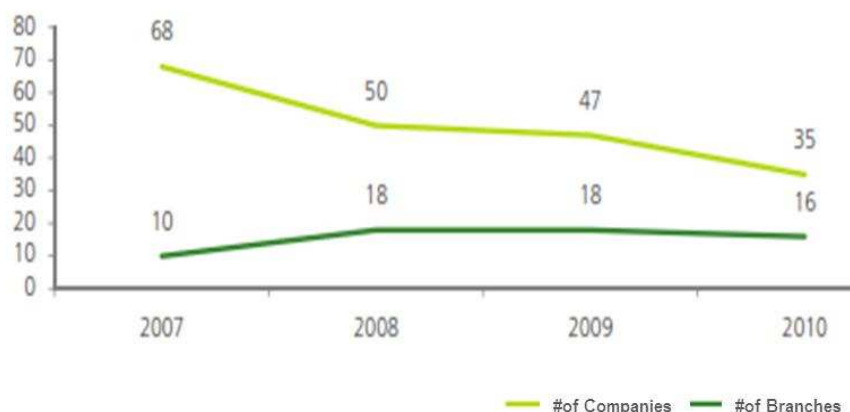


Figure 12 Companies and Representatives in Leasing Industry, Turkey

Source: BRSA

With restructuring efforts in financial system, in particular banks, following 2000 and 2001 crises, consolidation have been introduced to the sector. While there were 83 financial leasing companies in Turkey before 2006, the consolidation in the sector brought the number of companies to 47 as of April 2010. Additionally 13 investment banks and 4 participation banks are in the sector.

When the sectoral distribution of leasing contracts displayed on Table 11 is analyzed, there is a condensation in industry and services sector. With regard to the functional distribution of the receivables, there is a condensation in commercial companies and SMEs.

Table 11 Distribution of Domestic Leasing, According to Assets Type

(New Equipment amounts in USD million)

EQUIPMENT	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Vehicles	72,6	195,4	334,5	420,1	524,9	641,1	866,1	485,8	132,6	128,1	222,1
Air transportation vehicles	1,4	6,0	0,0	5,2	25,8	11,3	96,8	98,5	165,7	30,70	84,1
Marine vehicles	1,3	17,0	6,8	5,7	7,0	24,4	138,4	113,8	72,6	135,6	115,3
Construction machinery	72,1	99,6	201,7	446,0	986,0	1.363,8	1.931,1	1.081,3	385,5	746,00	1153,8
Manufacturing machinery and equipmen	156,8	278,5	547,9	781,6	1.175,0	1.416,0	1.921,9	1.433,8	632,5	898,0	1.362,4
Medical equipment	28,8	42,7	100,3	122,1	197,1	245,9	368,6	367,9	131,4	199,70	203,7
Textile machinery	87,8	310,8	413,3	371,2	351,9	355,0	651,3	136,5	69,1	194,6	421,8
Tourism equipment	16,0	36,0	42,9	42,4	59,6	96,4	195,7	180,8	67,4	70,60	118,4
Electronic and optical equipment	29,7	50,3	75,9	144,4	150,4	191,1	298,9	146,1	101,5	141,7	230,1
Printing equipment	24,6	38,3	56,5	104,9	134,9	152,2	230,1	289,9	49,2	93,90	139,2
Office equipment and computers	126,4	137,8	185,3	209,1	263,0	317,0	465,1	584,1	81,3	143,8	197,4
Real estate	66,6	68,7	144,1	196,9	343,9	384,6	919,5	80,2	264,4	365,40	596,9
Others	46,9	46,1	55,6	70,7	42,6	71,2	119,8	24,6	44,3	34,6	45,8
Total	731	1.327	2.165	2.920	4.262	5.270	8.203	5.023	2.198	3.183	4.891
Number of contracts	6.712	19.383	24.233	28.615	37.278	42.963	51.519	19.878	6.197	10.186	14.647
Equipment penetration	4,3	6,7	7,7	6,8	7,6	7,7	7,7	5,0	3,5	n/a	n/a

Source: FIDER

Consequently, it would not be wrong to put forward that leasing sector has caught a growth trend by 2010 with the growth of Turkish economy. Annual growth rate of the economy is around %9. This growth has a positive impact on transaction volume of leases and penetration level. Transaction volume has reached to a level of USD 3.2 billion with an annual growth rate of %45. As can be seen in Table 11 growth trend continued in 2011, new leasing finance reached to USD 4.9 billion. Estimated

volume of transaction and penetration level for 2012-2017 are displayed on the table below.

Table 12 Estimated Volume of Transaction for 2012-2017 (US\$ M)

Million USD

	2012	2013	2014	2015	2016	2017
GDP	822,000	888,000	952,000	999,600	1,049,580	1,102,060
Private Industry Machinery Investments	100,810	112,620	125,300	136,340	148,370	161,450
Leasing Penetration Ratio (Excl. Real Estate)*	0.05	0.06	0.08	0.10	0.12	0.13
Leasing volume (Excl. Real estate)	5,040	6,760	10,020	13,630	17,800	20,990
Real Estate Leasing Volume	500	680	1,000	1,360	1,780	2,100
Total Leasing Volume	5,540	7,430	11,020	14,990	19,580	23,090

As a consequence, it would not be a mistake to say that financial leasing has been a mid-term financing alternative for Turkish market which may be characterized by political and financial instability (Uydacı, 2006). Moreover, leasing has been accepted as a substitution of loan finance (KMPG, 2011).

General characteristics of the sector may be summarized as follows:

- Average term is around three years.
- Contracts are full payout.
- Fixed interest rate is generally employed.
- Leasing is used to cover approximately 3.5-8% of total private fixed capital investments.
- Cross border leases are valid only for high-tech equipment.
- Average annual growth rate is about 35%.

- Bad debt is roughly 3,5%.
- Most frequently leased items: Manufacturing machinery, construction machinery, transportation vehicles, real estate and office equipment.

3.1.2. Strengths of Turkish Leasing Industry

Incentives, in particular tax deductions, are the main advantageous to other alternatives for finance. Second advantage for the sector is specialization. Leasing companies focus on only their financing procedures that employees follow changes and updates. Hence, the lessees enjoy a professional service as well as consultancy and even training in particular cases.

Sector is sponsored and supported by Leasing Association, i.e. FİDER, officially established in 1994, but rooted in 1989 with couple of companies, namely Lease Club. All members of FİDER signed ethical codes leading to good governance. FİDER with experienced professional staff arranges extensive training programs for the leasing industry.

Since many leasing companies are subsidiaries of banks, they have a well-established and well-managed distribution channel. Thus, it is easy for the companies to communicate with the customers. Furthermore, information asymmetry is not a big deal for the companies since information on customers are not costly and easily accessible from different sources.

3.1.3. Weaknesses of Turkish Leasing Industry

Regulations, problems related to organizations and infrastructure, product variety, and maturity mismatch are main weaknesses of Turkish leasing industry. Because financial leasing act allows a broad contractual base, incentives are differently described in many acts and not obviously designated, and a definite definition of financial lease is not provided in the acts, collusive transactions and tax losses have been experienced in the sector (Söyler, 2007:17).

One of the main weaknesses is that lessees are not aware and taking the time to understand many benefits offered by the leasing. In a similar vein, lessors are not keen on demonstrating their capabilities and competencies. Many companies are not familiar with the sector and not sure what the differences the sector is able to provide in comparison with banks.

There are some discrepancies between Financial Leasing Law (No.3226) and Taxation Act (No.213). It is not explicitly stated that financial leasing institutions are credit unions or commercial firms or financial intermediaries (Kuntalp, 2006, p.56). Operating lease is not definitely mentioned in the regulations that act is mainly on financial lease. The difference between the two is put forward in the taxation act in concordance with valuation method.

Financial leasing is allowed for leasing companies, investment banks, and development and participation banks. And leasing companies are managed by the ones who have a bank based experience.

Leasing transactions other than financial leasing are regulated under general laws rather than the financial leasing law. For instance, Kuntalp (2006, p.40) states that regulations do not allow sale-leaseback since it comprises bilateral transactions while financial leasing involves third party ones. However, researcher advocates that regulations need to be changed to allow sale-leaseback as a leasing. Additionally, intellectual and industrial property rights like copyrights and patents are not included in the regulation, thus they may not be a subject of a financial lease. This may be a deficiency because knowledge management is a significant competence (Kuntalp, 2006, p.40).

While leasing companies could find funds with short-term maturity, they provide funds with long-term one. Also there is no extra charge or fee for the lessees once leasing may lose its attractiveness if extra charge applies.

The lessors do not use marketing and sales efforts efficiently to increase lessees awareness about the benefits leasing offers. However, Turkey, a typical emerging country, in need of source for growing capital requirements, does not have adequate

lessors willing to take associated risks, credits, currency and interest rate risks (Amembal and Halladay, 1995, p.60). Moreover, the lessors are may not be able to assess the creditworthiness of the lessee (Amembal and Halladay, 1995, p.60).

3.1.4. Opportunities for Turkish Leasing Industry

New legislation, growth opportunities, demand on participative banking, new sectors for leasing, and innovative structure are opportunities for Turkish leasing industry.

Share of financial leasing for real sector's capital investment is less than 8% for Turkey while that is 30% for the US, 23% for Canada, 16% for Germany, 11% for Italy, and about 10% for France, the UK, and Japan (Söyler, 2007:17). The statistics indicate that there is much room for financial leasing in Turkey, and it is prospecting. As Halladay and Amembal (1995, p.54) points out that the US leasing industry is still experiencing change and consolidation with its mature structure, the industry is in its growth stage in Turkey with its emerging structure. 20% may be an easily accessible target for the sector.

Following the latest global changes in the regulatory, accounting and taxation framework, a new legislation seems to be necessary for the market. Turkish Leasing Association and the BRSA have been working together in order to create a better leasing law that aims to adapt to global changes and overcome the contemporary problems.

Because financial leasing is similar to Islamic finance, it attracts many investors from Islamic countries. Furthermore, public sector is still naïve for leasing. Legislative framework allows leasing for particular cases in public sector. However, managerial experience is not sufficient to employ financial leases instead of purchase or rents. Similarly, leasing companies have not demonstrated how advantageous and beneficial financial lease is.

Leasing sector may discover new industries located in places other than İstanbul, financial center of Turkey. Moreover, new industries like railway

transportation, defense systems, health, renewable energy, and industrial agriculture are promising fields for leasing sector. Growth trend is going on vessels, energy, agriculture and IT. With incentives regarding the industries mentioned, companies will be in need of funds whereby they could be provided by the lessors, in particular captives.

Innovative structure is an opportunity for leasing sector because other sorts of leases like sub-lease are good sources of revenues. They also expand the level of transaction volume. Additionally leasing for real estate and movables with long economic life is another field to have growth potential.

3.1.5. Threats for Turkish Leasing Industry

Competition based on price, legislation, global financial instability, and substitute products are main threats for Turkish leasing industry. First, competition is based on price because banks still dominate financial system and commence to provide long-term credits to SMEs. Risk based planning and management has not yet been employed by the leasing companies.

Next, bureaucratic process to make new legislation or to update current one is too long and problematic. Global financial instability is another threat for the sector. Turkey has adapted the financial system to international standards aftermath 2000 and 2001 crises. It would not be wrong to state that financial system is deeper than ever it was. Nonetheless, global financial stability may have negative impact on the macroeconomic indicators like current account deficit and budget deficit as well as currency fluctuations. Thus, dollar denominated transactions are sensitive to global financial instability. Finally, substitute products like installment loans, equal-term payments are introduced by banks in order to overcome crises.

3.2. LEASING INDUSTRY IN PROSPECT AND DRAFT FRAMEWORK

The leasing industries have particular importance for the developing economies through better financing opportunities for SMEs. Leasing industry is also so crucial for SMEs that capital inadequacy may be overcome to stimulate exports and industrial

growth. Taking into account significant share in the economy and keeping in mind that one of the main problems of the Turkish economy has always been the high share of unregistered economy, it is important to offer financing opportunities for the SMEs and to support them in their development and institutionalization process. It makes sense that SMEs make up 99.5% of the total in terms of the number of companies operating in Turkey.

Turkish leasing industry has a growth potential despite that the world has been experiencing a demand contraction in heavy equipment, vessels, and aircraft (Söyler, 2007:16).

Product variety with new financial openings like operating lease, sale and leaseback, sub-leasing, software leasing may positively contribute to transaction volume and penetration.

Leasing companies need to be learning organizations which embed good governance and benchmarking. In-house and out-house training programs may be intensified that employees including tellers have good knowledge on products and processes.

Asset management and risk management seems to retain significance and may be the most significant issue for leasing companies because of Basel II criteria. In addition, speed of technological change is beneficial to the sector because technology investment point out the leasing capabilities for SMEs.

Although, Turkish leasing industry had covered significant distance during the past two decades, the volumes and penetration levels are still considerably low compared to its international peers. Especially, following the latest changes in the regulatory, accounting and taxation framework, a new legislation has been necessary for the deepening of the market as well as the diversification of the business lines and product offerings. Turkish Leasing Association and the BRSA have been working together in order to create a better leasing law that aims to serve these purposes. As the industry experts' reports in their interviews, the new law has been developed on three main pillars:

- Safeguarding the positive aspects already inherent in the existing law No 3226,
- Creating new growth opportunities by introducing operating leasing and authorizing sale and leaseback, subleasing and software leasing transactions,
- Eliminating uncertainties, e.g. by introducing clauses to protect lessor's recovery rights.

3.2.1. Main Changes to be Adopted

Some of the most important terms in the new legislation are as follows:

- Financial leasing firms will have the authority to perform not only financial (capital) leasing but also operational leasing,
- New products will be introduced such as Sale & leaseback operations
- Definition of goods subject to leasing is enlarged. With the new law, accessories and integral parts of the goods owned by the lessee will also be subject to leasing as well as software.
- The obligation to draw up contracts at notaries will be removed.
- Term restriction regarding the expiry of contracts will be removed and the term of the contract will be freely determined by the relevant parties.

A "Financial Leasing Firms' Association" with a public authority status will be established, at which all financial leasing contracts will be registered, enabling better monitoring of the industry.

3.2.2. Expected Effects of the New Legislation on Industry Players

3.2.2.1. Pros and Cons for the Lessors

Under the current legislation, since financial leasing is the only instrument offered by leasing companies, the main problem in the leasing industry has been the

absence of a multi-product framework. A multi-product framework is important due to reasons such as customer satisfaction, effective funding, tax management, operational productivity and risk diversification:

Customer Satisfaction: Offering both operational and financial leasing in a one-stop shopping framework would provide more convenience for the customer. Meanwhile sale and leaseback operations will give the opportunity to meet unexpected cash flow needs of the lessee. At the same time, the lessor can enjoy higher customer interaction with more focus on relationship management.

Effective Funding: There is always volatility in rental inflows, which mostly results in idle use of resources. The presence of multi-products might balance out different payment cycles, leading to a more efficient use of funds.

Tax Management: In financial leasing companies, when the major expense item is interest expense only, in line with the IFRS reporting, the flexibility in tax management is very limited. The addition of operational leasing brings the accounting of amortization expenses, which can be subject to different depreciation methods, bringing higher flexibility in tax management.

Operational Productivity: The use of a multi-product framework gives the lessor the opportunity to adopt a more productive use of its resources and labor force in line with different cyclicalities and volatilities in the market.

Risk Diversification: A multi-product approach can help risk management in different ways: 1- It provides the opportunity to get to know the customer in small-scale leasing operations before engaging in larger scale financial leasing. 2- It strengthens the Balance Sheet against liquidity and market risks.

While the pros of the newly proposed legislation highly outweighs the potential cons, the main expected con would be the additional burden it would bring on company management in terms of sophistication, IT infrastructure, product offerings, specializations and new rules of competition.

3.2.2.2. Pros and Cons for Lessees

Similar to the advantages of the lessor, the lessee will also have access to one-stop shopping advantages, meeting all his financial, operational lease and cash-flow needs from the same source. The operational efficiency and better cash flow and tax management by the lessor will also translate into better pricing for the lessee.

The accessibility of the SMEs to banking instruments is very limited. Accordingly, SMEs will particularly enjoy the benefits of the strengthening of the leasing sector with better pricing terms and more product availability as the leasing companies already have the best know-how on the SME segment in the financial system.

3.2.2.3. Impact on BRSA Supervised Companies vs. Captive Leasing Companies

Under the current legislation, although there is no framework that grants the leasing companies to offer operational leasing instruments, there are some non-financial companies (so-called captive operational leasing companies such a fleet-management companies) that offer operational leasing instruments with no supervision by any regulatory body. One major drawback of the new legislation would be the unfair competition among those BRSA-supervised companies versus the unsupervised captive leasing companies.

CHAPTER FOUR

CASH FLOW-AT-RISK: A METHODOLOGICAL APPROACH

There is an ever growing interest on value-at-risk approach to risk management in banking industry. Deregulation and globalization force financial institutions to be more competitive and exposed to greater volatility regarding financial risks (Jorion, 2007, p.8). Roughly speaking, risk can be broadly defined as the degree of uncertainty. Similarly, Jorion (2007, p.3) relates risk to the volatility of unexpected outcomes.

The literature distinguishes four main risks; credit risk, operational risk, liquidity risk, and market risk. While credit risk concerns the loss due to obligations of counterparts, operational risk is simply related to management of payments. On the other hand, liquidity risk is unexpected negative change in cash flows, which may result in early liquidation. Jorion (2007) qualifies liquidity risk as transformation of paper losses to realized ones. In addition, market risks are based on market conditions. Since it affects market value of a portfolio, it is most prominent in the risks.

Value-at-risk (VAR) approach takes market risk factors into account, which may be exposed to highest risk value in a given period at a certain confidence level. In other words, VAR measures an institution's exposure to market risks. Malz (2011) highlights that VAR analyzes portfolio market risk based on a known return model. Hence, VAR is widely used as the basis for risk management systems within financial institutions. What makes important VAR analysis are providing a single number for the risks, comprising all risk measures, adapting quickly to current states, and summarizing the risk of a portfolio containing different asset classes (Malz, 2011, p.93-94).

VAR methodology is employed by many researches in different industries. However, leasing industry is unique to its specific characteristics, and may not be convenient to study within VAR context because balance sheets quite differ from banks by their exposure to liquidity risk. Likewise, Yan, Hall and Turner (2011) adapt the methodology to banking industry due to higher liquidity risk as well as market risk. In

addition, leasing industry finances long-term investment with short-term resources, thus resulting in maturity mismatch. As Stein, Usher and LaGattuta (2000, p.8) emphasize, VAR is perhaps best suited to evaluating the risks of a trading desk that deals in relatively current assets. To this end, cash flow-at-risk (CFAR) concept seems best alternative to value risk in leasing industry since cash flow and liquidity risks get priority to market risk.

This chapter discusses CFAR methodology from a historical perspective and presents general volatility techniques employed in the method. Following chapter employs methodology for leasing firms operating in Turkey, both accredited to Istanbul Stock Exchange (ISE) and not publicly traded.

4.1. CONCEPTUAL DISCUSSION

Portfolio values of a firm and risk diversification have long been interesting research issues for both researchers and practitioners. Risk diversification, among others, is a useful tool that serves the mentioned objective. Companies traditionally attempt to create an internal capital market that can lower the cost of capital. However, as Brandolini et al. (2000) imply that classical risk management hypothesis is left behind. Consequently, a new risk management approach that harbors enterprise wide risks has been emerged. Furthermore, volatility in financial markets during last few decades urge companies, researchers and regulatory bodies to develop more complex instruments to manage risks (Manganelli and Engle, 2001, p.5).

Stein, Usher and LaGattuta (2000, pp.10-12) discuss why companies want to employ risk measures and list three reasons as; to know variability of cash flows to determine distress level related to capital structure policy, to quantify the benefits of risk management policy, and to share information with investors and analysts.

Chiu (2007) notes the significance of risk management and relate it to cash flow as *“risk management of cash flows is playing an increasingly important role in corporate financial management with the rapid development of corporate diversification.”*

Volatility in interest rates, exchanges rates, and commodity prices and incredible quick improvement of innovations as well as market expansion and growth of financing alternatives make risk management more significant and attractive. And the fact that last few decades experienced severe financial difficulties led management to create new tools to deal with volatilities and risks. During this period the use of value at risk techniques in risk management has also increased (Venkataraman, 1997). The need for VAR approach also stemmed from the above-mentioned reason (Linsmeier and Pearson, 2000).

In addition to VAR, some other approaches have been derived for cash flow oriented institutions. For instance Ye and Tiong (2000) adapted the methodology to measure risks related net present value computation in project evaluation. Likewise exposure based methodology adapted by (Andren, Jankensgard and Oxeiheim, 2005; Yan, Hall and Turner, 2011) is a derivative solution to rapid changing business environment. Another interesting work was conducted by Brandolini, Pallotta and Zenti (2000), which investigates differences between the meaning of risk management in a bank and in an asset management company.

In a similar vein, CFAR developed by Stein, Usher and LaGattuta (2000). CFAR is just the cash flow equivalent of VAR, which is tailored to industrial companies (Andren et al., 2005). Özvural (2004) employs the methodology within Turkey's market conditions.

CFAR quantifies the potential loss in cash flows rather than market variables as in VAR (Linsmeier and Pearson, 2000). CFAR, as VAR, pools the company's risk factors into a single bin that facilitates and supports corporate decision-making body and process, in particular related to hedging (Andren et al., 2005). All of the risks would be reported in annual report by means of CFAR. Main factor to bear in mind is that CFAR is cash flow losses resulted from normal market conditions.

Since CFAR transfers underlying concept of VAR to a setting in which cash flows are the targeted variable and follows VAR methodology, it is deemed necessary to discuss VAR at first and then move to CFAR.

VAR literature goes back to Markowitz's seminal work on portfolio choice in 1952 when the researcher explored the appropriate risk definition and measurement (Hendricks, 1996; Jorion, 2007, p.17). The main idea in VAR is to consider total portfolio risk inherent at all levels of enterprise (Jorion, 2007, p.27).

In addition, regulators designed new regulations around VAR techniques. Venkataraman (1997) lists examples as the determination of bank capital standards for market risk and the reporting requirements. For instance, the Basle Committee on Banking Supervision endorsed the use of such models, contingent on important qualitative and quantitative standards (Hendricks, 1996; Gupta and Liang, 2005). Thus, the Committee allows commercial banks to use their own internal VAR estimates to determine their capital requirement for market risk.

The Basle Committee, therefore, introduced some standards to the market. Jorion (2007, p.62) lists the standards on VAR computation as:

- Time Period: 10 trading days or 2 calendar weeks,
- Confidence level: 99%,
- Observation period: At least 1 year and updated at least once a quarter.

Also, the Bank for International Settlements Fisher report introduced a new mandate that financial intermediaries are to disclose measures of value-at-risk. Another example in this context was adopted by the U.S.. The Derivatives Policy Group formed by the Securities and Exchange Commission makes similar recommendations to broker-dealers that conduct an OTC derivatives business (Gupta and Liang, 2005, p.222).

Satchidananda (2006) summarizes purposes to use VAR estimates and seeks to answer why enterprises employ VAR methodology. The researcher lists the reasons as follows:

- To arrive at the capital adequacy requirement,
- To monitor the capital adequacy requirement,

- To arrive at the market value for the purpose of compliance with BIS standards,
- To evaluate the traders' and investors' risk/return performance.

A common definition in literature is that VAR is a measure of downside risk. This is also common grounds for VAR methodology to compare the risks of different markets no matter which industry it is applied to. VAR quantifies maximum potential change in a portfolio value. Jorion (2007, p.18) suggests that VAR describes the quantile of projected distribution of gains and losses over target period.

Linsmeier and Pearson (2000, p.48) provide a more formal description for VAR and define as “with a probability of x percent and a holding period of t days, an entity's VAR is **the loss that is expected to be exceeded with a probability of only x percent during the next t -day holding period.**” (bolds added).

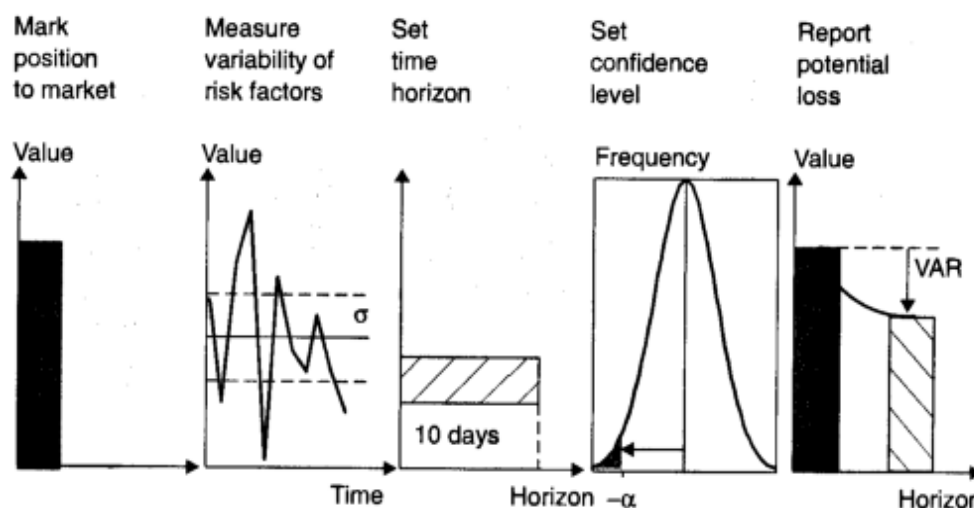


Figure 13 Steps in Computing VAR

Source: Jorion, 2007, p.107.

Steps to compute VAR are displayed in Figure 13. The first step is to identify the basic market factors and get a formula of mark-to-market value of portfolio

(Linsmeier and Pearson, 2000). The next step is to obtain historical data of determined market risk factors. Third step is to determine time horizon of VAR. The time period used in the definition of VAR is referred to as the “holding period”. Financial firms typically use one day because they trade their portfolios on a daily basis while nonfinancial institutions use longer period (Linsmeier and Pearson, 2000). According to Jorion (2007), longer horizons reduce the accuracy and consistency of tests. For instance, for a time horizon of 2-week at a year produces 26 observations while that of 1-day at a year does 252 observations. It is obvious that shorter horizon provides strength to the test.

The fourth step is to set confidence level. VAR gives the probability of experiencing a greater loss less than (1-confidence level). Hendricks (1996) reports that VAR estimates are calculated from the 90th to 99.9th percentiles in practice, but the most commonly used range is the 95th to 99th percentile range.

The last step is to report findings, namely potential loss expected. To communicate effectively to shareholders, we can rephrase as: “*under normal market conditions, the most the portfolio can lose over **given period** is about (VAR value) at the 99 percent confidence level.*” (Jorion, 2007, p.27) (bolds added to generalize).

A generalization of VAR computation is presented here. Computations hereinafter regarding VAR are based on Malz (2011). The value of the position is:

$$V_t = xS_t$$

V_t , here, is the current time value of position, and S_t denotes initial price of the position. Thereafter, future value of position is denoted as $V_{t+\tau}$ and it is evidently a random variable. Hence, mark-to-market profit/loss ($V_{t+\tau} - V_t$) is also random. We can rewrite the equation as:

$$(V_{t+\tau} - V_t) = x(S_{t+\tau} - S_t)$$

Hendricks (1996) clarifies definition and highlights that a VAR model determines how much the value of a portfolio could decline over a given period of time

with a given probability due to changes in market prices or rates. VAR measure would be an estimate of the decline in the portfolio value that could occur with a 1 percent probability over the next trading day (Hendricks, 1996).

Basic elements of this popular risk management tool are minimum loss expected, a certain holding period, and a given confidence level, i.e. probability. The length of time over which market risk is to be measured and the confidence level at which market risk is measured are two most important components according to Hendricks (1996). Confidence level is denoted by α ; then, $1 - \alpha$ is the probability of a loss equal to or greater than VAR. This is depicted in the equation below.

$$(V_{t+\tau} - V_t) = x(S_{t+\tau} - S_t) = xS_t((S_{t+\tau}/S_t) - 1) = xS_t(e^{t,\tau} - 1)$$

Finally, we can obtain profit/loss equal to the product of the initial value of the position by a proportional shock to the risk factor. Thereafter, VAR equation below is derived.

$$V^* = xS_t e^{r^*}$$

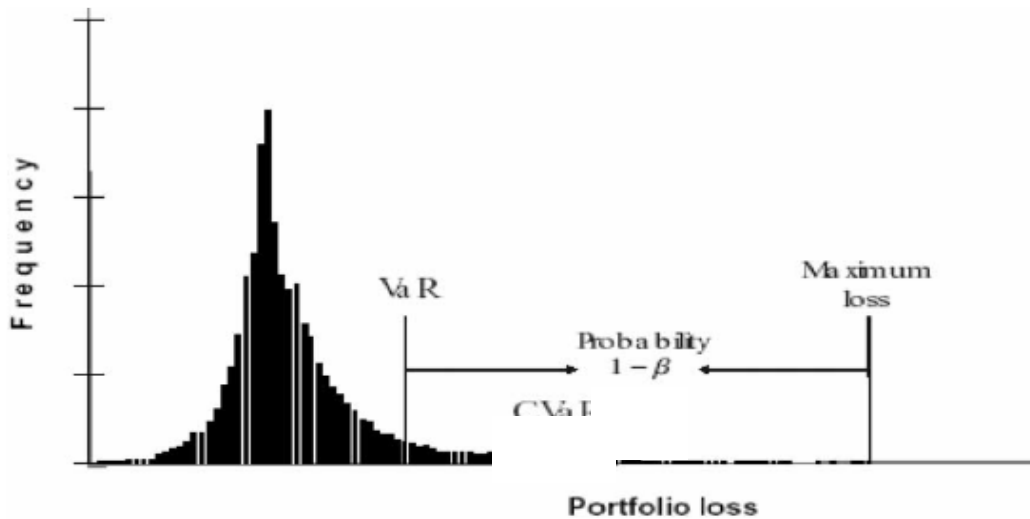


Figure 14 Graphic Depiction of VAR

Source: Szegö, 2002, p.1258.

Figure 14 transforms equations to graphic depiction. As it is depicted in the figure, VAR is cut-off position that points the stress level management to be exposed at most. VAR is the maximum portfolio loss within a certain confidence level (α) at a given time.

Gupta and Liang (2005) highlight another strength of VAR approach that it does not only measure the maximum loss a fund can experience over a certain horizon with a given probability, but can also be employed to measure the capital needed to cover those losses. Moreover, Brandolini et al. (2000) advocate that the risk management function can enhance the investment decision process as well as prevent large negative returns. Jorion (2007) supports the idea that VAR is now applied to all risk types.

After JP Morgan and Reuters (1994) established a concrete basis for the methodology by producing RiskMetrics software, VAR has become standard measure to quantify market risk (Manganelli and Engle, 2001). Regulations also require industries to use VAR as a standard (Lan, Hu and Johnson, 2010).

Jorion (2007) expects that risk-based instruments will be broadly used across the industry. Accordingly, many studies attempted to apply technique to different industries. For instance, Gupta and Liang (2005) examine the risk characteristics and capital adequacy of hedge funds through the VAR approach. In addition, Hendricks (1996) and Venkataraman (1997) investigate risk measures for foreign exchanges. Lan et al. (2010) examine daily returns through VAR methodology for mutual funds.

Once hedge fund risk and capitalization display significant time variation, Gupta and Liang (2005) underlie that traditional risk measures like standard deviation or leverage ratios fail to detect these trends.

Andren et al. (2005) observe that CFAR gains popularity among industrial companies for the same reasons that VAR has succeeded in financial institutions. Because of its conceptual simplicity, the technique reduces associated markets risks into one number that is easy to understand and implement. Venkataraman (1997) also

stresses adoption of the method by nonfinancial firms for their risk-management purposes.

In addition to theoretical papers (e.g. Linsmeier and Pearson, 2000; Stein et al. 2001; Andren et al., 2005), several empirical studies made researches in different industries for CFAR methodology. Özvural (2004) examines risk exposure of publicly traded nonfinancial companies by employing CFAR methodology. Chiu (2007) investigates effect of CFAR methodology whether companies are related diversified or not. Anderson and Davidson (2009) describe the application of CFAR model in deregulated electric markets. Yan et al. (2011) discuss this new methodology within UK banking industry.

4.2. GENERAL CHARACTERISTICS

CFAR is the cash flow equivalent of VAR that discounts all of risk measures in a single number. Both methods provide risk tolerance degrees that guide managers for risk management measures. As mentioned by Chiu (2007), CFAR and VAR have many evident differences as well as similarities. This section sheds some light on a comparison between the two models and then presents basic features of CFAR methodology.

VAR is a risk management tool commonly commissioned by financial institutions while CFAR model is based on VAR methodology and has been developed to measure risk value of institutions open to liquidity risk rather than market risk. Andren et al. (2005) observe that CFAR gains popularity among industrial companies for the same reasons that VAR has succeeded in financial institutions.

VAR models look out over daily or weekly basis, whereas the CFAR focuses on asset sides of balance sheets over longer horizons, namely quarterly or annual timeline (Chiu, 2007, p.2).

Third difference is the planning method. CFAR follows a top-down planning approach whereas VAR employs a bottom-up methodology (Chiu, 2007, p.2). Andren et

al. (2005) suggest a third approach that integrates both top-down and bottom-up planning approaches.

Another difference to be mentioned is the expected values that methods are anticipated to produce. While VAR gives the maximum amount of total value a firm is expected to lose under most foreseeable conditions, CFAR calculates the maximum shortfall of cash the firm is willing to tolerate (Andren et al., 2005).

CFAR methodology not only measures liquidity risk tolerance, but also helps to improve liquidity risk management through the provision of additional risk exposure information (Yan et al., 2011).

There are three main decision variables in estimating CFAR as in the case of VAR; target horizon, confidence level and estimation method (Gupta and Liang, 2005). The target horizon concerning the liquidity of the positions in the portfolio should reflect the amount of time necessary to take corrective action if high losses occur (Gupta and Liang, 2005, p.223; Jorion, 2007, p.117). Furthermore, target horizon should correspond to the time necessary to raise additional funds to cover losses (Gupta and Liang, 2005, p.223).

The confidence level also reflects the degree of risk aversion of the enterprise (Jorion, 2007, p.117). Higher confidence level means greater amount of capital to cover possible losses. A survey revealed that the confidence interval used by firms ranges from 95 percent to 99 percent (Venkataraman, 1997).

The choice of decision variables is a subjective process. There are, however, some rules of thumb in literature. Brandolini et al. (2000) recommend medium-long term horizons regarding risk management in an asset management company. While banks prefer shorter duration, investment managers and hedge funds choose longer horizon (Jorion, 2007, p.19). According to Venkataraman (1997), firms use the one-day holding period and an observation period of one year (250 trading days).

There are also some limitations in CFAR approach. First the historical data employed may not include representative events for the future (Gupta and Liang, 2005,

p.249). Next, portfolio risk profile may change over target horizon. That's to say, if a 10-day period is used in estimating, company may change its portfolio or the market conditions may differ. Hence, suffice it to say that researchers need to bear in mind that portfolio returns may not be normal with mean equal to zero and volatilities can change over time (Brandolini et al., 2000, p.2).

VAR methodology, which has established the base for CFAR, has also been subject to criticism. Giannopoulos and Tunaru (2005) stress that VAR estimates do not take into account the magnitude of extreme or rare losses not included in the percentiles. Lan et al. (2010) provide more criticisms such as inadequate account for extreme losses and violation of coherent risk measure features.

A risk measure needs to satisfy following criteria in order to be coherent.

- Monotonicity: Portfolio with lower returns is supposed to produce greater risk. This assumption is mathematically derived below:

$$\text{If } W_1 \leq W_2, \text{ then } \rho_1 \geq \rho_2$$

- Homogeneity: If the size of a portfolio increases by a certain amount, its risk increases by the same amount, respectively. This assumption is mathematically derived below:

$$\rho(bW) = b\rho(W)$$

- Subadditivity: If portfolios merge, total risk cannot be greater than that of individual portfolios. This assumption is mathematically derived below:

$$\rho(W_1 + W_2) = \rho(W_1) + \rho(W_2)$$

- Translation invariance: If a certain amount of cash is added to a portfolio, the risk of the portfolio is reduced by that amount. This assumption is mathematically derived below:

$$\rho(W_1 + k) = \rho(W_1) - k$$

In addition, VAR is widely criticized as being reflecting only normal market conditions. In other words, VAR is too conservative, especially during unusual market movements (Giannopoulos and Tunaru, 2005).

Giannopoulos and Tunaru (2005) underline another deficiency of VAR approach that VAR considers mainly the frequency of losses although the severity of a loss is the most important in risk.

Szegö (2002, 1261) evaluates VAR as an unacceptable risk measure because VAR does not measure losses exceeding VAR, a reduction of VAR may lead to stretch the tail exceeding VAR, conflicting results may be obtained at different confidence levels, VAR violates subadditivity, VAR may not be used in optimization problems, and there exist many local extremes resulting in unstable VAR ranking.

In sum, VAR is a necessary but not sufficient means to manage risk. Jorion (2007, p.28) suggests that VAR needs to be supported by some other statistical tools, such as stress test, limits, and controls.

4.3. BASIC METHODOLOGIES

Literature on basic methodologies employed in CFAR method is quite scant. There are few theoretical and empirical studies on the methodologies. However, we may borrow methodological approaches from VAR literature because Stein et al. (2000) assert that CFAR is analogous to VAR methodology.

VAR approach needs three main decision variables. It is significant to develop methodologies that provide accurate estimates for risk managers to evaluate the performance mandated by regulatory requirements. Otherwise, sub-optimal capital allocation may result in negative consequences on the profitability and financial stability (Manganelli and Engle, 2001, p.5). Hence, literature provides different classification for methodologies. For instance, Linsmeier and Pearson (2000) list three basic methodologies in order to predict future values of variables as; historical simulation, delta-normal approach and Monte Carlo simulation.

There is not a consensus on classification of approaches. While some (e.g. Dobránszky, 2009) distinguish two major families (historical and parametric approaches), others (Lan et al., 2010) cluster approaches into three groups; parametric, non-parametric, and semi-parametric models. Similarly, Malz (2011) puts the computation modes as parametric, monte carlo simulation, and historical data.

We discuss methodological approaches below in four groups; parametric approach, nonparametric approach, hybrid models, and NERA methodology. At the end of chapter, a comparison of approaches is also provided.

The basic differences among the estimation models result from financial data characteristics. Manganelli and Engle (2001) summarize empirical facts about financial markets. First is about distribution of financial returns. Those have heavier tails and higher peaks in relative to normal distribution. This sort of distribution is called leptokurtic. Second is on skewness of distribution. Returns are typically skewed to left. Third, volatilities of market variables have propensity to cluster. That's why, market variables are changing in the long run whereas maintaining stability in short-term.

4.3.1. Parametric Approach

Parametric methodologies make modeling assumptions that are based on some specific distribution function for the returns and fit some parametric distributions to the historical data (Dobránszky, 2009). Parametric approaches are relatively simple and straightforward, and produce more accurate results (Jorion, 2007, p.110).

Parametric models include, but not limited to, the RiskMetrics model developed by J.P. Morgan, parametric approaches that use normal distributions of returns such as the variance-covariance approach, parametric approaches that use nonnormal distributions, GARCH-type models and extreme value approaches (Lan et al., 2010). The main advantage of parametric approaches is that the number of future simulations is not limited to a given small number (Dobránszky, 2009).

The variance-covariance method is popularized by RiskMetrics and is the simplest and perhaps most widely used approach to modeling changes in portfolio value

(Glasserman, Heidelberger and Shahabuddin, 2002). Researchers highlight underlying assumptions as changes in risk factors are conditionally multivariate normal over a horizon and portfolio value changes linearly with changes in the risk factors (p.240).

Riskmetrics method is a way of calculating today's volatility depending on the historical data with exponential weights of the past volatility (Sinha and Chamu, 2000). RiskMetrics methodology includes a covariance matrix for a large variety of risk factors (Jorion, 2007). RiskMetrics assume that standardized residuals are normally distributed and confidence level is usually set equal to 94% or 97% (Manganelli and Engle, 2001, p.9).

4.3.2. Nonparametric Approach

Nonparametric approaches include historical simulation, weighted historical simulation, some hybrid models, the use of nonparametric density estimation and neural network (Lan et al., 2010). Here historical simulation and Monte Carlo simulation approaches are discussed due to context of the study.

4.3.2.1. Historical Simulation

Historical simulation is a nonparametric approach known as bootstrapping simulation. According to Linsmeier and Pearson (2000), historical simulation requires few assumptions on statistical distributions concerning market factors, i.e. variables. On the contrary, Manganelli and Engle (2001) and Lan et al. (2010) state that this approach does not require any distributional assumption. Now that it is evident that financial returns have fat tail characteristics, i.e. they are leptokurtic, common mistakes of assuming parametric distributions are avoided in historical simulation approach (Sinha and Chamu, 2000). However, it is inconsistent with the empirical evidence of asset returns because extreme events are much more likely to occur in practice than would be predicted based on the assumption of normality (Venkataraman, 1997).

It simply relies on specific quantity of historical observations and uses the actual percentiles of the observation period as value-at-risk measures (Hendricks, 1996). However, there is a tacit assumption that distribution does not change for the position at that specific time period (Manganelli and Engle, 2001).

Methodology uses historical changes in variables to predict future profit or loss in cash flows. The use of actual changes in variables to compute future profits or losses is the distinguishing feature of historical simulation approach (Linsmeier and Pearson, 2000, p.50). This feature is also a limitation of the approach that past history may not carry out into the future (Gupta and Liang, 2005, p.249).

Historical simulation approach includes five steps. First step is identification of variables and formulation of the model. Second step is to obtain historical values of variables for the last N periods. Simply, historical simulation approach captures a picture of a specific time period, generally ranging 6 months to 2 years (Manganelli and Engle, 2001, p.10). Portfolio is subjected to changes in variables in third step. Following step is ordering results from top-to-down, from largest profit to largest loss. In the last step, the loss equal to or larger than given confidence level is determined.

Historical simulation approach assumes that returns are independent and identically distributed (i.i.d.) (Jorion, 2007). Sinha and Chamu (2000) note that financial data are very sensitive to time varying property of volatility. Lan et al. (2010, p.120) also highlight this disadvantage that the approach assigns an equal probability weight to each historical return.

The calculation of standard deviations in an equally weighted average is

$$\sigma_t = \sqrt{\frac{1}{(k-1)} \sum_{i=t-k}^{t-1} (x_i - \mu)^2}$$

where σ denotes the estimated standard deviation of the portfolio. k is the observation period, x is the change in portfolio value and μ is the mean change in portfolio value. μ is assumed to be “0”.

In contrast to equally weighted approaches, exponentially weighted moving average approaches emphasize recent observations by using exponentially weighted moving averages of squared deviations. These approaches attach different weights to the past observations contained in the observation period. Because the weights decline

exponentially, the most recent observations receive much more weight than earlier observations. The formula for the portfolio standard deviation under an exponentially weighted moving average approach is

$$\sigma_j = \sqrt{\lambda \sigma_{j-1}^2 + (1-\lambda)(x_{j-1} - \mu)^2}$$

As shown, an exponentially weighted average on any given day is a simple combination of two components: (1) the weighted average on the previous day, which receives a weight of λ , and (2) yesterday's squared deviation, which receives a weight of $(1-\lambda)$.

There are some improved approaches to historical simulation to overcome some shortcomings of a typical one. For instance, Boudoukh et al. (1998) propose weighted historical simulation that places more weight on more recent returns and calculates VAR from the empirical distribution of the re-weighted returns (Lan et al., 2010, p.120). Another approach in this category is filtered historical simulation, proposed by Barone-Adesi et al. (1998; 1999) and Barone-Adesi and Giannopoulos (2001) (Lan et al., 2010, p.121).

Lan et al. (2010) illustrates using the filtered historical simulation model that combines GARCH volatility forecasting and bootstrap simulation to improve VAR forecast accuracy and precision. Giannopoulos and Tunaru (2005) show how to use the filtered historical simulation in estimating the expected shortfall. Filtered historical simulation presents opportunity to relax the distributional assumptions of the underlying risk factors while it takes the current market conditions into account (Giannopoulos and Tunaru, 2005, p.983). Filtered historical simulation approach checks for peakedness and fat tails separately and does not make any assumptions about the distribution that describes the data. It is not very sensitive to outliers, either.

4.3.2.2. Monte Carlo Simulation

Monte Carlo simulation approach is developed to overcome the limitations of standard methodologies in 1990s (Giannopoulos and Tunaru, 2005). Main difference

from historical simulation approach is that simulation is performed to obtain future profits and losses rather than historical changes in variables (Linsmeier and Pearson, 2000, p.56). Monte Carlo simulation approach that defines “a priori” structure of risk (Brandolini et al., 2000, p.8) assumes a statistical distribution to adequately capture the possible changes in variables to generate predictions.

VAR uncertainty is usually obtained from Monte Carlo simulations (Lan et al., 2010). Traditional approaches based on Monte Carlo simulation typically employ stochastic differential equations to generate returns over the time horizon (Brandolini et al., 2000, p.8).

The first and the last two steps are the same as historical simulation approach. After identifying market factors and formulating the model, in the second step distribution for changes in variables is determined. The opportunity to specify a distribution for the changes is strength of Monte Carlo simulation approach (Linsmeier and Pearson, 2000, p.56). Next step is to generate N future predictions by means of pseudo-random generator.

CFAR is typically estimated by Monte Carlo simulation (Linsmeier and Pearson, 2000, p.62). There are a few issues that differ in the methodology related to CFAR. Hypothetical market factors are taken into account to compute distribution of changes in an observation period. Calculations all include future cash flows, in other words, all factors affect operating cash flow are included. Moreover, time horizon is much different. Underlying market factors are to be simulated for the next specific quarters. The main goal to use CFAR is to facilitate internal planning rather than to control the risk.

4.3.3. Hybrid Models

There are also some approaches that use both parametric and nonparametric methods. One is delta-normal approach employed by Linsmeier and Pearson (2000). The basic assumption underlying delta-normal approach is that variables show a multivariate normal distribution (Linsmeier and Pearson, 2000, p.53). After obtaining

possible portfolio profits and losses, normal statistical procedures are employed to determine the loss equal to or larger than given confidence level.

Glasserman et al. (2002) develops efficient methods that exploit a quadratic approximation to the portfolio loss, namely delta-gamma approximation and a low variance Monte Carlo method for computing portfolio VAR when the underlying risk factors have a heavy-tailed distribution. Both methods use the quadratic approximation to guide the selection of an effective importance sampling distribution that samples risk factors so that large losses occur more often (Glasserman et al., 2002).

4.3.4. NERA Cash Flow-at-Risk Approach

Stein, Usher and LaGattuta (2001) develop a similar methodology to VAR to obtain a risk measure for non-financial firms. Yan et al. (2011) employs the methodology in the study on the banking industry. Özvural (2004) applies the model to publicly traded non-financial firms in Turkey and contends that the model functions quite good to estimate maximum loss in cash flow in the following period.

CFAR methodology is, in fact, a very powerful nonparametric way for any given firm. The method is based on operating cash flows whose basic measures are EBITDA or EBIT (Stein et al., 2001, p.14). The ratio of EBIT to Assets is used in the model. Since the data trace out the entire distribution, we do not need to rely on any assumptions about normality.

In order to measure how much cash-flow deviates from expectations, one needs to have a forecast of expected cash-flow since forecast errors are deviations of cash-flows from their expected values (Stein et al., 2001, p.13). To do so, a very simple autoregressive specification is introduced to the model. For a quarterly forecast, EBIT/Assets is regressed in quarter t against four lags of itself: that is, against EBIT/Assets in quarters $t-1$, $t-2$, $t-3$, and $t-4$. In any quarter t , the model is fit using the past years' worth of data. Finally, to evaluate a given confidence level tail for any given company, we simply look at the mentioned percentile of the empirical distribution.

In order to overcome data inadequacy, Stein et al. (2001, p.9) recommend grouping comparable firms into one bin. For instance, regarding a five-year observation period with a three-month time horizon, one company would provide 20 observations on a quarterly basis. On the other hand, the more companies involved in the analysis the more observations we include and the more accuracy and precision we statistically have. To make comparable groups, market capitalization, profitability, industry riskiness and stock price volatility may be available tools.

4.3.5. Comparison of Approaches

Dobrąnszky (2009) compares historical or parametric VAR methodologies and concludes that there is only slight difference in the calculated VAR. Linsmeier and Pearson (2000) employ historical simulation, Monte Carlo simulation and delta-normal estimation models and present a comparison in Table 13 below.

Table 13 Comparison of Methodologies

Attribute	Historical Simulation	Monte Carlo Simulation	Delta-Normal Approach	NERA Approach*
Ability to capture the risks	Yes	No	Yes	Yes
Easiness to Implement	Yes	Yes	Yes	Yes
Quickness in Computation	Yes	Yes	No	No
Production of Misleading Estimates	Yes	No	No	Yes
Sensitivity Analysis	No	Yes	Yes	Yes

Source: Linsmeier and Pearson, 2000.

* Added by the Researcher.

According to Stein et al. (2001, p.17), estimating CFAR offers a number of practical advantages. First and foremost, by looking directly at the ultimate item of interest-cashflow variability-the model naturally produces estimates that, within any given peer group, are correct on average. Second, the model is non-parametric, and

thereby avoids imposing the highly unrealistic assumption that shocks to cash-flow are normally distributed. Finally, once the model is built, it can be easily and at relatively low cost applied to any number of non-financial companies. Furthermore, to our knowledge, Yan et al. (2011) employed the methodology to banking industry, necessarily not a non-financial institution and reported methodology best suited to rapidly changing banking industry.

CHAPTER FIVE

APPLICATION

5.1. AIM OF RESEARCH

The aim of the research is twofold. First is to measure liquidity risk tolerance and help to improve liquidity risk management through the provision of additional risk exposure information, such as profitability. And second is to offer an investigation of CFAR model in the Turkish leasing industry, based on NERA CFAR approach.

5.2. SIGNIFICANCE OF RESEARCH

Literature review reveals that risk management is a significant issue for financial and non-financial institutions. However, risk management tools available are tailored to financial institutions, and banks, in particular.

In order to shed some critical light on risk management in a highly promising industry, namely leasing industry, this research is designed. There are three reasons that motivate the researcher to develop and introduce a risk model framework for the leasing industry. First, although risk management models are highly common among banks, there are no risk management models yet in the leasing industry. Common attributes among banks in the literature are identified and how they can be applied to the leasing industry is considered. Second, there is a need of a more concrete legal framework in the Turkish leasing industry but the potential impacts of the draft legislation are yet unknown. It is important to study the impact of the proposed changes on the profitability and risk of the leasing industry. Third, it is believed that a comprehensive and coherent risk management model framework would encourage both practitioners and researchers to better apply lessons-learned from relevant academic research.

So this study contributes to the scarce literature on risk management in the leasing industry. Also this study opens pathways for future research using newly developed risk management tools.

5.3. RESEARCH METHOD

VAR methodology is employed by many researches in different industries. As Stein et al. (2001, p.8) emphasize, VAR is perhaps best suited to evaluating the risks of a trading desk that deals in relatively liquid instruments. However, leasing industry is unique to its specific characteristics, and may not be convenient to study within VAR context because balance sheets quite differ from banks and other financial institutions by their exposure to liquidity risk. Balance sheets of financial intermediaries are compared in Table 14.

Table 14 Balance Sheets of Financial Intermediaries

Type	Assets	Liabilities
Banks	Loans, other credit exposures	Deposits, CDs, subordinated debt
Securities Firms	Securities (long)	Securities (long)
Insurance Companies	Market value of assets	Actuarial value of insurance claims
Pension Funds	Market value of assets	Present value of defined-benefit pensions
Leasing Companies	Receivables, property, plant, and equipment	Loans payable

Source: Adapted from Jorion (2007, p.67) and leasing companies are added.

Accordingly, risk factors are formed by balance sheet structures. Again main risk factors of financial intermediaries are compared in Table 15. Both tables are to be interpreted together. As it is obvious, leasing industry is based on property, plant, and equipment rather than current assets. That's why; leasing industry is more open to liquidity risk in relative to market risk.

However, ownership structure is assumed not to affect market positions of leasing companies. Bearing in mind that a large amount of the leasing companies in Turkey is backed by banks, this is beyond the scope of the study. Nevertheless, we need to mention that independent leasing companies, compared to bank backed leasing companies, have to be extremely aggressive and, in some cases, willing to bend the rules for the lessee's benefit to win a transaction because leasing is their principal

source of revenue (Contino, 2002, p.5). Hence, the latter are riskier than the former regarding liquidity due to cash flow.

Table 15 Main Risk Factors of Financial Intermediaries

Type	Main Risk Factors	Purposes of Regulatory Capital
Banks	Credit risk Market risk	Safety and soundness deposit insurance fund
Securities Firms	Market risk Liquidity risk	Protect customers Protect integrity of securities market
Insurance Companies	Actuarial risk Market risk	Protect claimants
Pension Funds	Market risk Liability risk	Protect retirees pension insurance fund
Leasing Companies	Liquidity/Credit risk Market risk	Protect integrity of leasing market Protect lessee

Source: Adapted from Jorion (2007, p.67) and leasing companies are added.

CFAR concept seems to be the best alternative for the leasing industry to value risk since cash flow and liquidity risks get priority over market risk. Some studies adapt the methodology even to the banking industry due to higher liquidity risk as well as market risk (e.g. Yan et al., 2011). In addition, leasing industry finances long-term investment with short-term resources, thus resulting in maturity mismatch.

5.4. PROBLEM STATEMENT

Leasing industry in Turkey is at a turning point concerning the legal framework and growth potential. However, no data are available to predict future gains or losses to prepare the industry. Moreover, liquidity management is critical to own and lease technologically developed equipment because of rapid globalization and intense competition. There is a tendency of consolidation in the sector. Merger and acquisition of banks affect the sector due to ownership structure. That's why it is significant to adopt a risk management framework and measure the readiness level of the industry. In addition, it is also crucial to analyze expected effects of the new legal framework. Hence, taking into account of theoretical and empirical studies, following problem statements are developed:

1. Would it be possible to adopt a risk management framework for the leasing industry and analyze its readiness to the expected changes?

2. What is the expected maximum loss for financial leasing companies under the current legal framework?

3. What is the expected maximum loss for operational leasing companies after the new legal framework is introduced?

4. What is expected maximum loss for companies running both financial and operational leasing when the new legal framework is introduced?

5.5. MODEL

5.5.1. Assumptions

Once CFAR is computed by employing historical data and applied to current portfolio, the portfolio and the operating environment are assumed to remain unchanged during the holding period (Linsmeier and Pearson, 2000).

Time horizon is measured on a quarterly basis, which is consistent with arguments provided in literature review whether analysis is based on market risk factors or operating cash flows.

Confidence level is set to 95%. Malz (2011) defines confidence level as the probability that quantile is being exceeded and gives the interval between %95 and 99.9%. Empirical studies reveal that confidence level is set between 95% and 99%, and the higher the confidence level the riskier the losses exceed CFAR.

5.5.2. Data Collection

The study applied to the leasing industry attempts to employ NERA CFAR model to estimate maximum losses. Data was retrieved from ISE website (i.e. www.kap.gov.tr) for quoted companies and via personal correspondence for non-quoted companies. Data include quarterly EBIT and total assets of twelve companies of which six are quoted to ISE. Quoted companies are, respectively, İş Finansal Kiralama AŞ,

Vakıf Finansal Kiralama AŞ, Finans Finansal Kiralama AŞ, YKB Finansal Kiralama AŞ, Şeker Finansal Kiralama AŞ and Fon Finansal Kiralama AŞ. At times when ISE based data was not available, information on company websites were also used.

CFAR methodology is based on comparables to make comments with regard to a specific industry or a particular company. As Stein et al. (2000) indicate that it may make more sense to look at a single industry. Leasing industry with a new legislative environment requires a specific focus to measure expected risks and returns.

Because number of companies quoted to ISE is not adequate to analyze, there was a need to obtain further data from industry. According to capital market regulations, it is not obligatory for non-quoted companies to issue financial tables. While BRSA impose (Official Gazette no 26525; May 17, 2005) the non-bank financial institutions to issue their financial statements latest in seven days after the General Assembly, not all financial institutions announce them publicly. Hence, we obtained data from six more companies via personal correspondence. Those are A lease, A&T Lease, Deniz Leasing, EFG Leasing, Yatırım Leasing, and Ziraat Leasing. Data span range first quarter of 2005 to third quarter of 2011. Raw data are enclosed to the study as Appendix 1.

There are currently 31 leasing companies in the sector. Twelve companies participated in the study mostly represent the financial leasing sector in Turkey since statistics displayed on the table below indicate that they account for roughly 59% and 52% of total investments made in 2010 and 2011.

Table 16 Investment, Financial Leasing Companies (2010, 2011)

Corporate	2011 INVESTMENT (000 TL)	RATIO TO INDUSTRY TOTAL	2010 INVESTMENT (000 TL)	RATIO TO INDUSTRY TOTAL
A&T LEASING	65.201	0,77%	29.049	0,60%
ALEASE	132.729	1,57%	120.076	2,48%
DENİZ LEASING	589.518	6,98%	268.382	5,54%
EFG LEASING	111.236	1,32%	63.271	1,31%
FFK FON LEASING	33.506	0,40%	26.596	0,55%
FİNANS LEASING	402.517	4,76%	471.727	9,74%
İŞ LEASING	668.751	7,92%	435.325	8,99%
ŞEKER LEASING	82.825	0,98%	108.087	2,23%
VAKIF LEASING	315.747	3,74%	165.172	3,41%
YAPI KREDİ LEASING	1.654.370	19,58%	931.148	19,22%
YATIRIM LEASING	17.872	0,21%	13.313	0,27%
ZİRAAT LEASING	285.869	3,38%	204.842	4,23%
TOTAL	4.360.141	51,61%	2.836.988	58,57%
OTHERS	4.088.271	48,39%	2.006.981	41,43%
INDUSTRY TOTAL	8.448.412	100,00%	4.843.969	100,00%

A six-year period on a quarterly basis provides sufficient data to make analyses. Furthermore, the companies involved in the analysis accounts for two-third of the sector regarding asset size and investment portfolio. For each company, 27 observations for the mentioned period were included in the analyses. Also, now that NERA CFAR methodology is based on cash flows on quarterly basis, data spectrum is naturally limited. However, literature review reveals that researches are sometimes subject to limited data. For instance, Altıntaş (2007) studies VAR methods on pension funds for 250 observations within a year. Similarly, Akın and Akduğan (2012) calculates VAR of pension funds for a three-year period. Overall, concerning data, it may be concluded that the sample is representative of the population and is expected to be unbiased, sufficient, efficient and consistent.

Further examination of data was needed prior to analyses. Since the method is based on operating cash flows whose basic measure is EBIT, the ratio of EBIT to Total Assets (EBIT/TA) was computed respectively and attached to the study as Appendix-2.

Balance sheets and income statements provide necessary information to carry out EBIT/TA formulation. Total assets directly exported from balance sheets. EBITs require further transactions using income statements. Once income statements display cumulative data, quarterly EBITs are simply comparison of current quarter with the following. The difference between quarters provides EBIT in the current quarter. For instance, take EFG leasing data from first and second quarter of 2011, TL 1,515,000 and TL 3,027,000 respectively. The computation is straightforward. EBIT for second quarter is 1,512,000 (3,027,000 (EBIT for second quarter) – 1,515,000 (EBIT for first quarter)). Next EBIT is divided by relevant total asset. Data arranged accordingly are plotted in Figure 15.

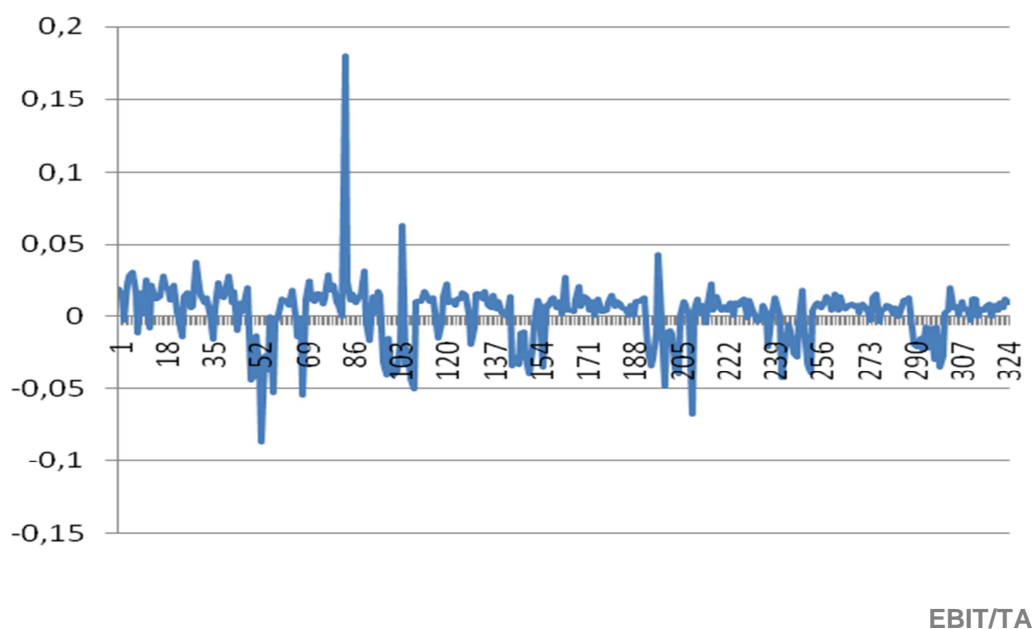


Figure 15 EBIT/TAs for Data

It is obvious in Figure 15 that there exist some outliers. In order to determine outliers, mean and standard deviations are computed by employing SPSS, a statistical package program.

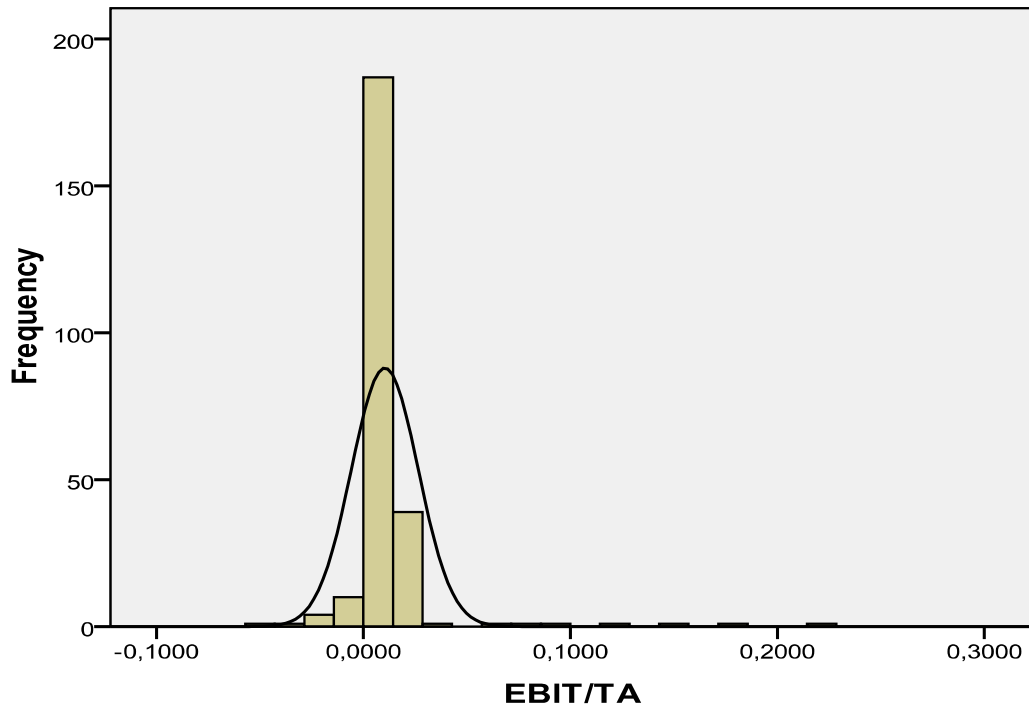


Figure 16 Histogram Graphic for Data with 322 Observations

With a mean of 0.0022 and a standard deviation of 0.0208, 324 observations are examined again and found that two observations do not fall within three standard deviations, recalling empirical rule which implies that approximately 99.7% of observations fall within three standard deviations of the mean (McClave, Benson and Sincich, 1998, p.70). After determining outliers and excluding two observations, data consisting of 322 observations between first quarter of 2005 and third quarter of 2011 is used for the analysis.

Table 17 Descriptive Statistics for Data with 322 Observations

Observations	322
Mean	,0019
Median	,0066
Mode	-,0867
Std. Deviation	,018
Skewness	-1,24
Std. Error of Skewness	,136
Kurtosis	2,654
Std. Error of Kurtosis	,271

Descriptive statistics (Table 17) and histogram graph (Figure 16) show that distribution of data is leptokurtic, i.e. kurtosis (2.654). Also distribution is slightly skewed to the right (skewness is -1.24 and mode (-.0867) is the lowest central tendency indicator where mean is 0.0019 and median is 0.0066). This is consistent with Manganelli and Engle (2001) that distribution of financial returns has heavier tails and higher peaks in relative to normal distribution. Also Stein et al. (2000, p.14) and Özvural (2004) assert that analysis need not to rely on any assumptions about normality because the data trace out the entire distribution.

5.6. FINDINGS

5.6.1. Data Analysis

In order to measure how much cash-flow deviates from expectations, one needs to have a forecast of expected cash-flow since forecast errors are deviations of cash-flows from their expected values (Stein et al., 2001, p.13). To do so, a very simple autoregressive specification is introduced to the model. For a quarterly forecast, EBIT/Total Assets ratio is regressed in quarter t against four lags of itself: that is, against EBIT/Total Assets ratios in quarters t-1, t-2, t-3, and t-4. In any quarter t, the model is fit using the past years' worth of data. A dummy variable is also included in the model with regard to VAT incentive. According to fiscal policy, from 2008 to the end of 2011 VAT incentive was not granted. Therefore, a dummy variable was introduced with a binary code of "0" if VAT incentive was not granted and "1" otherwise. Confidence level is assumed to be equal to 95% for analyses.

Overall, auto-regression equation may be written as:

$$(EBIT/TA)_t = \beta_0 + \beta_1*(EBIT/TA)_{t-1} + \beta_2*(EBIT/TA)_{t-2} + \beta_3*(EBIT/TA)_{t-3} + \beta_4*(EBIT/TA)_{t-4} + \text{dummy variable} + \varepsilon$$

One copy of excel sheet used to formulate data may be found in Appendix-3. Model for auto-regression is also depicted in Figure17 below.

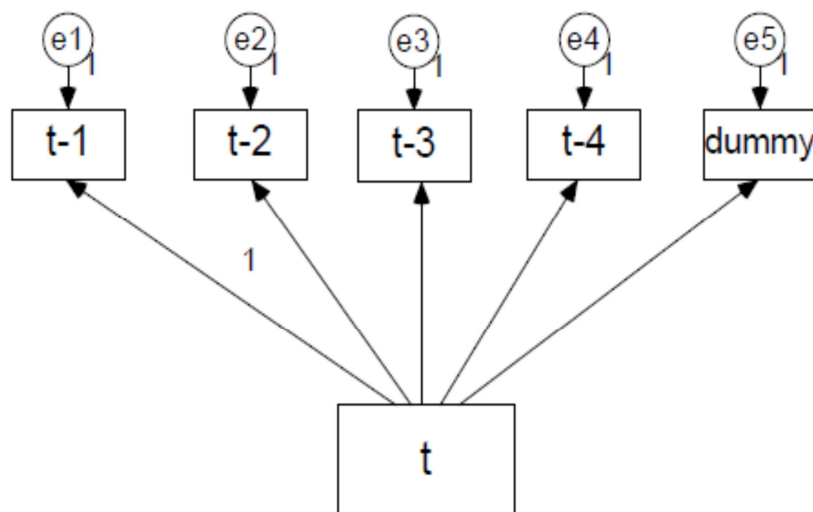


Figure 17 Hypothetic Model of Autoregression

$(EBIT/TA)_t$ where it is denoted as “t”, is regressed on four lags, shown as “t-1”, “t-2”, “t-3”, and “t-4”. SPSS is again employed for regression analysis and linear regression model is run to relate the time series of lags and the least squares method is employed to forecast future values of EBIT/TA. Summary statistics are provided in Table 18.

Table 18 Summary Statistics, Regression

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
,452	,204	,190	,01944	,204	13,871	5	270	,000	1,793

Multiple Coefficient of Determination (R^2) is the fraction of variation of the dependent variable that is explained by least squares prediction equation. R^2 is a sample statistics that tells how much the model explains variations from means. According to summary statistics, about 20.4% of variation can be explained by using lags to predict the EBIT/TA in the regression model.

We also need to test the significance of accuracy. In this sense, the hypotheses can be written as:

$$H_{null} = \beta_0 = \beta_1 = \dots = \beta_4 = 0$$

$$H_A = \text{At least one of the coefficients is nonzero}$$

Table 19 ANOVA for Regression Model

ANOVA ^b						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,026	5	,005	13,871	,000 ^a
	Residual	,102	270	,000		
	Total	,128	275			

a. Predictors: (Constant), dummy, v3, v2, v1, v4

b. Dependent Variable: t

where t1, t2, t3, and t4 denote lags and d denotes dummy variable.

The statistic F (F=13.871) has 5 and 270 degrees of freedom and may be used to test the null hypothesis that the coefficients of the model contribute sufficient information. The F statistics has an observed significance level of 0.000 so that there is strong evidence to reject the null hypothesis. It appears that at least one of the coefficients differs from zero. It may be concluded that the model contributes sufficient information for future prediction.

Table 20 displays the coefficients of the model with t-statistics and observed significance levels. The first, second, third and fourth lag coefficients are significantly different from zero ($\alpha=0.05$, $p<0.05$). But, the constant coefficient seems insignificant, which may signal that the independent variables may contribute redundant information. Because the correlated data is a general problem in the time-series model, the independent variables could be correlated with each other. Hence, this case is explored in the next section.

Table 20 Coefficients of Regression Model

		Coefficients ^a				
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,001	,001		,394	,694
	t1	-,267	,058	-,269	-4,581	,000
	t2	-,306	,058	-,312	-5,292	,000
	t3	-,220	,058	-,222	-3,805	,000
	t4	,147	,058	,150	2,547	,011
	dummy	,002	,003	,034	,615	,539

a. Dependent Variable: t

The Durbin-Watson statistic (d) is used to test for the presence of first-order autocorrelation. The correlation between time series residuals at different points in time is called autocorrelation. Correlation between neighboring residuals (at times t and $t-1$) is called first-order autocorrelation. The value of d always falls in the interval between 0 and 4 (McClave et al., 1998). There can be three cases regarding autocorrelation. If the residuals are uncorrelated then d is approximately 2. If the residuals are positively correlated, then d is greater than 2, if the relation is very strong then d is exactly 4. If the residuals are negatively correlated then d is less than two, if the correlation is very strong then d is absolutely 0. The Durbin-Watson statistic of the model is 1.793 as seen in Table 18, thus the residuals seem to be uncorrelated.

Consequently we can rewrite regression equation with coefficients as:

$$(EBIT/TA)_t = 0.001 - 0.267*(EBIT/TA)_{t-1} - 0.306*(EBIT/TA)_{t-2} - 0.220*(EBIT/TA)_{t-3} + 0.147*(EBIT/TA)_{t-4} + \varepsilon$$

Regression equation above is used to obtain forecasts for EBIT/TAs for period t . As Figure 18 displays scatterplot of regression standardized residual, they assume

normal distribution. Forecasts computed by regression equation are also provided in Appendix-4.

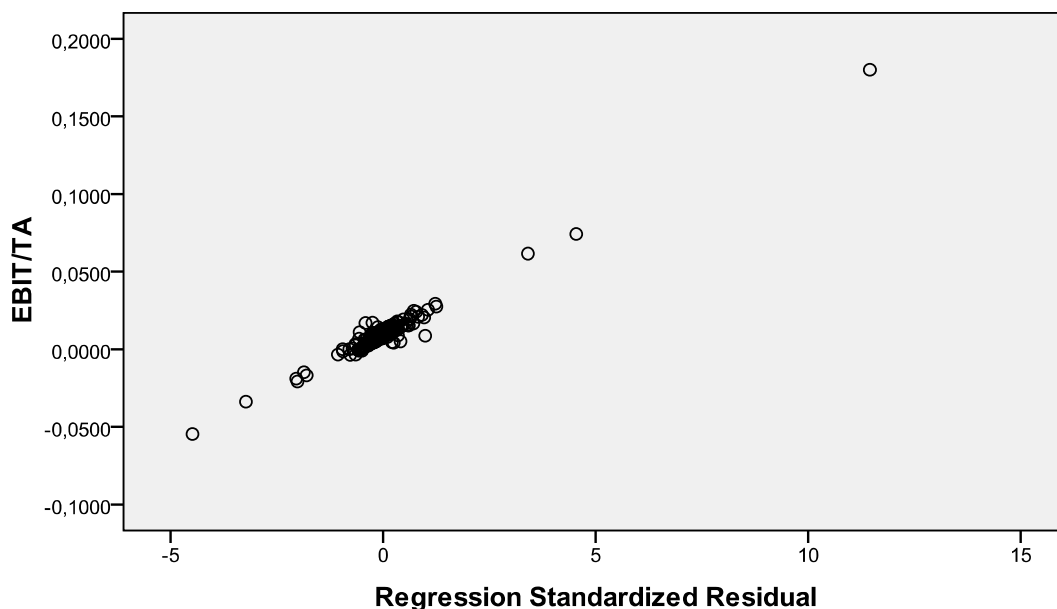


Figure 18 Scatterplot

According to CFAR methodology, in order to measure how much cash flow deviates from expectations, one needs to have a forecast of expected cash flow since forecast errors are deviations of cash flows from their expected values. Hence, forecast errors are calculated by subtracting forecasts from EBIT/TA values for period t . The results are also presented in Appendix-4.

Then, mean and standard deviation for forecast errors are computed by employing SPSS. For comparison, histogram of forecast errors is obtained and displayed in Figure19. Forecast errors with a mean of 0.000 and a standard deviation of 0.0193 follow the same pattern as actual data, namely it is also leptokurtic and slightly skewed to the right.

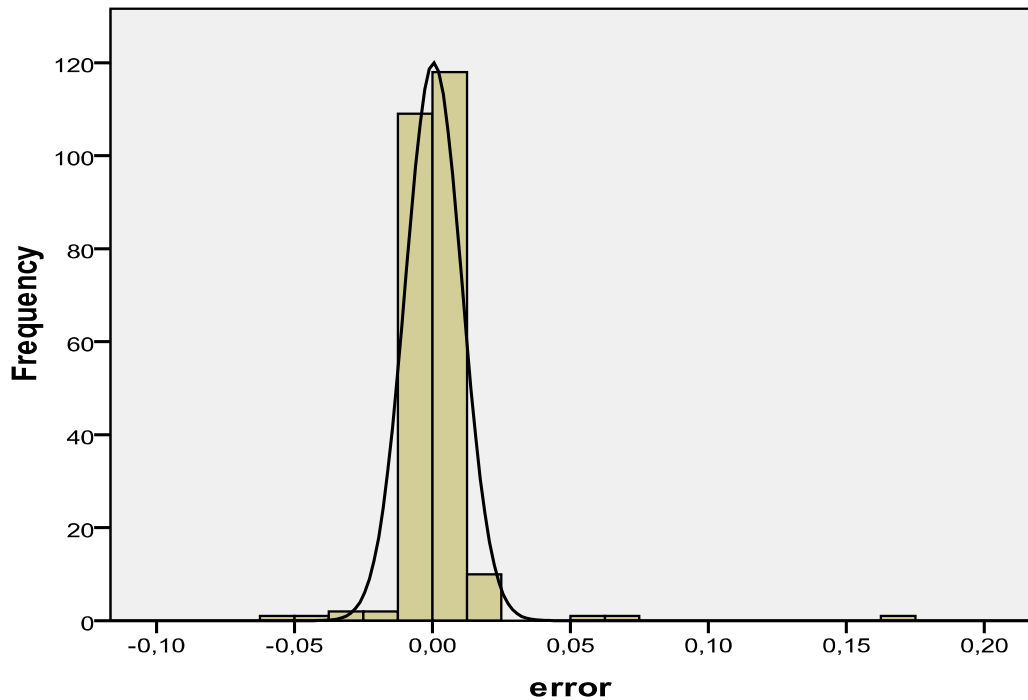


Figure 19 Histogram Graphic of Forecast Errors

5.6.2. Application of the Model

The study offers an investigation of risk exposure under both current conditions and the potential impact of the expected legislative change in the Turkish leasing industry. What this kind of analysis makes clear is that risk levels are identified with respect to leasing type. This part of the study, therefore, summarizes expected changes of new legislative framework and introduces three scenarios to apply the model obtained in previous section.

Some of the most important terms in the new legislation are highlighted below;

- Financial leasing firms will have the authority to perform not only financial (capital) leasing but also operational leasing,
- New products such as Sale & leaseback operations will be introduced,

- Definition of goods subject to leasing will be enlarged,
- Obligation to draw up contracts at notaries will be removed, term restriction regarding the expiry of contracts will be removed,
- The term of the contract will be freely determined by the relevant parties.
- “Financial Leasing Firms’ Association” with a public authority status will be established, at which all financial leasing contracts will be registered, enabling better monitoring of the industry.

While all of these changes are important for the sector, the introduction of operational leasing will be the most impactful in terms of financial statements and cash-flow analysis.

In order to recognize both potential impact of the new legislative framework and current situation, two sensitivity analyses are applied.

The first one applied to the consolidated quarterly data of the Leasing Industry (in order to reflect an industry wide perspective). The sensitivity analysis requires detailed data analysis with regard to financial statements. The data provided by FIDER is first used to analyze the risk and return analysis of financial leasing. Since the new legislation is expected to introduce operational leasing as the second important leasing instrument, a second case is analyzed with the assumption that the industry runs both operational leasing and financial leasing equally. Finally, the risk and returns are one more time analyzed with the assumption that the industry will focus entirely on operational leasing. As a consequence, CFAR is applied to three scenarios and a risk and return comparison is provided.

The sensitivity analysis is run in line with three main scenarios:

Scenario 1- If the leasing industry offers only financial leasing products,

Scenario 2- If the industry runs operational leasing and financial leasing together where 50% of the business volume will be coming from financial leasing operations and the other 50% will be generated from operational leasing,

Scenario 3- If the industry offers only operational leasing products.

The second application is applied on to the quarterly data of one single leasing company in order to identify the potential impact on a specific company rather than the industry as a whole.

Data from XXX Leasing (original corporate information is kept secret due to business confidentiality and will be referred to as Sample 1 in the rest of the study) was used to conduct this analysis. The sensitivity analysis requires detailed data analysis with regard to income statement. Since such detailed information is not available in all publicly available data sets on a quarterly basis, data provided by Sample 1 is used as an example to analyze the risk and return analysis under different scenarios. The sensitivity analysis is run in line with the previous application:

Scenario 1- if the company offers only financial leasing products,

Scenario 2- If the company runs operational leasing and financial leasing together where 50% of the business volume will be coming from financial leasing operations and the other 50% will be generated from operational leasing,

Scenario 3-If the company offers only operational leasing products. Sample 1 is asked to reflect draft framework to their financial tables.

As a consequence, CFAR is applied with the same assumptions to the three Scenarios and a risk comparison is provided. In order to run the sensitivity analysis, initially the data warehouse is built on “oracle 11g” system, and the business intelligence system is built on OBIEE (Oracle Business Intelligence Enterprise Edition). An E-core package program is written by using C# language on “.NET platform”. Transaction volumes and payment plans have been calculated on e-core package program.

The data used in sensitivity analysis prepared based on the following assumptions:

- Financial leasing transactions have been calculated on full payout principle. No residual value has been calculated, entire principal has been amortized at the maturity.
- Operational leasing transactions have been calculated on 35% and 43.3% residual value amount for two different asset groups.
- All costs have been accepted as being identical for financial & operational leasing.
- All other variables have also been based on the hypothesis that they are identical for financial & operational leasing.
- Fixed asset depreciation has been calculated as 20% and 16.7% for two different asset groups and straight line method basis is applied.
- The maturity of operating leasing transactions is 36 months. Financial statements of third and fourth quarters of third year have been prepared accordingly.
- No new operating leasing transaction has been realized, and the existing ones have been terminated at the end of 36th month.

Table 21 summarizes the three scenarios analyzed for leasing industry.

Table 21 Leasing Industry Income Statement (3rd and 4th Quarter, 2011)

Leasing Industry	30.09.2011			31.12.2011		
	Full Finance	Half Operating	Full Operating	Full Finance	Half Operating	Full Operating
Profit & Loss Statement						
Millions, TRY						
LEASE INCOME	851,44	2.992,38	4.474,01	1.135,83	3.922,31	5.965,80
A) Financial Lease Income	835,41	468,73	0,00	1.114,01	557,01	0,00
B) Operational Lease Income	0,00	2.507,62	4.457,98	0,00	3.343,48	5.943,98
C) Fees & Commissions Received From Lease Transactions	16,03	16,03	16,03	21,82	21,82	21,82
OPERATING EXPENSES (-)	195,28	1.780,86	3.014,08	252,47	2.366,57	4.010,87
A) Personnel Expenses	101,11	101,11	101,11	132,86	132,86	132,86
B) Provision Expense For Employment Termination Benefits	1,10	1,10	1,10	2,47	2,47	2,47
C) Research And Development Expenses	0,00	0,00	0,00	0,00	0,00	0,00
D) General Administration Expenses	80,53	80,53	80,53	100,29	100,29	100,29
E) Depreciation Expenses	0,00	1.585,58	2.818,80	0,00	2.114,10	3.758,40
F) Other	12,54	12,54	12,54	16,85	16,85	16,85
OTHER OPERATING INCOME	520,68	636,74	643,93	719,55	923,48	929,61
A) Interest Received From Banks	86,00	202,06	209,25	105,36	309,29	315,42
B) Interest Received From Reverse Repurchase Agreements	0,00	0,00	0,00	0,00	0,00	0,00
C) Interest Received From Marketable Securities Portfolio	5,84	5,84	5,84	6,71	6,71	6,71
D) Dividend Income	2,43	2,43	2,43	2,43	2,43	2,43
E) Trading Gains On Securities	127,17	127,17	127,17	183,96	183,96	183,96
F) Foreign Exchange Gains	102,72	102,72	102,72	137,05	137,05	137,05
G) Other	196,52	196,52	196,52	284,04	284,04	284,04
FINANCIAL EXPENSES (-)	389,74	963,87	1.143,52	534,57	1.300,02	1.605,83
A) Interest On Funds Borrowed	379,56	953,69	1.133,34	519,39	1.284,84	1.590,65
B) Interest On Factoring Payables	0,00	0,00	0,00	0,00	0,00	0,00
C) Financial Lease Expense	0,00	0,00	0,00	0,00	0,00	0,00
D) Interest On Securities Issued	0,12	0,12	0,12	2,10	2,10	2,10
E) Other Interest Expenses	0,13	0,13	0,13	0,03	0,03	0,03
F) Fees And Commissions Given	9,93	9,93	9,93	13,05	13,05	13,05
SPECIFIC PROVISIONS FOR FOLLOW-UP RECEIVABLES (-)	144,12	144,12	144,12	218,97	218,97	218,97
OTHER OPERATING EXPENSES (-)	176,34	176,34	176,34	265,46	265,46	265,46
A) Impairment Of Marketable Securities	0,23	0,23	0,23	0,37	0,37	0,37
B) Impairment Of Fixed Assets	0,24	0,24	0,24	0,29	0,29	0,29
C) Loss From Derivative Financial Transaction	154,88	154,88	154,88	229,22	229,22	229,22
D) Other	20,99	20,99	20,99	35,58	35,58	35,58
NET OPERATING INCOME/EXPENSE	466,64	563,93	639,88	583,91	694,76	794,28
TAXATION ON INCOME FROM CONTINUING OPERATIONS (±)	38,13	72,13	83,13	73,92	104,46	118,92
A) Current Tax Provision	62,81	96,81	107,81	73,27	103,81	118,27
B) Deferred Tax Expense Effect (+)	47,98	47,98	47,98	62,76	62,76	62,76
C) Deferred Tax Income Effect (-)	-72,66	-72,66	-72,66	-62,11	-62,11	-62,11
CURRENT PERIOD INCOME/ LOSS	428,51	491,80	556,75	509,99	590,30	675,36

As the details can be seen in Table 21, the sensitivity analysis suggests that the net profit that might be registered by the industry is TL 81.48M (509.99-428.51) under Scenario 1, TL 98,50M (590.30-491.80) under Scenario 2 and TL 118,61M (675,36-556.75) under Scenario 3. Net profits for the scenarios may be computed by deduction of current period income/loss for the fourth quarter from that of the third quarter.

In order to find CFAR, EBIT is to be computed by means of income statement. EBIT is equal to “Net Profit After Tax” plus “Income Tax Expense” minus “Total Operating Expenses”. EBIT for three cases is presented in Table 22. In addition, total assets for the cases are also presented. Recalling that forecast errors have a mean of 0.000 and a standard deviation of 0.0193, and a confidence level of 95%, z value to be used in the study is -1.645.

Table 22 EBIT Values for Cases

	Full Financial Lease	Half Operational Lease	Full Operational Lease
Net Profit After Tax	509,99	590,30	675,36
Income Tax Expense	-73,92	-104,46	-118,92
Total Operating Expenses	-252,47	-2.366,57	-4.010,87
EBIT	688,54	2.852,41	4.567,31
Total Assets (TA)	18.604,08	24.674,76	29.712,32

Tail value can be figured out by following equation:

$$z = (x - x_{avg}) / \sigma$$

where $x_{avg} = 0.000$, $\sigma = 0.0193$, and $z = -1.645$.

Tail values are then calculated as -0.03174 by means of below equation;

$$x = (z * \sigma) + x_{avg}$$

Total assets times tail value gives us the expected maximum loss for the following income statement period. As a consequence, when the results of the

sensitivity analysis is used under the risk management framework we have adopted by using the historical data of the twelve leasing companies, we came to the conclusion that the leasing industry may incur TL 590,49M loss at maximum if it functions under Scenario1, TL 783,18M loss at maximum under Scenario 2 and TL 943,07M loss at maximum under Scenario 3.

For the second application; Table 23 summarizes the three scenarios analyzed for XXX Leasing company.

Table 23 XXX Leasing Income Statement (3rd and 4th Quarter, 2011)

XXX LEASING Income Statement XXX Leasing (TRY) as of third and fourth quarter, 2011	30.09.2011			31.12.2011		
	Year to Date 30.09.2011	Year to Date 30.09.2011	Year to Date 30.09.2011	Year to Date 31.12.2011	Year to Date 31.12.2011	Year to Date 31.12.2011
	INTEREST AND DISCOUNT INCOME	32.859.768	25.833.962	18.808.156	42.550.828	36.030.333
INTEREST EXPENSE	20.144.655	23.470.593	26.796.530	27.121.698	31.556.281	-35.990.864
NET INTEREST INCOME	12.715.113	2.363.369	-7.988.374	15.429.130	4.474.052	-6.481.029
OPERATING LEASE INCOME	0	46.437.303	92.874.605	0	61.916.404	123.832.807
FEE AND COMMISSION INCOME	426.544	426.544	426.544	642.388	642.388	642.388
FEE AND COMMISSION EXPENSE	-414.413	-414.413	-414.413	-566.095	-566.095	-566.095
NET FEE AND COMMISSION INCOME	12.131	12.131	12.131	76.293	76.293	76.293
NET TRADING INCOME	203.773	203.773	203.773	227.262	227.262	227.262
OTHER OPERATING INCOME	103.348	103.348	103.348	103.348	103.348	103.348
TOTAL OPERATING INCOME	13.034.365	49.119.924	85.205.483	15.836.033	66.797.359	117.758.681
TOTAL PERSONNEL COST	-2.607.342	-2.607.342	-2.607.342	-3.455.057	-3.455.057	-3.455.057
TOTAL ADMINISTRATIVE EXPENSE	-1.444.728	-1.444.728	-1.444.728	-1.880.446	-1.880.446	-1.880.446
TOTAL DEPRECIATION	-148.297	29.510.797	58.873.298	-201.989	39.351.989	-78.501.990
TOTAL OPERATING EXPENSES	-4.200.367	33.562.867	62.925.368	-5.537.492	44.687.492	-83.837.493
BAD & DOUBTFUL DEBTS EXPENSE	-227.272	-227.272	-227.272	-266.824	-266.824	-266.824
OTHER PROVISIONS	-243.000	-243.000	-243.000	-324.000	-324.000	-324.000
NET PROFIT BEFORE TAX	8.363.726	15.086.785	21.809.843	9.707.717	21.519.043	33.330.364
INCOME TAX EXPENSE	-1.672.745	-3.017.357	-4.361.969	-1.941.543	-4.303.809	-6.666.073
NET PROFIT AFTER TAX	6.690.981	12.069.428	17.447.875	7.766.174	17.215.234	26.664.292

As the details can be seen in Table 23, the sensitivity analysis suggests that the net profit that might be registered by Sample 1 is TL 1.075.193 (7.766.174 - 6.690.981) under Scenario 1, TL 5.145.806 (17.215.234 - 12.069.428) under Scenario 2 and TL 9.216.417 (26.664.292 – 17.447.875) under Scenario 3. Net profits for the scenarios may be computed by deduction of net profits after tax for fourth quarter from that for third quarter.

In order to find CFAR, EBIT is again to be computed by means of income statement. EBIT is equal to “Net Profit After Tax” plus “Income Tax Expense” minus “Total Operating Expenses”. EBIT for three cases is presented in Table 24. In addition, total assets for the cases are also presented.

Table 24 EBIT Values for Cases

	Full Financial Lease	Half Operational Lease	Full Operational Lease
Net Profit After Tax	7.766.174	17.215.234	26.664.292
Income Tax Expense	-1.941.543	-4.303.809	-6.666.073
Total Operating Expenses	-5.537.492	-44.687.492	-83.837.493
EBIT	15.245.209	66.206.535	117.167.857
Total Assets (TA)	469.256.994	607.908.703	771.560.408

Recalling that tail values are calculated as -0.03174 , total assets times tail value gives us the expected maximum loss for the following income statement period. Consequently, when the results of the sensitivity analysis is used under the risk management framework we have adopted by using the historical data of the twelve leasing companies, we came to the conclusion that XXX leasing company may incur TL 14,89M loss at maximum if it functions under Scenario1, TL 19,29M loss at maximum under Scenario 2 and TL 24,49M loss at maximum under Scenario 3.

RESULTS AND DISCUSSION

Leasing is one of the alternatives of financing a business. The other means include, but not limited to, debt financing and Islamic finance. In fact, financial system facilitates economic activities and provides productive use of financial products. With globalization, rapid technological development and intense competition increased the need for capital. Leasing initially emerged as an alternative financing to acquire equipment. However, there has been a decline in global demand regarding heavy equipment, ship and plane (Söyler, 2007, p.16) and leasing shifted also towards other equipments, such as computer, photocopiers and vehicles.

The leasing industries have particular importance for the developing economies through better financing opportunities for SMEs. Today, in terms of the number of companies operating in Turkey, SMEs make up 99.5% of the total market. Their share in industrial employment is as high as 61.1% as well as their share in total value-added created. Taking into account this significant share in the economy and keeping in mind that one of the main problems of the Turkish economy has always been the high share of unregistered economy, it is important to offer financing opportunities for the SMEs and support them in their development and institutionalization process.

Under the current leasing legislation, since financial leasing is the only instrument offered by leasing companies, the main problem in the Turkish leasing industry has been the absence of a multi-product framework. A multi-product framework is important due to reasons such as customer satisfaction, effective funding, tax management, operational productivity and risk diversification. Such framework strengthens the balance sheet against liquidity and market risks.

Literature review reveals that risk management is a significant issue for financial and non-financial institutions. However, risk management tools that are currently available are mostly tailored to financial institutions, and banks, in particular. The Basle Committee on Banking Supervision endorsed the use of such models, contingent on important qualitative and quantitative standards (Hendricks, 1996; Gupta

and Liang, 2005). Thus, the Committee allows commercial banks to use their own internal VAR estimates to determine their capital requirement for market risk.

In order to shed some critical light on risk management in a highly promising industry, namely leasing industry, this research is designed. There are three reasons that motivate the researcher to develop and introduce a risk model framework for the leasing industry. First, although risk management models are highly common among banks, there are no risk management models yet in the leasing industry. Common attributes among banks in the literature are identified and how they can be applied to the leasing industry is considered. Second, there is a need of a more concrete legal framework in the Turkish leasing industry but the potential impacts of the draft legislation are yet unknown. It is important to study the impact of the proposed changes on the profitability and risk of the leasing industry. Third, it is believed that a comprehensive and coherent risk management model framework would encourage both practitioners and researchers to better apply lessons-learned from relevant academic research.

So this study contributes to the scarce literature on risk management in the leasing industry. Also this study opens pathways for future research using newly developed risk management tools. Leasing industry is based on property, plant, and equipment rather than current assets. That's why, while both market risk and liquidity risk is relevant to the leasing industry, it is more open to liquidity risk relative to market risk.

The maturity mismatch problem in the leasing industry due to the financing of long-term investments with short-term resources also increases the importance of liquidity risk in the sector. CFAR concept seems to be the best alternative for the leasing industry to value risk since cash flow and liquidity risks get priority over market risk. Since cash flow data summarize the combined effect of all the relevant risks (Stein et al., 2000, p.9), CFAR model, therefore, best fits to the leasing sector. In fact, in some studies the methodology is adapted even to the banking industry due to higher liquidity risk as well as market risk (Yan et al., 2011).

The study employs NERA CFAR model to estimate maximum losses within the context of risk management. Data were retrieved from ISE website (i.e. www.kap.gov.tr) for quoted companies and via personal correspondence for non-quoted companies. At times when ISE based data not available, information from company websites were also used. Data include quarterly EBIT and total assets of twelve companies of which six are quoted on ISE. Data span range first quarter of 2005 to third quarter of 2011.

Aim of the method is to obtain and employ forecast errors to predict future maximum cash flow loss to be incurred by leasing companies. The methodology is straightforward. Upon computation, EBIT/TA values were analyzed as dependent variable. After determining outliers and excluding two observations, data consisting of 322 observations were used between first quarter of 2005 and third quarter of 2011.

In order to obtain forecast errors, autoregression is employed. Regression model identifies four lags as the preceding four quarters determine the values. Regression model produces future predictions for EBIT/TA values. Then differences between actual data and forecast are taken as forecast errors.

In the second part of the study, the expected maximum loss is computed for a given period by means of the model determined in the previous section. A new legislative framework in the Turkish leasing industry is expected to be introduced, after its approval in the Parliament. However, the potential impacts of such change in legislation on the sectoral and company levels are yet quite ambiguous. Some of the most important terms in the new legislation are as follows: financial leasing firms will have the authority to perform not only financial (capital) leasing but also operational leasing, new products such as Sale & leaseback operations will be introduced, definition of goods subject to leasing is enlarged, the obligation to draw up contracts at notaries will be removed, term restriction regarding the expiry of contracts will be removed and the term of the contract will be freely determined by the relevant parties. In addition, "Financial Leasing Firms' Association" with a public authority status will be established, at which all financial leasing contracts will be registered, enabling better monitoring of the industry. While all of these changes are important for the sector, the

introduction of operational leasing will be the most impactful in terms of financial statements and cash-flow analysis.

In order to recognize both potential impact of the new legislative framework and current situation, a sensitivity analysis is applied to the consolidated quarterly data of the Leasing Industry (in order to reflect a wider perspective) and a leasing company (business title is kept anonymous due to commercial confidentiality). The sensitivity analysis requires detailed data analysis with regard to financial statements. The data provided by FIDER is first used to analyze the risk and return analysis of financial leasing. Since the new legislation is expected to introduce operational leasing as the second important leasing instrument, a second case is analyzed with the assumption that the industry runs both operational leasing and financial leasing equally. Finally, the risk and returns are one more time analyzed with the assumption that the industry will focus entirely on operational leasing. As a consequence, CFAR is applied to three scenarios and a risk and return comparison is provided.

The sensitivity analyses are run in line with three main scenarios:

- 1- If the industry (company) offers only financial leasing products,
- 2- If the industry (company) runs operational leasing and financial leasing together where 50% of the business volume will be coming from financial leasing operations and the other 50% will be generated from operational leasing,
- 3-If the industry (company) offers only operational leasing products.

The sensitivity analysis suggests that net profit for the industry might be registered by leasing industry is TL 81,48M under Scenario 1, TL 98,50M under Scenario 2 and TL 118,61M under Scenario 3. Accordingly, the analysis also suggests that the net profit for the company that might be registered by Sample 1 is TL 1,08M under Scenario 1, TL 5,15M under Scenario 2 and TL 9,22M under Scenario 3. Net profits for the scenarios may be computed by deduction of current period income/loss for fourth quarter from that for third quarter.

In return, when the results of the sensitivity analysis is used under the risk management framework we have adopted by using the historical data of the 12 leasing companies, we came to the conclusion that leasing industry may incur TL 590.493M loss at maximum if it functions under Scenario1, TL 783.177M loss at maximum under Scenario 2 and TL 943.069M loss at maximum if it functions under Scenario 3. Concerning XXX leasing company, TL 14,89M loss may be incurred at maximum if it functions under Scenario1, TL 19,29M loss at maximum under Scenario 2 and TL 24,49M loss at maximum under Scenario 3.

Looking at the industry data, the analysis suggest that both profitability and risk exposure increases towards a portfolio of pure operational leasing. Due to single product offerings and longer investment terms, financial leasing burden less risk on management and the company's profitability is more limited. Operational leasing, on the other hand, seems to burden higher risk as in the case of financial leasing and it promises higher return. However, CFAR methodology assumes stable market conditions throughout the holding period. Since volatility is quite strong in Turkish financial markets, unstable market conditions and high residual value risk high residual value may cause long-term high risk profile attached to operational leasing as suggested by this analysis. Also, risk and returns might differ from one company to another depending on the structure of the balance sheet. Accordingly, company specific data is also analyzed to confirm the results.

The company specific analysis also suggest that both profitability and risk exposure of XXX Leasing company increases towards a portfolio of pure operational leasing. Risk exposure for the company under Scenario 3 is larger than that under Scenario 1. Accordingly, XXX Leasing company suggest that with their balance sheet structure, pure financial leasing burdens less risk on management but the company's profitability is more limited. A mixed portfolio of operational and leasing operations provides a better risk and return profile for this company, as opposed to focusing on one instrument only.

Different results at the industry and company levels suggest that a combination of both operations might actually result in a more optimal risk and return balance for the

companies in the leasing industry. In fact, company-specific data might provide a better guidance to specify the right weighting of each instrument for each leasing company. The use of both operations also brings additional convenience in practice, such as mitigating the credit and liquidity risk further via secondary impacts of higher customer interaction and effective use of idle capital through better asset liability management. A leasing company can operate as a one-stop shop by using both instruments and provide customized offerings for its customers to improve customer satisfaction and up and cross-selling opportunities.

It should be recognized that this study is the first analysis employing CFAR model to the leasing industry in Turkey. A review of literature on leasing and related risk management framework reveals a lack of consensus concerning theoretical concepts and risk measurement. Although there are some limitations in the study such as the assumption of the portfolio to be remained unchanged during the holding period (Linsmeier and Pearson, 2000) and quarterly time horizon (Stein et al., 2000), the study sheds some critical light on limited pool of literature on the leasing sector.

This study opens pathways for future research on risk management in the leasing sector. To our best knowledge no study discusses difference between types of leasing companies. For instance, bank based leasing companies display such strength that those have capital power, market power, and liquidity power comparing to non-bank leasing firms. Hence, further research may differentiate the companies to measure exposed risks.

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APPENDIX
(DATA SET RAW)

1

(IL)	2005				2006			
EBIT	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	1.574.086,96	3.273.000,00	4.701.000,00	7.391.000,00	1.872.000,00	3.689.000,00	6.540.000,00	8.922.000,00
A&T	865.732,62	1.654.814,15	2.804.917,68	3.995.970,00	1.053.049,10	2.048.901,10	3.320.768,38	4.623.246,00
Deniz	-389.760,00	1.931.000,00	3.547.000,00	7.624.000,00	2.845.631,14	6.820.924,22	11.982.914,77	18.561.487,00
EFG	252.514,00	409.036,00	492.668,00	779.525,00	251.503,00	567.284,00	821.368,00	1.081.301,00
Finans	10.926.000,00	22.170.000,00	38.159.000,00	48.244.000,00	10.723.000,00	10.724.000,00	30.328.000,00	40.019.000,00
Fon	6.329.071,00	12.519.529,00	18.591.203,00	23.432.682,00	7.668.424,00	-2.555.632,00	7.886.424,00	26.370.184,00
İş	9.201.000,00	19.101.000,00	27.992.000,00	40.466.000,00	10.156.000,00	9.003.000,00	27.769.000,00	24.787.000,00
Şeker	-930.000,00	11.000,00	840.000,24	15.000,10	6.000,53	-5.169.000,28	-4.400.000,55	-5.887.000,44
Vakıf	2.692.000,00	5.939.000,00	7.897.000,00	9.300.000,00	1.026.000,00	3.253.000,00	4.609.000,00	6.780.000,00
Yatırım	29.000,00	81.000,00	149.000,00	246.000,00	105.000,00	1.107.000,00	1.089.000,00	1.195.000,00
YKB	7.598.000,00	6.922.000,00	3.201.000,00	6.246.000,00	6.743.000,00	10.792.000,00	83.581.000,00	111.942.000,00
Ziraat	-942.000,00	-2.830.000,00	-2.163.000,00	637.000,00	2.510.000,00	4.517.000,00	9.037.000,00	11.740.000,00
Total Asset	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	82.733.286,75	80.560.000,00	102.031.000,00	115.249.000,00	125.575.000,00	176.565.000,00	189.114.000,00	211.233.000,00
A&T	65.573.048,30	65.575.795,84	69.694.594,01	77.236.633,00	71.784.111,63	91.356.311,16	83.831.168,60	85.596.878,00
Deniz	169.946.222,00	199.153.588,00	266.890.000,00	318.804.269,00	368.095.316,27	532.484.799,87	596.852.692,07	719.232.697,00
EFG	11.217.544,00	11.363.244,00	12.602.774,00	12.841.378,00	13.107.779,00	17.564.450,00	19.387.232,00	19.138.268,00
Finans	388.010.000,00	398.010.000,00	419.068.000,00	359.814.000,00	432.737.000,00	680.713.000,00	668.870.000,00	678.873.000,00
Fon	201.487.035,00	285.468.534,00	324.092.130,00	506.129.424,00	587.349.687,00	733.360.399,00	578.349.768,00	576.213.494,00
İş	554.705.000,00	557.697.000,00	634.516.000,00	733.390.000,00	805.299.000,00	889.171.000,00	888.936.000,00	876.431.000,00
Şeker	81.268.000,00	84.214.000,00	84.443.000,00	83.128.000,00	86.497.000,00	94.809.000,00	80.030.000,00	88.380.000,00
Vakıf	167.720.000,00	151.979.000,00	148.710.000,00	146.827.000,00	157.357.000,00	183.545.000,00	169.892.000,00	161.630.000,00
Yatırım	20.321.000,00	24.615.000,00	27.021.000,00	30.819.000,00	31.595.000,00	40.457.000,00	38.215.000,00	41.859.000,00
YKB	296.791.000,00	286.827.000,00	236.604.000,00	214.294.000,00	264.294.000,00	328.328.000,00	404.463.000,00	1.679.807.000,00
Ziraat	113.114.000,00	134.924.000,00	141.356.000,00	141.138.000,00	150.781.000,00	188.733.000,00	187.695.000,00	186.818.000,00

(TL)	2007				2008			
EBIT	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	2.067.000,00	4.320.000,00	6.634.000,00	9.611.000,00	1.527.000,00	3.727.000,00	5.891.000,00	8.094.000,00
A&T	854.453,02	1.719.040,98	2.600.805,58	4.023.970,00	1.077.148,03	2.130.058,49	3.339.237,99	4.355.001,85
Deniz	7.831.000,00	16.343.000,00	23.315.000,00	32.955.000,00	16.156.000,00	35.884.000,00	55.981.000,00	75.673.000,00
EFG	304.141,00	648.237,00	982.797,00	1.312.414,00	488.451,00	1.069.526,24	1.604.525,34	2.561.855,00
Finans	10.604.000,00	21.289.000,00	33.508.000,00	50.415.000,00	12.043.000,00	26.112.000,00	39.561.000,00	46.896.000,00
Fon	5.204.252,00	11.725.000,00	22.445.000,00	25.462.000,00	1.235.987,00	1.960.134,00	2.282.598,00	2.807.241,00
İş	10.105.000,00	22.051.000,00	36.131.000,00	47.377.000,00	23.000.000,00	54.882.000,00	70.720.000,00	80.699.000,00
Şeker	409.000,83	766.000,41	821.000,84	1.095.000,76	641.000,30	1.278.000,18	1.824.000,96	1.892.000,18
Vakıf	1.684.000,00	-523.000,00	-4.034.000,00	-3.382.000,00	-283.000,00	706.000,00	1.509.000,00	4.413.000,00
Yatırım	192.000,00	700,00	-349.000,00	-373.000,00	12.000,00	165.000,00	358.000,00	943.000,00
YKB	31.629.000,00	62.321.000,00	97.973.000,00	131.876.000,00	36.338.000,00	67.873.000,00	93.092.000,00	127.475.000,00
Ziraat	2.615.000,00	6.952.000,00	10.276.000,00	1.942.000,00	3.584.000,00	8.968.000,00	12.718.000,00	16.187.000,00
Total Asset	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	219.178.000,00	224.066.000,00	241.365.000,00	254.813.000,00	293.012.000,00	323.319.000,00	301.556.000,00	331.996.000,00
A&T	92.155.323,52	81.267.483,49	80.865.434,27	82.389.202,00	88.133.012,91	88.935.214,83	88.093.110,70	98.332.483,59
Deniz	737.162.000,00	854.075.000,00	924.389.000,00	1.236.363.000,00	1.472.911.000,00	1.530.849.000,00	1.658.228.000,00	2.271.323.000,00
EFG	20.079.863,00	19.635.442,00	27.656.766,41	53.201.665,00	81.121.202,00	96.435.320,24	127.587.660,79	154.935.193,00
Finans	724.000.000,00	852.001.000,00	1.004.075.000,00	1.181.265.000,00	1.377.763.000,00	1.353.892.000,00	1.340.490.000,00	1.564.355.000,00
Fon	559.733.638,00	645.400.000,00	650.000.000,00	633.400.000,00	610.267.836,00	590.125.870,00	585.736.085,00	578.355.670,18
İş	896.428.000,00	934.464.000,00	938.728.000,00	1.052.343.000,00	1.101.511.000,00	1.160.109.000,00	1.291.874.000,00	1.235.524.000,00
Şeker	99.213.000,00	108.621.000,00	112.095.000,00	106.573.000,00	131.818.000,00	142.987.000,00	153.159.000,00	181.427.000,00
Vakıf	155.981.000,00	149.421.000,00	185.700.000,00	223.589.000,00	276.817.000,00	238.218.000,00	244.805.000,00	286.149.000,00
Yatırım	43.848.000,00	42.294.000,00	42.163.000,00	44.358.000,00	48.423.000,00	47.410.000,00	49.585.000,00	56.581.000,00
YKB	1.847.933.000,00	2.167.911.000,00	2.330.302.000,00	2.460.330.000,00	2.721.943.000,00	2.706.644.000,00	2.690.330.000,00	2.836.039.000,00
Ziraat	180.074.000,00	194.052.000,00	212.899.000,00	246.629.000,00	217.397.000,00	263.803.000,00	257.702.000,00	279.028.000,00

(TL)	2009				2010			
EBIT	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	46.000,00	311.000,00	1.661.000,00	1.341.000,00	1.245.000,00	2.617.000,00	4.073.000,00	2.960.000,00
A&T	1.210.863,83	2.191.980,60	3.373.364,50	4.439.981,60	831.005,75	1.533.339,11	2.233.813,39	2.623.570,52
Deniz	20.974.000,00	36.234.000,00	46.665.000,00	53.454.000,00	15.962.000,00	31.513.000,00	44.391.000,00	53.710.000,00
EFG	673.713,29	637.659,24	1.413.695,36	1.715.978,00	623.581,69	1.791.646,07	3.123.611,88	4.766.353,00
Finans	112.768.000,00	23.900.000,00	33.284.000,00	28.608.000,00	12.946.000,00	26.182.000,00	36.459.000,00	47.053.000,00
Fon	1.452.969,00	3.752.762,00	5.806.218,00	5.718.515,00	-3.098.885,00	1.573.502,00	2.462.973,00	3.020.105,00
İş	16.400.000,00	32.768.000,00	46.341.000,00	57.727.000,00	17.511.000,00	35.110.000,00	50.486.000,00	62.447.000,00
Şeker	-112.000,01	307.000,00	395.000,00	831.000,00	357.000,00	1.094.000,00	2.179.000,00	2.130.000,00
Vakıf	1.750.000,00	3.650.000,00	6.201.000,00	-982.000,00	5.909.000,00	12.969.000,00	15.188.000,00	17.217.000,00
Yatırım	193.000,00	4.000,00	323.000,00	298.000,00	54.000,00	210.000,00	123.000,00	610.000,00
YKB	23.479.000,98	46.247.000,00	70.022.000,00	99.343.000,00	30.171.000,00	59.567.000,00	88.091.000,00	112.186.000,00
Ziraat	4.743.000,00	11.055.000,00	14.890.000,00	17.648.000,00	5.025.000,00	7.102.000,00	12.358.000,00	17.449.000,00
Total Asset	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	361.128.000,00	308.387.000,00	307.868.000,00	318.053.000,00	307.991.000,00	310.622.000,00	299.753.000,00	305.066.000,00
A&T	93.298.727,19	94.341.330,06	86.576.233,29	94.971.332,16	85.063.546,01	81.949.946,79	86.842.015,89	95.355.206,87
Deniz	1.913.609.000,00	1.978.459.000,00	1.731.446.000,00	1.598.786.000,00	1.651.394.000,00	1.627.377.000,00	1.582.814.000,00	1.836.439.000,00
EFG	166.092.258,48	196.948.039,47	193.309.488,74	217.352.418,00	213.873.735,92	206.806.839,63	201.900.001,14	214.397.022,00
Finans	1.520.019.000,00	1.314.718.000,00	1.333.401.000,00	1.339.021.000,00	1.455.479.000,00	1.297.981.000,00	1.351.887.000,00	1.603.367.000,00
Fon	563.706.644,28	518.432.849,17	455.999.905,43	443.013.014,78	351.885.669,58	336.302.004,92	313.054.373,05	329.727.641,92
İş	1.324.000.000,00	1.356.375.000,00	1.394.990.000,00	1.440.580.000,00	1.466.060.000,00	1.692.002.000,00	1.850.388.000,00	2.093.398.000,00
Şeker	180.938.000,88	155.716.000,03	146.451.000,14	161.688.000,00	188.070.000,00	184.408.000,00	181.176.000,00	193.662.000,00
Vakıf	276.264.000,00	255.270.000,00	268.387.000,00	345.736.000,00	385.500.000,00	454.645.000,00	563.591.000,00	575.589.000,00
Yatırım	59.428.000,00	46.483.000,00	41.575.000,00	42.896.000,00	38.327.000,00	36.684.000,00	37.956.000,00	42.284.000,00
YKB	2.858.124.000,00	2.512.350.000,00	2.351.564.000,00	2.346.846.000,00	2.179.820.000,00	2.190.733.000,00	2.179.319.000,00	2.201.330.000,00
Ziraat	285.712.000,00	286.013.000,00	323.033.000,00	308.524.000,00	326.219.000,00	327.298.000,00	345.536.000,00	392.302.000,00

(TL)	2011		
EBIT	Q1	Q2	Q3
ALease	354.000,00	1.110.000,00	1.060.000,00
A&T	610.616,99	1.102.747,20	1.783.697,94
Deniz	13.405.000,00	43.841.000,00	51.647.000,00
EFG	1.515.323,68	3.027.287,96	5.125.498,59
Finans	10.380.000,00	20.952.000,00	33.704.000,00
Fon	796.732,00	987.099,00	1.044.172,00
İş	14.277.000,00	38.141.000,00	54.275.000,00
Şeker	523.000,00	1.563.000,00	2.397.000,00
Vakıf	5.255.000,00	7.995.000,00	13.273.000,00
Yatırım	280.000,00	165.000,00	457.000,00
YKB	33.946.000,00	66.860.000,00	103.073.000,00
Ziraat	5.297.000,00	11.715.000,00	16.900.000,00
Total Asset	Q1	Q2	Q3
ALease	300.297.000,00	316.326.000,00	340.666.000,00
A&T	105.148.366,72	114.345.018,28	124.656.463,31
Deniz	1.958.995.000,00	1.558.592.200,00	1.712.297.000,00
EFG	221.686.997,62	253.522.615,16	297.371.504,25
Finans	1.633.371.000,00	1.567.930.000,00	1.433.690.000,00
Fon	319.315.494,85	333.411.869,69	390.666.008,74
İş	2.203.723.000,00	2.266.068.000,00	2.073.904.000,00
Şeker	192.674.000,00	199.383.000,00	211.426.000,00
Vakıf	406.733.000,00	515.943.000,00	570.511.000,00
Yatırım	45.346.000,00	48.589.000,00	49.784.000,00
YKB	2.264.672.000,00	2.754.101.000,00	2.987.934.000,00
Ziraat	447.391.000,00	527.704.000,00	573.495.000,00

APPENDIX-2
DATA SET (EBIT/TA)

(TL)	2005				2006			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	0,019	0,021	0,014	0,023	-0,044	0,010	0,015	0,011
A&T	0,013	0,012	0,017	0,015	-0,041	0,011	0,015	0,015
Deniz	-0,002	0,012	0,006	0,013	-0,013	0,007	0,009	0,009
EFG	0,023	0,014	0,007	0,022	-0,040	0,018	0,013	0,014
Finans	0,028	0,028	0,038	0,028	-0,087	0,000	0,029	0,014
Fon	0,031	0,022	0,019	0,010	-0,027	-0,014	0,018	0,032
İş	0,017	0,018	0,014	0,017	-0,038	-0,001	0,021	-0,003
Şeker	-0,011	0,011	0,010	-0,010	-0,000	-0,055	0,010	-0,017
Vakıf	0,016	0,021	0,013	0,010	-0,053	0,012	0,008	0,013
Yatırım	0,001	0,002	0,003	0,003	-0,004	0,025	-0,000	0,003
YKB	0,026	-0,002	-0,016	0,014	0,002	0,012	0,180	0,017
Ziraat	-0,008	-0,014	0,005	0,020	0,012	0,011	0,024	0,014

(TL)	2007				2008			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	-0,031	0,010	0,010	0,012	-0,028	0,007	0,007	0,007
A&T	-0,041	0,011	0,011	0,017	-0,033	0,012	0,014	0,010
Deniz	-0,015	0,010	0,008	0,008	-0,011	0,013	0,012	0,009
EFG	-0,039	0,018	0,012	0,006	-0,010	0,006	0,004	0,006
Finans	-0,041	0,013	0,012	0,014	-0,028	0,010	0,010	0,005
Fon	-0,038	0,010	0,016	0,005	-0,040	0,001	0,001	0,001
İş	-0,016	0,013	0,015	0,011	-0,022	0,027	0,012	0,008
Şeker	0,063	0,003	0,000	0,003	-0,003	0,004	0,004	0,000
Vakıf	-0,033	-0,015	-0,019	0,003	0,011	0,004	0,003	0,010
Yatırım	-0,023	-0,005	-0,008	-0,001	0,008	0,003	0,004	0,010
YKB	-0,043	0,014	0,015	0,014	-0,035	0,012	0,009	0,012
Ziraat	-0,051	0,022	0,016	-0,034	0,008	0,020	0,015	0,012

(TL)	2009				2010			
EBIT	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ALease	-0,022	0,001	0,004	-0,001	-0,000	0,004	0,005	-0,004
A&T	-0,034	0,010	0,014	0,011	-0,042	0,009	0,008	0,004
Deniz	-0,029	0,008	0,006	0,004	-0,023	0,010	0,008	0,005
EFG	-0,011	-0,000	0,004	0,001	-0,005	0,006	0,007	0,008
Finans	0,043	-0,068	0,007	-0,003	-0,011	0,010	0,008	0,007
Fon	-0,002	0,004	0,005	-0,000	-0,025	0,014	0,003	0,002
İş	-0,049	0,012	0,010	0,008	-0,027	0,010	0,008	0,006
Şeker	-0,011	0,003	0,001	0,003	-0,003	0,004	0,006	-0,000
Vakıf	-0,010	0,007	0,010	-0,021	0,018	0,016	0,004	0,004
Yatırım	-0,013	-0,004	0,008	-0,001	-0,006	0,004	-0,002	0,012
YKB	-0,036	0,009	0,010	0,012	-0,032	0,013	0,013	0,011
Ziraat	-0,040	0,022	0,012	0,009	-0,039	0,006	0,015	0,013

(TL)	2011		
EBIT	Q1	Q2	Q3
ALease	-0,009	0,002	-0,000
A&T	-0,019	0,004	0,005
Deniz	-0,021	0,020	0,005
EFG	-0,015	0,006	0,007
Finans	-0,022	0,007	0,009
Fon	-0,007	0,001	0,000
İş	-0,022	0,011	0,008
Şeker	-0,008	0,005	0,004
Vakıf	-0,029	0,005	0,009
Yatırım	-0,007	-0,002	0,006
YKB	-0,035	0,012	0,012
Ziraat	-0,027	0,012	0,009

APPENDIX-3
DATA SET (REGRESSION)

		ALEASE						A&T LEASE						DENİZ LEASE					
		t	t-1	t-2	t-3	t-4	dummy	t	t-1	t-2	t-3	t-4	dummy	t	t-1	t-2	t-3	t-4	dummy
2005	Q1	0,019					1	0,013					1	-0,002					1
	Q2	0,021	0,019				1	0,012	0,013				1	0,012	-0,002				1
	Q3	0,014	0,021	0,019			1	0,017	0,012	0,013			1	0,006	0,012	-0,002			1
	Q4	0,023	0,014	0,021	0,019		1	0,015	0,017	0,012	0,013		1	0,013	0,006	0,012	-0,002		1
2006	Q1	-0,044	0,023	0,014	0,021	0,019	1	-0,041	0,015	0,017	0,012	0,013	1	-0,013	0,013	0,006	0,012	-0,002	1
	Q2	0,010	-0,044	0,023	0,014	0,021	1	0,011	-0,041	0,015	0,017	0,012	1	0,007	-0,013	0,013	0,006	0,012	1
	Q3	0,015	0,010	-0,044	0,023	0,014	1	0,015	0,011	-0,041	0,015	0,017	1	0,009	0,007	-0,013	0,013	0,006	1
	Q4	0,011	0,015	0,010	-0,044	0,023	1	0,015	0,015	0,011	-0,041	0,015	1	0,009	0,009	0,007	-0,013	0,013	1
2007	Q1	-0,031	0,011	0,015	0,010	-0,044	1	-0,041	0,015	0,015	0,011	-0,041	1	-0,015	0,009	0,009	0,007	-0,013	1
	Q2	0,010	-0,031	0,011	0,015	0,010	1	0,011	-0,041	0,015	0,015	0,011	1	0,010	-0,015	0,009	0,009	0,007	1
	Q3	0,010	0,010	-0,031	0,011	0,015	1	0,011	0,011	-0,041	0,015	0,015	1	0,008	0,010	-0,015	0,009	0,009	1
	Q4	0,012	0,010	0,010	-0,031	0,011	1	0,017	0,011	0,011	-0,041	0,015	1	0,008	0,008	0,010	-0,015	0,009	1
2008	Q1	-0,028	0,012	0,010	0,010	-0,031	0	-0,033	0,017	0,011	0,011	-0,041	0	-0,011	0,008	0,008	0,010	-0,015	0
	Q2	0,007	-0,028	0,012	0,010	0,010	0	0,012	-0,033	0,017	0,011	0,011	0	0,013	-0,011	0,008	0,008	0,010	0
	Q3	0,007	0,007	-0,028	0,012	0,010	0	0,014	0,012	-0,033	0,017	0,011	0	0,012	0,013	-0,011	0,008	0,008	0
	Q4	0,007	0,007	0,007	-0,028	0,012	0	0,010	0,014	0,012	-0,033	0,017	0	0,009	0,012	0,013	-0,011	0,008	0
2009	Q1	-0,022	0,007	0,007	0,007	-0,028	0	-0,034	0,010	0,014	0,012	-0,033	0	-0,029	0,009	0,012	0,013	-0,011	0
	Q2	0,001	-0,022	0,007	0,007	0,007	0	0,010	-0,034	0,010	0,014	0,012	0	0,008	-0,029	0,009	0,012	0,013	0
	Q3	0,004	0,001	-0,022	0,007	0,007	0	0,014	0,010	-0,034	0,010	0,014	0	0,006	0,008	-0,029	0,009	0,012	0
	Q4	-0,001	0,004	0,001	-0,022	0,007	0	0,011	0,014	0,010	-0,034	0,010	0	0,004	0,006	0,008	-0,029	0,009	0
2010	Q1	-0,000	-0,001	0,004	0,001	-0,022	0	-0,042	0,011	0,014	0,010	-0,034	0	-0,023	0,004	0,006	0,008	-0,029	0
	Q2	0,004	-0,000	-0,001	0,004	0,001	0	0,009	-0,042	0,011	0,014	0,010	0	0,010	-0,023	0,004	0,006	0,008	0
	Q3	0,005	0,004	-0,000	-0,001	0,004	0	0,008	0,009	-0,042	0,011	0,014	0	0,008	0,010	-0,023	0,004	0,006	0
	Q4	-0,004	0,005	0,004	-0,000	-0,001	0	0,004	0,008	0,009	-0,042	0,011	0	0,005	0,008	0,010	-0,023	0,004	0
2011	Q1	-0,009	-0,004	0,005	0,004	-0,000	0	-0,019	0,004	0,008	0,009	-0,042	0	-0,021	0,005	0,008	0,010	-0,023	0
	Q2	0,002	-0,009	-0,004	0,005	0,004	0	0,004	-0,019	0,004	0,008	0,009	0	0,020	-0,021	0,005	0,008	0,010	0
	Q3	-0,000	0,002	-0,009	-0,004	0,005	0	0,005	0,004	-0,019	0,004	0,008	0	0,005	0,020	-0,021	0,005	0,008	0

NOTES t is current, t-1, t-2,t-3, and t-4 are lags to be regressed.
t is dependent variable.
dummy variable is "1" if VAT incentive exists, "0" otherwise.

		EFG LEASE						FINANS LEASE						FON LEASE					
		t	t-1	t-2	t-3	t-4	dummy	t	t-1	t-2	t-3	t-4	dummy	t	t-1	t-2	t-3	t-4	dummy
2005	Q1	0,023					1	0,028					1	0,031					1
	Q2	0,014	0,023				1	0,028	0,028				1	0,022	0,031				1
	Q3	0,007	0,014	0,023			1	0,038	0,028	0,028			1	0,019	0,022	0,031			1
	Q4	0,022	0,007	0,014	0,023		1	0,028	0,038	0,028	0,028		1	0,010	0,019	0,022	0,031		1
2006	Q1	-0,040	0,022	0,007	0,014	0,023	1	-0,087	0,028	0,038	0,028	0,028	1	-0,027	0,010	0,019	0,022	0,031	1
	Q2	0,018	-0,040	0,022	0,007	0,014	1	0,000	-0,087	0,028	0,038	0,028	1	-0,014	-0,027	0,010	0,019	0,022	1
	Q3	0,013	0,018	-0,040	0,022	0,007	1	0,029	0,000	-0,087	0,028	0,038	1	0,018	-0,014	-0,027	0,010	0,019	1
	Q4	0,014	0,013	0,018	-0,040	0,022	1	0,014	0,029	0,000	-0,087	0,028	1	0,032	0,018	-0,014	-0,027	0,010	1
2007	Q1	-0,039	0,014	0,013	0,018	-0,040	1	-0,041	0,014	0,029	0,000	-0,087	1	-0,038	0,032	0,018	-0,014	-0,027	1
	Q2	0,018	-0,039	0,014	0,013	0,018	1	0,013	-0,041	0,014	0,029	0,000	1	0,010	-0,038	0,032	0,018	-0,014	1
	Q3	0,012	0,018	-0,039	0,014	0,013	1	0,012	0,013	-0,041	0,014	0,029	1	0,016	0,010	-0,038	0,032	0,018	1
	Q4	0,006	0,012	0,018	-0,039	0,014	1	0,014	0,012	0,013	-0,041	0,014	1	0,005	0,016	0,010	-0,038	0,032	1
2008	Q1	-0,010	0,006	0,012	0,018	-0,039	0	-0,028	0,014	0,012	0,013	-0,041	0	-0,040	0,005	0,016	0,010	-0,038	0
	Q2	0,006	-0,010	0,006	0,012	0,018	0	0,010	-0,028	0,014	0,012	0,013	0	0,001	-0,040	0,005	0,016	0,010	0
	Q3	0,004	0,006	-0,010	0,006	0,012	0	0,010	0,010	-0,028	0,014	0,012	0	0,001	0,001	-0,040	0,005	0,016	0
	Q4	0,006	0,004	0,006	-0,010	0,006	0	0,005	0,010	0,010	-0,028	0,014	0	0,001	0,001	0,001	-0,040	0,005	0
2009	Q1	-0,011	0,006	0,004	0,006	-0,010	0	0,043	0,005	0,010	0,010	-0,028	0	-0,002	0,001	0,001	0,001	-0,040	0
	Q2	-0,000	-0,011	0,006	0,004	0,006	0	-0,068	0,043	0,005	0,010	0,010	0	0,004	-0,002	0,001	0,001	0,001	0
	Q3	0,004	-0,000	-0,011	0,006	0,004	0	0,007	-0,068	0,043	0,005	0,010	0	0,005	0,004	-0,002	0,001	0,001	0
	Q4	0,001	0,004	-0,000	-0,011	0,006	0	-0,003	0,007	-0,068	0,043	0,005	0	-0,000	0,005	0,004	-0,002	0,001	0
2010	Q1	-0,005	0,001	0,004	-0,000	-0,011	0	-0,011	-0,003	0,007	-0,068	0,043	0	-0,025	-0,000	0,005	0,004	-0,002	0
	Q2	0,006	-0,005	0,001	0,004	-0,000	0	0,010	-0,011	-0,003	0,007	-0,068	0	0,014	-0,025	-0,000	0,005	0,004	0
	Q3	0,007	0,006	-0,005	0,001	0,004	0	0,008	0,010	-0,011	-0,003	0,007	0	0,003	0,014	-0,025	-0,000	0,005	0
	Q4	0,008	0,007	0,006	-0,005	0,001	0	0,007	0,008	0,010	-0,011	-0,003	0	0,002	0,003	0,014	-0,025	-0,000	0
2011	Q1	-0,015	0,008	0,007	0,006	-0,005	0	-0,022	0,007	0,008	0,010	-0,011	0	-0,007	0,002	0,003	0,014	-0,025	0
	Q2	0,006	-0,015	0,008	0,007	0,006	0	0,007	-0,022	0,007	0,008	0,010	0	0,001	-0,007	0,002	0,003	0,014	0
	Q3	0,007	0,006	-0,015	0,008	0,007	0	0,009	0,007	-0,022	0,007	0,008	0	0,000	0,001	-0,007	0,002	0,003	0

		İŞ LEASE					ŞEKER LEASE					VAKIF LEASE							
		t	t-1	t-2	t-3	t-4	dummy	t	t-1	t-2	t-3	t-4	dummy	t	t-1	t-2	t-3	t-4	dummy
2005	Q1	0,017					1	-0,011					1	0,016					1
	Q2	0,018	0,017				1	0,011	-0,011				1	0,021	0,016				1
	Q3	0,014	0,018	0,017			1	0,010	0,011	-0,011			1	0,013	0,021	0,016			1
	Q4	0,017	0,014	0,018	0,017		1	-0,010	0,010	0,011	-0,011		1	0,010	0,013	0,021	0,016		1
2006	Q1	-0,038	0,017	0,014	0,018	0,017	1	-0,000	-0,010	0,010	0,011	-0,011	1	-0,053	0,010	0,013	0,021	0,016	1
	Q2	-0,001	-0,038	0,017	0,014	0,018	1	-0,055	-0,000	-0,010	0,010	0,011	1	0,012	-0,053	0,010	0,013	0,021	1
	Q3	0,021	-0,001	-0,038	0,017	0,014	1	0,010	-0,055	-0,000	-0,010	0,010	1	0,008	0,012	-0,053	0,010	0,013	1
	Q4	-0,003	0,021	-0,001	-0,038	0,017	1	-0,017	0,010	-0,055	-0,000	-0,010	1	0,013	0,008	0,012	-0,053	0,010	1
2007	Q1	-0,016	-0,003	0,021	-0,001	-0,038	1	0,063	-0,017	0,010	-0,055	-0,000	1	-0,033	0,013	0,008	0,012	-0,053	1
	Q2	0,013	-0,016	-0,003	0,021	-0,001	1	0,003	0,063	-0,017	0,010	-0,055	1	-0,015	-0,033	0,013	0,008	0,012	1
	Q3	0,015	0,013	-0,016	-0,003	0,021	1	0,000	0,003	0,063	-0,017	0,010	1	-0,019	-0,015	-0,033	0,013	0,008	1
	Q4	0,011	0,015	0,013	-0,016	-0,003	1	0,003	0,000	0,003	0,063	-0,017	1	0,003	-0,019	-0,015	-0,033	0,013	1
2008	Q1	-0,022	0,011	0,015	0,013	-0,016	0	-0,003	0,003	0,000	0,003	0,063	0	0,011	0,003	-0,019	-0,015	-0,033	0
	Q2	0,027	-0,022	0,011	0,015	0,013	0	0,004	-0,003	0,003	0,000	0,003	0	0,004	0,011	0,003	-0,019	-0,015	0
	Q3	0,012	0,027	-0,022	0,011	0,015	0	0,004	0,004	-0,003	0,003	0,000	0	0,003	0,004	0,011	0,003	-0,019	0
	Q4	0,008	0,012	0,027	-0,022	0,011	0	0,000	0,004	0,004	-0,003	0,003	0	0,010	0,003	0,004	0,011	0,003	0
2009	Q1	-0,049	0,008	0,012	0,027	-0,022	0	-0,011	0,000	0,004	0,004	-0,003	0	-0,010	0,010	0,003	0,004	0,011	0
	Q2	0,012	-0,049	0,008	0,012	0,027	0	0,003	-0,011	0,000	0,004	0,004	0	0,007	-0,010	0,010	0,003	0,004	0
	Q3	0,010	0,012	-0,049	0,008	0,012	0	0,001	0,003	-0,011	0,000	0,004	0	0,010	0,007	-0,010	0,010	0,003	0
	Q4	0,008	0,010	0,012	-0,049	0,008	0	0,003	0,001	0,003	-0,011	0,000	0	-0,021	0,010	0,007	-0,010	0,010	0
2010	Q1	-0,027	0,008	0,010	0,012	-0,049	0	-0,003	0,003	0,001	0,003	-0,011	0	0,018	-0,021	0,010	0,007	-0,010	0
	Q2	0,010	-0,027	0,008	0,010	0,012	0	0,004	-0,003	0,003	0,001	0,003	0	0,016	0,018	-0,021	0,010	0,007	0
	Q3	0,008	0,010	-0,027	0,008	0,010	0	0,006	0,004	-0,003	0,003	0,001	0	0,004	0,016	0,018	-0,021	0,010	0
	Q4	0,006	0,008	0,010	-0,027	0,008	0	-0,000	0,006	0,004	-0,003	0,003	0	0,004	0,004	0,016	0,018	-0,021	0
2011	Q1	-0,022	0,006	0,008	0,010	-0,027	0	-0,008	-0,000	0,006	0,004	-0,003	0	-0,029	0,004	0,004	0,016	0,018	0
	Q2	0,011	-0,022	0,006	0,008	0,010	0	0,005	-0,008	-0,000	0,006	0,004	0	0,005	-0,029	0,004	0,004	0,016	0
	Q3	0,008	0,011	-0,022	0,006	0,008	0	0,004	0,005	-0,008	-0,000	0,006	0	0,009	0,005	-0,029	0,004	0,004	0

		YATIRIM LEASE						YKB LEASE						ZİRAAT LEASE					
		t	t-1	t-2	t-3	t-4	dummy	t	t-1	t-2	t-3	t-4	dummy	t	t-1	t-2	t-3	t-4	dummy
2005	Q1	0,001					1	0,026					1	-0,008					1
	Q2	0,002	0,001				1	-0,002	0,026				1	-0,014	-0,008				1
	Q3	0,003	0,002	0,001			1	-0,016	-0,002	0,026			1	0,005	-0,014	-0,008			1
	Q4	0,003	0,003	0,002	0,001		1	0,014	-0,016	-0,002	0,026		1	0,020	0,005	-0,014	-0,008		1
2006	Q1	-0,004	0,003	0,003	0,002	0,001	1	0,002	0,014	-0,016	-0,002	0,026	1	0,012	0,020	0,005	-0,014	-0,008	1
	Q2	0,025	-0,004	0,003	0,003	0,002	1	0,012	0,002	0,014	-0,016	-0,002	1	0,011	0,012	0,020	0,005	-0,014	1
	Q3	-0,000	0,025	-0,004	0,003	0,003	1	0,180	0,012	0,002	0,014	-0,016	1	0,024	0,011	0,012	0,020	0,005	1
	Q4	0,003	-0,000	0,025	-0,004	0,003	1	0,017	0,180	0,012	0,002	0,014	1	0,014	0,024	0,011	0,012	0,020	1
2007	Q1	-0,023	0,003	-0,000	0,025	-0,004	1	-0,043	0,017	0,180	0,012	0,002	1	-0,051	0,014	0,024	0,011	0,012	1
	Q2	-0,005	-0,023	0,003	-0,000	0,025	1	0,014	-0,043	0,017	0,180	0,012	1	0,022	-0,051	0,014	0,024	0,011	1
	Q3	-0,008	-0,005	-0,023	0,003	-0,000	1	0,015	0,014	-0,043	0,017	0,180	1	0,016	0,022	-0,051	0,014	0,024	1
	Q4	-0,001	-0,008	-0,005	-0,023	0,003	1	0,014	0,015	0,014	-0,043	0,017	1	-0,034	0,016	0,022	-0,051	0,014	1
2008	Q1	0,008	-0,001	-0,008	-0,005	-0,023	0	-0,035	0,014	0,015	0,014	-0,043	0	0,008	-0,034	0,016	0,022	-0,051	0
	Q2	0,003	0,008	-0,001	-0,008	-0,005	0	0,012	-0,035	0,014	0,015	0,014	0	0,020	0,008	-0,034	0,016	0,022	0
	Q3	0,004	0,003	0,008	-0,001	-0,008	0	0,009	0,012	-0,035	0,014	0,015	0	0,015	0,020	0,008	-0,034	0,016	0
	Q4	0,010	0,004	0,003	0,008	-0,001	0	0,012	0,009	0,012	-0,035	0,014	0	0,012	0,015	0,020	0,008	-0,034	0
2009	Q1	-0,013	0,010	0,004	0,003	0,008	0	-0,036	0,012	0,009	0,012	-0,035	0	-0,040	0,012	0,015	0,020	0,008	0
	Q2	-0,004	-0,013	0,010	0,004	0,003	0	0,009	-0,036	0,012	0,009	0,012	0	0,022	-0,040	0,012	0,015	0,020	0
	Q3	0,008	-0,004	-0,013	0,010	0,004	0	0,010	0,009	-0,036	0,012	0,009	0	0,012	0,022	-0,040	0,012	0,015	0
	Q4	-0,001	0,008	-0,004	-0,013	0,010	0	0,012	0,010	0,009	-0,036	0,012	0	0,009	0,012	0,022	-0,040	0,012	0
2010	Q1	-0,006	-0,001	0,008	-0,004	-0,013	0	-0,032	0,012	0,010	0,009	-0,036	0	-0,039	0,009	0,012	0,022	-0,040	0
	Q2	0,004	-0,006	-0,001	0,008	-0,004	0	0,013	-0,032	0,012	0,010	0,009	0	0,006	-0,039	0,009	0,012	0,022	0
	Q3	-0,002	0,004	-0,006	-0,001	0,008	0	0,013	0,013	-0,032	0,012	0,010	0	0,015	0,006	-0,039	0,009	0,012	0
	Q4	0,012	-0,002	0,004	-0,006	-0,001	0	0,011	0,013	0,013	-0,032	0,012	0	0,013	0,015	0,006	-0,039	0,009	0
2011	Q1	-0,007	0,012	-0,002	0,004	-0,006	0	-0,035	0,011	0,013	0,013	-0,032	0	-0,027	0,013	0,015	0,006	-0,039	0
	Q2	-0,002	-0,007	0,012	-0,002	0,004	0	0,012	-0,035	0,011	0,013	0,013	0	0,012	-0,027	0,013	0,015	0,006	0
	Q3	0,006	-0,002	-0,007	0,012	-0,002	0	0,012	0,012	-0,035	0,011	0,013	0	0,009	0,012	-0,027	0,013	0,015	0

**APPENDIX-4
DATA SET (FORECASTS)**

		ALEASE							A&T LEASE							DENIZ LEASE						
		t	t-1	t-2	t-3	t-4	forecast	forecast error	t	t-1	t-2	t-3	t-4	forecast	forecast error	t	t-1	t-2	t-3	t-4	forecast	forecast error
2006	Q1	-0.044	0.023	0.014	0.021	0.019	-0.011	-0.0326	-0.041	0.015	0.017	0.012	0.013	-0.009	-0.0321	-0.013	0.013	0.006	0.012	-0.002	-0.007	-0.0058
	Q2	0.010	-0.044	0.023	0.014	0.021	0.006	0.0047	0.011	-0.041	0.015	0.017	0.012	0.005	0.0055	0.007	-0.013	0.013	0.006	0.012	0.001	0.0065
	Q3	0.015	0.010	-0.044	0.023	0.014	0.009	0.0065	0.015	0.011	-0.041	0.015	0.017	0.010	0.0055	0.009	0.007	-0.013	0.013	0.006	0.001	0.0076
	Q4	0.011	0.015	0.010	-0.044	0.023	0.007	0.0044	0.015	0.015	0.011	-0.041	0.015	0.005	0.0103	0.009	0.009	0.007	-0.013	0.013	0.001	0.0080
2007	Q1	-0.031	0.011	0.015	0.010	-0.044	-0.015	-0.0159	-0.041	0.015	0.015	0.011	-0.041	-0.016	-0.0248	-0.015	0.009	0.009	0.007	-0.013	-0.008	-0.0069
	Q2	0.010	-0.031	0.011	0.015	0.010	0.004	0.0060	0.011	-0.041	0.015	0.015	0.011	0.006	0.0051	0.010	-0.015	0.009	0.009	0.007	0.001	0.0087
	Q3	0.010	0.010	-0.031	0.011	0.015	0.008	0.0020	0.011	0.011	-0.041	0.015	0.015	0.010	0.0013	0.008	0.010	-0.015	0.009	0.009	0.002	0.0055
	Q4	0.012	0.010	0.010	-0.031	0.011	0.004	0.0078	0.017	0.011	0.011	-0.041	0.015	0.006	0.0112	0.008	0.008	0.010	-0.015	0.009	0.000	0.0073
2008	Q1	-0.028	0.012	0.010	0.010	-0.031	-0.012	-0.0157	-0.033	0.017	0.011	0.011	-0.041	-0.015	-0.0181	-0.011	0.008	0.010	-0.015	-0.008	-0.008	-0.0037
	Q2	0.007	-0.028	0.012	0.010	0.010	0.004	0.0026	0.012	-0.033	0.017	0.011	0.011	0.004	0.0080	0.013	-0.011	0.008	0.008	0.010	0.001	0.0114
	Q3	0.007	0.007	-0.028	0.012	0.010	0.006	0.0007	0.014	0.012	-0.033	0.017	0.011	0.006	0.0079	0.012	0.013	-0.011	0.008	0.008	0.000	0.0117
2009	Q1	-0.022	0.007	0.007	0.007	-0.028	-0.009	-0.0138	-0.034	0.010	0.014	0.012	-0.033	-0.013	-0.0202	-0.029	0.009	0.012	0.013	-0.011	-0.010	-0.0190
	Q2	0.001	-0.022	0.007	0.007	0.007	0.004	-0.0035	0.010	-0.034	0.010	0.014	0.012	0.006	0.0048	0.008	-0.029	0.009	0.012	0.013	0.005	0.0025
	Q3	0.004	0.001	-0.022	0.007	0.007	0.007	-0.0028	0.014	0.010	-0.034	0.010	0.014	0.008	0.0054	0.006	0.008	-0.029	0.009	0.012	0.008	-0.0015
	Q4	-0.001	0.004	0.001	-0.022	0.007	0.005	-0.0065	0.011	0.014	0.010	-0.034	0.010	0.003	0.0081	0.004	0.006	0.008	-0.029	0.009	0.005	-0.0003
2010	Q1	-0.000	-0.001	0.004	0.001	-0.022	-0.004	0.0032	-0.042	0.011	0.014	0.010	-0.034	-0.013	-0.0290	-0.023	0.004	0.006	0.008	-0.029	-0.008	-0.0148
	Q2	0.004	-0.000	-0.001	0.004	0.001	0.001	0.0039	0.009	-0.042	0.011	0.014	0.010	0.007	0.0012	0.010	-0.023	0.004	0.006	0.008	0.006	0.0040
	Q3	0.005	0.004	-0.000	-0.001	0.004	0.001	0.0041	0.008	0.009	-0.042	0.011	0.014	0.011	-0.0032	0.008	0.010	-0.023	0.004	0.006	0.005	0.0028
	Q4	-0.004	0.005	0.004	-0.000	-0.001	-0.002	-0.0019	0.004	0.008	0.009	-0.042	0.011	0.007	-0.0031	0.005	0.008	0.010	-0.023	0.004	0.002	0.0036
2011	Q1	-0.009	-0.004	0.005	0.004	-0.000	-0.001	-0.0081	-0.019	0.004	0.008	0.009	-0.042	-0.011	-0.0085	-0.021	0.005	0.008	0.010	-0.023	-0.008	-0.0123
	Q2	0.002	-0.009	-0.004	0.005	0.004	0.004	-0.0016	0.004	-0.019	0.004	0.008	0.009	0.004	-0.0000	0.020	-0.021	0.005	0.008	0.010	0.005	0.0150
	Q3	-0.000	0.002	-0.009	-0.004	0.005	0.005	-0.0047	0.005	0.004	-0.019	0.004	0.008	0.006	-0.0005	0.005	0.020	-0.021	0.005	0.008	0.002	0.0024

NOTES t is current, t-1, t-2, t-3, and t-4 are lags to be regressed.
t is dependent variable.

$$(EBIT/TA)_t = \beta_0 + \beta_1(EBIT/TA)_{t-1} + \beta_2(EBIT/TA)_{t-2} + \beta_3(EBIT/TA)_{t-3} + \beta_4(EBIT/TA)_{t-4} + \epsilon$$

		EFG LEASE							FINANS LEASE							FON LEASE						
		t	t-1	t-2	t-3	t-4	forecast	forecast error	t	t-1	t-2	t-3	t-4	forecast	forecast error	t	t-1	t-2	t-3	t-4	forecast	forecast error
2006	Q1	-0.040	0.022	0.007	0.014	0.023	-0.007	-0.0336	-0.087	0.028	0.038	0.028	0.028	-0.020	-0.0665	-0.027	0.010	0.019	0.022	0.031	-0.007	-0.0194
	Q2	0.018	-0.040	0.022	0.007	0.014	0.005	0.0125	0.000	-0.087	0.028	0.038	0.028	0.011	-0.0113	-0.014	-0.027	0.010	0.019	0.022	0.004	-0.0182
	Q3	0.013	0.018	-0.040	0.022	0.007	0.005	0.0085	0.029	0.000	-0.087	0.028	0.038	0.027	0.0023	0.018	-0.014	-0.027	0.010	0.019	0.014	0.0045
	Q4	0.014	0.013	0.018	-0.040	0.022	0.004	0.0094	0.014	0.029	0.000	-0.087	0.028	0.016	-0.0021	0.032	0.018	-0.014	-0.027	0.010	0.008	0.0243
2007	Q1	-0.039	0.014	0.013	0.018	-0.040	-0.017	-0.0222	-0.041	0.014	0.029	0.000	-0.087	-0.025	-0.0161	-0.038	0.032	0.018	-0.014	-0.027	-0.014	-0.0238
	Q2	0.018	-0.039	0.014	0.013	0.018	0.007	0.0106	0.013	-0.041	0.014	0.029	0.000	0.001	0.0115	0.010	-0.038	0.032	0.018	-0.014	-0.005	0.0148
	Q3	0.012	0.018	-0.039	0.014	0.013	0.007	0.0050	0.012	0.013	-0.041	0.014	0.029	0.011	0.0009	0.016	0.010	-0.038	0.032	0.018	0.005	0.0110
	Q4	0.006	0.012	0.018	-0.039	0.014	0.003	0.0033	0.014	0.012	0.013	-0.041	0.014	0.005	0.0094	0.005	0.016	0.010	-0.038	0.032	0.007	-0.0018
2008	Q1	-0.010	0.006	0.012	0.018	-0.039	-0.014	0.0037	-0.028	0.014	0.012	0.013	-0.041	-0.015	-0.0126	-0.040	0.005	0.016	0.010	-0.038	-0.013	-0.0266
	Q2	0.006	-0.010	0.006	0.012	0.018	0.002	0.0043	0.010	-0.028	0.014	0.012	0.013	0.003	0.0072	0.001	-0.040	0.005	0.016	0.010	0.008	-0.0068
	Q3	0.004	0.006	-0.010	0.006	0.012	0.003	0.0013	0.010	0.010	-0.028	0.014	0.012	0.005	0.0046	0.001	0.001	-0.040	0.005	0.016	0.014	-0.0136
	Q4	0.006	0.004	0.006	-0.010	0.006	0.001	0.0050	0.005	0.010	0.010	-0.028	0.014	0.003	0.0013	0.001	0.001	0.001	-0.040	0.005	0.010	-0.0090
2009	Q1	-0.011	0.006	0.004	0.006	-0.010	-0.005	-0.0066	0.043	0.005	0.010	0.010	-0.028	-0.010	0.0530	-0.002	0.001	0.001	0.001	-0.040	-0.006	0.0031
	Q2	-0.000	-0.011	0.006	0.004	0.006	0.002	-0.0023	-0.068	0.043	0.005	0.010	0.010	-0.013	-0.0549	0.004	-0.002	0.001	0.001	0.001	0.001	0.0030
	Q3	0.004	-0.000	-0.011	0.006	0.004	0.004	0.0002	0.007	-0.068	0.043	0.005	0.010	0.006	0.0008	0.005	0.004	-0.002	0.001	0.001	0.000	0.0041
	Q4	0.001	0.004	-0.000	-0.011	0.006	0.003	-0.0020	-0.003	0.007	-0.068	0.043	0.005	0.011	-0.0145	-0.000	0.005	0.004	-0.002	0.001	-0.001	0.0007
2010	Q1	-0.005	0.001	0.004	-0.000	-0.011	-0.002	-0.0029	-0.011	-0.003	0.007	-0.068	0.043	0.021	-0.0318	-0.025	-0.000	0.005	0.004	-0.002	-0.002	-0.0234
	Q2	0.006	-0.005	0.001	0.004	-0.000	0.001	0.0046	0.010	-0.011	-0.003	0.007	-0.068	-0.007	0.0167	0.014	-0.025	-0.000	0.005	0.004	0.007	0.0065
	Q3	0.007	0.006	-0.005	0.001	0.004	0.001	0.0053	0.008	0.010	-0.011	-0.003	0.007	0.003	0.0042	0.003	0.014	-0.025	-0.000	0.005	0.006	-0.0028
	Q4	0.008	0.007	0.006	-0.005	0.001	-0.001	0.0088	0.007	0.008	0.010	-0.011	-0.003	-0.002	0.0089	0.002	0.003	0.014	-0.025	-0.000	0.001	0.0002
2011	Q1	-0.015	0.008	0.007	0.006	-0.005	-0.005	-0.0096	-0.022	0.007	0.008	0.010	-0.011	-0.007	-0.0155	-0.007	0.002	0.003	0.014	-0.025	-0.007	0.0001
	Q2	0.006	-0.015	0.008	0.007	0.006	0.002	0.0040	0.007	-0.022	0.007	0.008	0.010	0.005	0.0019	0.001	-0.007	0.002	0.003	0.014	0.004	-0.0032
	Q3	0.007	0.006	-0.015	0.008	0.007	0.003	0.0039	0.009	0.007	-0.022	0.007	0.008	0.006	0.0032	0.000	0.001	-0.007	0.002	0.003	0.003	-0.0029

		İS LEASE							ŞEKER LEASE							VAKIF LEASE						
		t	t-1	t-2	t-3	t-4	forecast	forecast error	t	t-1	t-2	t-3	t-4	forecast	forecast error	t	t-1	t-2	t-3	t-4	forecast	forecast error
2006	Q1	-0.038	0.017	0.014	0.018	0.017	-0.009	-0.0283	-0.000	-0.010	0.010	0.011	-0.011	-0.003	0.0034	-0.053	0.010	0.013	0.021	0.016	-0.008	-0.0447
	Q2	-0.001	-0.038	0.017	0.014	0.018	0.005	-0.0067	-0.055	-0.000	-0.010	0.010	0.011	0.004	-0.0581	0.012	-0.053	0.010	0.013	0.021	0.012	-0.0002
	Q3	0.021	-0.001	-0.038	0.017	0.014	0.011	0.0099	0.010	-0.055	-0.000	-0.010	0.010	0.019	-0.0096	0.008	0.012	-0.053	0.010	0.013	0.014	-0.0057
	Q4	-0.003	0.021	-0.001	-0.038	0.017	0.007	-0.0099	-0.017	0.010	-0.055	-0.000	-0.010	0.014	-0.0305	0.013	0.008	0.012	-0.053	0.010	0.008	0.0053
2007	Q1	-0.016	-0.003	0.021	-0.001	-0.038	-0.010	-0.0066	0.063	-0.017	0.010	-0.055	-0.000	0.015	0.0489	-0.033	0.013	0.008	0.012	-0.053	-0.015	-0.0172
	Q2	0.013	-0.016	-0.003	0.021	-0.001	0.002	0.0112	0.003	0.063	-0.017	0.010	-0.055	-0.021	0.0242	-0.015	-0.033	0.013	0.008	0.012	0.006	-0.0204
	Q3	0.015	0.013	-0.016	-0.003	0.021	0.006	0.0085	0.000	0.003	0.063	-0.017	0.010	-0.014	0.0147	-0.019	-0.015	-0.033	0.013	0.008	0.013	-0.0321
	Q4	0.011	0.015	0.013	-0.016	-0.003	-0.004	0.0145	0.003	0.000	0.003	0.063	-0.017	-0.017	0.0191	0.003	-0.019	-0.015	-0.033	0.013	0.020	-0.0168
2008	Q1	-0.022	0.011	0.015	0.013	-0.016	-0.012	-0.0105	-0.003	0.003	0.000	0.003	0.063	0.009	-0.0122	0.011	0.003	-0.019	-0.015	-0.033	0.004	0.0067
	Q2	0.027	-0.022	0.011	0.015	0.013	0.002	0.0253	0.004	-0.003	0.003	0.000	0.003	0.002	0.0029	0.004	0.011	0.003	-0.019	-0.015	-0.001	0.0050
	Q3	0.012	0.027	-0.022	0.011	0.015	0.000	0.0120	0.004	0.004	-0.003	0.003	0.000	0.000	0.0032	0.003	0.004	0.011	0.003	-0.019	-0.007	0.0102
	Q4	0.008	0.012	0.027	-0.022	0.011	-0.004	0.0123	0.000	0.004	0.004	-0.003	0.003	-0.000	0.0006	0.010	0.003	0.004	0.011	0.003	-0.003	0.0133
2009	Q1	-0.049	0.008	0.012	0.027	-0.022	-0.014	-0.0344	-0.011	0.000	0.004	0.004	-0.003	-0.002	-0.0094	-0.010	0.010	0.003	0.004	0.011	-0.002	-0.0077
	Q2	0.012	-0.049	0.008	0.012	0.027	0.013	-0.0008	0.003	-0.011	0.000	0.004	0.004	0.004	-0.0010	0.007	-0.010	0.010	0.003	0.004	0.000	0.0071
	Q3	0.010	0.012	-0.049	0.008	0.012	0.013	-0.0029	0.001	0.003	-0.011	0.000	0.004	0.004	-0.0035	0.010	0.007	-0.010	0.010	0.003	0.000	0.0093
	Q4	0.008	0.010	0.012	-0.049	0.008	0.007	0.0013	0.003	0.001	0.003	-0.011	0.000	0.003	0.0002	-0.021	0.010	0.007	-0.010	0.010	-0.000	-0.0206
2010	Q1	-0.027	0.008	0.010	0.012	-0.049	-0.014	-0.0135	-0.003	0.003	0.001	0.003	-0.011	-0.002	-0.0004	0.018	-0.021	0.010	0.007	-0.010	0.001	0.0173
	Q2	0.010	-0.027	0.008	0.010	0.012	0.006	0.0049	0.004	-0.003	0.003	0.001	0.003	0.001	0.0029	0.016	0.018	-0.021	0.010	0.007	0.002	0.0139
	Q3	0.008	0.010	-0.027	0.008	0.010	0.006	0.0020	0.006	0.004	-0.003	0.003	0.001	0.000	0.0058	0.004	0.016	0.018	-0.021	0.010	-0.003	0.0066
	Q4	0.006	0.008	0.010	-0.027	0.008	0.003	0.0029	-0.000	0.006	0.004	-0.003	0.003	-0.001	0.0006	0.004	0.004	0.016	0.018	-0.021	-0.012	0.0153
2011	Q1	-0.022	0.006	0.008	0.010	-0.027	-0.009	-0.0125	-0.008	-0.000	0.006	0.004	-0.003	-0.002	-0.0063	-0.029	0.004	0.004	0.016	0.018	-0.002	-0.0275
	Q2	0.011	-0.022	0.006	0.008	0.010	0.005	0.0057	0.005	-0.008	-0.000	0.006	0.004	0.003	0.0026	0.005	-0.029	0.004	0.004	0.016	0.009	-0.0039
	Q3	0.008	0.011	-0.022	0.006	0.008	0.005	0.0029	0.004	0.005	-0.008	-0.000	0.006	0.003	0.0008	0.009	0.005	-0.029	0.004	0.004	0.008	0.0009

		YATIRIM LEASE							YKB LEASE							ZİRAAT LEASE						
		t	t-1	t-2	t-3	t-4	forecast	forecast error	t	t-1	t-2	t-3	t-4	forecast	forecast error	t	t-1	t-2	t-3	t-4	forecast	forecast error
2006	Q1	-0.004	0.003	0.003	0.002	0.001	-0.001	-0.0036	0.002	0.014	-0.016	-0.002	0.026	0.006	-0.0044	0.012	0.020	0.005	-0.014	-0.008	-0.004	0.0163
	Q2	0.025	-0.004	0.003	0.003	0.002	0.001	0.0238	0.012	0.002	0.014	-0.016	-0.002	-0.001	0.0131	0.011	0.012	0.020	0.005	-0.014	-0.011	0.0221
	Q3	-0.000	0.025	-0.004	0.003	0.003	-0.005	0.0041	0.180	0.012	0.002	0.014	-0.016	-0.008	0.1883	0.024	0.011	0.012	0.020	0.005	-0.009	0.0334
	Q4	0.003	-0.000	0.025	-0.004	0.003	-0.005	0.0075	0.017	0.180	0.012	0.002	0.014	-0.049	0.0660	0.014	0.024	0.011	0.012	0.020	-0.009	0.0230
2007	Q1	-0.023	0.003	-0.000	0.025	-0.004	-0.006	-0.0172	-0.043	0.017	0.180	0.012	0.002	-0.061	0.0176	-0.051	0.014	0.024	0.011	0.012	-0.011	-0.0399
	Q2	-0.005	-0.023	0.003	-0.000	0.025	0.010	-0.0146	0.014	-0.043	0.017	0.180	0.012	-0.030	0.0445	0.022	-0.051	0.014	0.024	0.011	0.006	0.0160
	Q3	-0.008	-0.005	-0.023	0.003	-0.000	0.009	-0.0169	0.015	0.014	-0.043	0.017	0.180	0.033	-0.0180	0.016	0.022	-0.051	0.014	0.024	0.011	0.0047
	Q4	-0.001	-0.008	-0.005	-0.023	0.003	0.010	-0.0105	0.014	0.015	0.014	-0.043	0.017	0.005	0.0092	-0.034	0.016	0.022	-0.051	0.014	0.003	-0.0371
2008	Q1	0.008	-0.001	-0.008	-0.005	-0.023	0.001	0.0066	-0.035	0.014	0.015	0.014	-0.043	-0.017	-0.0182	0.008	-0.034	0.016	0.022	-0.051	-0.007	0.0147
	Q2	0.003	0.008	-0.001	-0.008	-0.005	0.000	0.0030	0.012	-0.035	0.014	0.015	0.014	0.005	0.0068	0.020	0.008	-0.034	0.016	0.022	0.009	0.0112
	Q3	0.004	0.003	0.008	-0.001	-0.008	-0.003	0.0073	0.009	0.012	-0.035	0.014	0.015	0.008	0.0015	0.015	0.020	0.008	-0.034	0.016	0.003	0.0116
	Q4	0.010	0.004	0.003	0.008	-0.001	-0.003	0.0132	0.012	0.009	0.012	-0.035	0.014	0.005	0.0074	0.012	0.015	0.020	0.008	-0.034	-0.016	0.0282
2009	Q1	-0.013	0.010	0.004	0.003	0.008	-0.002	-0.0101	-0.036	0.012	0.009	0.012	-0.035	-0.013	-0.0236	-0.040	0.012	0.015	0.020	0.008	-0.010	-0.0299
	Q2	-0.004	-0.013	0.010	0.004	0.003	0.001	-0.0049	0.009	-0.036	0.012	0.009	0.012	0.007	0.0024	0.022	-0.040	0.012	0.015	0.020	0.008	0.0144
	Q3	0.008	-0.004	-0.013	0.010	0.004	0.004	0.0034	0.010	0.009	-0.036	0.012	0.009	0.008	0.0017	0.012	0.022	-0.040	0.012	0.015	0.007	0.0051
	Q4	-0.001	0.008	-0.004	-0.013	0.010	0.004	-0.0051	0.012	0.010	0.009	-0.036	0.012	0.005	0.0072	0.009	0.012	0.022	-0.040	0.012	0.002	0.0072
2010	Q1	-0.006	-0.001	0.008	-0.004	-0.013	-0.002	-0.0042	-0.032	0.012	0.010	0.009	-0.036	-0.013	-0.0190	-0.039	0.009	0.012	0.022	-0.040	-0.016	-0.0229
	Q2	0.004	-0.006	-0.001	0.008	-0.004	0.001	0.0037	0.013	-0.032	0.012	0.010	0.009	0.005	0.0087	0.006	-0.039	0.009	0.012	0.022	0.009	-0.0029
	Q3	-0.002	0.004	-0.006	-0.001	0.008	0.003	-0.0054	0.013	0.013	-0.032	0.012	0.010	0.006	0.0072	0.015	0.006	-0.039	0.009	0.012	0.011	0.0043
	Q4	0.012	-0.002	0.004	-0.006	-0.001	0.002	0.0099	0.011	0.013	0.013	-0.032	0.012	0.002	0.0087	0.013	0.015	0.006	-0.039	0.009	0.005	0.0082
2011	Q1	-0.007	0.012	-0.002	0.004	-0.006	-0.003	-0.0040	-0.035	0.011	0.013	0.013	-0.032	-0.014	-0.0210	-0.027	0.013	0.015	0.006	-0.039	-0.014	-0.0130
	Q2	-0.002	-0.007	0.012	-0.002	0.004	0.001	-0.0029	0.012	-0.035	0.011	0.013	0.013	0.006	0.0060	0.012	-0.027	0.013	0.015	0.006	0.002	0.0103
	Q3	0.006	-0.002	-0.007	0.012	-0.002	0.001	0.0049	0.012	0.012	-0.035	0.011	0.013	0.008	0.0042	0.009	0.012	-0.027	0.013	0.015	0.005	0.0036

APPENDIX-5

BALANCE SHEET AND INCOMESTATEMENTLEASING INDUSTRY AND XXX LEASING

Leasing Industry

Balance Sheet

Millions, TRY

ASSETS	30.09.2011			31.12.2011		
	Full Finance	Half Operating	Full Operating	Full Finance	Half Operating	Full Operating
CASH BALANCES	0,05	0,05	0,05	0,03	0,03	0,03
FINANCIAL ASSETS AT FAIR VALUE THROUGH P&L	47,50	47,50	47,50	16,34	16,34	16,34
BANKS	1.573,10	4.719,86	7.798,77	1.650,65	6.925,41	11.198,64
RECEIVABLES FROM REVERSE REPURCHASE AGREEMENTS	1,55	1,55	1,55	0,00	0,00	0,00
SATILMAYA HAZIR FİNANSAL VARLIKLAR (Net)	79,25	79,25	79,25	71,14	71,14	71,14
LEASE RECEIVABLES	14.772,49	7.386,25	0,00	15.112,15	7.556,08	0,00
A) Receivables from leasing transactions	13.878,58	6.939,29	0,00	14.301,24	7.150,62	0,00
a) Financial lease receivables	16.109,09	8.054,55	0,00	16.677,20	8.338,60	0,00
c) Other	19,00	9,50	0,00	15,81	7,91	0,00
d) Unearned interest income(-)	2.249,51	1.124,76	0,00	2.391,77	1.195,89	0,00
B) Assets to be leased	408,42	204,21	0,00	330,16	165,08	0,00
C) Advances given for leasing transactions	485,49	242,75	0,00	480,75	240,38	0,00
TAKİPTEKİ ALACAKLAR	679,72	679,72	679,72	701,78	701,78	701,78
HEDGING DERIVATIVE FINANCIAL ASSETS	0,14	0,07	0,14	0,00	0,00	0,00
HELD TO MATURITY INVESTMENT SECURITIES (Net)	25,92	12,96	25,92	26,64	26,64	26,64
SUBSIDIARIES (Net)	36,12	18,06	36,12	36,27	36,27	36,27
INVESTMENTS IN ASSOCIATES (Net)	10,41	5,21	10,41	8,71	8,71	8,71
JOINT VENTURES (Net)	0,00	0,00	0,00	0,00	0,00	0,00
FIXED ASSETS (Net)	29,20	8.939,25	17.878,50	31,60	8.383,60	16.704,00
INTANGIBLE ASSETS (Net)	25,79	25,79	25,79	10,45	10,45	10,45
DEFERRED TAX ASSET	467,94	467,94	467,94	445,67	445,67	445,67
ASSETS HELD FOR SALE	23,29	23,29	23,29	29,16	29,16	29,16
OTHER ASSETS	507,36	507,36	507,36	463,49	463,49	463,49
TOTAL ASSETS	18.279,83	22.914,10	27.582,31	18.604,08	24.674,77	29.712,32

Leasing Industry

Balance Sheet

Millions, TRY

LIABILITIES	30.09.2011			31.12.2011		
	Full Finance	Half Operating	Full Operating	Full Finance	Half Operating	Full Operating
TRADING DERIVATIVE FINANCIAL LIABILITIES	96,39	96,39	96,39	96,52	96,52	96,52
BORROWINGS	13.212,77	16.973,13	21.085,27	13.411,62	18.533,99	22.934,33
FACTORING PAYABLES	0,00	0,00	0,00	0,00	0,00	0,00
LEASE PAYABLES	0,00	0,00	0,00	0,00	0,00	0,00
MARKETEABLE SECURITIES ISSUED(Net)	0,00	0,00	0,00	93,24	93,24	93,24
MISCELLANEOUS PAYABLES	506,08	506,08	506,08	469,63	469,63	469,63
OTHER LIABILITIES	179,18	179,18	179,18	225,08	225,09	225,08
HEDGING DERIVATIVE FINANCIAL LIABILITIES	1,22	1,22	1,22	1,22	1,22	1,22
TAX LIABILITIES	43,67	186,84	267,52	29,17	229,71	371,44
PROVISIONS	133,77	133,77	133,77	100,18	100,18	100,18
DEFERRED TAX LIABILITY	0,00	0,00	0,00	0,12	0,12	0,12
SHAREHOLDER'S EQUITY	4.106,75	4.837,50	5.312,88	4.177,30	4.925,07	5.420,56
A) Paid in Capital	2.004,78	2.004,78	2.004,78	1.958,90	1.958,90	1.958,90
B) Capital reserves	9,56	9,56	9,56	47,95	47,95	47,95
C) Profit reserves	1.489,36	2.156,82	2.567,25	1.493,82	2.161,28	2.571,71
D) Income or Loss	603,05	666,34	731,29	676,63	756,94	842,00
a) Prior years' income or Loss	174,54	174,54	174,54	166,64	166,64	166,64
b) Current Period Income or Loss	428,51	491,80	556,75	509,99	590,30	675,36
TOTAL LIABILITIES	18.279,83	22.914,10	27.582,31	18.604,08	24.674,77	29.712,32

Leasing Industry Profit & Loss Statement	30.09.2011			31.12.2011		
	Millions, TRY					
	Full Finance	Half Operating	Full Operating	Full Finance	Half Operating	Full Operating
LEASE INCOME	851,44	2.992,38	4.474,01	1.135,83	3.922,31	5.965,80
A) Financial Lease Income	835,41	468,73	0,00	1.114,01	557,01	0,00
B) Operational Lease Income	0,00	2.507,62	4.457,98	0,00	3.343,48	5.943,98
C) Fees & Commissions Received From Lease Transactions	16,03	16,03	16,03	21,82	21,82	21,82
OPERATING EXPENSES (-)	195,28	1.780,86	3.014,08	252,47	2.366,57	4.010,87
A) Personnel Expenses	101,11	101,11	101,11	132,86	132,86	132,86
B) Provision Expense For Employment Termination Benefits	1,10	1,10	1,10	2,47	2,47	2,47
C) Research And Development Expenses	0,00	0,00	0,00	0,00	0,00	0,00
D) General Administration Expenses	80,53	80,53	80,53	100,29	100,29	100,29
E) Depreciation Expenses	0,00	1.585,58	2.818,80	0,00	2.114,10	3.758,40
F) Other	12,54	12,54	12,54	16,85	16,85	16,85
OTHER OPERATING INCOME	520,68	636,74	643,93	719,55	923,48	929,61
A) Interest Received From Banks	86,00	202,06	209,25	105,36	309,29	315,42
B) Interest Received From Reverse Repurchase Agreements	0,00	0,00	0,00	0,00	0,00	0,00
C) Interest Received From Marketable Securities Portfolio	5,84	5,84	5,84	6,71	6,71	6,71
D) Dividend Income	2,43	2,43	2,43	2,43	2,43	2,43
E) Trading Gains On Securities	127,17	127,17	127,17	183,96	183,96	183,96
F) Foreign Exchange Gains	102,72	102,72	102,72	137,05	137,05	137,05
G) Other	196,52	196,52	196,52	284,04	284,04	284,04

Leasing Industry Profit & Loss Statement	30.09.2011			31.12.2011		
	Millions, TRY					
	Full Finance	Half Operating	Full Operating	Full Finance	Half Operating	Full Operating
FINANCIAL EXPENSES (-)	389,74	963,87	1.143,52	534,57	1.300,02	1.605,83
A) Interest On Funds Borrowed	379,56	953,69	1.133,34	519,39	1.284,84	1.590,65
B) Interest On Factoring Payables	0,00	0,00	0,00	0,00	0,00	0,00
C) Financial Lease Expense	0,00	0,00	0,00	0,00	0,00	0,00
D) Interest On Securities Issued	0,12	0,12	0,12	2,10	2,10	2,10
E) Other Interest Expenses	0,13	0,13	0,13	0,03	0,03	0,03
F) Fees And Commissions Given	9,93	9,93	9,93	13,05	13,05	13,05
SPECIFIC PROVISIONS FOR FOLLOW-UP RECEIVABLES (-)	144,12	144,12	144,12	218,97	218,97	218,97
OTHER OPERATING EXPENSES (-)	176,34	176,34	176,34	265,46	265,46	265,46
A) Impairment Of Marketable Securities	0,23	0,23	0,23	0,37	0,37	0,37
B) Impairment Of Fixed Assets	0,24	0,24	0,24	0,29	0,29	0,29
C) Loss From Derivative Financial Transaction	154,88	154,88	154,88	229,22	229,22	229,22
D) Other	20,99	20,99	20,99	35,58	35,58	35,58
NET OPERATING INCOME/EXPENSE	466,64	563,93	639,88	583,91	694,76	794,28
TAXATION ON INCOME FROM CONTINUING OPERATIONS (±)	38,13	72,13	83,13	73,92	104,46	118,92
A) Current Tax Provision	62,81	96,81	107,81	73,27	103,81	118,27
B) Deferred Tax Expense Effect (+)	47,98	47,98	47,98	62,76	62,76	62,76
C) Deferred Tax Income Effect (-)	-72,66	-72,66	-72,66	-62,11	-62,11	-62,11
CURRENT PERIOD INCOME/ LOSS	428,51	491,80	556,75	509,99	590,30	675,36

XXX Leasing
Balance Sheet
XXX Leasing Balance Sheet

As of third and fourth quarter, 2011	30.09.2011			31.12.2011		
	Full Finance	Half Operating	Full Operating	Full Finance	Half Operating	Full Operating
ASSETS						
Bank Placements	16.005.863	92.900.375	164.794.886	62.504.537	138.179.569	238.854.597
Due From Other Banks / AIR	19.252	19.252	19.252	68.105	68.105	68.105
LOANS AND ADVANCES TO BANKS	16.025.115	92.919.627	164.814.138	62.572.642	138.247.674	238.922.702
Trading Securities-Shares	419	419	419	409	409	409
Loans And Advances To Customers/Corporate Lending	444.161.331	349.342.763	254.524.195	402.639.269	326.415.948	250.192.626
Loans And Advances To Customers/AIR	861.786	861.786	861.786	987.614	987.614	987.614
Loans Advances To Customers/Non Performing Loans	5.709.834	5.709.834	5.709.834	5.680.772	5.680.772	5.680.772
Loans And Advances To Customers/Bad Debt Provision	-5.519.090	-5.519.090	-5.519.090	-5.558.642	-5.558.642	-5.558.642
LOANS AND ADVANCES TO CUSTOMERS	445.213.861	350.395.293	255.576.725	403.749.013	327.525.692	251.302.370
Investment Securities	425.278	425.278	425.278	0	0	0
Investment Securities / AIR	10.491	10.491	10.491	0	0	0
HELD-TO-MATURITY INVESTMENT SECURITIES	435.769	435.769	435.769	0	0	0
Leased Assets Cost	0	148.987.499	297.974.998	0	139.199.999	278.399.998
Leased Assets Depreciation	0	0	0	0	0	0
Fixed Assets Cost	233.673	233.673	233.673	233.673	233.673	233.673
Accumulated Depreciation Fixed Assets	-117.457	-117.457	-117.457	-130.023	-130.023	-130.023
Intangible Fixed Assets	489.448	489.448	489.448	489.448	489.448	489.448
Accumulated Depreciation Intangible Fixed Assets	-202.964	-202.964	-202.964	-244.090	-244.090	-244.090
FIXED ASSETS	402.700	149.390.199	298.377.698	349.008	139.549.007	278.749.006
Accrued Income - Prepayments - Other	125.517	125.517	125.517	387.954	387.954	387.954
Other Assets	1.266.376	1.266.376	1.266.376	1.065.173	1.065.173	1.065.173
Deferred Tax Assets	2.325.265	2.325.265	2.325.265	1.132.794	1.132.794	1.132.794
OTHER ASSETS	3.717.158	3.717.158	3.717.158	2.585.921	2.585.921	2.585.921
TOTAL ASSETS	465.795.023	596.858.465	722.921.908	469.256.994	607.908.703	771.560.408

XXX LEASING
Income Statement
XXX Leasing (TRY)
as of third and fourth quarter, 2011

	30.09.2011			31.12.2011		
	Year to Date 30.09.2011	Year to Date 30.09.2011	Year to Date 30.09.2011	Year to Date 31.12.2011	Year to Date 31.12.2011	Year to Date 31.12.2011
INTEREST AND DISCOUNT INCOME	32.859.768	25.833.962	18.808.156	42.550.828	36.030.333	29.509.835
INTEREST EXPENSE	20.144.655	23.470.593	26.796.530	27.121.698	31.556.281	-35.990.864
NET INTEREST INCOME	12.715.113	2.363.369	-7.988.374	15.429.130	4.474.052	-6.481.029
OPERATING LEASE INCOME	0	46.437.303	92.874.605	0	61.916.404	123.832.807
FEE AND COMMISSION INCOME	426.544	426.544	426.544	642.388	642.388	642.388
FEE AND COMMISSION EXPENSE	-414.413	-414.413	-414.413	-566.095	-566.095	-566.095
NET FEE AND COMMISSION INCOME	12.131	12.131	12.131	76.293	76.293	76.293
NET TRADING INCOME	203.773	203.773	203.773	227.262	227.262	227.262
OTHER OPERATING INCOME	103.348	103.348	103.348	103.348	103.348	103.348
TOTAL OPERATING INCOME	13.034.365	49.119.924	85.205.483	15.836.033	66.797.359	117.758.681
TOTAL PERSONNEL COST	-2.607.342	-2.607.342	-2.607.342	-3.455.057	-3.455.057	-3.455.057
TOTAL ADMINISTRATIVE EXPENSE	-1.444.728	-1.444.728	-1.444.728	-1.880.446	-1.880.446	-1.880.446
TOTAL DEPRECIATION	-148.297	29.510.797	58.873.298	-201.989	39.351.989	-78.501.990
TOTAL OPERATING EXPENSES	-4.200.367	33.562.867	62.925.368	-5.537.492	44.687.492	-83.837.493
BAD & DOUBTFUL DEBTS EXPENSE	-227.272	-227.272	-227.272	-266.824	-266.824	-266.824
OTHER PROVISIONS	-243.000	-243.000	-243.000	-324.000	-324.000	-324.000
NET PROFIT BEFORE TAX	8.363.726	15.086.785	21.809.843	9.707.717	21.519.043	33.330.364
INCOME TAX EXPENSE	-1.672.745	-3.017.357	-4.361.969	-1.941.543	-4.303.809	-6.666.073
NET PROFIT AFTER TAX	6.690.981	12.069.428	17.447.875	7.766.174	17.215.234	26.664.292

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