

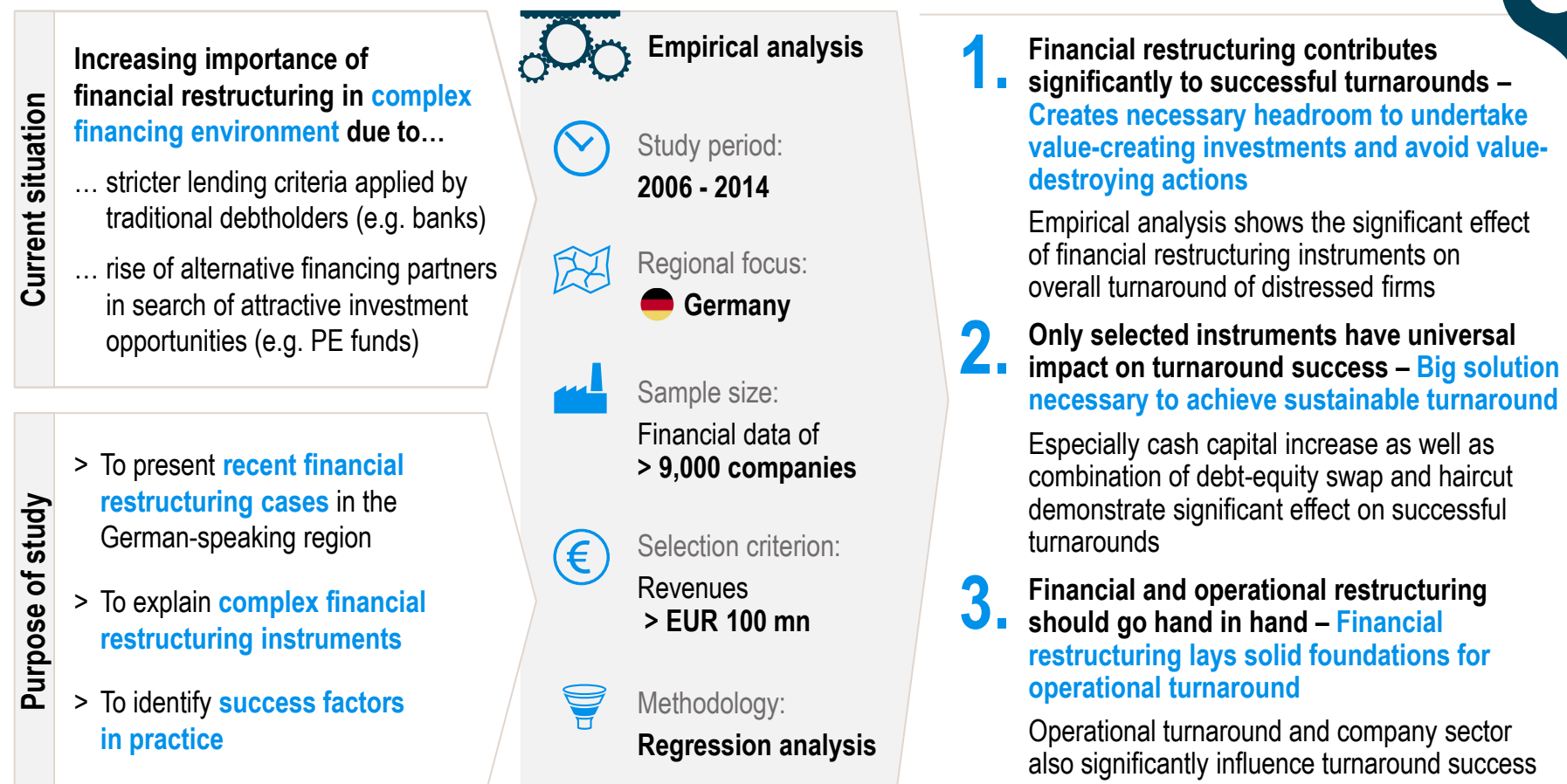
Financial Restructuring Study 2015

Instruments and success
factors in practice



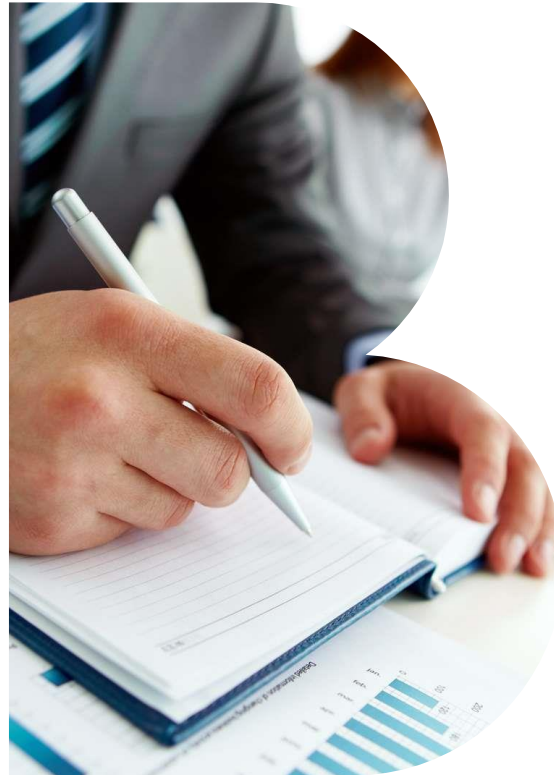
Financial restructuring contributes significantly to successful turnarounds when applied in accordance with company specifics

Management summary



Contents	Page
A. Introduction and study outline	4
B. Current market development and recent cases	8
C. Financial restructuring – Instruments, stakeholders and approach	11
D. Empirical analysis – Success factors in practice	21
E. Outlook	36

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

Focus of study

Study period

 **2006 – 2014**

Selection criterion

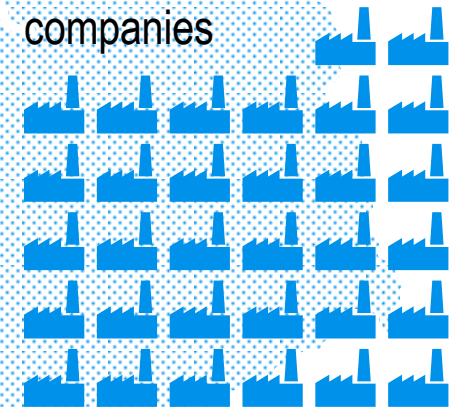
 Revenues
> EUR 100 mn

Methodology

 **Regression analysis**

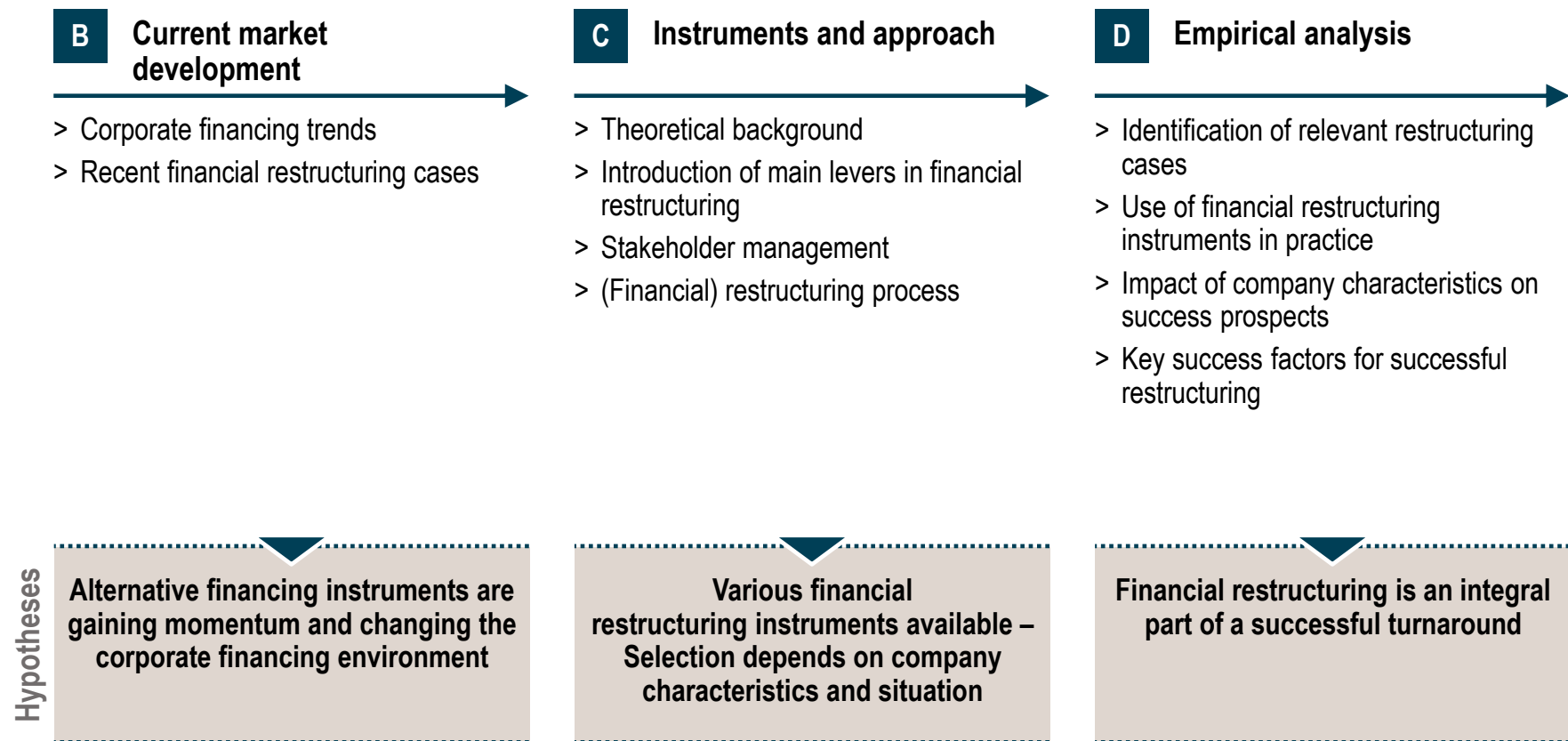
Sample size

> 9,000
companies



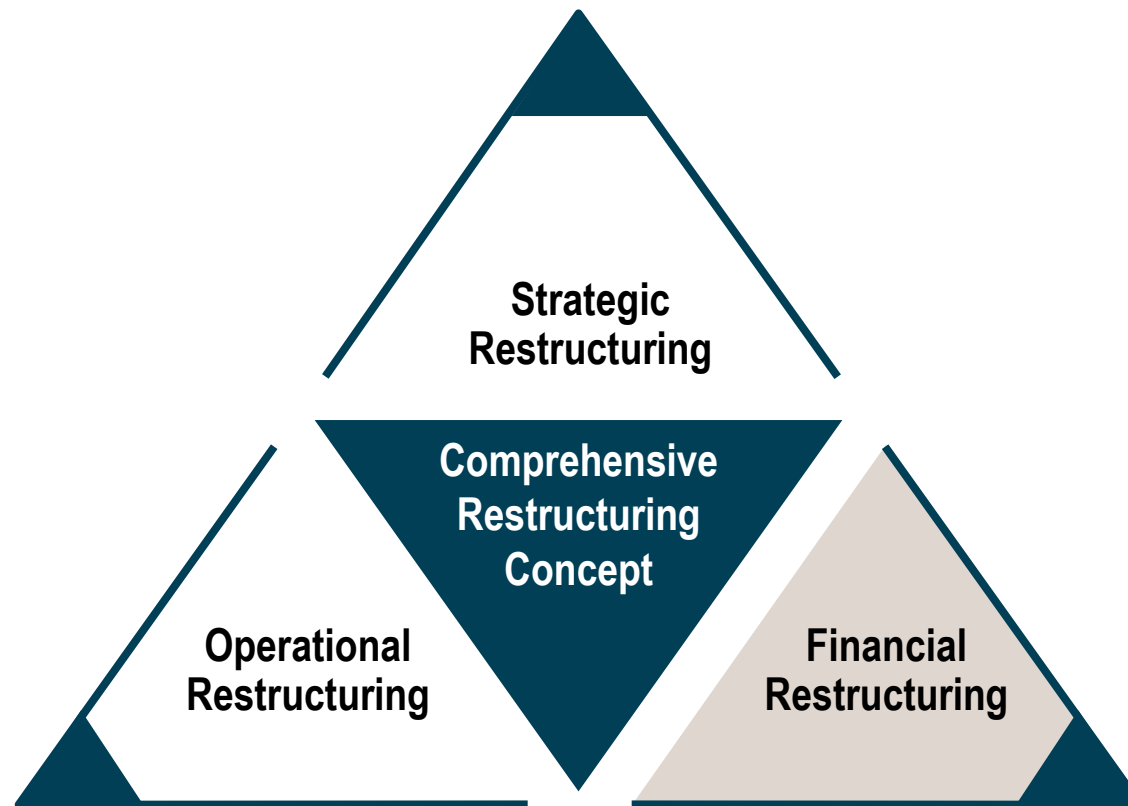
... and therefore provides valuable insights into the workings of financial restructuring instruments and their impact on success

Study outline



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?

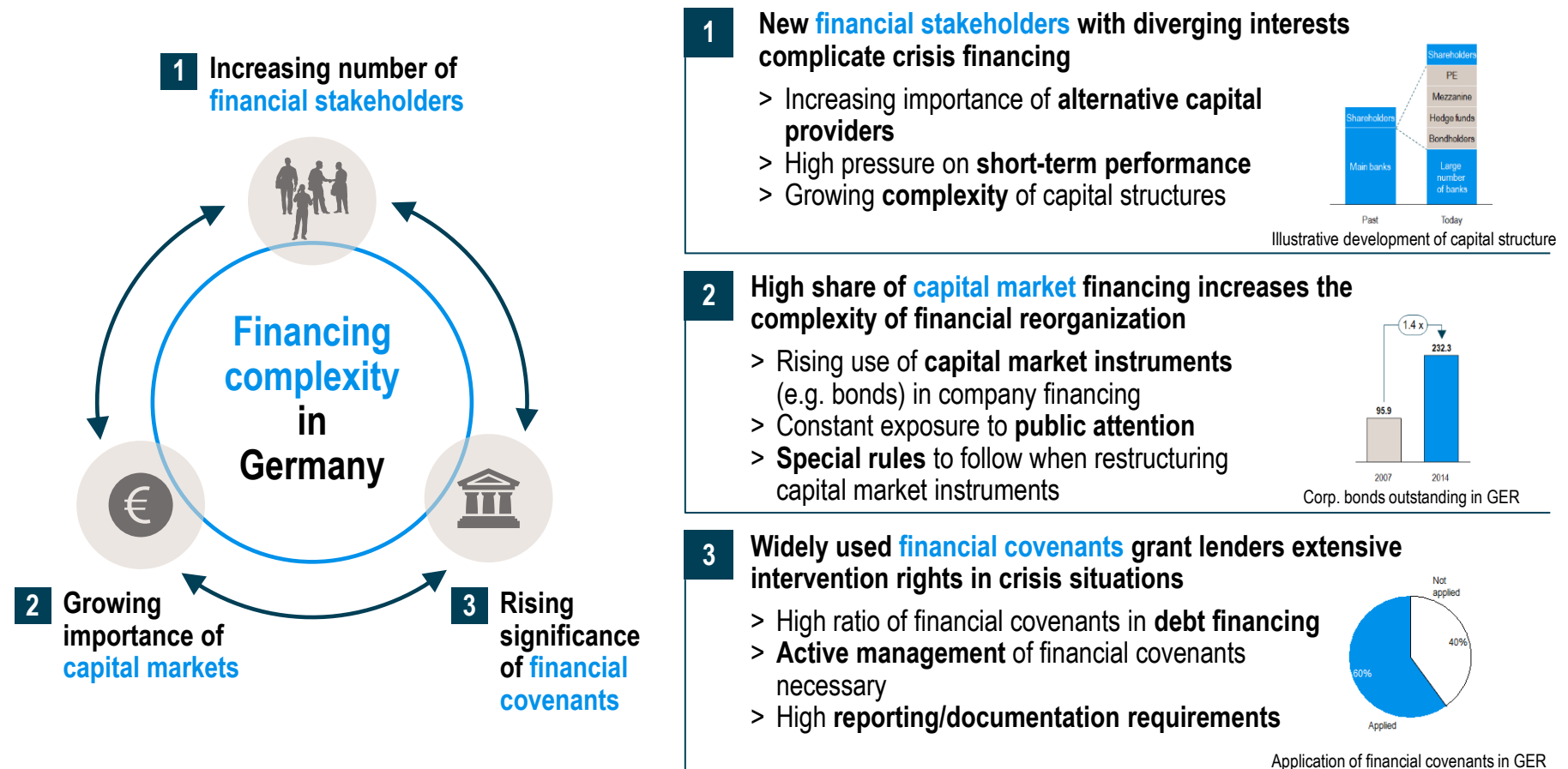
- > **Stability in financing** serves as a basis for necessary investments in strategic and operational realignment
- > Traditional financing partners like **banks** apply **stricter lending criteria** due to increasing **regulatory requirements**
- > **Alternative investors** seek new investment opportunities in the current low-interest environment – Increased focus on German "Mittelstand"

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

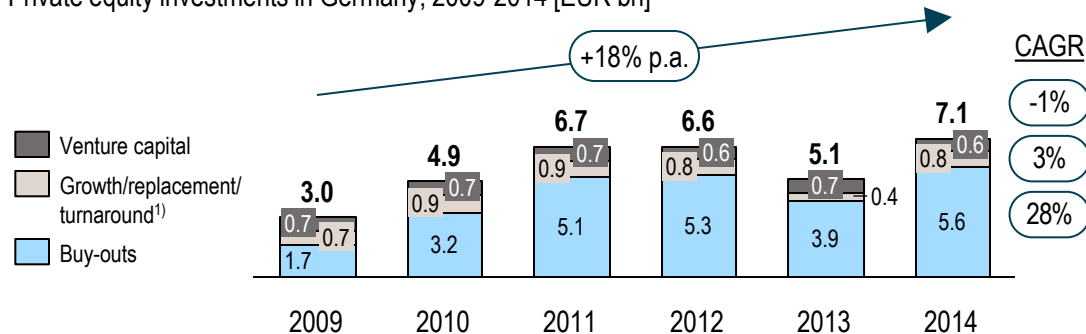


Complex financing environment in Germany requires sophisticated approaches, especially in restructuring situations

German market for corporate financing

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

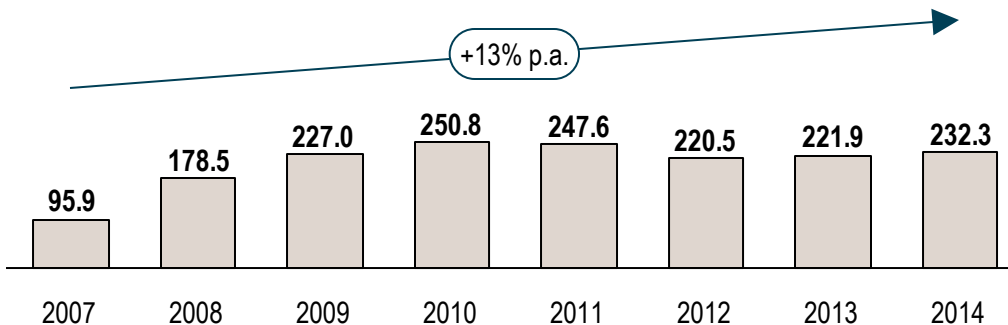
Private equity investments in Germany, 2009-2014 [EUR bn]



- > 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

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

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



"ZF issues record promissory note loan"

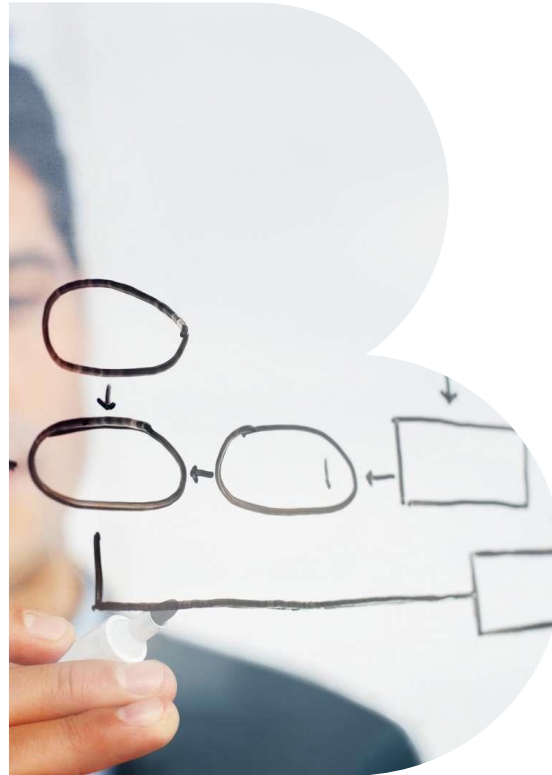
FINANCE, Feb. 2015

"Hedge funds discover German Mittelstand"

Handelsblatt, May 7, 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

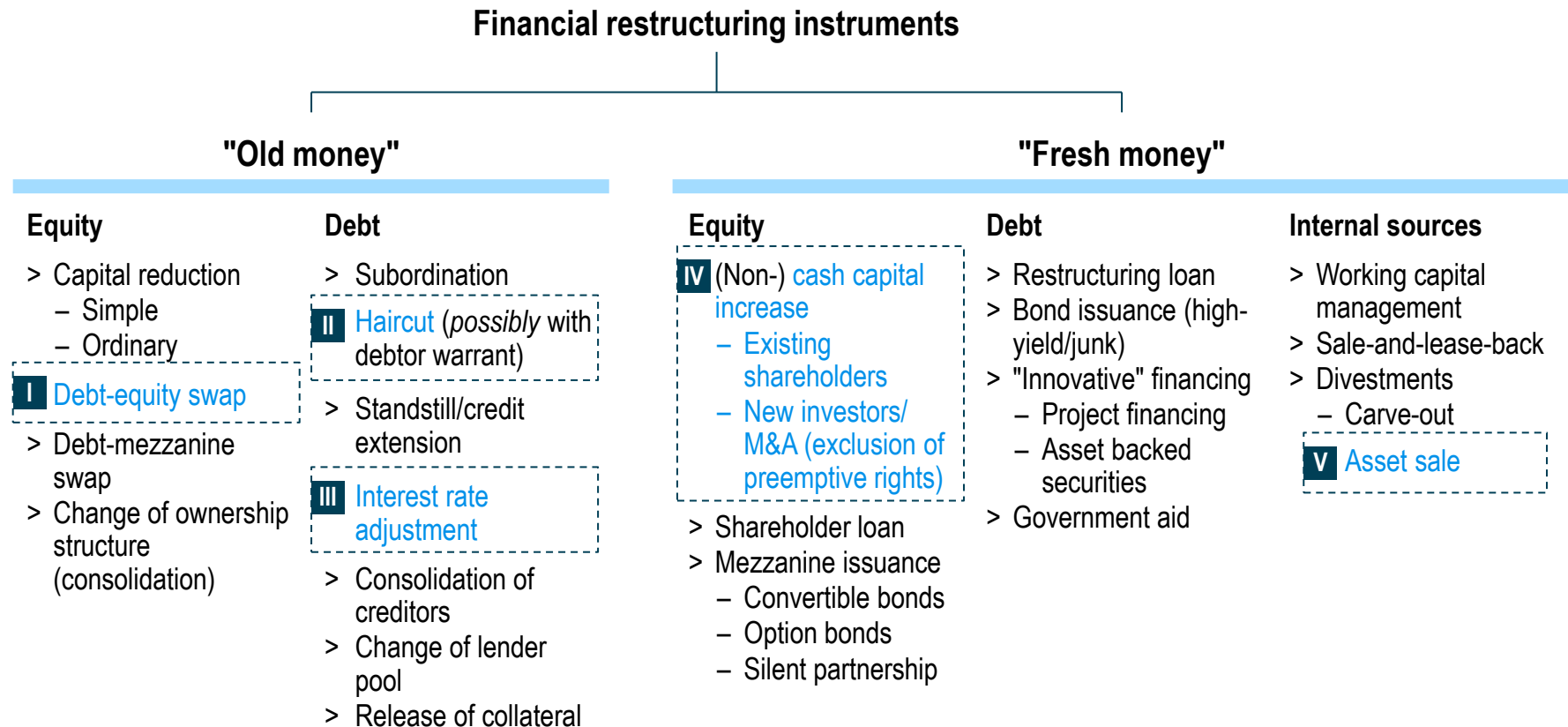
3. **Secure future company financing**

- > Develop and implement financing concept for future investments
- > Raise fresh money

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

Available financial restructuring instruments can be clustered according to their liquidity effect on the firm

Financial restructuring instruments

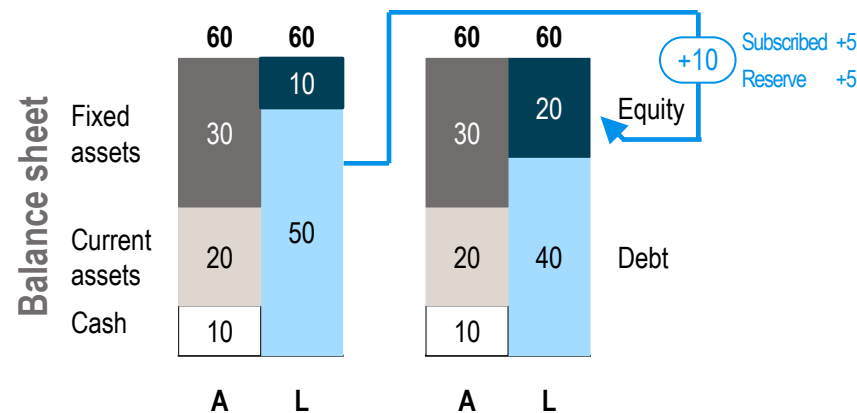


xxx Focus in this study

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]



P&L	Operating income	≈
	Financial income	+
	Extraordinary income	+
Other	Leverage	-
	Liquidity	+
	Share price	-

Basic concept

- > Existing **loans** are **swapped** to **equity stakes** in the distressed company – Lenders become shareholders
- > Swap performed via **non-cash capital increase** without subscription rights for existing shareholders – Dilution of shares outstanding
- > No immediate liquidity effect but **reduction of interest expenses** leads to positive medium-term liquidity effects
- > **Extraordinary income** from transaction can result in additional tax burden

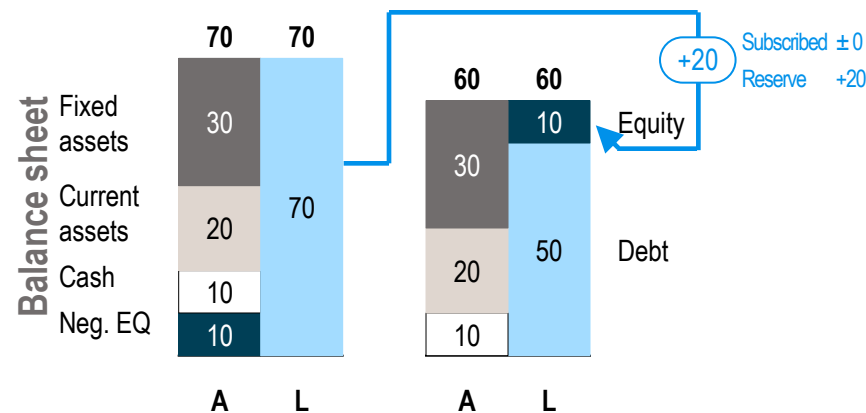
Proxies used in study

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

By accepting a haircut lenders waive their right to repayment of loans granted to a distressed firm

Haircut

Impact on company financing [illustrative]



P&L	Operating income	≈
	Financial income	+
	Extraordinary income	+
Other	Leverage	-
	Liquidity	≈
	Share price	+

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

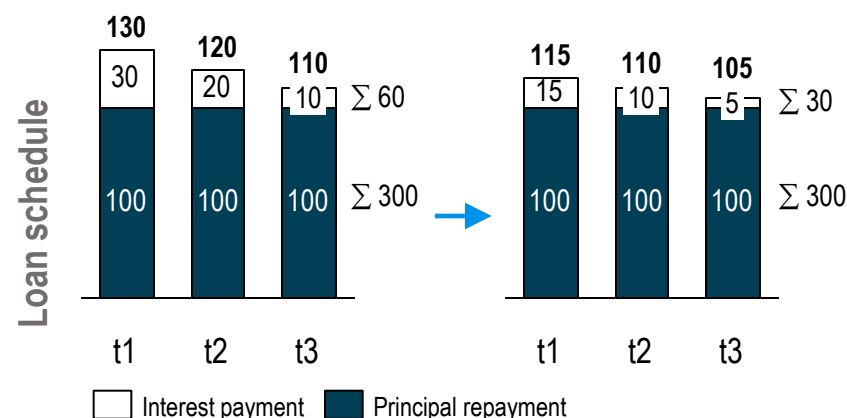
Proxies used in study

- > Material reduction of long-term debt

Interest rate adjustment by lenders leads to positive liquidity effects through reduction of interest burden

Interest rate adjustment

Impact on company financing [illustrative]



P&L	Operating income	≈
	Financial income	+
	Extraordinary income	≈
Other	Leverage	≈
	Liquidity	+
	Share price	+

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

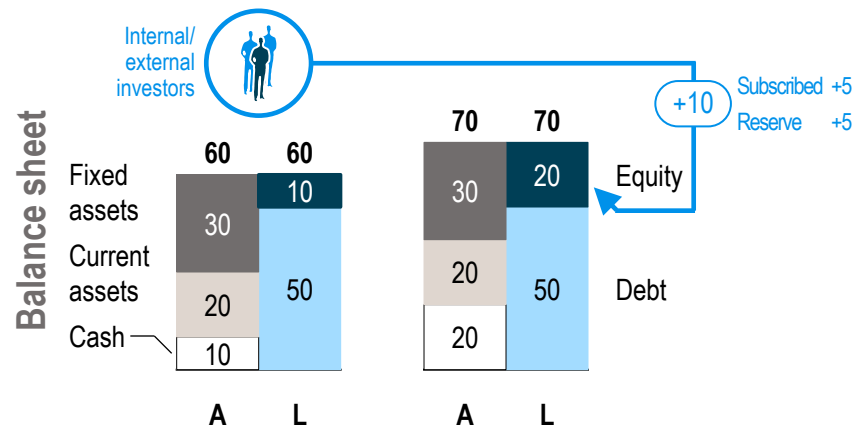
Proxies used in study

- > 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]



P&L	Operating income	≈
	Financial income	≈
	Extraordinary income	≈
Other	Leverage	-
	Liquidity	+
	Share price	-

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

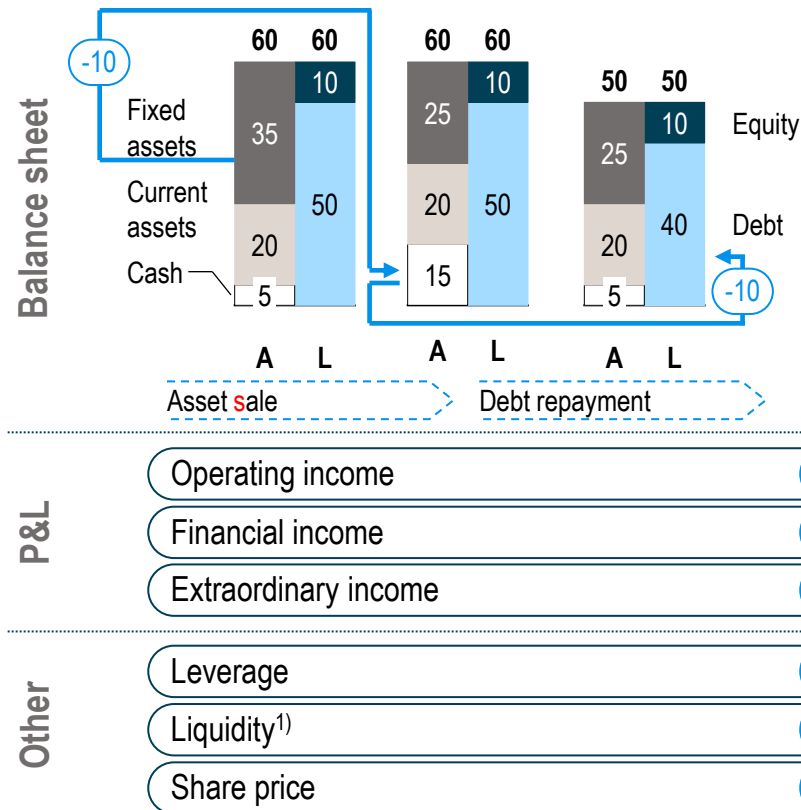
Proxies used in study

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

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

Asset sale

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**")

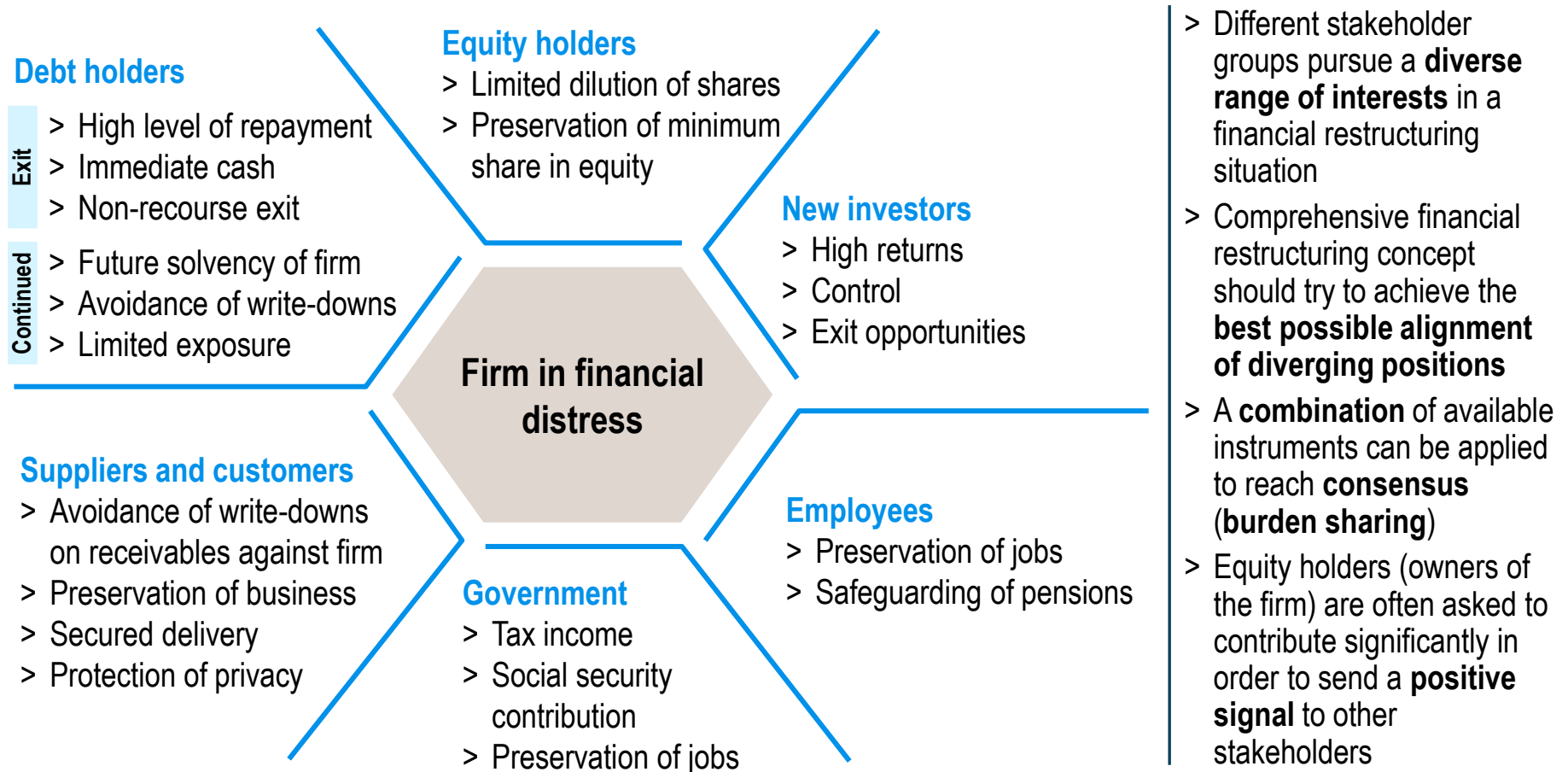
Proxies used in study

- > Material reduction of fixed assets (corrected for depreciation)

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

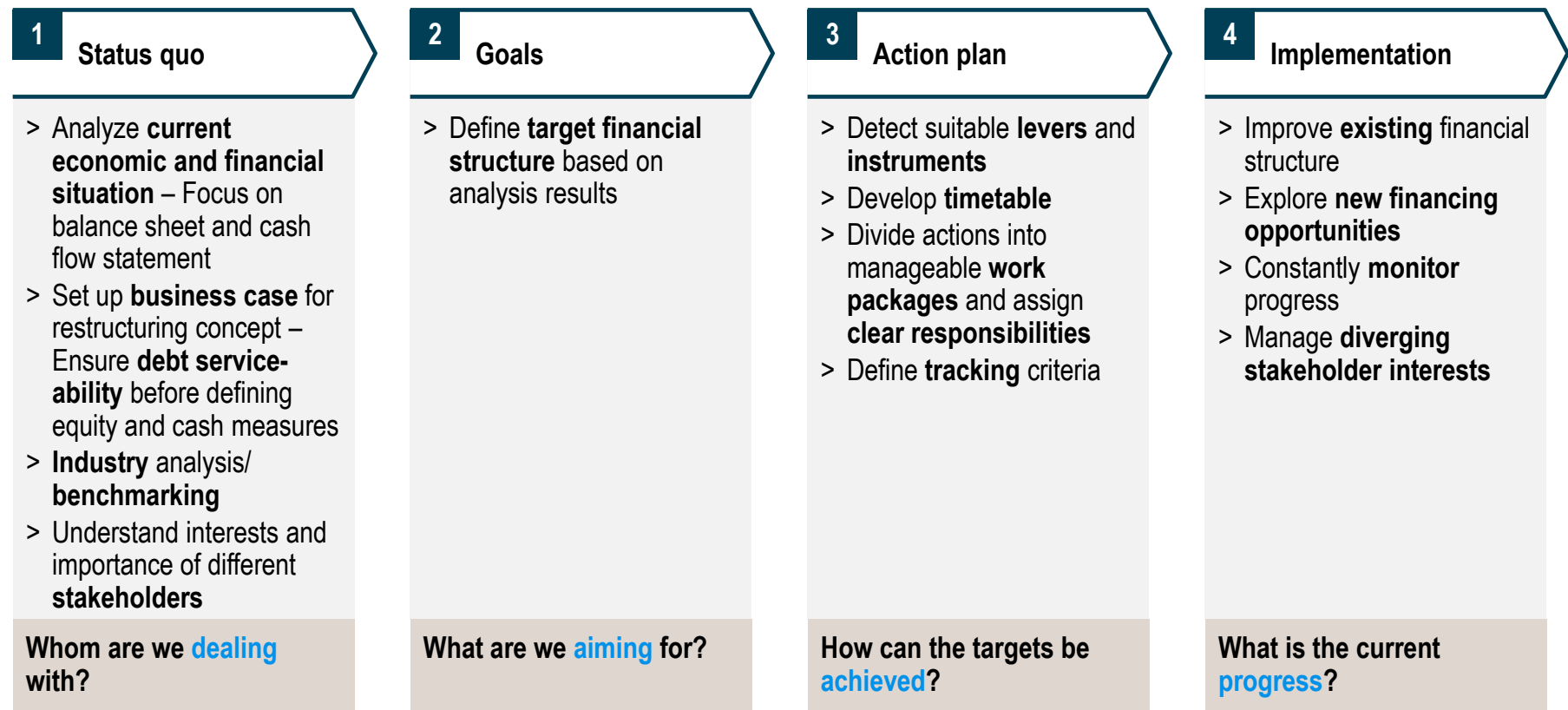
Successful financial restructuring transactions require balanced stakeholder management to achieve optimal burden sharing

Direct stakeholders in financial restructuring situations and their corresponding interests



Successful financial restructuring requires a thorough understanding of the situation, clear goals and a dedication to implementation

Detailed approach to financial restructuring



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

Objectives of the quantitative analysis

- > Examine the **frequency** of financial restructuring instruments in **distress situations**
- > Identify **application patterns** among financial restructuring instruments
- > Analyze the impact of financial restructuring instruments on the **success** of a turnaround

Steps of quantitative analysis

I Identification of distress cases

- > Data consist of a financial data set of
 - Over **9,000 companies** in Germany with
 - **Revenues** in excess of **EUR 100 m**
 - For the last **9 years**
- > A set of **distress cases** is identified by applying three distress criteria
- > A case is defined as **successful turnaround** if insolvency was avoided and two out of three distress criteria are no longer applicable within a timeframe of **three years**

II Use of financial restructuring instruments

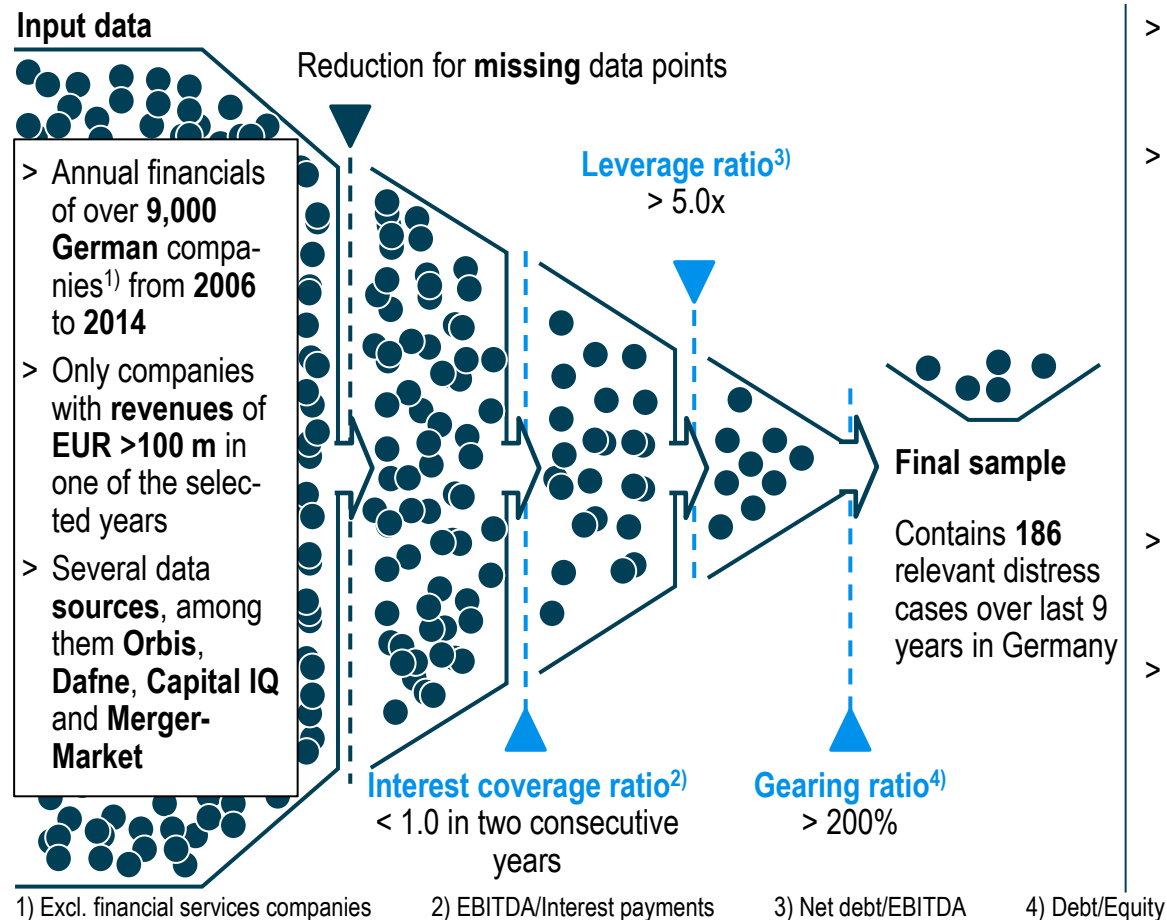
- > Instruments are **operationalized** using approximations (**proxies**) derived from financial data
- > **Observable use** of the financial restructuring instruments in the sample is **examined**
- > **Interdependence** of instruments in the restructuring context is analyzed

III Instruments and success

- > For a more detailed analysis of the respective impacts of the instruments, a **regression analysis** is conducted
- > Relevant **control variables** are identified and operationalized
- > Impact of instruments is estimated using a **generalized linear model (GLM)**

Relevant distress cases are deduced from the data set by applying distress-relevant KPIs as selection criteria

Data sampling

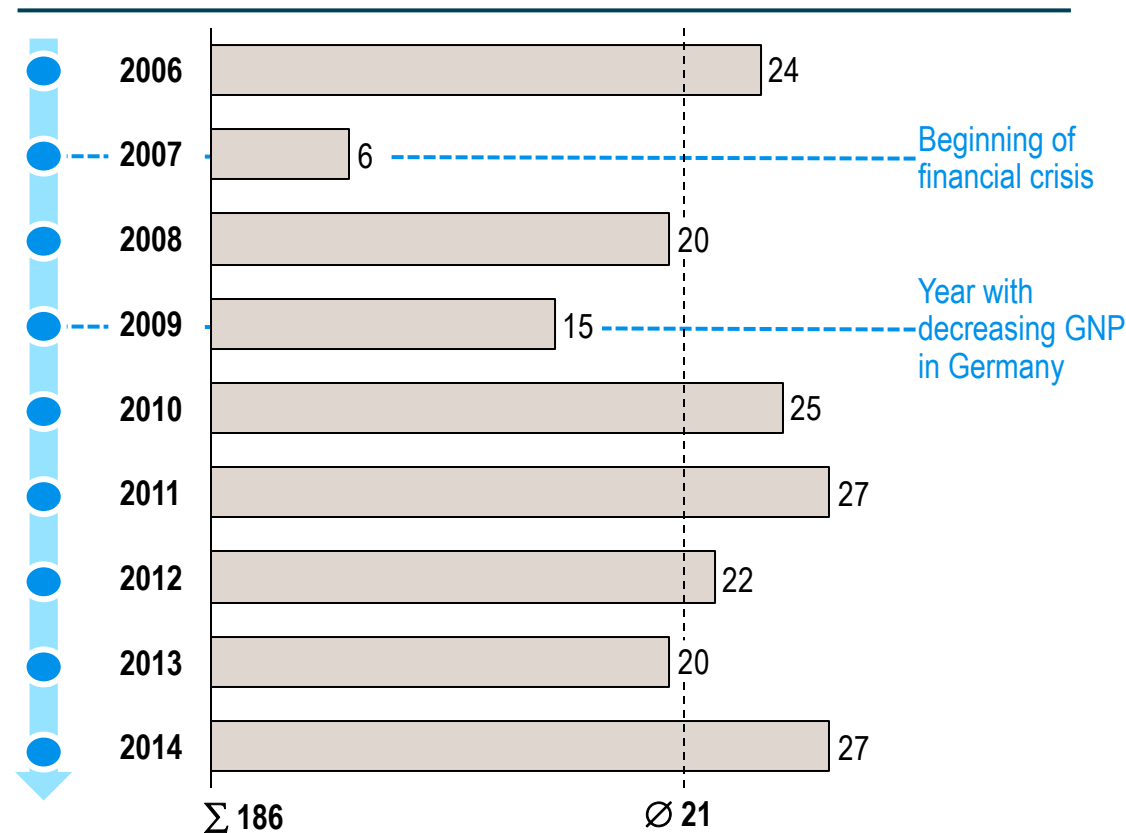


- > To identify distressed companies the existing data are first **cleared** from companies for which data is **insufficient**
- > In a second step, a set of **distress-relevant KPIs** is applied to the data – To be classified as a distress case, a company has to be in the **distress zone** for each 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**

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

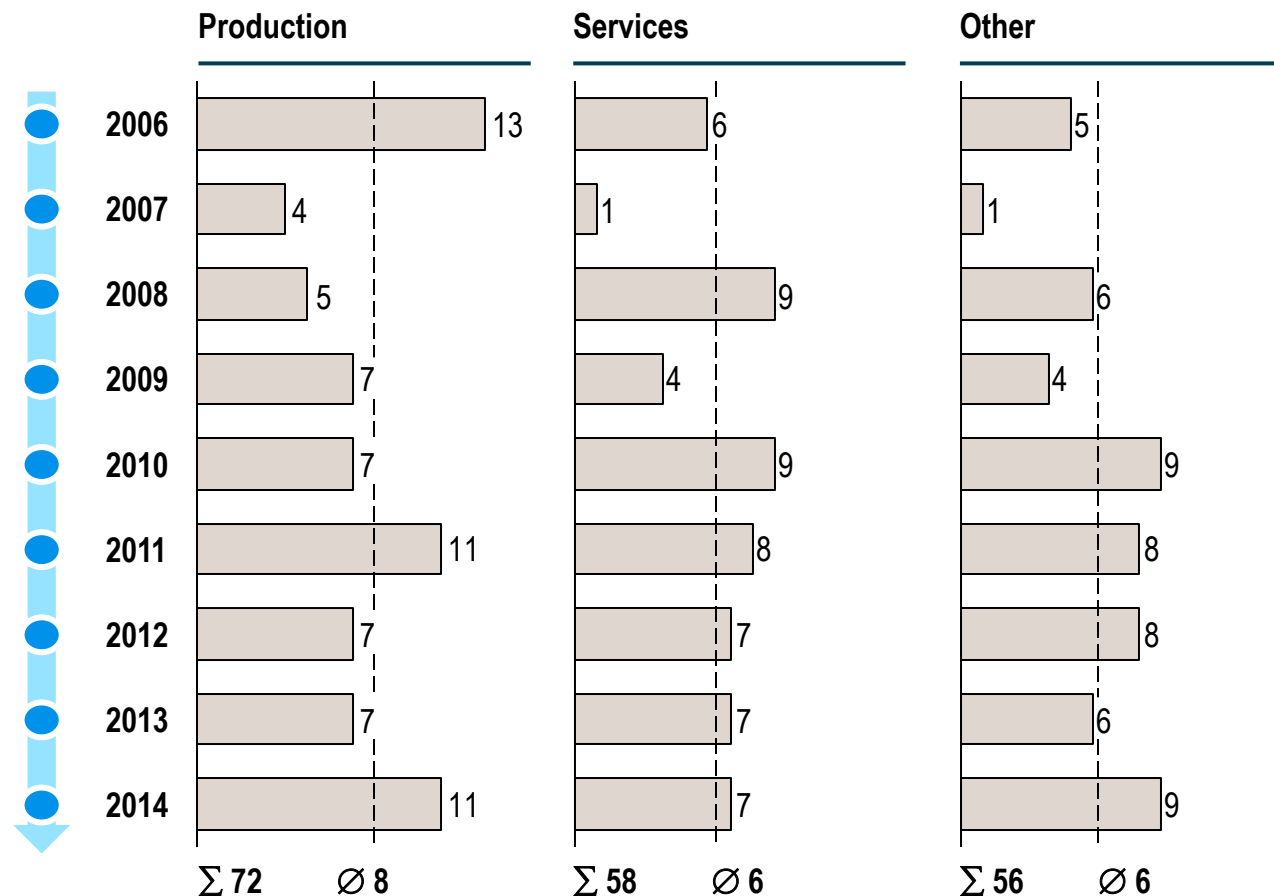
Identified distress cases per year [#]



- > 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

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 [#]

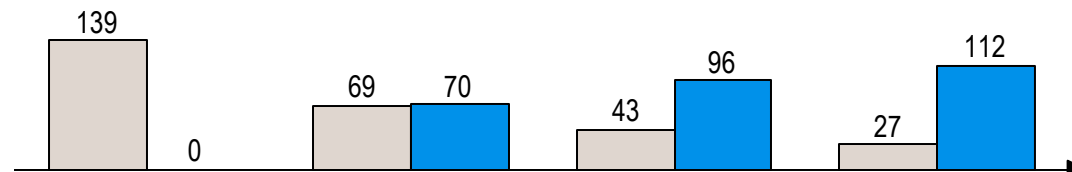


- > With a total of 72 cases, most distress cases occur in the **production sector**
- > Only in 2008 and 2010 were there more distress cases in the **service sector – Financial crisis** had an immediate impact on service companies such as banks and insurance companies
- > Many distress cases in the 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%)

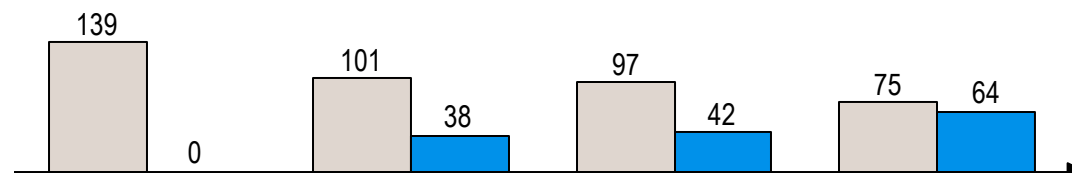
In the years after the beginning of distress, balance sheet-related KPIs require more time for recovery than profitability-focused KPIs

Development of KPIs after initial distress for cases until 2012¹⁾ [#]

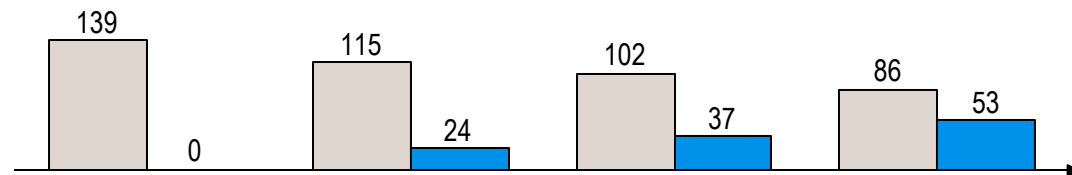
Interest coverage ratio



Leverage ratio



Gearing ratio



Year of distress 1st year after distress 2nd year after distress 3rd year after distress

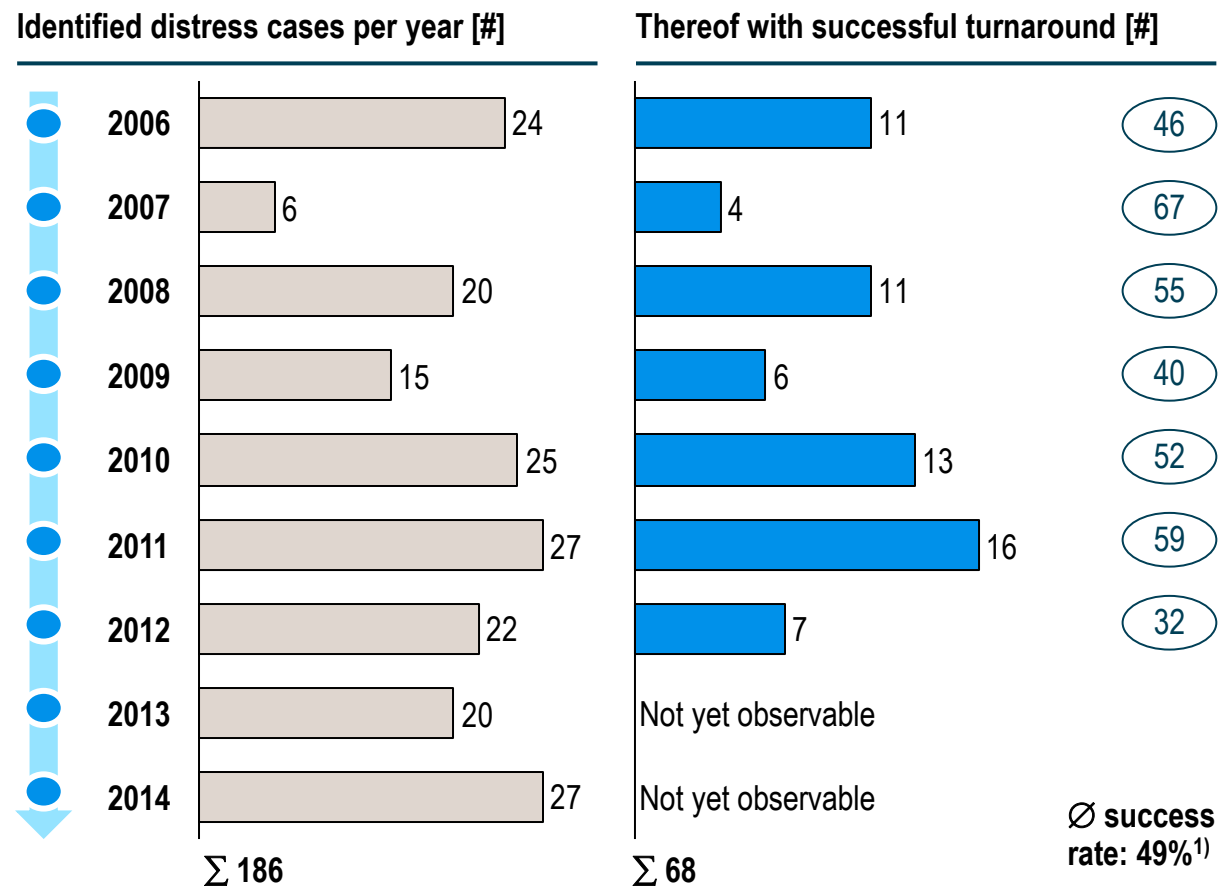
■ KPIs in distress zone ■ KPI in non-distress zone

1) For cases after 2012 information on the development of the KPIs is not yet available

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

About half of the identified distress cases have experienced a successful turnaround

Distress cases and successful turnarounds

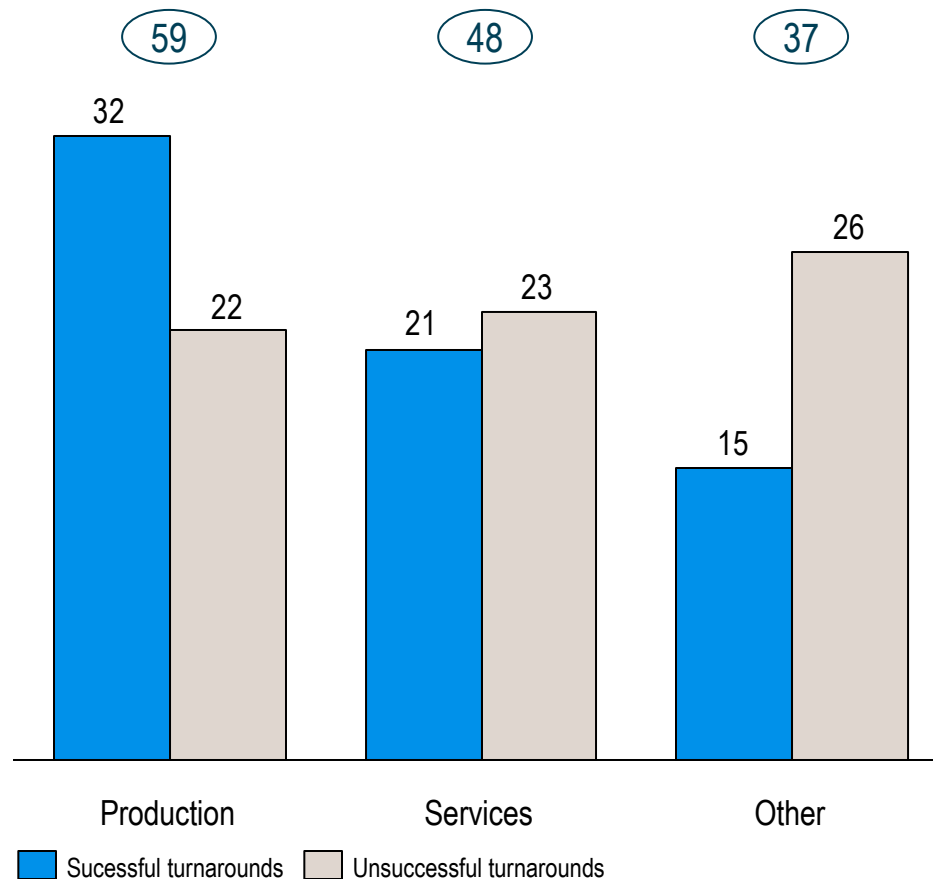


- > In a successful turnaround at least **two out of the three distress KPIs are no longer in the distress zone** – Allows for one KPI to be on a low level for structural rather than distress-related reasons
- > As selected KPIs cover **profitability** and **financing issues**, a successful turnaround 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

XX Share of successful turnaround cases [%] 1) Calculation basis 139 cases until 2012

Companies in the production sector show a significantly higher turnaround success rate

Successful turnaround by sector [#]



XX Share of successful turnaround cases [%]

- > 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**)

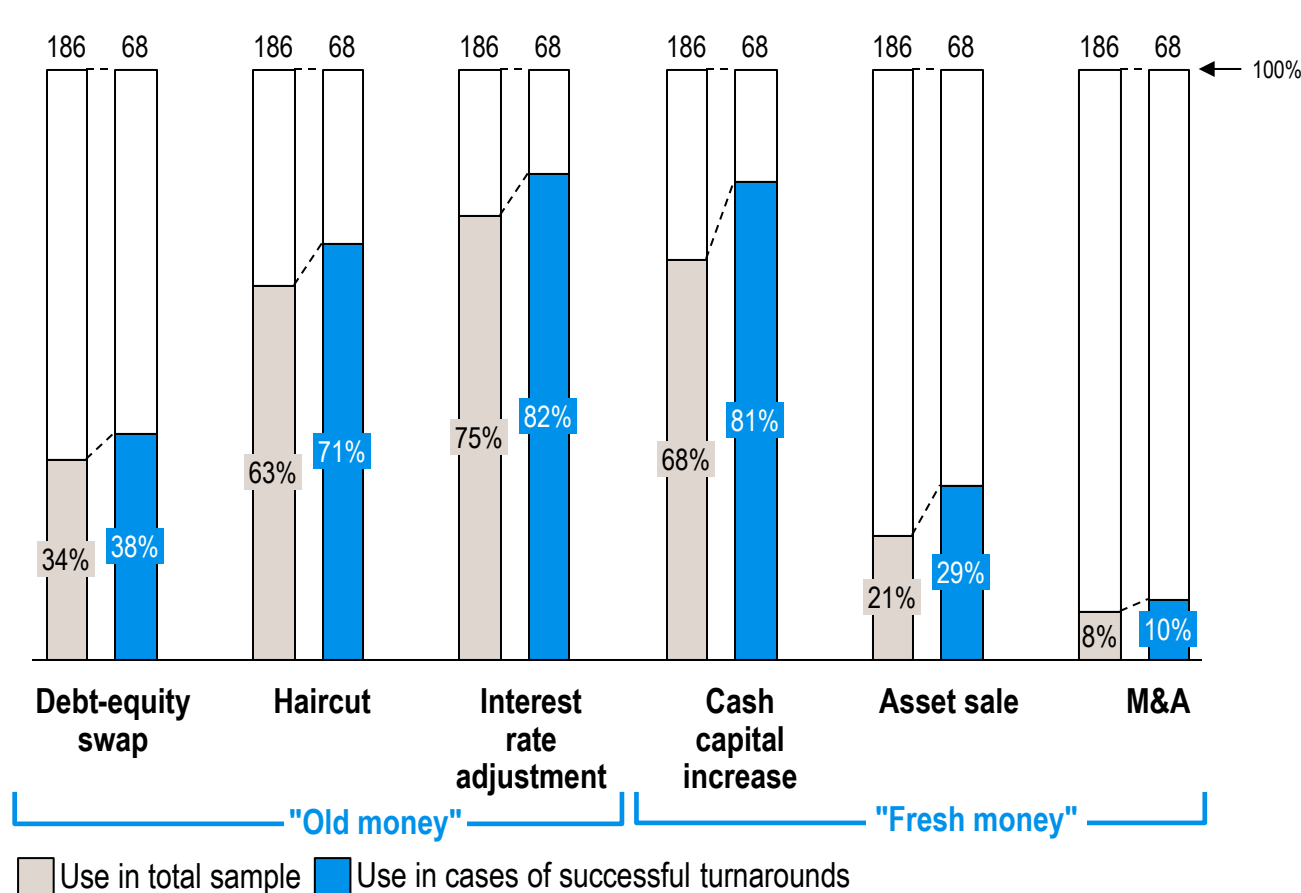
For further analysis the relevant instruments are operationalized by applying proxies based on the financials

Operationalization of financial restructuring instruments

	Instrument in empirical test	Operationalization of instrument (proxy) based on financial data
"Old money"	Debt-equity swap	Increase of equity (corrected for earnings) and decrease of corresponding magnitude of long-term liabilities
	Haircut	Material reduction of long-term debt
	Interest rate adjustment	Material decrease of interest rate
"Fresh money"	Cash capital increase	Increase of equity (corrected for earnings) without a corresponding decrease of long-term liabilities
	Asset sale	Material reduction of fixed assets (corrected for depreciation)
	M&A	Company was target of a transaction

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

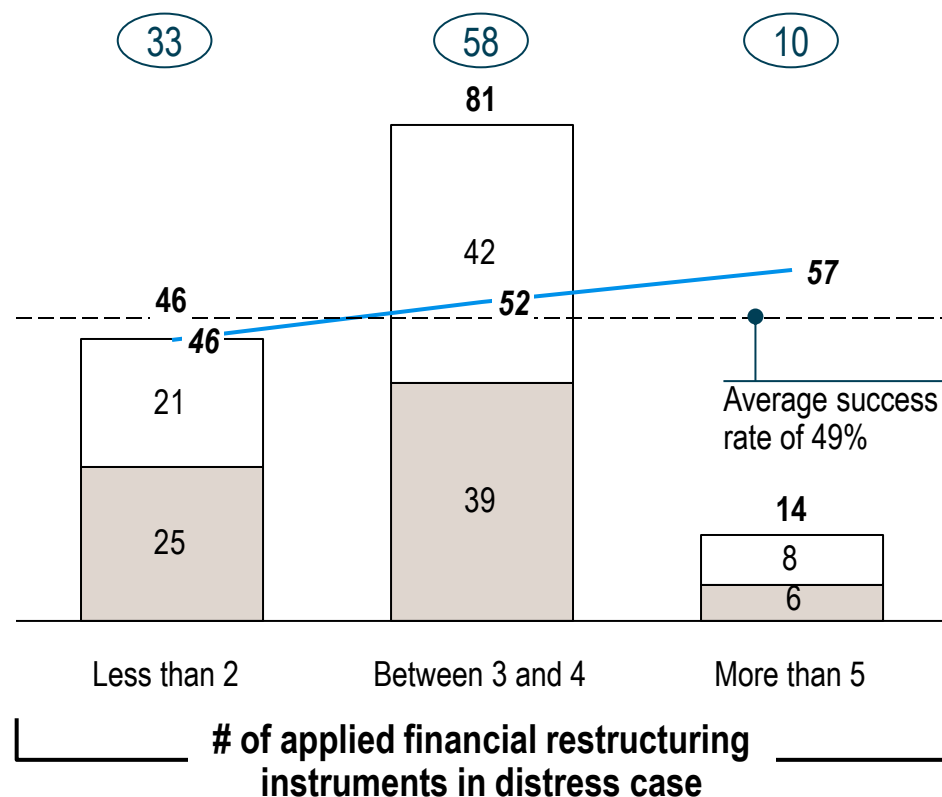
Relative use of instrument in total sample and for successful cases



- > **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**

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

— Success rate □ Successful turnarounds ■ Unsuccessful turnarounds

(XX) Share of overall cases until 2012

Application of financial restructuring instruments does not follow a specific pattern

Correlation of financial instruments in sample until 2012

	"Old money"			"Fresh money"		
	Debt-equity swap	Haircut	Interest rate adjustment	Cash capital increase	Asset sale	M&A
Debt-equity swap	1.00					
Haircut	0.22	1.00				
Interest rate adjustment	- 0.21	- 0.01	1.00			
Cash capital increase	0.12	- 0.06	0.18	1.00		
Asset sale	0.13	0.16	- 0.10	- 0.02	1.00	
M&A	0.09	-0.01	- 0.13	- 0.03	0.09	1.00

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**

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 change¹⁾ 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

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

	Statistical significance	Impact
Single instruments		
✓ Cash capital increase	●	●
✓ Debt-equity swap	●	●
Haircut	●	●
Interest rate adjustment	●	●
Asset sale	●	●
M&A	●	●
Interaction terms		
✓ Debt-equity swap & haircut	●	●
Debt-equity swap & asset sale	●	●
Control variables		
✓ Operational turnaround	●	●
✓ Company's sector	●	●
Size of company	●	●
Financing environment	●	●

Stat. significance: ● 95% significance level ● 90% significance level ● Significance < 90%
Impact: ● > 50% ● 20%-50% ● <20%

- 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
- 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
- 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

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

Characteristics of empirical study

- > Even though the **explanatory power** of the regression analysis is relatively high, a wide range of **other factors** influence the success of a turnaround, which can only be partially measured, e.g.:
 - Overall analysis of financial data on distress cases does not involve a detailed analysis on an **individual case** level
 - Purely quantitative approach does not consider **qualitative factors** and explanations of results, which are of relevance in practice

Interpretation

- > If regression analysis does not find a significant effect for a specific instrument, the instrument can still make a **valuable contribution** to successful turnarounds
- > If the empirical effects of the respective instruments are not significant **over the course of the sample**, they are potentially quite helpful in **individual situations**
- > Still, the study shows that not every financial restructuring instrument supports the turnaround in any situation – A professional and **tailored use of instruments** is required



E. Outlook

Professional, integrated and customized approach is key to success in financial restructurings – Initial hypotheses confirmed

Conclusion

	B Current market development	C Instruments and approach	D Empirical analysis
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
Findings	<ul style="list-style-type: none"> > Financial restructuring measures have been essential for successful turnarounds in recent distress cases in the German-speaking region > Alternative financing instruments such as private equity or corporate bonds have become more important for corporate financing in Germany 	<ul style="list-style-type: none"> > There is a large set of financial restructuring instruments available to improve the financing situation of companies > Appropriate application depends on the individual situation 	<ul style="list-style-type: none"> > Success rate of financial restructuring increases with the number of applied instruments > Cash capital increase as well as combination of debt-equity swap and haircut have a significant impact on restructuring success > Operational turnaround and external setting are also relevant to success
<p>A professional, integrated and customized approach is the key to success in financial restructurings</p>			

Let's think:
act!

