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Handmade Musical Instruments Production in Turkey: An Historical Analysis on Cymbal Producing Businesses

Alper Erserim*, Barış Tektekin
Department of Business Administration, Muğla Sıtkı Koçman University, Turkey

ABSTRACT

Depending on the geographical richness of Turkey, it can be seen that the music culture took place here highly immense. This richness make producing musical instruments with different types and schemes possible and by enabling production of these materials, high quality hand-made musical instrument production becomes highly feasible. The leading product in the world in this sector is considered as cymbal. This research, aims to grasp how a little local business becomes a big leading international business when it comes to producing cymbal. The main purpose of this commitment is to analyze historically how hand-made cymbal producers grow and endure their living. In this context, Istanbul Mehmet Cymbals and Bosphorus Cymbals businesses are contacted and obtained information are analyzed. Regional distribution information of hand-made musical instrument producers are also tried to be given in this perspective. It can be seen from the gathered information that to endure their living, producers in Turkey needs to take a lot of conditions into consideration, nevertheless, again can be seen that eligible products were brought to the future under the names of different brands.

Keywords *Musical Instruments, Handmade, Cymbal*

1.INTRODUCTION

Hand-made style of production is the oldest kind of production and therefore craftsman are the first producers. Craftsman, by passing through a freshman period, become masters and make productions on demand, usually they make their own products and sell the things they made themselves. Craftsman, obtain their raw materials and produce alone, and by processing the material in every single production procedure, get the ultimate product. In this era that employee numbers were limited, production processes were long, ultimate product numbers were countable and therefore costs were high, production on demand, was more accessible for prosperous people [7, 12, 3]. Piano and violin kind of instruments that are made on demand can be given as example for this way of production that is still on agenda [8]. Primarily historical evolution of hand-made musical instrument production in the world, then the situation in Turkey was taken into consideration.

1.1. Hand-made Musical Instrument Production in the World

After industrial revolution, while there was instruction of mass production systems in economically prosperous countries, handmade musical instrument production kept going on in certain limits. When it comes to the production of the best qualified hand-made musical instruments in the world, the ones made by Cremonian instrument producers Amati, Guarnerius and Stradivarius during 1600 and 1700

were to be praised. The excelling of violins each passing day with the continuous production of violins started around 1600 in Italy [9]. Amati produced dark sound instruments with the best tone and softness of his time. Stradivarius violins, on the other hand, with their transparent polishing, strong and nice high-pitched sound reached perfection [14]. With their mastership in producing qualified hand-made instruments, Germany, France and Italy are of primary importance in the world in music and musical instrument production sectors with their qualified hand-made violins. Being produced during 1600s in the western world, violin reached its final form thanks to Italian masters Amati, Guarnerius and Stradivarius [4].

Despite given low priority by music making processes and its unpopularity in musical instrument production phases when compared with popular and solo instruments, Turkey is the only place where the only hand-made production of cymbal is made, which is quite beneficial when making music, which also has the ability to considerably alter the feeling that music makes us feel, with the musical tones it creates for unity and harmony, is not only a necessary instrument for the world, but also something of its own. At the beginning of 1900s Zilciyan family, which is the only family in the world to produce cymbals, moved to USA and started producing cymbals on a larger scale, a kind of mass production scale, which they were doing locally back in their atelier in Samatya, Istanbul. Therefore, the traditional hand-made cymbal production continued only on Turkey in the world, until the family's last living member on earth, Mikael Zilciyan passed away in 1978. Nevertheless, master Mikael apprentices grasp the tradition back in their hands and they kept the tradition going on.

1.2. Hand-made Musical Instrument Production in Turkey

Musical instrument production in Turkey takes place on industrial level locally. All kinds of unindustrialized musical instrument production takes place on atelier level. Since there is a high demand for sectoral products, while production keeps going on in hand-made way, the production of highly qualified and rarely used instruments is done on demand. The production of the instruments based on individual choices can also be analyzed in the scope of only on demand kind of method.

When the art of musical instrument production is analyzed in the scope of Anatolian history, the earliest information about this art branch traces back to Ottoman sources. In the Ottoman era, the instruments used in harem were purchased by chief armourer or chief harem eunuch and they got them repaired by masters outside the palace. It is known that in the time of Fatih the Conqueror there was a lute player called Şîrmerd and there was a zitherist called Ishak in the palace. In the archives of artisans of Ottoman Empire, there was a January 1526 registered record about a tanbur player/ maker called Muslihiddin, which was chosen among other instruments and employed to the palace in return for 12 coins. This record shows that in the time of Fatih, there were paid instrument artisans and musicians in the palace [1]. In "seyahatname", when mentioning about craftsmanship in Istanbul, Evliya Çelebi emphasized that were instrument artisans called janissary band member or chief zurna player [5]. In addition, some records show that at the beginning of XIX century, there were some instruments ateliers in the palace and some of the masters worked for the palace [13]. However, no concrete proof about sectoral structure of instrument artisans, training, master and apprentice relationship is available [1].

Since there is no system of mass production and fabrication of musical instruments in Turkey, nearly all of the production is hand-made locally by using additional production equipment. In different regions of Turkey, production of specific musical instruments are made locally in small ateliers and consequently marketing procedures of some of those produced instruments are done and they are sold abroad. Efforts of mass production can be seen on small scales; however, since there is limited number of masters trying to do that, no significant improvement can be made.

Because of the dominant musical culture in Turkey, it can easily be seen that the highest produced

musical instrument, which is also one of the major instrument of Turkish folk music, is “baglama”. Even though baglama, which has a history of nearly 5000 years in this territory, has a richer sound than most of the western musical instruments, the reason why it is not well-known around the world can be that it is not integrated enough to the world music, it is not mass produced until this day in Turkey. Nonetheless, lately baglama production, in addition to being more wide-spread than other instruments, is made in large or small scales with different qualities. Today, most baglama players produce small amounts of baglama even though they made it for themselves. There are particular names in Turkey when it comes to baglama production. Being trained as instrument artisan in Istanbul
Technical University conservatory, one of our master artists, the one who introduced fretless classical guitar to world, also known for his baglama and lute making skills, Erkan Oğur can be a good example.
Instruments production can be divided into two types as hand-made and mass production. Mass production is generally made abroad and hand-made is generally done locally in Turkey. However, there are also some businesses that mass produce violin and baglama. Nearly %80 of masters who generally hand-made their products work alone, in other words employ no single employee. The reason why instrument master employ no personnel even though there is a high need for it can be that there is a skilled personnel problem in this sector. Despite this situation in the past, to meet the skillful personnel demand of sector, commitments like instrument making programs are conducted in universities and instrument production departments are gradually established in ministry of education high schools [16].
Turkey is a dependent country in terms of raw materials of instruments. The raw materials necessary for local instruments are obtained from Turkey, on the other hand nearly all of the materials necessary for western music are imported abroad. Generally, materials that are necessary
local instruments are grown inside Turkey and can easily be gathered when needed. The ones necessary for western instrument production are also no longer hard to gather. This convenience is paralleled by the development of furniture sector because those materials and woods used in instrument making are also the main materials in furniture production. Because furniture sector is developed in a systematical scheme in Turkey, importing raw materials in large scales in a swift way made instrument producers’ job easier and easier day by day. Even though these materials are imported not for instruments but furniture, instrument artisans are trying to overcome providing material problem and trying to make the best out of it.
An instrument may born somewhere but has no land or country [15]. If a classification wants to be made in terms of musical instrument production, the only possible way of doing it depends not on regions but on different production types of instruments regarding their eastern and western way of production [16]. In terms of production classification, it is hard to classify instrument production into regions in Turkey. For example, baglama has its own unique way of production in each region of Turkey. It can be seen that in general it is hard to make classifications depending on local instruments; however one can say that the situation can change for western instruments [15].
When the way western instruments like guitar and violin are produced is analyzed, it can be seen that more production is being made on western parts of the country, and when one goes to the eastern part of the country, he/she can easily see that production tendency moves more towards local instruments. If hand-made instrument production is classified as eastern and western in Turkey, then it is possible to classify the sector as three major cities Istanbul, Ankara and Izmir on one side and others on the other side. The main reason for this situation is that cities like Istanbul are centers of all kinds of sectors in the country and they are also port cities which make them highly viable when it comes to importing materials and equipment.
In terms of reaching raw materials, masters in big cities and port cities hold an advantageous position in producing western instruments and therefore make instruments on a national scale (In terms of

marketing and opportunities).

If closeness to raw materials is taken into account, calabash is grown more in Mediterranean and Mediterranean side of Aegean region, which may makes us presume that rebab production is made more in these regions. The reason why once upon a time inexpensive and considerable number of musical instruments made from beech trees and hornbeams in Black sea region is that these trees were significantly wide-spread on this region. The regions where leather production is wide-spread, there may be more production of percussion instruments. The cities where industry is developed, there may be a possibility of production of music wire, which is not normally produced in Turkey. The port cities such as Istanbul and Izmir, where imported woods easily reach, instruments made up of those woods may have a little bit of front position [15].

2. Strategy of the Research

The research is made with leading cymbal manufacturers in Turkey and in the world, Istanbul Mehmet Cymbals and Bosphorus Cymbals. Before meeting was arranged with the firms, ready question forms were used and additional information was tried to be reached. Establishment, development, competitiveness and performance related information about these firms were aimed to be analyzed and were addressed.

The type of this research is descriptive research and multiple sampling case study was made. Case study was made in terms of qualitative research and meeting was chosen as data collection technique. Case study especially goes from questions to answers, regulates and analyzes findings and implications regarding the case, gives the best possible answers to research questions and summarizes everything in harmony [6]. According to Yin (2003), case studies must be made, where questions of how and why weighs, where researcher have no chance of affecting the case, which is present at real, but where there is not much research was done [10].

The absence of academicals and sectoral research on production in Turkey both curtails the information about the sector and makes it hard to reach information about firms. It is considered highly appropriate to meet firms face to face in order to obtain required information. Question forms were prepared for the firms to be met, and in order to analyze the sector and question general state of the firms, by grouping questions under five categories as establishment, development, market and competitiveness, performance and general assessment, sub-questions were prepared.

Upon creating question forms, the process continued with choosing companies to be met. Five leading firms were contacted for the meeting. Istanbul Mehmet Handmade Cymbals, which comes from Zilciyan tradition, and which is owned by the last living member of that tradition, and Bosphorus Cymbals, which especially deserves a special place in the world for jazz cymbal production, which is also known for Whiplash, 5 times Oscar nominee in 2015 Oscars in Hollywood since their cymbals were used in that movie, accepted the meeting offer enabling an effective meeting. Starting from the question forms that would make us evaluate and analyze firms according to appropriate criteria, by following content analysis process, categories were determined and coding processes were determined according to them. At the last stage, by explaining obtained data meaningfully, correlation among findings was concluded and explanations were given.

Quantitative researchers conceptualize variables as a part of assessment procedure and refine these concepts. On the contrary, qualitative researchers, creates new concepts or refines concepts that are dependent on data. Conceptualization is an important part of data analysis and starts during data collection. Therefore, conceptualization is arranging data and concluding meanings out of them by qualitative researchers [11]. A code arranged according to the theme is a code that protects qualitative richness of the phenomena. This code can be used in analysis, evaluation and presentation of the

phenomena. This code can be used in analysis, evaluation and presentation of the research [2]. In order to code data according to themes, researcher must first see or learn themes in data. Seeing themes depend on four different skills: (1) recognizing patterns in data; (2) thinking in terms of systems and concepts; (3) having the ability to have necessary information that are not expressed or to have background information (for example, knowing things about Greek myths helps one to understand Shakespeare‘s plays); and (4) to have related information (for example, in order to code themes of a rock concert, one must know about rock musicians and rock music itself) [2].

3. Findings

Obtained data as a result of the meetings were expressed by dividing into categories. Four categories in this research are; establishment, development, market and competitiveness and performance. Firstly findings about Istanbul Mehmet Cymbals and then Bosphorus Cymbals were stated.

3.1. Istanbul Mehmet Cymbals

According to the establishment information obtained from the firm; hammer Agop Tomurcuk and turner Mehmet Tamdeğer who were working for Zilciyan atelier until 1978, after the atelier were closed down, started working for sectors that were closer to their (Mehmet for jewelry store as a teemer, Agop for auto garage). Agop and Mehmet, learnt the formula secretly by watching master Mikael Zilciyan when they were working for the atelier, the formula that only Mikael Zilciyan knew and they kept this as a secret till master Mikael passed away. The formula of Istanbul cymbals was kept secret for centuries and only Zilciyan family knew of was also known by Agop and Mehmet. They decided to their own job after a while, and started their own atelier and started producing cymbals again. Upon the death of Agop, Istanbul Cymbals were divided into two. Agop‘s children started as Istanbul Agop with their own share, and the last living cymbal master Mehmet Tamdeğer started as Istanbul Mehmet.

Mehmet Tamdeğer’s wife Ayla Tamdeğer from Istanbul Mehmet Cymbals were met and interviewed according to pre-prepared question form and related categories.

When looking at the historical development of the firm, after Mikael Zilciyan’s death, Mehmet Tamdeğer and Agop Tomurcuk decided to keep this business going. Because, since their childhood, they were in this business, they got nothing more to do. As of 1981, cymbal production in Istanbul started again. In 1996, upon Agop Tomurcuk’s death, Mehmet Tamdeğer and Agop Tomurcuk‘s children ended partnership and by protecting the Istanbul brand, decided to divide the firm into two as Istanbul Mehmet ve Istanbul Agop. The position of cymbal master Mehmet Tamdeğer in the sector is quite divergent. The firms coming after him in this sector, except for Istanbul Agop, are the firms that worked for Mehmet Tamdeğer and then started their own businesses.

As well as internal marketing of cymbals, external sales of them are also of great importance. Nearly all of the firms that produce cymbal for the needs of domestic market are also selling products abroad. Product demands coming from abroad and the way they are met, which ways are used, were explained by Ayla Tamdeğer as; “External sales are made by contacting 50 countries in the world as distributors. In addition, all the foreign drummers coming to Turkey, come to the ateliers to see how cymbals are made, join in a factory tour and buy cymbals in the end. By making connections between foreign endorsers and distributors in their country, endorser sales took place. In addition to this, online sales are made.”

In addition to this fundamental information, conceptualized sub-categories related to this interview is shown below.

Table 1. İstanbul Mehmet Cymbals

İSTANBUL MEHMET CYMBALS				
THEME	**MANUFACTURE**		**PROMOTION**	
CATEGORY	***Establishment***	***Expansion***	***Market(ing) &Competition***	***Performance***
CODES	• Reasons of Organization • Method of establishment	• Billy Hart's arrival to the atelier • Job-order production • Necessary financing only available from sales • Master – apprentice relationship • Production according to rising styles musician demand • Accounting work; within company	• Sales price to market conditions, competition conditions competitive price • R & D (Research & development) • Sales in the World Marketing • Endorsing • Use of social media, participation in fairs, advertising to sector publications • Labor issue and raw material access	Moderate - High

3.2. Bosphorus Cymbals

They started producing cymbals by establishing their own atelier after they left Mehmet Tamdeğer and Agop Tomurcuk's atelier in 1996. In time, they started becoming masters of some different kinds of cymbals, especially like the ones used in jazz music. Bosphorus Cymbals was established by three partners Hasan Şeker, İbrahim Yakıncı and Hasan Özdemir, who kept working for the same atelier for 16 years. They all committed in this business. The founders of this business have been friends since their childhood, who grew up in the same neighborhood. They all were sent to work for the atelier in their neighborhood when they were children [17].

When we look at the historical development of Bosphorus Cymbals, the process begins with three partners working for the cymbal atelier in 1983, then 1996 they leave Mehmet Tamdeğer and Agop Tomurcuk's and found their own atelier and in time they become experienced in producing different kinds of musical cymabls, especially jazz music. Since 1996, the company has been in the top three producers of cymbals in the world market. By contacting and interviewing international marketing director, Emrah Sipahi, information was gathered and evaluations were made about both the firm and the cymbal sector.

When the success of hand-made cymbal production in Turkey is taken into account, and when we look at external success and marketing strategies of the firm rather than internal ones, different marketing strategies and retail methods draw attention. Fairs, online merchandising are the tools that are used for promotion and sale. Foreign music bands coming to Turkey for concerts visiting the production facilities and buying cymbals at the same time and touristic tours are also other ways of marketing and in this way contacts are made with 80 countries. In addition to this fundamental information, like the ones above, conceptualized sub-categories related to this interview is shown and summarized below.

4. Conclusions and Discussion

When we look at the features of hand-made producer in Turkey, it can be seen that they carry some region related features and that they have been carried to the future by master-apprentice relationship. It can easily be seen that these little ateliers were hardly ever subjects of research and no records were kept about them. The main focus of this research was to understand how these little ateliers were formed and to find out how these little ateliers were developed and brought to the future, how they earned the international reputation. This research aims to grasp how a little atelier earns international reputation in the context of hand-made cymbal production. The main purpose of this initiative is to historically analyze the development of hand-made cymbal production and its producers in Turkey. Within this context, Istanbul Mehmet Cymbals and Bosphorus Cymbals corporations were contacted and the obtained information as a result of the meetings was analyzed.

Firstly, working principles of corporations were scrutinized and production processes were analyzed and therefore their production levels were tried to be figured out. It can be clearly understood that Istanbul Mehmet and Bosphorus Cymbals use whatever opportunities they have to produce at the highest level and they keep up with the recent production trends in the world to create newer and newer strategies. However, despite all the opportunities they have to produce cymbals at the highest level, because of the sectoral problems and drawbacks, they endure problems from time to time. Expensive raw material problem and deficient experienced employee problem comes at the top of the problems. Since it is a tough job to make hand-made production, employees may quit their jobs, and therefore, since it takes 2-3 years for an employee to get experienced, circulation of employees resulted in insufficient qualified employees. The main factor that determines Turkey's level at the world stage, and quality, has been kept and should be kept in the future.

BOSPHORUS CYMBALS				
THEME	**MANUFACTURE**		**PROMOTION**	
CATEGORY	***Establishment***	***Expansion***	***Market(ing)&Competition***	***Performance***
CODES	• Desire to establish a company	• Job – Order production • Necessary financing only avaible from sales and demand study • 100% sales • Experting in jazz cymbals • Accounting work; out of company	• Sales price to market conditions, competition conditions, competitive price and promotion visits • High-end Marketing • 60% of world market • Endorsing • Use of social media, participation in fairs, advertising to sector publications • Expansion problem; Lack of human resource	• Between low – Very high

This research may be taken into account from different perspectives. Nowadays, it can be taken into account from the perspective of culture industry and can be taken into account from the perspective of the community.

Additional Information

(1) This study was presented as a draft paper at the 3rd International Annual Meeting of Sosyoekonomi Society April 28-29, 2017 in Ankara, Turkey.
(2) This research was done by making use of Barış Tektekin's "Handmade Musical Instruments Production in Turkey: A Survey for Cymbal Manufacturer Corporations" graduate thesis with Alper Erserim's counselling.

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World Bank's Smart Economics for Gender Equality: An Exposition

Varalakshmi M.1,* , Manjusree Naidu K.2
1Centre for Gandhian Studies, GITAM Institute of Management, GITAM University, India
2Department of Entrepreneurship, GITAM Institute of Management, GITAM University, India

A B S T R A C T

Gender empowerment, in terms of economic empowerment, played a significant role since historical times in upbringing of children, education of children and decision making; also it took care of widowhood and old age of women. Women with economic entitlement earned more respect and security than women without any such economic asset. While empowerment through education is the best way to empower women, economic empowerment certainly plays a difference in the quality of lives of women; especially illiterate, poor and women suffering with various types of ill treatment from domestic front and outside the home. In this context World Bank's Plan as Smart Economics: Gender Action Plan (2007-2010) came out with an objective to support women and girls to reach the main stream through its studies and support. The objective of the third goal of the "UN Millennium Development Goals" too, is for Gender equality and empowerment. How far we achieved this goal since its inception? It is in this context the present paper discusses the World Bank's Plan on Smart Economics; its concept; features and further considerations.

Keywords *Women, Empowerment, Gender Action Plan (GAP), World Bank, Smart Economics and Women's Economic Participation*

1.INTRODUCTION

When compared with yester years women are far ahead in terms of health; education and empowerment in many ways. But we should not be satisfied with the success so far. Hence World Bank considering the economic backwardness for women and the significance of economic returns both for women and the nations came out with this plan. Further, with an objective to "advance women's economic empowerment in the world Bank Group's client countries in order to promote shared growth and accelerate the implementation of Millennium Development Goal 3 (MDG-3 – promoting gender equality and women's empowerment)" (World Bank, September, 2006)[1], this Gender Action Plan (GAP) 2007-2010 came out1 as "Gender Equality as Smart Economics". "Smart Economics" is to empower women in developing countries that "not only gives jobs and help them to economic growth" but also to pave a "route to combat poverty and a movement towards greater liberty and democracy" (Laine, 2010)[2].

Gender Action Plan (GAP) 2007-2010 aimed to invest for women's improvement in terms of, access to jobs, land rights, financial services, and agricultural inputs and infra-structure. Further, increased women's labour force participation is associated with reduced poverty and faster growth. Thus GAP also focuses on girl's transition from school that would benefit children and society as a whole. The four focussed areas in this plan are: energy, transport, and water and sanitation (World Bank web link)[3].

This plan came out, also due to World Bank's previous monitoring process on Bank's 2001- Gender Mainstreaming strategy. This research revealed a steady improvement in country's lending operations and technical assistance (World Bank, 2002 cited, World Bank, 2006)[1]. Further, research by Poverty Reduction and Economic Management Gender and Development Unit (PREMGE) held that during Fiscal Year 2004 and Fiscal Year 2005, ninety percent of World Bank projects in health and education sectors incorporated gender issues. At the same time World Bank's achievements in terms of promoting women's economic participation; in strengthening institutions to collect sex-disaggregated data and in measuring disaggregated results of its intervention were found to be less satisfactory; also overall economic progress is less robust (World Bank, March,2006, cited, World Bank, September, 2006)[1]. World Bank (September, 2006)[1] also refers elsewhere too on World Bank's commitments to improve sex-disaggregated statistics on cross-country data on women's economic participation; as for instance on women's participation in informal employment are notably weak (Millennium Project, 2003, cited). Considering all these, the World Bank group thought that it needs to strengthen the integration of gender issues in economic sectors where it has a comparative advantage.

	Policy Level Making Markets work for women	**Agency Level** Empowering women to compete in Markets
Product Market	• Reductionin monetary costs • Female-owned business • Information to suppliers	• Access to Information &communication Technologies(ICTs) • Quality day care service • Business start-up grants
Financial Market	• Reform financial institutions • Reform laws regarding right to own property	• Support Self Help Groups (SHGs)& Rotating Saving and Credit Associations (ROSCAs) • Gender sensitive business services
Land Markets	• Promote joint titling • Reform laws restricting women's right to own land	• Ensure women's participation in land adjudication and registration process • Involve women in local and natural resource management
Labour Market	• Introduce legislation to promote women's employment • Socialize costs of maternity leave • Certify good gender practices	• Increase access to women's training programmes • Provision for labour intermediate services(to migrants)

Figure 1. Plan Enhances Women's Empowerment

2. Major Features of the Gender Action Plan (Fiscal Years 2007 – 2010):

The Gender Action Plan (GAP) defines a concrete road map for four-years and it has actually come out to complement the existing main stream strategy on women empowerment with a view to further advancement. The flowing is a brief account of the major features and plans of GAP based on the World Bank's Gender Action Plan (September, World Bank, 2006)[1]

Guiding Principles of GAP (2007- 2010):

The plan was focussed on selected countries and areas; tailored to individual country needs; grounded in empirical evidence on gender inequalities and oriented to results – processes, outcomes and impacts. Other aspects include, focusing on building and replicating success and considering incentives rather than mandates and obligations. Finally it is designed to promote development effectiveness and to be aligned with Paris Declaration (this is endorsed on March 2, 2005 to commit more than 200 countries and development organizations to continue and increase efforts in harmonization, alignment, and managing aid for results with a set of monitorable actions and indicators, World Bank, September,

2006, see foot note 11).

Targets of Action Plan:

The Action Plan targets four key markets to empower women to compete in. These are: land, labour, product, and financial including formal and informal markets. This process reduces transaction costs by providing infrastructure investments which in turn increase women's access to these markets. While some of the action plans are operated through policy level by Bank Groups others are executed at agency level together contributing for women empowerment (see Figure 1, edited Figure 1 from World Bank, September, 2006)[1].

Of Selected Areas and Countries: Africa,

East Asia and the Pacific; Europe and Central Asia; Latin America and North Africa are the areas. The list of the possible countries preliminarily included Afghanistan, Cambodia, Ethiopia, Ghana; Honduras' Kenya; Lao PDR; Malawi; Mauritania; Mongolia; Mozambique; Niger; Papua New Guinea, Senegal; Tajikistan; Timor-Leste; Uganda; Vietnam and Yemen are from low income countries. From fragile states, Liberia; Sierra Leone and Sudan and from Middle-income countries, Armenia; Chile; China; Egypt; Guatemala; Indonesia; Morocco; Nicaragua; Philippines and Uruguay are selected.

Major Action areas and Objectives:

Action 1: Aimed to intensify gender mainstreaming in Bank and International Finance Corporation (IFC) and in key regional economic and social sector work. This action seeks to harness the opportunities by gender mainstreaming in infrastructure: energy, transport, mining, ICT, water and sanitation. This plan proposed to engender key Economic and Sector work such as, climate assessments; integrated poverty, social and gender assessments. Performance indicators include increase in number of female entrepreneurs; increase in application of gender analysis in land administration and quality of agriculture projects and water-projects that address gender differences and gender analyses.

Action 2: Through this action resources are mobilized and Result-Based Initiatives (RBIs) and other initiatives are implemented through Development Grant Facility (DGF) especially to low income countries. Some examples for RBIs are: policy reforms in agriculture that affect women's crops or women's access to land titling; promotion of female labour participation through incentives to private firms and job training programmes for women. Programmes such as provision of low-cost renewable energy to promote off-farm employment of women and facilitating formation of farmers' cooperatives and water users associations are some other RBIs.

Action 3: This action is meant to improve knowledge and statistics on women's economic participation and the relationship between gender equality, growth, and poverty reduction. This action deals with studies on World Bank's commitments in policy research on women's economic empowerment. Some of the areas of research are: micro foundations of gender equity and growth; macro between gender equality and growth; funds for extra-mural research on economic empowerment of women. This plan also works through Development Economics Data Group (DECDG) which in turn works with International Labour Organization (ILO) and United Nations Economic Commission for Europe (UNECE) to improve gender statistics.

Action 4: This action is aimed to undertake targeted communication campaign and training to build partnerships on the importance of women's economic contribution and execute action plan. These actions include partnerships with donor countries in public launch to increase awareness of the Action plan; preparation of announcements on kiosk [booth]. Performance indicators include, increase in the number of development partners/clients; NGO intervention and others

.

Method of Monitoring and evaluation:

This includes tracking the activities and measuring their results. It is through baseline assessments, mid-term reviews and other ways by assessing women's economic empowerment evaluation takes place. PRMGE's annual report and evaluation of RBI's by International Centre for Research on Women (ICRW) are some bodies that conduct evaluation (World Bank, September, 2006)[1].

Human Resource:

World Bank group took in to consideration that institutional capacity would be increased by employing an approach that emphasizes on results and "learning-by-doing-with-monitoring" approach ((World Bank, September, 2006). Further it also planned that staffing constraints would be addressed in two ways: by training staff to build up their capacity in gender issues and by hiring qualified consultants.

Financing:

While initial planning by group estimated about $24.5 million for the financial year 2007-2010; recent sources also held that the $63 million with the budget support from external partners; including the governments of Australia, Canada, Denmark, Germany, Iceland, Norway, Spain, Sweden, Italy, the United Kingdom as well as the Nike Foundation to empower women economically [1].

Self-assessment of performance of World Bank's GAP:

The following is a brief account of Bank Group's self-assessment:

Promoted Gender equality in developing countries through lending grants, knowledge, and analysis and policy dialogue.

Total share of lending rose from 83 to 98 percent (from Financial Year (FY) 2012 to FY2013) that means US $ 31 billion in FY 2013.

93 percent of operation in fragile and conflict countries was gender informed.

World Bank staff who had never worked on gender was encouraged to include gender into their projects which resulted into evidence base of innovations, evaluation and research data (World Bank, October, 11, 2013)[4].

3. Significance and Opinions on Smart Economics

World of women in particular and general development groups internationally were appreciative of smart economics in many senses. Women are still working as unpaid family labourers and in small farm plots with less profitable crops and thus World Bank focussed on gender equality particularly on the economics of Gender.

Michelle Bachelet (2011)[5], UN women Executive Director, who was also as defence minister, an epidemiologist and a pediatrician and one who introduced several programmes for women and who

widened health insurance provisions and held several positions and promoted female participation in Government expressed her grief: "With the recent global downturn women's economic position has further deteriorated, especially for the 53 percent of working women – 600 million in total – who were in vulnerable jobs. Also there exists a huge gender gap – in practice, women are still paid 30 less than men in some countries. In terms of decision-making, only 28 countries have legislature where women make up at least 30 percent of the members, which is considered a critical mass for women in parliament. Women also continue to be in the frontlines of wars – even after peace has been declared. From Nepal to Afghanistan to Sudan, war harms women in multiple ways: from mass rapes to mass displacements". Therefore, she added, "Productivity gains from ensuring equal access to fertilizers, seeds and tools for women could reduce the number of hungry people by between 100 and 150 million". When asked on needs to be done to shake the apparent hold of men over the levels of power in business world, Bachelet said that UN women have been working closely with private sector mostly in Latin America and in Egypt to promote Gender Equality seal which is certification process verifying whether a company meets standard that promote workplace equality. She cites countries like Norway where proactive policies were implemented by showing at least 40 percent requirements for representation of each sex in the boards.

Rodriguez (2011)[6], a programme officer for the Asia Foundation's women Empowerment Programme assessed World Development Report: "Gender equality as smart economics" has become the recent mantra of such women as Hillary Clinton and Michelle Bachelet. She also refers to Isobel Coleman from Council on Foreign Relations: "The Bank's framing of gender equality not only as a development objective in its own right, but also a smart economics, is an important message for those countries that lag the most on gender equality. Just as investing in women and girls can create a positive development cycle, the opposite is also true; countries that fail to empower half their population will suffer from lower productivity, slower economic growth, and weaker development outcomes".

Similarly Mary Okumu (2010)[7] reports on meeting at Johannesburg on Gender-Response Budgeting (GRB),

was actually made by the African Governments to scale-up GRB initiatives during the side-event organized by UNDP at 54th session of the Commission on the Status of women held in 2010. It is reported: "Gender-Response Budgeting (GRB) is 'Smart Economics, that reverberated them echoed during the three day's meeting ...". In that meeting Nomcebo Manzini, the Regional Programme Director of UN women for Southern Africa came out with such facts that there are only four years away to meet the MDGs and that Sierra Leone government abolished the user fees at hospitals for women to increase health access and pre and post natal services which isa notable achievement

Similarly Laine (2010)[2] while speaking of challenges for smart economics policy, referred to world economic crisis in developing countries when many customers to micro-fiancé institutions were unable to repay their loans and raise new capital.

Zuckerman (2007)[8] opines that while GAP's objective was to make markets work for women it is critically important that it fully ignores the moral imperative of empowering women to achieve women's human rights and full equal rights with men. For the world Bank ignores the most important argument that the main beneficiaries of infrastructure – agriculture, finance and infrastructure as transport, mining, information and communication technology, water and sanitation – all benefit corporations the most, but not poor men or women. Zuckerman also points out that the standard economic reforms that the bank imposes

poor countries – low-inflation and tight spending policies only sabotage MDG 1 that focuses on universal education and MDG 2 on young female health. Further the Bank never mentioned about its Multi Lateral Investment Guarantee agency (MIGA) which constantly guarantees corporate investments with extremely harmful gendered impacts.

4. For Furtherance

In one way, Gender equality in the world of work is a win-win of many forms. As per Booz & company (cited.) estimates raising female participation have a direct impact on GDP increasing 34 percent in Egypt; 12 percent in United Arab Emirates; 10 % in South Africa and 9 percent in Japan. On the other hand, ILO's estimates held, almost half of women's productive potential globally is unutilized compared to men's 22 percent (World Bank, 2014)[9]. A 2012 Credit Suisse study (cited) of nearly 2400 companies across the world found that the share prices of companies that have at least one woman on their boards perform 26 percent more than the companies that do not women. Research data from by International Bank for Reconstruction and Development (IBRD) in combination with World Bank (2013)[10] finds that almost 90 percent of the 143 countries covered by women, business and the Law 2014 have at least one legal difference restricting women's economic opportunities. While IBRD and World Development Report (2013) finds that jobs are broadly defined to include various forms of wage, non-wage, formal and informal. Informal work is the major source for of employment for women in Africa, Asia, and the Middle East. Bank recognises jobs that are best for women's economic empowerment. And development goals more broadly depend on country-specific jobs and challenges. And more important is, women's ability to make choices; to act on the choices and jobs can increase women's agency by expanding their life choices and their capacity to support their families and to actively participate in communities and societies.

5. Concluding Remarks

Attitude of people ultimately matters in terms of cooperation and understating and encouragement for girl child development. Further, adult woman's economic participation at familial level; inclusive attitude of civil society and protective and welfare laws from state level are welcoming signs for women's empowerment. As suggested by IBRD and World Bank, solutions for economic security or comprehensive development of women and young children can be country-specific. Thus it can be culture-based too; policy implementation would be strengthened when it is culturally too accepted by societies. Many women entrepreneurs are also running such business that caters the demands of high society people who have un-satiated demands to please their fashion and passion. Women in rural society and urban poor strata too are following these lines and entering such professions that are not actually conducive to the psychological environment of women at large. Rather awareness programme for literacy; psychological counselling for women on marriageable age and need for "learning while earning" to enter such professions as food making; candle and paper bags; soaps and detergents would help women economically in a better way.

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The Relationship between Liquidity Risk and Failure of Commercial Banks in Kenya

Ogilo Fredrick1,*, Omwoyo Jeremiah2, Zipporah Onsomu3
1Lecturer, School of Business, University of Nairobi, Kenya
2MBA Student, University of Nairobi, Kenya
3Tutorial Fellow, School of Business University of Nairobi, Kenya

ABSTRACT

This study sought to establish the relationship between liquidity risk and failure of commercial banks in Kenya in the years 2013 to 2016. Additionally, the study endeavoured to establish the effect of capital adequacy, asset quality, management quality, earnings, sensitivity to market and size on the failure of banks in Kenya. To achieve this goal, secondary data was collected from the websites of operational banks while data for failed banks was collected from reports published by the central bank of Kenya, corroborated with publications in past years newspapers. Panel logit regression was used to analyze the data using Eviews 9.5 student version. The results of the regression revealed that there was a positive and significant relationship between liquidity risk and bank
failure, implying that liquidity increased the likelihood of failure. The study also found a positive and significant relationship between bank failure and asset quality and earnings indicating that they increased the likelihood of failure. The study found a negative and significant relationship between bank failure and management quality and sensitivity to market implying that they decreased the likelihood of bank failure. Capital adequacy and bank size were found to have insignificant relationship with the failure of commercial banks in Kenya. These findings are valuable to managers in understanding how the variables of the study increase or decrease the likelihood of failure so that they may come up with appropriate strategies for managing the various risks facing their banks

Keywords *Liquidity Risk, Bank Failure, Capital Adequacy, Bank Size*

1.INTRODUCTION

Banks play an indispensable function in a country's financial system and economy as a whole through offering intermediary and liquidity services (Heffernan, [1]). The function of financial intermediation inherently exposes banks to liquidity risk through the activity of transforming
the maturity of short-term liabilities and demand deposits into long term maturity assets in form of loans. Kumar and Yadav [2] explains liquidity as a bank's capacity to fund increase in assets and meet both expected and unexpected cash and collateral obligations at reasonable cost and without incurring unacceptable losses. According to Kaufman [3] a bank is deemed to be a failure if the market price of its assets is diminished to an extent that it is less than the market price of its liabilities. Daley, Matthews and Whitfield [4] contend that bank failure includes closure, bankruptcy, supervised merger, or direct government assistance. Minamihashi [5] consider a bank to be a failure if it suspends issuance of new loans or credit to its clients. According to Bennett and Unal [6] liquidity, undercapitalization, safety, soundness, and fraud are some of the causes of bank failure.

1.1. Liquidity Risk

Banks [7] defined liquidity risk as the uncertainty that a bank may incur loss due to a lack of cash or its equivalents or that it may suffer economic loss in its attempt to procure the cash vital for its operations. According to Farag et al. [8] liquidity risk can take two forms: Funding liquidity risk, which results from the bank having insufficient cash and collateral to settle debts owed to counterparties and customers immediately; and market liquidity risk which is the possibility that the bank's assets cannot be cashed quickly without incurring large discounts.

Liquidity is important to banks because it compensates for expected and unexpected fluctuations in their financial position besides providing funds for their growth; also if a bank suffers from a liquidity shock and it fails to repay depositors and other creditors amounts owed to them punctually then it may be declared cash-flow insolvent (Faraget al., [8]).The importance of liquidity risk (both funding and market) is underscored by the fact that it has potential to cause severe liquidity spirals (Gomes & Khan, [9]).Severe liquidity crisis may arise when numerous depositors withdraw their savings at once leaving the bank without funds causing what is known as a bank run. Such bank runs can even cause "healthy" banks to fail affecting the entire economy (Diamond & Dybvig, [10]). Another reason why liquidity risk is important as observed by Acerbi and Scandolo [11] is that it can explode market and credit risks in addition to transforming loss in one bank into a systemic and contagious crisis.

According to Banks [7] the two most frequently used measures of liquidity risk are liquidity ratios and liquidity gaps. Empirical studies reviewed in this study reveal there is no single measure of liquidity risk that suits all studies. Liquidity coverage ratio and the net stable funding ratio have also been used to quantify liquidity risk by Cucinelli [12]. Ogilo and Mugenyah [13]; and Wekesa [14] adopted the loans to deposits ratio to measure the same. Berger and Bouwman [15]) propounded the comprehensive liquidity measure (BB) which has been used by Fungacova, Turk and Weill [16] and Zheng, Cheung, and Cronje [17]. Liquidity risk is measured in this study by ratio of loans to deposits.

1.2. Bank Failure

According to Kaufman [18] a bank is deemed to be a failure if the market price of its assets is diminished to an extent that the market price of its assets is exceeded by that of its liabilities. Bank failure consequences can be financial, economic, and social or even political (Okeahalam, [19]). Additionally, Minamihashi [20] postulate that bank failure affects client firms of failed banks since they cannot borrow from the failed banks causing them to suffer from a credit crunch something that may stagnate the activities of such clients. Müller and Trümpler [21] opine that failure of banks precede a significant drop in output and an upsurge of unemployment. Macey and Miller [22] argue that the government's stake in the financial stability of banks and the fact that many people perceive healthy banks as essential for a stable economy makes bank failure a matter of concern and hence important to study. Another reason why bank failure may warrant a study is the resultant loses. James [23] found out that failed banks lose a substantial value of their assets averaging to about 30% while bank closure cost averaged to 10% of the banks' assets.

According to Bouvatier, Brei and Yang [24] bank failure is measured by an indicator or dummy variable which indicates whether an event has or not happened. According to Skrivanek [25] indicator variables are used in regression to assign either "1" or "0" to members of two mutually exclusive categories. This study measured bank failure according to Zheng, et al. [17] where a binary performance variable was adopted to signify whether a bank fails in a particular financial year. As such a bank that fails within a period of 12 months will be flagged failure and given a score of one, otherwise it is flagged surviving and given a score of zero.

1.3. Research Objective

To find out the relationship between liquidity risk and failure of commercial banks in Kenya the period 2013 to 2016.

1.4. Conceptual Framework

The conceptual model in figure 1 below shows how the independent variables, the control variable and the dependent variable are related. The dependent variable was measured by the probability of bank failure was measured by either one if a bank fails or zero if it does not fail in a particular year. The independent variable, liquidity risk, is represented by the ratio of liquid assets to customer deposits. The control variables involved the use of bank management techniques which are: capital adequacy, asset quality, management capability, earnings, sensitivity and bank size are included to control for omitted variables error in the regression.

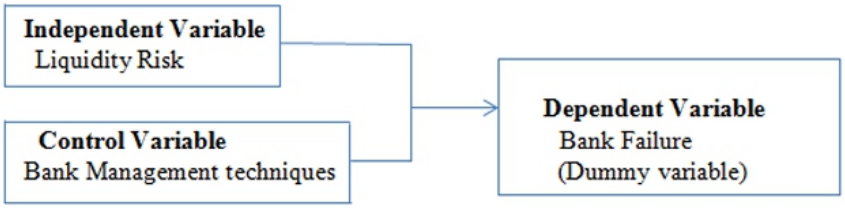

Figure 1. Conceptual framework

2. Methods

The study subscribed to a quantitative descriptive research design to investigate if there exist a relationship between liquidity risk and failure of commercial banks in Kenya. The population of the study was all the 43 commercial banks licensed and operating in Kenya on 1st of January 2013. A census study approach was adopted because the total number of banks in Kenya are few compared with other countries such as USA that have thousands of banks at any one point in time. A total of 42 commercial banks, whose accounts had been incorporated in the bank supervision annual report 2012 (CBK, [26]) were included in the study. The study relied on secondary data extracted from the audited annual financial statements and other disclosures of all commercial banks licensed to operate in Kenya as posted in their respective websites or gleaned from the annual bank supervision reports of the central bank of Kenya, for the period 2013 to 2016. The study employed logistic (logit) regression analysis to establish the relationship between bank failure and liquidity risk

2.1. Analytical Model

The analytical model of the study consists of bank
failure as the dependent variable and liquidity as the independent variable. However to control for omitted variables regression error, capital adequacy, asset quality, management capability and sensitivity to market and bank size were used as control variables.

The logit regression model employed to analyze the effect of liquidity risk on bank failure is specified below.

$$Prob(Bankfailureindicator = 1|X,Z) = \wedge(\alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it})$$

$$\text{Where } \wedge(Y) = \frac{e^Y}{1+e^Y} = \frac{\exp(Y)}{1+\exp(Y)}, Y = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} + \mathcal{E}_{it}$$

$$\text{Or} logit(p) = \alpha + \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} + \mathcal{E}_{it}$$

stribution function and X1, X2,…X7 represent liquidity risk, capital adequacy, asset quality, management efficiency, earnings, sensitivity to market, and bank size respectively. In the model α is the intercept and β1, β2…β7 are the respective coefficients of the independent variable and control variables. Lastly, I is the individual bank ranging from 1 to 42, t is the time which can range from 1 to 4 and $\mathcal{E}$ is the error term.

3.Results and Discussion

3.1. Correlation Analysis

As shown on the second column of Table 1 below, the relationship between failure and the explanatory variables was found to be low with the highest being -0.083 for failure and sensitivity to market and the lowest being 0.014 between failure and loan to deposit ratio (LAD). Column 3 of Table 1 shows the correlation between liquidity risk (LAD), and the other explanatory variable. The correlation between liquidity risk capital adequacy, asset quality, management quality, earnings, sensitivity to market and size (ASSETS) to three decimal places are 0.299, -0.352, -0.390, 0.248, 0.616, and -0.016 respectively. Capital adequacy has a correlation of -0.151, -0.132, -0.12, 0.185 and -0.199 with asset quality (AQ), management quality (MQ), earnings (ROA), sensitivity to market (SM), and size (ASSETS) respectively. Asset quality has a correlation of 0.462 with management quality, -0.594 with earnings, -0.262 with sensitivity to market and -0.360 with size. Management quality has a correlation of negative (-) 0.532 with earnings, -0.5 with sensitivity to market, and -0.143 with size. Earnings (ROA) have a correlation of 0.181 with sensitivity to market, and 0.597 with size. Finally, sensitivity to market has a correlation of 0.005 with size.

Table 1. Spearman rank-Order

Covariance Analysis: Spearman rank-order								
Date: 11/02/17 Time: 14:12								
Sample: 2013 2016								
Included observations: 157								
Correlation								
Probability	FAILURE	LAD	CAR	AQ	MQ	ROE	SM	ASSETS_MILI
FAILURE	1.000							

LAD	0.014	1.000						
	0.866	-----						
CAR	0.038	0.299	1.000					
	0.635	0.000	-----					
AQ	0.046	-0.352	-0.151	1.000				
	0.565	0.000	0.059	-----				
MQ	-0.038	-0.390	-0.132	0.462	1.000			
	0.635	0.000	0.099	0.000	-----			
ROE	0.097	0.248	-0.012	-0.594	-0.532	1.000		
	0.228	0.002	0.878	0.000	0.000	-----		
SM	-0.083	0.616	0.185	-0.262	-0.500	0.181	1.000	
	0.301	0.000	0.020	0.001	0.000	0.024	-----	
ASSETS_MILI	-0.031	-0.016	-0.199	-0.360	-0.143	0.597	0.005	1.000
	0.697	0.838	0.013	0.000	0.073	0.000	0.947	-----

3.2. Regression Analysis

In order to find how the independent variables explain failure of commercial banks in Kenya over the study period panel logit regression analysis was carried out and the results are shown on Table 2 below.

Table 2. Logit Regression Analysis output

Dependent Variable: FAILURE				
Method: ML - Binary Logit (Newton-Raphson / Marquardt steps)				
Date: 11/02/17 Time: 14:21				
Sample: 2013 2016				
Included observations: 157				
Convergence achieved after 9 iterations				
Coefficient covariance computed using the Huber-White method				
Variable	Coefficient	Std. Error	z-Statistic	Prob.
LAD	6.632	2.863	2.317	0.021
CAR	4.429	14.466	0.306	0.759
AQ	26.998	13.456	2.006	0.045
MQ	-9.760	2.995	-3.259	0.001
ROE	22.922	8.532	2.687	0.007
SM	-14.987	5.544	-2.703	0.007
LOG(ASSETS)	-0.484	0.328	-1.478	0.139
C	0.974	7.354	0.132	0.895
McFadden R-squared	0.327	Mean dependent var.		0.045
S.D. dependent var.	0.207	S.E. of regression		0.189
Akaike info criterion	0.347	Sum squared resid		5.344
Schwarz criterion	0.503	Log likelihood		-19.255
Hannan-Quinn criter.	0.410	Deviance		38.509
Restr. deviance	57.228	Restr. log likelihood		-28.614
LR statistic	18.719	Avg. log likelihood		-0.123
Prob(LR statistic)	0.009			
Obs. with Dep.=0	150	Total obs.		157
Obs. with Dep.=1	7			

As shown in Table 2 the coefficient for liquidity risk or loans to deposit ratio (LAD) is 6.632, with Z statistics value of 2.317 and probability of 0.021. Capital adequacy ratio (CAR) has a coefficient of 4.429, Z-statistic of 0.306 and probability of 0.759. Asset quality (AQ) has a coefficient of 26.998, Z-statistic of 2.006 and probability of 0.045. Management quality (MQ) has a coefficient of -9.760, Z-statistic of -3.259 and probability of 0.001.

Earnings (ROE), has a coefficient of 22.922, Z-statistic of 2.687 and probability of 0.007. Sensitivity to market has a coefficient of -14.987, Z-statistic of -2.703 and probability of 0.007. The natural logarithm of total assets (LOG (ASSETS)) has a coefficient of -0.484, Z-statistic of -1.478 and probability of 0.139. The constant (C) has an insignificant coefficient of 0.974, Z-statistic of 0.132 and probability of 0.895.Model statistics indicate that the McFadden R-squared of the regression is 0.327, the likelihood ratio statistic is 18.719 with a probability of 0.009, deviance of 38.509 and restricted deviance of 57.228, Akaike information criterion of 0.347 and Schwartz criterion of 0.503.

4.Conclusions and Recommendation

There exists a positive correlation between bank failure and liquidity risk, capital adequacy, asset quality, and earnings. This implies that increase in these variables increase the likelihood of bank failure. Similarly, a negative correlation between bank failure and management quality, sensitivity to market and bank size implies that increase in these variables decreases the likelihood of bank failure. A positive correlation between liquidity risk and capital adequacy, earnings, and sensitivity to market implies that as banks take more liquidity risk; capital adequacy, earnings and sensitivity to market tend to increase as well. On the other hand a negative correlation between liquidity risk and asset quality, management quality and bank size implies that as liquidity risk increases these variables tend to decrease. Spearman rank correlation also shows a positive correlation between capital adequacy and sensitivity to market which means that as capital adequacy increases so does sensitivity to market increase. Conversely, a negative correlation between capital adequacy and asset quality, management quality, earnings and size implies that as capital adequacy increases these variables also decrease. Similarly, a positive correlation between asset quality and management quality indicates as one of these variables increase so does the other. On the contrary a negative correlation between asset quality and earnings, sensitivity to market and bank size indicates that as asset quality (or nonperforming loans) increases earnings, sensitivity to market and size deceases as well.

Spearman rank correlation also shows a negative correlation between management quality and earnings, sensitivity to market and bank size implying that as management quality or operational costs increase earnings, sensitivity to market and bank size decrease. A positive correlation between earnings and sensitivity to market and bank size implies that as earnings increase sensitivity to market and bank size also increase. Finally, a positive correlation between sensitivity to market and bank size means that as sensitivity to market increases bank size increases.

The fact that liquidity risk has a positive coefficient implies that increase in liquidity increases the likelihood of failure. According to Zheng et al. [17] the relationship between liquidity risk and bank failure can be negative if failed banks suffer from the moral hazard problem or positive if the banks are pursuing the precautionary motive of the liquidity preference theory. The fact that the coefficient is positive and significant at 95% confidence level indicates that failed banks had stocked piled liquid asset for precautionary reasons. This finding is contrary to Canicio and Blessing [27] who found liquidity to be significant and negatively correlated with bank crisis or failure. The finding is however consistent with the findings of Sahut and Mili [28] and Pena [29] who found liquidity to be positively correlated with banking crisis, and Zheng et al. [17] who found a positive correlation between failure of small banks and liquidity risk. The finding is also consistent with Berger and Bouwman [15] who through trend analysis found that liquidity creation tends to be higher prior to financial crisis. Given that the banks that failed in Kenya were small banks, this finding is considered valid.

Capital adequacy has a positive coefficient implying that increase in equity in the capital structure of banks increases the likelihood of bank failure. The positive sign is inconsistent with the findings Canicio and Blessing [27]; Sahut and Mili [28] and Zheng et al. [17] who found capital adequacy to be significant and negatively correlated with failure. However, the insignificant probability implies that the capital adequacy has no significant effect on bank failure.

Asset quality has a positive coefficient indicating that it increases the likelihood of failure. Since the Z-statistic is more than 1.96 and the p-value is below 0.05 then asset quality has a significant influence on bank failure. This finding confirms previous empirical studies like Zheng et al. [17] and Canicio and Blessing [9] who found it both positive and significant. Management quality has a negative coefficient implying that it decreases the likelihood of bank failure. Nonetheless, its p-value of less than 0.05 signifies that it has significant relationship with bank failure. This finding is contrary to the results of

Zheng et al. [17] and Canicio and Blessing [27]). Earnings, measured by (ROE) have a positive coefficient implying that increase in profitability increases the likelihood of failure. The fact that the p-value of earnings is less 0.05 indicates that profitability has a significant relationship with failure. This finding is inconsistent with the finding of Zheng et al. [17] and Canicio and Blessing [27]. Sensitivity to market has a negative coefficient implying that having more securities decreases the likelihood of bank failure. The natural logarithm of total assets has negative coefficient implying that increase in size reduces the likelihood of bank failure. The negative coefficient compares well with previous studies like Sahut and Mili [28] and Zheng et al. [17].

4.1. Conclusions

The study found a positive and significant relationship between liquidity risk and bank failure. According Zheng et al. [17] appositive relationship between liquidity risk and bank failure confirms that failed bank had pursued the precautionary motive of the liquidity preference theory. Earnings had a significant positive relationship with bank failure indicating that banks that failed were making profit prior to their failure. This indicates that bank managers need to understand the negative effect of pursuing short term profit as the main goal instead of pursuing shareholder wealth maximization as discussed in the theory of the firm by Jensen and Meckling [30].A positive and significant relationship between bank failure and earnings provides empirical support that bank managers of failed banks had not pursued shareholders wealth maximization as the main goal of the firm but had rather sought to maximize short-term profits. This leads to the conclusion that just as making losses can lead to bank failure through bankruptcy risk, excess profits can equally cause bank failure through excessive loans default risk. The study's results show that sensitivity to market had significant negative relationship with bank failures, implying that holding more securities reduced the likelihood of bank failure. Bank therefore have more liquid securities to reduce their chances of failure. The fact that both earnings and asset quality had a significant positive coefficient implying that the two variables increased the likelihood of bank failure indicates that moral hazard problem played a major role in the failure of commercial banks in Kenya.

The regression however did not find a significant relationship between bank failure and capital adequacy and bank size. This implies that the banks that failed suffered their predicaments mainly for the way they managed their business and not on size and capitalization. Since capital adequacy was an insignificant variable in the regression, then we can infer that failed banks were not Insolvent at the time of failure.

4.2. Recommendations

Given that the liquidity risk, asset quality, management quality, earnings and sensitivity to market showed a significant relationship with bank failure, the study recommends that bank managers emphasize on this variables in their day to day management practices. Further, given that the coefficient of earning is positive implying that profitability increased the likelihood of bank failure, the study suggest that managers of banks should be risk sensitive instead of endeavouring to make short-term profits that increase the chances of bank failure. Further, Since liquidity risk has been identified a significant factor related to bank failure the study recommends that the central bank of Kenya implements the Basel III accord to enhance a more detailed reporting on liquidity especially the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR).

Since asset quality has been found to have a significant relationship with failure of commercial banks in Kenya, this may be an indication of weakness in the credit standards used to screen

borrowers. The study recommends that bank managers reassess their current credit standards and consider replacing them with more comprehensive standards. These new and comprehensive credit standards will reduce nonperforming loans and save banks from impending failures. Further as management quality has a negative and significant relationship with failure of commercial banks. The study recommends that banks should study and find an optimal level of operating expenses that can help in reducing the likelihood of failure.

4.3. Limitations of the Study

The main limitation of the study was that it relied on observations spanning over the four years 2013 to 2016 and hence likely to suffer from the small sample bias. This limitation was overcome by doing a census study that incorporated all commercial banks in Kenya. The study was also limited by the fact that at the time of the study the websites of all failed banks were closed hence limiting the availability of financial statements in a timely manner. This limitation was overcome by searching for the financial statement in past newspapers. Further annual reports of one the failed banks for the year 2015 were not incorporated in the analysis for lack of integrity as the auditors had qualified it. A further limitation of the study is that it was designed to be a descriptive investigation. As such even if the study found significant relationships between bank failure and LAMES no conclusion can be made that these variables were indeed cause of bank failure. This means that to establish the causality of the variables another study need to be done with the objective of finding the causes of bank failures. Nonetheless, the relationship of bank failure with macroeconomic variables like inflation, unemployment, interest rate and gross domestic product growth rate were not investigated in this study. Since empirical studies show that these factors can contribute to bank failure, these factors are left for future studies.

4.4. Suggestions for Further Research

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Since the study relied on annual financial statements, it is suggested that the study be replicated with biannual or quarterly financial to capture the effects of the CAMELS on bank failure more proximately. The study concentrated on a narrow window of only four years. The study makes suggestion that a study covering all previous bank failures be done because it might yield more insightful results than those found by this study. A further suggestion is that detailed case studies of each failed bank be carried out to delve into factors that prompted failure of commercial banks in Kenya beyond the CAMELS factors. The study suggests that a sequel study be carried out to establish whether the relationships shown in this study were also causal in nature or not. It is suggested that a study be carried out that will control for the effect of distressed banks on the relationship between bank failure and the independent variables. Finally this study was retrospective in nature. It is suggested that a prospective study predicting or forecasting bank failures in Kenya be carried out to complement the findings of this study and to provide proactive managerial action.

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Assessing the Financial Soundness of Indian Aviation Sector Companies by Using Altman's Z-Score Model & Pilarski's P- Score Model

Vivek Divekar*, Sreerupa Sukhari
Symbiosis Institute of Management Studies, Symbiosis International (Deemed University), Pune, Maharashtra, India

ABSTRACT

The COVID 19 has brought down aviation industry to its knees. Till March 2020, before getting sense of distraction by this pandemic, Indian economy was eager to take off to reach further heights including the Aviation Sector. The growing middle class was the base reason for the prosperity in the Aviation Sector, but the pandemic has changed the whole scenario at least temporarily for next couple of years. However, even before the pandemic the history is showing that almost all Indian airlines companies are in losses. Jet Airways is almost grounded permanently whereas Kingfisher Airlines is now a history. Being one of the important sectors for the economy and even for the investors, an attempt is made to find out the reasons behind financial failure of selected Indian Aviation Companies by using Altaman's Z Score Model and Pilarski's P -Score Model and various problems faced by them. The secondary data is collected mainly by using Annual Reports of 4 leading Airlines Companies in India. Analysis is showing that various internal and external factors which are responsible for such pathetic financial position of these companies and a serious overhauling is required not only by those companies but also from the government side.

Keywords *Financial Distress, Financial Analysis, Discriminate Analysis, Bankruptcy, Z-Score, Financial Ratios*

1.INTRODUCTION

Every Company faces the problem of liquidity or operating efficiency in its life. However, when a company is landing into financial distress it directly impacts on the value of the company's business. There are different reasons for a company going into financial distress and defaults in payment of external obligations and it's a very embarrassing position to all the stakeholders. There are number of reasons for this situation right from of the management to the bad capital structure [1]. Company is not able to generate sufficient EBITDA to service its interest payment and principle loan amount. It is a very common situation where funds required for the growth are funded by external parties, however, gradually company is either losing its top line to the competitors or management is not efficient enough to keep the operating costs under control which is pressurizing EBITDA and Operating margins and ultimately ends with default in making payment to lenders and other external parties. Other important area for such situation is wrong planning about investment in Fixed Assets. Excess investment in fixed assets is directly impacting on asset efficiency which in turn again pressurizes top line and ultimately cash flow generation. Wrong product mix, poor emphasis on product research and development, no quality control, poor sales promotion, inadequate human resources, exchange fluctuation and so on so

forth, Recently we have seen number Corporate Groups are on the verge of collapse because of COVID 19 impact on their business including Aviation sector [2].

There was a news buzz in the market that Indian Aviation business has reached to its bottom and Airlines Companies in India are expecting a relieving package for their survival. Number of flights per day has gone down almost to 700 to 800 per day from 3,300 to 3,400 per day. Load factors have dropped to 40 to 45 % from 85% to 90% before the pandemic. Total number of passengers travelling has gone down to two million from twelve million before lockdown. This position is understandable because this scenario is in all airlines all over the world. In India even before the pandemic, situation was not very encouraging. Government of India has kept Air India for sale for last two years with no success because of poor financial condition of Air India. At the same time corporate group Tata has shown interest in buying Air India even though they are already controlling two Airlines Companies, Air Asia and Vistara in India. This situation tempted us to study the real reasons and to find out financial distress of number of Airlines Companies in India. With this background, an attempt is made to study aviation sector in India to find out various reasons for the business failures and while analyzing financial distress of Aviation Sectors in India a deliberate attempt is made to find out the financial distress position before 31st March, 2020 when the impact of COVID 19 was not that visible at least in the domestic business.

Airline Industry in India is having its own problems. This industry is growing very fast in India, particularly in last 10 years. However, during the same period we have seen failure of two market leaders Kingfisher Airlines and Jet Airways. There are different reasons for failure for both, but there are few reasons common in nature. Remaining five players in the market are trying their best for their survival and growth. All are different with their market share, Capital structure, business model, age, control. The industry is under the control of DGCA (Directorate General of Civil Aviation), companies which are listed are further governed by Securities & Exchange Board of India and different listing requirements and provisions of the Companies Act, 2013. Major external issues for the industry are the aircraft fuel prices in which they cannot do much, Different agreements for leasing of Aircrafts and agreements for repairs and maintenance of the aircrafts. Object of this research is to find out various reasons for the financial distress of these Companies and to point out major issues associated to the Aviation Sector [3] particularly areas which are not covered earlier Research Papers such as to find out whether the LCC model which is dominating Indian aviation sector is the main cause failure or limitations on the part of the companies to keep their fixed costs under control for example Lease model instead of Buy model for aircrafts where a fixed lease rent payment is coming into the picture which pressurizes working capital requirements of the company and its profitability. The Paper is divided in following parts

1. Introduction to Aviation Sector in India
2. Literature Review
3. Research Methodology
4. Financial discussion by using Z score Model &
Pilarski P Score Model
5. Conclusion
6. References

2. Literature Reviews

Presently, the Indian Aviation sector off lately appears not to be as shaped as it should be. However, there has been a not a constant growth in Aviation sector, an in-depth study would reflect the darker side. The situation is already disappointing with the falling performance of large players and the exit of Kingfisher Airlines, being bankrupt. There are number of research papers on Aviation sector in India by

using Z score model.

The earliest studies were conducted by Beaver, W.H. (1966) where an empirical study of a biased sample was investigated for the usefulness of ratios. Inferences drawn from his studies concluded that ratio analysis can be very instrumental in prediction of failure for at least 5 years before failure [4]. In the Indian context, An empirical study analysing the financial distress of the Navratna Companies of India was made by Rajasekar et.al,(2004). Their research suggested that even though these organizations were funded by Government and thus, there lies a very low chance of bankruptcy, caused by financial distress still they should check their financial status frequently, in order to avoid financial crisis and sustain in the market with credible reputation.

Later in the year 2012, Bhatt, S.N. (2012) investigated the capability of three versions of Altman's Z-Score and the results of the study shows that a remarkable degree of accuracy by these models, in prediction of the financial distress with use of financial ratios computed for the year prior to distress. Anjum, S.(2012) research work tried to summarize Altman's research of development of the Altman's Z Score model. The researcher studied the repeated regular changes made by Altman for achieving the perfect equation that could predict the bankruptcy. It was concluded that Z Score model is reliable for application in modern economies for prediction of distress and bankruptcy, two to three years in advance [5].

In 2013, Pandey et.al., analyzed the bankruptcy of Indian aviation companies through prediction models like Z-score and Air-score models. They implicated its use for the stakeholders to avoid recurring losses and help company to head in better directions.

With reference to logistic companies like GATI Ltd, Aegis, Container Corporation, another study was conducted, analyzing the financial health of logistics sector for the period of 2005-06 to 2011-12 by Tyagi, V.(2014). He concluded that at the time of being hit by Global recession, the average Z score value of the selected firms experienced an increasing scale. He extended his research work in 2017 with another research publication.Attempts were also made to check the financial risk of companies using Z-scores in other sectors. Gowri et.al., (2014) attempted to study about the financial health of the automobile companies in India for a period of 10 years from FY 2003-04 TO 2011-12, using Altman's Z-scores. Since, the research on the same was very limited in India, the paper focussed to apply and interpret the financial performance of automobile industry using Z-scores. Bankruptcy models have always been very common tool for financial analysis and prediction of financial distress of companies. Machek, O. (2014) analysed the ex-ante predictive ability of a few selected solvency and bankruptcy models, which are commonly used for analysing the finances. He considered the Czech companies over the span of 5 years (2007-2012) for his research work [6].

Pradhan, R.(2014) emphasizes the usage of BPNN for predicting bankruptcy in public sector banks in India. His research work provides the Z score values for the public sector banks. It was concluded that, these values were proved to be very useful when these banks demand for loans from funding agencies or RBI.

Since the Central Public Sector Enterprises (CPSEs) are regarded as one of the instrumental factors causing socio-economic transformation of the country, Pardeshi et, al (2015) tried analysing the financial performance and efficiency of selected Central Public Sector Enterprises (CPSEs) an evaluated the financial health suing the Altman's Z Score. It was concluded that, SAIL and NTPC were in distress zone. However, BEL. ONGC and RCF were at medium level of solvency.

After few years, in 2017, Tyagi et. al., attempted to compare the results of the then present financial situation over a period of (2010-2014) with the pre-bankruptcy period (2008-2012) of Kingfisher Airline.

the reasons of bankruptcy and checked the possibility for banks to assess the creditworthiness and if banks could have abstained from lending credits to Kingfisher Airlines.They made their conclusions on

the basis of results of Z Scores. Parallel to Kolte's study, Safiuddin, S.K. (2017) attempted to analyse the possibility of insolvency of selected Airline Companies. To the Indian Context, two aviation companies were selected for calculation of Z Scores. In this attempt he again considered the period of 10 years(2007-2016). Conclusions were drawn from the study that states that Indigo had performed well in financial ratios and Z-Scores. On the contrary was the performance of Jet Airways, which was predicted to be in distress in the coming two years, if corrective actions have not been take [7].

Kulkarni. S.(2018) used the Altman's Z Score model for prediction of Bankruptcy in the same sector and considered 6 listed companies like TAAL Enterprises, Jagson Airlines, Global Vectrs Helicorp, Jet Airways, Spice Jet, Indigo Airways and Air India for his research study. He concluded the safety of Indigo Airlines backed by calculation of it's Z-Score to be 2.9, back in 2018, whereas according to his study, all the other companies were in financial distress.

Safiuddin, S.K. (2019) attempted to study the impact of Profitability, liquidity and efficiency performance on Z score of selected Aviation companies of India, leveraging the use of Z score model and the needed financial ratios. He considered a time span of 10 years (2007-2016).

A recent study was done accessing the financial health of different Indian Airline companies using different calculated models like Fuzzy Logic Model Altman Modified Z'' Score Model, Pilarski Model etc., by Shome et.al. (2020). They targeted to assess the current financial health of different airline companies of India and concluded the suitability of studied models that helps in indicating the financial distress leading to potential bankruptcy [8].

Wang et. Al., (2010) attempted to consider publicly listed companies of China to provide ex ante evidences of failure of prediction power of the Z-Score model. The results showed that Altman's (1968) Z-Score model has the least accuracy of prediction, while the revised model had better results. It also confirms that the existing Z-Score models have been very useful for the prediction of company delistings.

Gritta et.al., (2011) used the Z-score model for providing an update on financial health of the major U.S. air carriers. They concluded that the major factor in the decline of financial health was the combination of decreased equity values and increased use of debt. They summarized that if the industries majorly rely on the debt, it could have negative impact on the major carriers, provided the interest rates rise again in coming years.

Anindya Ardiansari, Siti Ridloah, Irene Rini Demi Pangestuti and Pipit Indrayani [19] in their paper on The Influence of Intellectual Capital on the Company's Financial Performance and Market Value aiming to find out the relation between increase in intellectual capital on financial performance of a company and its market value.

3. Sample, Data and Methodology

Through this study, attempt is made to find out the financial distress of Indian Aviation sector and reasons behind it by selecting major Four Aviation companies India as Indigo, Spicejet, Jet Airways and Air India. Jet Airways even though grounded at present is taken into consideration because of the past performance of this company. Data are taken from Annual Report of all these Companies and from the website of DGCA. Financial data considered for four years i.e., 2015-16, 2016-2017, 2017-2018 and 2018 – 2019. Financial data for the year 2019-2020 not considered because of non-availability of financial data of all the companies for the year 2019-2020 and introduction of Ind as 116 from 1st April, 2019 has changed the presentation of leased assets in the Balance Sheet which is not comparable with previous year's data [9].

3.1. Methodology

The financial data taken for four years on consolidated basis from the Annual Reports of these Companies to apply Altman's Z score and Pilarski's P- Score used to check the financial distress and bankruptcy position.

3.2. Evaluating Financial Distress

There are different parameters to find out financial distress. In fact, when a Company is in financial distress it is going to make default to its creditors either financial or operational in near future, When a company is in financial distress companies survival is in difficult stage. Delayed payment to suppliers, overdrawing credit limits, default in payment of instalments to the bank, default in payment of statutory dues, erosion in the valuation of shares, employees are leaving the organization, declining capacity utilization, declining market reputation.

There are various reasons also internal as well as external for a company to be under financial distress such as managerial incompetency, over investment in fixed assets, irrational price structure, poor customer service, poor demand projections etc. Similarly external factors such as Government policies, entry of larger number of competitors etc. To find out such situation, number of ratios can be calculated such as Interest coverage ratio, Debt Service Coverage Ratio, Debt Equity Ratio, Short Term Debt to Current Assets, and Short Term Debt to Cash from Operations and so on. Experts worked on this issue in the past to find out the early signs of corporate distress so as to take appropriate action. P – Score Model was used to find out financial distress of Aviation sector in the past. In US a Neural Network Model was used to check financial distress in small airlines companies. In 2002, a logistic regression model was used successfully to find out financial distress. In our study we have used Altaman's Z score model which is touching upon five important financial areas to find out financial distress and also Pilarski P Score model which focuses on different five financial ratios which are indicating bankruptcy position of the business.

Number of papers is high lighting on the financial factors which are indicating financial distress of the business and early indicative signs. In this paper we are focusing along with financial factors other managerial factors which are important reasons to bring those companies into financial distress. For example in case of Jet Airways, management failed to foresee the impact on their business because of the entry of LCC model used by Indigo whereas Air India management never attempted to reduce the fixed cost. Almost every airline was not focusing at all on cargo business as additional source to generate cash inflows.

3.3. Altman Z-Score Model

Altman's Z-score model is one of the best models to assess the financial soundness of any firm and is globally accepted in the field of management. This model developed by Altman is a great method for credit risk investigation [10].

At first, the investigation had picked 22 factors or correlations from issued financial reports of 66 firms in the USA for assessment dependent on the prevalence in the writing and pertinence to the examination. At that point arranged into five standard proportion classifications: liquidity, activity, leverage, solvency, and profitability, After a unique rundown of 22 factors, five were selected based on numerous models that incorporate their factual essentialness, relative commitment to the model, interrelations among variables, their insightful precision, and the judgment of the investigator. The final result of that study is mentioned below: The Final Result of Z Score guide is Equation 1

$$Z\text{-Score} = 1.2*(Z_1) + 1.4*(Z_2) + 3.3*(Z_3) + 0.6*(Z_4) + 1.0*(Z_5) \quad (1)$$

Table 1. Z-Score Guide

Z-Score Guide	
Z1	(Net Working Capital/ Total Assets)*1.2
Z2	(R&S/Total Assets)*1.4
Z3	(EBIT/Total Assets)*3.3
Z4	(Market Capitalization/Outside Liability)*0.6
Z5	(Sales/ Total Assets)*1

Where Z1, Z2, Z3, Z4, Z5 represents five ratios as given below:
Z1 is equal to Working capital/Total assets
Z2 is equal to Retained earnings/Total assets
Z3 is equal to EBIT/Total assets
Z4 is equal to Market value of equity/Total liabilities
Z5 is equal to Net sales/ Total assets After completing his study Altman (1968) interpreted the results of Z score as shown below:
$Z < 1.8$ Very high probability of insolvency (Risky Zone);
$1.8 < Z < 3$ Very Poor financial health and risks of insolvency are high (Grey Zone);
$Z > 3$ Strong financial position with negligible risks of insolvency (Safe Zone);

P – Score Model – P Score model is also based on five different ratios with different weightages
1. Operating Revenue/Total Assets,
2. Retained Earnings /Total Assets
3. Equity/Total Debts
4. Liquid Assets/Current Obligation of total debt
5. Operating Profit/Sales

P means probability of bankruptcy. Higher the score more the possibility of bankruptcy, the weights are

$$-1.98X1 - 4.95\ X2 - 1.96\ X3 - 0.14\ X4 - 2.38\ X5 \quad (2)$$

Then the number P is determined by $P = 1/(1+e)$. Here value of "E" can be taken approximately 2.718. The weight of P value is measured through the Equation 2.

Table 2. Aviation Business in India data collected from DGCA website

Year	Domestic Passengers (In millions)	Growth in %	International Passengers (In millions)	Growth in %
2015-16	85.20	21.58%	49.78	8.85%
2016-17	103.75	21.77%	54.68	9.84%
2017-18	123.32	18.86%	60.58	10.79%
2018-19	140.33	13.79%	63.88	5.43%

If we observe number of Aircrafts, Indigo has increased its fleet year on year basis, Spice jet has also increased particularly in the year 2018-19 whereas Jet Airways and Air India are almost having the same number for two years. Out of total number of aircrafts, Jet Airways owns only three Aircrafts whereas all remaining are taken on Operating Lease basis and few on Financial Lease basis.

3.4. Data Analysis and Interpretation

Sample Companies:

Z1: A higher value of Z1 indicates liquidity position of the company. It compares Net Working Capital with Total Assets. For any organization, combination of fixed assets and Working Capital is very important. Out of total assets how much amount is invested in Fixed Assets and how much is invested in Working Capital becomes very vital. For Airlines business where aircraft fuel expenses, repairs and maintenance of aircrafts and salary are day to day expenses where lot of ready cash is required so if company is having sufficient Net Working Capital, it is a very good sign. If we check at present Indigo is the only Company which can be survived in the pandemic situation because of sufficient bank balance and capacity to raise funds at any point of time. [12]

Table 6. Sample Selected from Indian Aviation Sector

Company
Indigo
SpiceJet
Jet Airways
Air India

Z2: It talks about retained earnings to Total Assets. It indicates relation between these two and in short talks about past performance of the Company. Accumulated profits which are building the Reserves & Surplus of the Company and which ultimately created Total Assets of the business. From the table we can say that

Z3: Operating Profit is the key for any business. It indicates how efficiently management is running the business to maximize profit generated from main business activity. It also indicates overall Operating margins business can generate which depends on nature of its business. It also focuses on investment in Total Assets to generate operating profits. Altaman has given maximum weightage to this ratio. From the Table 7 we can say that:

Z4: This ratio talks about comparison of Market Capitalization and outside liabilities. It indicates value created for Companies shares through market capitalization and total amount contributed by outsiders in the business. From the Table we can say that

Z5: This ratio focuses on utilization of total Assets to generate maximum sales, which includes utilization of Tangible Fixed Assets, Intangible Fixed Assets as well as utilization of Current Assets.

International Passengers includes Departing as well as Arriving Passengers

Table 3. Market share of top 4 Indian Airlines Companies in Percentage

Name of Company	2015-16	2016-17	2017-18	2018-19
Indigo	36.90	40.10	39.70	43.00
Spice jet	12.50	12.80	13.10	13.00
Jet Airways	21.60	18.40	17.20	14.00
Air India	15.20	13.86	12.10	11.10
Others	13.80	14.84	17.90	18.90

Table 4. Number of Aircraft held by Indian Airlines Companies

No. of Aircrafts	2015-16	2016-17	2017-18	2018-19
Indigo	107	131	163	217
Spice jet	34	49	62	111
Jet Airways	116	115	113	118
Air India	118	126	159	151

Table 5. Number of Passengers in Domestic Market

No. of Passengers	2015-16	2016-17	2017-18	2018-19
Indigo	31453451	41600088	48955983	48955983
Spice jet	10670866	13236143	16130815	17655832
Jet Airways	18401029	19027140	21308273	19397067
Air India	12891380	13845073	14886170	15673411

For Jet Air ways data for Jet lite added and similarly for Air India, data for Air India Express added

Table 2 is indicating that number of passengers on year-on-year basis is going up even though the growth rate is going down both for domestic as well as for international business. Table 2 is indicating the Aviation Business in India data collected from DGCA website. Market share of indigo is around 40% and has gone up considerably in the year 2018-2019 because of fall down of Jet Airways. Jet Airways has started losing ground gradually and started losing market share year on year basis. Table 3 is indicating the Market share of top 4 Indian Airlines Companies in Percentage. However important point to note that even the year in which Jet Airways grounded, their market share is slightly better than Spice Jet. Table 4 is indicating Number of Aircraft held by Indian Airlines Companies. Naturally question arises suddenly what happened that jet Airways had to close down its business and they were not able to Air craft fuel charges and even salary to their employees. Also, others include Go Air, Vistara, Air Asia who are trying to increase their presence in the market however so far Indigo is dominating the market. Table 5 is indicating the Number of Passengers in Domestic Market [11].

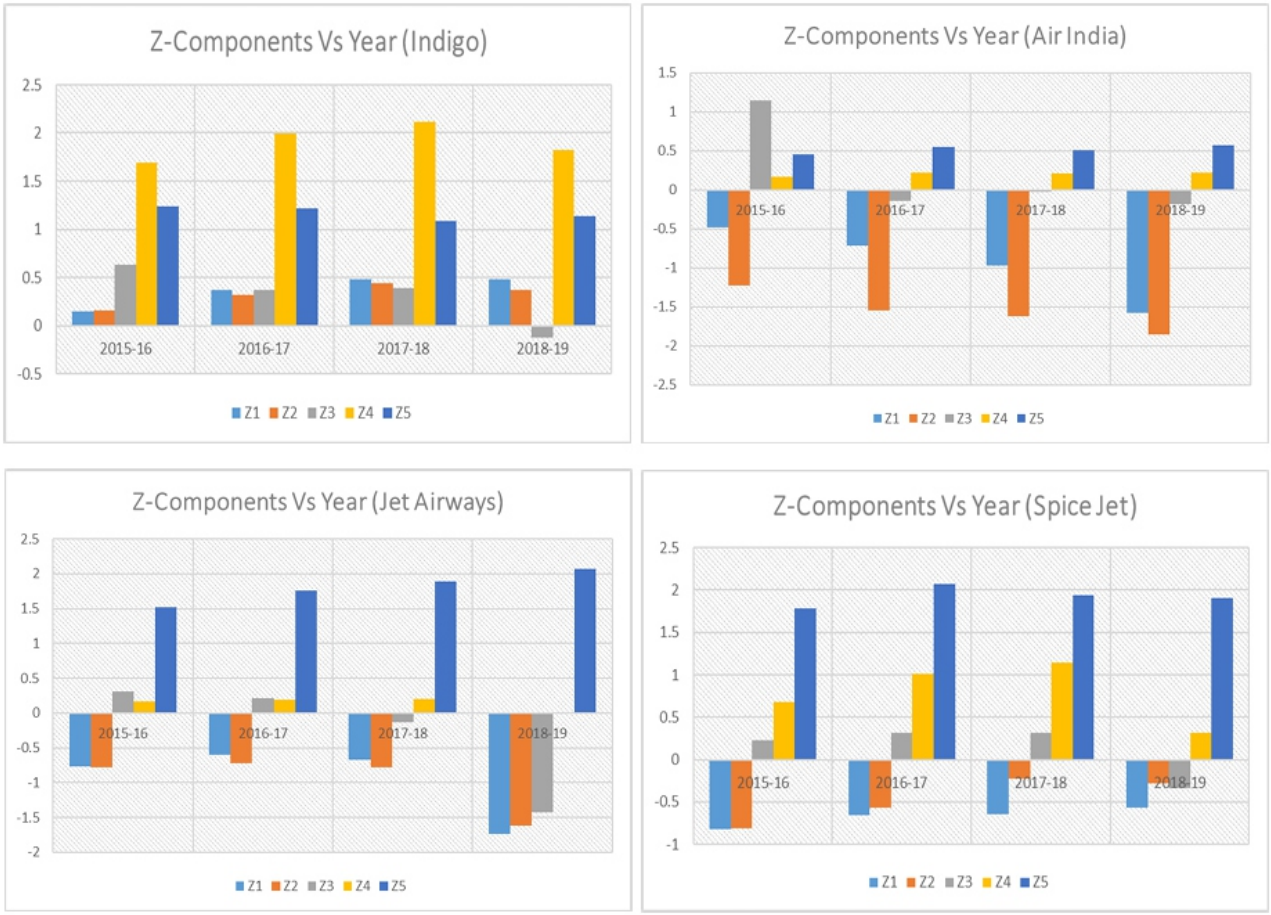


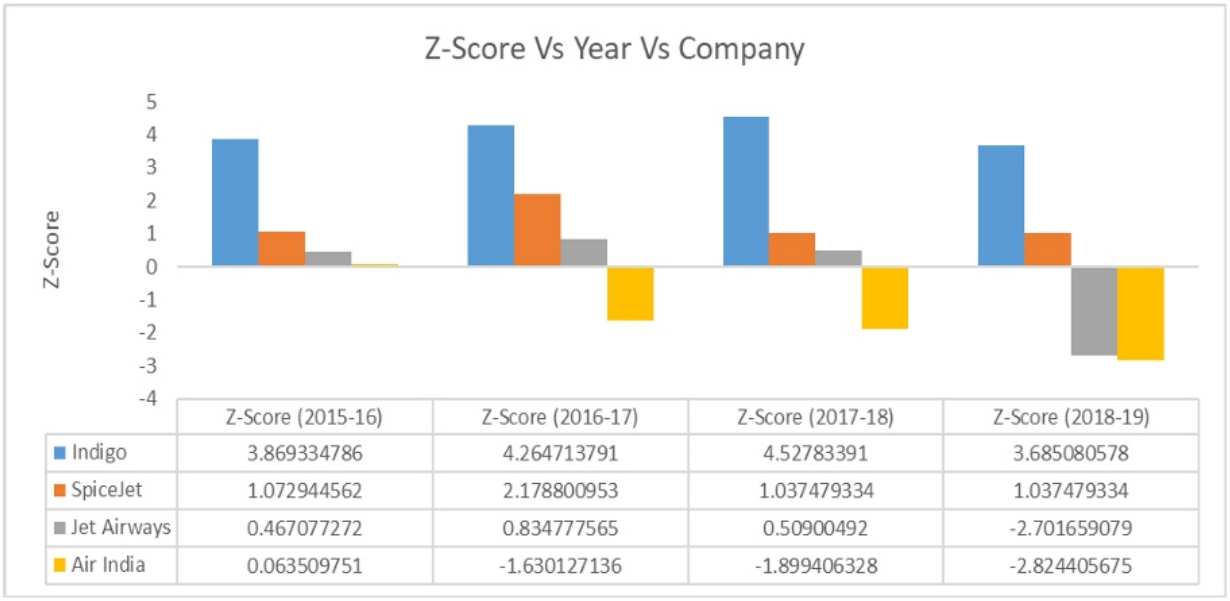
Figure 1. Graphical Representation of Z-Components of Different Aviation Companies

Table 7. Z-Score Analysis

Altman's Z-score for Indian Aviation Sector Companies as of March 31							
Company	**Year(FY)**	**Z1**	**Z2**	**Z3**	**Z4**	**Z5**	**Z-Score**
Indigo	2015-16	0.148849979	0.158496844	0.634294692	1.687984278	1.239708994	3.869334786
	2016-17	0.367798415	0.314587393	0.365807119	1.994902027	1.221618837	4.264713791
	2017-18	0.483226512	0.443466133	0.393512108	2.118104594	1.089524563	4.52783391
	2018-19	0.484600814	0.36704448	-0.126981379	1.821768327	1.138648336	3.685080578
SpiceJet	2015-16	-0.819964548	-0.805716572	0.226286065	0.684985391	1.787354226	1.072944562
	2016-17	-0.65276959	-0.567894431	0.311496065	1.015896741	2.072072169	2.178800953
	2017-18	-0.643952496	-0.228280728	0.31639745	1.144717022	1.940543678	2.529424927
	2018-19	-0.56334444	-0.277407272	-0.338743696	0.313808737	1.903166006	1.037479334
Jet Airways	2015-16	-0.762745463	-0.774620621	0.314379021	0.165687091	1.524377243	0.467077272
	2016-17	-0.602772639	-0.71930143	0.210432058	0.18488923	1.761530347	0.834777565
	2017-18	-0.667426934	-0.783770858	-0.138260251	0.206489229	1.891973734	0.50900492
	2018-19	-1.742313932	-1.61361631	-1.428533405	0.008044528	2.07476004	-2.701659079
Air India	2015-16	-0.479059514	-1.22693949	1.148069557	0.169165092	0.452274106	0.063509751
	2016-17	-0.716003049	-1.550039143	-0.136508738	0.223767992	0.548655802	-1.630127136
	2017-18	-0.967083826	-1.617940106	-0.026594178	0.208593571	0.503618212	-1.899406328
	2018-19	-1.574944909	-1.858974786	-0.182786476	0.224627079	0.567673416	-2.824405675

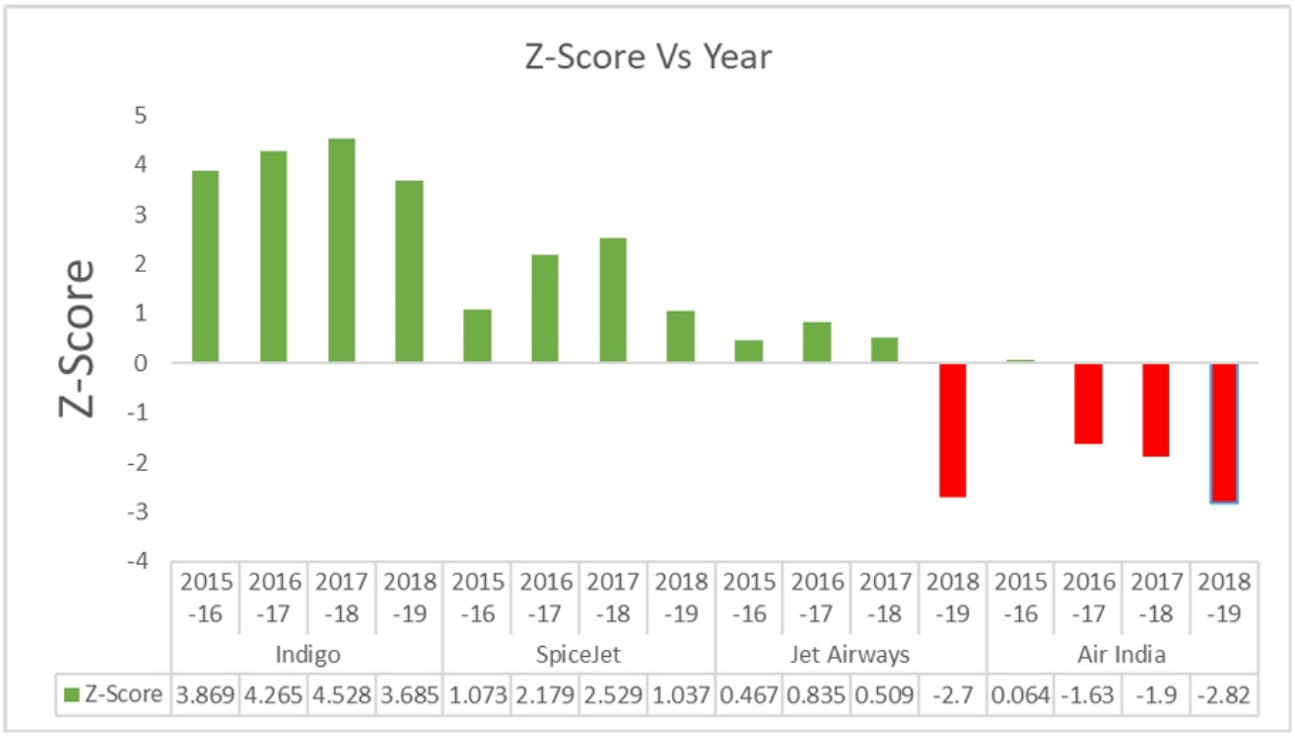
Source: Author's Calculation. * Jet Airways data is taken on standalone basis for the year 2018-19

Graphical Representation of Z-Components of Different Aviation Companies is presented in Figure 1.
Graphical representation of Z-Score Analysis is presented in Figure 2.
Graphical representation of Z-Score Vs Years (2016-2019) is presented in Figure 3.



	Z-Score (2015-16)	Z-Score (2016-17)	Z-Score (2017-18)	Z-Score (2018-19)
Indigo	3.869334786	4.264713791	4.52783391	3.685080578
SpiceJet	1.072944562	2.178800953	1.037479334	1.037479334
Jet Airways	0.467077272	0.834777565	0.50900492	-2.701659079
Air India	0.063509751	-1.630127136	-1.899406328	-2.824405675

Figure 2. Graphical representation of Z-Score Analysis



	2015-16	2016-17	2017-18	2018-19	2015-16	2016-17	2017-18	2018-19	2015-16	2016-17	2017-18	2018-19	2015-16	2016-17	2017-18	2018-19
	Indigo				SpiceJet				Jet Airways				Air India			
Z-Score	3.869	4.265	4.528	3.685	1.073	2.179	2.529	1.037	0.467	0.835	0.509	-2.7	0.064	-1.63	-1.9	-2.82

Figure 3. Graphical representation of Z-Score Vs Years (2016-2019)

Table 8. P-Score Analysis

Indigo	Year	P1	P2	P3	P4	P5
	2015-16	-2.454	-0.56	-1.218	-0.196	-0.369
	2016-17	-2.418	-1.112	-2.84	-0.276	-0.215
	2017-18	-2.157	-1.567	-5.655	-0.334	-0.316
	2018-19	-2.254	-1.297	-5.604	-0.316	0.08
Spice Jet	**Year**	**P1**	**P2**	**P3**	**P4**	**P5**
	2015-16	-3.538	2.848	1.655	-0.044	-0.091
	2016-17	-4.102	2.007	1.039	-0.047	-0.108
	2017-18	-3.842	0.807	0.084	-0.0435	-0.117
	2018-19	-3.768	0.98	0.618	-0.052	0.128
Jet Airways	**Year**	**P1**	**P2**	**P3**	**P4**	**P5**
	2015-16	-3.018	2.738	1.687	-0.184	-0.226
	2016-17	-3.487	2.543	1.765	-0.156	-0.151
	2017-18	-3.746	2.711	2.641	-0.062	0.099
	2018-19	-4.108	5.705	3.238	-0.028	1.03
Air India	**Year**	**P1**	**P2**	**P3**	**P4**	**P5**
	2015-16	-0.895	4.338	0.898	-0.049	0.417
	2016-17	-1.086	5.48	1.011	-0.051	0.443
	2017-18	-0.997	5.72	1.128	-0.047	0.448
	2018-19	-1.123	6.572	1.872	-0.007	0.584

If we make analysis of the above indicators in further detail, we have to check one by one strategies and policies adopted by these companies. Indigo right from beginning which believed in Low-Cost Carrier concept started off very well. Company has their IPO in 2015 where they raised funds through issue of equity shares. Company adopted the model where they started to own the aircrafts rather than taking it on lease basis. No doubt huge money was blocked in Fixed Assets; Companies Balance Sheet became very strong. Since the major funding was done through Equity, there was no huge pressure of interest cost. Company gradually started filling the gap in the market which was created because of failure of Kingfisher Airlines. Started with just one aircraft in 2006, Indigo is the market leader. It kept same size of aircrafts Airbus A320 for years. Companies' sale and lease back policy has worked well. Better control on operating cost is the key to the success of Indigo. Less dependence on Debt funds is another reason. By 2010 Indigo was at number three just behind of Kingfisher and Jet Airways and now it is market leader in domestic business for years.

For any business ultimate object is to increase the wealth of shareholders. Indigo is the only company who has achieved this main object. If we observe for Spice Jet and for Jet Airways market prices of Equity shares are in now two digits. In fact, for Jet Airways trading is not taking place on day-to-day basis and company is in defaulters list of stock exchanges. As far as Air India is concern it is not listed on any stock exchange so there is no question of any market price. However, if we look at Government as Shareholder, Government has lost crores of rupees just to keep live Air India's business. In last 10 years Government has poured more than Rs.30, 000 Crore without any return, the only hope for the Government now to get rid of it by selling to other existing parties. Again, Government has postponed the last date for submission of bids from 31st August, 2020 to 30thOctober, 2020 with a hope to get a bidder.

Discussion on Z score and P- Score is made at latter part of the paper

Table 8 represents P-Score Analysis. Table 9 represents P-Scores of Indian Airlines. Figure 4 shows the

P-Scores of Indian airline companies for different years (2016-2019). Figure 5 presents Year wise P-Components for different Indian Airlines Companies

Table 9. P-Scores of Indian Airlines

P-Score	2015-16	2016-17	2017-18	2018-19
Indigo	0.0080000	0.0010000	0.0000465	0.0000834
Spice Jet	0.6960000	0.2290000	0.0426000	0.1090000
Jet Airways	0.7300000	0.6250000	0.8460000	0.9970000
Air India	0.9910000	0.9960000	0.9980000	0.9990000

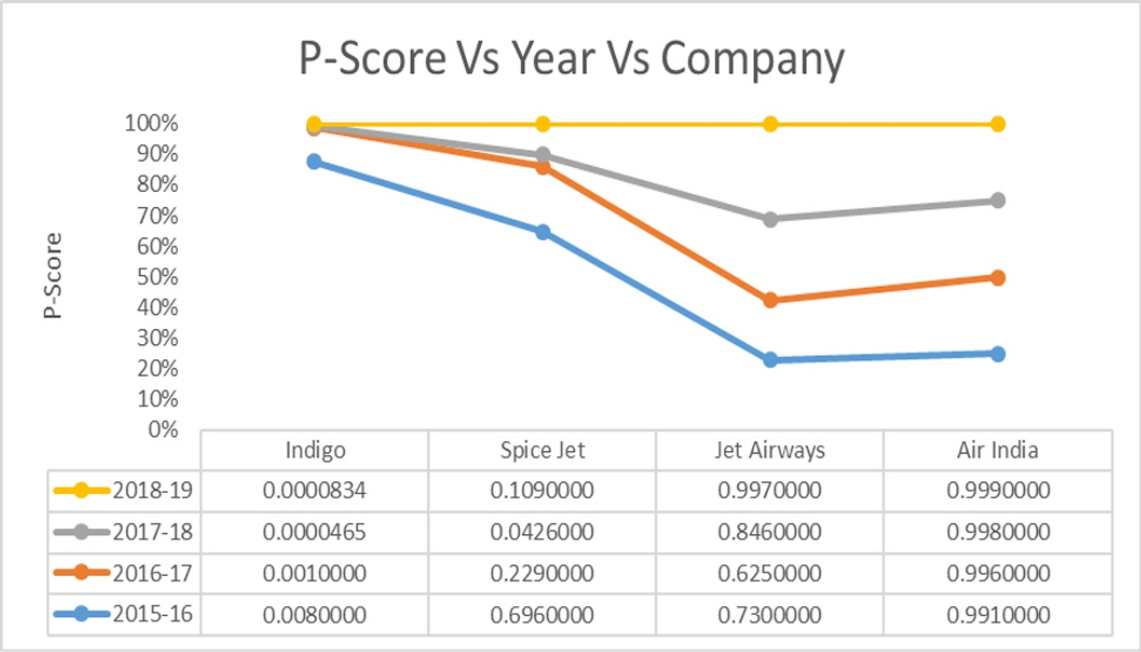
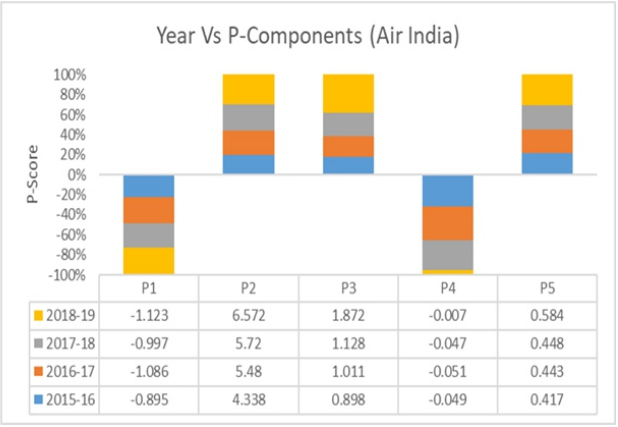
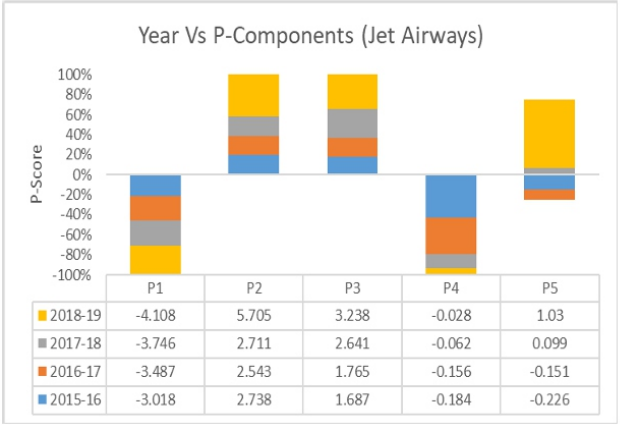


Figure 4. P-Scores of Indian airline companies for different years (2016-2019)





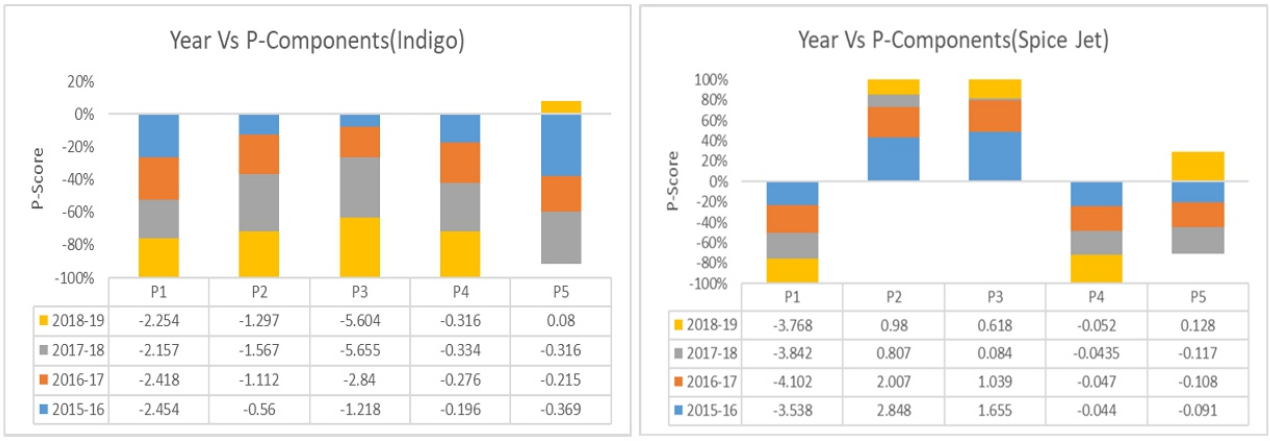


Figure 5. Year wise P-Components for different Indian Airlines Companies

4. Financial Discussion by Using Z-Score Model

4.1. Indigo

Indigo started as a low-cost carrier model. Used similar type of aircrafts and engines, short destinations, quick turnaround, point to point flights with low fares, Frequency of flights was reducing the fixed costs. Company was able to use cast experience of Rakesh Bhatia one of the founder member, in airlines industry. Indigo's Sale and Lease back strategy also worked for years. In 2005 they gave massive order of 100 fleets [13]. The sale and lease back policy removing the pressure on Balance sheet and it was becoming sounder on year-on-year basis. Company gone for IPO in 2015 which was very successful and after that company became market leader in the domestic market. The increasing middle-class population helped Indigo to reach that position. The disciplined approach of management has helped them to show a decent score of operating profits right from beginning when other competitors were struggling to show even average performance. Z score and P Score both are indicating financial soundness of Indigo. Company has kept its borrowings within limits. It has kept a proper balance between Finance Leased and Operating Leased aircrafts. In 2017 Indigo shifted its stance by ordering ATR flights which were different from A320 aircrafts what they were using. ATR aircrafts were requiring high skill pilots with higher salaries, during the same period there were lot many changes at management level, Aditya Ghosh, President after working for more than 10 years resigned. New management people are not specialist in LCC model. The dispute between two Promoters also has impacted on its business, not on day-to-day basis but at management level [14].

In last bid for Air India, Indigo also had applied showing clear signs of shifting from just LCC to international carrier. Immediate intention may be just to increase the network and gradually a long haul LCC. It has ordered A321 neo aircrafts for its international flights particularly to Europe. However, to grab the market of Jet Airways on its failure, Indigo has lost its discipline. They have lost due to Punctuality was the strength of Indigo was not maintained. Increased network at domestic level has broken the time table.

Covid 19 has changed the fate of Airlines industry in India as well as across the globe. However, in India at present Indigo is the only one who can survive in this situation because of its strong Balance Sheet. Company has taken so many steps to reduce its day-to-day cost from Rs.40 Crore per day to Rs.30 Crore per day. Company has already planned to raise around Rs.4,000 crore through Qualified Institutional Placement (QIP) now only time will tell how company is going to manage in coming couple of years

[15].

4.2. Spice Jet

Spice Jet is the only competitor to Indigo at present. After total failure of Jet Airways, market share of Spice Jet has increased to 15%. Even though both Spice Jet and indigo started almost at the same time, Spice Jet got lot of turbulence in the beginning itself on management side and financial resources. Whereas for Indigo it was a smooth and steady take off. Number of aircrafts, number of flights, number of destinations in India and in abroad, Indigo is having number than Spice Jet. Banning of use of Boing 747 Max has also impacted on Spice Jet performance. Company has taken number of aircrafts from Jet Airways on lease basis. However, the fact remains is the only LCC airlines at present which can compete with Indigo is Spice Jet. Spice Jet is not financially very strong. There are debts in the Balance sheet right from beginning. Company is in losses right from beginning. Important plus point Spice Jet is having is its Promoter Director, Ajay Singh who is a very aggressive person and takes decisions according to the situation very fast. Covid 19 has impacted a lot on Spice Jet. It is difficult for it if it is not able to get around Rs.2000 to Rs.2500 crore immediately. Considering current position of the Balance sheet it is difficult for Spice Jet to get any external funding. However, in this changed pandemic situation, Spice Jet has aggressively increased its cargo business significantly. Even though the aircrafts are taken on wet lease basis it will help the company for its survival. However, both Z Score and P score are not very encouraging for Spice Jet and if it is not getting any fresh funding it will be difficult for the company to again stabilize itself as close competitor of Indigo [16].

4.3. Jet Airways

Jet Airways once a leading Full-Service Carrier and market leader in India in domestic as well as in International front was not able to understand the threat from Low-Cost Carriers who started their operations in and around 2005 -2006. Jet Airways was not able to retain its corporate clients and at the same time was not able to handle the pressure created by LCC. Acquiring Air Sahara at 500 USD for cash in 2006 was a blunder. Jet Lite new name given to Air Sahara never succeeded and ultimately company had to write it off from its Balance Sheet. At operational front Jet was not very professional and disciplined. Borrowings in the Balance Sheet were going up on year-on-year basis. Increasing crude oil prices in the international markets and at the same time weakening of rupee impacted a lot on Jet. It was impossible for Jet to survive where the LCC had started capturing the market. On Financial front also Jet failed. RPK was always below CPK which increased the burden on the Balance sheet. High Debt and high finance cost were dragging Jet always in red. Company had not taken any strategic investor right from beginning and Management style of Mr. Naresh Goyal was not able to get any financer at the end. Z score and P – Score are clearly indicating financial distress of Jet Airways

4.4. Air India

Government has put Air India foe sale and in the last attempt it failed to attract any investor. Now Government has made second attempt and last date of submission of bid is 31st August, 2020. This time Government has made so many changes in the offer comparing to last attempt. Already Government of India has pumped in more than Rs.30, 000 crore as bailout package out of taxpayer's money and at present Air India flights are taking off only because of Government financial support [17].

For failure of Air India there are number of reasons. The aircrafts owned by it are wide body aircraft which are not required at domestic level. Air India's international business is in huge losses where they are not able to recover even cost per flight. Strategy of Air India to own the aircraft has ended with huge

more than Rs. 60,000 crore loan in the Balance Sheet. In the year 2018-19 Air India achieved a total income of around Rs. 29,000 Crore with a loss of Rs.7200 Crore, loss from discontinued operations of Rs.1,500 crore with a total loss of Rs.8700 crore. Lack of professionalism is another reason. For example, all other airlines, employees per aircraft are hardly 100 whereas for Air India the same ratio is 130 per aircraft. There is almost 4000 excess staff. Excess salary has increased the losses year on year basis. Huge Debts and huge Finance cost has made Air India unattractive for the buyers.

4.5. Financial Discussion by using P – Score Model

P – Model is another statistical model introduced by Pilaraski particularly to check the bankruptcy position of airlines Companies.

Apart from Indigo, all remaining Companies are having negative Reserves & Surplus. Because of very high debt, Debt Equity ratio is in negative, High Fuel cost and Repairs and Maintenance cost is impacting on Operating Profits. For Air India employee cost is also impacting negatively. Companies barring Indigo don't have sufficient funds to repay the debts. All this position is indicated through P-Score of all these companies except Indigo. Scores are low only for Indigo whereas all remaining three companies score is high indicating bankruptcy position [18].

5. Conclusions

Airlines industry in India is right now on ventilator and the only company which has capacity to survive on its own is Indigo i.e., Inter globe Aviation Limited. Companies' strategy to own aircrafts rather than taking it on lease basis is working in such critical situation. Sale and Lease Back transactions will give scope to the company to generate fresh funds which are absolutely required at this stage where operations have gone down by almost by 80 to 85%. Company is planning to raise funds by further issue of shares. Cost cutting is another measure company has taken and said that expenses per day have brought down from Rs.40 crore per day to Rs.30 crore per day. Company has recently reduced its work force by 10% which was around 27,000.Spice jet another Low-cost carrier in India is in financial problems and Auditors of the Company have raised concern about the Going Concern of this company. Considering financial position of the company there is less scope to get funds from the market. Company has to rely on any Government package.

Air India is on sale and Government has given 31st August, 2020 as last date for submission of the bids. Company is in bad financial position with huge losses. Recently Boeing has discontinued supplying spare parts to Air India due to non-payment of earlier dues. The fate of Air India is now only depending on sale of its business to any professionally run airlines company like Tata's who shown interest in buying Air India. Jet Airways has already has stopped its operations and at least as of today there is no any hope of change in this situation and gradually this company will be liquidated.

6. Result of the Study

Overall conclusion is that to run airlines business absolute professionalism is required. Strong Balance Sheet is must which will have ability to raise funds at any point of time. Being LCC model is used, only option available is to control fixed costs, provide more quality service to the customers through punctuality and better on board services so as to attract more and more customers and create more cash generation. To focus more on other alternatives such as cargo business, for Indigo the sale and lease back policy has worked well and has helped to generate and keep more cash in the Balance sheet which is very useful in a panic situation. For Spicejet things have gone wrong right from beginning with the

wrong capital structure and limitations to generate sufficient cash, For Jet Airways wrong acquisitions and failure or ignorance to understand impact of entry of LCC carriers brought to this situation and for Air India lack of efficiency in management and high fixed costs are the main reasons with less focus on domestic business.

Abbreviations

NSE, National Stock Exchange; EBIT, Earnings before Interest & Tax; BSE, Bombay Stock Exchange

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The Impact of Different Market Transparency Standards on the Success of Momentum Strategies Using the Example of the German Stock Market

Katharina Beyenburg1, Dirk Braun2,*, Lina Kuckelkorn3
1Department of Business Administration, FOM University of Applied Sciences, Campus Cologne, Germany
2Department of Business Administration, FOM University of Applied Sciences, Campus Aachen, Germany
3Faculty of Business Sciences & Economics, RWTH Aachen University, Aachen, Germany

ABSTRACT

This study primarily focuses on the explanation of momentum effects regarding different transparency standards of particular stock segments. Based on theories of efficient markets and information diffusion it can be expected that a momentum can rather be observed in those stock segments which do not require high transparency obligations. Regarding the results of this study on the effect of transparency, no significant correlation can be proven for the intensity of transparency obligations and the level of the momentum. Hence, the theory on the intensity of transparency obligations affecting the level of the momentum has to be rejected. However, it has to be pointed out that in contrary to the theoretical assumption, the momentum of Prime Standard has not only been most constant but also highest. Especially in times of strong market turbulences, high volatility and uncertainties in the market, investors seem to invest in titles which show highest transparency and for which a lot of public information is accessible. Thus, they regard stocks of Prime Standard as security values.

Keywords *Momentum Strategy, Market Transparency Standards, German Stock Market Performance, Information Asymme*

1. INTRODUCTION

Neoclassical theory turns out to be the predominating assumption in the assessment of capital market titles such as stocks, since it has significantly influenced further explanatory approaches. [1] Among other things, it assumes efficient markets and rational participants. Hence, current asset prices contain all information that influences the market environment. [2-4] However, neoclassical theory is often put into question, since several anomalies on the capital market contradict it.

This paper focuses on the momentum effect, which can often be proven in equity markets. [5, 6] In the awareness of this anomaly, a so-called momentum strategy for speculative (short-term) equity investments is derived which takes into account the expectations of market participants regarding future share performances. [7, 8] On the basis of past studies, this paper examines the realization of this strategy in the German stock market for a time period from 2005 to 2015. For the first time, different market transparency standards are taken into account.

2. Theoretical Background

Following the argumentation of neoclassical capital market theory, no anomalies would exist in capital

markets, since e.g. equity markets would be flawless. Hence, the market price of a stock would reflect rational expectations regarding future cash flows at any time. [2] Systematic deviations like under- or overreactions could thus be excluded. [4] If the neoclassical approach is taken as a basis, modern financial markets will be confronted with several anomalies from various directions [9, 10] because systematic deviations of market prices from fundamentally justified values can be observed repeatedly. [11, 12] One of these anomalies, which can be proven systematically over different time periods and markets, is the so-called momentum. The observation of a stock development continuing over a short time period (usually 3–9 months) is called momentum effect. It can be proven for both, stocks which have shown outstanding performances in the past, as well as for stocks which have underperformed or developed negatively. [13] This leads to the result that in short-term previously well-performing stocks will continue winning and previously low- performing stocks will continue losing. [14] Literature explains this effect especially with herd mentality [15, 16] and lagged information processing by market participants. [17, 18]

In the awareness of this anomaly, the rule of relative strength can be derived. [5] Momentum strategies are based on this theory. [19] The model of relative strength implies that stocks are not measured by benchmarks but by the stock's performance. [5, 20] This means that a correlation of stock performance is assumed which implies that stocks, which have developed above average in a certain period of time, will continue to do so in the future due to trend- following. As a consequence, stocks, which have under-performed in this time period, develop to the contrary. [8, 19] Hence, an investor who anticipates this development is likely to follow a pro-cyclical investment [13] which is based on the fact that market participants need a longer time period to process new information and implement them into their investment- and trade strategies reliably, especially when they contradict to their individual opinion. [11, 19] Furthermore, herd mentality has been identified to support the momentum effect because market participants follow a trend consciously or unconsciously to eliminate their own insecurities. [14] This is why the momentum strategy could be equivalent to the systematic implementation of the rule of thumb "the trend is your friend". Applying the momentum strategy, market participants do not make their investment decisions based on a company's fundamental values but based on past development of the corresponding stock. [20] To gain the highest possible excess returns market participants choose stocks which have outperformed in the past time period (analogue to the model of relative strength). Therefore, a so-called formation period (FP) is defined at first. The performance in FP is crucial for the investment in winning stocks that are bought or held in the so-called holding period (HP). HP comprises the same time period as FP or more. After stocks have been held for one HP, new winning stocks are classified and held for the following time period. [8] Figure1 shows this classification:

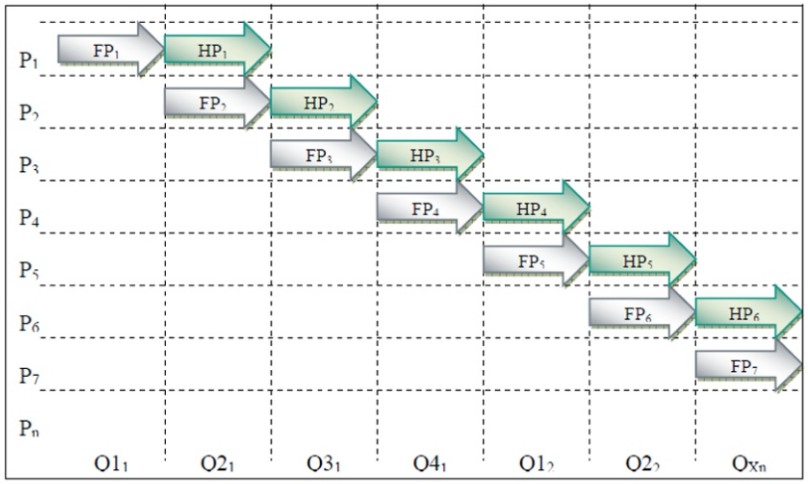

Figure 1. Formation (FP) and holding periods (HP) of a momentum strategy over three months each

3. Literature Review

In the past, the existence and characteristics of momentum effects have been investigated throughout different observation periods and with different emphases. Hereafter, an overview over the current state of knowledge is given. As a result, the existing research gap or rather the desired findings are being derived.

Several studies have shown a systematic excess return of a pro-cyclical momentum strategy amounting to 5-15% over all market segments and different time periods in an observation period from 1926-2003. [5, 6, 21, 22] Comparable effects could be proven for different European stock markets in an observation period from 1961-2011. [7, 8, 23, 24] Furthermore, momentum effects have been validated for investment funds [15] and different industries. [25] Other investigated coherences show for example the grade of investors' overconfidence [26], the correlation of momentum with previous trading volumes [27], risk adjustments [22] and the ability to predict momentum crashes [22] as well as the presentation of hidden risks of such a strategy. [28]

Furthermore, several studies dealt with the question of an optimal momentum strategy to reach the highest possible excess return depending of the duration of formation and holding periods. According to those studies, stable trends last for 12-15 months. This is why several authors derive optimal formation periods of 3-6 months and optimal holding periods of 6-9 months. [7, 13, 29, 30] Current research states the supply and processing of information to be one of the most important factors, which is why it has been a popular research subject in the past. Thus, the momentum effect is stated to be an under-reaction in processing available information. [22, 31- 33] These studies argue that the optimal choice of formation and holding periods crucially depends on the processing of information in individual markets.

4. Research Gap and Hypotheses

Based on previous research findings, this paper examines the application of a momentum strategy regarding transparency on the German stock market. It examines different forms of the momentum effect depending on different transparency standards of the German stock market's trading segments. Therefore, different information asymmetries might exist. The examined time period is 2005-2015. In this time period, the German stock market was divided into three segments: Prime Standard, General Standard and Entry Standard. These are examined regarding the existence of a momentum, its level and its duration.

Since literature regards the momentum effect as a proven anomaly in the capital market, the first hypothesis states that there is a corresponding effect in all three market segments during the examined time period:

H1: Momentum per market segment > 0

Furthermore, all three segments of the German stock market are especially examined towards their transparency and its impact on the momentum effect. The studies of Hong/Stein [32] and Hong/Lim/Stein [33] developed and

tested a model which deals with the diffusion of information. From these studies it can be concluded that stocks, whose information spreads slower, show a higher momentum since there is an under-reaction to information of these companies. From this, the second hypothesis is being derived. It states that the higher the transparency standard of the segment in which the stock is traded, the quicker the information relevant to the stock spreads and accordingly, the momentum effect is lower:

H2: Level momentum Prime Standard < level momentum General Standard < momentum Entry Standard

At this point we would like to state that the requirements for information transparency and the publication of information are highest in Prime Standard. Companies whose stocks are listed in Prime Standard are obliged to publish all information in German and English whereas companies whose stocks are listed in General and Entry Standard only have to publish information in German. In general, the obligation to the publication of information in Entry Standard is very low. [34] This is why it is assumed that information about companies in Prime Standard spreads quicker than those regarding General or Entry Standard. Hence, the level of momentum should be lowest in Prime Standard. General Standard has second-highest requirements and thus, Entry Standard has to fulfill the lowest requirements of the three segments. This is the reason for the sequence of H2.

The third and last hypothesis examines the duration of the momentum effect. The model of information diffusion assumes that the slower the information of a stock spreads the higher is the momentum. It might also come to a longer period of under-reaction. [32, 33] This study considers the momentum to spread slower the lower the transparency obligations for the particular stock segment are. This is why in Entry Standard the momentum should not only be higher than in General and Prime Standard but should also span a longer observation period:

H3: Duration momentum Prime Standard < duration momentum General Standard < duration momentum entry Standard

5. Data Selection and Methodology

In order to make momentum effects measurable regarding different transparency standards in the German stock market the underlying indicators of the empirical analysis have to be operationalized. The variable to be explained eventually is the momentum effect. It is being examined with regard to different transparency obligations of the three named stock segments. Therefore, closing prices of Prime, General and Entry Standard are needed on the one hand. On the other hand, we require the calculated performance of these closing prices in different ranges. The performance of a stock is being calculated for four holding periods respectively: three, six, nine and twelve months. The formation period is always three months. This approach corresponds to past studies. [7, 35, 36] The analysis over four holding periods aims at the determination of a momentum's duration and therefrom the derivation of the optimal ratio of formation and holding periods. Thus, 44 performance time series over four periods per segment result for the observation period from 2005-2015. This period has been chosen due to the fact that the three stock segments existed in this period of time and all needed stock dates are available. Additionally, an observation period of 11 years represents empirical statistic relevance. Thus, general validity can be concluded from the findings of the special sample. The analysis only takes into account stocks whose data were available for the whole observation period and which can be matched to the German stock market (selection via German identification number). The result is an adjusted data base of 348 stocks: 199 in Prime Standard, 114 in General Standard and 35 in Entry Standard.

In the first place, the adjusted database is examined towards the existence of a momentum. Therefore, the performance of the thee-month formation period for 44 single periods in the time period from 2005-2015 is calculated. Per formation period, 10% of those stocks are chosen which are part of the best (winner) and worst (loser) of all stocks, as measured by their performance in the formation period. These stocks are then being held for a period of three, six, nine and twelve months. The average performance per holding period is calculated. The shares are held equally weighted in the portfolios. By the means of the average performance, a course of time can be outlined which can determine the duration of a potential momentum as well as possible under- or overreactions for the whole observation period. For this purpose, measures of central tendencies such as maximum, minimum, median, arithmetic mean, quartiles as well as the correlation of data are examined. Performance data of the individual stock segments' four holding periods are being tested towards coherence and content ofinformation. Afterwards, the determined correlation is being tested towards significance. Therefore,

the correlation of the individual variables "winner", "loser" and "index" are tested against each other separately. The statistical analysis is completed by the Shapiro Wilk test for normal distribution. This test is made for each time line individually. The Shapiro Wilk test is a test for significance which examines the assumption that the underlying population of a sample is normally distributed. [37]

6.Results

Hereafter, the central results of the data evaluation with regard to the three hypotheses are presented. At first, the average performance of winning and losing stocks is determined and compared to the average performance of the respective stock segment. Tables 1-3 show the results:

Table 1. Momentum Prime Standard

HP in months	HP 3	HP 6	HP 9	HP 12
winner	3,69	8,79	14,16	18,48
loser	1,96	5,51	7,85	11,41
average performance	2,87	6,38	9,97	13,92

Table 2. Momentum General Standard

HP in months	HP 3	HP 6	HP 9	HP 12
winner	2,87	-1,11	0,86	3,64
loser	10,91	15,43	16,80	13,15
average performance	4,22	7,24	8,47	10,04

Table 3. Momentum Entry Standard

HP in months	HP 3	HP 6	HP 9	HP 12
winner	0,62	2,43	2,91	3,69
loser	2,32	2,13	7,15	6,84
average performance	1,57	3,05	4,42	5,50

For winning as well as for losing stocks a positive momentum could be proven for all market segments and holding periods (with one exception) throughout the observation period. Thus, the first hypothesis can be validated. Momentum effects can therefore be observed for younger review periods as well, as illustrated in figures 2 and 3.

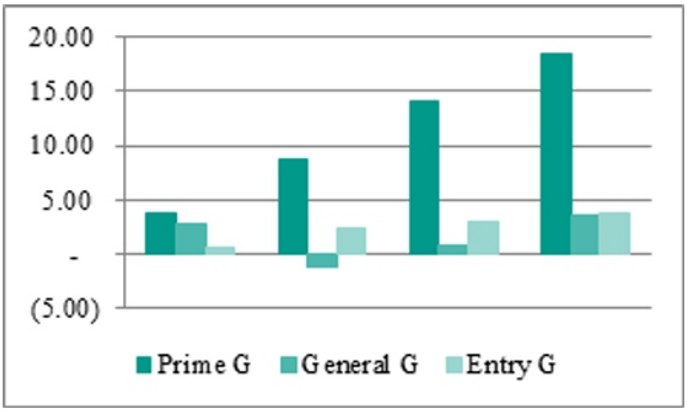

Figure 2. Momentum of winning portfolios (winner) of Prime, General and Entry Standard in comparison per average

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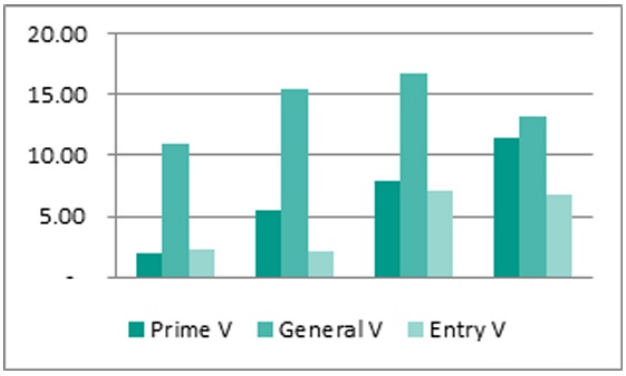

Figure 3. Momentum of losing portfolios (loser) of Prime, General and Entry Standard in comparison per average

However, the second hypothesis has to be rejected. The first part of this hypothesis implied the momentum to be lowest in Prime Standard. This could not be proven. The momentum of winning stocks in Prime Standard has even turned out to be highest on average. The highest momentum for losing stocks could be proven for General Standard. The second part assumed complete order. This could also not be validated regarding transparency obligations since the order of the average momentum for winning stocks turns out to be inconsistent:

Momentum Prime Standard 11.28% > Momentum General Standard 1,57% < Momentum Entry Standard 2,41%.

The third hypothesis has to be rejected as well, for both, winning and losing stocks, because the duration of a momentum for winning stocks in the observation period is equal for all three stock segments. Additionally, the duration of a momentum seems to be shorter in General and Entry Standard than in Prime Standard for losing stocks, as to be shown in the following figures 4 and 5.

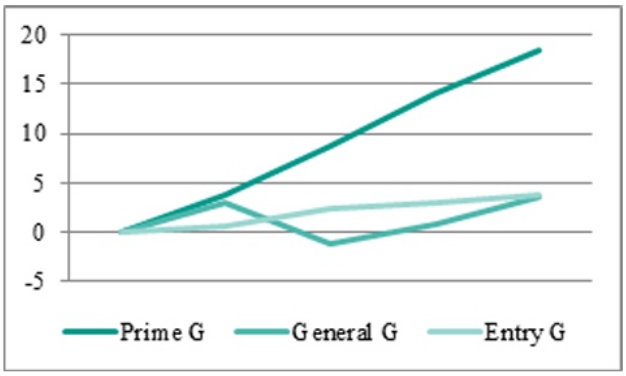

Figure 4. Momentum of winning portfolios (winner) of Prime, General and Entry Standard in comparison in time course

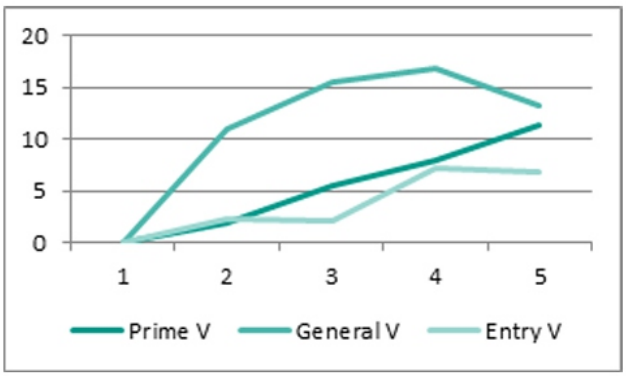

Figure 5. Momentum of losing portfolios (loser) of Prime, General and Entry Standard in comparison in time course

Subsequent statistical evaluation could furthermore prove a significantly positive correlation of winning and stocks as well as of the index. The strongest positive correlation of those variables could be observed in Prime Standard with values between 0.67-0.91. General Standard showed second-highest correlation. The values ranged from 0.29 to 0.78. The weakest correlation of variables could be observed in Entry Standard. In this stock segment, values ranged from 0.19 to 0.8 throughout all holding periods. Table 4 provides an overview over the particular correlations:

Table 4. Correlation matrix for all stock segments and holding periods

Market Standard	Prime	General	Entry
3 months HP	0,75-0,92	0,34-0,78	0,19-0,75
6 months HP	0,67-0,90	0,29-0,64	0,19-0,75
9 months HP	0,71-0,91	0,42-0,70	0,25-0,80
12 months HP	0,69-0,89	0,42-0,69	0,30-0,73

The strong positive correlation of stocks in the different segments speaks for the fact that there is a dependency between the development of a momentum for winning and losing stocks. The dependency seems to be highest in Prime Standard and decreasing with declining transparency obligations. After that, the data was tested for normal distribution. Regarding the average of the individual stock segments, normal distribution can be assumed. Generally speaking, normal distribution can also be assumed for the performance distribution of winning and losing stocks as well as for the index of the individual stock segments. The only exception is the performance of winning stocks in General Standard. An average value of 0.02 can be observed here, which lies below the significance level $\alpha = 0,05$. Table 5 shows the average values of the Shapiro Walk Test for normal distribution.

Table 5. Correlation matrix for all stock segments and holding periods

Market Standard	Winner	Loser	Index
Prime	0,56	0,07	0,42
General	0,02	0,12	0,22
Entry	0,62	0,25	0,12

7. Discussion and Conclusions

This study primarily focused on the explanation of momentum effects regarding different transparency standards of particular stock segments. Based on theories of efficient markets and information diffusion it was assumed that a momentum can rather be observed in those stock segments which do not require the highest transparency obligations. To verify this issue three hypotheses have been made to explain the phenomenon of momentum effects regarding the aspect of transparency. Following the first hypothesis, the data set has been examined for a momentum effect in general. A positive momentum in the German stock market could be proven for the observation period as well as for several past studies. The other two hypotheses focused on the observation of effects of transparency. Hence, the three stock

segments were defined with regard to the intensity of transparency obligations. It was assumed that momentum effects prove to be shorter and less pronounced the higher transparency obligations are. This assumption was based on models and past studies. For instance, Hong and Stein [32] established the theory that private information spreads slower than public information and thus leads to a longer and stronger overreaction in the market. They proved their idea empirically in another study. [33]

Nevertheless, the examinations of this study could not prove longer overreactions for stock segments with less public accessible information. A longer momentum could not be proven for those stock segments as well. Hong, Lim and Stein [33] examined the American stock market which is why a deviation from the German stock market is certainly possible. An alternative explanatory approach could be the high volatility of the German stock market within the observation period. January 2008, August 2011 and August 2015 showed exceptionally strong negative developments whereas stocks developed strongly positive in January, February and October 2015.

Regarding the strong volatility of the market within the observation period, the results of this study can be compared to those of Daniel and Moskowitz [22]. For a time period of 1927 to 2013 they proved that in the American stock market the momentum effect does not generate a positive momentum if the market shows a phase of high volatility. In those times, losing portfolios would even gain higher revenues than winning portfolios. Those so-called momentum crashes could be observed for General and Entry Standard in the present examination. Meanwhile, the momentum strategy could successfully be implemented in Prime Standard. These results indicate that Prime Standard is more resistant to the effects of volatility and thus is not significantly influenced by those. Hence, the implementation of a momentum strategy only works limitedly in times of high volatility like the examined observation period. Even though a positive return can be generated, higher returns are possible with an investment in losing portfolios in stock segments with low transparency obligations. Regarding the results on the effect of transparency, no significant correlation can be proven for the intensity of transparency obligations and the level of the momentum. Hence, the theory on the intensity of transparency obligations affecting the level of the momentum has to be rejected. However, it has to be pointed out that in contrary to the theoretical assumption, the momentum of Prime Standard has not only been most constant but also highest. Especially in times of market turbulences, high volatility and uncertainties in the market, investors seem to invest in titles which show highest transparency and for which a lot of public information is accessible. Thus, they regard stocks of Prime Standard as security values. Referring to the idea of regarding the momentum effect as a kind of herd mentality to eliminate insecurities of the investors [14, 16] this action coincides with comparably insecure times like these.

8. Possible Implementation in Trading Strategies

A deduction for specific trading strategies or recommended actions for institutional and private investors, which can be derived from the findings of this study, could be the fact that a momentum in the standard values of a stock market turns out to be highest and more persistent especially in volatile market phases. Thus, salient reporting in combination with the size of the companies seem to result in a stronger feeling of control of (private) investors. [11, 21] An investor could anticipate this trend and reallocate his portfolio to standard values with a positive momentum when volatility in markets increases. [13, 24] However, these market phases come along with a higher risk of momentum crashes. [8, 22] This is why the investor should closely monitor the development of his portfolio.

In general, it can be stated that this study - in analogy with several preliminary studies [23, 26, 27, 29] - also shows that good momentum strategies still yield excess returns as compared to their benchmark. Nevertheless, the realization of a momentum strategy for individual investors (especially without access to databases to run a market analysis and knowledge of statistical programs to determine

efficient portfolios) come along with high expenditures for cost and control since a market analysis for the identification of losing and winning stocks and a (partial) reallocation of the portfolio have to be conducted approximately every three months. [cf. previous statements in section 5 of this article and reference 13] This is why relevant funds (so-called „momentum funds“) can be a good investment alternative for private investors which are convinced of the momentum effect in markets. Several investment companies hold respective funds. [38]

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[38] See e.g. Fuller & Thaler Behavioral Small Cap Equity Fund, https://www.fullerthalerfunds.com, 2017-09-30

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3. Short or preliminary communication (original management paper of full format but of a smaller extent or of a preliminary character);
4. Scientific critique or forum (discussion on a particular scientific topic, based exclusively on management argumentation) and commentaries. Exceptionally, in particular areas, a scientific paper in the Journal can be in a form of a monograph or a critical edition of scientific data (historical, archival, lexicographic, bibliographic, data survey, etc.) which were unknown or hardly accessible for scientific research.

Professional articles:

1. Professional paper (contribution offering experience useful for improvement of professional practice but not necessarily based on scientific methods);
2. Informative contribution (editorial, commentary, etc.);
3. Review (of a book, software, case study, scientific event, etc.)

Language

The article should be in English. The grammar and style of the article should be of good quality. The systematized text should be without abbreviations (except standard ones). All measurements must be in SI units. The sequence of formulae is denoted in Arabic numerals in parentheses on the right-hand side.

Abstract and Summary

An abstract is a concise informative presentation of the article content for fast and accurate Evaluation of its relevance. It is both in the Editorial Office's and the author's best interest for an abstract to contain terms often used for indexing and article search. The abstract describes the purpose of the study and the methods, outlines the findings and state the conclusions. A 100- to 250-Word abstract should be placed between the title and the keywords with the body text to follow. Besides an abstract are advised to have a summary in English, at the end of the article, after the Reference list. The summary should be structured and long up to 1/10 of the article length (it is more extensive than the abstract).

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Acknowledgements

The name and the number of the project or programmed within which the article was realized is given in a separate note at the bottom of the first page together with the name of the institution which financially supported the project or programmed.

Tables and Illustrations

All the captions should be in the original language as well as in English, together with the texts in illustrations if possible. Tables are typed in the same style as the text and are denoted by numerals at the top. Photographs and drawings, placed appropriately in the text, should be clear, precise and suitable for reproduction. Drawings should be created in Word or Corel.

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Footnotes are given at the bottom of the page with the text they refer to. They can contain less relevant details, additional explanations or used sources (e.g. scientific material, manuals). They cannot replace the cited literature.
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Note