



The financial aspects of corporate growth

A market-oriented approach for analyzing some critical financial aspects of corporate growth in developed countries

1 Introduction

*The strongest principle of
growth lies in human choice*
George Eliot
(1819-1880)

Financial success of a company is extensively determined by a wide range of partakers whose interest are interrelated and choices they make. The majority of rational decisions is based on past, current and expected future extrinsic values of certain economic category. The value of a company is also a result of decisions, and some of them are made on daily basis. For that reason, it is important to understand what are the most important markets, who are their participants, what are their preferences, and how do they make their decisions regarding company.

1.1 Which are the typical relevant markets in this process and what are preferences of their participants?

Financial markets, labor market and certain markets of goods and services stand for most essential markets for majority of companies.

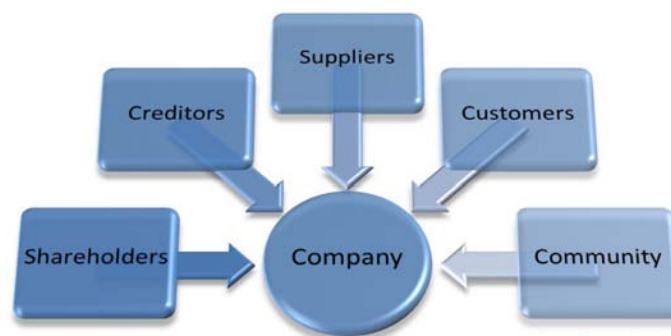


Figure 1 – Major interest groups

1.1.1 Financial markets

1.1.1.1 Capital market and money market

Since initiators and founders of every company come from the group of shareholders, the initial market which every legal entity face is financial market, more precisely - capital market. The nature of their arrangement is risk- taking, and responsibility is limited to the value of contributed and retained capital. Gains are expected from increase in their market price or distribution of assets in the form of dividends, so they are directly and dynamically linked to financial results. This form of financing is considered as most vital, but in the same time most expensive one. The cost of capital is relatively high because of the residual claimer role of the owners in a company.

In terms of this work paper creditors are institutional or private investors involved in some kind of fixed interest- bearing agreements with companies such as bond holders and banks with in advance determined payments dynamic. These sources are used depending on their maturity periods for financing both investing and current operations. Main benefits creditors expect of a company are regular payments of interest, the rate of which is closely linked to perception of investment riskiness.

When there is some excess of liquid assets, in order to improve its profitability companies usually decide to take an opposite – investing role on money and capital markets. Further on, in order to make diversification of its risk or strengthen relations with suppliers, companies can decide to buy larger quantity of shares in another company.

Usually companies open both debtor and creditor arrangements on capital and money market in the same time. Volumes of transactions which are experiencing these markets make them very important, and relations and position of a certain company on these markets may be critical for its financial success.

1.1.1.2 Foreign exchange market

When currency exchange rate fluctuations are significant, holding large amounts of assets invested in monetary assets can contribute to overall business risk. Companies that have not speculative aspirations on foreign exchange market are primarily oriented on risk avoiding policy. Fixed rate arrangements can be used for hedging, but this is usually costly practice. The ultimate solution would be reducing exposure by minimizing volume of monetary assets and liabilities through strategic financial management and developing superior relations on other relevant markets.

1.1.2 Labor market

Labor costs have typically significant proportion in overall expenditures so cost – reducing may seem to be a proper strategy, but this is delicate issue where great improvements were made in recent decades. The awareness of human resource function is rising and successful companies now understand modern concepts and practices of organizational learning, knowledge management, team building, and motivation and selection systems. Salaries are not the only compensation that employees can get from company; there is lot of different explanations about which factors influence job satisfaction. Among the rest, social safety and opportunities for learning and progress are characteristics of successful organizations that make them more favorable than other.

There are some excellent examples from the past of how important teamwork is, and how even a single leader can be influential on corporate development. These examples reveal that relation between company and their employees definitely do determine potential achievements.

1.1.3 Markets of goods and services

While advances in internal processes are mainly driven by iterative improvements in organizational, technological and informational aspects within company, results of these activities are traceable on its ultimate outcome which is final product or service. All these activities are affecting company's expenditures, but at the same time they influence customers' perception of the service. This is the point where company is exposed to their target market decisions.

From company's perspective, most relevant participants on markets of goods and services are final consumers. Frequently, there is a need for some kind of intermediation when wholesalers, brokers and dealers carry out some part of marketing function. At the same time companies are dynamically purchasing producing factors on the same kind of market. The main inherent challenges that need to be managed in order to be attractive on this market are quality, price acceptability and delivery. Companies' relations with both customers and suppliers are the most critical factor of overall success. *All other markets seem to be unlocked when potential or established relations on this market are acceptable and sustainable.*

1.2 Statement of the Problem

In order to explore interrelation between corporate growth and its positioning on the relevant markets, this research should answer following questions:

- **How do typical relevant markets influence corporate growth?**
- **Are relations established on these markets functions of corporate growth stage?**
- **Is there any pattern of developing these relations in specific industries?**

1.3 Purpose of the Study

Process of corporate growth is a fascinating phenomenon positioned in the area overlapped by major business subjects, and its effects and consequences are regularly partly covered with few significant but unidisciplinary approaches.

Because of noticed lack of comprehensive and multidisciplinary approach for this important matter, the purpose of this research is to **quantify and analyze several most important aspects of corporate growth process by using already recognized economics, financial and accounting conceptions and terminology.**

1.4 Delimitations

This research will be focused on drawing some general conclusions about **few most important financial aspects of corporate growth on developed financial markets**, with no aspirations to examine all possible situations and financing models.

It will mostly elaborate commercial, financial, risk bearing and some technical aspects of economies of scale, which are additionally explained in review of literature section.

Subject of the research will be mainly actively involved in modern and in terms of data available stock exchange market in United States in the year 2007.

Some research findings may not be applicable in developing economies, and in countries where financial markets and instruments are not established or secure enough.

1.5 Definitions of Terms

For the purpose of this research, **corporate growth** will be defined as systematic increase in value of assets of a legal entity through both managed advances in internal processes and development of superior relations with parties concerned in relevant markets.

The outcomes of these two activities are directly correlated in the long run and request from management high level of wide-ranging skills and knowledge to harmonize them.

2 Review of the Literature

Numerous microeconomic models are enlightening nature of costs dynamics concerning changes in output volume; financial management is mainly occupied with financing sources and investment decisions, and sustainable corporate growth topic is mainly discussed in literature related to strategic management issues.

The most eminent concept in economic theory related to growth and increase in activity of business entity is **economy of scale**.

Economies of scale are features of a firm's technology that lead to falling long-run average cost as output increases. With given input prices, economies of scale occur when the percentage increase in output exceeds the percentage increase in inputs. The main source of economies of scale is the specialization of labor and capital. Diseconomies of scale are features of a firm's technology that lead to rising long-run average costs as output increases. The most common source of decreasing returns to scale is the increasingly complex management and organizational structure required to control a large international company.¹ It is also referred to as coordination problem.

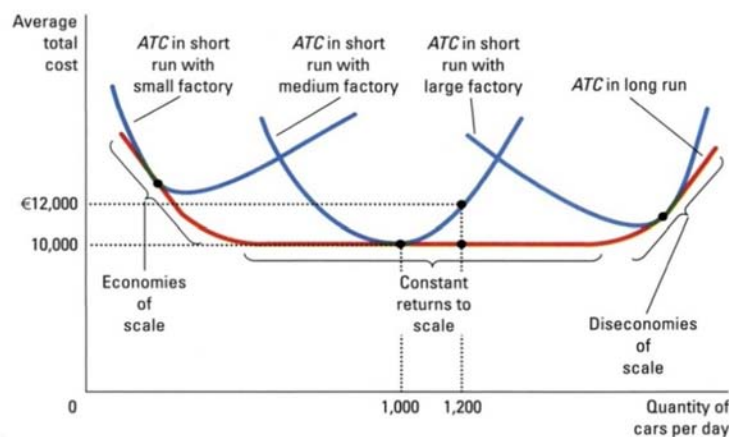


Figure 2- ATC and output curve²

¹ Parkin, M., Powell, M., and Matthews, K., (2005), Economics, 6th Edition, Pearson Education, Addison Wesley Longman, Harlow

² Mankiw, G., and Taylor, M., (2006), Microeconomics, Thomson Learning

This analysis shows why long- run average total cost curves are often **U-shaped**. At low levels of production, the firm benefits from increased size because it can take advantage of greater specialization.

By contrast, at high levels of production, the benefits of specialization have already been realized, and coordination problems become more severe as the firm grows larger.³

Economies of scale can be further divided in several elements based on different criteria.⁴

One of possible criteria is functional:

➤ **Technical**

- o Spreading fixed cost over a large production volume
- o Economy of scope
- o Specialization – large organizations can employ specialized labor
- o Principle of multiples – firms using more than one machine of different capacities
- o Advanced information systems and databases
- o Research & Development

➤ **Commercial**

- o Large firms can negotiate favorable prices and other conditions (JIT inventories; Extended payment period) as a result of buying in bulk
- o Large firms may have advantages in keeping prices higher because of their market power

➤ **Financial**

- o Large firms are able to negotiate cheaper finance deals
- o Large firms are able to be more flexible about finance- share options, rights issue, etc

➤ **Managerial**

- o Use of specialists in accounting, marketing, lawyers, production, etc

➤ **Risk Bearing**

- o Diversification of risk through financial investments
- o Diversification of risk through product proliferation
- o Diversification of risk through accessing different markets

³ Mankiw, G., and Taylor, M., (2006), *Microeconomics*, Thomson Learning

Another significant contribution was made by management author Larry Greiner in 1972. His **growth phases model** suggests that organizations go through 5 stages of growth, and need appropriate strategies and structures to cope.⁵

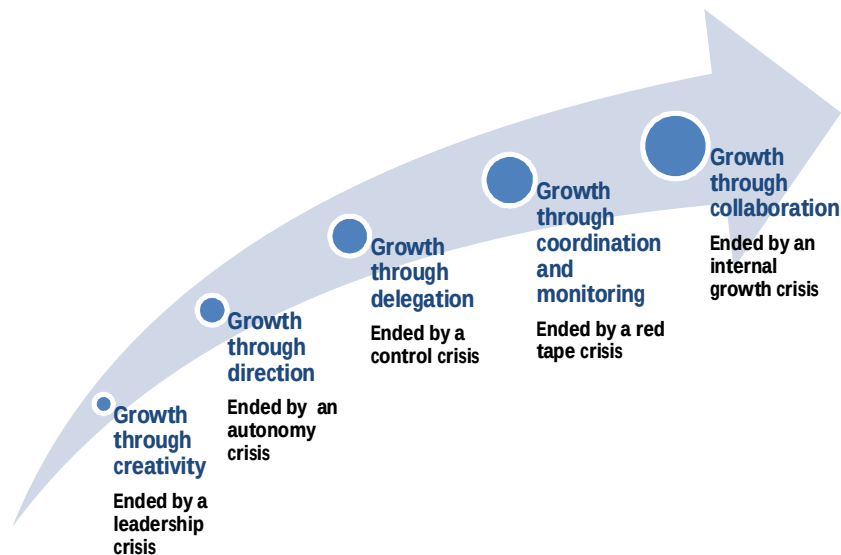


Figure 3- Greiner growth phases model organization framework

Soon after, Greiner added 6th phase called extra- organizational solutions which include mergers, holdings and networks of organizations. This model is mainly focused on organizational aspects of corporate growth, revealing its iterative nature.

Also, there are two basic methods of corporate growth pointed out in literature:

- **organic** – when a company increases its value through retention of its generated profits; and
- **inorganic** - when it grows through acquisitions and merger strategy

Both of them are equally established and recognized on the contemporary economies.

⁵ http://www.valuebasedmanagement.net/methods_greiner.html – An online management articles database

3 Research Design

3.1 How can growth be quantified?

Quantification of corporate growth phenomenon is fragile issue, while there is no generally applicable definition available.

When observing financial reports of a company, the solely fact that they are product of accounting system in which all items are mutually dependent and correlated can make decision of which figure to look at when assessing companies growth very difficult. All of the items are linked to some kind of company's activity or legal condition and expressed in monetary units. Selecting just some of them is always trade- off between benefits of accuracy and relevance.

Two most commonly used quantifiers of size of a company are its sales and total assets.

These are some key reasons that make choosing total assets more reasonable:

- Each company is started and registered as a legal entity with certain amount of starting capital invested, so assets are the starting point, and sales are just a result of a vital (selling) activity with purpose to increase its value. The values that revenues and expenses create are materialized in assets and liabilities.
- Assets are much better measure of company's capacities in contrast to sales which are more market recognized values
- Changes in assets can often reveal more about company's profitability and investment or disinvesting activities of major fund suppliers

Main shortcomings of choosing assets in comparison to revenues:

- Although significant efforts have recently been made in order to improve accounting and audit practice, book value of assets is still more responsive to accounting methodology and policy than revenues which are mainly based on external documentation. This problem of reliability can be reduced by using as big as possible sample of independently audited financial reports
- Revenues are better measure of growth for companies that are not capital intensive, such as some types of services. Some segmentation based on industry is necessary to overcome this problem, so data compared within the same industry can become relevant again
- Amount of revenues imply potential amount of earnings in the case when operating margin can be widened. Although this is true, using a large sample would also reveal what happens if this potential is realized at some stage

3.2 Methodology considerations

Methodology applied will be presented on an example with screenshots to illustrate iterations.

The example utilized data from financial statements, and looked at the relationship between assets and assets turnover ratio. The required data were imported in an Excel spreadsheet, and assets turnover ratio is calculated as follows:

$$\text{Assets turnover}_{2006} = \frac{\text{Total sales}_{2006}}{\text{Total assets}_{2005}}$$

Ticker symbol	Sector	Total Assets 2005	Total Revenue 2006	Total assets turnover ratio in 2006
SPT	BM	11,094.00	184,939.00	16.73
NEG.OB	BM	135,727.00	176,760.00	1.30
TENG.OB	BM	1,538.00	149.00	0.10
ARP	BM	121,886.00	51,723.00	0.42
EERG.OB	BM	951.00	-	0.00
ETE	BM	4,917,120.00	7,859,100.00	1.60
HPC	BM	2,568,800.00	2,035,300.00	0.79
EPM	BM	9,465.00	2,861.00	0.30
USEG	BM	38,107.00	813.00	0.02
GNI	BM	19,456.00	17,555.00	0.90
FDG	BM	1,062,460.00	1,583,450.00	1.49
HEP	BM	254,775.00	89,194.00	0.35
CHNR	BM	4,054.00	18,639.00	4.60
PETD	BM	449,085.00	286,503.00	0.64
CLB	BM	394,605.00	575,689.00	1.46
TMH	BM	191,292.00	425,097.00	2.22
PKP	BM	2,743,940.00	1,018,500.00	0.37

Figure 4 - First step: Import data

Data were sorted in ascendant order on the criterion of total assets value for the purpose of easier visual inspection of scatter plot line and further manipulation.

Ticker symbol	Sector	Total Assets 2005	Total Revenue 2006	Total assets turnover ratio in 2006
BRL	BM	-	29,587,000.00	NDIV/OI
AHCP	BM	-	987,242.00	NDIV/OI
CHAP	BM	-	-	NDIV/OI
POWR	BM	-	-	NDIV/OI
RDS-B	BM	-	-	NDIV/OI
CHGY.OB	BM	-	-	NDIV/OI
LMAC	BM	-	539,729.00	NDIV/OI
DEEP	BM	-	-	NDIV/OI
BF	BM	-	-	NDIV/OI
BGH	BM	-	461,760.00	NDIV/OI
EXH	BM	-	-	NDIV/OI
CEP	BM	-	-	NDIV/OI
ROY	BM	-	20,346.00	NDIV/OI
GPR	BM	-	6,716.00	NDIV/OI
LHRP.PK	BM	-	-	NDIV/OI
NQA	BM	-	544,786.00	NDIV/OI
ETQ	BM	-	-	NDIV/OI

Figure 5 - Second step: Sort data

Companies with total assets value above \$100,000 are considered as start-ups, and are excluded from analysis. Because of their small value of assets and relatively large revenues, they are able to achieve extremely high assets turnover ratio values that can mislead observation. This group was not numerous (521 out of 6382 or 8.16%), so their exclusion did not significantly harm representativeness of data.

Ticker symbol	Sector	Total Assets 2005	Total Revenue 2006	Total assets turnover ratio in 2006
PDEP.OB	TC	108.00	269.00	2.49
JGAC.OB	FN	111.00	892.00	8.04
UPSN.OB	TC	120.00	743.00	6.19
NIMU.OB	HC	133.00	341.00	2.56
AMMS.OB	SR	145.00	25.00	0.17
FKLT.OB	TC	154.00	1,003.00	6.51
SGNC.OB	HC	161.00	6.00	0.04
TES	TC	174.00	3,100.00	17.82
TRUC.OB	BM	175.00	6,470.00	36.97
TRBY.OB	TC	187.00	364.00	1.95
BMKI	CN	188.00	50.00	0.27
URDE.OB	SR	208.00	450.00	2.16
STLS.OB	FN	213.00	6.00	0.03
ASDI.OB	TC	217.00	79.00	0.36
ECDE.OB	BM	219.00	486.00	2.22
RONE.OB	FN	219.00	2,479.00	10.37
NMPT.OB	CG	262.00	50.00	0.19

Figure 6 - Third step: Selective exclusion

A scatter was assembled with assets values on x axis, and assets turnover ratio value on y axis. This position implicates that companies assets turnover ratio should depend on the value of its total assets. This scatter shows that data need additional tuning in order to became useful for interpretation.

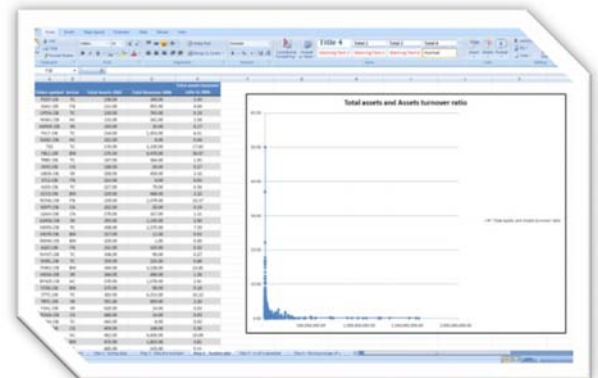


Figure 7 - Fourth step: Scatter plot

Since there are huge differences in values of total assets among companies, a natural logarithm of total assets value is calculated for each company. It is obvious that small companies have superior ratio figures, but also greater variability. Regression would reveal no statistically significant relationship for these two groups of items.

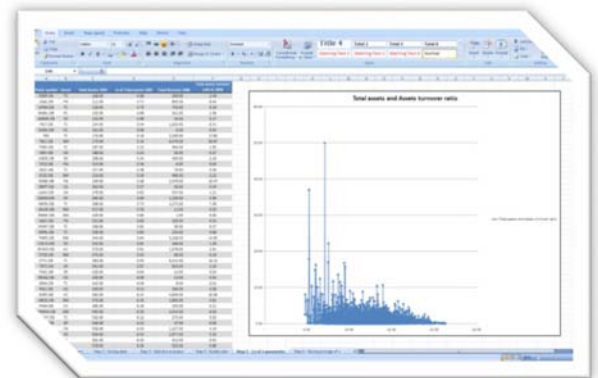


Figure 8 - Fifth step: In of x parameter

In order to draw some general conclusion about this relation and gain predictability, this variability has to be stabilized. This was performed by calculation of simple central moving averages with period of 101 consecutive items. It means that new figures correspond to average values of ratios of companies positioned fifty places below and above of observed item based on assets value criterion, including also figure of that particular company.

This step practically illustrates the trade-off between assessment of variability and assessment of general tendencies.

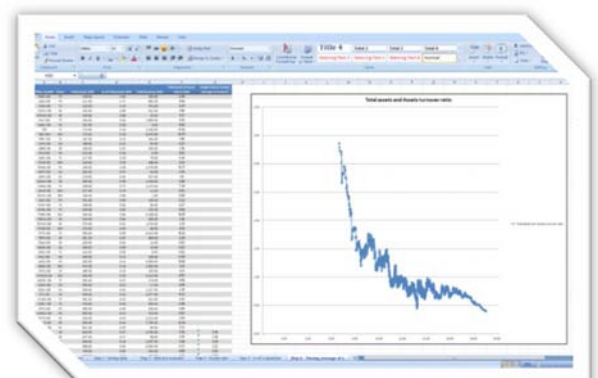
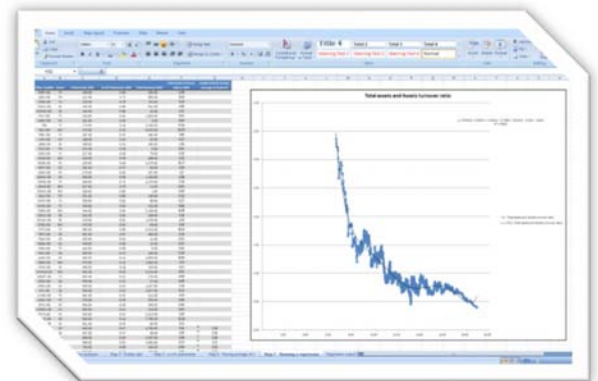


Figure 9 - Sixth step: Moving average of y parameter

After these adjustments, it is possible to run a regression with high expected R square value. These two values are negatively correlated, because x variable is presented as denominator of variable y. But, a general conclusion can be drawn: ratio value is decreasing more rapidly in early stage of companies' development than after that. Despite the variability mentioned, this means that investors can expect much higher assets turnover when investing in group of start-ups than in a group of established companies with valuable assets. There is also a tendency of rapid decrease of ratio value among companies with biggest values of assets.



The results of regression are following:

$$y = 7E - 05x^6 - 0.005x^5 + 0.163x^4 - 2.738x^3 + 25.29x^2 - 122.6x + 246.0$$

$$R^2 = 0.893$$

The interpretation is:

If investment is made in a pool of 101 consequential companies regarding value of their total assets, ratio value is obtainable with sound rate of accuracy.

Also, there is a base for realizing the nature of relationship between these two values.

When there is analytical data available for specific industries, this process can be completed more accurately and conclusions can be made about their characteristics.

4 Collection and classification of the Data

In this research, data from SEC filings of publicly listed companies provided by Yahoo! Finance in cooperation with Edgar Online will be used. All available financial data posted by mentioned source on date September 19, 2007 will be analyzed which makes a sample of 6382 companies.

The reasons for choosing this source as appropriate database for research were:

- large amount of data is available in electronic form
- all financial data are originally provided by SEC and taken as reliable
- all companies are publicly listed on stock exchange with lot of stakeholders interested in financial reporting transparency
- financial reports are audited by specialized and independent company

These companies are sorted by criterion of their main business characteristics in nine sectors which are following:

1. Basic Materials
2. Conglomerates
3. Consumer Goods
4. Financial
5. Healthcare
6. Industrial goods
7. Services
8. Technology
9. Utilities

The sectors are further divided in particular industries.

Detailed list of sectors and industries is provided in Appendix section.

The data will be analyzed on aggregate level of sectors in order to ensure sufficient data homogeneity, and at the same time to ensure acceptable representativeness of sample groups. Following four sectors will be particularly observed: Basic Materials, Finance, Services and Technology. Running separate analysis of these four sectors is mainly result of their different characteristics regarding operations, financial reporting and their primary market development stage.

At the same time analysis of the entire group of nine sectors will be prepared in order to draw some general conclusion about certain phenomena.

5 Report of Findings

In this section, research findings will be presented briefly in a systematical way, with the main goal to clearly answer the questions stated prior.

- ✓ Analysis revealed that financial success of **each company is strongly dependent on both internal and external conditions**, especially on most relevant markets that are already mentioned. Changing of some of these conditions can either positively or negatively impact corporate development and growth.
- ✓ After adequate transformation of raw data from financial reports a strong evidence of **functional relationship between corporate growth and relations established on most relevant market** is detected.
- ✓ Depending on particular sector, **it is possible to notice and track a common pattern of developing these relations**, and recognize their influence on growth and prosperity of a company.

All three statements are supported with graphs and explained in more details in analysis of findings section.

6 Analysis of Findings

6.1 Total assets and Capital surplus

Data from financial reports:

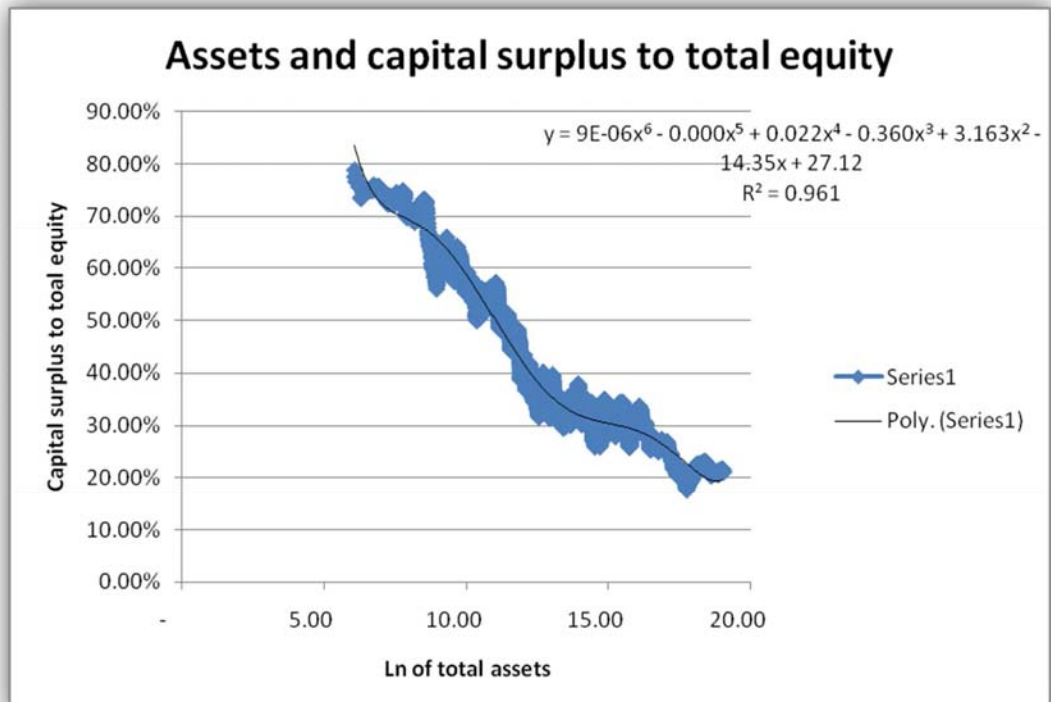
- ✓ Total assets 2006
- ✓ Total stockholder equity 2006
- ✓ Capital surplus 2006

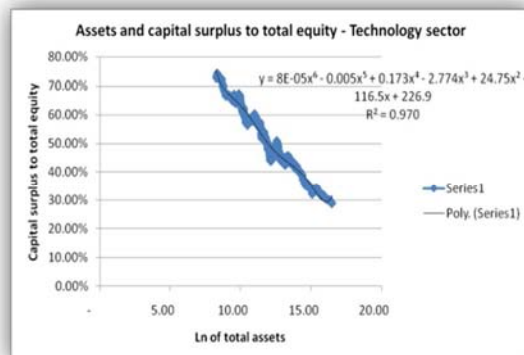
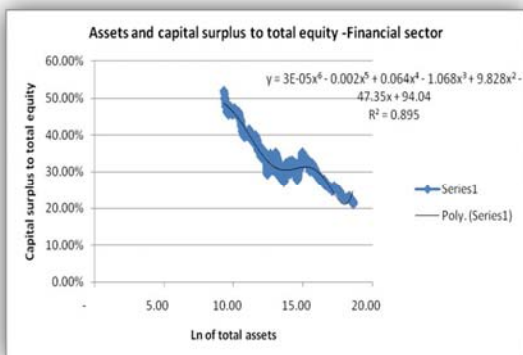
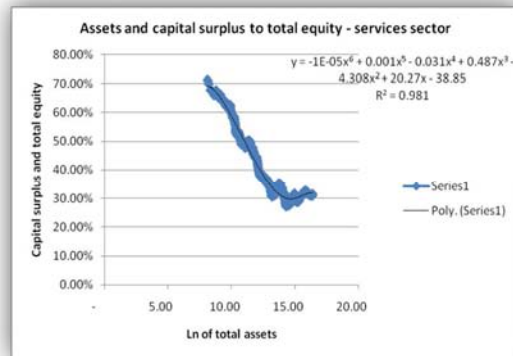
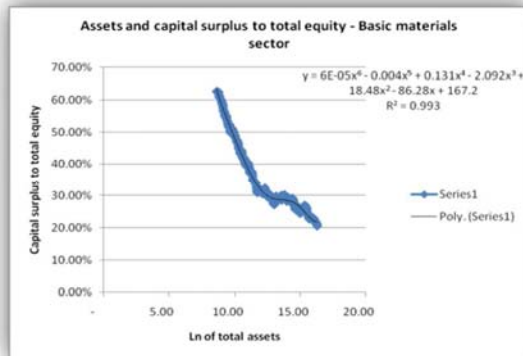
➤ Total equity = Capital surplus + Total stockholder equity

$$\text{Capital surplus to total equity} = \frac{\text{Capital surplus}}{\text{Total equity}}$$

Excluded items :

- With negative stockholder equity





Significance of parameter: Ability to raise additional funds of capital with premium paid is important financial advantage.

General rule: There is an obvious declining trend as companies grow.

Sector specifics: There is a second wave of capital inflow noticeable as a result of interest rate dynamics. This phenomenon will be analyzed later on in research.

Interpretation: While in start-up phase of development lot of companies are requested for discounts when rising additional funds of capital, after establishing operations and customer base, small companies are able to sell their stocks higher than their nominal value. In that case Capital surplus position is formed in their balance – sheets on liabilities side. Small companies have greater potential (rather room to growth than possibility) to increase their operations activity, and to provide their shareholders' capital gain. When they became large, potential shareholders perceive them as less risky, but in the same time as a less opportunity to gain profit.

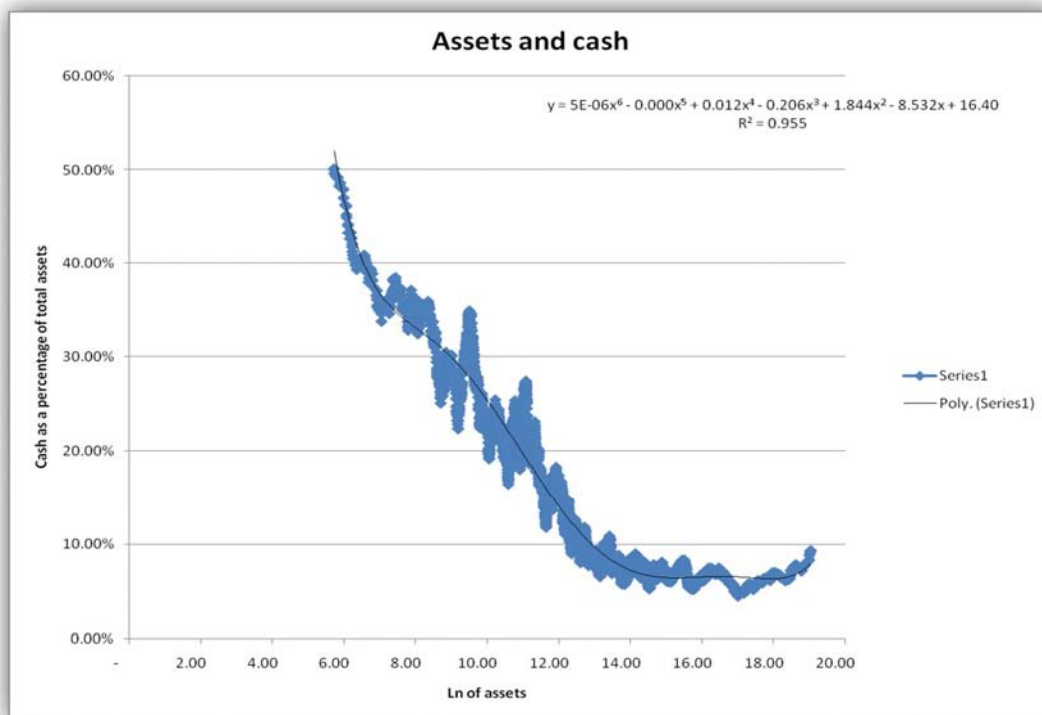
6.2 Total assets and Cash

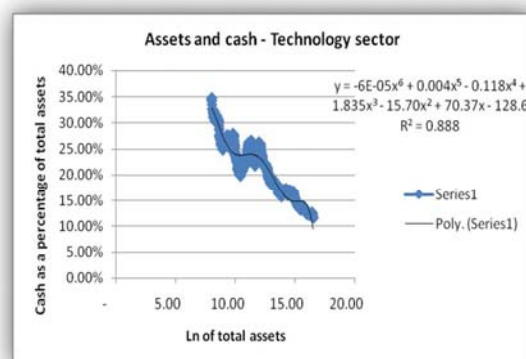
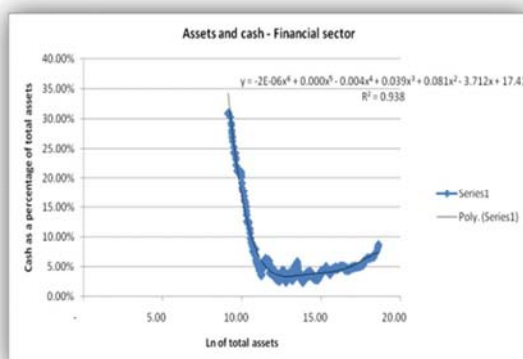
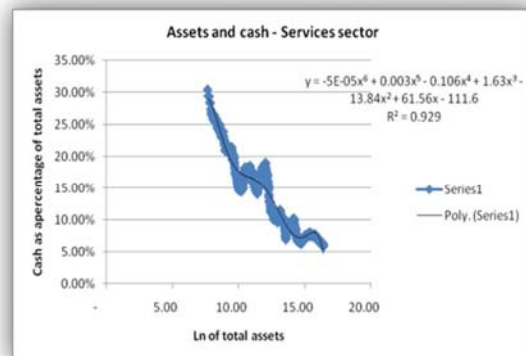
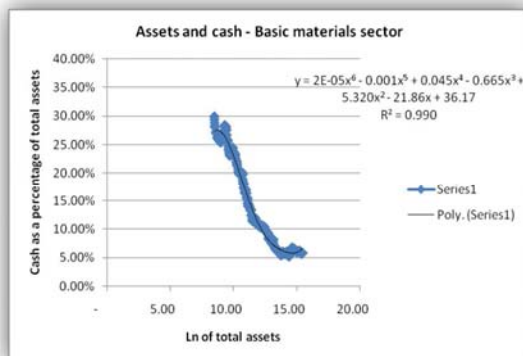
Data from financial reports:

- ✓ Total assets 2006
- ✓ Cash 2006

$$\text{Cash as a percentage of total assets} = \frac{\text{Cash}}{\text{Total assets}} \%$$

Excluded items : No excluded items





Significance of parameter: Main function of holding cash is to assure liquidity, but large amounts of cash can harm company's profitability and enlarge exposure to exchange rate risk

General rule: There is a declining trend, regularly from 50% (for observed companies about 30% to 5% of total assets value). Financial institutions have higher requirements regarding liquidity, so there is an upward trend within largest financial institutions.

Sector specifics: Financial sector, because of relevant regulations and imperative of liquidity

Interpretation: Small companies have slow production cycles and cash transactions are relatively significant in comparison to their value of assets. As they increase their assets, they are able to improve their assets structure and switch to less risky and more profitable forms.

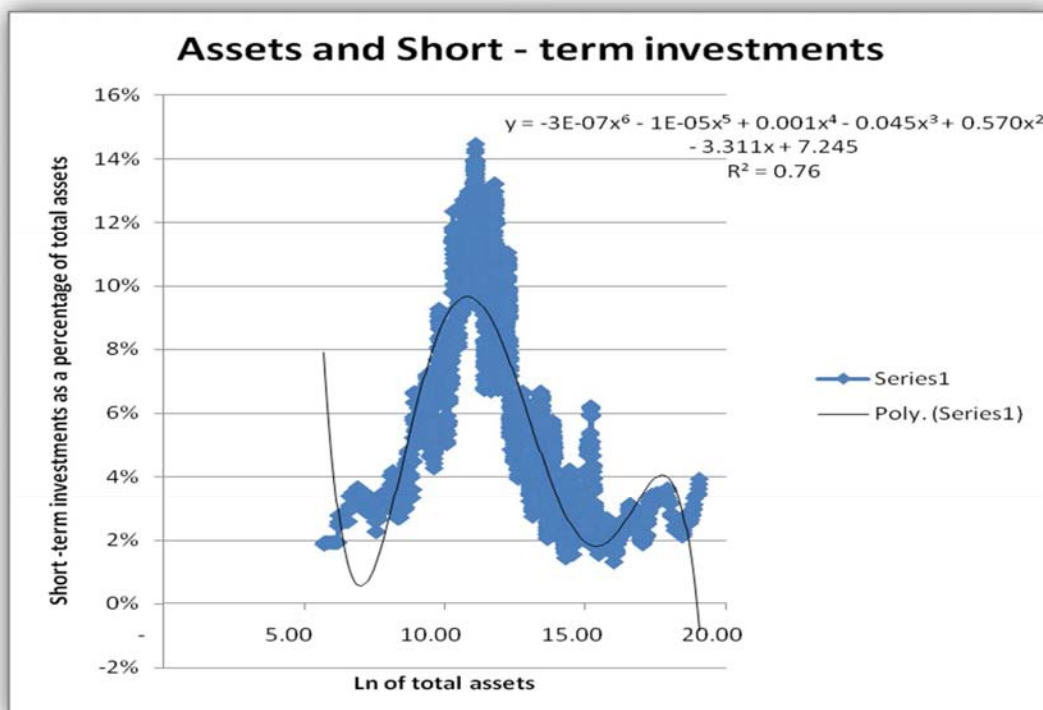
6.3 Total assets and Short- term investments

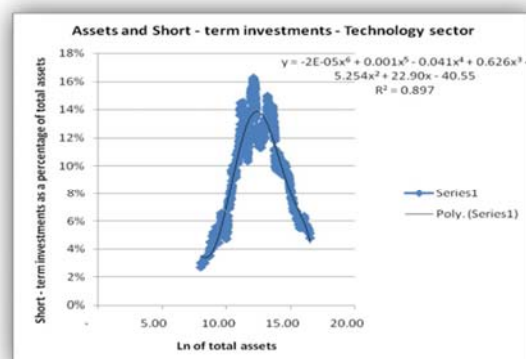
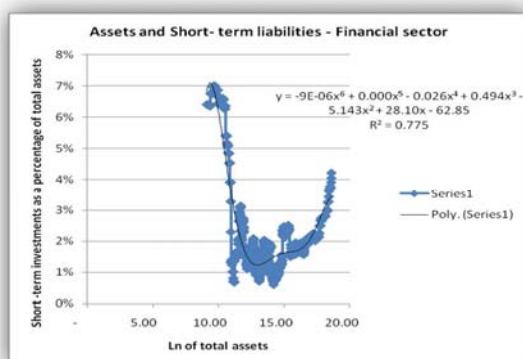
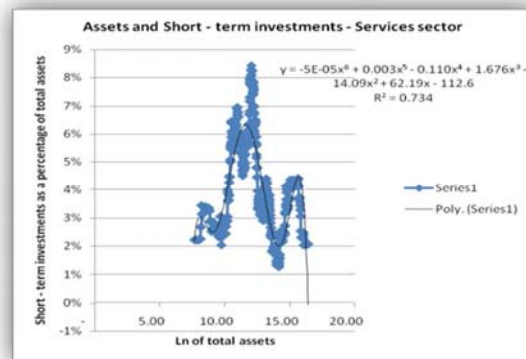
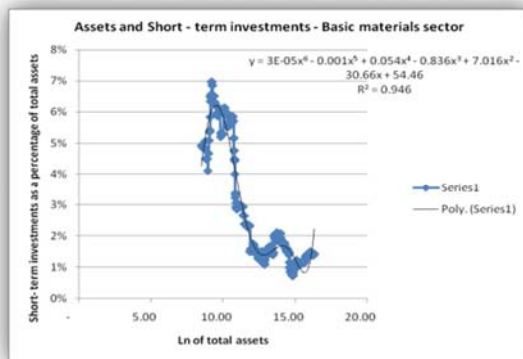
Data from financial reports:

- ✓ Total assets 2006
- ✓ Short- term investments 2006

Short – term investments as a percentage of total assets = $\frac{\text{Short-term investments}}{\text{Total assets}} \%$

Excluded items : No excluded items





Significance of parameter: Speculative involvement on stock – exchange market can increase profitability, but also risk of capital losses.

General rule: There is generally a bell- shaped curve of companies' involvement in this kind of markets, which is not completely visible for basic materials, and financial sector because of their earlier entrance.

Sector specifics: Financial sector has one more wave of speculative investments, because of their constant need for high liquidity and profitability of its investments. Technology sector has delayed and relatively high peak of stock – exchange activities

Interpretation: Small companies have greater tendency for speculative purchases of small quantities of shares, because this purchases are affordable and do not request large amounts of liquid assets. Second reason is their greater willingness to accept inherent risk of these transactions.

6.4 Total assets and net crediting

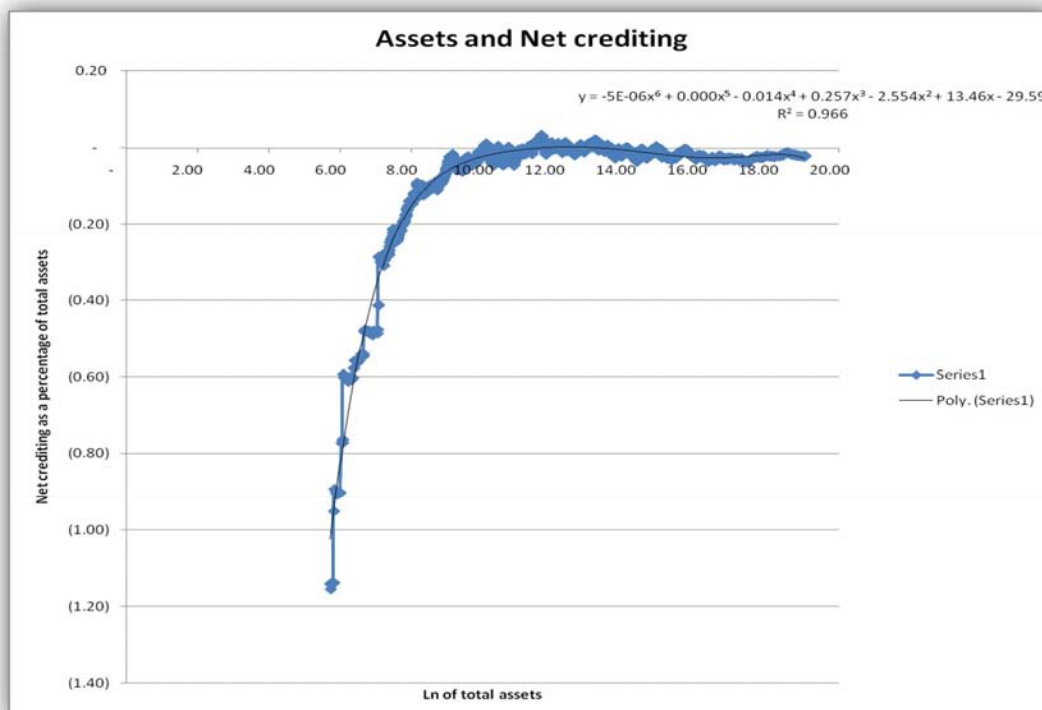
Data from financial reports:

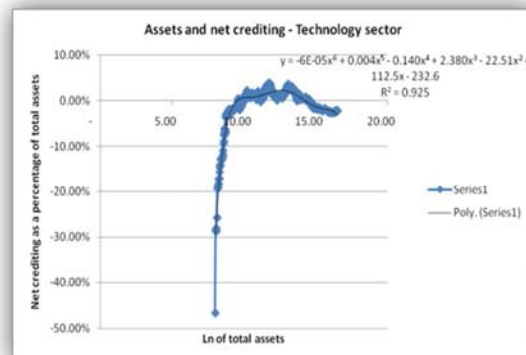
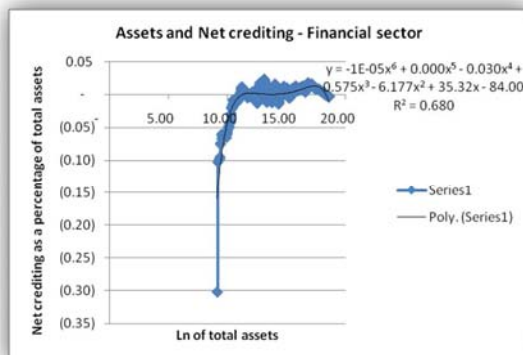
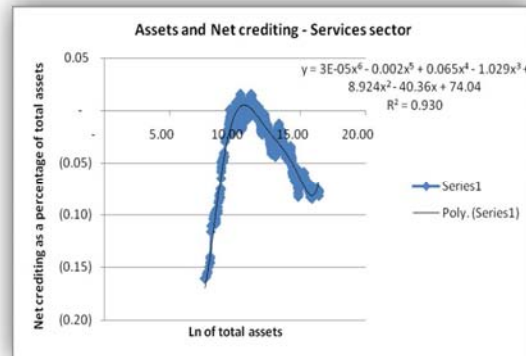
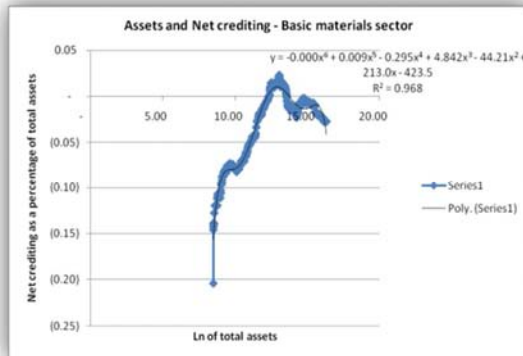
- ✓ Total assets 2006
- ✓ Net Receivables 2006
- ✓ Accounts payable 2006

➤ *Net crediting* = *Net receivables* – *Accounts payable*

$$\text{Net crediting as a percentage of total assets} = \frac{\text{Net crediting}}{\text{Total assets}} \%$$

Excluded items : No excluded items





Significance of parameter: Period of time between selling a product or service and customer's payment generates implicit financial expense for a company.

General rule: Net crediting is generally characterized with a bell- shaped curve.

Sector specifics: Services sector has more intensive debtor status than other sectors, because majority of service companies are involved in retailing, and practice selling for cash. Net crediting is less relevant for financial sector, and that is the reason for somewhat lower R square value.

Interpretation: Smaller companies are forced to provide more convenient selling conditions for customers in order to become competitive, and to demonstrate their financial capabilities to potential investors through regular debt servicing. However, net crediting period is just an episode in life cycle of a company, and they are again starting to gain privileged position in supply chain.

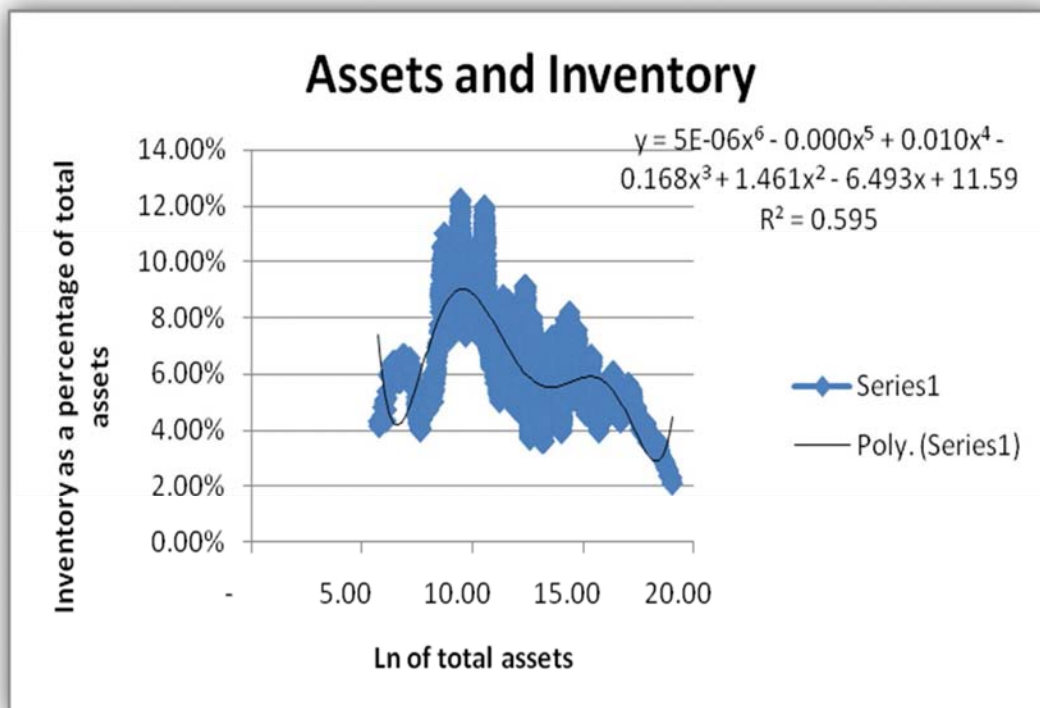
6.5 Total assets and Inventory

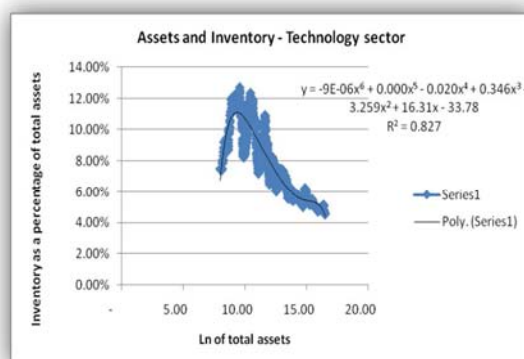
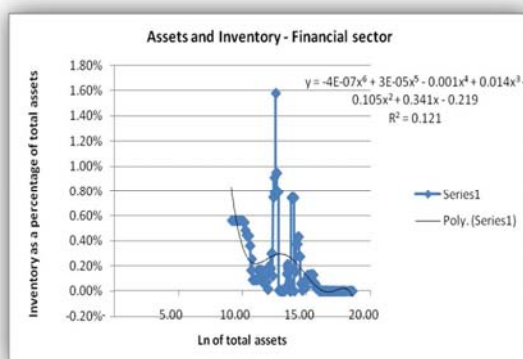
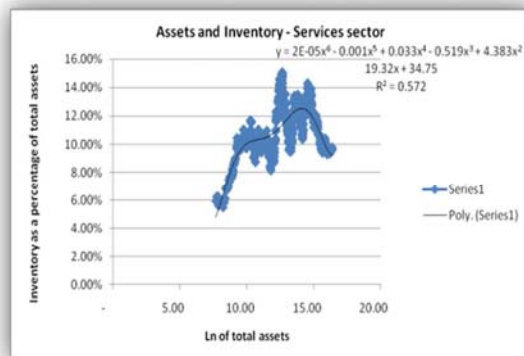
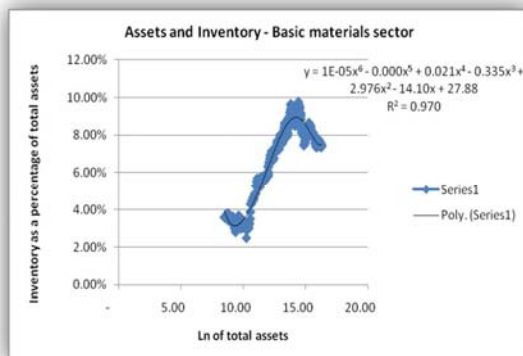
Data from financial reports:

- ✓ Total assets 2006
- ✓ Inventories 2006

$$\text{Inventories as a percentage of total assets} = \frac{\text{Inventory}}{\text{Total assets}} \%$$

Excluded items : No excluded items





Significance of parameter: Amount of assets accumulated in form of inventories decreases profitability, but is essential for keeping satisfactory level of quantity and variety of product assortment.

General rule: Inventories also tend to form more or less visible bell-shaped curve.

Sector specifics: Financial services have no statistically significant relation between value of total assets and value of inventories, what is expected because of the fact that inventories are generally irrelevant regarding their key operations. Services sector is more diversified and less predictable regarding inventories proportion for that reason. Technology sector is able to decrease its inventories before other sectors, because they are forced to accelerate their business cycles for the reason of technology advances, sell software through licensing method and use advanced informational systems to manage inventories. Similar to majority of current assets, this decrease is rather relative than absolute.

Interpretation: Smaller companies are forced to provide more convenient selling conditions for customers in order to become competitive, and to demonstrate their financial capabilities to potential investors through regular debt servicing. However, net crediting period is just an episode in life cycle of a company, and they are again starting to gain privileged position in supply chain.

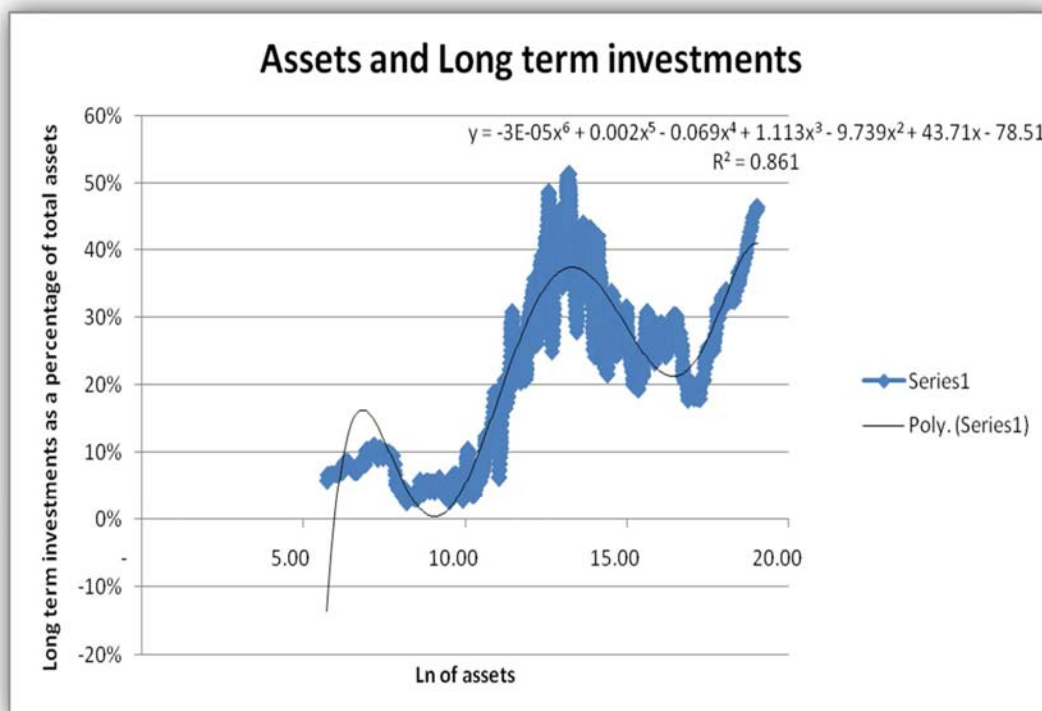
6.6 Total assets and Long term investments

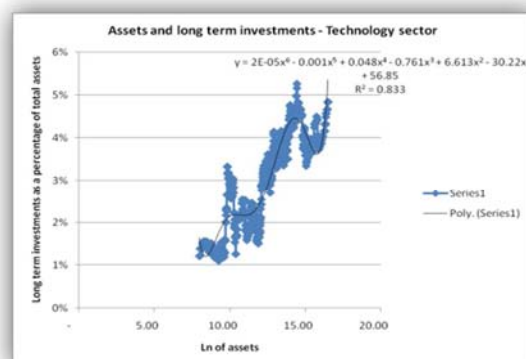
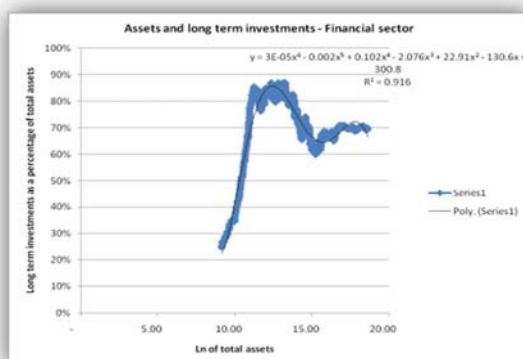
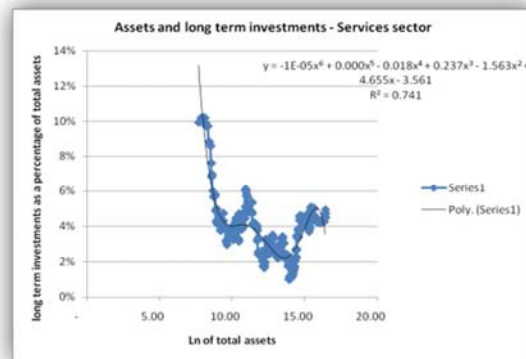
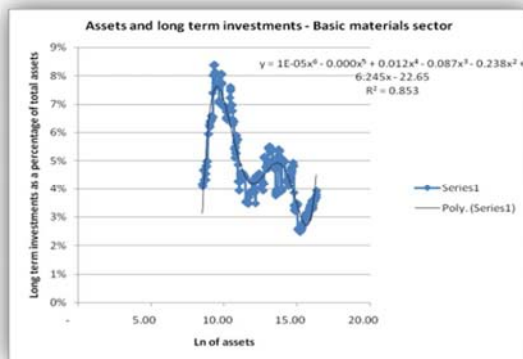
Data from financial reports:

- ✓ Total assets 2006
- ✓ Long term investments 2006

Long term investments as a percentage of total assets = $\frac{\text{Long term investments}}{\text{Total assets}} \%$

Excluded items : No excluded items





Significance of parameter: Placing large amounts of investments in other companies can be made with different rationales including gaining power over participants in the same supply chain, diversifying market risk or increasing profitability, etc.

General rule: There are great differences regarding long term investments strategy among different sectors, and no universally applicable rule can be defined.

Sector specifics: Most reliable pattern of long term investments is visible in financial sector, where there is large contribution of them to overall assets and steep increase in early stages of growth. This increase is subsequently substituted with acquisitions. Technology sector has aggressive approach on this field.

Interpretation: This section must be analyzed simultaneously with the next one, which is focused on acquisitions, because they are often two segments of one strategy.

6.7 Total assets and Goodwill

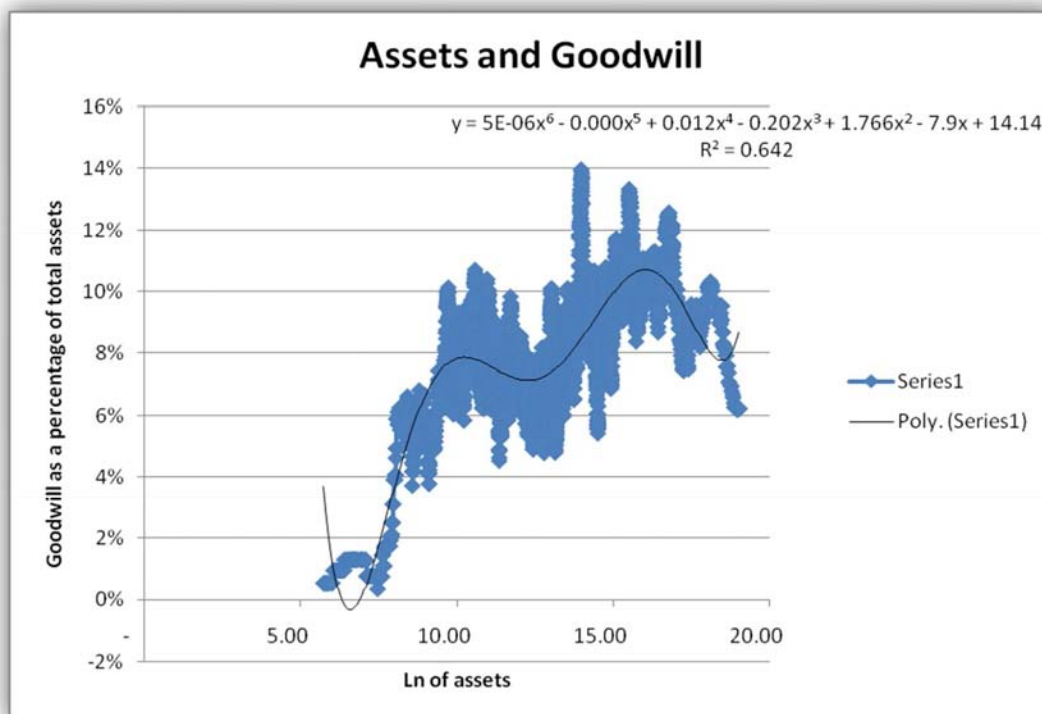
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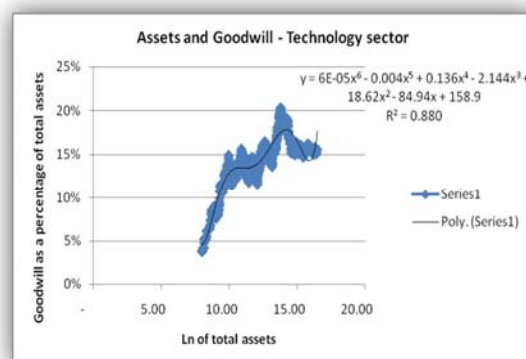
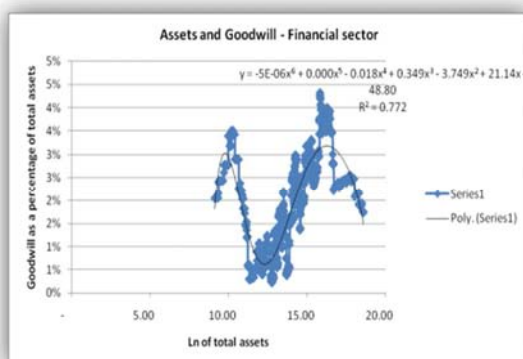
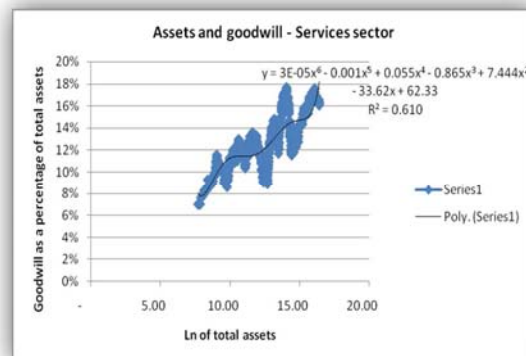
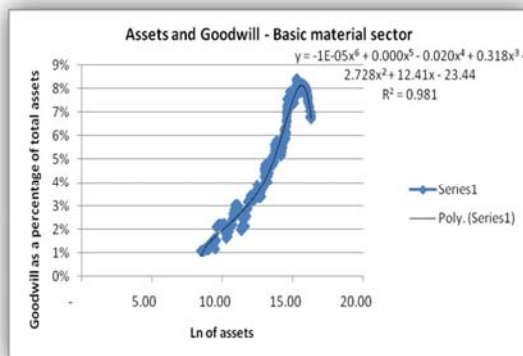
- ✓ Total assets 2006
- ✓ Goodwill 2006

$$\text{Goodwill as a percentage of total assets} = \frac{\text{Goodwill}}{\text{Total assets}} \%$$

Excluded items :

- Negative values of Goodwill are not included





Significance of parameter: Reasons for purchasing control package of shares of some other company are similar to those mentioned in previous example. The main difference is full control over resources of the purchased company, which are often primary target of acquisition.

General rule: Generally, it is an upward trend with tendency of decreasing within largest companies

Sector specifics: While basic materials sector has very predictable pattern of acquisition strategy, finance shows great variety and some kind of two growth- stage related waves

Interpretation: Trend of switching assets structure to safer and more fixed form continues. After establishing good and stable operations, companies are facing frontiers in organic growth, and realizing significant exposure to their primary market risk, so they regularly decide to apply merger and acquisition strategy of inorganic growth.

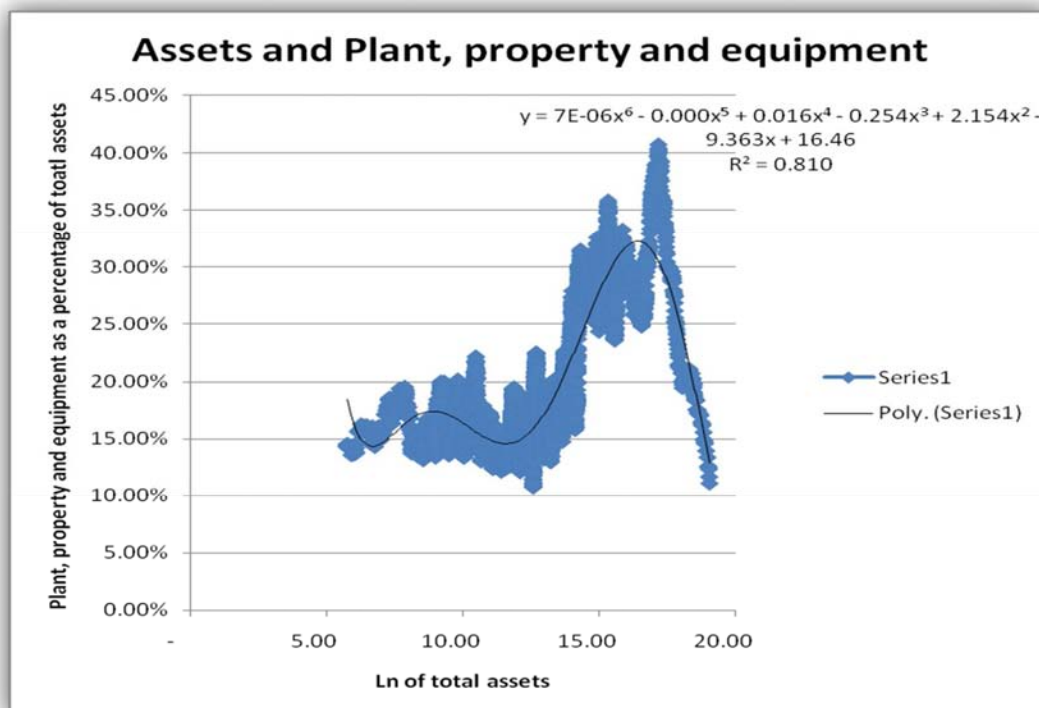
6.8 Total assets and Plant, property and equipment

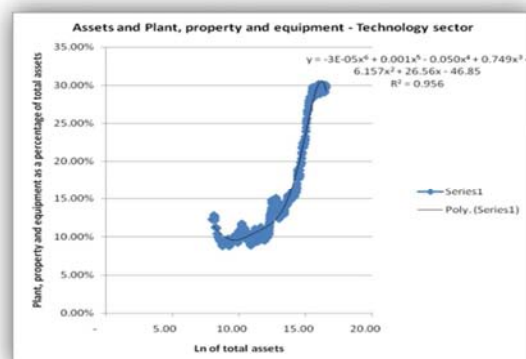
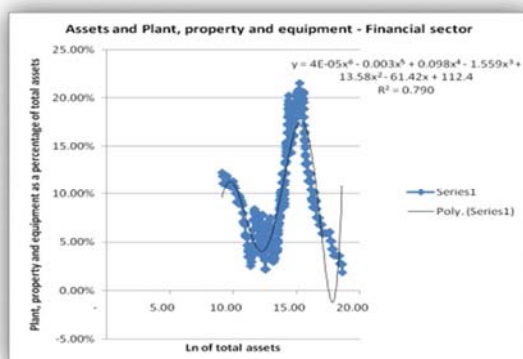
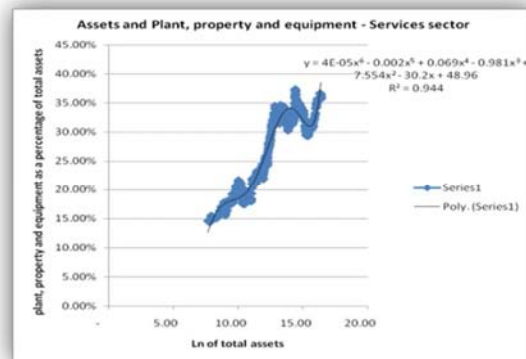
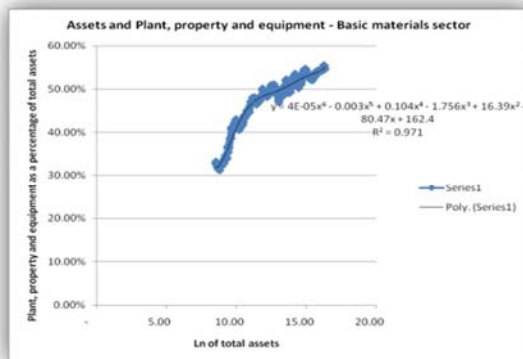
Data from financial reports:

- ✓ Total assets 2006
- ✓ Plant, property and equipment 2006

Plant, property and equipment as a percentage of total assets = $\frac{\text{Plant, property and equipment}}{\text{Total assets}} \%$

Excluded items : No excluded items





Significance of parameter: Investments in plant, property and equipment are long- term investments, which allow companies to convert some variable cost in fixed, and as a result, to achieve economy of scale effects. This is applicable only if volume of output rises, otherwise locking assets in this form can harm overall profitability.

General rule: There is an obvious trend of increasing share of these assets in overall structure.

Sector specifics: Financial sector has a steep declining line of investments in plan, property and equipment, mainly related to buildings, which are in the case of international expansion rather leased than purchased. There is also regulation pressure for banks, investment funds and other financial institutions to keep this share below some limit, and to invest in some other assets. Also, E- Commerce allows these companies to run their operation with limited investments in property.

Interpretation: Increase in level of operations traditionally results in additional investments in plant, property and equipment, but as mentioned above, companies which are experiencing limits related to market demand, should be aware of risk of overinvesting in assets with high depreciation rates.

6.9 Total assets and Selling and administrative expenses

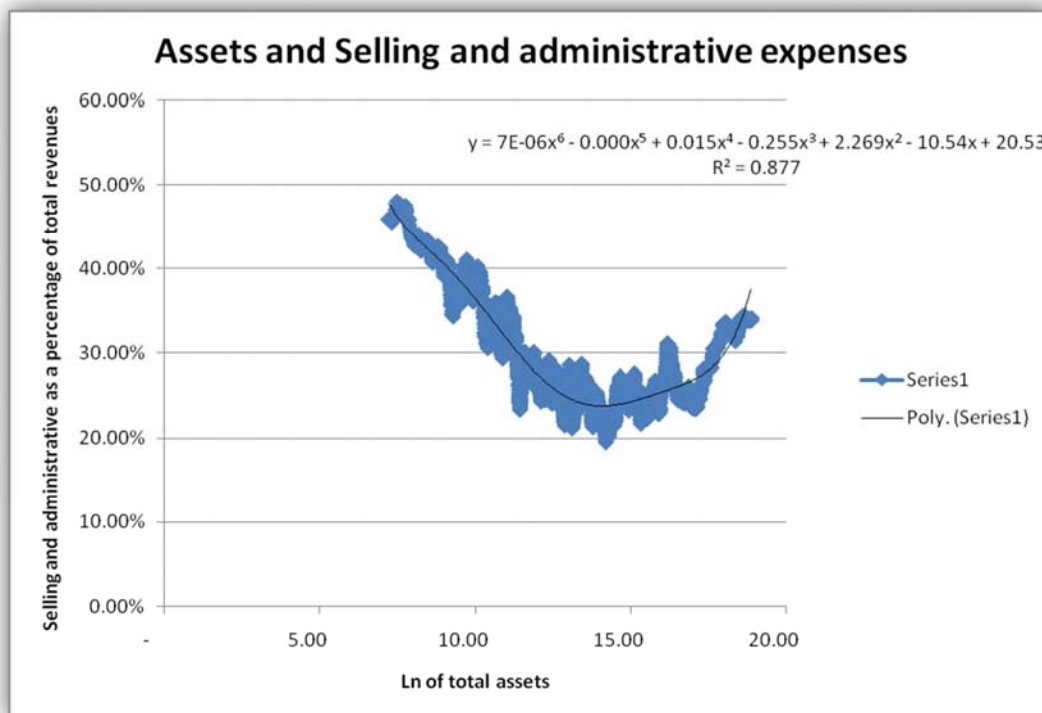
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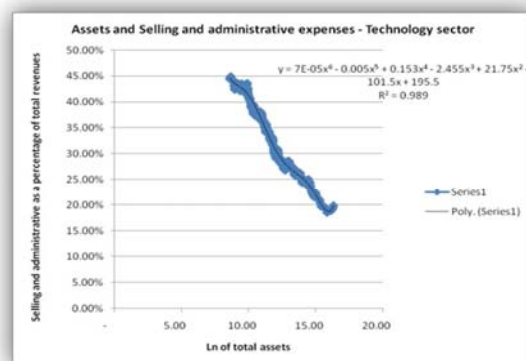
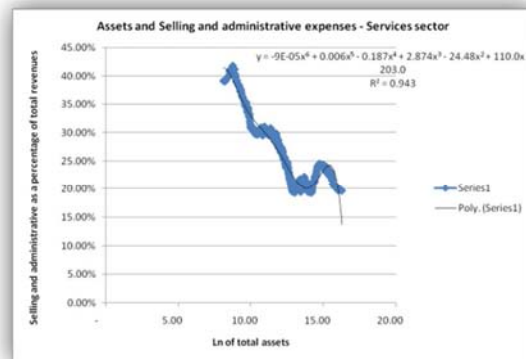
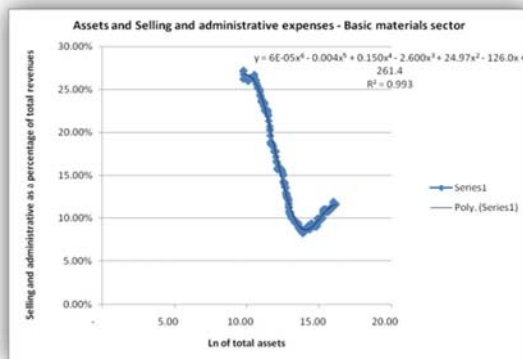
- ✓ Total assets 2005
- ✓ Total revenues 2006
- ✓ Selling and administrative expenses 2006

Selling and administrative expenses as a percentage of total revenues =

$$\frac{\text{Selling and administrative expenses}}{\text{Total revenues}} \%$$

Excluded items : No excluded items





Significance of parameter: Reduction of this kind of expenses is the main source of economy of scale. They are strongly influencing operating margin and consequently net margin, because small changes in their amounts can result in great improvements in profitability.

General rule: These graphs give the impression of refexion in a mirror of graphs from previous section. Therefore, there is generally a declining tendency, but there is an upward trend within largest companies.

Sector specifics: Limited investments in plant, property and equipment do not allow financial institutions to exploit economies of scale in late stage of growth. In contrast, they are experiencing diseconomies of scale regarding this aspect.

Interpretation: There are great savings related to S&A expenses, but there is an obvious limitation that the largest companies are facing - administrative costs are boosting as a result of developed organizational hierarchy, especially visible in basic materials sector.

6.10 Total assets and Interest on debt

Data from financial reports:

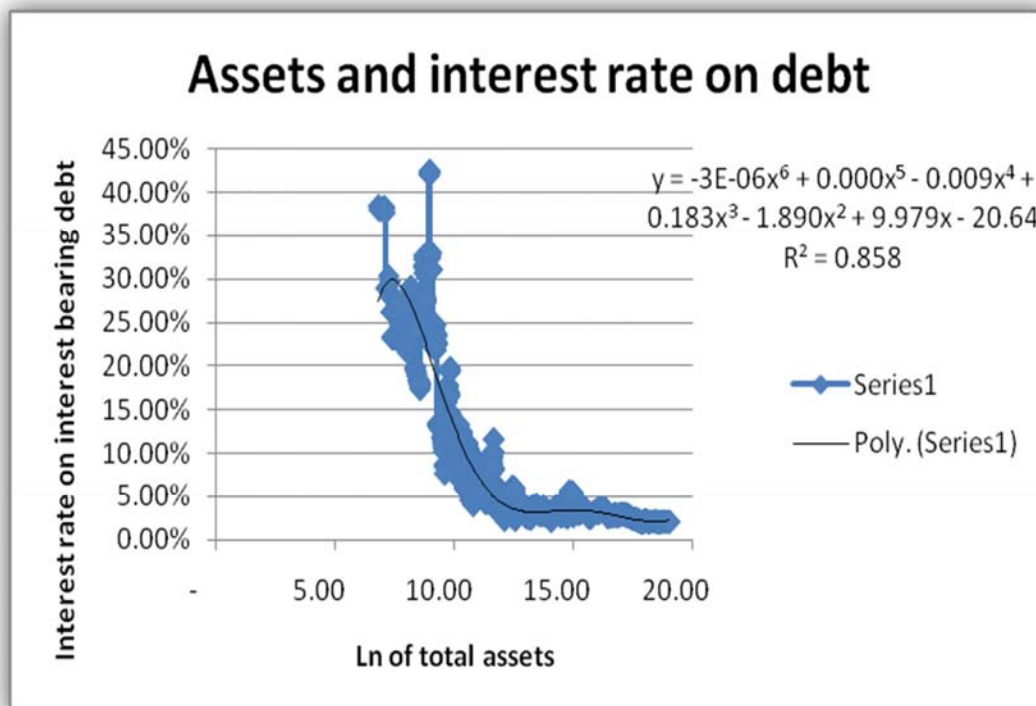
- ✓ Total assets 2005
- ✓ Total liabilities 2005
- ✓ Accounts payable 2005
- ✓ Interest expense 2006

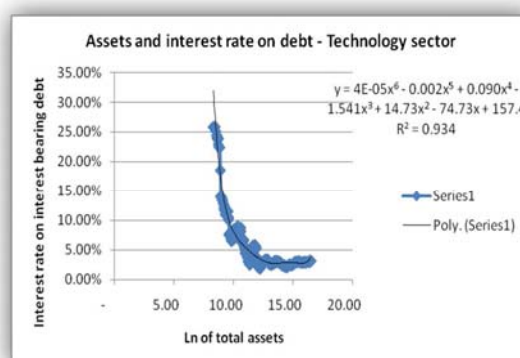
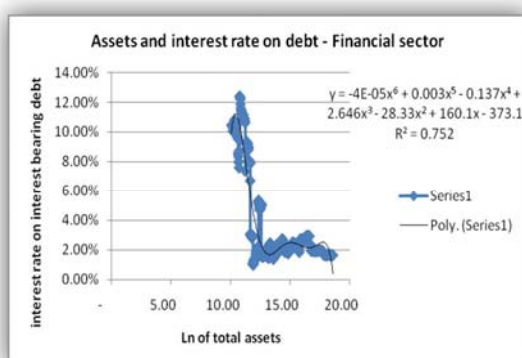
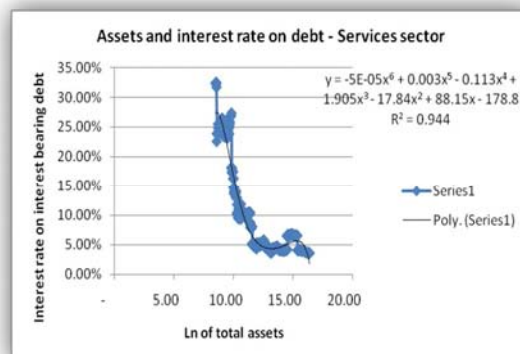
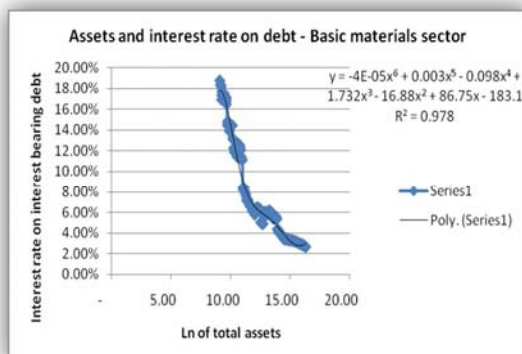
➤ **Total interest bearing debt = Total liabilities – Accounts payable**

$$\text{Average interest rate on total interest bearing debt} = \frac{\text{Interest expense}}{\text{Total interest bearing debt}}$$

Excluded items :

- Interest average rate greater than 1000 %





Significance of parameter: Conditions for raising additional funds in form of debt do significantly impact decision whether to use leverage or not. Lower cost of debt enables companies to improve their profitability by using this method.

General rule: There is a clear declining trend of interest rates when companies grow.

Sector specifics: Financial sector is specific once more. Lot of sight – deposits which do not earn interest within banks may be the main reason for early stabilization of the interest rate on the level of about 1- 2% in this sector. There is a lot of these deposits because the safeness of investment is perceived as savings rather than factual investment, and that is the reason for such low interest rates. Technology sector is also able to decrease its cost of debt very fast, because of the fact that liquid assets (cash and short term investments) are at least 15 % even in the biggest companies, and they generally do not have large debt to suppliers. This makes them safe for investment.

Interpretation: More valuable assets make investment in large companies less risky than in smaller. Also, as it is presented in previous sections, structure of assets in large companies is changing in towards less risky assets. Capital market mechanism set the lowest interest rate on comparable level, but the highest interest rates do differ extensively. The capital census required for starting business in basic materials and financial sectors put this rate on a reasonable level.

6.11 Total assets and debt to equity ratio

Data from financial reports:

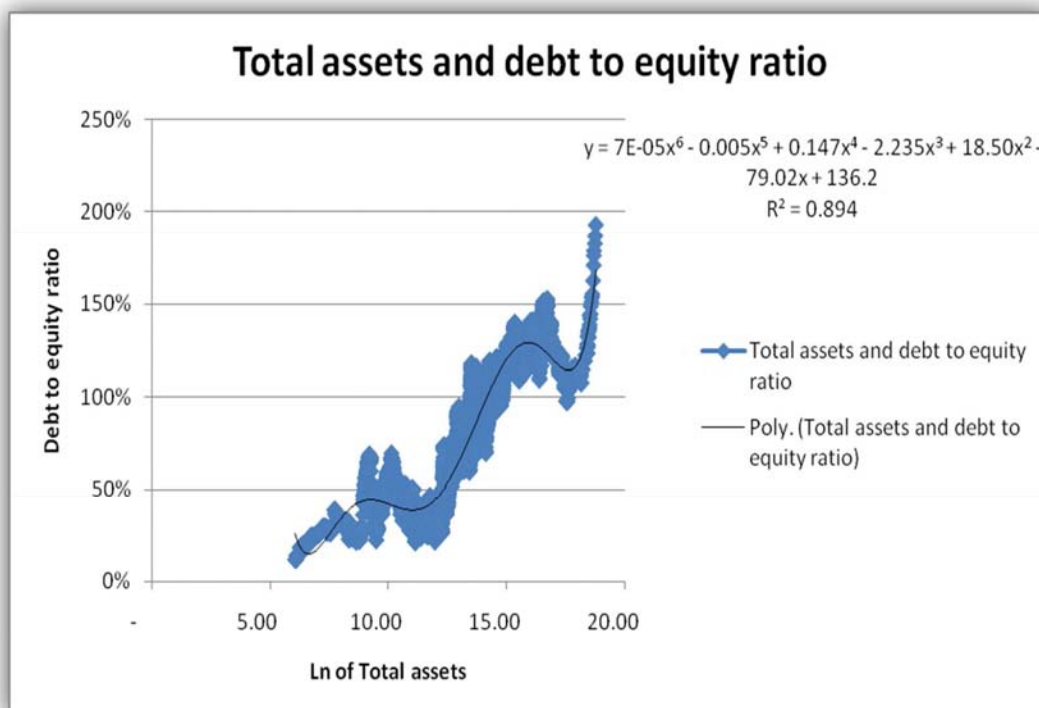
- ✓ Total assets 2006
- ✓ Total stockholder equity 2006
- ✓ Long term debt 2006
- ✓ Short / Current long term debt 2006

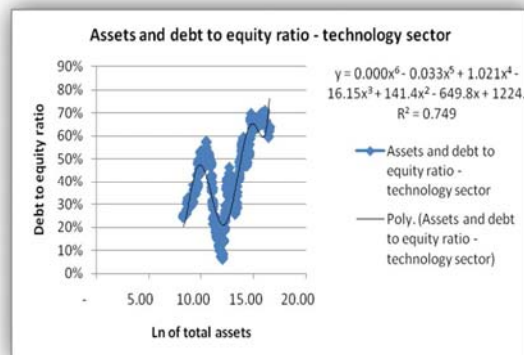
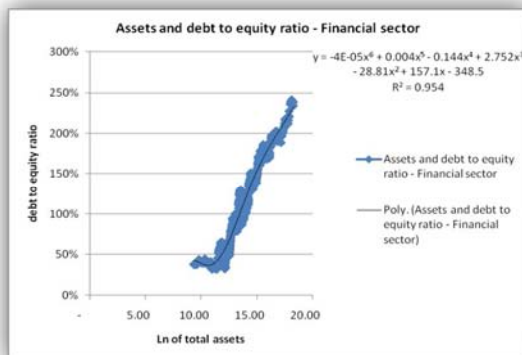
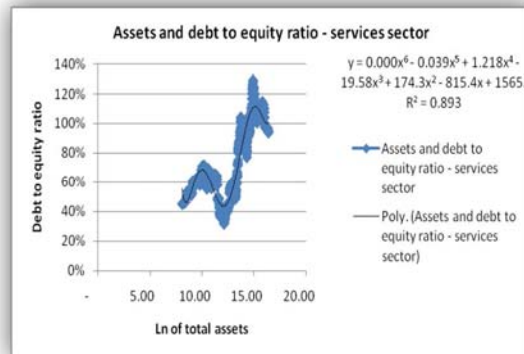
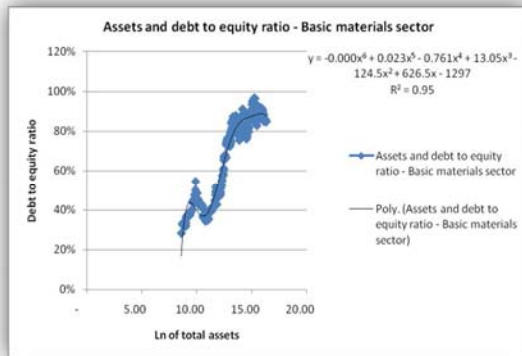
➤ Total debt = Long term debt + Short / Current long term debt

$$\text{Debt to equity ratio} = \frac{\text{Total debt}}{\text{Total stockholder equity}}$$

Excluded items :

- With negative stockholder equity
- With debt to equity ratio greater than 1000 %





Significance of parameter: Using leverage is beneficial in cases where rate of return on investments in a company is higher than cost of debt.

General rule: Larger companies generally use more leverage.

Sector specifics: All of these four sectors have a stage of growth when they decrease use of leverage. This phase is most visible in technology and services sector.

Interpretation: An explanation for this fracture can be found in previous section. It happens at the same time when companies reach the stage of decelerated decreases in interest rate on their debt. In this stage companies are forced to raise additional funds of equity. Conditions for raising equity funds are advantageous, especially for technology and services sector, (at least 30% of capital surplus in contrast to financial and basic materials sectors), and they are switching to equity financing again. When debt equity ratio becomes low again, they start using leverage for a second time, because of the lowered interest rate

6.12 Total assets and difference between ROE and ROA

Data from financial reports:

- ✓ Total assets 2005
- ✓ Total stockholder equity 2005
- ✓ Net income 2006
- ✓ Earnings before interest and taxes 2006

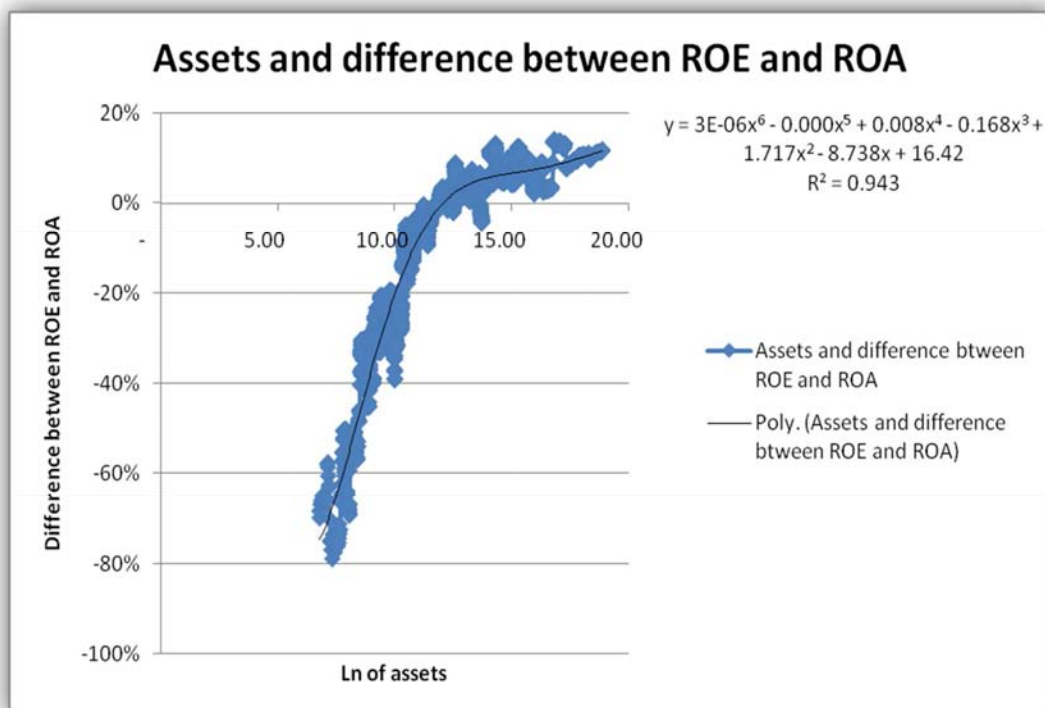
$$\text{ROE} = \frac{\text{Net income 2006}}{\text{Total stockholder equity 2005}}$$

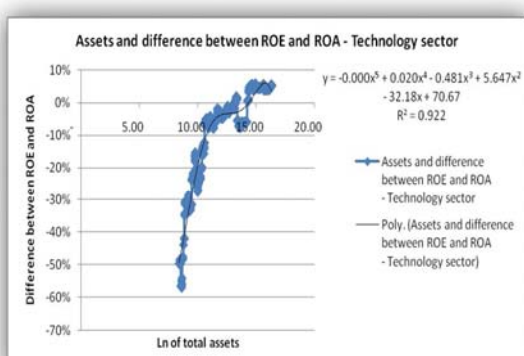
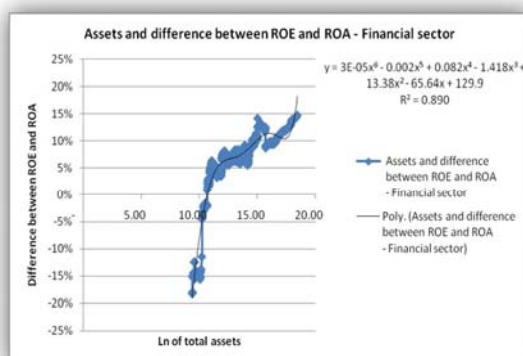
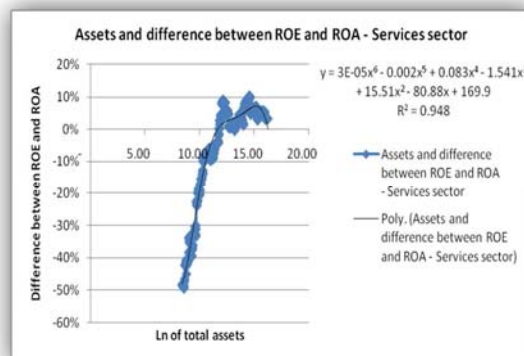
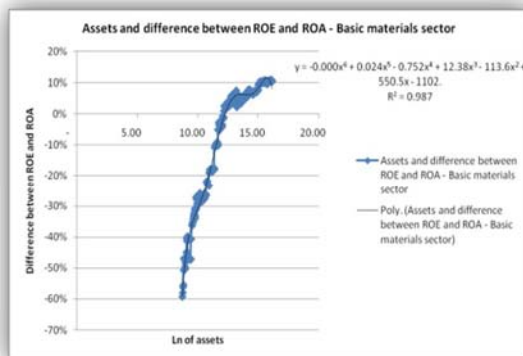
$$\text{ROA} = \frac{\text{Earnings before interest and taxes 2006}}{\text{Total assets 2005}}$$

$$\text{Difference between ROE and ROA} = \text{ROE} - \text{ROA}$$

Excluded items :

- With negative stockholder equity
- With ROE greater than 1000 %
- With ROA greater than 1000 %





Significance of parameter: Lowered interest rate and intensive using of leverage allows company to make a positive difference between ROE and ROA, which means that shareholders earn more on each monetary unit invested than all investors (including creditors) on average.

General rule: Large negative difference becomes positive.

Sector specifics: Financial sector is using leverage very successful, while the rest are facing some limitations.

Interpretation: The curve noticed in previous section is also visible on these graphs. Increased amount of equity harms ROE by increasing denominator.

6.13 Total assets and ROE

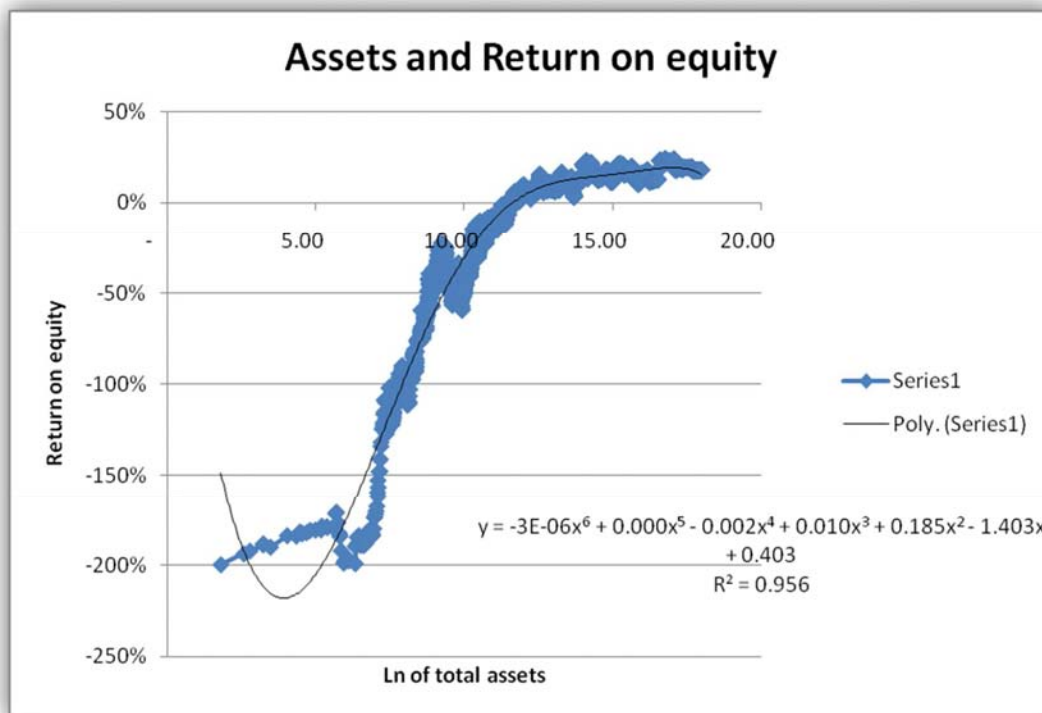
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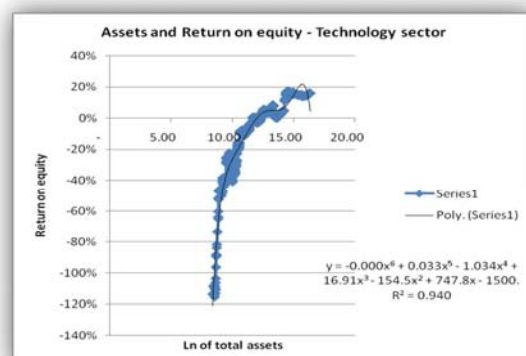
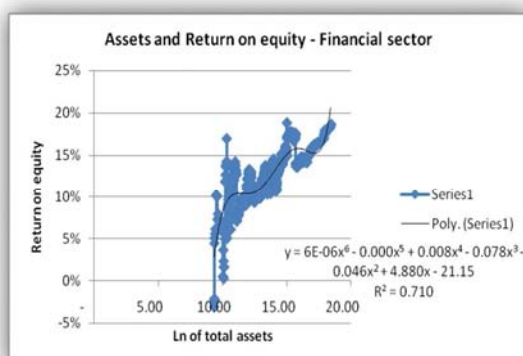
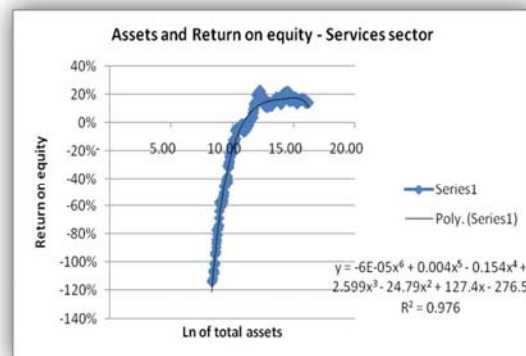
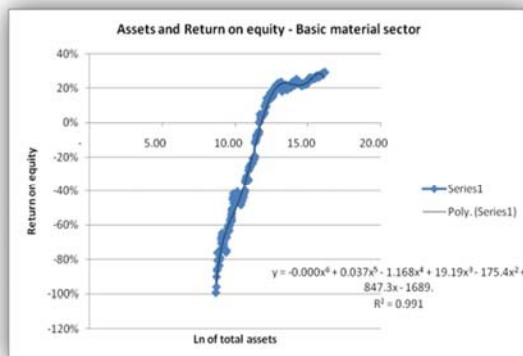
- ✓ Total assets 2005
- ✓ Total stockholder equity 2005
- ✓ Net income 2006

$$ROE = \frac{\text{Net income 2006}}{\text{Total stockholder equity 2005}}$$

Excluded items :

- With negative stockholder equity
- With ROE greater than 1000 %





Significance of parameter: A measure of creating value for shareholders.

General rule: From steep increase to stagnation (opposite to interest rate).

Sector specifics: Although Financial and basic materials sectors have diseconomies of scale regarding selling and administrative expenses, their ROE continues to rise.

Interpretation: Large companies in financial and basic materials sector experience growth in their gross margins, so they can achieve this sustainable growth of ROE.

7 Concerning the pattern of growth

There were few main instruments to gain superior profitability mentioned in this work.

They are now systematized in the following steps:

- Raising capital funds on capital market under favorable conditions

To do this, a company has to offer good ROE and even more important good increase in ROE.

In order to increase ROE, a company must:

- Exploit all available technical economies of scale by investing in fixed assets and increasing output volume
- Reduce risk, in order to raise debt under best conditions available, by switching majority of assets to those exposed to different markets, where company can use its size advantage.

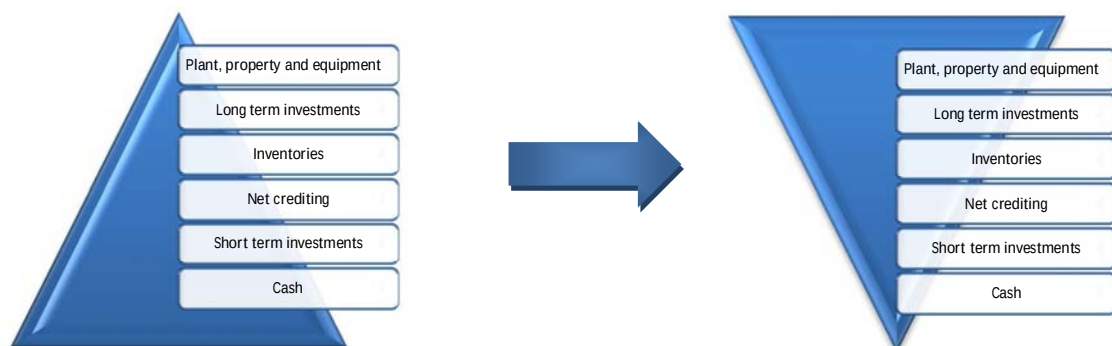
Explanation: there is an average entity in business environment, which for example has these characteristics (same source used for this data): total assets: \$8,628,781.704; total revenues: \$2,619,455.01; cost of sales: \$1,435,828.04; average transaction on markets of services and goods: \$50,000.00.

A larger company can obtain several advantages in transactions with this average company:

By having large amounts of sales, the failure of an average company to pay its obligation will now harm significantly financial position of the company.

By having relatively large assets in comparison to average company, there is an opportunity to buy one of them. So a large company is reducing risk by exposing to one more different market of goods and services, and has a new profitable asset which makes relatively small portion of total assets (risk reduction).

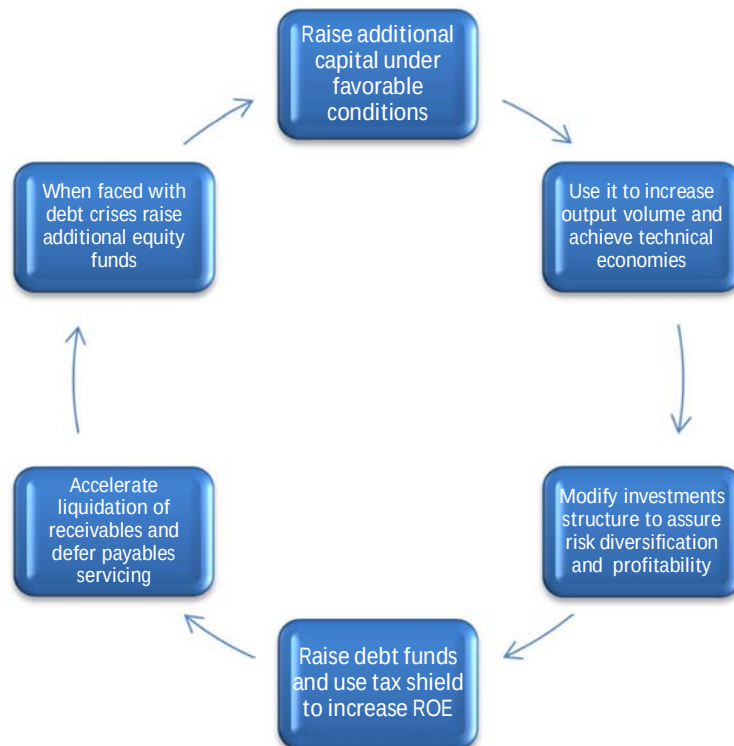
This is the way a large company assures high profitability and risk reduction at the same time.



- Use leverage and tax shield

Tax shield further increases ROE, but debt to equity ratio increases, so company becomes more risky and interest rate decline stops.
- Use their good positions on goods and services market to enhance its net debtor position.

By having large amounts of purchases in the same period, it can become a significant buyer for the average company. The results of this position are often deep discounts and delayed payment periods because of the fact that the larger company is accelerating operating cycle of the smaller company.
- Again, when faced with debt crises (interest rate increase), raise additional funds with capital surplus which is distributed to existing shareholders



8 Conclusions

*There was that law of
life, so cruel and so just, that
one must grow or else pay
more for remaining the same*

The Deer Park
Norman Mailer
(1923-2007)

Despite great differences and specifics in their operations and processes, in order to achieve financial success all industries have to build distinctive relations and materialize their advantages on the typical relevant markets. Globalization, development of their instruments, and most of all, similar preferences of their participants makes them so comparable.

Size of a company makes great influence on the way that people perceive it. While small companies attract venture capital because of expectations related to their growing opportunities, large companies are often recognized as safe, profitable and dominant; and as it is obtainable from this research that is what they actually are.

Although the main sources of corporate growth are improvements of internal processes and choices made by participants on surrounding markets, they are also the main sources of constraints to infinite growth. While the internal sources of constraints to growth are the crises of controllability, communications and increased bureaucracy, main external limitations are related to demand (industry lifecycles), availability and conditions for raising additional funds and elasticity of participants in supply chain. Even for fully diversified investments companies cannot have the cost of debt below risk free interest rate, and if they are making too aggressive financial pressures on suppliers and customers, they can decide to switch to some other company with more favorable conditions.

Given the fact that organizational solutions, relevant markets and their instruments are continually developing, when all benefits of mergers and acquisitions are exploited, we are most likely going to be witnesses of Greiner's 7th phase whatever it is going to look like.

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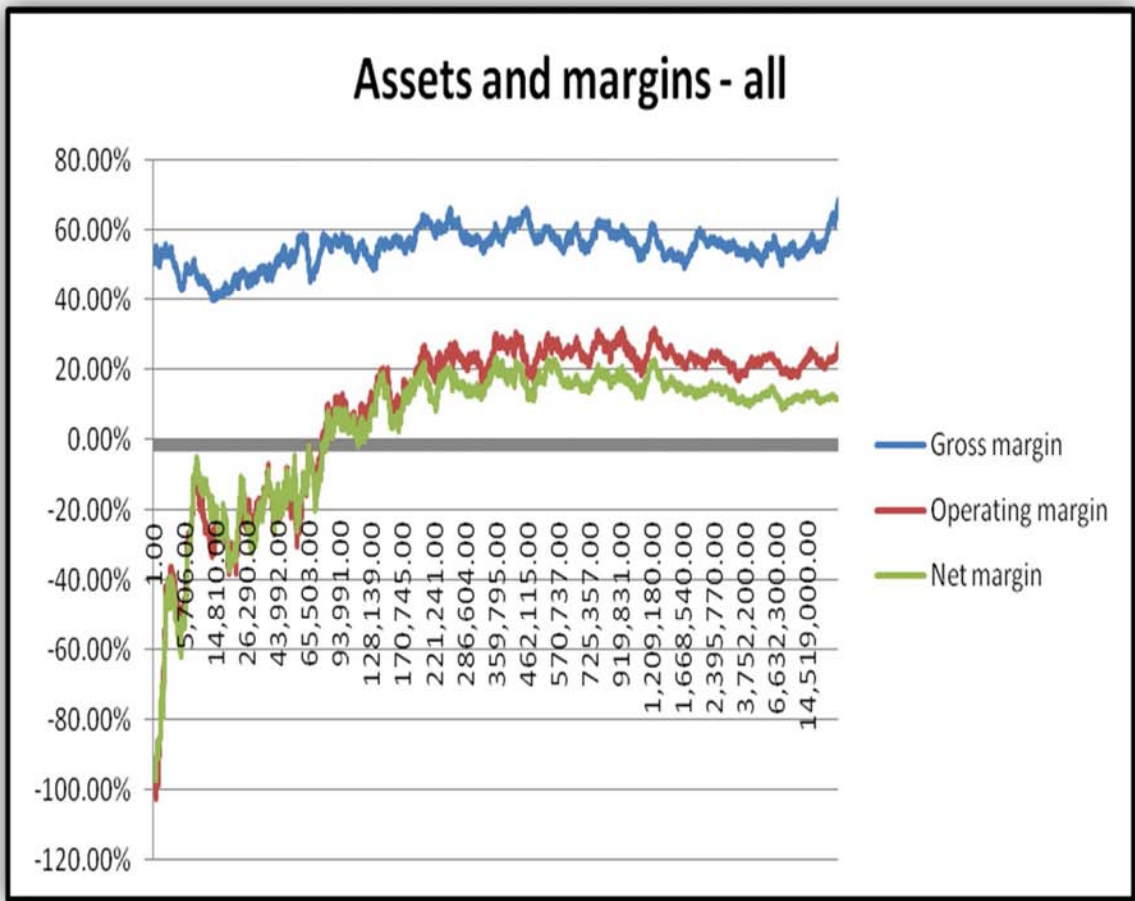
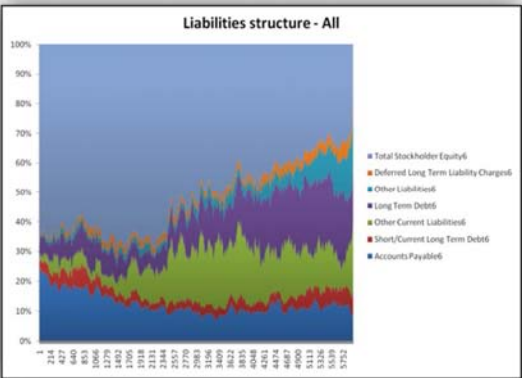
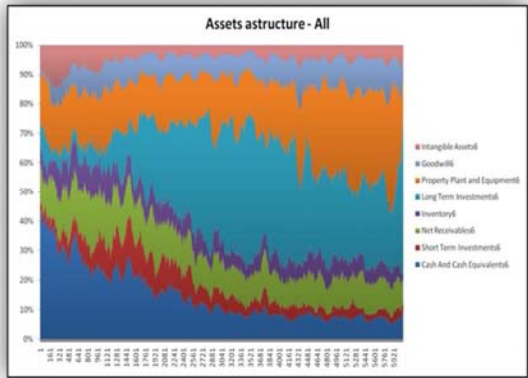
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10 Appendixes

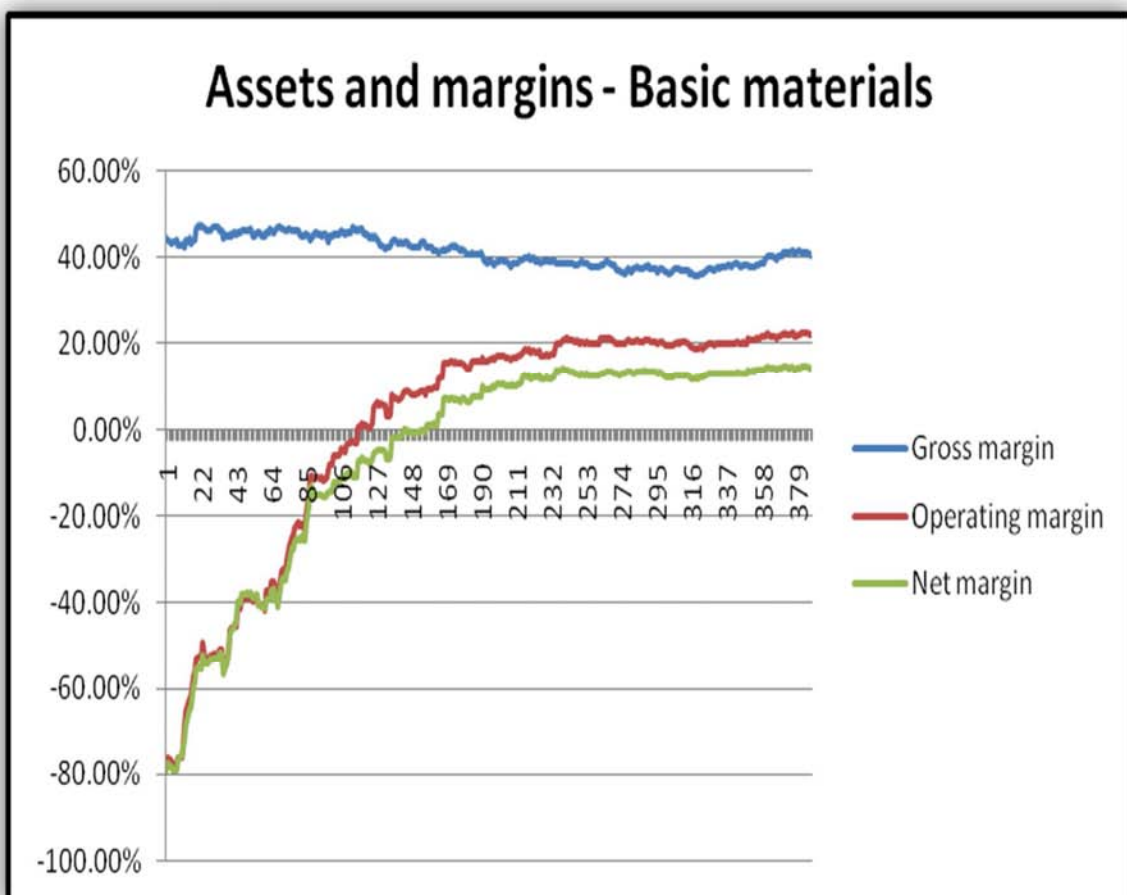
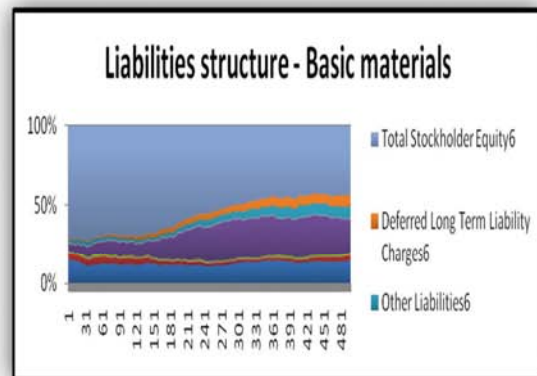
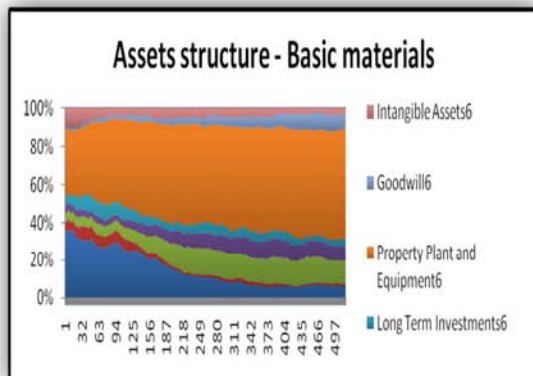
10.1 Appendix I

**-Structure of financial statements
among different sectors-**

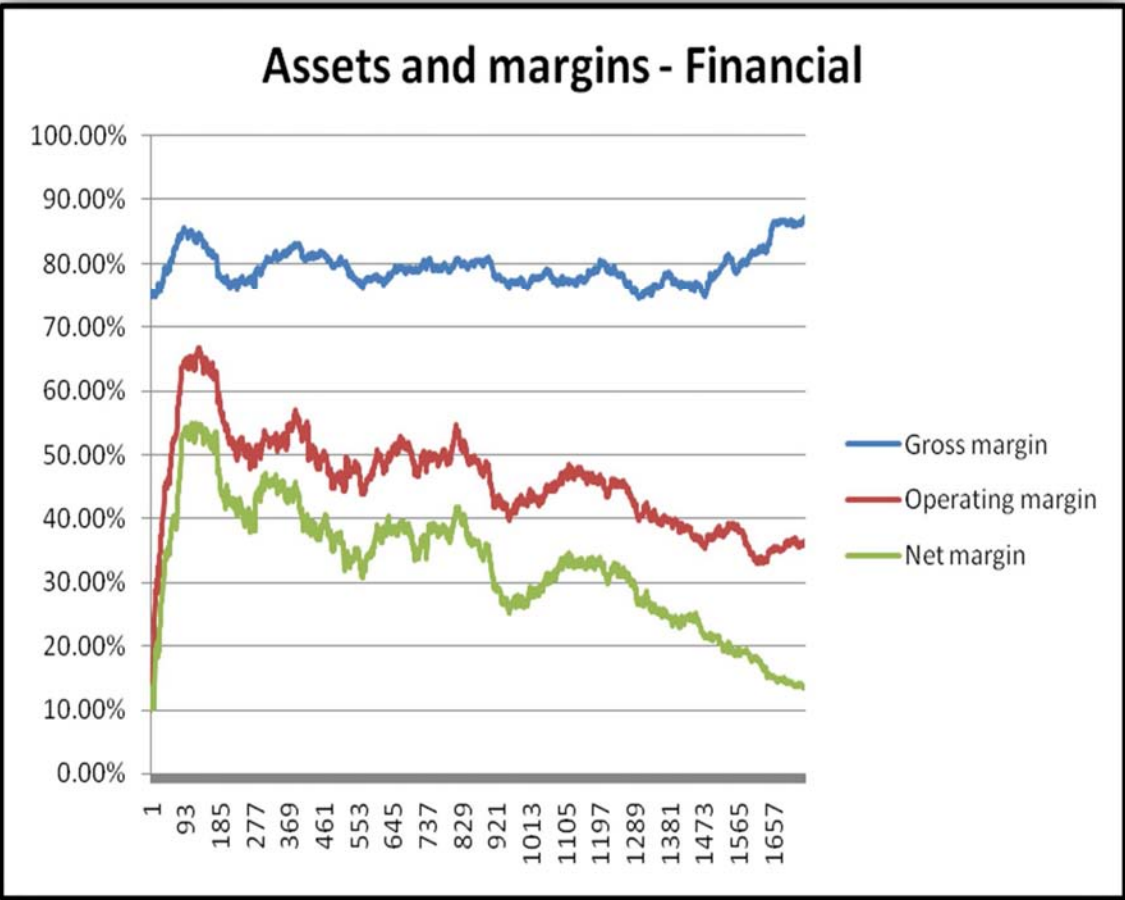
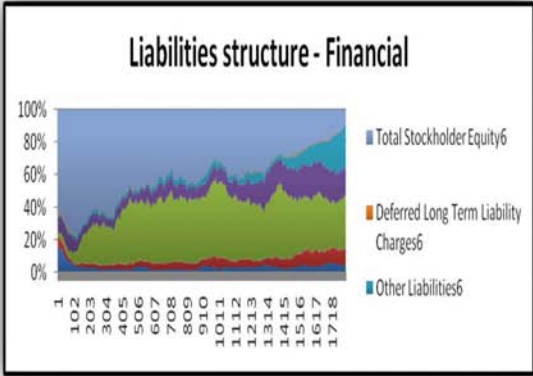
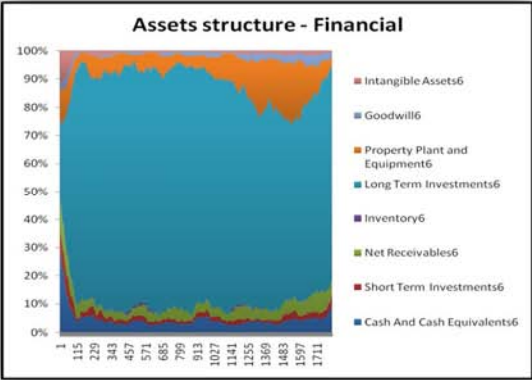
o.Financial reports structure for all companies observed



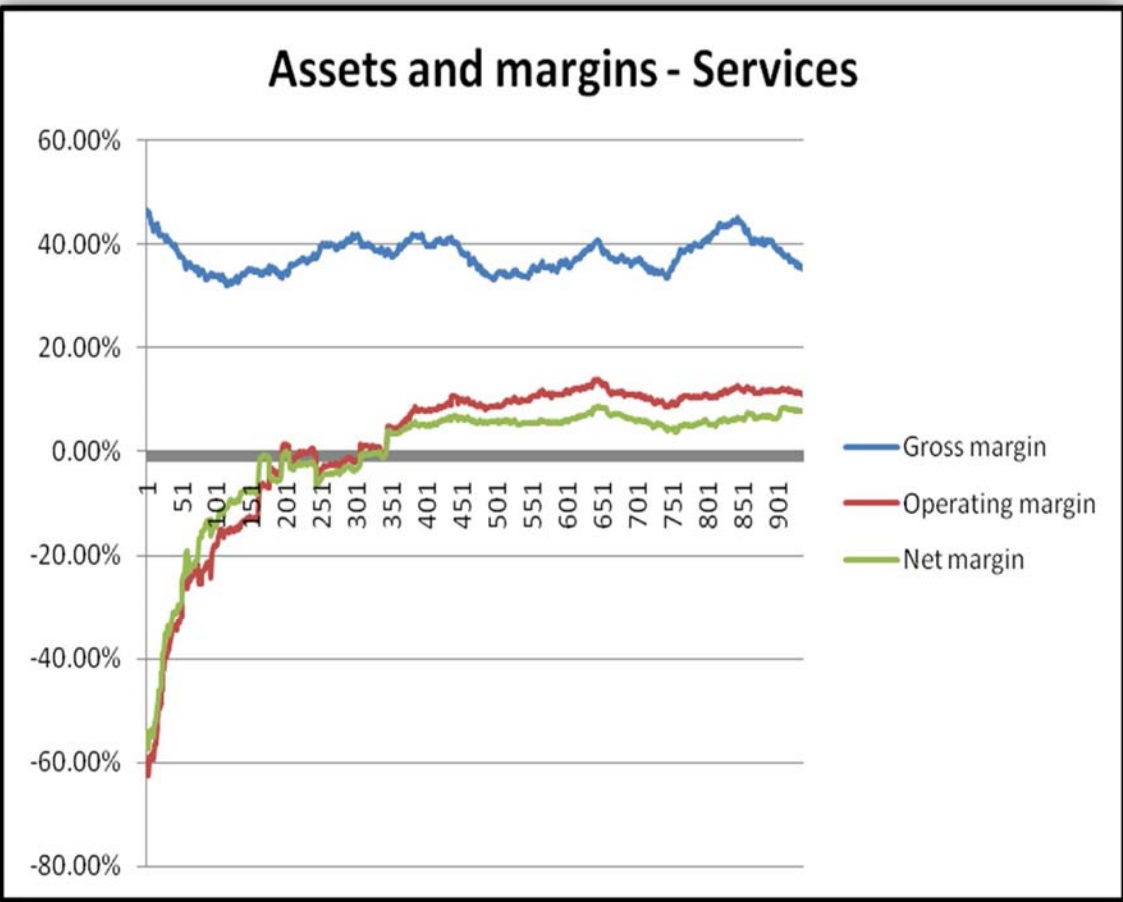
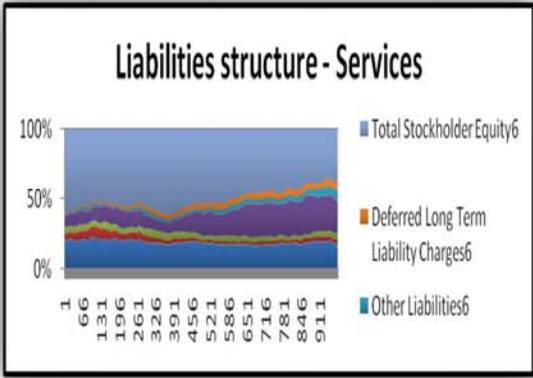
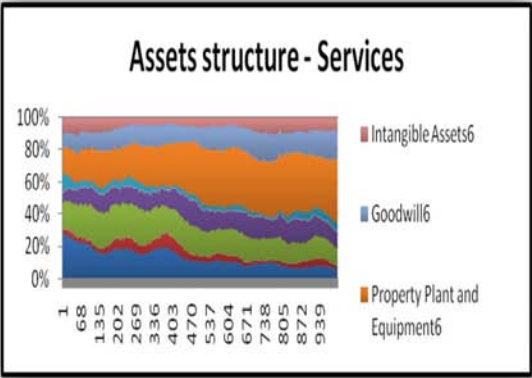
Financial reports structure for Basic material sector



Financial reports structure for Financial sector



Financial reports structure for Services sector



Financial reports structure for Technology sector

