The European Distressed and Defaulted Debt Market

The Market and Opportunities

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Introduction

The purpose of this research project is to provide an overview and analysis of the European distressed and defaulted debt market. The research is divided into two main parts. The first provides an overview of leveraged debt instruments in a European context, focusing on issues that are important for potential investors such as structures, trends, recovery rates and sourcing. The second part attempts to provide a quantitative analysis of the defaulted and distressed European debt market, applying methods similar to those of Professor Altman in his analysis of the US distressed market. Finally, we summarize and provide advice for potential investors.

Two Introductory Comments:

1) The term 'Europe' itself is subjective, and often relates to different geographies within the European continent. This research uses the term 'Europe' primarily for EU members, without differentiating between jurisdictions.

2) It should be noted that data on the European distressed market is scarce and cannot be easily obtained from the financial institutions. Additionally, the European high-yield market was nonexistent prior to 1997. Therefore, in some parts of this report we have used assumptions and original analysis to support the lack of historical data, as detailed in relative Appendices.

Part I: The European Leveraged Debt Market

The European leveraged market is a young and fascinating market. It is constantly reinventing itself with new structures and products in an effort to bridge different jurisdictions within Europe and to keep up with a changing economical and political climate. The market is quite a challenge for many leveraged and distressed investors, especially from the US. There are fundamental differences with respect to: structures, pricing, liquidity, insolvency regimes (no chapter 11), financial institutions, and expected returns as well as other less significant disparities. The leveraged finance market is now, and will continue to be, an important source of distressed debt in Europe (along with increasing number of 'fallen angels' and distressed corporate debt, mainly from Germany). Familiarity with the different characteristics of this market is essential for successful investing.

The current leveraged market is comprised of 3 main debt instruments – leveraged loans, mezzanine and high-yield, all of which bear little resemblance to the same instruments a few years ago. Heavily influenced by the booming telecom sector and optimism of the late 90's and early 00's, most leveraged finance debt at the turn of the century was directed towards the telecom, media & utility sectors. These transactions (almost always Leveraged Buyouts), aggressively priced and structured, eventually led to many defaults as further elaborated below. Since then, the market has become more diversified with new structures and more players.

The Leveraged Loans Market (Private Debt)

Overview

Although the private debt/loans market can take many forms - from mezzanine through investment grade loans and leases, we recognize a special importance for the leveraged loans market, as it constitutes a major source for distressed and defaulted debt.

European Leveraged loans, otherwise known as sub-investment grade rated bank debt, derive most of their risk from a lack of liquidity, high default expectations and poor debt management practiced by the companies. Secondary drivers of the leveraged loan market include a small portion of risk coming from interest rates and credit migration.

The following key points summarize the current loan market characteristics, which also serve as the basis for future development, as further elaborated below:

- Private information – information is maintained confidentially among syndication members. Information is disseminated on private relationship basis.
- Credit Rating – most tranches are unrated by the agencies.
- Banks are both intermediaries and investors – Banks play dual roles to facilitate syndication of loans.
- Negotiated/relationship/fixed pricing – Generally, there is no efficient pricing mechanism. In essence, pricing is based more on the specific tranche classification than on the actual credit of the issuer.
- "Buy and hold" lenders – Banks tend to hold on to the troubled loans and continue to keep them marked at book value.

In Europe, the majority of loans have been issued in connection with Leveraged-Buy-Outs. However in 2003, fallen angels (names such as Vivendi Universal (€2.5 billion), Heidelberg Cement (€1.4 billion) and Alstom (€600 million)) drove up non-LBO volume (see discussion about size below).

Another source of transaction type for leveraged loans is the refinancing of existing debt. A low interest rate environment coupled with improving operating performance provide incentives for companies to restructure their capital structure.

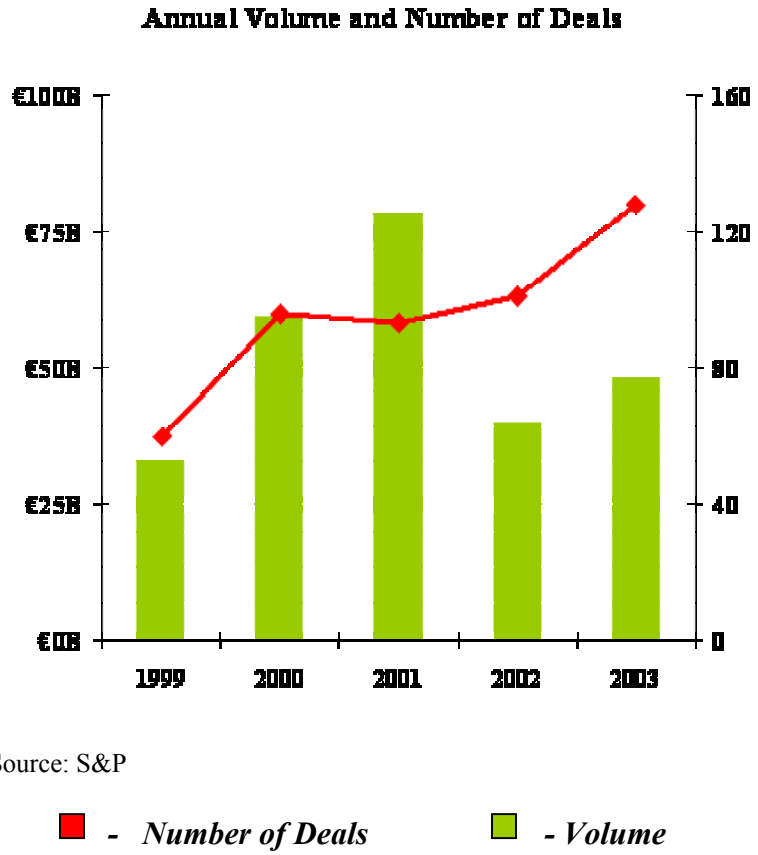
Current Size

For 2003 as a whole, European leveraged loan volume was €48.1 billion from 128 deals, up from €39.98 billion and 101 deals in 2002, a 20.2% increase. Total volume remains significantly down from its peak in 2001: €78.54 billion from 93 deals. Roughly €8.6 billion, or 18% of 2003 volume, was driven by fallen angels. However, while overall leveraged volume was still below historical levels, LBO volume has increased each year for the past five years. Full-year 2003 saw €29.64 billion from 91 LBO deals, up 10.3% from 2002's €26.86 billion and 76 deals.

In 2003, UK continues to lead the way, with €12.69 billion in leveraged loans (including €6.88 billion from 23 LBOs), compared to France's €8.69 billion (€4.19 billion from 14 LBOs) and Germany's €5.55 billion (€3.39 billion from 12 LBOs).

Figure 1 below provides a graphical illustration of these trends.

Figure 1. New Issue Leveraged Loans



Source: S&P

Investors

Institutional investors' market share fell to 20% in 2003, from 23.2% for the 12 months ended September 2003. This is just shy of the 20.2% level in 2002. CDO participation in the market fell even further, to 18% of the market in 2003, down from 20.8% for the 12 months ended September 2003 and from 19.4% in 2002.

This trend is partially due to recent large transactions such as the €5.4 billion acquisition of Seat Pagine by a European LBO consortium, but is also a result of the polarisation of the institutional investor base. A two-tier market has developed in which the larger firms, such as Duke Street, Prudential M&G and Alcentra, who are able to provide significant capital, are invited into deals early and often absorb all of the fund markets' allocation before the smaller investors even get a

look. For new funds coming on line, many equity investors are picking selectively among the CDO managers. The largest and most recognized funds are not encountering fund-raising difficulties, but the more marginal, or newer funds, are still finding it slow going, especially with regard to raising equity. It would be interesting to observe these developments in the near future.

Trends and Developments

Structures

Leverage - As a result of continuing fierce competition for mandates and strong market liquidity, overall leverage multiples have risen in 2003 and continued to rise in 2004. Total debt to EBITDA across all leveraged loans was 4.3x in 4Q 2003, and 4.27x for the whole year, compared to 4.19x in 2002. Senior debt was 3.3x in the fourth quarter and 3.52x for the whole year, compared to 3.38x in 2002.

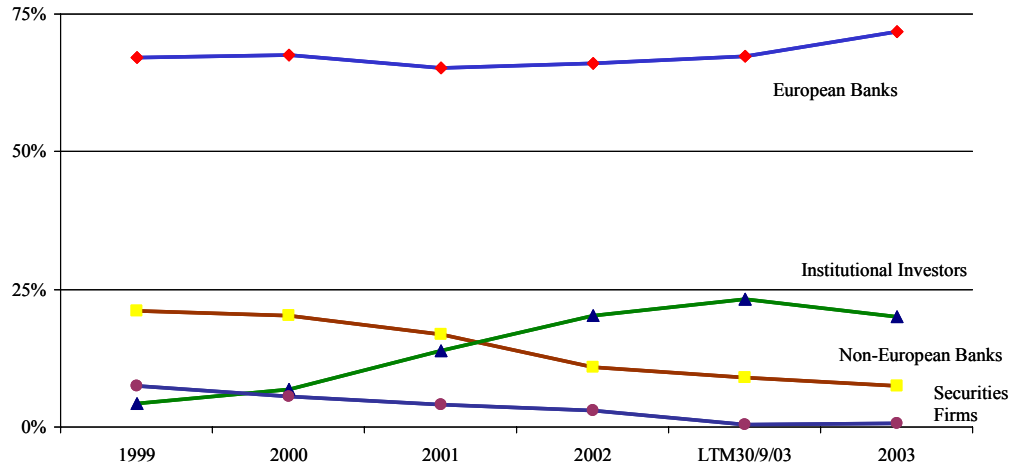
As for LBOs, total debt multiples have become much more aggressive. Total debt to EBITDA is nearing the high levels of 2000, at 4.44x in the fourth quarter and 4.38x in all of 2003, compared to 4.24x in 2002. Senior LBO debt to EBITDA was 3.47x in the fourth quarter and 3.56x for all of 2003, from 3.39x in 2002.

General opinion is divided as to whether today's structures are a cause for concern, and whether leverage could actually increase. Some professionals still feel that credit sense prevails, pointing to the market's reaction to highly leveraged deals as evidence, and say that multiples could still rise as the market improves. Some also feel that 2003's higher multiples are skewed by the trend for secondary buyouts and recaps in which investors allow more aggressive terms due to the proven de-leveraging history and familiarity with management. On the other hand, some fear that especially aggressive bidding for the more cyclical deals with low equity, high leverage and low

debt service coverage ratios will result in another crisis and high default rates in the next few years.

A key criterion for structuring loans is the investor profile relevant for the loans. A comparison of senior debt capital structures highlights the predominant presence of banks vs. institutions in the European market.

Figure 2. Primary Market for European Leveraged Loans by Investor Type



Source: S&P

For comparison purposes, in the US, institutional investors account for approximately 75.9% of the US leveraged loan market (for the 12 months ended June 30 2003) compared with 21.70% in Europe. This has shaped the two loan markets (American and European) in two distinct ways. First, institutional investors price risk to a far tougher standard and demand more competitive pricing, and therefore, tranches are priced more efficiently based on risk, rather than uniform pricing as in Europe (see on pricing below). Second, institutional investors require more liquidity than banks because they have to mark-to-market, therefore the US market is much more liquid.

Risk and Credit Quality

Whether or not we agree that structures are becoming too aggressive, one thing is clear: deals are becoming riskier. Single-B issuance surged in Europe during 2003, lending weight to the prediction of defaults down the line for some of today's more aggressively structured transactions. For all leveraged loans by volume, 29% of all deals were rated single B in 2003, while for only rated leveraged loans, a total of 47.1% were single B. Again, this is a significant increase, from 18.1% and 25.3% in 2002. In 2000, single-B deals comprised even more of the rated market, at 51.4%, largely due to cable and telecom activity.

Pricing

In the US, the average pro rata spread for a BB-rated credit was 285.3 basis points in the six months ended July 2003. While a B-rated credit was priced far higher, at 361bp. In Europe, however, pricing for both BB and B-rated credits in the same period was 225bp, showing no distinction between the different risk levels. Such imperviousness has prompted many to label Europe an unsophisticated backwater, where archaic and irrational pricing mechanisms still exist. Others have recognized these inefficiencies as an opportunity to arbitrage, albeit in a risky environment.

We believe that this is a symptom of a general lending practice in Europe where European corporates tend to prefer loans from relationship banks as opposed to accessing a potentially cheaper high yield market. European banks are still not charging appropriate returns for non-investment grade corporate loans. These loans need to be priced on a relative value basis for the secondary market to develop. The quality of the banks' portfolios would improve if they stopped providing large cheap loans to clients that should be recapitalizing with a high-yield bond and loan mix.

Perhaps a growing number of rated loans and other indices, such as S&P's new European leveraged loans index will facilitate increased transparency leading to more efficient pricing. However, it should be noted that the relationship nature of lending in Europe makes it acceptable for banks to lend uneconomically and generate revenues from other business lines with the client (e.g. advisory). We believe that more liquid markets would prevent banks from doing so, as it would make it much tougher to off-load credit from their balance sheets at prices close to par.

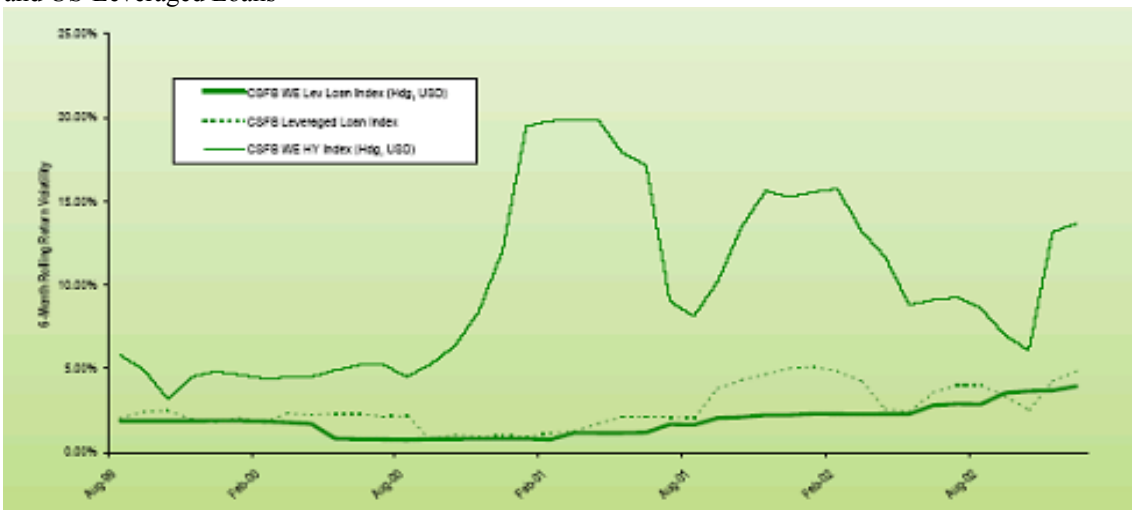
The Secondary Market

Europe's secondary loan market is showing the first signs that it could influence primary pricing and lead to a more rational pricing system. The discussions surrounding the €5.4 billion buy-out of Seat Pagine Gialle's directories business in September 2003 illustrate that more European lenders are talking about expected secondary performance when deciding to join a loan in a primary syndicate.

As the European loan market has matured in the midst of a bearish market environment, prices and hence returns, have become more dispersed, leading to a greater volatility of assets. Nonetheless, loans in Europe continue to exhibit the lowest price volatility when compared to US leveraged loans and Western European high-yield index. In fact, the uptick in volatility can be attributed to normal fluctuations in a recessionary period in an economic cycle as opposed to increased intrinsic volatility of the loans themselves.

The graph provides an illustration of the volatility trends discussed:

Figure 3. 6 Months Rolling Return Volatility in European Leveraged Loans, European High-Yield Bonds and US-Leveraged Loans



Source: CSFB

The Mezzanine Market (Private Debt)

Overview

The European mezzanine has always been a viable alternative for subordinated debt in the LBO's capital structure – the main source of leveraged debt. Today, with a growing appetite in the market for mezzanine, an increasing number of investors are looking favourably at mezzanine, with existing investors trying to grow and secure their market positions. Landmark deals include the secondary buy-outs of Gala (£190 million) and Elis (€290 million). Mezzanine is also available in a warrantless form – with part of the interest payable and some rolled up – only becoming due on maturity or on prepayment triggered by an exit or other refinancing.

In our view, the mezzanine note reinforces the trend away from structural subordination while successfully accommodating the conflicting interests of senior banks, high-yield bondholders and equity investors.

Size

In 2003, the mezzanine market surpassed 2002's unprecedented growth with volume of €3.33 billion from 49 deals (excluding Linpac, Focus and Wedgewood) compared to 2002's €3.2 billion from 40 deals. However, in line with smaller senior deals, the average mezzanine deal size fell to €68.1 million from €79.9 million in 2002. We have also witnessed a surge in second lien structures, which provide similar returns to mezzanine.

The increased liquidity in the mezzanine market has allowed issuers to secure mezzanine loans of up to €350 million. This has given European sponsors a ready alternative to high-yield for many transactions. **Figure 4** provides data regarding level of issuances in previous years:

Figure 4. Issuance of Mezzanine

Annual New Issue of Mezzanine by Volume (bln, €)

Year	Total	No. of Deals	Average Size (mln)
2001	1.8	27.0	66.7
2002	3.2	40.0	80.0
2003	3.3	49.0	67.3

Source: S&P

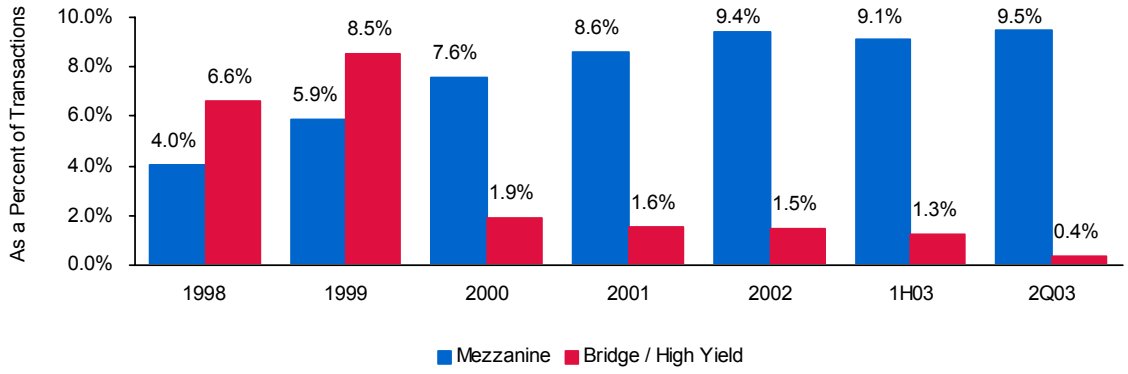
Trends and developments

Growing popularity

Empirical observations show that high-yield and mezzanine have now become sparring structures on deals requiring subordinated debt for more than €150 million. They both compete for the same place in the capital structure. Common opinion held that deal costs were the reason why mezzanine was used for smaller portions of subordinated facilities and high-yield was used for larger. However, now mezzanine experts say that mezzanine is only limited by the size of the investors and the investment funds available, i.e., the market's ability to absorb all mezzanine that is being offered. This opinion was further strengthened by landmark deals such as Gala (£190 million) and Elis (€290 million).

The following figure demonstrates this trend:

Figure 5. Average Mezzanine and Bridge / High Yield Contributions to European Leveraged Buyouts 1998 – 2Q03



Source: S&P

Default Rates

One of the most popular reasons for investing in mezzanine is its ability to offer continuous stability especially in times when overall default rates rise. This is chiefly because (a) there is no secondary market for mezzanine (except CDOs, but most buy to hold); and (b) information is not public and therefore the performance of the asset in correlation with the performance of the company is unknown. Moreover, until now, in terms of credit quality, similar companies use mezzanine and alternative sources of financing. In research performed by CSFB, almost all mezzanine investors have claimed that:

1. The mezzanine investors' network is a very exclusive club where everyone knows each other personally and is very difficult to gain entry.

2. In times of distress, senior lenders will go the extra mile to help the company avoid default on the mezzanine. If the same bank arranged both the senior and the mezzanine, it would not be able to afford a default on the mezzanine.

3. Some of the investors are convinced that there are much deeper problems in the market than what appears on the surface. Since these are resolved internally at the company level, there is no transparency of the problems.

A reinforcing fact is that there has been no major publicized default of a mezzanine loan in recent years. We have used public information to try to come up with an estimated default rate for mezzanine. Looking at Intermediate Capital Group's (biggest mezzanine fund in Europe) mezzanine portfolio between 1990-2002, the average annual default rate was 3.5% and the recovery rate on exited defaulted positions exceeded 70%. In 2002, ICG made £17.5 million of

provisions compared to a net charge of £16.2 million in the previous year. At the end of the year ICG's total provisions amounted to £44.5 million in respect of nine investments. This represents 84% of total cost of these loans and investments and 5% of the gross loan book. Even though we compare the private to the public, default rates for mezzanine appear to be somewhat lower than those in the public market. Some experts claim that it is a psychological effect - investors still remember significant investments being written off, especially in leveraged assets.

The High Yield Market

Overview

Europe's high-yield market is approximately six-years old. In the beginning of 1997 virtually no high yield bonds had been issued in Europe. The LBO market was forced to develop without the facility of high-yield borrowing. Europe's high-yield volume was finally established after significant issuances to fund the telecom market in late 1999. As indicated in **Figure 7** default and distressed levels from 2001 onwards were enormous due to 2 main factors:

Lack of diversification

The European high-yield market's development coincided with the telecom boom and bust, which burned many investors. For several years, high-yield became associated with volatile credits and mezzanine was developed as a real alternative to take up the slack.

Inferior structures

The most significant issue in the high-yield market in recent years was the controversy over structural subordination of the bonds. Senior banks' preference and high-yield distaste for structural subordination has been around since the emergence of the high-yield bond market in Europe. Early LBO transactions in Europe were structured (by senior bankers) largely ignoring the interests of high-yield buyers. The high-yield investors, perhaps unaware of structural subordination's implications (e.g. different bankruptcy codes in US/UK/Europe) on insolvency, were actually repaid after the trade creditors - it was as if they assumed an "equity-like" risk. When this disadvantage was finally recognized, senior banks refused to deviate from what had become "standard market practice". At the end of 2002, European high-yield buyers signed an open letter refusing to buy high-yield paper unless fair concerns on structural subordination were finally addressed. This time the banks took notice since they were sitting on significant unsold high-yield debt, namely the Brake Brothers LBO. A compromise was achieved in the Brake

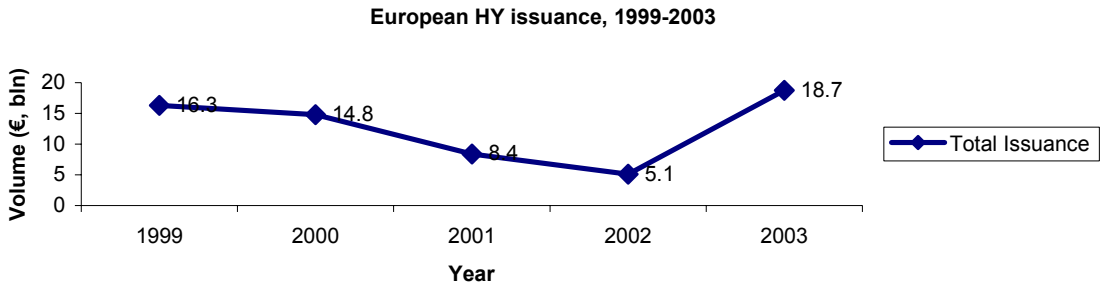
Brothers LBO deal where high-yield bondholders received upstream guarantees from the operating companies.

In a way, the European high-yield market has started a new chapter, with better structures and diversification. Although some different cases such as Heidelberger Cement, Vivendi and Rhodia have emerged, Europe's high-yield market is mainly dominated by LBOs. This is because banks in Europe still extend cheap loans to relationship clients to protect their market share and to generate ancillary business – which often never materializes or does not compensate for such loss lending. Many Continental European banks will lend to an LBO at 225bp but charge a similarly rated domestic corporate at just 150bp.

Size

The European high-yield market is constantly evolving. Its volumes and level of issuance fluctuate depending on the market sentiment for high-yield debt, as shown in the figure below.

Figure 6. Issuance Volumes



Source: CSFB

From **Figure 6** we learn that 2003 issuances have reached the record levels of 1999 when the European high-yield market took-off. The reason for the increased issuance was primarily because investors were seeking fixed income return while issuers locked in attractive rates. High returns and increasing diversification contributed to the asset's growing popularity. Low levels of

issuance in 2002 are a result of very high default rates of past issuances (for further discussion please refer to Part II below).

Figure 7 provides an overview of the total high-yield market. Analysis of the defaulted and distressed market is provided in Part II of this report.

Figure 7. European High-Yield and Defaulted Market

Year	O/S HY debt	Defaulted still o/s at year end	Total Market	Distressed (par)	% Distressed	Defaulted (par)	% Defaulted
1999	45.3	11.1	**56.4**	2.5	4.4%	11.1	19.7%
2000	61.1	3.7	**64.8**	34.0	52.5%	3.7	5.8%
2001	69.6	22.7	**92.3**	69.6	75.4%	22.7	24.6%
2002	88.9	55.0	**143.9**	29.1	20.2%	55.0	38.2%
2003	98.0	14.7	**112.7**	21.0	18.6%	14.7	13.0%

Source: CSFB, Strategic Value partners, Moody's, S&P and authors' estimation.

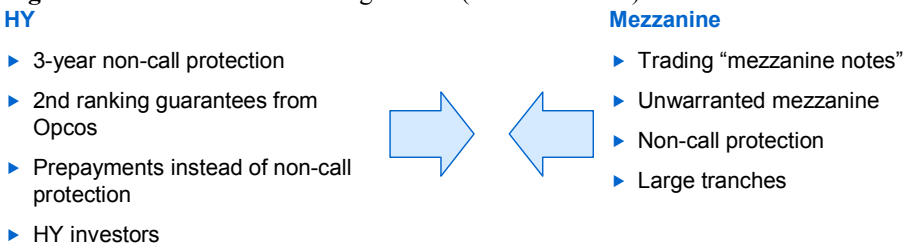
Trends and developments

Structure

Once the initial flaws of the European high-yield market were ironed out, new high-yield structures began to emerge in the market to challenge the growing popularity of the mezzanine debt. A number of financial sponsors preferred issuing mezzanine debt as a result of its more flexible prepayment features versus high-yield, despite its higher price. The high-yield market responded with a number of recent issues which have shorter non-call periods than the standard 5-year non-call, while preserving the lower all-in coupon compared to mezzanine.

Figure 8 illustrates major trends in high-yield and mezzanine, perhaps signaling a convergence trend:

Figure 8. Structural Trends in High-Yield (and Mezzanine) Market



Source: Authors' analysis

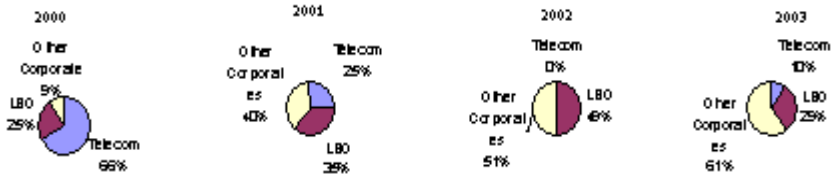
Some of the deals related to these trends are Flender, EVC and Focus Wickes.

More interestingly, this crisis over structure has led the banks to create a "new creature" – the mezzanine notes – notes with the characteristics of mezzanine, traded publicly, that were issued for the first time in the refinancing of Focus Wickes, a retailer. Compared with the conventional high-yield structure, the note holders benefit from securitization and were contractually subordinated to the senior debt. The notes were listed in Europe without SEC registration rights and included call protections similar to European mezzanine.

Diversification

The European high yield market has maintained a very important diversification trend over the past 4 years. In 2000, 66% of total issues were of telecom companies. However, in 2003, only 10% of issuances were telecom related and 61% were issuers of other industries, as shown in **Figure 9**. Additionally, LBO volume, which rose to almost 50% in 2002, was down to below 30% in 2003.

Figure 9. Shift in Issuers Towards Corporates, away from Telecom and LBOs



Source: Goldman Sachs

Credit Quality

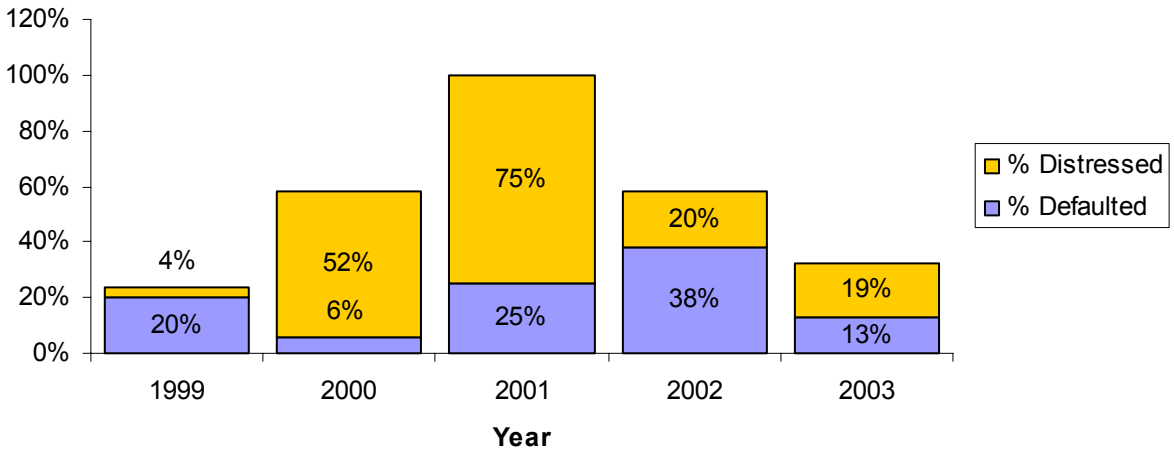
Investor's appetite for risk has grown in Europe, yet more moderately then in the US. Generally, we have witnessed a reduction of quality in issuances, with an increased number of B rated issuances. **Figure 16** below provides data regarding quality of issuances.

Part II: The Distressed and Defaulted Debt Market

Proportion and Size of the Distressed and Defaulted Public and Private Debt Markets

In 2003, the distressed and defaulted public debt represented approximately 32% of the total high-yield and defaulted corporate grade market in Europe. This was down considerably from 58% of the market at the end of 2002 and down from almost 100% at the end of 2001 (see **Figure 10**). Our measure of the total market here is the aggregation of high-yield bonds outstanding (€98 billion at 2003 year end) and the public defaulted bond issues that were still outstanding as of December 31, 2003 (estimated to be about €14.7 billion, including €6 billion of Parmalat's defaulted public debt) for a total of €112.7 billion. We note the big drop in 2003 in the level of defaulted high-yield bonds outstanding to 13% as of year-end 2003 from 38% one year earlier, an 65% decrease year on year. We also note the significant drop in the level of distressed debt outstanding from 2001, when basically the whole market was either distressed or defaulted due to the Telecom sector meltdown. In 2001, 75% of the market was considered to be distressed compared to a constant 20% in 2002 and 2003. The proportion of distressed debt compared to the high-yield market alone was about 25%. See **Appendix 1** for method and sources used for **Figure 10** below.

Figure 10. Distressed and Defaulted Debt as a Percentage of Total High-Yield Debt and Defaulted Corporate Grade Market, 1999-2003



Market Size

In **Figure 11** below, we estimate the size of defaulted and distressed public and private market debt markets as of year-end 2003. For sources of data and method of calculation see **Appendix 1**. Similar to the US trend, total European distressed and defaulted debt fell dramatically in 2003 to about €571.1 billion (face value) from a level of €1,345.7 billion one year earlier. We believe that the overwhelming reason for this drop is the amount of defaulted debt. As clearly demonstrated in **Figure 10** above, we saw the proportion of defaulted debt in 2003 fall from 38% to 13%.

Figure 11. Estimated Face and Market Values of Defaulted and Distressed Debt (Euros, billion)

	Face Value		Market Value			
	12/31/02	12/31/03	12/31/02	xFV	12/31/03	xFV
Public Debt						
Defaulted	55.0	14.7	13.2	24.0%	3.5	24.0%
Distressed	29.1	21.0	23.3	80.0%	16.8	80.0%
Total Public	84.1	35.7	36.5		20.3	
Private Debt						
Defaulted	825.1	220.4	434.8	52.7%	116.2	52.7%
Distressed	436.5	315.0	392.9	90.0%	283.5	90.0%
Total Private	1,261.6	535.4	827.7		399.7	
Total Public and Private	1,345.7	571.1	864.2		420.0	

Sources: See **Appendix 1**

The breakdown in 2003 of the total public defaulted and distressed bonds is €14.7 billion of defaulted bonds and €21 billion of distressed bond issues. We utilize a private to public ratio of 15 to estimate the size of the private debt market, considerably greater than the US ratio, now estimated to be 2.2 times[1]. Calculation of this ratio required analysis and reaching assumptions, given the fact that no information was available whatsoever. For detailed discussion on calculations of this ratio, please see **Appendix 2**.

For distressed market values, we have used CSFB's definitions for distressed debt which is below 90% of par value for loans and below 80% of par value for bonds. For market value of defaulted public debt, we have used 0.24 of par value, which is the average of post-default prices for

[1] Based on Professor's Altman latest research report – "Defaults and Returns in the High Yield Bond Market:Q3-2004"

European bonds that defaulted in 2003 (Source: Moody's). For public debt, the average recovery rate used was 52.7% as detailed in **Figure 15** below.

Our estimate for market values, combining the public and private debt market, was about €420.0 billion, down from €864.2 billion one year earlier. We believe that with improving and developing insolvency regimes, these values will increase in future years.

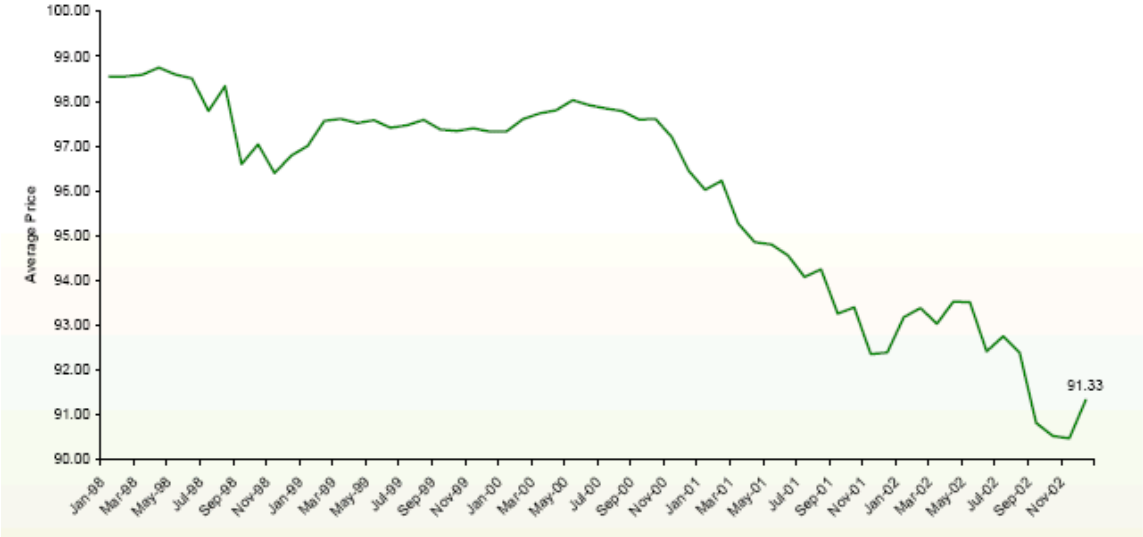
Analysis

Market Size

From a very high default rate in 2002, corporate bond default rates in Europe declined significantly in 2003. This decline follows the global trend in default rates which peaked in 2002 due to a deluge of defaults in the telecommunications, technology and energy industries. As seen above, in Europe specifically, the vast majority of public issuances in the late 1990's were of telecommunication companies. The fallout in the telecom sector explains the very high level of distressed debt in 2001 – almost 75% of the market (see **Figure 10 and Figure 11)** and the subsequent high level of defaults in 2002 – 38%. It also explains the high levels of private and public distressed and defaulted debt in 2002 – close to €1,345 billion (see **Figure 11**). These numbers support the mortality theory with respect to default patterns – most companies that default go into distress after 1-2 years from issuance, which is the approximate time period between 1999-2001. Prior to 1999, the European high yield was virtually non-existent, which explains the low level of distressed and defaulted debt prior to 2000.

Figure 12 below illustrates the aforementioned trend. Since prices of loans are much less volatile than those of bonds, and are usually more resilient to single events, e.g. bad quarter results, the graph below demonstrates the market sentiments towards leverage credit in general.

Figure 12. Average Price of the CSFB Western European Leveraged Loan index



Source: CSFB

European companies have continued to repair and strengthen their balance sheets resulting in lower subsequent defaults in 2003. Improving credit conditions and the continuation of a low interest rate environment also helped companies roll over their debt coming due in 2003, with attendant decline in number of defaulting issuers.

The high levels of European distressed debt in 2003 (19%), compared to the US could be explained by a lack of Chapter 11 bankruptcy code. Since default often means liquidation or an immediate appointment of receivership in many countries, oftentimes companies do anything to avoid default or defaults are kept confidential. The 'private club' nature of the European market keeps companies from 'defaulting' formally. This high level of distressed debt remained at the lofty levels of 2001 (75%) due to the telecom issuances. It is expected to decrease in subsequent years.

It is interesting to note that at the end of 2003, American and European default rates were roughly similar, with the European default rate at 6% (the original figure in **Figure 10** above is 13%; it is

6% excluding Parmalat's €6 billion of defaulted bonds) and the American at 5%. In fact, if the European market continues to show robust growth, we expect that the default rates will converge, not withstanding regional differences.

Defaults

Figure 13 below provides an overview on default volumes in the past 14 years. It supports our discussion above relating to the market size and the high default rates in 2001 and 2002.

Figure 13. Time Series of European Default Count and Default Volumes

	Default Counts			Default Volumes (€, millions)		
Year	Rated	Non-Rated	Total	Rated	Non-Rated	Total
1990	1	0	1	564		564
1991	2	1	3	1,333	191	1,524
1992	0	1	1		134	134
1993	0	2	2		133	133
1994	1	3	4	554	1,423	1,977
1995	0	7	7		967	967
1996	0	3	3		1,358	1,358
1997	0	3	3		183	183
1998	2	3	5	570	402	972
1999	9	4	13	2,230	83	2,313
2000	3	1	4	804	19	823
2001	17	8	25	10,829	511	11,340
2002	28	4	32	42,691	575	43,266
2003	9	8	17	3,511	6,189	9,700
Total	**72**	**48**	**120**	**63,086**	**12,168**	**75,254**

Source: Moody's

In 2002, European defaults, similar to those in the US, were concentrated in the media and telecommunication industry. For example, telecom and media issuers accounted for over 88% of total defaults in 2002 (€38 billion of a total of €43 billion). In 2003 however, defaults were much more diversified. In fact, the share of telecom and media defaults dropped to less than 10%. In 2003, although the defaults were somewhat fairly distributed across industry categories, the consumer products industry was responsible for over 50% of the total European default volume.

As seen in **Figure 14** below, Italy has the largest total number of defaulting issuers and volume due entirely to the default of Parmalat and its subsidiaries.

Figure 14. 2003 European Defaults by Domicile

In € millions

Country	Default Count	Amount
Austria	1	5
Germany	4	939
Italy	5	5,936
Luxemburg	2	1,051
Netherlands	1	500
Portugal	1	131
UK	3	1,139
Total	**17**	**9,701**

Source: Moody's

Appendix 4 provides a list of European corporate defaulters in 2003.

Recovery Rates

One of the most important parameters for investors are the recovery rates on defaulted debt. In Europe, given completely different jurisdictions and insolvency codes, recovery rates vary substantially from one nation to the other. Nevertheless, **Figure 15** presents recovery rates compiled by Moody's, compared with North American rates:

Figure 15. Value-Weighted Average Recovery Rates for Defaulted and North American Debt Instruments

	1982-2003		1982-2002		2003	
Instrument	Europe	North America	Europe	North America	Europe	North America
Bank Loans	52.70%	46.10%	52.70%	42.70%	N/A	58.10%
Bonds						
Sr. Secured Bonds	44.30%	57.8%	51.8%	57.1%	24.5%	69.0%
Sr. Unsecured Bonds	19.7%	36.2%	22.3%	35.5%	13.1%	44.6%
Sr. Subordinated Bonds	11.5%	28.0%	11.6%	27.7%	N/A	31.5%
Subordinated Bonds	16.1%	29.3%	17.4%	30.2%	8.8%	12.1%
Jr. Subordinated Bonds	N/A	17.1%	N/A	17.1%	N/A	N/A
All Bonds	**20.8%**	**35.6%**	**23.4%**	**35.2%**	**13.6%**	**40.1%**
Preferred Stock	7.9%	6.9%	7.9%	6.9%	N/A	4.7%
All Instruments	**21.1%**	**35.5%**	**23.2%**	**35.5%**	**13.6%**	**38.8%**

Source: Moody's. The data above is based on 30-day post-default bid prices on defaulted bonds, though no trades might have taken place at some of these prices. The data includes both bonds rated by Moody's as well as non-rated issues.

We can clearly see that European recovery rates for subordinated debt are lower than the American rates, whereas the opposite trend has been recorded regarding bank loans. The lower average bond recovery rates in Europe are likely driven by larger amounts of bank debt in the

typical capital structure and the absence of Chapter 11 type bankruptcy process, which also explains the higher recovery rates for bank debt. We also note that the average recovery rate for bonds for 2003 was only 13.6% - substantially lower than the long-term average recovery rate of 23.4%.

It is only obvious that seniority and security plays a significant role in recovery prices. Between 1982-2003, bonds with higher seniority and security recovered a higher percentage of their par value. Senior secured bonds recovered 44.3% of the par value while senior unsecured bonds recovered roughly 19.7% of the par value. This clearly demonstrates the value of security and seniority in resultant recovery rates in the event of default.

Forecasts for Distressed and Defaulted Debt Market

In this section, similar to the previous, we have tried to apply Professor Altman's method for forecasting the future market for 2004-2005[2] (with the necessary changes).

Calculating Mortality Rates

The first step was trying to come up with the default volumes in the coming year based on past issuances and quality of credits. Using issuance volumes in past years and ratings for these issuances, we then applied Altman's mortality rate to estimate the default volumes in the next two years. Calculations are demonstrated in **Figure 16** below.

Figure 16. Default Rate Forecast for European High Yield – 2004 & 2005
In €, billions

Year	Total High-Yield Debt Issued	*Rating	% of total	Volume	Mortality rates for 2004	Expected Defaults in 2004	**Mortatlity rates for 2005	Expected Defaults in 2005
1999	16.3	BB	47%	7.6	2.49%	0.19	1.1%	0.09
		B	53%	8.7	6.22%	0.54	4.3%	0.37
		CCC	0%	0.0	3.38%	0	10.3%	0.00
2000	14.8	BB	57%	8.4	2.15%	0.18	2.5%	0.21
		B	43%	6.4	8.74%	0.56	6.2%	0.40
		CCC	0%	0.0	11.28%	0	3.4%	0.00
2001	8.4	BB	88%	7.4	4.53%	0.33	2.2%	0.16
		B	12%	1.0	7.85%	0.08	8.7%	0.09
		CCC	0%	0.0	16.16%	0	11.3%	0.00
2002	5.1	BB	66%	3.4	2.62%	0.09	4.5%	0.15
		B	32%	1.6	7.14%	0.12	7.9%	0.13
		CCC	2%	0.1	14.57%	0.02	16.2%	0.02
2003	18.7	BB	42%	7.9	1.23%	0.10	2.6%	0.21
		B	58%	10.9	3.19%	0.35	7.1%	0.78
		CCC	0%	0.0	6.70%	0	14.6%	0.00
2004E	20.6	BB	40%	8.2	N/A	N/A	1.2%	0.10
		B	56%	11.5	N/A	N/A	3.2%	0.37
		CCC	4%	0.8	N/A	N/A	6.7%	0.06
Total						**2.55**		**3.12**

Sources: S&P (split of issuances), CSFB (total issuances)
Notes: Mortality rates were calculated using Professor Altman's mortality rate table
For 2004, we assumed a 10% increase in total issuance

Next, we estimated the size of the high-yield bond market for mid-year 2004 and 2005. We have assumed a 10% growth until 2004 and 5% from 2004 to 2005, starting from €98 billion in 2003(see Appendix 1 below for calculations of current market size). We present our final forecasted default rate in **Figure 17** below.

[2]As described in "Altman Report on the Investment Performance and Market Size of Defaulted Bonds and Bank Loans, Report by Citigroup" and in "Defaults and Returns in the High Yield Market Bond Market 2003 in Review and Outlook for 2004/2005"

Figure 17. Forecasted High-Yield Market Size, Defaults and Default Rates for 2004 and 2005 (in €, billions)

Year	Market Size	Default Rate	Default Amount
2004	107.8	2.4%	2.5
2005	113.2	2.8%	3.1

Source: Estimation of authors of this report

The result is a default rate of 2.4% and 2.8% for 2004 and 2005 respectively. The 2004 rate of 2.4% is a reduction of 10.6% from the default rate in 2003 (which was about 13%). If we exclude Parmalat's debt, which accounted for about €6 billion of total of €9.7 billion of defaulted debt in Europe in 2003, there is a modest reduction of 1.4% in the default rate (see **Appendix 1** for 2003 European default rates). The reduction can be explained by improved credit structures as explained above and by overall improved economic conditions.

The marginally higher rate in 2005 represents higher marginal mortality rates in the second year after issuance. We based this on the 2003 new issuance and investors' increased appetite for risk. The 2003 new issuance with lower credit quality measures factors into our forecast for future distressed debt levels. The proportion of split B and CCC has risen to 58% in 2003 from 32% in 2002 and is similar to the proportion of 53% in 1999 that led to high default rates in subsequent years.

Estimated Market Size

Figure 18 presents our estimates of the future size of distressed and defaulted debt. These estimates are based on our default rate and default amount forecast (**Figure 17**) and estimated debt that will emerge from corporate restructurings in the next two years.

Figure 18. Forecasted Face and Market Values of Defaulted and Distressed Debt, 2004-2005, Euro, billion

	Face Value		Market Value			
	12/31/04	12/31/05	12/31/04	xFV	12/31/05	xFV
Public Debt						
Defaulted	14.7	15.4	7.8	52.7%	8.1	52.7%
Distressed	16.2	11.3	10.5	65.0%	7.4	65.0%
Total Public	30.9	26.7	18.3		15.5	
Private Debt						
Defaulted	221.2	230.5	161.5	73.0%	172.9	75.0%
Distressed	242.6	169.8	206.2	85.0%	144.3	85.0%
Total Private	463.7	400.3	367.6		317.2	
Total Public and Private	494.6	427.0	385.9		332.6	

Default rates were calculated using: (2003 default population) + (2004 defaults) – (2004 emergences), same for 2005.
Distressed debt levels are based on 15% of size of high yield market as shown in Figure 17 above (in 2004, €107 billion); 10% of market in 2005 (€113.2 billion).
We use the same ratio of 15 for private/public ratio.
Sources: Estimated by the authors of this report and based on Altman's report

Our forecast for the size of the defaulted public bond market starts from the estimates of the size at the end of 2003 (€14.7 billion from **Figure 11**). We then add expected new defaults in 2004 and 2005 of €2.55 billion and €3.12 billion, respectively (**Figure 17**) and subtract our estimate of bonds from companies emerging from corporate restructurings. For the latter we subtract €2.5 billion for each of 2004 and 2005. Given different insolvency regimes and bankruptcy codes, it is hard to estimate the time it takes to restructure or do a workout in Europe, yet we assume that a 2 year average is reasonable (in the UK the process is very fast – immediately after default a receiver can be appointed, in Italy it can take years). Therefore, we expect the vast majority of existing defaulted debt, as of the end of 2003, to disappear within 2 years.

For distressed debt, we assume that the year-end 2003 proportion of the high-yield market decreases to 15% in 2004 and then decreases to 10% as of year-end 2005. We base the direction of the change (decrease) on the fact that we don't expect a significant increase of defaults to occur in 2005, and the current levels of distressed debt are very high (a legacy of the 1999-2000 issuances).

We again assume a private/public debt ratio for defaulted and distressed firms of 15 to 1 to apply to our public debt forecasted levels. Given the expected convergence trend with US markets, and the fact that secondary markets for leveraged assets are becoming more efficient, we assumed that market values as a percent from face value as similar to those in the US, which were taken from Professor Altman's report.

Our final estimate of the combined sizes of the public and private, defaulted and distressed debt market (**Figure 18**) is about €494.6 billion (face value) and €385.9 billion (market value) in 2004 and €427.0 billion (face value) and €332.6 billion (market value) as of year-end 2005. Therefore, we believe that there will be many opportunities for distressed investors in the next 2-3 years.

Summary

Based on our findings in this report, the leveraged finance and the distressed and defaulted debt markets in Europe are at a crossroad. Many of the biggest players in the international market are already involved and the others are close by, waiting in the wings. From a high-profile start in the late 90's, with blockbuster telecom LBOs and lots of money pouring in, the market has plunged to its depths with extremely high levels of defaults. The investors, burned by the telecom meltdown, climbed higher in the capital structure with mezzanine and bank loans. In turn, this migration created higher issuance of these structures. Additionally, in recent years, public debt has returned, with improved structures and better diversification of credits.

Recently, the market has rebounded quite nicely. Although the level of distressed debt in 2003 was the same as in 2002, the default rates decreased significantly, and our estimates predict that it will continue to decrease, along with the level of distressed debt. This improvement is a result of a few factors; the players are better informed as to the European high-yield market; there is better liquidity both for loans and for bonds; recovery rates are increasing; insolvency regimes are evolving et al.

Naturally, improving markets never fail to attract a large supply of investment dollars. The flow of American capital along with growing interest from American funds in the European distressed market will undoubtedly lead to further convergence of trends and patterns. More money will chase fewer opportunities. The following trends will play a major role in the improvement in quality of assets and general investors' sentiments in the short/medium term:

1. Convergence of structures towards US style debt. This will lead to increased transparency and improved recovery rates.

2. Diversification of issuers.
3. Transparency of assets through increased rating activity and new indexes.
4. Growing debt issuance will attract more investors will increase competition.

Nevertheless, a good analysis should consider the following issues which could potentially shift the momentum to a deteriorating quality of credits in the market:

1. Highly competitive LBO market has raised leverage levels with very aggressive levels that some consider too risky. This could lead to increased default rates.
2. Decreasing overall quality of debt and riskier credits should also lead to increased defaults.
3. Lower level of market efficiency in the European market makes for more attractively priced markets, but is risky for inexperienced investors.
4. New high-yield structures may not prove to be lasting and will be tested in a default situation.
5. A high profiled default of private debt, or an insolvency situation of a big financial institution given a default that will shed some light on the 'mysterious' private debt market, may trigger a domino affect that will affect prices of debt.

For the distressed investor interested in Europe, barriers of entry are still quite high. Relationship lending is still the most popular way of financing. The problem it presents is twofold. First, it makes the sourcing of distressed debt much more difficult. You need to be a familiar player in the market to be able to source good credits. Second, it hinders efficient pricing. These two issues must be corrected in order to provide liquidity in a secondary market. Existing investors with established relations and familiarity with the market have no incentive to call for change. This lack of efficiency, mis-pricing and transparency will deter investors from going into the market.

Yet, on the other hand, it will create arbitrage opportunities for some. Those who will dare to jump in will benefit from growing levels of leveraged instruments. After some initial mistakes these investors will gain expertise and will grow with the market, gaining a "first mover" advantage while the market converges with the US market.

Finally, the obvious should be noted - Europe is comprised of various nations with widely ranging insolvency regimes. The data compiled into this report relates to aggregate data of European countries, yet default rates and recovery rates differ within the countries. Further studies should be made to explore the specific jurisdictions within Europe.

Appendix 1

Sources and calculations for Figures 10 and 11 - levels of European distressed and defaulted debt

The underlying data for Figures 10 and 11:

Year	O/S HY debt	Defaulted still o/s at year end	Total Market	Distressed (par)	% Distressed	Defaulted (par)	% Defaulted
1999	45.3	11.1	**56.4**	2.5	4.4%	11.1	19.7%
2000	61.1	3.7	**64.8**	34.0	52.5%	3.7	5.8%
2001	69.6	22.7	**92.3**	69.6	75.4%	22.7	24.6%
2002	88.9	55.0	**143.9**	29.1	20.2%	55.0	38.2%
2003	98.0	14.7	**112.7**	21.0	18.6%	14.7	13.0%

The following paragraph details the analysis, assumptions and sources of data for each of the columns:

Outstanding high-yield debt

Data was obtained from CSFB.

Defaulted still outstanding at year-end

The following table was used to come with the figures for years 1999-2003:

Trailing 12 months value-weighted default rates for Europe (In €, Thousands)

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8
12-Months Ending	Speculative Grade Default Volume O/S	Speculative Grade Total Volume (Moodys)	Speculative Grade Default Rate	Speculative Grade Total Volume (CSFB)	Ratio - CSFB / Moodys	Speculatie Grade total defaulted volume (ratio applied)	Investment Grade total defaulted volume - using ratio	Total
31/12/1999	1,362	7,296	18.7%	45,300	6.2	8,456	2,670	11,127
31/12/2000	713	15,347	4.6%	61,100	4.0	2,839	896	3,735
31/12/2001	8,015	32,345	24.8%	69,600	2.2	17,247	5,446	22,693
31/12/2002	22,829	48,547	47.0%	88,900	1.8	41,805	13,202	55,006
31/12/2003	3,909	57,971	6.7%	98,000	1.7	6,608	2,087	14,695

The left part of the table (columns 1-3) was published by Moody's and provides the level of default at year-end of 1999-2003. However, Moody's data relates only to debt rated by Moody's and debt that was speculative grade at issuance. Therefore, we have taken the ratio of Moody's volume of the high-yield market and CSFB's estimates, which we assume include all debt, rated and unrated (columns 4 and 5). We then applied this ratio to Moody's speculative grade default volume outstanding, and received our overall estimated volume of speculative grade defaults

outstanding (column 6). We then used Professor Altman's rule of thumb which says that of the total defaulted population, only 75% was initially speculative grade and 25% is investment grade (column 7). We applied this ratio and received our estimate for the total amount of defaulted public debt outstanding at the end of each year (column 8). For 2003, we have added €6 billion, to adjust for Parmalat's distressed debt, that was not captured in Moody's report – to get total defaulted debt of €14.7 billion.

Total Market

The sum of outstanding high-yield debt and defaulted bonds outstanding at year-end, as per Professor Altman's definition in his report.

Distressed debt

We received the figure for 2003 (€21 billion) from CSFB. Their definition of distressed public debt was debt trading below 80% of face value. For the years 1999-2002 we have used Professor's Altman's rule of thumb, that one third of the distressed population in a certain year will default in the next. We used the defaulted amount of debt in each year and multiplied it by 3 to get an estimation of previous year's level of distressed debt, as presented in the table below.

Time Series of European Default volumes, (In €, Thousands)

Year	Default Volumes	Year	Distressed Volumes O/S in Prior year
1999	2,313	1998	6,939
2000	823	1999	2,469
2001	11,340	2000	34,020
2002	43,266	2001	70,000
2003	9,701	2002	29,103
Total	**67,443**		

Source: Moody's

For 2002 we did not apply Altman's rule of thumb, since the result we got (129 billion) was higher than the total market size – €92.3 billion (see above). We therefore assumed that nearly

100% of the market was either defaulted or distressed, and subtracted the total defaulted €22.7 billion (see above) from the total market €92.3 billion to get a distressed market of €70 billion.

Appendix 2

Calculation of ratio – Private/Public distressed and defaulted debt

From Professor Altman's research listed below, we learned that the private/public distressed and defaulted debt ratio is in the US is approximately 2.2. However, the European debt markets are different in two main aspects that give us reason to believe that the ratio is significantly higher than 2.2, these are:

1. The relationship style, tight-knit lending that is very common in most European countries. This implies that relative levels of private debt are much higher in Europe than in the US.
2. The increased popularity of mezzanine which is a hybrid instrument that is not publicly traded, therefore considered private debt.
3. The level of private debt used to finance LBOs.

Given these factors, we have implemented the following framework to come up with an improved ratio for Europe:

1. We have gathered research indicating the estimated size of distressed and defaulted market in specific geographic regions for specific years. The following table summarizes these findings:

Estimated Amount of Distressed Debt in Different Countries

(in €, millions)	2003	2002	
MCKINSEY DATA		**$**	**€**
Germany	300	280	224
France		150	120
Italy		150	120
UK		100	80
Spain		30	24

$/€ Exchange Rate Used 0.8

Sources: Reuters, Berarnd Wynn; FT, Matt Miller; FT Patrick Jenkins; Mckinsey Quarterly. For full references see 'Sources'

2. DB's report on Western European banks (see 'Sources') provides a list of 59 major Western European banks commercial banks, categorized into countries. Of these banks, we have sampled 18 according to the following criteria:

a) Each country has at least one 'representative'.

b) Major countries (e.g. France, Germany) have at least two 'representatives'. This excludes Spanish banks, which do not report outstanding amount of non-performing loans, only provisions and write-offs.

For each of these banks, we have read through their financial reports, and found the total number of non-performing loans outstanding as of 2003 year-end. In this context, it is important to note several issues:

a) Although similar in most cases, definitions and accounting standards for non-performing loans may vary from bank to bank and from country to country. Some are classified as 'Problem Loans', some are 'Non Performing Loans' and some are 'Doubtful Loans'. As far as this paper is concerned, all 'problematic' loans were counted. For this reason, results displayed below account both for distressed debt and defaulted debt, per Altman's definitions in his report. Furthermore, the term 'non-performing loans' relates to all problematic loans.

b) The analysis above does not take into account European distressed debt held by non-European banks even if these banks are operating in Europe, e.g. Goldman Sachs etc.

c) The total outstanding non-performing loans does not equal the amount each of the banks writes-off as bad debt or makes provisions for on its balance sheet (usually provisions are around 60% of non-performing loans, but it varies).

3. For the countries and regions we had a reference, we calculated the percentage of NPLs held by banks from that country to the total amount of total distressed/defaulted debt in that country. We then applied for the following steps:

a) For countries we had data only for 1 year (2002 or 2003), we assumed the same % applies for the other as well (e.g. if in 2002 the percentage of sampled debt to total debt in France was 11.6%, we assumed same ratio for 2003).

b) For countries we had no information, we calculated an average % of countries we did have references. The following table summarizes the calculation of this average:

% Of Sampled Debt for Referenced Country Data

COUNTRY	2003	2002
Germany	4.6%	8.1%
France		13.7%
Italy		11.1%
UK		20.4%
Average	11.6%	(for 2002 and 2003)

c) We then applied 11.6% to the sampled debt for each country, to get an estimate of total amount of distressed and defaulted debt in that country. The following table summarizes all steps taken:

Distressed/Defaulted Private Debt - NPL

	SOURCE	2003	2002	2003	2002
(in € millions)		O/S AMOUNT OF DISTRESSED	O/S AMOUNT OF DISTRESSED	TOTAL IN COUNTRY	TOTAL IN COUNTRY
Austria					
Bank Austria	2003 AR	5.3	5.8		
Total		*5.3*	*5.8*	45.8	50.2
% of total in country		*11.6%*	*11.6%*		
Benelux				42.8	53.0
ABN Amro	2003 AR	5.0	6.1		
Total		*5.0*	*6.1*		
% of total in country		*11.6%*	*11.6%*		
France				110.7	120.0
BNP Paribas	2003 AR	14.1	15.3		
Natexis	2003 AR	1.1	1.2		
Total		*15.2*	*16.4*		
% of total in country		*13.7%*	*13.7%*		
Germany				300.0	224.0
Commerzbank	2003 AR	7.1	7.1		
Deutsche Bank	2003 AR	6.6	11.0		
Total		*13.7*	*18.1*		
% of total in country		*4.6%*	*8.1%*		
Italy				103.4	120.0
Sanpaolo	2003 AR	1.0	1.2		
Capitalia SPA	2003 AR	1.9	2.0		
Banca Intesa	2003 AR	8.6	10.1		
Total		*11.5*	*13.3*		
% of total in country		*11.1%*	*11.1%*		
Nordics					
Danske Bank	2003 AR	1.3	1.3	43.8	46.3
Nordea	2003 AR	3.8	4.0		
Total		*5.1*	*5.4*		
% of total in country		*11.6%*	*11.6%*		
Portugal					
Banco Espirito	2003 AR	0.8	0.6	6.5	4.9
Total		*0.8*	*0.6*		
% of total in country		*11.6%*	*11.6%*		
Switzerland					
Credit Suisse Group	2003 AR	4.6	8.1	67.8	104.7
UBS	2003 AR	3.3	4.0		
Total		*7.8*	*12.1*		
% of total in country		*11.6%*	*11.6%*		
UK				74.8	80.0
Lloyds TSB	2003 AR	5.0	5.3		
Barclays	2003 AR	8.4	8.7		
Royal Bank Of Scotland	2003 AR	1.8	2.3		
Total		*15.3*	*16.3*		
% of total in country		*20.4%*	*20.4%*		
Ireland				6.5	10.1
Allied Irish Bank	2003 AR	0.7	1.2		
Total		*0.7*	*1.2*		
% of total in country		*11.6%*	*11.6%*		
Total		**160.8**	**190.5**	**802.0**	**813.1**

The shadowed cells indicate that information in that cell can be referenced, rather than being our estimated, as demonstrated in the tables above.

4. Finally, we added back the total debt of these countries. We subtracted the public distressed/defaulted debt, since we assumed that it is already included in the total distressed/defaulted debt for the country, and divided the result by the total public distressed/defaulted debt to get a ratio of 15. The following table illustrates these calculations:

Ratio Analysis

(in €, millions)

	2003	2002
Total European Private distresed/defaulted debt held by banks	802.0	813.1
Less: Total European public distressed and defaulted debt	35.7	84.1
European Private distressed/defaulted debt held by banks for ratio calculatution	766.3	729.0
Estimated total amount of distressed public debt outstanding	21.0	29.1
Estimated total amount of defaulted public debt outstanding	14.7	55.0
European Public distresed/defaulted debt held by banks for ratio calculatution	35.7	84.1
Ratio	**21.5**	**8.7**
Average Ratio	**15.1**	

Note: This table assumes that distressed/defaulted leveraged loans and distressed/defaulted public debt are included in the total debt of each of the countries

Appendix 3

Moody's definition for defaults includes three types of default events:

1. A missed or delayed disbursement of interest and/or principal, including delayed payments made within a grace period;

2. Filing for bankruptcy, administration, legal receivership, or other legal blocks (perhaps by regulators) to the timely payment of interest and/or principal; or

3. A distressed exchange occurs where: (i) the issuer offers bondholders a new security or package of securities that amount to a diminished financial obligation (such as preferred or common stock, or debt with a lower coupon or par amount); or (ii) the exchange had the apparent purpose of helping the borrower avoid imminent default.

This definition is intended to capture events that change the relationship between the bondholder and bond issuer from the relationship which was originally contracted, and which subjects the bondholder to an economic loss.

Appendix 4

List of 2003 European Defaulters (in €, thousands)

Company	Country	Broad Industry	Defaulted Amount (€, mln)
Adcon Telemetry AG	Austria	Industrial	5
AES Drax Energy Limited	United Kingdom	Utilities	376
British Energy, plc	United Kingdom	Utilities	609
Cable Satisfaction International, Inc.	Portugal	Media	131
Cenargo International Plc.	UK	Transportation	153
Cybernet Internet Services International Inc.	Germany	Technology	131
Ekabel Hessen GmbH	Germany	Telecoms	560
Gerling-Konzern Globale Lebenversicherungs-AG	Germany	Finance	N/A
Gehrling Global Finance B.V*	Netherlands	Finance	248
Getronics N.V.	Netherlands	Technology	500
Millicom International Cellular S.A.	Luxemburg	Telecoms	801
Parmalat Capital Finace Ltd.	Italy	Consumer Products	437
Parmalat Finance Corp BV	Italy	Consumer Products	4,441
Parmalat Finanziaria S.p.A.	Italy	Consumer Products	155
Parmalat Netherlands BV	Italy	Consumer Products	350
Parmalat Soparfi SA	Italy	Consumer Products	553
Vantico Group	Luxemburg	Industrial	250
Total			9,700
Total excluding Parmalat			3,764
Default Rate for 2003			9.9%
Default Rate for 2003 (excluding Parmalat)			3.8%

Source: Moody's

Appendix 5

	Prov Charge/Loans (%)			Prov Charge/PPP			NPLs/Cust Advs. (%)		
	2003E	2004E	2005E	2003E	2004E	2005E	2003E	2004E	2005E
AUSTRIA	0.65	0.67	0.64	36.0	36.5	33.4	6.83	6.79	6.70
ERSTE BANK	0.64	0.66	0.66	31.4	30.8	29.0	6.31	6.14	5.94
BANK AUSTRIA ORD	0.66	0.67	0.64	41.1	40.9	38.7	7.27	7.37	7.38
BENELUX	0.38	0.33	0.29	20.3	17.2	14.7	2.18	2.14	2.06
AEN AMRO	0.39	0.42	0.38	20.2	21.0	18.9	2.71	2.75	2.69
DEXIA	0.14	0.06	0.06	10.2	6.2	5.7	0.50	0.48	0.47
KBC	0.74	0.48	0.37	30.3	18.5	13.9	3.30	3.10	3.00
FRANCE	0.66	0.68	0.68	24.8	20.3	19.3	5.43	5.37	5.20
BNP PARIBAS	0.60	0.54	0.59	20.4	16.9	17.4	5.39	5.17	4.83
CREDIT AGRICOLE	0.63	0.54	0.52	30.4	22.9	20.1	5.22	5.12	4.93
NATEXIS BP	0.48	0.48	0.47	30.2	24.4	20.3	4.34	4.25	4.06
SOCIETE GENERALE	0.82	0.71	0.69	26.0	22.2	20.8	5.96	6.13	6.24
GERMANY	0.60	0.56	0.45	60.9	49.8	35.8	3.77	3.62	3.42
AAREAL BANK	0.55	0.52	0.46	42.1	38.7	32.4	10.17	9.94	9.94
BHW HOLDING	0.22	0.17	0.15	69.7	45.8	40.3	0.00	0.00	0.00
COMMERZBANK	0.81	0.67	0.55	82.4	52.1	34.2	4.72	4.73	4.35
DEPFA BANK PLC	0.00	0.00	0.00	0.0	0.0	0.0	0.02	0.02	0.01
HYB GROUP	0.70	0.74	0.60	62.0	57.6	42.8	4.62	4.33	4.16
ITALY	0.75	0.71	0.68	31.7	28.3	25.0	7.91	7.51	7.33
BANCA LOMBARDA	0.46	0.46	0.47	19.8	19.0	18.2	0.00	0.00	0.00
BNL	0.95	0.89	0.88	54.2	48.8	43.8	6.33	6.21	6.21
BPU BANCA	0.64	0.52	0.53	26.4	24.1	21.6	4.73	4.53	4.62
BPVN	0.53	0.51	0.52	20.8	18.0	17.5	7.33	6.99	7.04
CAPITALIA SPA	1.24	1.18	1.01	58.6	51.6	40.3	17.06	15.46	14.52
CREDITO EMILIANO	0.26	0.29	0.29	13.5	13.8	13.2	0.00	0.00	0.00
FINECOGROUP SPA	0.32	0.31	0.23	98.6	28.7	28.5	0.00	0.00	1.37
BANCA INTESA	0.78	0.72	0.71	35.5	29.4	29.1	11.11	10.26	9.52
MONTE PASCHI SIENA	0.76	0.70	0.67	37.0	32.2	28.0	5.63	5.67	5.66
SANPAOLO - IMI	0.46	0.50	0.49	25.6	25.9	23.4	5.23	5.17	5.13
UNICREDITO ITALIANO	0.81	0.79	0.75	19.8	19.3	17.3	6.84	6.86	6.86
NORDICS	0.19	0.19	0.19	13.2	13.1	12.7	0.54	0.52	0.53
DANSKE BANK	0.18	0.16	0.16	12.6	11.4	11.6	0.37	0.37	0.36
DEN NORSKE BANK	0.41	0.31	0.31	22.7	19.2	17.3	0.00	0.00	0.00
FOERENINGSPARBANKEN	0.15	0.16	0.16	9.7	10.3	10.2	0.56	0.52	0.00
NORDEA	0.25	0.26	0.26	17.9	17.7	17.0	1.89	1.84	1.79
SEB A	0.15	0.17	0.17	10.9	11.9	10.9	1.86	1.66	0.00
SV HANDELSBANKEN A	0.06	0.11	0.11	3.7	7.0	7.6	0.57	0.59	0.00
PORTUGAL	0.78	0.69	0.61	38.7	34.3	29.0	1.92	2.23	2.57
BANCO ESPIRITO SANTO	0.90	0.87	0.77	32.8	34.1	30.6	2.57	2.86	3.16
BCP	0.87	0.73	0.62	49.0	39.4	31.7	1.60	1.92	2.28
BPI	0.34	0.31	0.31	21.6	18.6	17.4	1.84	2.15	2.51
SPAIN	0.82	0.73	0.72	24.9	22.3	21.1	1.89	1.86	1.33
BANCO DE SABADELL	0.64	0.56	0.48	30.3	26.4	23.5	0.75	0.92	1.12
BANCO POPULAR REG	0.80	0.75	0.70	20.3	20.2	19.1	1.01	1.20	1.28
BANKINTER REG	0.87	0.25	0.23	44.1	11.8	11.1	0.42	0.40	0.37
BBVA	0.83	0.78	0.76	24.5	22.7	20.9	2.33	1.53	0.98
SANTANDER	0.83	0.76	0.78	24.9	22.7	22.1	2.00	1.87	1.79
SWITZERLAND	0.21	0.29	0.31	8.5	8.0	7.6	3.12	3.05	2.98
CREDIT SUISSE GROUP N	0.28	0.29	0.29	12.1	11.0	10.0	2.86	2.77	2.68
JULIUS BAER	0.03	0.03	0.03	0.3	0.3	0.3	0.48	0.46	0.47
UBS N	0.12	0.31	0.34	2.7	6.3	6.3	3.62	3.59	3.55
VONTOBEL	0.03	0.20	0.47	0.2	1.1	2.2	0.49	0.48	0.47
LIECHTENSTEINISCHE LANDESBANK	0.06	0.06	0.07	1.5	1.4	1.4	0.48	0.47	0.45
BANK SARASIN & CIE AG	0.24	0.25	0.26	4.7	3.5	3.1	0.50	0.49	0.48
VP BANK	0.60	0.60	0.60	12.1	11.6	10.6	1.14	1.28	1.34
UK	0.64	0.67	0.65	23.9	23.8	22.6	2.30	2.17	2.17
UK (excl. HSBC & Stan. Ch.	0.47	0.47	0.47	20.5	19.8	19.3	1.83	1.82	1.82
ABBEY NATIONAL	0.17	0.17	0.10	18.1	16.6	9.0	2.48	2.54	2.54
A&L	0.20	0.23	0.24	11.7	13.2	13.7	0.04	0.04	0.04
BARCLAYS	0.65	0.63	0.62	25.7	25.2	24.9	2.23	2.23	2.23
BRADFORD & BINGLEY	0.01	0.02	0.02	1.0	1.6	1.7	1.01	1.02	1.02
HBOS	0.42	0.42	0.43	21.7	21.8	22.2	2.06	2.04	2.03
HSBC HLDGS (US$)	1.39	1.41	1.33	30.6	31.8	29.6	3.70	3.41	3.41
LLOYDS TSB	0.71	0.66	0.66	22.3	20.9	20.5	0.97	0.97	0.97
NORTHERN ROCK	0.14	0.16	0.16	11.5	13.7	14.6	0.60	0.65	0.65
ROYAL BANK OF SCOTLAND	0.64	0.60	0.60	17.6	16.5	16.2	1.77	1.77	1.77
STANDARD CHARTERED (US$)	1.01	0.99	0.96	26.1	24.7	22.8	3.88	2.91	2.92
IRELAND	0.23	0.24	0.24	9.3	10.2	10.2	1.19	1.16	1.14
AIB	0.31	0.34	0.33	11.5	12.9	12.9	1.84	1.75	1.70
BANK OF IRELAND	0.16	0.17	0.17	7.0	7.5	7.5	0.65	0.65	0.65
DB UNIVERSE	0.57	0.56	0.54	24.5	22.6	20.7	3.37	3.24	3.11

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