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Call for papers
Journal of Applied Research in Finance

Published two times a year, the Journal is the official publication of *The European Centre of Managerial and Business Studies*, academic organization devoted to the study and promotion of knowledge about financial economics. The journal has been established in year 2009 as a descendant to *Journal of Applied Economic Sciences* (JAES). Two issues are published per volume. All articles and communications are available online for free. Printed copies can be ordered at a cost. The editors maintain classic *double blind peer review* procedure aiming at high academic standards but at the same time emphasize dynamic referee process so that the journal tracks scientific progress in real time.

The intention of the Journal of Applied Research in Finance is to provide an outlet for innovative, quantitative research in financial economics which cuts across areas of specialization, involves transferable techniques, and is easily replicable by other researchers. Contributions that introduce statistical methods that are applicable to a variety of financial problems are actively encouraged. The Journal also aims to publish review and survey articles that make recent developments in the field of theoretical and applied finance more readily accessible to applied economists in general.

Journal of Applied Research in Finance publishes high-quality research on all aspects of financial economics, including traditional areas such as asset pricing, corporate finance and market microstructure, as well as new areas such as markets and institutions of emerging markets. The journal welcomes contributions that deal with international issues or issues related to specific countries. Also Journal of Applied Research in Finance aims to publish articles of high quality dealing with the application of existing as well as new econometric techniques to a wide variety of problems in financial economics and related subjects, covering topics in measurement, estimation, testing, forecasting, and policy analysis. The emphasis is on the careful and rigorous application of econometric techniques and the appropriate interpretation of the results. The economic content of the articles is stressed.

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Table of Contents

Analysis of the Risks in the Enterprise Activity

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Abstract

*Dealing with a competitive, regional, national and international business environment, it is compulsorily needed to know **the risks** that can occur in the economic and financial activity of a firm. The insufficient knowledge of risk, its wrong evaluation and the lack of prevention strategy directly affect the final result of the activity. The focus centres on the **analysis of the risks**, of the influence factors and on the risk management.*

Keywords: risks, strategy, risk management, incertitude, probabilities, financial risk, lever effect analysis

JEL Classification: D92, E62, G31

1. Introduction

The risk problem is not a new one. Concerns about it began in 1970 and lasted for 10 years. They involved different branches of the human sciences: management, sociology, economy, political sciences. Two personalities from this period are to be mentioned: the philosopher Hans Jonas, who focused on responsibility, and the sociologist Ulrich Beck (2001), who characterised the modern society as a 'risk society'.

Then there followed a period when less interest regarding the risks and their management was shown. The enterprises did not reorganise and fell into the trap of creating value by fusion-acquisition, by investing and money withdrawal, to which the financial markets that led to risky financial investments were added.

'The beginning of the third millennium reanalyses the risks that have marked the societal life, especially the industrial environment, for 20 years. The risks are the same, some are more dangerous, or new ones have appeared' (Iacob 2006). Nowadays, many enterprises face moral and human risks, informational risks, new technology risks and, in order to be able to deal with them, these enterprises appeal to consultancy offices, local organisations, public institutions and even to international organisations.

The societal transformations that occur become risk factors themselves because externalisation is not always the best method of risk prevention. Integrating risky activities can create a risk culture, and that is why enterprises must elaborate on the choices and methods of future risk prevention. According to the American economist, Arthur Brian (1988), there are causes that appear, combine, cumulate, creating thus the 'avalanche' effect and then it is difficult to estimate and stop the already existing risks.

In this context, the analysis between risk and incertitude, the risk nature that nowadays enterprises face, risk analysis and measurement, risk anticipation and prevention and risk management, all of these are problems to focus on and to deal with.

2. General aspects regarding the enterprise risks

Risk is defined as the possibility of an undesired event as far as cost, quality and deadline of an objective are concerned.

There is a difference between risk and incertitude. According to the economist Knight (2001), the difference between the two is that risk is probable. On the other hand, risk can be measured, while the incertitude cannot.

We can say that, in order to evaluate and efficiently manage the risks, it is necessary to know what form they will take. Most of the risks usually take the form of the loss of operation control and fund lock-up. These forms can differ from one enterprise to another and from one activity to another.

The risk notion forces to consider the advantages and the real and potential inconveniences, depending on their frequency and threat (Table 1).

Table 1. Risks matrix

	Low threat	High threat
Low frequency	① Minor risks	② Catastrophic risks
High frequency	③ Operational risks	④ Risks needed to be avoided

Source: Hassid (2005, 64).

Risks with low frequency and threat affect the enterprise budget and can be ignored.

Risks low high frequency and high threat are difficult to be anticipated and managed. This kind of risks has serious consequences at the level of the enterprise and requires external capital.

Risks with high frequency and low threat, called operational risks, can relatively be foreseen and managed.

Risks with high frequency and threat have significant consequences for the enterprise and, in most of the cases, result in abandoning the enterprise development projects.

The IFRS and a better interpretation of the IAS (International Accounting Regulations) allow the measurement of the capital investment risk in the enterprise by correctly evaluating the financial evaluation, performance and treasury flows.

Practically, the general frame of IFRS 1, 2 and 3 assures, besides a good reflection of the position and performance, a correct measurement of the financial structure by identifying exactly the enterprise liquidity and solvency, as well as the economic and financial risk factors.

The differences in perceiving the risk and its threat can lead to many decisions of risk management, decisions that are not the most appropriate. The levels of the perceived incertitude can be diminished when the risks become accepted in society.

On the way to the services economy, monetary factors begin to dominate the risk perception of a person. Culture has, as well, a crucial role in the perception of the risk.

In this domain, the decisional process takes place, most of the times, under risk and incertitude. Consequently, the economic agents are not sure that their business will reach their target.

The performers of the economic life focus on risk measurement using probabilities. But probability and risk in economy are different concepts. *Probability* shows how possible is for an event to take place under well determined circumstances. This means that, for each event, there is a certain probability of occurrence.

Both probability and risk can be objectively and subjectively interpreted.

The objective probability is based on the historical evidence of the statistics and it lies in estimations of the probable situations, based on the previous transformations.

The subjective probability and the subjective estimation of the risk are personalised; they reflect mentalities and habits and show how much they base on intuition or, on the contrary, on false observations.

The complexity of the contemporary economic life, the frequent changes in the economic environment and the factors that influence all economic activities determine the existence of many risk categories. Consequently, the risk represents 'the result fluctuation under the influence of the environment factors, involving the probability of an unfavourable event' (Buşe 2005, 338). Moreover, the same category of risk can register different probabilities and effects depending on the economic agent or on the investment project. This fact leads to the idea that the economic risk can be determined and analysed for each business separately.

On another hand, leaving from the fact that the users of the accounting information are interested both in the net profit of the period and in the share result, in order to deal with some aspects concerning the risk associated to the profitability in the accounting documents, it is considered necessary to connect their analysis to the diagnosis of the economic and financial profitability.

It is obviously that the international accounting regulations, IFRS/IAS, assures, besides the right reflection of the position, performance and enterprise treasury flows, a measure of the profitability of the enterprise assets exploitation. The answer that is required from the financial analysts is to know if the capital investment in the enterprise assets, with a specific financial and economic risk, is well paid with profit or is paid better than the average in its economic category. We cannot establish the economic and financial risks of an enterprise without the accounting information about the balance sheet and about the profit or loss account set in accordance with

the IFRS/IAS regulations. That is why, in order to analyse and evaluate the risks, all these are grouped as follows: exploitation risks, financial risks, insolvency and bankruptcy risk.

3. Analysis of the financial risk

The financial activity, in its numerous categories, is influenced by the unpredictable, by restrictive elements in evolution, often unexpected, and does not depend directly on the economic agents. Dealing with many factors (market, competition, time, inflation, exchange rate, interests, commissions, people and, last but not least, firm culture) leads to making a decision in risk conditions.

Managing or administrating the risk in the financial domain involves:

- identifying the sectors prone to risk,
- estimating the probability of the financial risk,
- determining the connections between the financial risks and the other significant risks (exploitation risk, market risk – interest fluctuations),
- establishing the risk and observing it in order to stop it or to diminish its effect,
- identifying the causes of the financial risk in order to establish the possible effects on the enterprise as a whole,
- determining the risk as a quantified size, as well as the effects associated with its occurrence,
- establishing the strategies to position the enterprise in a space of financial certitude.

The activity of management of the financial risk is part of the process of financial control and planning. It is involved in the strategies of continuous adjustment of the firm to the continuously changing internal and external conditions.

We can see in Figure 1 where the financial risk and its effects appear.

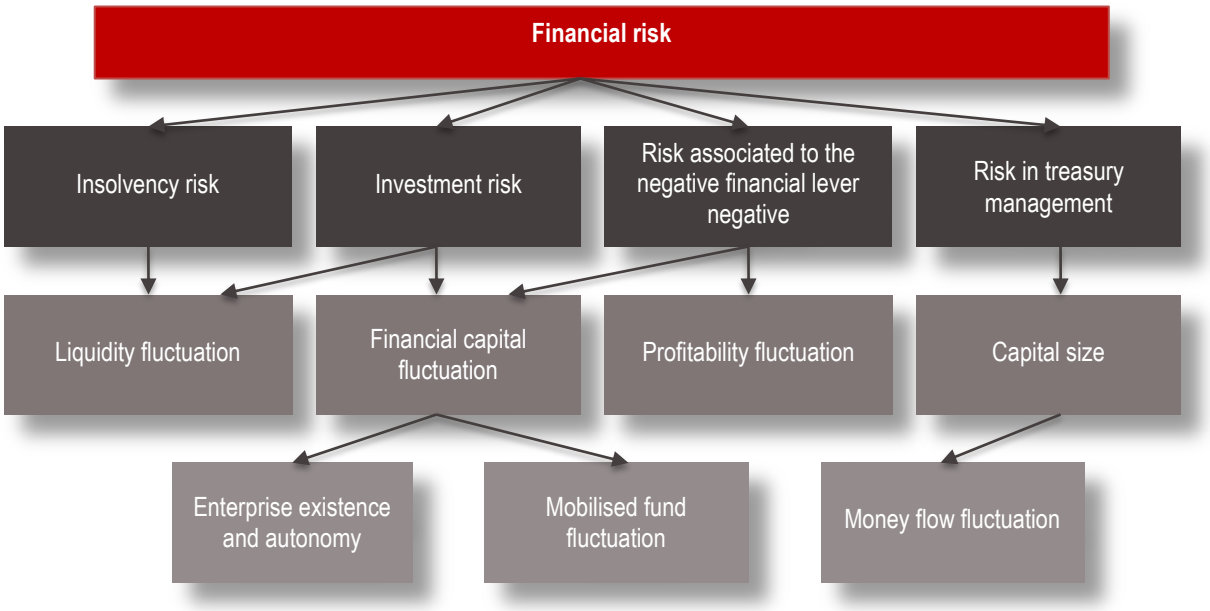

Figure 1. Financial risk and associated risks

The enterprise **financial risk** characterizes the fluctuation of the result indicators, on the basis of the enterprise financial structure. The financial risk appear when making appeal to credit loans in order to finance an activity, being connected, consequently, to the structure of the balance passive, especially the debts.

If the decision of investment determines the risk of the economic activity (of exploitation), then the decision of finance leads to the financial risk.

The correlation between the *indebtedness degree* of the enterprise and its capacity to remunerate its own capital by means of financial profitability rate can be analysed through the **financial lever effect.** In this case 'the advantage comes from the anticipation of the use of the obtained funds, at a fix interest rate, in investment opportunities with profitability superior to the interest rate paid for the credited loans' (Helfert 2006, 219).

When analysing the financial lever effect, we begin by forming some simplifying hypotheses that allow isolating the effects on the financial profitability of the activity other than the exploitation one.

The hypotheses involve:

- *neglecting the results of the exceptional activity;* these results are found in the net result and, by extension, influence the size of the financial profitability,
- *admitting that the entire enterprise capital, its own capital or loans, is invested in the exploitation activity only.*

Consequently, the enterprise's capacity growth leads, by indebtedness, to a marginal result. This result is partially absorbed by the debt cost. If the net result of the financial expenses is positive, the global result of the enterprise and its rate will rise. The relation is inverted if the marginal rates become negative.

As far as the ***treasury management risk*** is concerned, the following remarks are to be mentioned.

Treasury management means manipulating daily the economic agent's money, taking decisions about investment and financing, buying or selling foreign currency on the market, taking responsibility for different financial objectives.

Each of these activities has financial risks that, many times, mean losses. When analysing the risks of the treasury management, the following financial risks are to be taken into consideration:

- **incompetence risk** – risk as a result of the errors that the directing board have committed,
- **liquidity risk** – risk of supporting the penalties regarding the time or price of acquisition of a financial tool,
- **exchange risk** – risk regarding the foreign exchange currency fluctuation; the debts of the enterprise are expressed and evaluated in this foreign currency, different from the account currency that the enterprise usually uses,
- **tax risk** – risk regarding the tax flow management,
- **human risk** – risk regarding the behaviour of the people that make decisions or involve the enterprise in risky activities,
- **interest rate risk** – risk regarding the fluctuation of the interest rate level.

The financial risk evaluation in investment plan is another important aspect that has to be mentioned.

In order to correctly estimate and evaluate the financial risk in investment plan, it is important to keep in mind the three levels of the investment projects of the risk:

- risk of the investment projects regarded individually, which doesn't take into consideration that it is part of the enterprise's asset portfolio and that the enterprise is just a share in the investors' portfolios;
- enterprise risk, the risk of the investment projects when they are integrated in the activity of the enterprise as a whole;
- investment risk in relation with the shareholders or the market risk, considered to be holders of their own and different investment portfolios.

The financial structure, respectively the relation between the lent capitals and the own capitals, influences the profitability of the enterprise, being partially risky. This risk is a financial risk, determined by the fact that the financial resources are not assured at the necessary level or in due time.

The size of the financial risk can be calculated by means of a global profitability level, using the equation:

$$BFcr = \frac{Cf + Si}{1 - \frac{Cv}{BF}} = \frac{Cf + Si}{1 - Rv} = \frac{Cf + Si}{Rmv}$$

where:

BF_{cr} – critical or minimum business figure, Cf – production fix cost, Cv – variable cost, Rv – variable cost rate, Rmv – variable cost margin rate, Si – paid interest sum.

In order to diagnose the financial risk, as well as in the case of the economic risk, we can use relative or absolute position indicators, and, depending on their level, we can calculate the situation of the financial risk, using the same criteria:

$$I = BF_{ef} - BF_{cr}$$

$I\% = ((BF_{ef} - BF_{cr}) / BF_{cr}) * 100$

where:

I, I% – we can use relative or absolute position indicators, BF_{ef} – actual business figure.

In order to be complete, the analysis of the financial balance must be continued with the calculation and interpretation of other tools, too, respectively of different categories of rates resulted from the functional and financial balance sheet.

The analysis and the interpretation of the rates contribute to the evaluation of the enterprise's financial performances, both in evaluating the management quality and in approval or disapproval of the bank loans, banks having score grids that calculate the risk degree of the enterprise.

The correlation between the *indebtedness degree* of the enterprise and its capacity to remunerate its own capital by means of financial profitability rate can be analysed through the **financial lever effect**.

3.1. Analysis of the lever effects in the financial previsions in order to prevent risks

The financial analysis, directed to the future, aims at quantizing the *effects* in succession of the lever coefficients when setting *previsions* regarding the results.

Considering the evaluation methodology and the correct data of the enterprise under research, the following aspects are to be mentioned:

- *Exploitation lever effect* (ELE) represents the exploitation result adjustment (ΔrRexp) under the influence of the rise (Δr) of the sales (business figure).

The estimation and evaluation of the economic risk can be calculated by means of the coefficient of the exploitation lever (CLE).

$$CLE = E_{R\,exp/CA} = \frac{\Delta R\,exp\,/\,R\,exp}{\Delta CA\,/\,CA} = \frac{\Delta R\,exp}{\Delta CA} \times \frac{CA}{Re\,xp} = \frac{31217376}{61679109} \times \frac{52023817}{23099424} = 1{,}13$$

$ELE = CLE \cdot \Delta r_{q(CA)} = \Delta rRexp\ (\%)$

- *Financial lever effect* (FLE) represents the net result adjustment (ΔrRnet), as a consequence of the estimated rise of the exploitation result (ΔrRexp).

This risk takes the form of the sensitivity of the *net result* at the exploitation result fluctuation and it is estimated by the *flexibility* $F_{Rnet/\,Rexp}$ known as the *financial lever coefficient* (FLC):

$$CLF = F_{R\,net\,/\,R\,exp} = \frac{\Delta Rnet/Rnet}{\Delta R\,exp/R\,exp} = \frac{5036970}{31217376} \times \frac{23099424}{511593} = 7{,}28$$

$FLE = FLC \cdot \Delta rRexp = \Delta rRnet\ (\%)$

▪ *Total lever effect* (TLE) represents the net result adjustment (ΔrRnet), as an effect of the sales rise ($\Delta r_{q(BF)}$).

The total lever coefficient (TLC), calculated in the end as a report between the margin of the variable costs and the exploitation result diminished as a result of the financial expenses, expresses the sensitivity of the net result at the sale fluctuation:

$TLC = CLE * FLC = 1{,}13 * 7{,}28 = 8{,}23$

$$CLT = \frac{\Delta R\,exp/Rexp}{\Delta q/q} \times \frac{\Delta Rnet/Rnet}{\Delta R\,exp/R\,exp} = \frac{\Delta Rnet/Rnet}{\Delta q/q} = \frac{\Delta rRnet}{\Delta rq} = 8{,}23$$

$TLE = TLC \cdot \Delta rq(BF) = \Delta rRnet\ (\%)$

For example, the sales figure rise with 10 % in the next period will have the following *effects in succession*:

- $ELE = CLE \cdot \Delta rBF = 1{,}13 \cdot 10 = 11{,}3\ \% = \Delta rRexp$ so:
  $\text{Rexp} = 1{,}113 \cdot 23099424 = 25.709.658$ lei;

- $FLE = FLC \cdot \Delta rRexp = 7{,}28 \cdot 11{,}3 = 82{,}37\ \% = \Delta rRnet$ so:
  $\text{Rnet} = 1{,}8237 \cdot 511593 = 932.992$ lei;

- $TLE = TLC \cdot \Delta rBF = 8{,}23 \cdot 10 = 82{,}3\ \% = \Delta rRnet$ so:
  $\text{Rnet} = 1{,}823 \cdot 511593 = 932.992$ lei.

The conclusion we reach is that, on the basis of the estimations, the sales rise has favourable effects on all results.

4. Conclusions

Far from being a new interest at the international level, risk management must be a continuous preoccupation.

On one hand, enterprises make more and more use of the assets assurance, and n the other hand, the progressive turn from an indebtedness economy to an economy based on the financial markets raises the problem of a complex financing and requires important investment of the enterprises.

The western countries pay again attention to the risk management at the enterprise and administration levels. But we cannot say the same thing about the enterprises in our country.

Nobody talks about the existence of the risk–manager function, the existence of a team, target, strategy etc. That should take care to identify, measure and prevent or control the risks of an enterprise. At the national level, most of the important interests are in macroeconomics, while most of the enterprises function by force of habit, and others are insecure.

Among others, we also think about the fact that the enterprises do not evaluate correctly their tax risk level, about the fact that there is no policy to obtain a tax decision taken by the control departments or the management board.

How can we convince the decision takers that risk management is compulsory at the enterprise level? There is only one answer: researchers should work out a guide entitled 'Risk management – guiding lines for the attention of the decision takers'.

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Modelling Correlated Liquidity and Solvency on a Balancing Equation in Indian Consumer Industry

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Abstract

A well designed and implemented financial management has a significant contribution for firms' growth. This growth is measured by the firm's adequacy of solvency and to maintain liquidity powers. The purpose of this study is to assess this adequacy level between liquidity and solvency in Indian Consumer Industry and its impact on profitability. The author argues that liquidity is an important source of stability risk and this balancing should be measured quantitatively when accessing the overall risk of the firm. Ratio analysis has been primarily used to assess the short-term and long-term performance of the units under study. The relationship between liquidity and solvency, their influence has been measured using correlation and regression analysis and then tested using ANOVA. The results show that liquidity risk and solvency have statistically no relationship among them in the Indian consumer industry. This always puts tremendous pressure on the corporate to come out with a balancing mix of both to maximize the profits for shareholders. Also, it has been observed that the relatively low liquidity observed in firms is important to increasing the profitability, but that increased profitability from decreased liquidity can be offset by increased solvency.

Keywords: liquidity, solvency, financial ratios, profits, relationship

JEL Classification: M41

1. Introduction

A well designed and implemented financial management is expected to contribute positively to the creation of a firm's value (Padachi 2006). Dilemma in financial management is to achieve desired trade-off between liquidity and solvency for profitability (Lazaridis *et al.*, 2007). *Liquidity* refers to quickly convert investments into cash or assets with minimal cost and in less time. *Solvency* is the ability to meet interest payments and repayments of loans at due intervals. An important role and impact of investment attractiveness, is that investors make decisions and allocate resources properly. In fact, the lack of balance between liquidity and solvency may have a negative effect on shareholder value. The recent financial crisis and subsequent turmoil in financial markets have sparked new questions about the perception and evaluation of liquidity and solvency risk.

This paper proposes and demonstrates a modelling correlated relationship between liquidity and solvency and liquidity risks for a consumer industry. Given the interaction between solvency risk and systemic liquidity risk, our framework will jointly model both. This research reinvestigates this relationship by using commonly used liquidity and solvency financial ratios

2. Literature review

Let us review the noteworthy scholarly evidences on the interrelationship between liquidity and solvency in a firm in order to assess the pervasiveness of the balancing of their equation and the likely effect on the profits for the shareholders.

Liquidity management has been commonly used to assess the financial performance of firms (for example, see Kenkel *et al.* 2002; Boyd *et al.* 2007). Liquidity ratios measure the short-term solvency of a firm. High liquidity reflects an ability to repay debts and is valuable for obtaining debt capital.

Research in the general economics literature supports the idea of increased profitability with decreased liquidity. Kehoe and Levine (2001) model the effect of liquidity constraints on asset holders. They find that these asset holders experience greater persistence of shocks, whereas asset holders facing constraints on leverage instead of on liquidity experience no long-run effects from short-run shocks. In this case, managers may choose risk management strategies which tend to increase efficient use of resources.

Oliveira and Fortunato (2006) and Hoshi, Kashyap and Scharfstein (1991) indicate that investment in firms with information problems in capital markets is much more sensitive to liquidity levels than for firms which provide relatively more information to capital markets. Evans and Jovanovic (1989) describe the extreme case of this when concluding that liquidity constraints bind decisions of entrepreneurs attempting to enter a given product market, forcing the entrant to bear the risks associated with their new venture.

Solvency has also been used as an indicator of financial performance (Baourakis *et al.* 2002; Boyd *et al.* 2007) and research has shown it affects the profitability of firm. To determine the solvency level of firms according to existing obligation of firms', different techniques may apply as measurement of liquidity. Current ratio, quick ratio and cash ratio are among the most traditional liquidity measurement techniques and the most recent dynamic technique, cash conversion cycle is applied for measurement of liquidity level of firms.

The relationship of these traditional and modern liquidity measurement techniques are studied by Lyroudi and McCarty (1993) for small US companies for the period of 1984-1988 and they found that cash conversion cycle was negatively related with current ratio but positively related with quick ratio. Enyi (2005) studied the relative solvency level of 25 sample firms. The finding of the study revealed that the gap created by the inability of traditional liquidity measurement of solvency level, like current ratio, quick ratio and other solvency ratio to effectively determine the proper size or volume of working capital is fulfilled by the relative solvency level model.

3. GAP areas

As evident from the literature, modelling of liquidity and solvency on balancing lines has been the topic of interest for researchers in the advanced economies like USA, UK, Australia, that facilitate research on the concept contrary to the situation in developing economies where modelling the two has not received the considerable attention they deserve despite number of studies published on them. That too, Indian consumer Industry has not been covered in – depth. In the present paper we have tried to cover issues related to balancing of liquidity and solvency for better profits in Consumer Industry in India.

4. Objective of the study

This study is designed to achieve the following objectives:

- To measure the relative liquidity and solvency level in relation to operational size of firms,
- To measure the relationship between two financial parameters, the liquidity and the solvency in Indian Consumer Industry,
- To study the impact of the said relationship on the profits of the companies under consideration.

5. Research methodology of the study

Sample selection

The top 5 companies have been chosen for the year 2010-11 as per the 'Business News This week', **out of top 15 fmcg companies, 5 were chosen for our study on the basis of data availability during the period as follows**:

Table 1. Sample Companies

No.	Company Name
1.	Hindustan Unilever
2.	Dabur India
3.	Godrej Consumer
4.	Marico
5.	Colgate Palmolive

Source: *http://www.businessnewsthisweek.com/2009/11/top-20-fast-moving-consumer-goods-fmcg.html*

1. Hindustan Unilever Limited

Hindustan Unilever Limited (HUL) is the only company in Indian consumer goods market that has products in more segments than any other company of the same sector. HUL is India's one of the largest fast moving consumer goods company, with leadership in Home, Personal Products and others.

2. Dabur India

Dabur India Ltd. is currently the fourth largest company in India in terms of market capitalisation in the FMCG and Personal care sector with revenues of over Rs. 4000 Cr. The company is 125 years old and specializes in Ayurvedic medicines.

3. Godrej Consumer Products Ltd.

Godrej Consumer Products Ltd is one of the leading FMCGs companies in India. It is the market leader in personal, hair, household and fabric care segments. The company operates in two segments: soaps and personal care goods.

4. Marico

Over the past few years, Marico has evolved into one of the leading Indian FMCG companies from a coconut oil manufacturer. It has positioned itself on the beauty and wellness platform and caters to hair care, health care, and skin care.

5. Colgate Palmolive

Incorporated in September1937, Colgate-Palmolive (India) Limited (CPIL) is India's leading provider of scientifically proven oral care products. The range of products includes toothpastes, toothpowder and toothbrushes as well as a specialised range of dental therapies.

Tools and techniques

To accomplish the aforementioned research objectives, the data for this study was gathered from the companies' published financial statements.

(i) Financial Ratios have been calculated in order to assess the short-term and long-term performance of the units under study (as discussed below).

(ii) In addition, Correlation analysis has been used to establish the relationship between the liquidity and solvency performance.

(iii) Regression analysis has been used to study the impact of liquidity and profitability variables on Solvency during the period under study. ANOVA has been applied to test the balancing between liquidity and profitability of the units under study.

A. Solvency Ratios

1. Debt Equity Ratio

The debt-to-equity ratio (D/E) is a financial ratio indicating the relative proportion of shareholders' equity and debt used to finance a company's assets. It is calculated as:

$$\text{Debt Equity Ratio} = \frac{\text{Long term Debt}}{\text{Shareholder's Funds}}$$

2. Interest Coverage Ratio

Interest Coverage ratio is used to determine how easily a company can pay interest on long-term debt. The ratio is calculated as:

$$\text{Interest Coverage Ratio(ICR)} = \frac{\text{Operating Profit/ EBIT}}{\text{Interest on long term loans}}$$

Larger the ICR, greater is the safety of the lender's interest.

B. Liquidity Ratios

1. Current Ratio

Current Ratio, or working capital ratio, is a measure of liquidity and a company's ability to meet its short term obligations. It is calculated as:

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

A current ratio of 2:1 is considered standard, but this may differ from industry to industry.

2. Quick Ratio

Quick Ratio, or acid test ratio, is liquidity ratio that determines whether a firm has enough short term (current) assets to meet its short term obligations (current liabilities) without selling its inventories. It is calculated as:

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\text{Quick Assets} = \text{Cash and Cash Equivalents} + \text{Accounts Receivables} + \text{Short Term Investments}$$

A quick (liquid) ratio of 1 is considered standard, but this may differ on industry basis.

3. Super Quick Ratio

Super Quick Ratio is liquid ratio that determines whether a firm has enough cash & cash at bank to meet its short term obligations (current liabilities).

It is calculated as:

$$\text{Super Quick Ratio} = \frac{\text{Cash \& Cash at Bank}}{\text{Current Liabilities}}$$

A ratio of 0.67:1 is considered standard or normal for a firm.

Period of the Study

The time period taken is of five years, ranging from 2006 to 2011; it is reasonably long enough to analyse the relationship trend and reveal the short and long-term fluctuations thereof.

6. Results and discussion

A. Financial Analysis

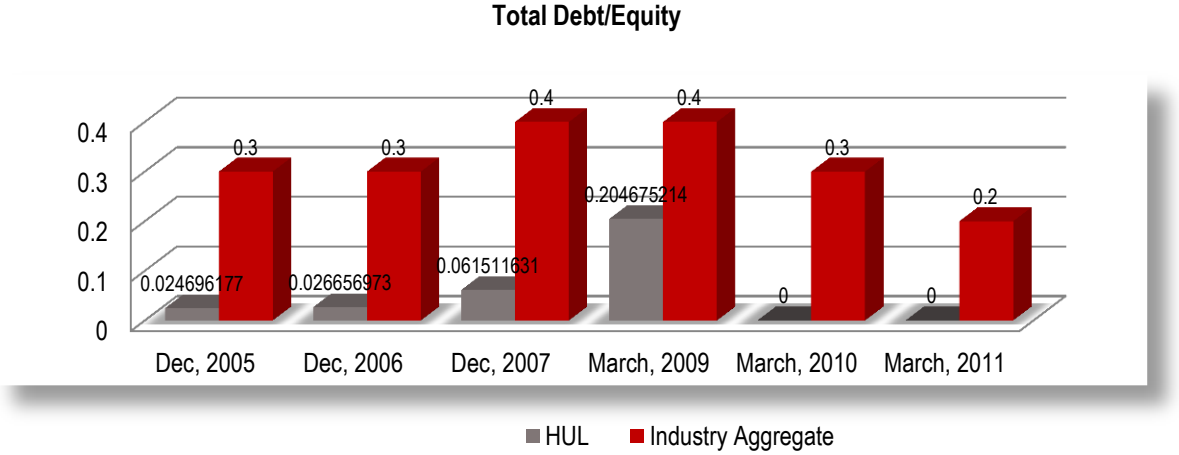
Here, the performance of company has been analysed regarding their liquidity and solvency.

1. HUL

Solvency Analysis

Debt Equity

Figure 1. Debt-Equity Ratio of HUL for 2005-2011



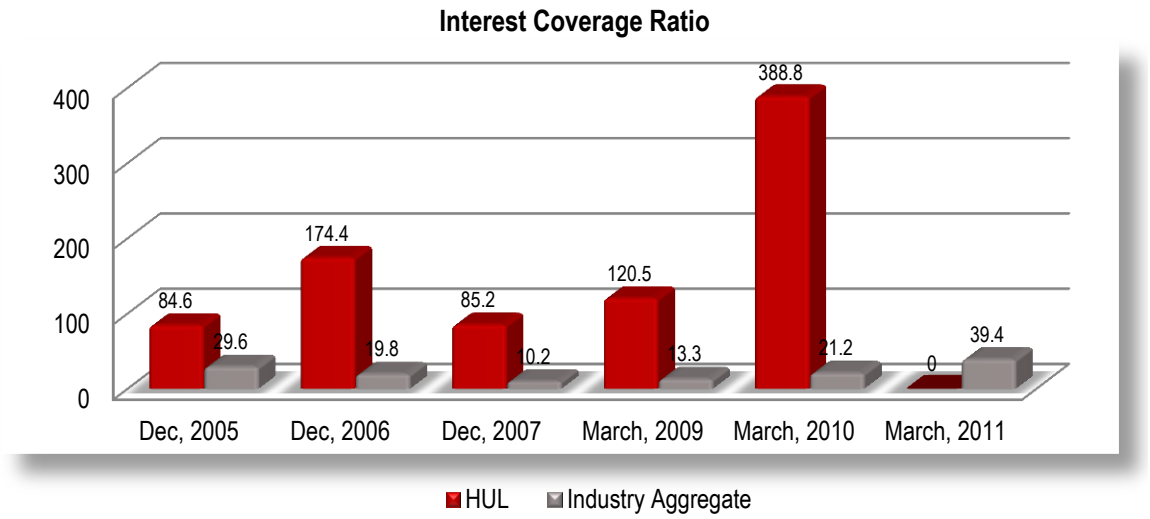
Analysis

HUL is currently a zero debt company. So, HUL is in a strong position solvency-wise and stale debt-wise. Debt Equity ratio increased sharply in 2008-2009 which can be attributed to the fact HUL went for buy back of shares in 2008, probably because of which they had to go for both Secured and Unsecured Loans. Owing to this

their total debts increased. There was a sharp decrease in Equity in 2007 because they gave very high dividends before going for the buyback of shares. After 2007 Equity has shown an increasing trend.

Interest Coverage Ratio

Figure 2. Interest Ratio of HUL for 2005-2011

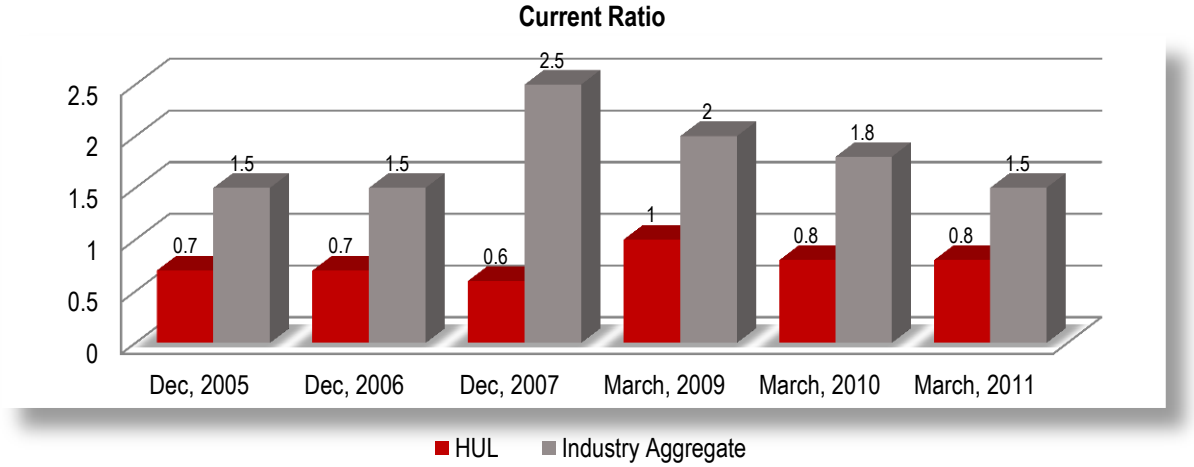


Analysis

HUL has a very high Interest coverage ratio, well above the industry average. This is due to very low debt that HUL has. In 2008 HUL went for a change in its accounting period from calendar year to financial year. Therefore the accounting period ending 2009 effectively has 15 months, i.e. from Jan, 2008 to Mar, 2009. Because of this sales and operating profit figures are higher than what one would expect considering the normal trends. Interest burden is a not a big concern for HUL.

Liquidity Analysis
Current Ratio

Figure 3. Current Ratio of HUL for 2005-2011



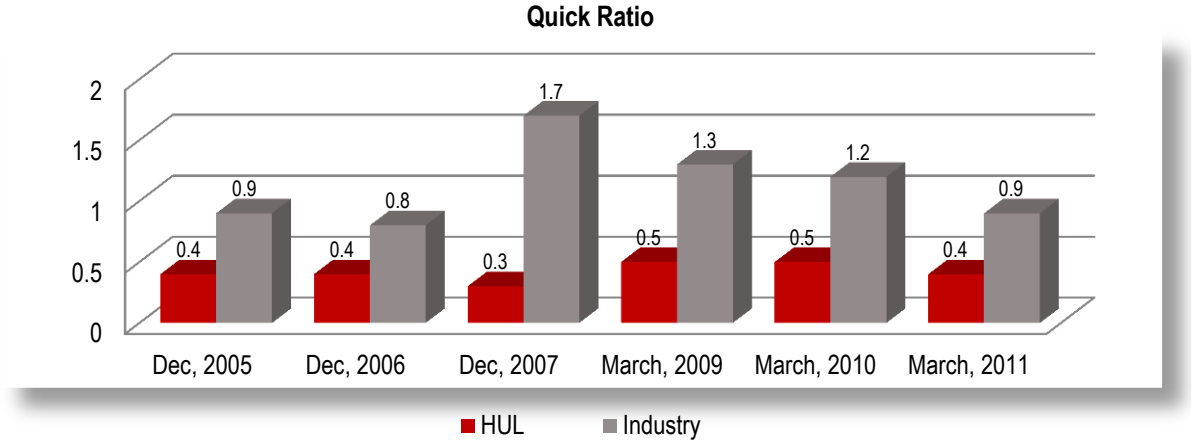
Analysis

Compared to the industry aggregate, HUL has a relatively low current ratio and well below the benchmark of 2. The current ratio has varied from a minimum of 0.6 in 2007 to a maximum of 1 in 2009. Current Assets have showed a CAGR of 17.05%, whereas current liabilities displayed a CAGR of 12.38%. Over the last 6 years, current ratio has been more or less same, except in 2007-2008, where it fell to 0.6 from 0.7 in 2007. This fall in

2007-2008 can be attributed to increase in current liabilities. It implies that the HUL cannot meet its short term liabilities without loans and advances.

Quick Ratio

Figure 4. Quick Ratio of HUL for 2005-2011

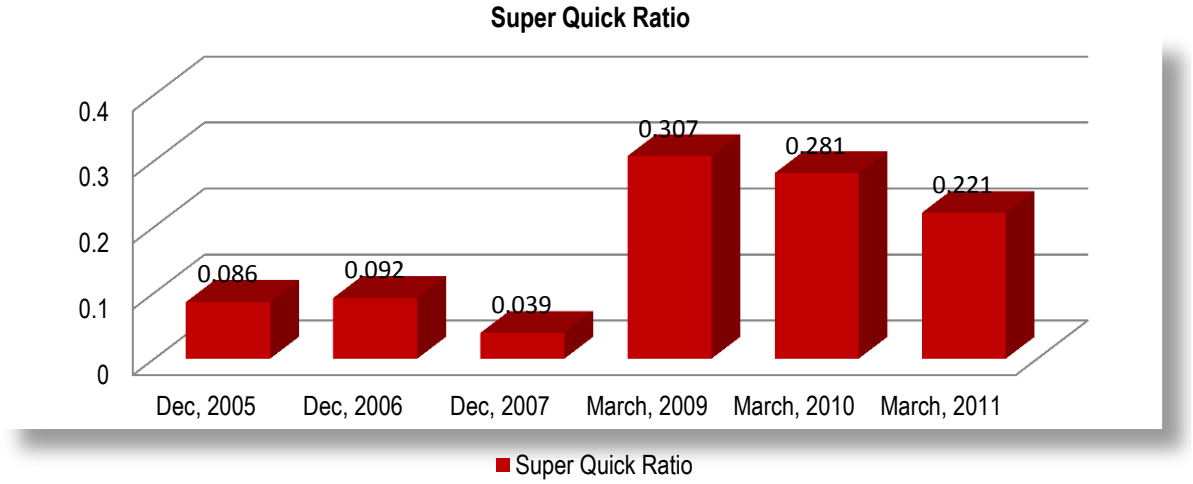


Analysis

Due to the heavy proportion of inventory in current assets, HUL's quick ratio is much lower than the industry aggregate. The quick ratio has shown an erratic trend due to the high dependence on inventory in current assets.

Super Quick Ratio

Figure 5. Super Quick Ratio of HUL for 2005-2011



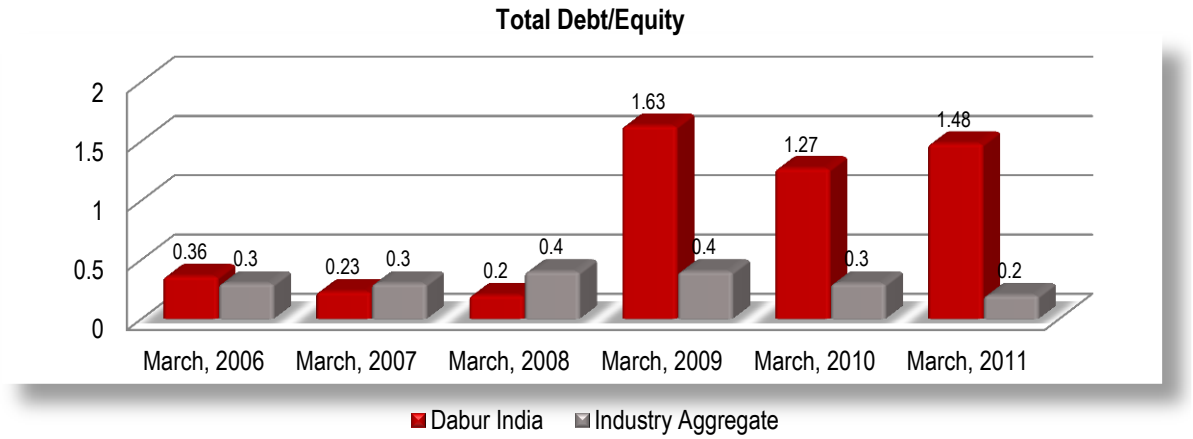
Analysis

Cash ratio is very low as compared to the benchmark of 0.67. In years from 2005 to 2007 HUL had very less term deposits with Banks which increased multiple times in subsequent years which explains the rise in cash ratio in 2008-2009. This low cash is heavily due to piled up inventory and also increase in debtors.

2. Dabur India

Solvency Analysis
Debt Equity Ratio

Figure 6. Debt-Equity Ratio of Dabur for 2006-2011

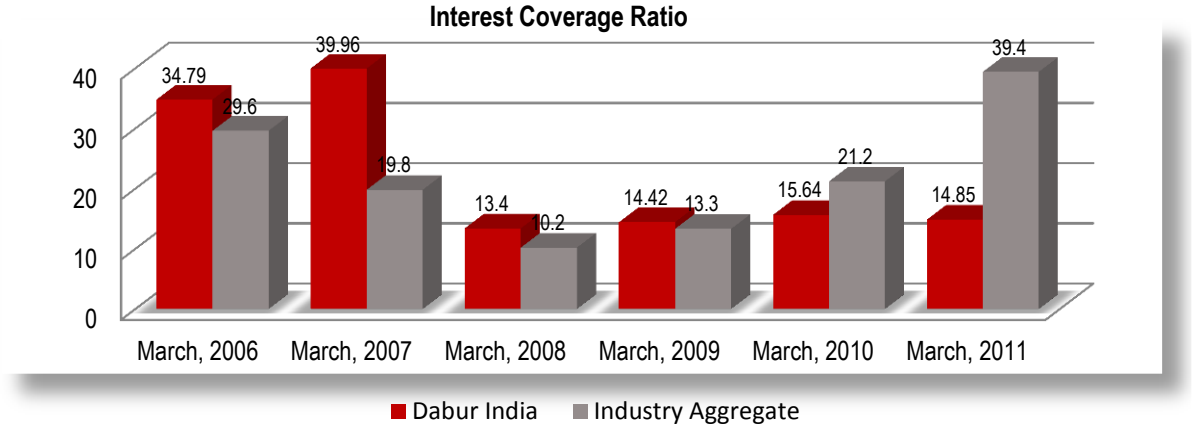


Analysis

Dabur has shown a trend of increasing debts which has increased drastically in 2009 by over 700%. It since then has been hovering above 1. The personal care industry aggregate for this ratio has always been below the Dabur's ratio due to the presence of low-debt companies such as HLL and CPIL. So, Dabur is not in an ideal position stable debt-wise.

Interest Coverage Ratio

Figure 7. Interest Ratio of Dabur for 2006-2011

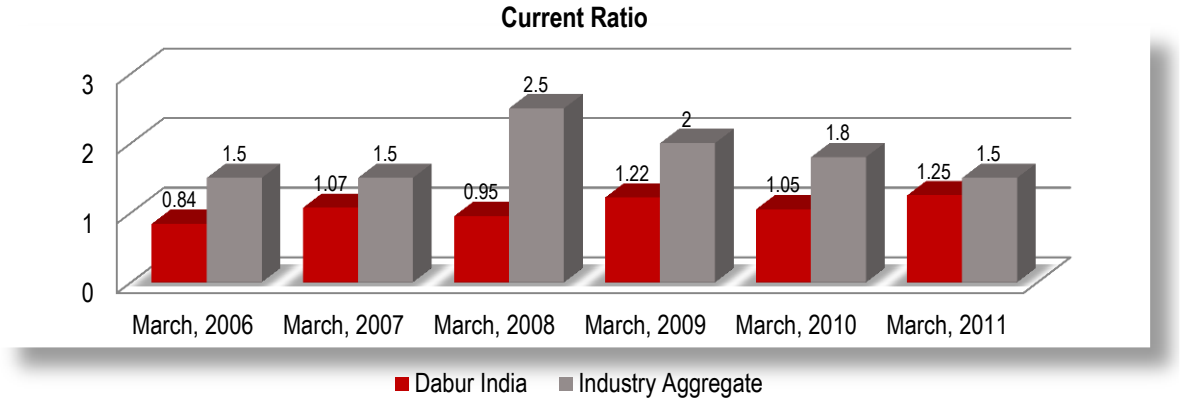


Analysis

The ICR for Dabur has shown a downward trend in recent years, primarily due to the large amount of debt it has undertaken in the past 3 years. The ICR is likely to fall further over the years due to the high dependence of unsecured loans from banks.

Liquidity Analysis
Current Ratio

Figure 8. Current Ratio of Dabur for 2006-2011

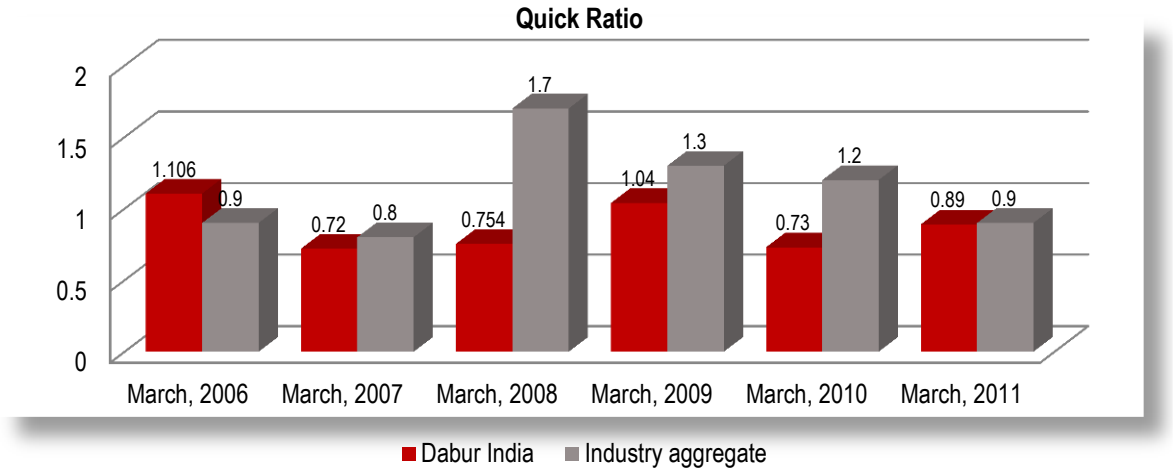


Analysis

The current ratio for personal care sector ranges around 1.5 to 2. However, during the financial year 2007-2008 the industry as a whole had an adequate stock of current assets to meet their short-term obligations. However, Dabur India has always been far below the standard ratio of 2:1. The company was better off slightly in 2009 and 2011 when the company's current assets increased by 35% and 41% respectively owing to more than doubling of cash in 2009 and 35% increase in loans in 2011. The liabilities of the company were too were on constant rise over the years owing to increase in creditors.

Quick ratio

Figure 9. Quick Ratio of Dabur for 2006-2011

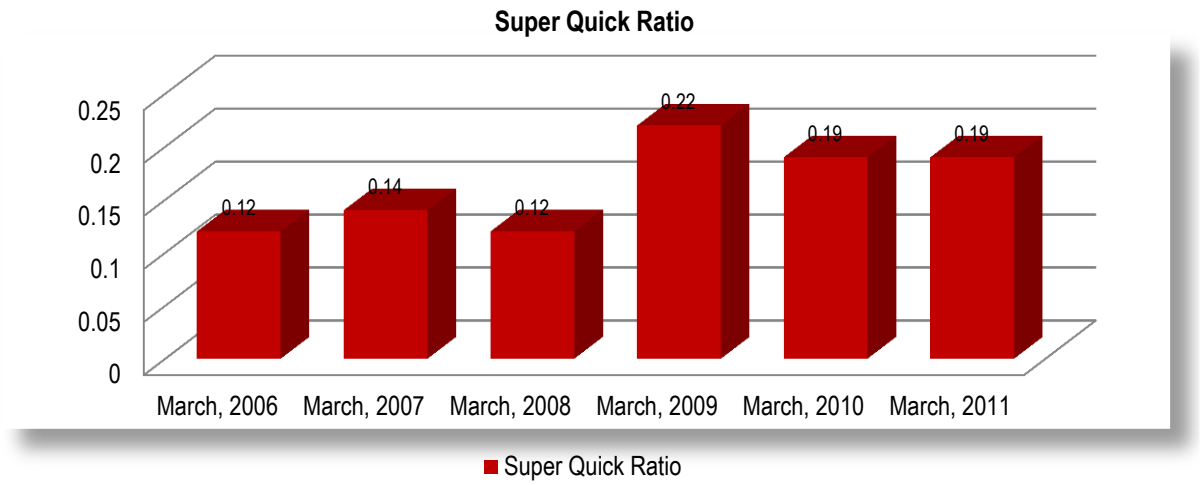


Analysis

Dabur, in this case again was better off only in two financial years 2006 and 2009 when its quick ratio was above the standard quick ratio of 1:1. In 2006, it was even better than the industry aggregate.

Super Quick Ratio

Figure 10. Super Quick Ratio of Dabur for 2006-2011



Analysis

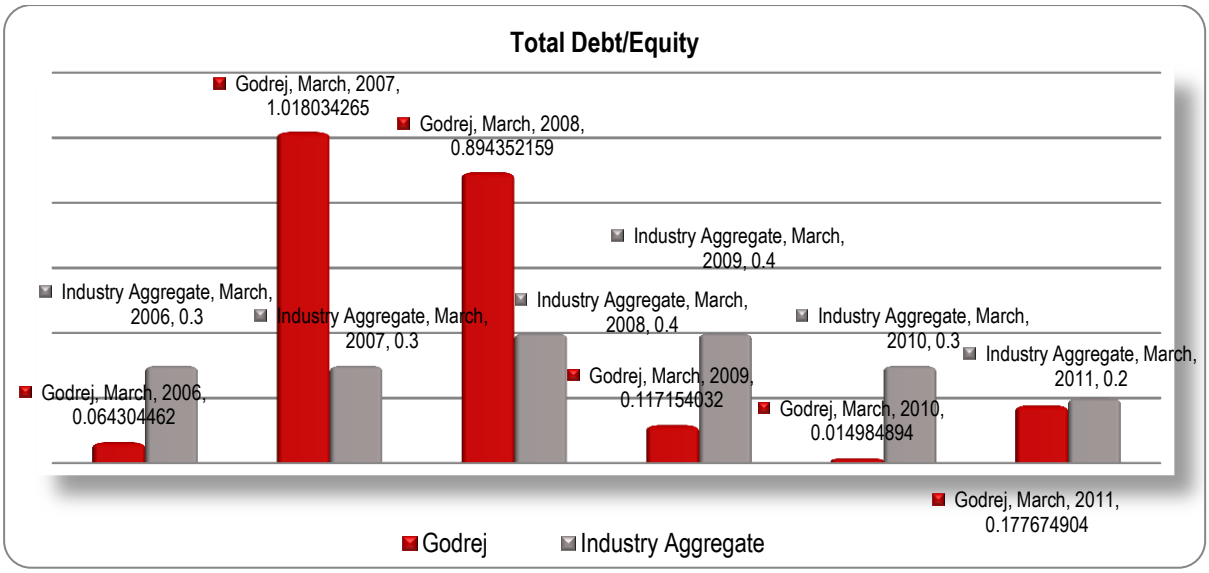
Super-Quick ratio for Dabur increased in the fiscal year 2009 owing to more than doubling of its cash reserves. It afterwards remained constant because of the equally increasing creditors.

3. Godrej Ltd.

Solvency Analysis

Debt Equity

Figure 11. Debt-Equity Ratio of Godrej for 2006-2011

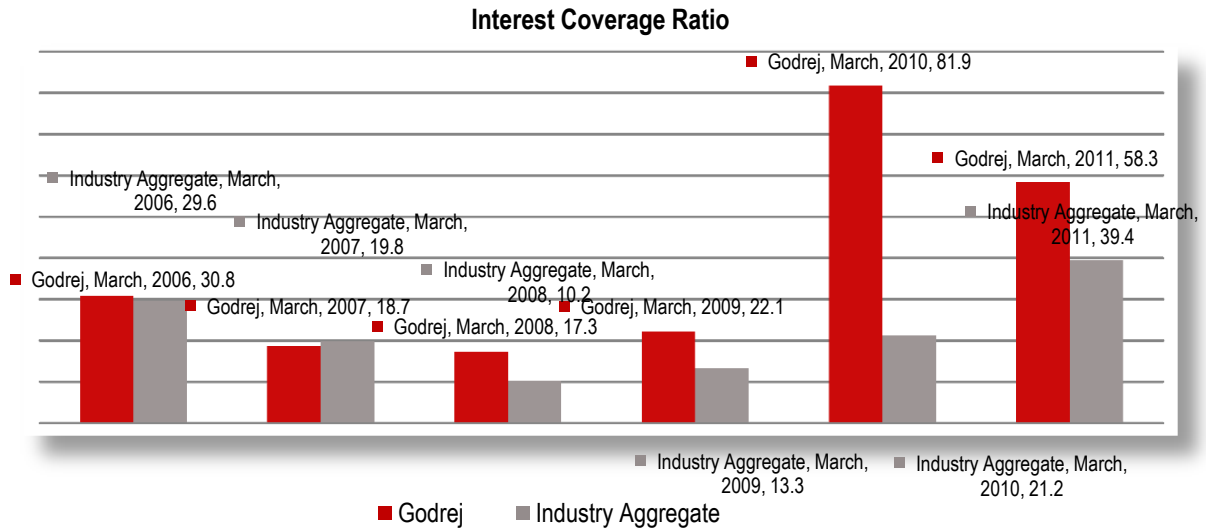


Analysis

Godrej used to have high debts in 2006-07 and 2007-08 as compared to their equity but during the 2008-09 and 2009-10 they repaid most of their secured as well as unsecured loans. Also, during these years, the equity has shown a continuous upward trend and risen tremendously from 110.9 crore in 2006-07 to 1533.7 crore in 2010-11. This increase is primarily due to increase in reserves and surplus. The debt/equity ratio for Godrej was much higher than the industry average during 2006-07 and 2007-08. As Godrej repaid most of their loans in next 2 years, the deb/equity ratio fell sharply. In 2010-11, the debt/equity ratio for Godrej almost stands equal to that of industry due to high amounts of equity.

Interest Coverage Ratio

Figure 12. Interest Ratio of Godrej for 2006-2011



Analysis

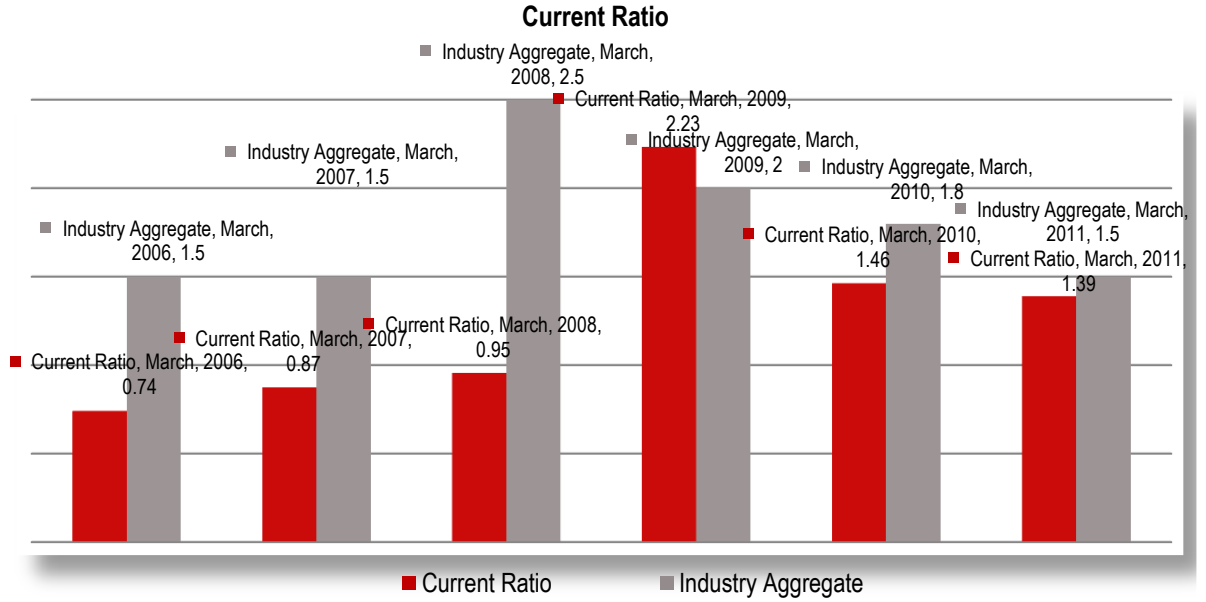
EBIT for Godrej has shown a positive trend for the past 6 years. The Interest Payable has been varying as Godrej repaid some of the loans and has taken some new loans in 2010-11.

The Interest Coverage Ratio for Godrej is almost equal to the Industry for the period 2005-08 but has improved in last 2 years. In year 2009-10, Godrej repaid its debt so the interest paid was small as compared to EBIT which resulted in much lower ICR than Industry average.

We can conclude, at present, Godrej has a very moderate risk of defaulting on its external long term liabilities.

Liquidity Analysis
Current Ratio

Figure 13. Current Ratio of Godrej for 2006-2011



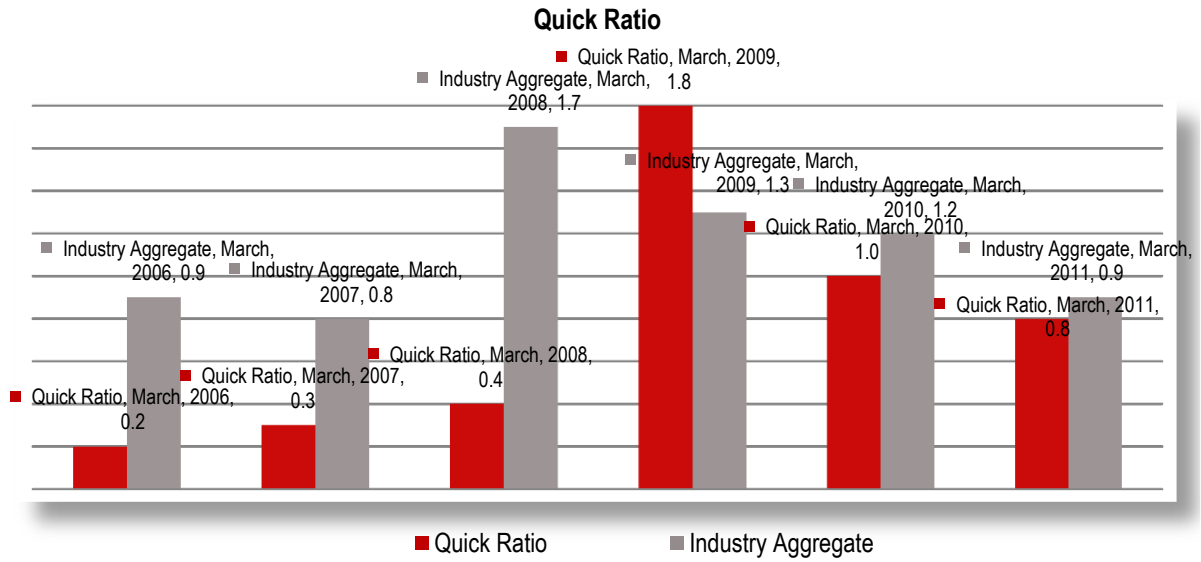
Analysis

Compared to the industry aggregate, Godrej used to have a very low current ratio during 2005-07, but the current ratio has improved since 2008 and is now only slightly less than Industry Aggregate, but it's still less than

the benchmark of 2.The exceptionally high current ratio in 2008-09 is mainly due to large amount of cash leading to a very high current assets and a slight reduction in the current liabilities. So, Current ratio can be considered reasonably healthy for the time being but the low levels of cash and large amount of debtors can be a problem.

Quick Ratio

Figure 14. Quick Ratio of Godrej for 2006-2011

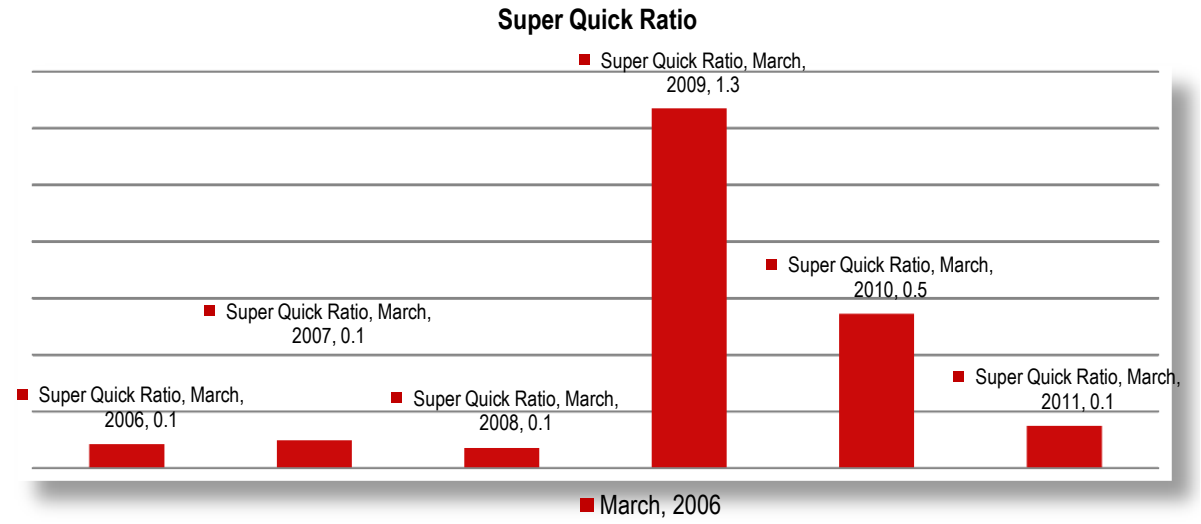


Analysis

Like current ratio, quick ratio for Godrej was much lower than Industry average during 2005-07 but has improved in the last 2 years and become almost equal to the Industry average. Quick ratio has fallen during 2009 and 2010 due to Fall in cash and Increase in current liabilities. At present, Godrej has a quick ratio of 0.8 which is quite healthy but if the ratio falls even further, this could be a problem signal for Godrej as this will mean that they don't have enough liquidity to cover their short-term liabilities.

Super Quick Ratio

Figure 15. Super Quick Ratio of Godrej for 2006-2011



Analysis

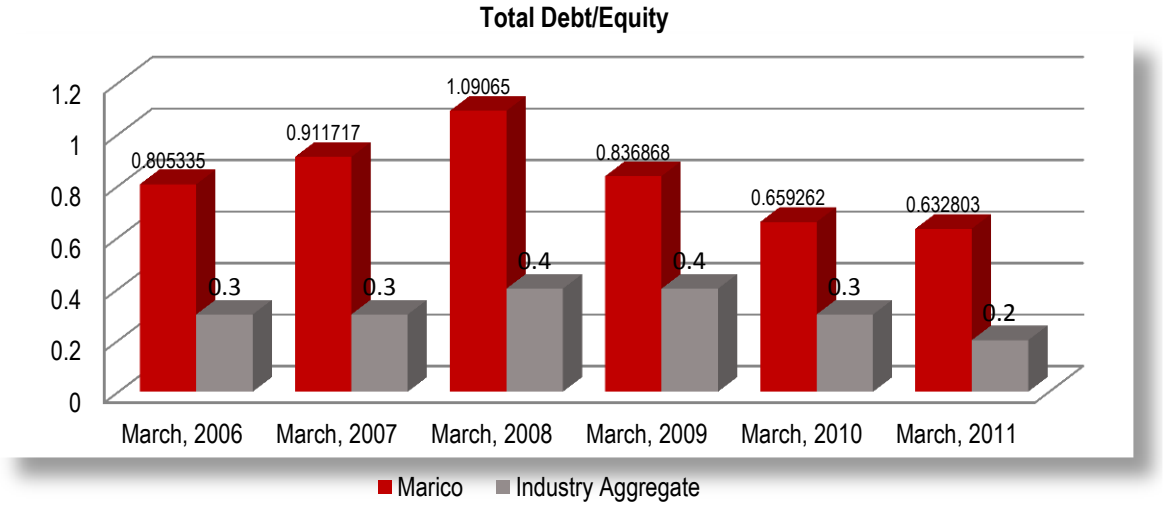
Cash reserves for Godrej have been falling for the last 2 years while at the same time their short-term liabilities have been increasing. As a result, their Super Quick ratio has fallen sharply in the last 2 years and is much lower than the benchmark of 0.67. Thus, Godrej should consider improving its cash reserves to have a better liquidity.

4. Marico

Solvency Analysis

Debt Equity

Figure 16. Debt-Equity Ratio of Marico for 2006-2011

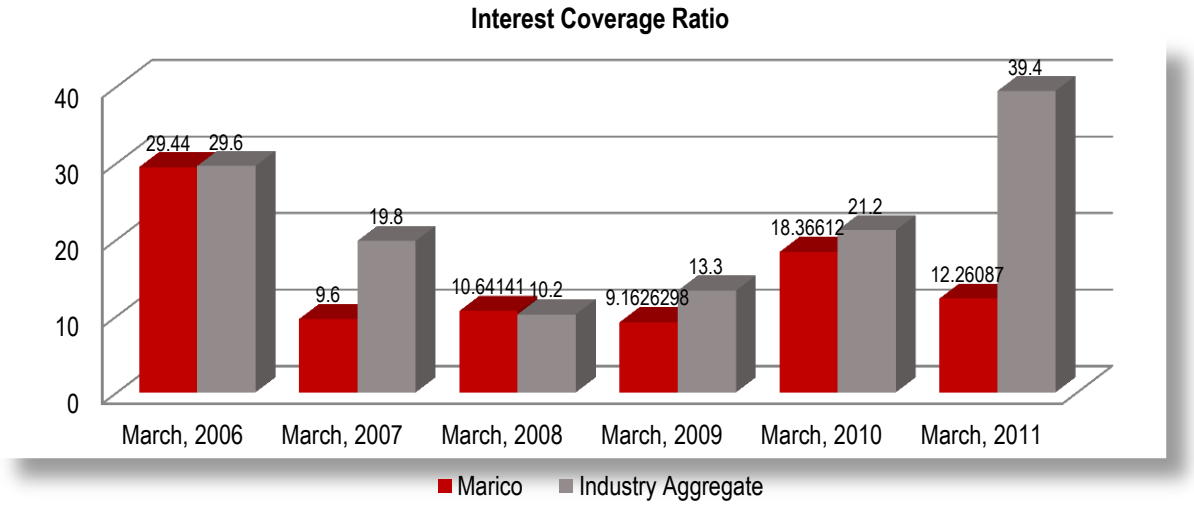


Analysis

Debt Equity ratio has shown increasing trend till 2006 – 2008 while afterwrads, it showed a decreasing trend. Equity is increasing at faster pace than Debts. Major Chunk of increase in Equity is due to Reserves and Surplus and we can say that Company is using Debts efficiently and making good profits. Marico is also taking care of Shareholders interests with 60% plus dividends year on year.

Interest Coverage Ratio

Figure 17. Interest Ratio of Marico for 2006-2011

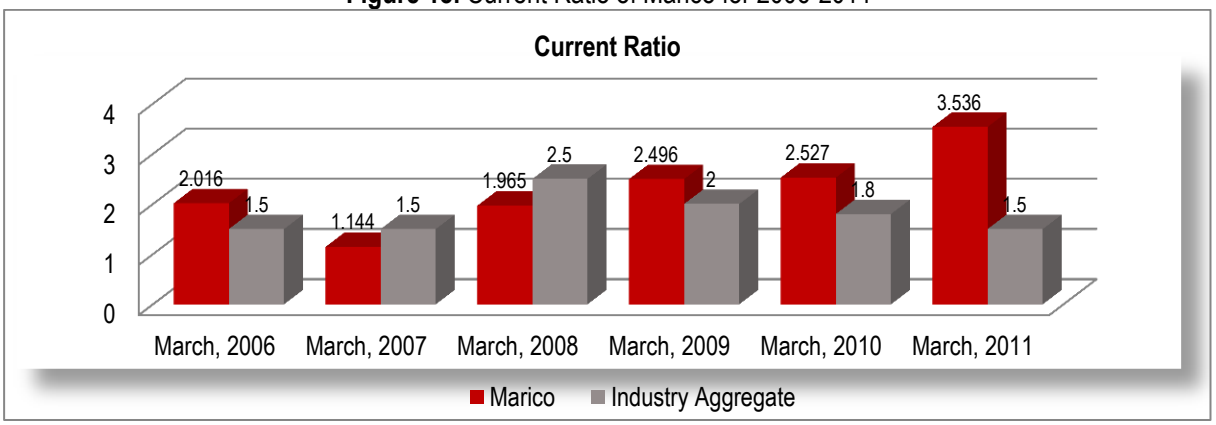


Analysis

There was a sharp decrease in Interest Coverage ratio from 2006 to 2007 due to substantial increase in Unsecured Loans. Interest Coverage ratio also decreased from 2010 to 2011 but this decrease was not as sharp as 2006-07 fall because this decrease was due to increase in Secured Loans. In year 2010-2011Interest Coverage ratio for Marico has been very low as compared with Industry. Though it has low interest coverage ratio, but it has an upward trend of Operating profits for the past 6 years. So, Marico has Medium Risk Profile.

Liquidity Analysis
Current Ratio

Figure 18. Current Ratio of Marico for 2006-2011

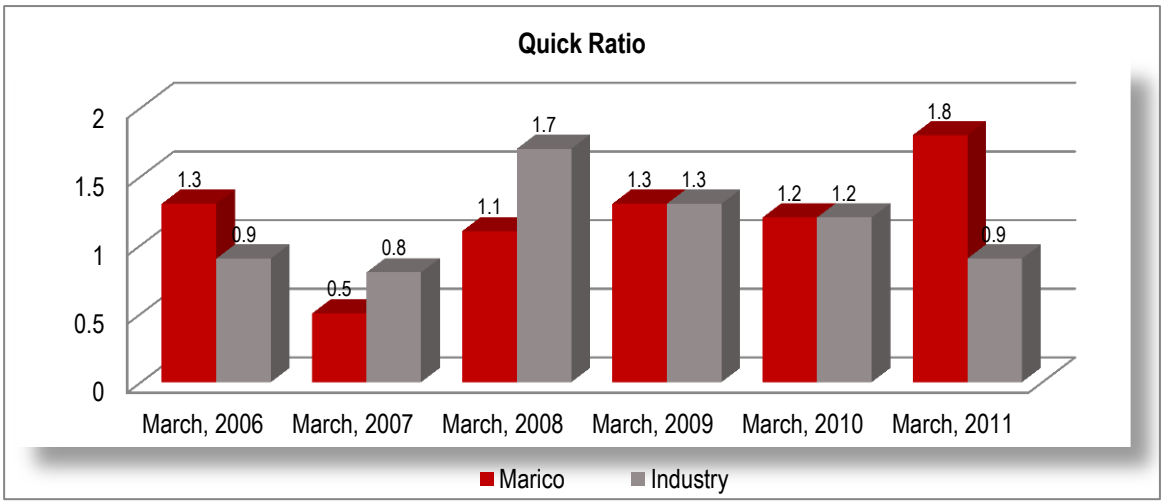


Analysis

Marico has high Current ratio in 2009-2010 but it does not represent the true picture as the major contributor piled up is inventory. Current ratio has shown an increasing trend YoY except in the year 2007. In 2007 it took on a large current liability due to the operations of its subsidiaries. All the other current liabilities increase in an average and expected proportions. Thus we can discount this significant increase in current liabilities as an extraordinary items and not the representative of the overall company's performance.

Quick Ratio

Figure 19. Quick Ratio of Marico for 2006-2011

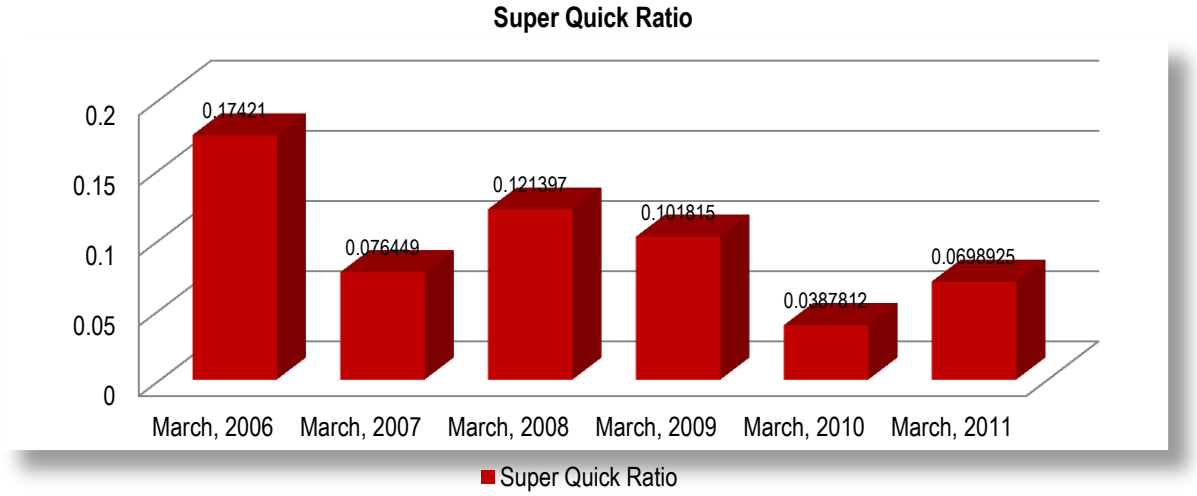


Analysis

Due to the heavy proportion of inventory in current assets, Marico's quick ratio is much lower and closer to the industry aggregate. The quick ratio has shown an erratic trend due to the high dependence on inventory in current assets.

Super Quick Ratio

Figure 20. Super Quick Ratio of Marico for 2006-2011



Analysis

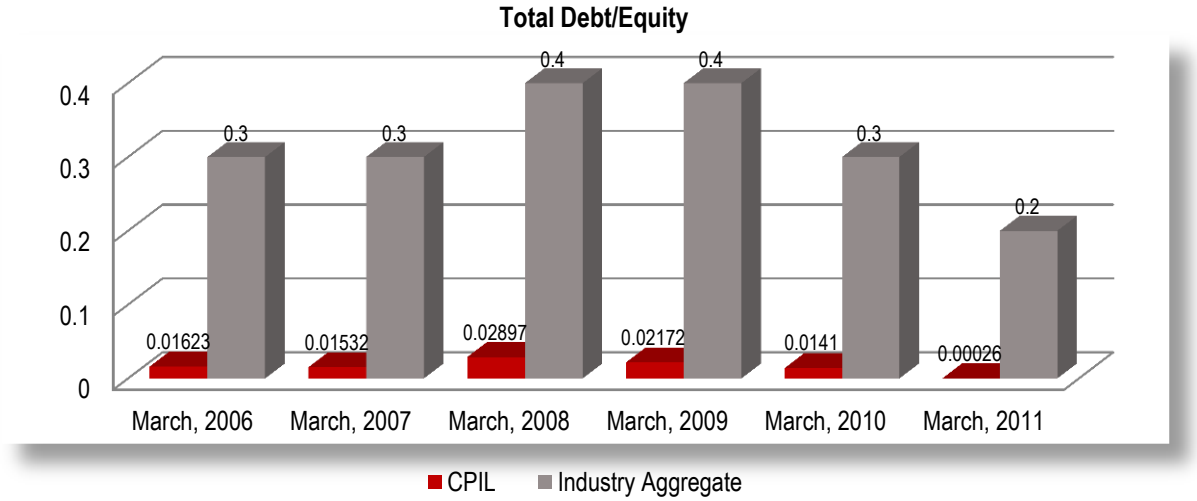
Cash ratio is very low as compared to the benchmark of 0.67. This is heavily due to piled up inventory and also increase in debtors. It has a heavy cash investment in its subsidiaries.

5. Colgate Palmolive

Solvency Analysis

Debt Equity

Figure 21. Debt-Equity Ratio of Colgate for 2006-2011



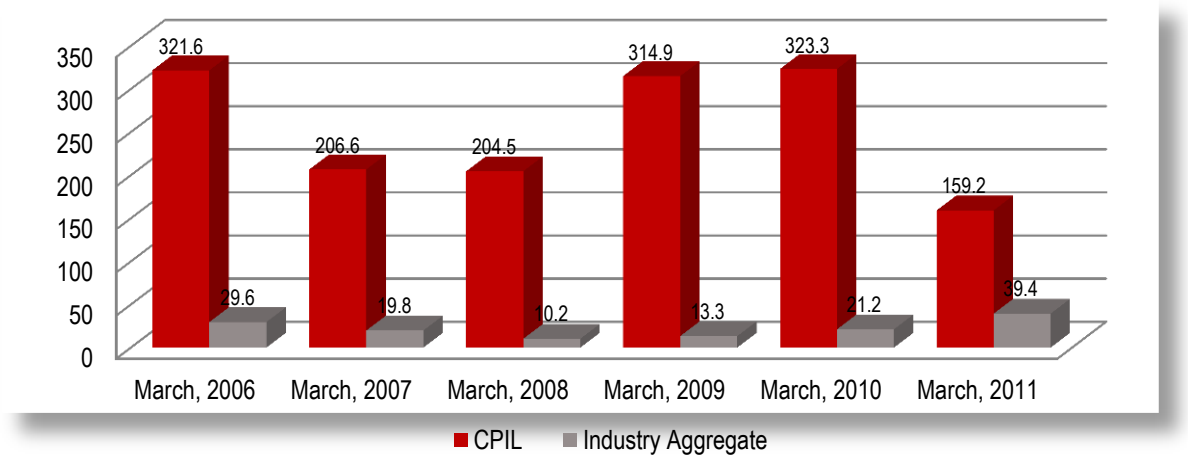
Analysis

CPIL is a low debt company, with a debt/equity ratio of hovering between a maximum of .02897 in 2008 to a minimum of .00026 in 2011. From 2006-2010, CPIL has kept a debt of Rs 4.3-4.7 crore. The significant reduction in debt/equity ratio in 2011 is attributable to the repayment of outstanding loans to the tune of Rs 4.5 crore. At the same, shareholders funds/equity has displayed an upward trend. The only exception to this was in 2008 when CPIL reduced paid up equity capital from Rs 136 crore to Rs 13.6 crore. Reserves and surplus has increased YoY for the previous 6 years as CPIL has consistently made profits

CPIL's Debt/Equity ratio has been well below industry aggregate ratio for the period of analysis. We can conclude that CPIL is in a strong position solvency-wise and stale debt-wise.

Interest Coverage Ratio

Figure .2: Interest Ratio of Colgate for 2006-2011



Analysis

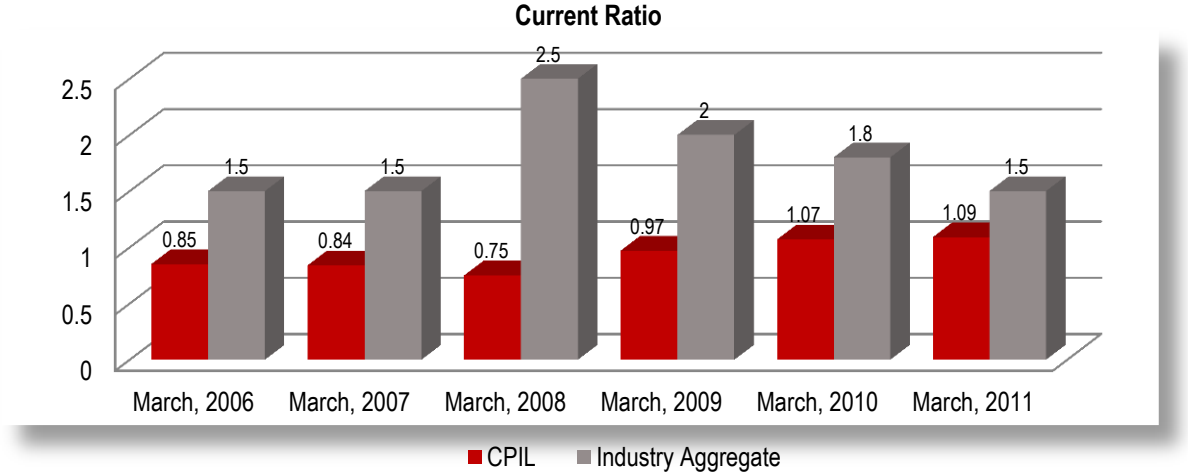
CPIL has a very high Interest coverage ratio, well above the industry average. This is due to the very low debt CPIL has. EBIT shows an upward trend for the past 6 years. Interest burden is a not a big concern for CPIL. As such, CPIL is easily capable of covering its interest obligations through its operating profits.

Thus, we can conclude CPIL has a low risk of defaulting on its external long term liabilities.

Liquidity Analysis

Current Ratio

Figure 23. Current Ratio of Colgate for 2006-2011



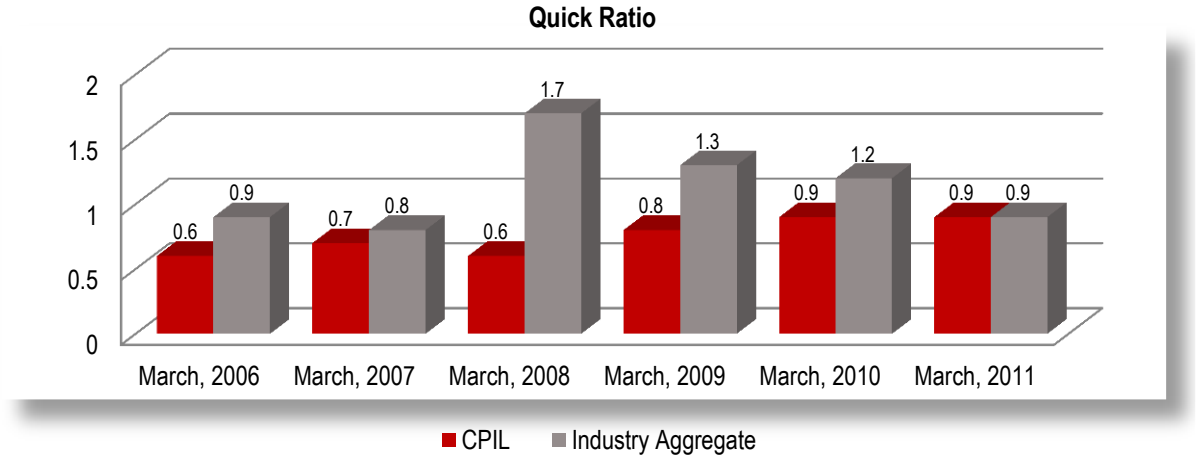
Analysis

Compared to the industry aggregate, CPIL has a relatively low current ratio and well below the benchmark of 2. The current ratio has varied from a minimum of 0.75 in 2007 to a maximum of 1.09 in 2011

Current Assets have showed a CAGR of 15.19%, whereas current liabilities displayed a CAGR of 10.61%. Over the last 6 years, current ratio has shown an upward trend, except in 2008, where it fell to 0.75 from 0.84 in 2007. CPIL operates at a very high efficiency. It has payment period of 83 days which is much higher than industry average of 81 days. Its collection period is just 4 days, again efficient than industry period of 16 days.

Quick Ratio

Figure 24. Quick Ratio of Colgate for 2006-2011

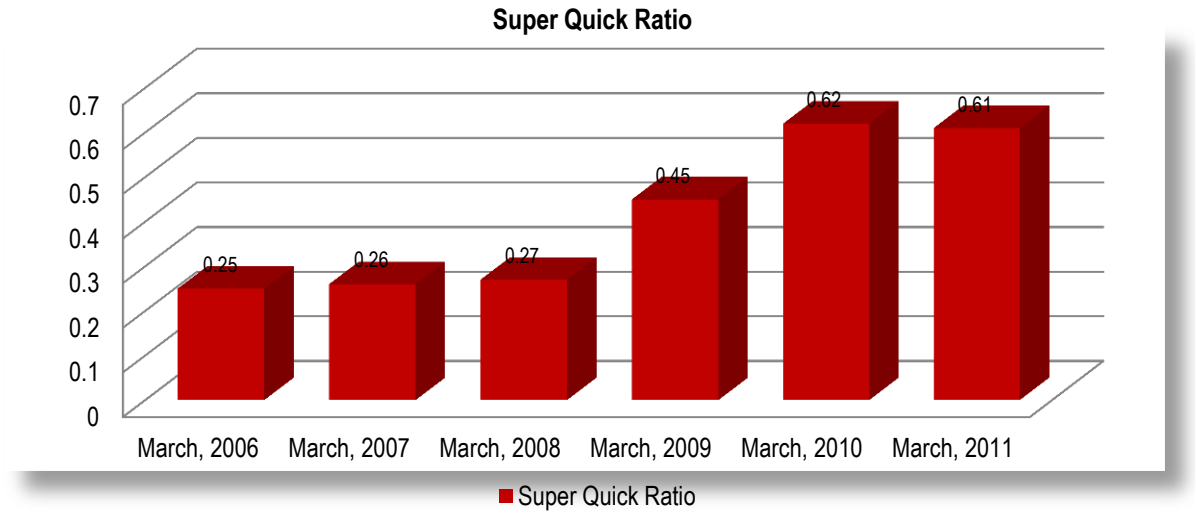


Analysis

Compared to the current ratio, CPIL's quick ratio is much closer to the industry aggregate, even though it is consistently lower than it. As with the current ratio, the quick ratio has also displayed an increasing trend, except for the year of 2008. Due to its operating efficiency and low inventories, CPIL can boast of a healthy quick ratio, despite having a sub par current ratio.

Super Quick Ratio

Figure 25. Super Quick Ratio of Colgate for 2006-2011



Analysis

CPIL has accumulated large cash reserves in the last 3 years. As a direct consequence, the super quick ratio has risen from 0.25 in 2006 to 0.61 in 2011. It is close to the benchmark of 0.67 and thus, we can conclude that CPIL has a healthy super quick ratio.

B. Relationship between Liquidity and Solvency

In this section, relationship between liquidity and solvency of the sample companies and the relative impact has been examined for better viability.

Correlation Analysis

Liquidity refers to a firm's ability to pay off its short term liabilities and obligations, while solvency is a firm's ability to meet the long term liabilities. The presence of one does not necessarily imply the other, i.e., it is possible for a firm to be liquid but insolvent and vice versa.

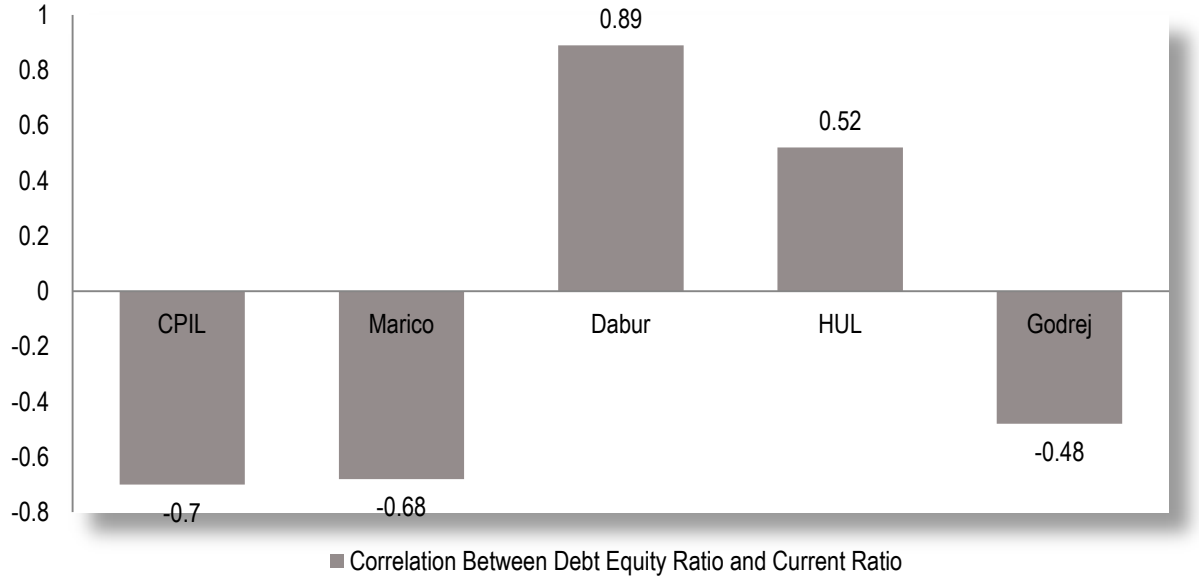
Table 2. Correlation of Sample Companies

Correlation	CPIL	Marico	Dabur	HUL	Godrej
DE & ICR	0.32	-0.37	0.31	-0.18	-0.61
DE & CR	-0.70	-0.68	0.89	0.52	-0.48
DE & QR	-0.66	-0.61	0.74	0.16	-0.53
ICR & CR	0.08	0.15	0.50	0.11	0.20
ICR & QR	-0.02	0.33	0.40	0.56	0.19
CR & QR	0.84	0.95	0.94	0.84	0.99

As can be seen from the above table, there is no obvious relation between some of the ratios, such as Quick Ratio and Interest Coverage Ratio etc. Their relationship is more complicated and depends on many other factors such profits earner, equity raised and interests payable.

An interesting observation is the high degree of correlation (be it positive or negative) between Debt Equity Ratio and Current Ratio. A high positive correlation implies a strong direct relationship between them, i.e., they either increase or decrease in the same direction. As is visible with the case of Dabur India, it has raised substantial unsecured bank loans to repay its current liabilities and acquire current assets. In this case, it has sacrificed some of its solvency to gain liquidity and meet short term obligations.

Figure 26. Correlation trend of Sample Companies



On the other hand, a high degree of negative correlation between Debt Equity Ratio and Current Ratio implies that there exists an inverse relationship between them. As one increases, the other decreases. In the case of CPIL, it has simultaneously been able to repay its loans, and finance operations out its operating profits, without the need of seeking external financing. This is a positive sign for the firm, but it may yet be forced to raise money through debt if it wants to expand aggressively and improve shareholder returns.

There is a high degree of positive correlation between current ratio and quick ratio, which can be easily understood due to their similar composition.

Regression Analysis

We have modelled Debt as a function of

- Equity,
- Current Assets,

- Current Liabilities,
- PAT.

Following are the regression results for sample companies:

Table 3. Regression Results of Dabur India

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952(a)	.906	.831	34.98774

(a) **Predictors**: (Constant), PAT, CA, Equity, CL

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59129.253	4	14782.313	12.076	.009(a)
	Residual	6120.711	5	1224.142		
	Total	65249.964	9			

(a) **Predictors**: (Constant), PAT, CA, Equity, CL
(b) **Dependent Variable**: Debt

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.532	41.040		.013	.990
	CA	.396	.202	1.599	1.961	.107
	CL	-.219	.249	-.772	-.879	.420
	Equity	.197	.253	.585	.778	.472
	PAT	-.502	.371	-.879	-1.352	.234

(a) **Dependent Variable**: Debt

$$Debt\ Estimate = 0.532 + (0.396) * (Current\ Assets) + (-0.219) * (Current\ Liabilities) + (0.197) * (Equity) + (-0.512) * (PAT)$$

From the model, we can conclude that as the PAT increase, the company will be able to internally finance operations and be less dependent on debt. Another takeaway is that as current liabilities increases, debt incurred will be lesser as company is effectively trading liquidity for higher solvency.

The high R square statistic of .906 shows that this model is a good fit, with little unexplained or random component.

Table 4. Regression Results of Colgate Palmolive India Limited

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.531(a)	.282	-.293	2.69800

(a) **Predictors**: (Constant), PAT, Equity, CA, CL

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.285	4	3.571	.491	.745(a)
	Residual	36.396	5	7.279		
	Total	50.681	9			

(a) **Predictors**: (Constant), PAT, Equity, CA, CL
(b) **Dependent Variable**: Debt

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10.091	5.925		1.703	.149
	CA	.009	.018	1.177	.513	.630
	CL	-.013	.024	-1.547	-.561	.599
	Equity	-.019	.028	-.479	-.683	.525
	PAT	.006	.029	.307	.193	.855

(a) **Dependent Variable**: Debt

$$Debt\ Estimate = 10.091 + (0.009) * (Current\ Assets) + (-0.013) * (Current\ Liabilities) + (-0.019) * (Equity) + (0.006) * (PAT)$$

The low value R squre statistics is due to the low amount of debt taken by CPIL and thus, this model is not a very good fit as there is a high degree of unexplained/random component which this model does not account for. We cannot make concrete conclusions based on this model and despite repeated efforts of including other related variables in the model, this model could not be significantly improved.

Table 5. Regression Results of Godrej Consumer Products Ltd.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918(a)	.843	.717	45.44890

(a) **Predictors**: (Constant), PAT, CA, Equity, CL

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	55374.666	4	13843.666	6.702	.030(a)
	Residual	10328.010	5	2065.602		
	Total	65702.676	9			

(a) **Predictors**: (Constant), PAT, CA, Equity, CL
(b) **Dependent Variable**: Debt

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-89.225	47.793		-1.867	.121
	CA	-.392	.213	-1.146	-1.839	.125
	CL	2.502	.909	4.072	2.751	.040
	Equity	.157	.156	.910	1.005	.361
	PAT	-2.432	1.332	-3.097	-1.826	.127

(a) **Dependent Variable**: Debt

$$Debt\ Estimate = -89.225 + (-0.392) * (Current\ Assets) + (2.502) * (Current\ Liabilities) + (0.157) * (Equity) + (-2.432) * (PAT)$$

As the PAT increases, the dependence on debt decreases. This implies that the company can internally finance operations and does not go for external financing when it has the option. A high R square statistics implies that the model is a good fit.

Table 6. Regression Results of HUL

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.823(a)	.678	.420	488.87136

(a) **Predictors**: (Constant), PAT, Equity, CL, CA

ANOVA(b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2512520.128	4	628130.032	2.628	.159(a)
	Residual	1194976.053	5	238995.211		
	Total	3707496.181	9			

(a) **Predictors**: (Constant), PAT, Equity, CL, CA
(b) **Dependent Variable**: Debt

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3865.575	1207.897		3.200	.024
	Equity	-.700	.292	-.666	-2.395	.062
	CA	.950	.425	1.774	2.236	.076
	CL	-.753	.278	-1.616	-2.706	.043
	PAT	-1.064	.849	-.645	-1.252	.266

(a) **Dependent Variable**: Debt

$$Debt\ Estimate = 3866.575 + (0.950) * (Current\ Assets) + (-0.753) * (Current\ Liabilities) + (-0.700) * (Equity) + (-1.064) * (PAT)$$

The R-Square statistic value is comparatively low which means that the model is not a very good fit and there is significant degree of unexplained/random component which this model does not account for. However, we can conclude (with some error) that as the PAT increases the debt decreases which means that the company is using profits to finance its operations and is reducing its reliability on long-term debts for financing.

Also, since equity and current liabilities can be considered as alternate sources of money, an increase in them causes a fall in debt.

Table 7. Regression Results of Marico

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.976(a)	.952	.914	54.53784

(a) **Predictors**: (Constant), PAT, CL, CA, Equity

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	297181.004	4	74295.251	24.978	.002(a)
	Residual	14871.880	5	2974.376		
	Total	312052.884	9			

(a) **Predictors**: (Constant), PAT, CL, CA, Equity
(b) **Dependent Variable**: Debt

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-90.603	93.313		-.971	.376
	Equity	-.115	.886	-.139	-.130	.901
	CA	.783	.456	1.087	1.718	.147
	CL	.002	.886	.001	.002	.998
	PAT	.035	2.987	.016	.012	.991

(a) **Dependent Variable**: Debt

$$Debt\ Estimate = -90.603 + (0.783) * (Current\ Assets) + (0.002) * (Current\ Liabilities) + (-0.115) * (Equity) + (0.035) * (PAT)$$

A high value of R-statistic signifies that the model is a good fit and there is a very small degree of random component.

From the model, we can conclude that a rise in equity causes a fall in debt. This means that the company is relying on shareholder's funds to finance its operations rather than raising loans.

7. Conclusion and suggestions

The results suggest a statistically insignificant relationship between liquidity and solvency parameters of the sample companies. So, there is no obvious relationship between liquidity and solvency. It is very tricky for companies to balance their liquidity and solvency. Some companies like Dabur have undertaken huge loans in recent years and reduced their solvency, but as a direct result, their liquidity position has improved. Other firms like CPIL and HUL follow a low or zero debt policy, but their liquidity ratios are often below industry aggregates, indicating there are not very liquid. It depends on the company's management and its long term objectives as to which of liquidity or solvency should be focused upon.

We also conclude that the relatively low liquidity observed in firms is important to increasing the profitability, but that increased profitability from decreased liquidity can be offset by increased solvency. Hence, sufficient access to cash within a season, and maintaining a policy of restraint in acquiring long-term debt, generate conditions which tend to increase profitability. These conditions suggest that the increased working capital requirements associated with long-term debt have not impaired the ability of firm to remain profitable.

8. Limitations and implications for future research

There are some limitations of this study which could be categorized as under:

In total 15 fmcg companies were chosed for the relevance of the study. But, finally 5 were analyzed for our study on the basis of data availability during the period. So, the present study could be confined to only top 5 fmcg corporate enterprises in India, leaving all other enterprises due to data non-availability.

Interrelationship among liquidity ad solvency can be further examined, apart from profitability, for other motivational parameters in the light of growing investors' awareness about market behaviour.

One implication of these results is that the profitability of a firm is indicative of a firm's potential of its operational efficiency in terms of available liquidity. *A second implication* for solvency in the ling run is always dependent upon the firm's management of short-term assets.

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The Impact of Market Power on Bank Risk Taking in Albania

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Abstract

The general belief that some degree of market power in the banking sector was necessary to maintain its market stability, has led many countries into attending policies that implicitly or explicitly limit competition. Such policies have modified the banking market structure raising concerns about the competition and efficiency issues. Concerns grow even more for developing economies and especially for the Albanian banking system. Here, bank loans are the biggest source of the external financing for businesses and hence of the economic growth. Nevertheless, the link between competition and stability is quite complex. This is the main reason why this paper provides a test of such a relationship for the Albanian banking system. Competition level measured mainly by the Lerner index, while stability is assessed by Z index and non-performing loan /total loan. The analysis indicates that competition enhancement into the loan market has increased the risk taking, but the effect on the overall level of banking stability is not of great importance.

Keywords: market power, Lerner index, credit risk, financial stability

JEL Classification: G21, L11.

1. Introduction

The banking industry is characterised by the moral hazard problem, meaning that banks are encouraged to take over risks. Furthermore, the globalisation trend is modifying the banking market structure all over the world, pointing out serious issues dealing with financial stability and competition. These issues become even more sensitive for post-communist European countries and for Albania as well, as their economies have created relatively new banking systems being currently of little experience. Furthermore, the banks of these countries act as key players in channelling funds from lenders to borrowers having a direct impact on investment and growth. It is therefore important that their intermediary role provides a higher welfare for society, possibly at the lowest cost.

Competition is generally regarded as a positive force in the economy, often being an adjunct to increase in efficiency and consumer welfare. However, for the banking sector it is a very debatable issue. Such an issue becomes even more disputable in the times of international financial crisis suffered by the countries all over the world, raising many concerns to the policymakers on the banking systems that had been created.

The purpose of this paper is to analyse the impact of competition on the banking stability. Banking stability is evaluated by Z index and NPL ratio (Non-performing loan/total loan). To achieve this goal, performance of the competition and stability indicators in the Albanian banking market will be first examined, focusing mainly on the period of 2002-2011. These indicators are two indices that have not been previously used for the Albanian banking market. The level of competition in the Albanian banking market is measured through the Lerner index, while banking stability is evaluated by index Z. The two indicators are assessed at the bank and system level, in order to better investigate any problems from the microeconomic point of view. Then, these and other indicators will be used to analyse the impact of market power in the bank risk-taking.

Two main hypotheses are provided in the banking market literature. These refer to the competition-fragility and the competition-stability. The first one indicates that banks in a competitive environment are willing to take more risk, therefore competitive systems are more fragile than those less competitive. In contrast, the second hypothesis suggests that less competitive banking environment may make the banking sector itself more vulnerable. The rationale is that less competitive market structure would allow banks to increase loan rates, thereby increasing the possibility to failing. Therefore, there is no consensus in the literature on which of hypotheses is true. Moreover, there is no consensus on how to measure the level of competition. While some researchers have used traditional indicators such as HHI or CR_k, others use Lerner index, H-statistics of Panzar and Rosse, etc.

This paper is organised as follows. The second section will provide a closer look on the theoretical and empirical literature regarding competition-stability relationship. The third section provides the methodology, description of the variables and the data used. The econometric results of the model together with the interpretation of the estimation are represented in the fourth section. The last section concludes.

2. Literature review on competition-stability relationship

The relationship between market power and financial stability has been questioned continuously during the last two decades, as this period has been characterised by financial disorders and crises around the world. Competition in the banking sector is generally seen as destructive to financial stability. This 'competition-fragility' view has been widely supported both theoretically and empirically in the banking literature. Marcus (1984) was the first to set up a theoretical model, which indicates that when banks compete intensively for deposits, interest rates fall and their franchise value will be destroyed. Initiatives to take over a greater risk increase since banks have little to lose from a non-payment. This argument has been very important in modelling the worldwide banking legislation. In this theoretical model, Broecker (1990) supports the hypothesis of the 'franchise value'. He obtained a negative relationship between the average credit-worthiness and the number of banks in the banking market. Besanko and Thakor (1996) further point out that a higher degree of bank competition is associated with a deterioration of information rent obtained from the lending relationship, which in turn increases bank risk-taking.

Keeley (1990) is the first to empirically indicate that increased competition in the 1980 destroyed the monopoly profits and led to the increasing of U.S bank failures. In a situation where a large number of competing banks excess profits are destroyed, banks should take more risk in order to increase their profits. Demsetz *et al.* (1996) also examine the U.S. banking industry and find that banks with greater market power are banks with largest solvency ratios and lower assets risk. Hellman *et al.* (2000) show that competition for deposits can also undermine prudent bank behaviour. They describe savings and loan crisis in the U.S. and Japan as examples of taking over a greater risk, which led to enormous social cost. They blame financial liberalisation, which removed entry barriers and restrictions on opening new branches, in addition to deregulating interest rates. Increased competition for deposits reduced bank benefits and destroyed franchise value encouraging moral hazard incentives. When banks are very competitive and franchise value is low, banks have moral hazard incentives to take risk because of the government safety net. Jimenez *et al.* (2007) threw light on the negative relationship between the Lerner index and risk-taking for Spanish banks. However, they considered only risk in the loan market and did not take into account the overall risk of the bank.

While the empirical literature reports mainly the bank competition effect on banks' risk-taking, Beck *et al.* (2006a) focused on the impact of bank concentration on the probability of banking crises. Studying 69 countries during the period 1980-1997, they find out that banking crises are less likely to occur in a banking system with greater concentration. In the case of the Russian banks, Fungácová and Weill (2009) find that a higher degree of banking competition is associated with increasing bank failures. In the case of developing countries during the period 1999-2005, Turk-Ariss (2010) finds that the greatest power of the banking market increased bank stability.

The 'competition-stability' view is not much supported by the literature. Accordingly, increased vulnerability comes because of reduced competition. Banks with market power will earn more if they impose higher interest rates on business loans. Stiglitz and Weis (1981) show that higher interest rates may increase the risk of loan portfolio due to bad selection and moral hazard problem. While increases in financing costs discourage safer borrowers, other borrowers are encouraged to choose riskier projects. Therefore, they are likely to face a higher probability of default. The volume of non-performing loans in this way will increase. This would lead to increased bank vulnerability. Boyd and De Nicolo (2005), show that market power can be harmful to financial stability. Current researches on financial stability assume that competition in the deposit market is permitted, but it should be limited in the loan market. Empirical findings of Boyd *et al.* (2006) show that the probability of failure increases with more concentration in the market. However, they do not accept the negative relationship between bank competition and stability. Nevertheless, their conclusions are derived using concentration indices, which may be insufficient to measure the competition. In the case of European banks, Haucap *et al.* (2009) also highlight that bank concentration undermines financial stability. This negative effect of bank concentration on financial stability is greater in less developed countries of Eastern Europe. Molyneux and Linh Nguyen (2008) also analyse the relationship between competition and bank risk in Southeast Asia and find that competition does not increase bank risk-taking. Schaeck *et al.* (2006) use an alternative measure of competition and conclude that competitive banking systems are more stable than monopolistic systems due to the lower probability of bank failure and a longer time to crisis.

Berger *et al.* (2009) tested the two theories with the data taken from 23 developed economies. They took into consideration the overall bank risk, which includes loan risk, bank risk and capital. Results of the relationship between total risk and market power indicators showed that, in accordance with the traditional theory 'competition-fragility', banks with a higher market power have a lower risk of exposure. However, the data also provide support to 'competition-stability' hypothesis, because a higher degree of bank market power is associated with an increase in non-performing loans. They indicate that this risk may be offset partially by higher equity rate.

Kalluci (2008), analysed individual banks operating in the Albanian banking system for the period 2002-2007. According to her, Albanian banks during this period have paid more attention to the increased share of the credit market, which is expressed in aggressive promotional offers. During this period, banks increased the variety of loan products that offer, but also shortened the time of loan processing, as a result of the increasing competition in the loan market. Under these conditions, when competition was becoming stronger and when the level of non-performing loans had been low, the banks have been more comfortable in setting the margins and not affecting them positively by the credit risk.

3. Methodology and variable description

Market power

As stated above, there is no consensus as to what would be the best estimator of the degree of competition in the banking sector. However, the three or four most commonly used indicators are CR3, HHI, H-statistic of Panzar and Rosse, and the Lerner index. Among these, Lerner index is the most preferred indicator to the market power, because it is calculated at the bank level; whilst concentration reports and H-statistics are calculated in country levels.

The Lerner index that measures the level of market competition captures the prices' power margin over the marginal cost, expressed in percentage to the price. Its value is influenced by variables included in the cost estimation. If only the traditional bank activity of intermediation through the loan-deposits is taken into consideration, activities of service insurance would be excluded. Volume of such activities however has been increasing during the last years, boosting higher revenues for the banks (generally commission increases has raised non-interest revenues). Hence, in order to estimate the Lerner index, as in De Guevara *et al.* (2007), Carbó *et al.* (2009), Berger *et al.* (2009), Turk-Ariss (2010), it is important to include product prices. However, constrained also by the type of data (it was not possible to separate the data at disposal into components), we will only use one output. According to Shaffer (1993) and Berg and Kim (1994), this should be the total assets. The rationale for using such a variable is that the flow of the products and services produced by a bank is proportional to its total assets.

Using the frontier technique, we estimate the translog cost function[1] of the following form:

$$lnCT_{it} = \alpha_0 + \alpha_1 lnQ_{it} + \frac{1}{2}\alpha_2 (lnQ_{it})^2 + \sum_{k=1}^{3} \beta_k lnw_{k,it} + \sum_{k=1}^{3} \gamma_k lnQ_{it} lnw_{k,it} + \sum_{k=1}^{3}\sum_{j=1}^{3} \gamma_{kj} lnw_{k,it} lnw_{j,it} + \varepsilon_{it} \quad (1)$$

Where:

ln – natural logarithm, *i* – bank's index, *t* – time index, CT_{it} – total cost of bank *i* at time *t*, Q_{it} – total assets of bank *i* at time *t*, $W_{k,it}$ or $W_{j,it}$ – indicates: 1) price of labour measured as ratio of personnel expenses to number of employees, 2) price of capital, measured as ratio of operating and administrative expenses to fixed assets, 3) price of funds, which is measured as ratio of interest expenses to total deposits, ε_{it} – error of estimation.

In order to estimate the cost function described above, the linear homogeneity restrictions in input prices have to be hypothesised. Several researchers do this by normalising costs and input prices by dividing them with the price of one of the inputs, such as in Pruteanu-Podpiera *et al.* (2008) who analyse banks in the Czech Republic, or Cebenoyan *et al.* (1993) for the USA, etc. We will use the ratio with the labour price. The reason is that all the other independent variables could be highly correlated to each other in almost all the cases. Moreover, regarding alternative estimations conducted, using the chosen variable could produce a better estimation than if using other variables for the normalisation process. Hence, the cost function takes the following form:

[1] More details over Lerner index calculation can be found in De Guevara *et al.* (2005).

$$lnC_{it} = \alpha_0 + \alpha_1 lnQ_{it} + \frac{1}{2}\alpha_2 (lnQ_{it})^2 + \alpha_3 ln w_{1,it} + \alpha_4 ln w_{2,it}$$
$$+\alpha_5 ln w_{1,it} ln w_{2,it} + \frac{1}{2}\alpha_6 \left(ln w_{1,it}\right)^2 + \frac{1}{2}\alpha_7 \left(ln w_{2,it}\right)^2 \quad (2)$$
$$+\alpha_8 lnQ_{it} ln w_{1,it} + \alpha_9 lnQ_{it} ln w_{2,it} + \varepsilon_{it}$$

Where:

$W_{1,it}$ – capital price over labour price, $W_{2,it}$ – fund price over labour price, C_{it} – total costs over labour price, α_0 – the constant, $\alpha_{1,2,3...9}$ – coefficients of respective variables.

The marginal cost function is the first derivative of the cost function (2) given above to the quantity (Q) as follows:

$$MC_{it} = \frac{C_{it}}{Q_{it}}\left(\alpha_1 + \alpha_2 lnQ_{it} + \alpha_8 ln w_{1,it} + \alpha_9 ln w_{2,it}\right) \quad (3)$$

After all the cost function parameters are estimated, their values will be used in the marginal cost function formula in order to perform estimation of such costs for each of the banks for each year. Next, the formula of the Lerner index will be applied for each bank and each year to serve the purpose of the study:

$$Lerner_{it} = \frac{P_{it} - MC_{it}}{P_{it}} \quad (4)$$

Where:

MC_{it} – Marginal cost of bank *i* in time *t* , P_{it} – Output price, measured as total revenue over total assets ratio.

Banking stability

Z index is one of the most commonly used indicators of banking stability, which estimates the bank's potential risk for each year. The Z-index proxy of bank stability combines indicators of profitability, leverage and return volatility into a single measure. It is given by the ratio[2]:

$$Z_{it} = \frac{ROA_{it} + E_{it}/TA_{it}}{\sigma_{ROA_i}} \quad (5)$$

Where ROA_{it} and E/TA_{it} are the bank's return on assets and equity to total assets at time *t* respectively, and σ_{ROAi} is the standard deviation of returns on assets for bank *i*. The bank stability indicator increases with higher profitability and capitalisation levels, and decreases with unstable earnings reflected by a higher standard deviation of return on assets.

In order to observe the impact of market power in taking a higher risk or not, two panel regressions will be estimated, following the basic model as follows:

Y = f (market power, control variables)

The dependent variable Y measures banking stability, once through Z index and then through NPL/total loans rate. While Z banking stability index exhibits greater stability or less potential risk for a higher value of this index, the other variable NPL/total loans shows that its growth reduces system stability due to higher risk. The rationale for the construction of these regressions is to observe the market power impact of banks over banking stability. Therefore, the control variables are used to verify the results obtained even when other explanatory factors of dependent variable are included in regression.

Market power, represented by the Lerner index, indicates that larger values tell for a greater market power and simultaneously less competitive market conditions. The sign of the relationship between the Lerner index and stability indicators will serve to reveal which of the theoretical and empirical views is more suitable for Albanian banking market.

[2] *See* Boyd *et al*. (2006), Berger *et al*. (2009), Turk-Ariss (2010).

Control variables include:

- Portfolio size STA (measured as the percentage of each bank's assets to total assets of the relevant year). Its impact on the stability can be either positive or negative. The positive effect could be attributed to the behaviour that large banks have tending to diversify and reduce risk (i.e. increase stability). The negative impact may be the result of the higher risk that large banks undertake if they are motivated by the initiative 'too big to fail',
- Loans over total assets ratio L/TA (the bank's credit exposure measured by the ratio of loans to total assets). This variable explains stability through the weight that loans have in the portfolio composition. Its impact on banking stability (Z index) is expected to be negative,
- Return on equity ROA, which will be included as a control variable only when the dependent variable is NPL over total loans ratio and not Z index, since this index is calculated mainly on the basis of that indicator,
- Variable E/TA, calculated as the capital to total assets ratio represents the level of capitalisation. Higher levels of capitalisation could tell for a higher stability in the banking system.

The study covers only the period of 2002-2011 because of the lack of consistent available data prior 2002. Data on the Albanian banking system are taken from the database provided by the Bank of Albania. These data are in the form of an unbalanced panel form, with 153 observations.

3. Empirical results

Lerner index results

We have applied the frontier[3] technique to estimate equation (2). The empirical results are shown in Table A2. Estimation of the model parameters indicates that generally these parameters are statistically significant. Moreover, the Wald test shows a statistically significant model in general, at the level of 99%. Using the parameters found we apply equation (3) in order to first calculate the marginal cost of each firm. Then, calculating the difference between the price and the marginal costs and by dividing this result to the price, we find the Lerner index (i.e. by applying equation 4). Figure 1 shows the path that Lerner index has followed.

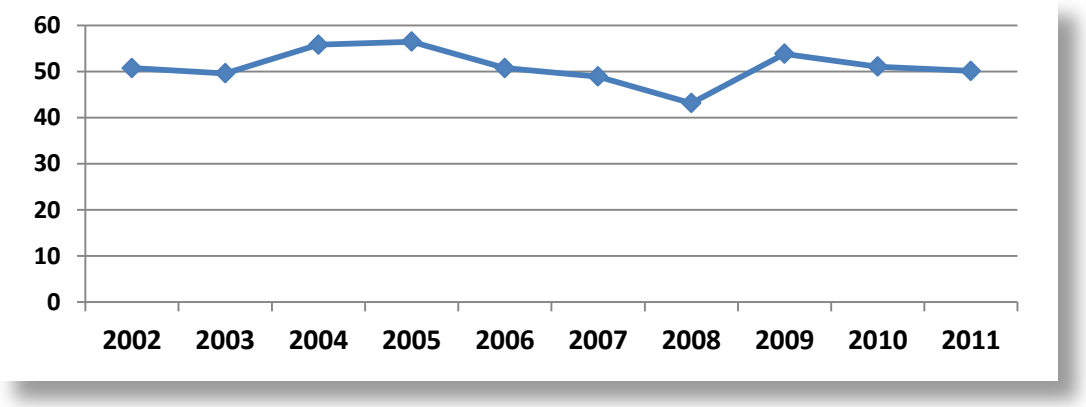

Figure 1. Lerner index for the banking system during 2002-2011

Source: Bank of Albania (2012) and Authors calculations

A quick overview of the price indicator illustrates the idea of a cycle where its two maximum points coincide exactly with the years of the general elections (year 2005 and year 2009). A thorough observation of the data for each of the banks in the sample, for example in year 2005, tells for a higher increase in the revenues than in the total assets, as measured in percentage. Such behaviour of the data could also explain the maximum values of the Lerner index in year 2005 and 2009 (election years). The price has an increasing trend up to year 2005 reaching its maximum, and then falls for the consecutive 2 years, then increasing again for the last 3 years. The same trend is observed for the marginal cost, although not quite remarkable as for the price. Moreover, the

[3] All the empirical models in this research study are performed in the Stata software.

difference between these two variables becomes larger in 2009, reflecting at the same time the increase in relative terms (as represented by Lerner index). Relying on the above analysis, the results regarding the degree of competition are quite impressive. The power exercised by banks in the market turns around an average value, which shows no decreasing trend for a period of at least 10 years.

At bank level, we compare the Lerner index calculated for year 2011 to the average value for the overall period of each of the banks respectively (Figure 2).

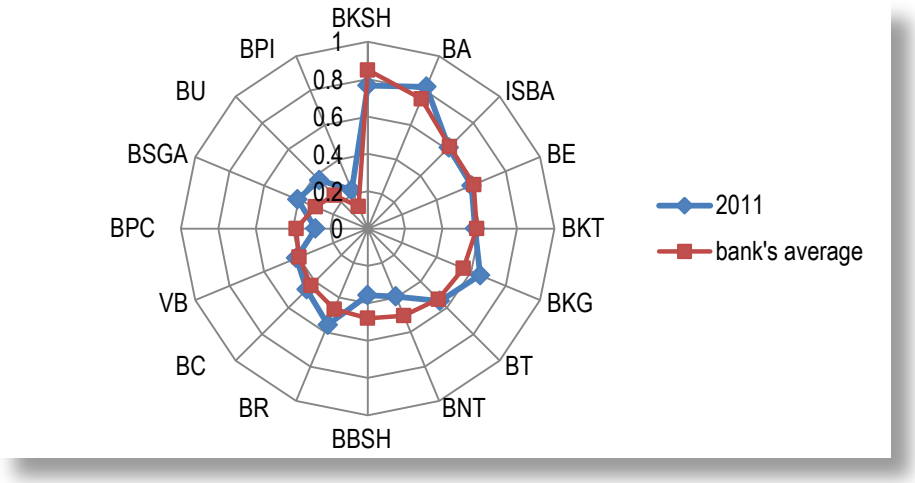

Figure 2. Lerner index per each bank (2011) compared with their average

Source: Bank of Albania (2012) and Authors calculations

We generally observe that year 2011 values are above the banks' average Lerner index values, this reflecting an increase of their market power. Furthermore, we notice that the biggest bank's (Raiffeisen) Lerner index of 2011 is above its own average value, which however does not stand at the top. Raiffeisen and other banks of the third group have generally higher or equal values of 2011 Lerner index compared to the average, and stand at the top of the group classification. Such an observation highlights the idea that the margin they set is higher as compared to other groups. This is an indicative of their greater market power.

If we observe the smallest value of the Lerner index during the study period (43.14%) and compare it to the Carbo *et al.* (2009) study, according to which the average value of the Lerner index in the EU is about 16%, the difference is quite high. This highlights furthermore the idea that competition level in the Albanian banking market is still far away that of the countries to which we aspire to join.

Z index results

We have applied the bank level data in equation (5) to calculate the *Z* index. A more detailed view of banking stability can be taken from the results for each bank and year. Hence, Figure 3 represents *Z* index for all the banks included in the study for year 2011, compared with the average of the period under the study for each of the banks.

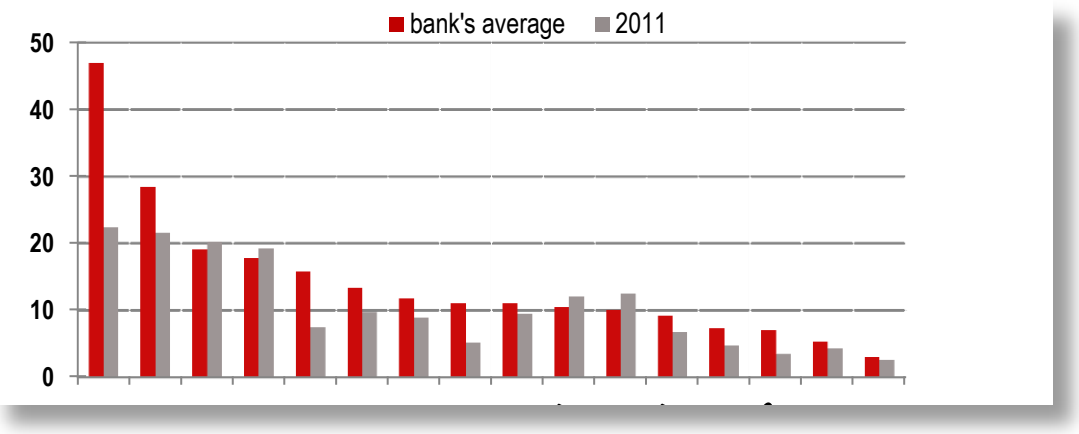

Figure 3. Z index per each bank (2011) compared with their average

Source: Bank of Albania (2012) and Authors calculations

It seems that differences of *Z* index values between banks are slightly smaller in year 2011 as compared to the whole period average values. On one side, banks that showed higher values compared to the average have reduced this index (i.e. BNT, BKSH, BPI). On the other side, generally the largest banks, with relatively low index values have improved their stability index attesting to a better capitalisation rate or normalisation of their income (i.e. BT, BKT, ISBA, BR).

Analysing the *Z* index for the whole banking system over the period 2002-2011 (Figure 4), a sharp decline during 2004-2006 can be noticed. Then, this trend is mitigated, slightly growing, but at the end of the period under analysis, there is a decrease and deviation from the period average. Such behaviour in the last years could be due to the impact of the international financial crisis. Similar results come from the Central Bank reports (Financial Stability Report, 2011, 2012) giving messages of a fragile banking system in Albania.

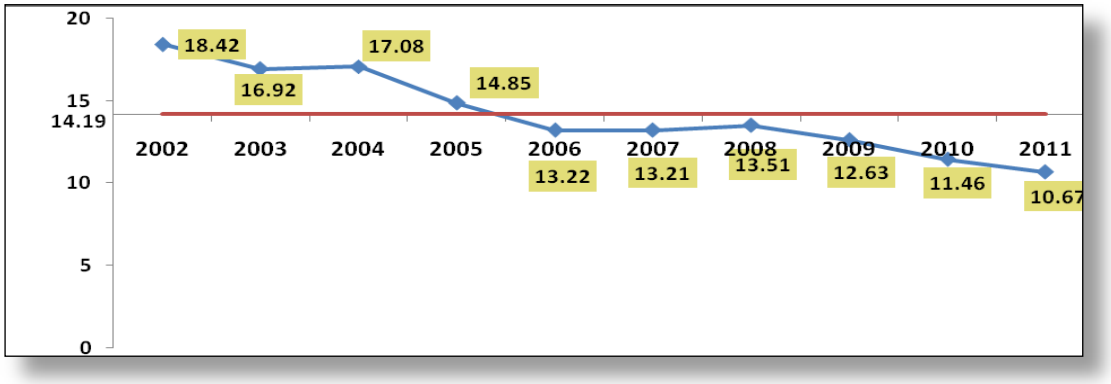

Figure 4. Z index for the banking system during 2002 – 2011

Source: Bank of Albania (2012) and Authors calculations

Results of competition-stability relationship

Next, we observe the impact of market power in taking a higher risk or not, estimating two panel regressions as stated in equation (6) above. First, Breusch and Pagan Lagrangian Multiplier test is used in order to examine which of the models is more appropriate, either random or OLS (Table A3 and A4). The values of this test show that random regressions are more suitable. Then Hausman test is used to compare whether fixed or random model is more appropriate. Accordingly, fixed effects method is more suitable for both the regressions. Moreover, we use fixed effects to evaluate the impact of competition on the dependent variables in a specific bank in order to capture the individual characteristics of each bank. The rationale for that is to reach our main goal in looking for variables' relationship within banks.

Based on the variables' relationships suggested in the literature, we have tried all the control variables that may affect the dependent variables. In all the equation estimations we have carried out, Lerner index performs as a significant explanatory variable. Here, we refer to two regression estimations selected to best explain *competition-stability* relationship

The F test shows that all regression parameters are different from zero at about 1 per cent level of significance (Table A3 and A4). The modified Wald test is used as a heteroskedasticity test for the fixed effects model. Results of this test indicate no presence of heteroskedasticity. Moreover, the two regressions do not suffer from autocorrelation according to Wooldridge test for panel data.

Results of the first regression, where the dependent variable is NPL/total loans (Table A3), shows that the Lerner index negatively affects NPL/total loans (statistical significance at 1 percent). This indicates that in the Albanian banking market, banks with more power are more risk averse. Hence, they have operated at lower non-performing loan rates. Such a result is also supported by the competition-fragility theory for the risk taking in the loan market. The rationale is that, in such a market, competition should not be tough because it would lead to taking a greater risk faced with non-performing loans. However, this problem would be diminished if the promotion policy of competition could be combined with prudent policies.

Bank size does not significantly affects the NPL /total loans ratio, indicating that risk-taking is not affected by the size of the bank. ROA and E/TA variables are statistically significant. ROA is positively related with the risk of loans. This indicates that higher return rate encourages banks to take more loan risk. Capitalisation is negatively related with risk-taking, meaning that one of the prudent policies to be undertaken could be the increase in the level of capitalisation, given that its growth restrains risk-taking.

Table A4 gives the regression results where Z index is the dependent variable. As it can be noticed, the Lerner index appears statistically insignificant, showing that the overall banking stability level does not depend on the level of power that banks exercise. Unlike in the previous regression, size of bank in this case is significant at the 5% level of significance. Bank size is negatively related with bank's stability, implying that large banks are generally more fragile.

5. Conclusions

In order to achieve the goal of this study, we first provided some new evidence about competition and stability in the Albanian banking system. For this purpose we calculated new indicators not used previously for the Albanian banking market. We measured the level of competition in this market as well as the power that any bank may exercise through the Lerner index. Price margin over marginal cost expressed in relation to the price (i.e., the Lerner index) has had oscillation during the period under the study with the growing trend in the banking system as a whole as well as for each of the banks. This is indicative of a diminishing competition level. Albanian banking system operates in a non-competitive environment when compared to the EU countries. It consists of banks that exercise substantial market power, and the differences between banks themselves regarding the market share are considerable. On the other hand, calculation of Z index and NPL/total loans show that in general there is a deterioration of the stability indicators. However, according to these indexes differences between banks have been reducing.

Empirical analysis about the impact of competition on risk-taking and overall stability showed that increased competition in the loan market has increased risk-taking, but the impact on total risk of bank is insignificant. Different authors have found similar results in various banking systems, implying that aggressive competition is more harmful in the loan market than a less competitive market. However, such a relationship is rather uncertain regarding the overall level of banks' risk.

On one side, increased competition may provide initiatives to promote imprudent behaviours. On the other side, regulatory policies such as: capital requirements, disclosure rules, risk-based deposit protection, may provide incentives for banks to behave carefully in a competitive market too. This implies that regulatory reform should not be directed towards limitation of competition with the excuse that this behaviour could maintain banking stability.

This research study of competition and stability in the Albanian banking market could be extended by including other competition or stability measurement indicators. Moreover, similar analysis to that of ours in this paper could be performed at the banking products' level data with the purpose of distinguishing better and more specifically any problems that these products could encounter. Although the data at disposable are not available to us, we believe that such an analysis would be helpful in providing comprehensive policy implication in more details and more directly.

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Appendix

Table A1. Classification of banks into groups based on their activity size at the end of 2011

Banks	Groups
United Bank of Albania (BBSH)	**G1** banks sharing below 2% of total banking system's assets each
Veneto Bank (VB) (Veneto Banka)	
International Commercial Bank (BNT)	
First Investment Bank (BPI)	
Credit Bank of Albania (BKSH)	
Union Bank (BU)	
Procredit Bank (BPC)	**G2** banks sharing 2 to 7 percent of total banking system's assets each
Emporiki Bank-Albania (BE)	
National Bank of Greece Albania Branch (BKG)	
Alpha Bank (BA)	
Société Générale Albania Bank (BSGA)	
Raiffeisen Bank, (BR)	**G3** banks sharing more than 7% of total banking system's assets each
National Commercial Bank (BKT)	
Intesa Sanpaolo Bank Albania (ISPA)	
Tirana Bank (BT)	
Credins Bank (BC)	

Source: Bank of Albania (2012)

Table A2. Results taken from the cost function empirical estimation

Variables	Coefficients	std.errors
_cons	-3.568 *	(1.989)
$\ln w_1$	1.597 ***	(0.612)
$\ln w_2$	0.454*	(0.268)
lnq	0.924**	(0.372)
$1/2(\ln w_1)^2$	-0.182 *	(0.096)
$1/2(\ln w_2)^2$	-0.079 ***	(0.028)
$1/2(\ln q)^2$	0.028*	(0.016)
$\ln q x \ln w_1$	0.187 ***	(0.041)

Variables	Coefficients	std.errors
$lnqxlnw_2$	-0.085 ***	(0.013)
lnw_1xlnw_2	-0.129*	(0.072)
Overall significance	Wald chi2(9) =1327.62 Prob > chi2 =0.000	

Statistical significance:* p<.1; ** p<.05; *** p<.01

Source: Authors calculations

Table A3. Regression results, dependent variable: NPL/total loan

Variables	Coefficients	std.errors
Lerner	-0.0902***	0.0196
Sta	0.395	0.2815
ROA	0.0317***	0.043
E/TA	-0.0047***	0.0015
_cons	0.372	0.276
Nr. of obs	153	
R-sq	within = 0.50 between = 0.46 overall = 0.51	
Overall significance	F(4,131) = 7.62 Prob > F = 0.000	
Hausman test	Prob>chi2 = 0.002	
Wooldridge test	Prob > F = 0.681	
Wald test	Prob>chi2 = 0.7054	

Statistical significance:* p<.1; ** p<.05; *** p<.01

Source: Authors calculations

Table A4. Regression results, dependent variable: Z index

Variables	Coefficients	std.errors
Lerner	-0.0191	0.0949
Sta	-0.2931**	0.1345
L/TA	-0.0105	0.0137
_cons	0.0531*	0.0317
Nr. of obs	153	
R-sq	within = 0.26 between = 0.24 overall = 0.29	

Variables	Coefficients	std.errors
Overall significance	F(3,132) = 7.41 Prob > F = 0.0001	
Hausman test	Prob>chi2 = 0.0098	
Wooldridge test	Prob > F = 0.689	
Wald test	Prob>chi2 = 0.473	

Statistical significance:* p<.1; ** p<.05; *** p<.01

Source: Authors calculations

Foreign Direct Investment in India

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Abstract

Though India has a long history of foreign direct investment (FDI) inflows, the actual FDI post-independence was quite low. Post-1991 liberalization policies supported inflow of FDI. Overall there is increase in foreign trade from 1991 to 2012 however the annual growth has not been consistent over the years. Services, construction development, telecommunications, computer software and hardware, and drugs and pharmaceutical have received the maximum amount of FDI inflows. These five sectors have received almost half of the overall FDI inflows. Mauritius, Singapore, United Kingdom, Japan and South Africa have contributed the maximum amount of FDI inflows. These five countries have contributed almost three-fourth of the overall FDI inflows. Mumbai, New Delhi, Bangalore, Chennai, Ahmadabad and Hyderabad offices of RBI have contributed the maximum amount of FDI inflows. These six offices have contributed more than two-third of the overall FDI inflows. Maharashtra has received the maximum amount of FDI. However the FDI inflows are quite small in comparison to China.

Keywords: Foreign Direct Investment, emerging markets, India

JEL Classification: F14, F41, F43

1. Introduction

Global foreign direct investment (FDI) inflows rose 16 per cent in 2011, surpassing the 2005–2007 pre-crisis level for the first time. This increase occurred against a background of higher profits of transnational corporations (TNCs) and relatively high economic growth in developing countries during the year (UNCTAD 2012a). Many countries continued to liberalize and promote foreign investment in various industries to stimulate growth in 2011 (UNCTAD 2012b). Developing and transition economies together continued to account for more than half of global FDI (45 per cent and 6 per cent, respectively) for the year as their combined inflows reached a new record high, rising 12 per cent to $777 billion and Indications suggest that developing and transition economies will continue to keep up with the pace of growth in global FDI in the medium term (UNCTAD 2012b). It is an important part of transnational corporations (TNCs) foray into international business. Survey of the largest 100 TNCs reflects the overall upward trend in international production, with the foreign sales and employment of these firms growing significantly faster than those in their home economy (UNCTAD 2012b).

FDI is preferred by host government over Foreign Institutional investors due to various reasons including its more stable nature, transfer of technology expectations, job creation etc. It is the intent and objective of the Government of India to attract and promote foreign direct investment in order to supplement domestic capital, technology and skills, for accelerated economic growth (DIPP 2012).

India has a long history in receiving FDI. It can be traced back to East India Company in the 18th Century (Hooda 2011). Post-independence, Indian economy was more inward looking and followed dual policies of export pessimism and import substitution. FDI was mainly encouraged for technology transfer. The regulatory framework was consolidated through the enactment of Foreign Exchange Regulation Act (FERA), 1973 wherein foreign equity holding in a joint venture was allowed only up to 40 per cent (RBI 2011). Subsequently, various exemptions were extended to foreign companies engaged in export oriented businesses and high technology and high priority areas including allowing equity holdings of over 40 per cent (RBI 2011). Even for technology licensing agreements, there were restrictions on the rates of royalty payment and technical fees. Development banks largely met the external financial needs for importing capital equipment. However, foreign investment was permitted in designated industries, subject to varying conditions on setting up joint ventures with domestic partners, local content clauses, export obligations, promotion of local R and D and so on - broadly similar to those followed in many rapidly industrialising Asian economies (Nagraj 2003). However, the 1980s witnessed a gradual relaxation of the foreign investment rules – perhaps best symbolised by the setting up of Maruti, a central government joint venture small car project with Japan's Suzuki Motors in 1982 (Nagraj 2003). The

announcements of Industrial Policy (1980 and 1982) and Technology Policy (1983) provided for a liberal attitude towards foreign investments in terms of changes in policy directions (RBI 2011).

However, the liberalisation policies in post 1991 era saw major changes in the FDI policies in India. A series of measures that were directed towards liberalizing foreign investment included: (i) introduction of dual route of approval of FDI – RBI"s automatic route and Government's approval (SIA/FIPB) route, (ii) automatic permission for technology agreements in high priority industries and removal of restriction of FDI in low technology areas as well as liberalisation of technology imports, (iii) permission to Non-resident Indians (NRIs) and Overseas Corporate Bodies (OCBs) to invest up to 100 per cent in high priorities sectors, (iv) hike in the foreign equity participation limits to 51 per cent for existing companies and liberalisation of the use of foreign brands name and (v) signing the Convention of Multilateral Investment Guarantee Agency (MIGA) for protection of foreign investments (RBI 2011). These were followed with other changes and gradually more sectors were opened for FDI as well as the upper limit of FDI for various sectors were also increased. Recently in 2012 FDI was allowed in more sectors including retail.

2. Foreign Direct Investment in India

Table 1 shows the foreign direct investment in India from 1991 to 2012. Overall there is increase in foreign trade from 1991 to 2012 however the annual growth has not been consistent over the years. Similarly, the investment by foreign institutional investors (FIIs) has shown an overall growth from 1991 to 2012 but the annual growth has not been consistent over the years.

Table 1. Foreign Direct Investment (FDI) Inflows in India

(August 1991 to March 2000 to 2012-2013-upto September, 2012)
(Amount US$ Million)

Financial Year	Foreign Direct Investment (FDI)						
	Equity				FDI Flows into India		Investment by FIIs Foreign Institutional Investors Fund (Net)
	FIPB Route / RBIs Automatic Route / Acquisition Route	Equity capital of Unincorporated bodies #	Reinvested Earnings+	Other Capital+	Total FDI Inflows	%age Growth Over Previous Year (In US$ terms)	
(A) 1991-2000$	15483	-	-	-	15483	-	-
2000-01	2339	61	1350	279	4029	-	1847
2001-02	3904	191	1645	390	6130	(+) 52 %	1505
2002-03	2574	190	1833	438	5035	(-) 18 %	377
2003-04	2197	32	1460	633	4322	(-) 14 %	10918
2004-05	3250	528	1904	369	6051	(+) 40 %	8686
2005-06	5540	435	2760	226	8961	(+) 48 %	9926
2006-07	15585	896	5828	517	22826	(+) 146%	3225
2007-08	24573	2291	7679	292	34835	(+) 53 %	20328
2008-09	31364	702	9032	776	41874	(+) 20 %	(-) 15017
2009-10 (P) (+)	25606	1540	8668	1931	37745	(-) 10 %	29048

2010-11 (P) (+)	21376	874	11939	658	34847	(-) 08 %	29422
2011-12 (P)	34833	1021	8205	2994	46553	(+) 34 %	16813
2012-13 (P) up to September, 2012	12,248	432	4,626	1,394	18,700	-	6,198
Cumulative Total (from April 2000 to September, 2012)	185,389	9,193	66,927	10,406	271,915	-	140,743

Note: $ – From August 1991 to March 2000; # – Figures for equity capital of unincorporated bodies for 2010-11 are estimates; (P) – All figures are provisional; + – data in respect of Re-invested earnings & Other capitals for the years 2009 – 10, 2010 – 11 and 2012 – 13 are estimated as average of previous two years; Inflows under the acquisition of shares in March, August & October, 2011, include net FDI on account of transfer of participating interest from Reliance Industries Ltd to BP Exploration (Alpha); RBI had included Swap of Shares of US$ 3.1 billion under equity components during December 2006; Monthly data on components of FDI as per expended coverage are not available. These data, therefore, are not comparable with FDI data for previous years.

Source: Ministry of Commerce and Industry Government. of India and IndiaStat Database (2012)

Table 2 shows the sector-wise foreign direct investment in India from 2000 to 2012. Services, construction development, telecommunications, computer software and hardware, and drugs and pharmaceutical have received the maximum amount of FDI inflows. These five sectors have received almost half of the overall FDI inflows. The services sector accounted for a steeply rising share of FDI stocks in India since the mid-1990s.

Table 2. Sector-wise Foreign Direct Investment (FDI) Inflows in India (April 2000 to September, 2012)

Sectors	Amount of FDI Inflows		%age with Total FDI Inflows (+)
	Rs. in Crore	In US$ Million	
Services Sector (Fin., Banking, Insurance, Non-Fin/Business, Outsourcing, R&D, Courier, Tech.Testing And Analysis, Other)	162415.59	35395.30	19.27
Construction Development:Townships, Housing, Built-Up Infrastructure And Construction-Development Projects	97262.15	21383.25	11.64
Telecommunications	57314.17	12595.22	6.86
Computer Software & Hardware	51439.58	11446.08	6.23
Drugs & Pharmaceuticals	45515.58	9695.97	5.28
Chemicals (Other Than Fertilizers)	39719.05	8737.78	4.76
Power	34949.05	7615.83	4.15
Automobile Industry	34299.66	7392.33	4.02
Metallurgical Industries	30635.45	6725.82	3.66
Petroleum & Natural Gas	31925.50	6383.28	3.47
Trading	24782.76	5376.75	2.93
Hotel & Tourism	16821.34	3635.61	1.98
Information & Broadcasting (Including Print Media)	14395.16	3081.78	1.68

Sectors	Amount of FDI Inflows		%age with Total FDI Inflows (+)
	Rs. in Crore	In US$ Million	
Electrical Equipments	14015.39	3061.96	1.67
Cement And Gypsum Products	11776.08	2625.88	1.43
Miscellaneous Mechanical & Engineering Industries	10322.25	2281.84	1.24
Industrial Machinery	10479.24	2202.75	1.20
Consultancy Services	9365.19	2034.44	1.11
Construction (Infrastructure) Activities	9093.22	1884.75	1.03
Non-Conventional Energy	8535.36	1866.33	1.02
Ports	7870.22	1661.85	0.90
Agriculture Services	6717.38	1635.08	0.89
Food Processing Industries	7131.60	1485.27	0.81
Hospital & Diagnostic Centres	6602.25	1442.98	0.79
Textiles (Including Dyed,Printed)	5550.87	1200.18	0.65
Electronics	5390.69	1184.06	0.64
Sea Transport	5336.39	1165.46	0.63
Fermentation Industries	4747.59	1071.13	0.58
Mining	4137.42	955.83	0.52
Paper And Pulp (Including Paper Products)	4033.89	861.44	0.47
Rubber Goods	3658.34	761.33	0.41
Prime Mover (Other Than Electrical Generators)	3763.92	755.16	0.41
Education	3205.54	660.93	0.36
Machine Tools	2842.77	600.29	0.33
Medical And Surgical Appliances	2728.33	570.26	0.31
Soaps, Cosmetics & Toilet Preparations	2449.66	509.88	0.28
Ceramics	2185.41	506.25	0.28
Air Transport (Including Air Freight)	2004.26	446.00	0.24
Diamond,Gold Ornaments	1796.11	366.62	0.20
Vegetable Oils And Vanaspati	1656.39	361.90	0.20
Fertilizers	1273.17	270.09	0.15
Printing Of Books (Including Litho Printing Industry)	1191.12	260.10	0.14
Railway Related Components	1124.63	247.77	0.13
Commercial, Office & Household Equipments	1089.49	237.81	0.13
Glass	1028.81	217.71	0.12
Agricultural Machinery	919.80	203.30	0.11

Sectors	Amount of FDI Inflows		%age with Total FDI Inflows (+)
	Rs. in Crore	In US$ Million	
Earth-Moving Machinery	743.59	170.27	0.09
Tea And Coffee Processing & Warehousing Coffee & Rubber)	454.55	100.94	0.05
Leather,Leather Goods And Pickers	462.30	95.38	0.05
Scientific Instruments	466.60	89.06	0.05
Photographic Raw Film And Paper	269.26	66.54	0.04
Industrial Instruments	307.45	66.53	0.04
Boilers And Steam Generating Plants	305.75	61.83	0.03
Timber Products	259.10	52.87	0.03
Sugar	230.99	49.73	0.03
Retail Trading (Single Brand)	196.00	42.70	0.02
Coal Production	103.11	24.78	0.01
Dye-Stuffs	87.32	19.50	0.01
Glue And Gelatin	70.56	14.55	0.01
Mathematical,Surveying And Drawing Instruments	39.80	7.98	0.00
Defence Industries	19.89	4.12	0.00
Coir	10.00	2.10	0.00
Miscellaneous Industries	35080.83	7773.41	4.23
Sub.Total	844604.92	183703.92	100.00
Rbi"S- Nri Schemes (2000-2002)	533.06	121.33	-
Grand Total	845137.98	183825.25	-

Note: (i) + Percentage of inflows worked out in terms of US$ & the above amount of inflows received through FIPB/SIA route, RBIs automatic route and acquisition of existing shares only; (ii) FDI inflows data re-classified, as per segregation of data from April 2000 onwards; # – In line with the extant FDI policy, the Sectors Housing and Real Estates & Construction Activities have been renamed as Construction development: Townships, housing, built-up infrastructure and construction-development projects and Construction (Infrastrure) activities, respectively.

Source: Ministry of Commerce and Industry, Government. of India and IndiaStat Database (2012)

Table 3 shows the country-wise foreign direct investment in India from 2000 to 2012. Mauritius, Singapore, United Kingdom, Japan and South Africa have contributed the maximum amount of FDI inflows. These five countries have contributed almost three-fourth of the overall FDI inflows. Many MNCs bring FDI in India through Mauritius due to various tax benefits and that's why it ranks as number one source for FDI inflows (Mishra, 2011).

Table 3: Country-wise Foreign Direct Investment (FDI) Inflows in India
(April 2000 to September, 2012)

Countreis	Amount of FDI Inflows		%age with Total FDI Inflows (+)
	(Rs. in Crore)	(In US$ Million)	
Mauritius	323610.36	70427.96	38.34
Singapore	83739.06	18272.99	9.95
United Kingdom	77814.10	17061.12	9.29
Japan	65155.65	13632.85	7.42
S.A	49381.63	10836.50	5.90
Netherlands	37566.97	8077.69	4.40
Cyprus	31208.12	6683.29	3.64
Germany	23181.80	5051.10	2.75
France	14796.94	3187.19	1.73
UAE	10876.44	2342.91	1.28
Switzerland	10442.67	2252.49	1.23
Spain	5780.68	1246.81	0.68
South Korea	5458.28	1165.09	0.63
Italy	5005.49	1122.79	0.61
Hong Kong	4576.53	992.87	0.54
Sweden	4558.67	973.85	0.53
Caymen Islands	3704.48	868.25	0.47
British Virginia	3570.56	789.63	0.43
Indonesia	2815.61	608.48	0.33
Australia	2389.74	518.64	0.28
The Bermudas	2252.20	502.07	0.27
Malaysia	2452.07	498.33	0.27
Belgium	2164.19	470.63	0.26
Russia	2236.31	468.13	0.25
Luxembourg	2066.18	448.96	0.24
Canada	1857.48	407.42	0.22
Oman	1591.04	346.16	0.19
Denmark	1630.93	339.85	0.18
Finland	1301.84	273.87	0.15
Austria	827.09	174.94	0.10
Ireland	633.14	144.25	0.08

Countreis	Amount of FDI Inflows (Rs. in Crore)	Amount of FDI Inflows (In US$ Million)	%age with Total FDI Inflows (+)
Chile	654.69	141.06	0.08
Morocco	648.56	136.80	0.07
China	662.91	135.03	0.07
South Africa	559.69	119.86	0.07
Norway	549.56	115.60	0.06
Thailand	461.67	101.47	0.06
British Isles	428.11	94.10	0.05
West Indies	348.13	78.28	0.04
Taiwan	305.81	65.56	0.04
Turkey	275.87	58.98	0.03
Israel	245.90	55.32	0.03
Poland	246.70	51.94	0.03
St.Vincent	254.02	49.67	0.03
Saudi Arabia	193.33	40.82	0.02
Panama	185.36	40.61	0.02
Saint Kitts & Nevis	147.88	33.53	0.02
New Zealand	132.50	30.09	0.02
Jordan	155.03	28.57	0.02
Sri Lanka	132.29	28.31	0.02
Bahamas	127.21	28.09	0.02
Baharain	119.29	27.17	0.01
Portugal	100.36	21.40	0.01
Iceland	93.72	21.14	0.01
Brazil	97.59	20.45	0.01
Kenya	93.09	20.09	0.01
Gibraltar	83.67	19.51	0.01
Korea(North)	91.83	19.45	0.01
Seychelles	86.83	18.21	0.01
Virgin Islands(US)	86.73	18.19	0.01
Kuwait	84.55	17.87	0.01
Kazakhstan	81.11	17.42	0.01
Czech Republic	74.68	17.34	0.01
Liberia	64.54	14.56	0.01

Countreis	Amount of FDI Inflows (Rs. in Crore)	Amount of FDI Inflows (In US$ Million)	%age with Total FDI Inflows (+)
Malta	57.96	12.71	0.01
Channel Islands	55.86	12.46	0.01
Belarus	49.91	12.17	0.01
Mexico	49.11	10.66	0.01
Hungary	47.35	10.20	0.01
Argentina	46.23	10.15	0.01
Nigeria	47.25	10.02	0.01
Myanmar	35.75	8.96	0.00
Isle of Man	38.09	8.49	0.00
Slovenia	39.07	8.24	0.00
Philippines	32.22	6.32	0.00
Liechtenstein	27.10	5.90	0.00
Maldives	24.72	5.49	0.00
Belize	24.65	5.43	0.00
Slovakia	22.62	5.22	0.00
Rep. of Fiji Islands	22.30	5.07	0.00
Romania	22.34	4.45	0.00
Tunisia	19.84	4.31	0.00
Guersney	23.27	4.20	0.00
Uruguay	16.06	3.63	0.00
Ghana	13.56	3.08	0.00
Scotland	12.68	2.84	0.00
West Africa	12.31	2.47	0.00
Qatar	11.28	2.30	0.00
Nepal	9.12	1.93	0.00
Yemen	7.74	1.87	0.00
Greece	8.25	1.79	0.00
Monaco	7.49	1.52	0.00
Egypt	7.30	1.43	0.00
Tanzania	6.31	1.41	0.00
Colombia	5.36	1.17	0.00
Ukraine	4.84	1.08	0.00
Cuba	4.73	1.04	0.00

Countreis	Amount of FDI Inflows (Rs. in Crore)	Amount of FDI Inflows (In US$ Million)	%age with Total FDI Inflows (+)
Guyana	4.60	1.00	0.00
Vanuatu	4.41	0.94	0.00
Uganda	3.69	0.84	0.00
Congo (DR)	2.41	0.54	0.00
Croatia	2.29	0.52	0.00
Aruba	1.96	0.43	0.00
Lebanon	1.87	0.39	0.00
Bulgaria	1.69	0.36	0.00
Estonia	1.31	0.30	0.00
Anguilla	1.45	0.29	0.00
Bermuda	1.48	0.28	0.00
Yugoslavia	1.13	0.24	0.00
Jamaica	1.00	0.22	0.00
Togolese Republic	0.99	0.22	0.00
Iraq	0.85	0.19	0.00
Zambia	0.67	0.15	0.00
Vietnam	0.62	0.14	0.00
Iran	0.47	0.10	0.00
Libya	0.26	0.06	0.00
Latvia	0.27	0.06	0.00
Mongolia	0.27	0.06	0.00
Sudan	0.24	0.05	0.00
Peru	0.20	0.04	0.00
Not Indicated	0.16	0.03	0.00
Afghanistan	0.12	0.03	0.00
Botswana	0.13	0.02	0.00
St. Lucia	0.06	0.01	0.00
East Africa	0.02	0.00	0.00
Georgia	0.02	0.00	0.00
Bolivia	0.01	0.00	0.00
Costa Rica	0.01	0.00	0.00
Kyrgyzstan	0.01	0.00	0.00
Cameroon	0.01	0.00	0.00

Countreis	Amount of FDI Inflows (Rs. in Crore)	(In US$ Million)	%age with Total FDI Inflows (+)
Djibouti	0.00	0.00	0.00
Venezuela	0.00	0.00	0.00
Barbados	0.00	0.00	0.00
Muscat	0.00	0.00	0.00
FII's	0.25	0.06	0.00
NRI (As Individual Investor) â€˜*â€™	20383.66	4684.25	2.55
Country Details Awaited	30854.19	6960.47	3.81
TOTAL	844604.91	183703.90	100.00
RBIâ€™S- NRI SCHEMES (2000-2002)	533.06	121.33	-
Grand Total	845137.97	183825.23	-

Note: Complete/separate data on NRI investment is not maintained by RBI. However, the above FDI inflows data on NRI investment are reported by RBI under head NRI (as individual investors); + – Percentage of inflows worked out in terms of US$ and the above amount of inflows received through FIPB/SIA route RBIâ€™s automatic route and acquisition of existing shares only.

Source: Ministry of Commerce and Industry, Goverment of India and IndiaStat Database (2012).

Table 4 shows the RBI Regional Office-wise foreign direct investment in India from 2000 to 2012. Mumbai, New Delhi, Bangalore, Chennai, Ahmadabad and Hyderabad offices have contributed the maximum amount of FDI inflows. These six offices have contributed more than two-third of the overall FDI inflows. Maharashtra has received the maximum amount of FDI.

Table 4. RBI Regional Office-wise Foreign Direct Investment (FDI) Inflows Received (with State Covered) in India (2010-2011 to 2012-2013-upto September, 2012)

RBI's Regional Office[2]	State Covered	2010-2011		2011-2012		2012-2013*		Cumulative Inflows (April 2000 to September, 2012)	
		Rs. in Crore	US$ in Million	Rs. in Crore	US$ in Million	Rs. in Crore	US$ in Million	Rs. in Crore	US$ in Million
Mumbai	Maharashtra, Dadra & Nagar Haveli, Daman & Diu	27669	6097	44664	9553	30851	5652	276986	60272
New Delhi	Delhi, Part of UP and Haryana	12184	2677	37403	7983	11852	2185	162943	35256
Bangalore	Karnataka	6133	1332	7235	1533	2373	437	46265	10199
Chennai	Tamil Nadu, Puducherry	6115	1352	6711	1422	5856	1068	43415	9341
Ahmedabad	Gujarat	3294	724	4730	1001	1973	363	38396	8521

RBI's Regional Office[2]	State Covered	2010-2011		2011-2012		2012-2013*		Cumulative Inflows (April 2000 to September, 2012)	
		Rs. in Crore	US$ in Million	Rs. in Crore	US$ in Million	Rs. in Crore	US$ in Million	Rs. in Crore	US$ in Million
Hyderabad	Andhra Pradesh	5753	1262	4039	848	2375	435	32976	7244
Kolkata	West Bengal, Sikkim, Andaman & Nicobar Islands	426	95	1817	394	750	135	8935	2017
Chandigarh	Chandigarh, Punjab, Haryana, Himachal Pradesh	1892	416	624	130	146	27	5456	1181
Kochi	Kerala, Lakshadweep	2093	451	569	123	603	109	4182	886
Bhopal	Madhya Pradesh, Chhattisgarh	167	37	2274	471	223	42	4155	880
Panaji	Goa	1376	302	181	38	31	6	3538	768
Jaipur	Rajasthan	230	51	161	33	423	78	3033	631
Kanpur	Uttar Pradesh, Uttarakhand	514	112	635	140	112	21	1559	337
Bhubaneshwar	Odisha	68	15	125	28	60	11	1392	300
Guwahati	Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura	37	8	5	1	0	0	321	73
Patna	Bihar, Jharkhand	25	5	123	24	21	4	170	34
Region Not Indicated3		29344	6447	53851	11399	12484	2274	210884	45765
Sub Total		97320	21383	165146	35121	70132	12846	844605	183704
RBIsNRI Schemes (From 2000 to 2002)		0	0	0	0	0	0	533	121
Grand Total		97320	21383	165146	35121	70132	12845	845138	183825

Note: 1. Includes 'equity capital component' only, 2. The State-wide inflows are classified as per RBI's Region-wide inflow furnished by RBI, Mumbai, 3. Represents, FDI inflows through acquisition of existing shares by transfer from residents to non-residents. For this, RBI Regional wise information is not provided by Reserve Bank of India, * – Upto September 2012

Source: Ministry of Commerce and Industry, Government of India and IndiaStat Database (2012).

3. Discussion

A perusal of India's FDI policy vis-à-vis other major emerging market economies (EMEs) reveals that though India's approach towards foreign investment has been relatively conservative to begin with, it progressively started catching up with the more liberalized policy stance of other EMEs from the early 1990s onwards, inter alia in terms of wider access to different sectors of the economy, ease of starting business, repatriation of dividend and profits and relaxations regarding norms for owning equity (RBI 2011). Due to liberalization and growth potential of Indian economy, overall there is increase in foreign trade from 1991 to 2012 however the annual growth has not been consistent over the years. In the trend analysis, it is found that the FDI

inflow into India has increased over time, but the rate of increase was slow from 1991 to 2003 and after that it has increased very rapidly up to 2008 and from then it is decreasing (Koner and Purandare 2013). Similarly, in the regression analysis, the estimated coefficient is positive and also significant at 1 % level. So, the impact of FDI inflow into India on GDP is positive and highly significant (Koner and Purandare 2013).

There were just few (U.K, USA, Japan, Germany, etc.) major countries investing in India during the period mid-1948 to march 1990 and this number has increased to fifteen in 1991 (Hooda 2011) and this number has increased to more than 135 countries.

While the foreign investment inflow represents a substantial jump over the 1980s, it is modest compared to many rapidly growing Asian economies, and miniscule compared to China (Nagaraj 2003). This reality has not changed much in 2000s also. FDI inflows to India witnessed significant moderation in 2010-11 while other EMEs in Asia and Latin America received large inflows (RBI 2011).

4. Conclusion

Due to liberalization and growth potential of Indian economy, overall there is increase in foreign trade from 1991 to 2012 however the annual growth has not been consistent over the years. Services, construction development, telecommunications, computer software and hardware, and drugs and pharmaceutical have received the maximum amount of FDI inflows. These five sectors have received almost half of the overall FDI inflows.

Mauritius, Singapore, United Kingdom, Japan and South Africa have contributed the maximum amount of FDI inflows. These five countries have contributed almost three-fourth of the overall FDI inflows. Mumbai, New Delhi, Bangalore, Chennai, Ahmadabad and Hyderabad offices of RBI have contributed the maximum amount of FDI inflows. These six offices have contributed more than two-third of the overall FDI inflows. Maharashtra has received the maximum amount of FDI.

Research shows positive impact of FDI on Indian economy and while the foreign investment inflow represents a substantial jump over the 1980s, it is quite small in comparison to China.

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