Financial Restructuring Study 2015

Instruments and success factors in practice

Munich, October 2015
Financial restructuring contributes significantly to successful turnarounds when applied in accordance with company specifics

Management summary

Increasing importance of financial restructuring in complex financing environment due to...

- stricter lending criteria applied by traditional debtholders (e.g. banks)
- rise of alternative financing partners in search of attractive investment opportunities (e.g. PE funds)

Current situation

To present recent financial restructuring cases in the German-speaking region

To explain complex financial restructuring instruments

To identify success factors in practice

Purpose of study

Empirical analysis

- Study period: 2006 - 2014
- Regional focus: Germany
- Sample size:
  - Financial data of > 9,000 companies
- Selection criterion:
  - Revenues > EUR 100 mn
- Methodology: Regression analysis

1. Financial restructuring contributes significantly to successful turnarounds – Creates necessary headroom to undertake value-creating investments and avoid value-destroying actions

   Empirical analysis shows the significant effect of financial restructuring instruments on overall turnaround of distressed firms

2. Only selected instruments have universal impact on turnaround success – Big solution necessary to achieve sustainable turnaround

   Especially cash capital increase as well as combination of debt-equity swap and haircut demonstrate significant effect on successful turnarounds

3. Financial and operational restructuring should go hand in hand – Financial restructuring lays solid foundations for operational turnaround

   Operational turnaround and company sector also significantly influence turnaround success

Source: Roland Berger
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A. Introduction and study outline
The study covers all major financial restructuring cases in Germany over the past 9 years …

Introduction

Financial restructuring in Germany

- Presentation of recent developments
- Illustrative explanation of complex instruments
- Identification of success factors in practice

Study period

📅 2006 – 2014

Sample size

> 9,000 companies

Selection criterion

€ Revenues

> EUR 100 mn

Methodology

💧 Regression analysis

Source: Roland Berger
... and therefore provides valuable insights into the workings of financial restructuring instruments and their impact on success

Study outline

B Current market development
- Corporate financing trends
- Recent financial restructuring cases

C Instruments and approach
- Theoretical background
- Introduction of main levers in financial restructuring
- Stakeholder management
- (Financial) restructuring process

D Empirical analysis
- Identification of relevant restructuring cases
- Use of financial restructuring instruments in practice
- Impact of company characteristics on success prospects
- Key success factors for successful restructuring

Hypotheses
- Alternative financing instruments are gaining momentum and changing the corporate financing environment
- Various financial restructuring instruments available – Selection depends on company characteristics and situation
- Financial restructuring is an integral part of a successful turnaround

Source: Roland Berger
Financial restructuring is one of the main pillars of a holistic restructuring concept in a changing financing environment.

Roland Berger Restructuring Pyramid

Why is financial restructuring gaining importance in Germany?

> Stability in financing serves as a basis for necessary investments in strategic and operational realignment.

> Traditional financing partners like banks apply stricter lending criteria due to increasing regulatory requirements.

> Alternative investors seek new investment opportunities in the current low-interest environment – Increased focus on German "Mittelstand".

Source: Roland Berger
B. Current market development and recent cases
Financing environment in Germany has changed significantly in recent years – Increasing complexity especially in crisis situations

Complexity of corporate financing in Germany

1. **Increasing number of financial stakeholders**
   - New financial stakeholders with diverging interests complicate crisis financing
     - Increasing importance of alternative capital providers
     - High pressure on short-term performance
     - Growing complexity of capital structures

2. **Growing importance of capital markets**
   - High share of capital market financing increases the complexity of financial reorganization
     - Rising use of capital market instruments (e.g. bonds) in company financing
     - Constant exposure to public attention
     - Special rules to follow when restructuring capital market instruments

3. **Rising significance of financial covenants**
   - Widely used financial covenants grant lenders extensive intervention rights in crisis situations
     - High ratio of financial covenants in debt financing
     - Active management of financial covenants necessary
     - High reporting/documentation requirements

Source: Deutsche Bundesbank; Roland Berger
Complex financing environment in Germany requires sophisticated approaches, especially in restructuring situations

German market for corporate financing

"Private equity investments in Germany have more than doubled since 2009"

Private equity investments in Germany, 2009-2014 [EUR bn]

<table>
<thead>
<tr>
<th>Year</th>
<th>Venture capital</th>
<th>Growth/replacement/turnaround</th>
<th>Buy-outs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0.7</td>
<td>4.9</td>
<td>0.9</td>
</tr>
<tr>
<td>2010</td>
<td>1.7</td>
<td>3.2</td>
<td>5.1</td>
</tr>
<tr>
<td>2011</td>
<td>5.1</td>
<td>6.7</td>
<td>5.3</td>
</tr>
<tr>
<td>2012</td>
<td>3.9</td>
<td>6.6</td>
<td>0.7</td>
</tr>
<tr>
<td>2013</td>
<td>0.4</td>
<td>5.1</td>
<td>0.8</td>
</tr>
<tr>
<td>2014</td>
<td>5.6</td>
<td>7.1</td>
<td>0.6</td>
</tr>
</tbody>
</table>

CAGR: +18% p.a.

+CAGR: +13% p.a.

"Corporations with access to capital markets can leverage on low interest level"

Volume of German corporate bonds outstanding, 2007-2014 [EUR bn]

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>95.9</td>
<td>178.5</td>
<td>227.0</td>
<td>250.8</td>
<td>247.6</td>
<td>220.5</td>
<td>221.9</td>
<td>232.3</td>
</tr>
</tbody>
</table>

+13% p.a.

> Restrictive lending by traditional financiers (e.g. banks) due to changing regulatory requirements

> Investors in search of promising investment opportunities given the current low-interest environment – Particularly institutional investors short on attractive investment opportunities

> Alternative investment vehicles increasingly on the radar of both institutional and retail investors

> According to recent Roland Berger survey, the majority of restructuring experts in the German-speaking region consider the current financing environment challenging for restructuring cases – Experienced implementation support necessary

"Hedge funds discover German Mittelstand"

Handelsblatt, May 7, 2015

"ZF issues record promissory note loan"

FINANCE, Feb. 2015

1) Later-stage financing for established companies

Source: BVK, Deutsche Bundesbank; Roland Berger
C. Financial restructuring – Instruments, stakeholders and approach
Financial restructuring is the reorganization of ownership and capital structure with the goal of improved performance and financial stability.

Financial restructuring – Definition

1. **Avoid insolvency of distressed company**
   - Efficiently exploit existing liquidity sources
   - Accelerated sale of non-operating assets
   - Align interests of different stakeholder groups

2. **Reorganize existing company financing**
   - Achieve agreement regarding burden sharing with existing investors and lenders

3. **Secure future company financing**
   - Develop and implement financing concept for future investments
   - Raise fresh money

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Enable **short-term survival** and create **sufficient financial headroom to safeguard the company's future development**

Source: Roland Berger
Available financial restructuring instruments can be clustered according to their liquidity effect on the firm

Financial restructuring instruments

"Old money"

<table>
<thead>
<tr>
<th>Equity</th>
<th>Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Capital reduction</td>
<td>&gt; Subordination</td>
</tr>
<tr>
<td>– Simple</td>
<td>&gt; Haircut (possibly with</td>
</tr>
<tr>
<td>– Ordinary</td>
<td>debtor warrant)</td>
</tr>
<tr>
<td>&gt; Debt-equity swap</td>
<td>&gt; Standstill/credit</td>
</tr>
<tr>
<td>&gt; Debt-mezzanine swap</td>
<td>extension</td>
</tr>
<tr>
<td>&gt; Change of ownership structure (consolidation)</td>
<td>&gt; Interest rate adjustment</td>
</tr>
</tbody>
</table>

"Fresh money"

<table>
<thead>
<tr>
<th>Equity</th>
<th>Debt</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV (Non-) cash capital increase</td>
<td>&gt; Restructuring loan</td>
</tr>
<tr>
<td>&gt; Existing shareholders</td>
<td>&gt; Bond issuance (high-yield/junk)</td>
</tr>
<tr>
<td>&gt; New investors/M&amp;A (exclusion of preemptive rights)</td>
<td>&gt; &quot;Innovative&quot; financing</td>
</tr>
<tr>
<td>&gt; Shareholder loan</td>
<td>&gt; Project financing</td>
</tr>
<tr>
<td>&gt; Mezzanine issuance</td>
<td>&gt; Asset backed securities</td>
</tr>
<tr>
<td>&gt; Convertible bonds</td>
<td>&gt; Government aid</td>
</tr>
<tr>
<td>&gt; Option bonds</td>
<td></td>
</tr>
<tr>
<td>&gt; Silent partnership</td>
<td></td>
</tr>
</tbody>
</table>

Internal sources

<table>
<thead>
<tr>
<th>Internal sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Working capital management</td>
</tr>
<tr>
<td>&gt; Sale-and-lease-back</td>
</tr>
<tr>
<td>&gt; Divestments</td>
</tr>
<tr>
<td>– Carve-out</td>
</tr>
<tr>
<td>V Asset sale</td>
</tr>
</tbody>
</table>

xxx Focus in this study

Source: Roland Berger
Through a debt-equity swap former lenders become shareholders in the distressed firm – Positive effect on equity ratio

Debt-equity swap

Impact on company financing [illustrative]

<table>
<thead>
<tr>
<th>Balance Sheet</th>
<th>Existing loans are swapped to equity stakes in the distressed company – Lenders become shareholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current assets</td>
<td>Swap performed via non-cash capital increase without subscription rights for existing shareholders – Dilution of shares outstanding</td>
</tr>
<tr>
<td>Fixed assets</td>
<td>No immediate liquidity effect but reduction of interest expenses leads to positive medium-term liquidity effects</td>
</tr>
<tr>
<td>Debt</td>
<td>Extraordinary income from transaction can result in additional tax burden</td>
</tr>
</tbody>
</table>

Basic concept

Proxies used in study

- Increase of equity (corrected for earnings)
- Decrease of corresponding magnitude of long-term liabilities

Source: Roland Berger
By accepting a haircut lenders waive their right to repayment of loans granted to a distressed firm

Haircut

Impact on company financing [illustrative]

Basic concept

> Lenders partly waive their claims against the distressed company – Possibly participation in future success of distressed firm through debtor warrant

> Improved position of shareholders (ceteris paribus) – Increase of equity reserve without issuing new shares

> No immediate liquidity effect but reduction in interest expenses leads to medium-term liquidity discharge

> Extraordinary income from transaction can result in additional tax burden

Proxies used in study

> Material reduction of long-term debt

Source: Roland Berger
Interest rate adjustment by lenders leads to positive liquidity effects through reduction of interest burden

Interest rate adjustment

### Impact on company financing [illustrative]

[Diagram showing loan schedule with interest payments and principal repayments]

#### Basic concept

- Lenders agree to **lower the interest rates** charged on borrowing – Slightly positive **liquidity effect**
- Initial **repayment schedule** for principal usually stays **intact**
- **Improved position of shareholders** *(ceteris paribus)* – Lower cost of capital can lead to increase in company value

#### Proxies used in study

- Material decrease of average interest rate
Distressed firm can raise fresh money through issuance of new shares – Value of outstanding shares usually diluted

(Cash) capital increase/M&A

Impact on company financing [illustrative]

Basic concept

> Issuance of new shares (common or preferred) to raise fresh money for growth financing or debt repayment
> Investors can be either strategic or financial – Different interests and criteria regarding (M&A) investments
> Existing shareholders usually equipped with preemptive rights in transaction – Can be suspended e.g. if new anchor shareholder necessary/on hand
> Shares usually offered at discount – Dilution of shares outstanding

Proxies used in study

> Increase of equity (corrected for earnings) without a corresponding decrease of long-term liabilities
> Transaction involvement (M&A target)

Source: Roland Berger
Sale of non-operating assets raises fresh money for financing corporate growth and/or repaying debt

Impact on company financing [illustrative]

> **Basic concept**

- **Sale of (non-operating) assets** to generate cash to finance corporate growth or repay outstanding debt
- **Extraordinary income** if price is higher than the asset's book value can result in additional tax burden – Destruction of company value if assets are sold at a discount ("fire sale")

**Proxies used in study**

- Material reduction of fixed assets (corrected for depreciation)

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1) No sustainable liquidity increase in example above since proceedings are used for repayment of debt

Source: Roland Berger
Successful financial restructuring transactions require balanced stakeholder management to achieve optimal burden sharing.

Direct stakeholders in financial restructuring situations and their corresponding interests:

- **Equity holders**
  - Limited dilution of shares
  - Preservation of minimum share in equity

- **New investors**
  - High returns
  - Control
  - Exit opportunities

- **Government**
  - Preservation of jobs
  - Safeguarding of pensions

- **Suppliers and customers**
  - Avoidance of write-downs on receivables against firm
  - Preservation of business
  - Secured delivery
  - Protection of privacy

- **Debt holders**
  - High level of repayment
  - Immediate cash
  - Non-recourse exit

- **Employees**
  - Preservation of jobs
  - Safeguarding of pensions

- **Firm in financial distress**

Source: Roland Berger

- Different stakeholder groups pursue a diverse range of interests in a financial restructuring situation.
- A comprehensive financial restructuring concept should try to achieve the best possible alignment of diverging positions.
- A combination of available instruments can be applied to reach consensus (burden sharing).
- Equity holders (owners of the firm) are often asked to contribute significantly in order to send a positive signal to other stakeholders.
Successful financial restructuring requires a thorough understanding of the situation, clear goals and a dedication to implementation.

Detailed approach to financial restructuring

1. Status quo
   - Analyze current economic and financial situation – Focus on balance sheet and cash flow statement
   - Set up business case for restructuring concept – Ensure debt service-ability before defining equity and cash measures
   - Industry analysis/benchmarking
   - Understand interests and importance of different stakeholders

2. Goals
   - Define target financial structure based on analysis results

3. Action plan
   - Detect suitable levers and instruments
   - Develop timetable
   - Divide actions into manageable work packages and assign clear responsibilities
   - Define tracking criteria

4. Implementation
   - Improve existing financial structure
   - Explore new financing opportunities
   - Constantly monitor progress
   - Manage diverging stakeholder interests

Whom are we dealing with?
What are we aiming for?
How can the targets be achieved?
What is the current progress?

Source: Roland Berger
D. Empirical analysis – Success factors in practice
The empirical study examines financial data of 9,000 firms to identify the impact of financial restructuring instruments in distress situations.

**Objectives and steps of quantitative analysis**

<table>
<thead>
<tr>
<th><strong>Objectives of the quantitative analysis</strong></th>
<th><strong>Steps of quantitative analysis</strong></th>
<th><strong>Instruments and success</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Examine the <strong>frequency</strong> of financial restructuring instruments in distress situations</td>
<td>I. Identification of distress cases</td>
<td>&gt; For a more detailed analysis of the respective impacts of the instruments, a regression analysis is conducted</td>
</tr>
<tr>
<td>&gt; Identify <strong>application patterns</strong> among financial restructuring instruments</td>
<td>&gt; Data consist of a financial data set of</td>
<td>&gt; Relevant <strong>control variables</strong> are identified and operationalized</td>
</tr>
<tr>
<td>&gt; Analyze the impact of financial restructuring instruments on the <strong>success</strong> of a turnaround</td>
<td>- Over <strong>9,000 companies</strong> in Germany with</td>
<td>&gt; Impact of instruments is estimated using a <strong>generalized linear model</strong> (GLM)</td>
</tr>
<tr>
<td></td>
<td>- <strong>Revenues</strong> in excess of <strong>EUR 100 m</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- For the last <strong>9 years</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A set of <strong>distress cases</strong> is identified by applying three distress criteria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>A case is defined as <strong>successful turnaround</strong> if insolvency was avoided and two out of three distress criteria are no longer applicable within a timeframe of <strong>three years</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; Instruments are operationalized using approximations (proxies) derived from financial data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; <strong>Observable use</strong> of the financial restructuring instruments in the sample is examined</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt; <strong>Interdependence</strong> of instruments in the restructuring context is analyzed</td>
<td></td>
</tr>
</tbody>
</table>

**Source:** Roland Berger
Relevant distress cases are deduced from the data set by applying distress-relevant KPIs as selection criteria.

Data sampling

**Input data**
- Annual financials of over 9,000 German companies\(^1\) from 2006 to 2014
- Only companies with revenues of EUR >100 m in one of the selected years
- Several data sources, among them Orbis, Dafne, Capital IQ and MergerMarket

Reduction for **missing** data points

- **Interest coverage ratio**\(^2\): < 1.0 in two consecutive years
- **Leverage ratio**\(^3\): > 5.0x
- **Gearing ratio**\(^4\): > 200%

**Final sample**
Contains 186 relevant distress cases over last 9 years in Germany

> To identify distressed companies the existing data are first **cleared** from companies for which data is **insufficient**

> In a second step, a set of **distress-relevant KPIs** is applied to the data – To be classified as a distress case, a company has to be in the **distress zone** for each of the three KPIs within the reference year
- **Interest coverage ratio**: < 1.0 for two consecutive years
- **Leverage ratio**: > 5.0 within the reference year
- **Gearing ratio**: > 200% in the reference year

> KPIs address **profit** as well as **balance sheet-related figures** – Profitability as well as financing crises are distress-relevant

> In order to identify relevant restructuring cases, KPIs and distress zones have been selected based on Roland Berger restructuring experience

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1) Excl. financial services companies
2) EBITDA/Interest payments
3) Net debt/EBITDA
4) Debt/Equity

Source: Roland Berger
The resulting sample includes 186 distress cases since 2006 – The lagging definition of KPIs means that peaks follow crisis with delay

Overview of resulting distress cases/year

<table>
<thead>
<tr>
<th>Year</th>
<th>Identified distress cases per year [#]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>24</td>
</tr>
<tr>
<td>2007</td>
<td>6</td>
</tr>
<tr>
<td>2008</td>
<td>20</td>
</tr>
<tr>
<td>2009</td>
<td>15</td>
</tr>
<tr>
<td>2010</td>
<td>25</td>
</tr>
<tr>
<td>2011</td>
<td>27</td>
</tr>
<tr>
<td>2012</td>
<td>22</td>
</tr>
<tr>
<td>2013</td>
<td>20</td>
</tr>
<tr>
<td>2014</td>
<td>27</td>
</tr>
<tr>
<td>∑ 186</td>
<td></td>
</tr>
<tr>
<td>Ø 21</td>
<td></td>
</tr>
</tbody>
</table>

- Identified distress cases accumulate in the years following the financial crisis and the subsequent economic downturn in Germany
- As the definition of distress requires financing troubles on the balance sheet as well as two years of profitability problems, distress cases occur with a time lag after macroeconomic downturns
  - Number of distress cases increase in the years after the financial crisis and global economic downturn from 2007 onward
  - Largest accumulation of cases in two years after the most economically critical year 2009
  - Steady decline in cases in years of recovery from the crisis
  - Large number of cases in 2014 due to economic stagnation in 2013
- Number of distress cases that are identified per year can be subject to bias as only large companies are examined

Source: Statistisches Bundesamt; Roland Berger
Most distress cases observable in production sector – Service sector had a higher share in 2008 and 2010

Overview of resulting distress cases/year by sector [#]

<table>
<thead>
<tr>
<th>Year</th>
<th>Production</th>
<th>Services</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2008</td>
<td>5</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>2009</td>
<td>7</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>2010</td>
<td>7</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>2011</td>
<td>11</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>2012</td>
<td>7</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td>2013</td>
<td>7</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>2014</td>
<td>11</td>
<td>7</td>
<td>9</td>
</tr>
</tbody>
</table>

∑ 72   Ø 8

Source: Statistisches Bundesamt; Roland Berger

> With a total of 72 cases, most distress cases occur in the production sector
> Only in 2008 and 2010 were there more distress cases in the service sector – Financial crisis had an immediate impact on service companies such as banks and insurance companies
> Many distress cases in the production sector in 2006 as a consequence of weak economic performance in Germany in the previous three years (average real GDP growth of 0.4%)
In the years after the beginning of distress, balance sheet-related KPIs require more time for recovery than profitability-focused KPIs.

Development of KPIs after initial distress for cases until 2012\(^1\) [#]

**Interest coverage ratio**

- **In year of distress** all KPIs are, per definition, in the distress zone.
- **In the years after distress**, the KPIs continuously improve.
- The interest coverage ratio recovers the fastest and with the highest frequency from the distress state as interest payments as well as operating profitability are relatively fast to adjust. In about half of the cases, the interest coverage ratio leaves the distressed zone within the first year after distress.

**Leverage ratio**

- Leverage ratio requires more time for recovery and leaves the distress zone less often because the involved net debt figure is slower to adjust.

**Gearing ratio**

- Gearing ratio, focusing only on the financing structure, exhibits the slowest adjustment speed. Industry specifics explain the significantly lower frequency of cases leaving the distress zone.

1) For cases after 2012 information on the development of the KPIs is not yet available.
About half of the identified distress cases have experienced a successful turnaround.

**Distress cases and successful turnarounds**

<table>
<thead>
<tr>
<th>Identified distress cases per year [#]</th>
<th>Thereof with successful turnaround [#]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>11</td>
</tr>
<tr>
<td>2007</td>
<td>4</td>
</tr>
<tr>
<td>2008</td>
<td>11</td>
</tr>
<tr>
<td>2009</td>
<td>6</td>
</tr>
<tr>
<td>2010</td>
<td>13</td>
</tr>
<tr>
<td>2011</td>
<td>16</td>
</tr>
<tr>
<td>2012</td>
<td>7</td>
</tr>
<tr>
<td>2013</td>
<td>Not yet observable</td>
</tr>
<tr>
<td>2014</td>
<td>Not yet observable</td>
</tr>
</tbody>
</table>

**Share of successful turnaround cases [%]**

- **∑ 186**
- ∑ 68

- Success rate: 49%

1) Calculation basis 139 cases until 2012

**Source:** Roland Berger

- In a successful turnaround at least two out of the three distress KPIs are no longer in the distress zone – Allows for one KPI to be on a low level for structural rather than distress-related reasons.
- As selected KPIs cover profitability and financing issues, a successful turnaround requires profitability as well as balance sheet improvements.
- In total, about half (49%) of the distress cases manage a successful turnaround within three years after the initial distress.
- Annual success rates fluctuate between 32% and 67% – Fluctuation rates, however, do not represent a special finding on the dependence of the success over the time horizon.
Companies in the production sector show a significantly higher turnaround success rate

Successful turnaround by sector [#]

- Production sector exhibits a relatively high success rate of financial restructuring (59%)
- Production sector more capital-intensive business – Advantage for turnaround potential
  - Bigger potential to leverage assets as more securities are available
  - Possibility of selling fixed assets to repay debt and regain liquidity
  - Capital-intensive production business is usually financed with more debt – Therefore, insolvency brings higher expected losses for involved banks (increased commitment)
For further analysis the relevant instruments are operationalized by applying proxies based on the financials

Operationalization of financial restructuring instruments

<table>
<thead>
<tr>
<th>Instrument in empirical test</th>
<th>Operationalization of instrument (proxy) based on financial data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt-equity swap</td>
<td>Increase of equity (corrected for earnings) and decrease of corresponding magnitude of long-term liabilities</td>
</tr>
<tr>
<td>Haircut</td>
<td>Material reduction of long-term debt</td>
</tr>
<tr>
<td>Interest rate adjustment</td>
<td>Material decrease of interest rate</td>
</tr>
<tr>
<td>Cash capital increase</td>
<td>Increase of equity (corrected for earnings) without a corresponding decrease of long-term liabilities</td>
</tr>
<tr>
<td>Asset sale</td>
<td>Material reduction of fixed assets (corrected for depreciation)</td>
</tr>
<tr>
<td>M&amp;A</td>
<td>Company was target of a transaction</td>
</tr>
</tbody>
</table>

Source: Roland Berger

Use of financial restructuring instruments

II

“Old money”

“Fresh money”
Interest rate adjustment most frequently applied – All instruments applied to a disproportionate extent in successful restructurings

Relative use of instrument in total sample and for successful cases

> **Interest rate adjustment** is the most frequently applied financial restructuring instrument among the examined restructuring cases

– Linked to the use of other instruments – e.g. cash capital increase leads to rise of equity ratio thereby reducing the interest rate

> **Low number of M&A cases** also due to data availability – Data is only partially available for a large number of private transactions in Germany

> For each instrument, the share of usage is higher for successful restructurings

> High share of instrument usage signals importance of financial restructuring for successful turnarounds

Source: Roland Berger
The success rate of turnarounds increases as more financial restructuring instruments are combined

Applied financial restructuring instruments [#] and success rate [%]

In the majority of distress cases, between three and four financial restructuring instruments are combined.

In only 10% of distress cases can the use of more than five financial restructuring instruments be observed.

As the number of applied instruments increases, so the success rate of turnarounds rises – Success rate for cases with more than 5 instruments is 8 ppts. above the average success rate.

Source: Roland Berger
Application of financial restructuring instruments does not follow a specific pattern

Correlation of financial instruments in sample until 2012

<table>
<thead>
<tr>
<th></th>
<th>&quot;Old money&quot;</th>
<th>&quot;Fresh money&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Debt-equity swap</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>Haircut</td>
<td>0.22</td>
<td>1.00</td>
</tr>
<tr>
<td>Interest rate adjustment</td>
<td>-0.21</td>
<td>-0.01</td>
</tr>
<tr>
<td>Cash capital increase</td>
<td>0.12</td>
<td>-0.06</td>
</tr>
<tr>
<td>Asset sale</td>
<td>0.13</td>
<td>0.16</td>
</tr>
<tr>
<td>M&amp;A</td>
<td>0.09</td>
<td>-0.01</td>
</tr>
</tbody>
</table>

Correlations all below 0.22

> Analysis of correlation in order to examine whether certain instruments are usually combined in distress cases\(^1\)

> Correlations in the use of instruments are on a relatively low level – Maximum correlation of 0.22

> Low correlations show that there is no clear pattern in the use of the instruments – Combination of instruments is highly dependent on individual cases

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\(^1\) If correlations are positive, instruments are more likely combined (Maximum of 1 = Always applied together); negative correlation signals that instruments are less likely combined (Minimum of -1 = Never applied together)
A generalized linear model (GLM) is used to estimate the impact of the financial restructuring instruments on success.

**Model setup**

**Generalized linear model (GLM)**

- Generalized linear model applied to estimate the impact of the use of specific instruments on the restructuring success.
- More flexible version of a linear regression model – Variables do not have to be normally distributed.
- The GLM is applied to the restructuring cases until 2012 because the success cannot yet be determined for the more recent cases.

**Variables used in model**

- The **dependent variable** is the success of the restructuring.
- **Instruments** of financial restructuring as well as two relevant interaction terms constitute the **independent variables**.
- **Control variables** are included in the model in order to take account of other factors that impact the success of a restructuring:
  - **Operational turnaround** measured by a substantial change in the operating cash flow.
  - **Financing environment** measured by the EURIBOR.
  - The **size** of the company measured by the natural logarithm of sales.
  - **Sector** in which the company operates – Production or service sector.

Source: Roland Berger

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1) Transition from negative to positive operating cash flow in reference period for turnaround.
Financial restructuring increases likelihood of successful turnaround of distressed firms – Surrounding characteristics to be considered

Key findings of empirical analysis

1. Financial restructuring instruments increase the likelihood of successful turnaround – Create headroom for value-creating investments
   - Financial restructuring has a significant effect on overall restructuring success
   - Especially cash capital increase and combination of debt-equity swap and haircut exhibit a substantial effect

2. Only selected instruments have a significant impact on turnaround success – Big solution necessary
   - Analysis does not show significant effect for all instruments on a stand-alone basis
   - Situation-based selection and professional execution are crucial

3. Operational turnaround and firm-specific factors are relevant to restructuring success – Financial and operational restructuring go hand in hand
   - Operational turnaround is also necessary for turnaround success – Integrated restructuring approach required
   - Industry affiliation of the distressed firm appears to be significant for successful turnaround

Source: Roland Berger
No significance found for other instruments due to nature of empirical study – Instruments still helpful in situations of distress

Explanation of missing significance for other instruments

<table>
<thead>
<tr>
<th>Characteristics of empirical study</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; Even though the <strong>explanatory power</strong> of the regression analysis is relatively high, a wide range of <strong>other factors</strong> influence the success of a turnaround, which can only be partially measured, e.g.:</td>
<td></td>
</tr>
<tr>
<td>– Overall analysis of financial data on distress cases does not involve a detailed analysis on an <strong>individual case</strong> level</td>
<td></td>
</tr>
<tr>
<td>– Purely quantitative approach does not consider <strong>qualitative factors</strong> and explanations of results, which are of relevance in practice</td>
<td></td>
</tr>
<tr>
<td>&gt; If regression analysis does not find a significant effect for a specific instrument, the instrument can still make a <strong>valuable contribution</strong> to successful turnarounds</td>
<td></td>
</tr>
<tr>
<td>&gt; If the empirical effects of the respective instruments are not significant <strong>over the course of the sample</strong>, they are potentially quite helpful in <strong>individual situations</strong></td>
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</tr>
<tr>
<td>&gt; Still, the study shows that not every financial restructuring instrument supports the turnaround in any situation – A professional and <strong>tailored use of instruments</strong> is required</td>
<td></td>
</tr>
</tbody>
</table>

Source: Roland Berger
E. Outlook
Professional, integrated and customized approach is key to success in financial restructurings – Initial hypotheses confirmed

**Conclusion**

### Hypotheses

**Current market development**

- Alternative financing instruments are gaining momentum and changing the corporate financing environment

**Instruments and approach**

- Various financial restructuring instruments available – Selection depends on company characteristics and situation

**Empirical analysis**

- Financial restructuring is an integral part of a successful turnaround

### Findings

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>B</th>
<th>Current market development</th>
<th>C</th>
<th>Instruments and approach</th>
<th>D</th>
<th>Empirical analysis</th>
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<tr>
<td></td>
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<td>Alternative financing instruments are gaining momentum and changing the corporate financing environment</td>
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<td>Various financial restructuring instruments available – Selection depends on company characteristics and situation</td>
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<td>Financial restructuring is an integral part of a successful turnaround</td>
</tr>
<tr>
<td>Financial restructuring measures have been <strong>essential</strong> for successful turnarounds in recent distress cases in the German-speaking region</td>
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<tr>
<td>&gt; Alternative financing instruments such as private equity or corporate bonds have become more important for corporate financing in Germany</td>
<td></td>
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<tr>
<td>&gt; There is a large set of financial restructuring instruments <strong>available</strong> to improve the financing situation of companies</td>
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<tr>
<td>&gt; Appropriate application depends on the <strong>individual situation</strong></td>
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</tr>
</tbody>
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**A professional, integrated and customized approach is the key to success in financial restructurings**

Source: Roland Berger
Let's think: act!