Empirical Analysis of Determinants of Dividend Policy: An Evidence from Pakistani Banking Industry

by

Raheel Aziz
Fellow of MS Management Sciences
Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology (SZABIST) Karachi
Email: rahil_sky@hotmail.com

Dr. Jameel Ahmed Khilji
Assistant Professor of Economics' and Finance
Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology(SZABIST)
Email: jameel.khilji@gmail.com

Nazia Abdul Rehman
Lecturer at Banazir School of Business
Banazir Bhutto Shaheed University Lyari, (BBSUL) Karachi
Email: nzshakir@gmail.com

Abstract

The research investigates impact of firm specific factors on dividend payout of the 13 conventional and Islamic banks listed on Pakistani Stock Exchange for the period from 2001 to 2016. We have taken Lintner (1956) Model and its extended forms as a base model for our research analysis. We have checked the predict power of the independent variables i.e. earnings per share, return on assets, return on equity and debt to equity ratio on depended variable dividend payout ratio. Quantitative data was collected annually over the stated period. In this study we have estimated the panel data taken from Thomson Reuters on EVIEWS by running Fixed Effect Model (FEM). The research approach is epistemological and we have taken post positivism as our research paradigm. Before running the analysis, the data was checked for the normality, autocorrelation, heteroskedasticity, and multicollinearity. We found that earning per share have positive correlation with the dividend payout ratio, whereas return on assets and debt to equity ratio have also strong linear association with the dividend payout. However the dividends paid by the banks are found to be more sensitive to the earnings per share. In contrast our results show an inverse linear association of the return on equity with the dividend payout. Our results are consistent with the existing literature that the banks that pay more dividends are more profitable than the banks that do not pay at all. The research will be beneficial for the stock market investors and academic scholars to study and predict the dividend payout behavior of the listed banks of Pakistan.

Keywords: Dividend Payout, Fixed Effect Model (FEM), Earning Price Share (EPS), Profitability, Financial Leverage.

Introduction:

Background of Study:

Growth of the banking sector plays a significant role in the economic growth of a country particularly in the developing country like Pakistan. Banking sector in Pakistan has more than 6 decades of history. The sector has seen developments in last two decades. Many factors affect the performance of the bank and its earnings. Study shows a different pattern of Pakistani markets and factors affecting the earning of the banks. Dividend policy has remained an interesting subject in the study of the corporate finance over the years. Perhaps due to its impact on the equity stock of the firm. If firms issue dividends and do not have sufficient funds to invest new projects than the firm will issue new shares to fund its projects increasing the number of shares outstanding.

The dividend policy is devised by the firm to decide whether to pay dividends or not. Initial studies relating dividend payout is by (Lintner, 1956) where he interviewed managers of the 26 American firms. He found that the companies follow a constant dividend payout policy. He also concluded that the policy remains constant for a considerable time period to escape investor's doubts. However (Modigliani, 1961) presented dividend irrelevance theory which states that shareholders income and firms value does not have effect on the dividend payout by the firm. In contrast to dividend irrelevance theory (M Gordon, 1956) presented bird in hand theory which states that the investors are likely to invest in the companies paying constant dividends to those where there is likely hood of capital gains. This tend companies to pay more dividends resultantly the market value of the share increases. Unlike Pakistan where the firms show dynamic dividend policy many studies conclude that firms pay stable dividends. It is assumed that the dividend policy may be affected by the consumer behavior, tax laws, rules regulations and policies of the countries, and many other external factors. It may also be affected by the agency cost which is conflict between the shareholders and the managers of the company. Studies have found that internal share holdings by the companies have dividend payout ratios and reduced agency cost. Dividend policy is affected by the multiple other factors but return on assets, earnings per share, return on equity, size of the firm, asset growth and financial leverage are the said to be of important (Spaarkman, 1979) (Joseph E. Murphy, 1967) (Attiya, 2009) (Javid, 2008) (Imran, 2011).

Research Problem:

The dividend policy has been a puzzling topic in the study of the corporate finance. Historical background of the issue tells that dividend policy is different from country to country and varies the policies of the government its economic conditions. Studies so far done on the topic concluded that there is not perfect measure of the dividend policy of the firm. It depends upon whether the firm have sufficient earnings to pay the dividends. However the policy may vary from sector to sector. In our study we have chosen banking sector to see how the banks pay dividends and the factors affecting the dividend policy of the Pakistani banking sector. Studies also contradict whether the size of the firm and financial leverage have significant impact on dividend payments. In his study (Hashim Zameer, 2013) concluded that there is no significant relationship between the size of the firm and financial leverage, which contradicts the existing literature on the topic available (Fama & French, 2002).

Research Objectives:

The Purpose of this study is to see the relationship between different variables and the dividend policy of the banking sector. As per the literature available on the topic we have profitability, financial leverage and earning per share as independent variables to show their impact on dividend payout of the firms.

1. We will see if the profitability of the firm has significant impact on its dividend policy and future predictions of the dividend payments.
2. We will see whether the firms debt have any impact on constructing the dividend policy.
3. We will try to find out the relationship of the firms size with its dividend policy and whether earning per share of the firm play any role in dividend payments of the banking sector in Pakistan.

Research Questions:

Through research questions we remain focused and we do not get distracted from our research. It also helps building the research framework (Creswell, 2011). For our study we have following research questions;

1. Does profitability have significant impact on dividend policy of Pakistani banking industry?
2. Does financial leverage have any relationship with the dividend policy of the Pakistani banks?
3. Does earning per share have any impact on dividend policy of the Pakistani banks?

Justification:

Researches have been conducted in different economies like GCC countries, Malaysia, USA, Jordan and others. In Pakistan the work has been done on the subject by various scholars including (Sajid Gul, 2012) (Hashim Zameer, 2013) (Abdul Raheman, 2010) (Attiya, 2009). These studies have found the relationship of the dividend payout with profitability, leverage and firm size. The study by (Hashim Zameer, 2013) have contrasting results in prospect of size of the firms and leverage. He found that both the variables have no significant impact on dividend payments which is a contradicting view. However the existing literature is agreed that size of the firm and leverage have significant relation with the dividend payments (Eriotis, 2005) (Fama & French, 2002). In this study we will be estimating the relationship of the size of the firm and leverage and dividend payments of the Pakistani banking industry and will check effect of a new variable earning per share on dividend policy along with the other discussed variables. The literature also supports the argument (Arnott, 2003) (Ruland, 2006) (Attiya, 2009).

Literature Review:

The dividend policy of the firm is unpredictable. The dividend policy is affected by the internal as well as external factors. Some of the external factors like growth, technology and consumer behavior are very important (P Kotler, 2002). Among the internal factors profitability, liquidity and investment opportunities influence the dividend policy. Empirical researches have shown that firm pay more dividends when they earn more. Whereas the larger firms earn more

investor confidence due to their sources of the funds. Despite of payment earnings in dividends the firms can raise funds for their investments (Varouj Aivazian, 2003). Studies have also found that there is significant relationship of the dividends with the size of the firm, cash flows, leverage, growth of the firm, previous dividend payments and profitability (Harry DeAngelo, 2004). Firms with high debts pay less dividends. A study by (Asif, Rasool, & Kamal, 2011) found there is significant negative relationship between the dividends and the leverage. Study by the (Attiya, 2009) found that there is negative relationship between the size of the firm and dividend payments. According to the study the larger firms tend to invest into their projects rather than paying the dividends. Whereas another researcher (Eriotis, 2005) have found that the larger the firms have more access to the market and can raise funds to finance their investment projects and pay more and consistent dividends.

Researchers have consensus over the dividends payout to be an important tool in the estimation of the firm's financial health. However no more focus was given to the financial variables like return on assets, leverage, return on equity, firm size, earning per share and their relationship with the dividend payout ratio (Spaarkman, 1979). Dividend can be calculated by dividing the annual dividends per share with the annual earnings per shares. Moreover, recent studies show good deal of work is done over the individual factors affecting the dividend policy of the firm. As per (Arnott, 2003) the dividend payout fuels the earnings per share growth of the firm. According to (Javid, 2008) Pakistani firms rely on current earnings per share and past dividends while devising the dividend policy. Decision whether firms will pay dividends or not comes with the firm's profitability. Higher the profits higher are the chances that company will pay their dividends (Myers, 1984). According to (Kohli, 2011) the return on assets have direct and significant relation with the dividend payout of the firm. A study from Jordan found that the profitability is a key determinant of the dividend policy (Al-Malkawi, 2007).

Dividend Policy in Emerging and Developed Economies:

In a study by (Fama & French, 2001) they took Americans firms to see the ratio of the non-financial firms listed on the renowned American stock markets. They found that there are three features that affect the dividend decision of the American firms i.e. investment opportunities, firm size and profitability. Larger firms pay more dividends than the smaller ones. Firms with more investment opportunities tend to pay fewer dividend or no dividends at all. They also found that the newly listed firms that do not pay dividends are more profitable than the firms that are listed formerly and pay dividends.

In his study (Al-Kuwari, 2009) studies non-financial firms listed on the stock exchange of the GCC countries (Kuwait, Doha, Muscat, Saudi Arabia and Bahrain). He took government ownership, firm size, firm profitability and leverage to test on the dividend policy. The research found that the government ownership, firm's size and profitability have significant positive relationship with the dividend decisions whereas the leverage ratio is negatively related to the dividend payout decision.

Dividend behavior of the emerging markets is same as the US firms. In his study (Varouj Aivazian, 2003) investigated the data collected from the emerging markets with the sample of US firms to compare the results of the dividend decision. In this study the author compared the firms of the emerging markets i.e. Pakistan, Turkey, Thailand, India, Jordan, Zimbabwe, Malaysia and South Korea with that of the US firms and found that in both the profitability have significant impact on dividend payments. Return on assets are significantly positive relationship with the dividend payments whereas the debt ratio has negative relationship with the dividend payments.

In a study on listed non-financial firms in Nairobi Securities Exchange (NSE) (Maniagi et al, 2013) found that the return on equity, firm earnings and its growth activities are positively related to the dividend payments. The size of the firm and business risk taken as moderating variables have also shown significant impact in defining the variables.

Dividend Payout and Explanatory Variables:

As we look at the studies on dividends payout from last more than seven decades several researchers have presented their work and models devised. The crux of the studies is to find out whether or not the market value is affected by the firm's dividend policy. Initially the (Lintner, 1956) found through a series of interview of the managers of the American firms that the firms tend to keep a stable dividend policy so as to avoid uncertainty of the investors. This study was extended by (Eugene F. Fama, 1968) in which the authors introduced new variable earnings from previous period and found the model and found the results consistent with Lintner's model. The study by (Modigliani, 1961) discussed the dividend do not affect the market value of the firm. Literature is available for the variables affecting the dividend payout policy of a firm i.e. size, return on asset, return on equity, earnings per share and leverage. A study conducted by (Harry DeAngelo, 2004) concluded that there is positive relationship between dividend policy and leverage, return on assets, return on equity, firm size and past dividends. Asset growth being the important component of the firm's financial activities predicts the future returns of the firm depending upon the size. A study on banking dividend policy by (Ross N. Dickens, 2002) also concluded positive relationship between dividend payout and size of the firm.

There is strong significant evidence from large cap firms which show negative relationship between the assets growth and dividends payout of the firm. Higher return on assets is considered the key to the lowered retained earnings and high payout ratio. Large companies with higher earnings tend to pay more dividends to the shareholders in order to secure investor confidence (Cummin, 1957). Historical evidence suggests that higher retention rate (lower dividend payout) tends to increase the earnings growth of the firm. This view is supported by many researchers (Chen, 2003) (Gordon, 1959). In his study (Joseph E. Murphy, 1967) concluded that there is a lack of positive relationship between the dividends and future earnings to come. They are of the view that firm's retained earnings may be reinvested into the new projects to warranty future earnings growth. Some of researches are of the view that firm's growth and dividend payout have negative relationship. They argue that firm's should finance their activities through internal funds and pay little or no dividend at all (Al-Malkawi, 2007). As per (Grullon, 2002) the mature firm are likely to have less investment opportunities and do not retain their earnings. As they have fewer capital expenditures, they pay more dividends compared to the new firms which pay lower dividends or do not pay at all. However, there are contradictions in the researcher's findings where some of the studies disagree with them. For example (Arnott, 2003) holds that the lower payout ratio precedes the lower future earnings. It is observed that the retained earnings are invested into the less efficient projects with lower growth whereas higher dividend payout leads to the finance the carefully selected projects. (Ruland, 2006) also concluded a strong positive relationship between the current dividend payout and the future earnings growth. (Johnson, 2003) found that firms with big size are highly profitable and perform better compare to the smaller ones. Leverage growth is negatively related to the dividends payout of the firm. As the increased debt would put interest burden on the firm's earnings thereby less income will be available to the shareholders. Highly leverage firms are put to high risk and increased volatility and lower dividend payments by the firm (M.C., 1986) (Jensen, 1992) (Hashim Zameer, 2013). Debt has a positive correlation with the systematic risk.

Reduced systematic risk improves the equity of the firm (Gustavo Grullon, 2002). Firm size studied by (Mark, 1998) plays a significant role in determining the dividend policy of the firm. Large firms become less dependent on the internal earnings of the firm and pay more dividends and higher future earnings growth. Firms pay more dividends than their previous year dividend payments. The firm size, its earnings per share and sales growth are positively related to the to the dividend payout of the firm (Imran, 2011). Size of the firms in addition to the earnings of the firm play a significant role in the dividend policy decision. In his study (Eriotis, 2005) found that the firms with large firms size are independent and win more investor confidence than the small firms. Large firms also tend to pay more dividends than the smaller ones. Large firms have more funds available to pay the dividends and can raise funds for their investments easier than the smaller firms. Dividend payout by the firms were examined by the (Imran, 2011) for the Pakistani engineering sector. He found that the firm size is positively related to the dividend payout policy of the firms. A study by (Sajid Gul, 2012) on determinants of dividend policy on Pakistani Banking Sector is available. In this study authors have taken 18 listed banks and sample period from 2006-2011. They found that there is strong positive relationship between profitability, firm size and dividend payout whereas weak positive association between growth and dividend payout. Study also found an inverse relationship between risk, leverage and dividend payout.

Earnings Per Share (EPS) and Dividend Payments (DPR):

Earnings per share is a measure of company's share of income over the outstanding share capital. It can be calculated by dividing the company's earnings over the period by its outstanding share capital. While calculating earnings per share the weighted average of number of outstanding shares would be more accurate because the number of shares changes frequently with the time. Diluted earnings per shares is calculated after accounting for the convertible securities and stock options. Diluted earnings per share is always lower than the earning per share calculated on taking weighted average of capital stock. Dividend is an amount company pays to its shareholders for every share they hold. One of the reasons company pay dividend is Agency Cost, which is a conflict of interest between the managers of the company and the shareholders. There is a rationale that lower dividend payout retains earnings and there are ample chances of higher future earnings therefore the low dividend payout indicates higher earnings per share growth. According to (Ibbotson & Chen, 2003) higher dividend payout are the indicators of the lower growth. The studies have found that high current dividend payout correlates with the high earnings per share growth. There is a strong positive relationship between high dividend payout and earnings per share growth (Ruland, 2006). In a study (Fama & French, 2002) observed that the companies with higher investment opportunities pay lower dividend. In contrast with the conventional theories (Ruland, 2006) and (Arnott, 2003) investigated that fewer dividend payments does not guarantee higher future earnings growth. Results of this study are unconventional and give new sight to the traditional theories about the earnings per share growth and dividend payout. In their study (Fama & French, 2001) have also confirmed that the firms tend to pay more dividends when there are higher earnings and fewer when they have lesser earnings. Another study confirms the view by (Imran, 2011) on Pakistani engineering sector that the earning per share have positive relationship with the dividend payments of the firm.

H1: There is a significant association between Dividend Payout (DPR) and the Earning Per Share (EPS).

Financial Leverage (DER) and Dividend Payout (DPR):

Increased leverage means firm is financing its activities more through debt financing rather than equity. Firm's debt is negatively related to the dividends payout of the firm. Higher would be the debt burden the firm will have to pay more interest affecting the firm's earnings and less income will be available to the shareholders. The firms with high debt are put to high risk and increased volatility and lower dividend payments by the firm (M.C., 1986) (Jensen, 1992) (Hashim Zameer, 2013). Debt has a positive correlation with the systematic risk. Reduced systematic risk improves the equity of the firm (Gustavo Grullon, 2002).

H3: There is a significant relationship between the Leverage of the firm and the Dividend Payout (DPR) by the firm

Profitability (ROA & ROE) and Dividend Payout (DPR):

Return on assets and Return on equity are used as proxy for the profitability of the firm. Return on Assets is a ratio of company's earnings to its assets. The ratio explains the relationship of the assets and the earnings i.e. how much money a company earns for every asset they have. More profitable firms pay more dividends (Imran, 2011). The firm's profitability is positively related to the dividends payout. Risky firms pay less or no dividends at all. The firms if satisfied its short-term needs tend to pay more dividends and will increase payout ratio than last year payments (Fama & French, 2002). Return on equity is a handy tool in determining the profitability through effective utilization of the shareholders equity. Return on equity can be measured through DuPont formula where it is divided into three components by multiplication of each unit i.e. leverage, asset turnover and net profit margin. Higher the profits higher would be the return on equity. Higher asset turnover is also directly related to the increase in return on equity. Return on equity is widely used as an indicator to measure how firms device their dividend policy. Higher return on current equity shares is the predictor of the per earnings growth in the future to come (Joseph E. Murphy, 1967).

H4: There is a significant relationship between the Profitability of the firm and the Dividend Payout (DPR)

Determinants of Dividend Payout (DPR) in Pakistan:

This study discovers dividends of the dividend policy for the banking industry of Pakistan and stresses four key variables in devising the dividend policy decision. Researchers have concluded that the key variables of the dividend payout decision in developed markets such as US are similar to those in the emerging markets (Varouj Aivazian, 2003). However researchers from Pakistan have found agency cost, liquidity, owner structure and last year dividend payments as variables having significant impact on dividend payment of the Pakistani Banks. In contrast to the traditional studies, the results of the study by (Hashim Zameer, 2013) show no significant impact of the firm size and leverage on dividend payments by the Pakistani banks. Another research on the topic by the (Imran, 2011) on listed firms of engineering sector of Pakistan concluded that there is positive relationship of the dividend payout and last year dividend payment, earning per share of the firm, size of the firm, profitability and negative relationship with its cash flows.

Research Methodology:

Research Design:

Research design is a view that what the author means to achieve through his research. According to (Creswell, 2011) the research design is an amalgam of the research philosophy, research methods, the approach taken by the researcher and the research strategy he will follow.

Research Philosophy and Paradigm:

When researcher is defining his research philosophy, he basically defines the positions taken by him throughout the research period that he will take. The data in finance is usually the secondary data where we use epistemology as our philosophical approach that is the knowledge we will be getting through the rational thinking and our experience. In philosophical terms this is also called empiricism. In this study we will take post-positivism as our research paradigm. This research paradigm holds that ontological a separate being the research cannot be devoid of the researcher's personal experience (Ryan, 2006). Through post-positivism research paradigm we will use existing theory to test the analysis and test dividend payout determinants.

Research Approach:

The Research approach clears the way to explain the research design. It could be called to be the approach of the researcher to his research supported by the data collected (Bryman & Bell, 2011). Here we will be using deductive approach to the research because we have secondary data from the financial statements of the listed Pakistani banks and state bank online library. The research is deductive because we will use existing knowledge available and try to generalize it for the Pakistani banking industry from where the data has been collected.

Research Type:

We will use quantitative research method for our research as (Saunders, 2011) elaborates that through research questions we can identify whether the research is qualitative or quantitative. In this study we will use pure quantitative research as we will be working on the secondary data and as defined by our research questions. The impact of the independent variables on dividend payout will be examined through quantitative research techniques. Quantitative data will be taken from the websites of the concerned banks and from the website of the state bank.

Research Strategy:

The research strategy is how we answer our research questions through a thorough investigation of the data variables at hand. Seven research strategies are defined by the (Saunders, 2011), which are based on how we collect and examine the data. These comprise Case Study, Ethnography, Grounded theory, Experiment, Survey, Action Research and Archival Data research. We will take the secondary data from archives of the concerned banks websites so here we will be taking the archival data research.

Data Collection Methods and Sources:

In our research we will take archive data from the websites of the banks concerned for research and use quantitative data techniques to analyze the data. However we will be using the proxies of the some of the variables. This study is an analysis of dividend policy and its determinants for the Pakistani banking sector. The secondary data would be collected from websites of the concerned banks, Pakistan Stock Exchange, Security and Exchange Commission of Pakistan website and SBP website. The banks will be selected as dividend paying bank which at least had paid two dividends during the sample period (Sajid Gul, 2012).

Variables and Data:

The research will be conducted through panel data with monthly frequency of last 5 years from July-2010 to June-2015. The impact of independent variables like earning per share, size of the firm, leverage and profitability will be checked on the depended variable which is dividend payout through quantitative data analysis techniques. We will use E-Views to process the data and analyze the data by using random effect model. Websites of the banks, state bank websites and Pakistan Stock Exchange website will be used as the data sources.

The variables used in the above equation have been explained in the following Table: 1.

Table: 1 Description of the variables

Variables	Description
DPR	Dividend payout; dependent Variable
DER	Leverage; measured by debt to equity ratio
ROE	Return on Equity; measure of the profitability
ROA	Return on Assets; measure of the profitability
EPS	Earnings Per Share

Data and Sources of Data:

We will be using panel data from various reliable sources for our analysis so that we can get accurate estimates. The proxies of the variables will be used according to the past studies available. The variables are profitability, leverage, firm size and earning per share.

We will use total assets as the proxy of the firm size (Mark, 1998). For leverage we will be using debt to equity ratio as proxy (Sajid Gul, 2012). Return on Assets and Return on Equity are used as proxy of profitability (Hashim Zameer, 2013).

We have the stated variables affecting the dividend policy of the banks. We will use EVIEWS software for the analysis.

Theoretical Framework:

In this section we will discuss the explanatory variables of the dividend policy for the banking industry of Pakistan. Firm size, earning per share, profitability and leverage are used as explanatory variables of the dividend policy. The research conducted based on theoretical underpinning of model of dividend policy developed by (Fama & French, 2001). The change growth measured through the total assets, where the profitability measured as increase in total sales and return on assets, and return on equity. In the study (Chen et al., 2005) explains the next exploratory variable is leverage which determine the total debt divided by total equity risk of the

firm determine by firms beta. Return on assets and return on equity are used as proxies of the profitability of the firm. For the leverage; we have the ratio of the total debt to total equity of the firm.

Conceptual Framework:

The study use for the analysis and testing the model of (Lintner, 1956). We have incorporated the set of variables in the Lintner's model that influence the dividend policy of the banks as was extended by (Vasiliou & Eriotis, 2003). It shows the impact of various variables, earning per share, profitability and leverage in this case, on dividend policy. The study is an extended form of the studies by the (Hashim Zameer, 2013) and (Sajid Gul, 2012) where the authors see relationship of the determinants on the dividend policy. Here we have added another variable earning per share to see if there is significant relationship between the earning per share and dividend payout policy. Study by (Ruland, 2006); (Imran, 2011)supports the argument

Figure 1: Theoretical Framework
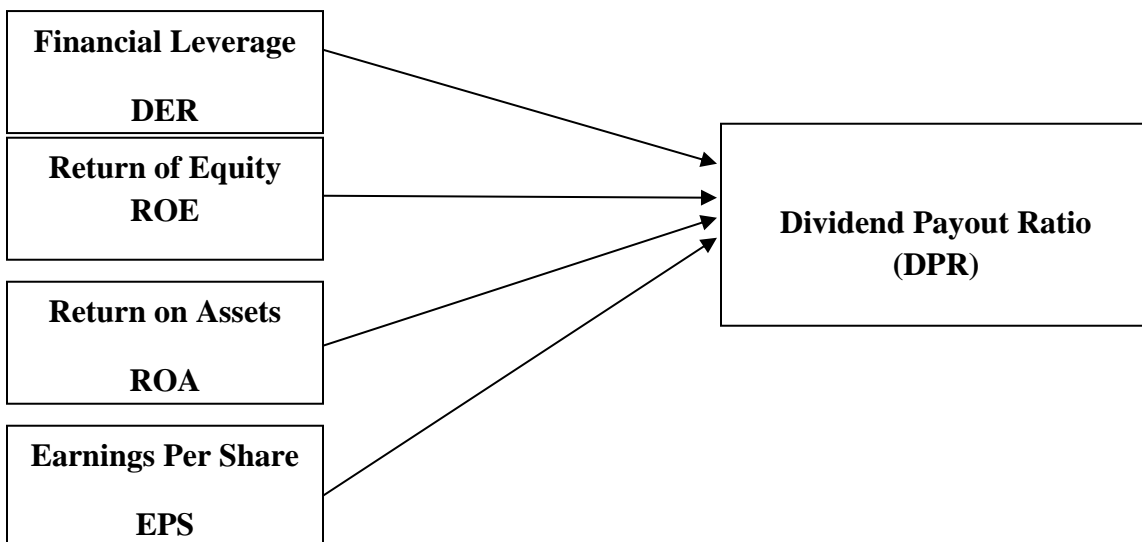
Hypothesis:

As per literature available following hypothesis will be tested during the study:

H1:   Return on Assets (ROA) have significant impact on dividend payout (DPR) of the banks.
H2:   Return on Equity (ROE) have significant impact on dividend payout (DPR) of the banks.
H3:   Earnings per share (EPS) have significant impact on dividend payout (DPR) of the banks.
H4:   Leverage has significant impact on dividend payout (DPR) of the banks.

Econometric Model:

The panel data techniques will be used to estimate the variables due to the nature of data available.

We will run descriptive statistic first to see the mean, mode, standard deviation (variance) and kurtosis in the data.

To check the data is valid and reliable we will run different validity tests described as under:

- We will check whether the data is stationary or not through applying the Im-Pearson-Shin (IPS) test. Null hypothesis is that the data is no stationary. If we fail to reject null hypothesis, then the series contains unit root and we will remove it through first difference and second difference to make the data stationary.
- Then we will run Durbin Watson test to check the autocorrelation problem among the residuals.
- After which the Pearson correlation test to test the relationship among the variables.
- Then we will run the panel regression. We will check to see whether we will go for the fixed effect or random effect model. In software we will put the variables in the equation and will estimate them by running random effect model. After running the test, we will apply Hausman Specification Test. Chi-square value will determine whether we will apply Fixed Effect Model or go for the Random Effect Model. We will see the chi-square value of Hausman test. If the value will be less than 0.05 we will go for the Fixed Effect Model and if the value is above 0.05 then we will stay with the Random Effect Model. Hausman test checks the relationship of the variables and the residuals. If there is a relationship between the two the fixed effect model if not, the random effect model is used.

After running all validity tests the OLS multiple regression will be run to test the hypothesis.

The general form of bivariate data model can be written as

$$Yit = \alpha_{it} + \beta Xit + u_{it}$$

(1)

Where the left-hand side of the equation Y shows dependent variable and right hand side of the equation represents the independent variable X. U is the error term, the i shows cross

sectional dimension of the data and t shows the times series dimension of the data. Following model have been derived from the above equation on the basis of the selected variables.

$$\text{DPR} = \alpha_i + \beta 1 \text{DER} + \beta 2 \text{ROE} + \beta 3 \text{ROA} + \beta 4 \text{EPS} + u_{it} \qquad (2)$$

Empirical Analysis:

In this study we want to see the impact of earning per share, profitability and leverage on dividend payout ratio. So we have collected the annual panel data of Pakistani listed banks for sixteen years from (starting July 2001 to June 2016) to check the impact on variables. The study is influenced by the conceptual framework given in the Lintner's Model in 1956 which was extended by (Vasiliou & Eriotis, 2003). In this study we want to see the relationship of the ratios i.e. dividend payout as dependent and earning per share ratio, return on equity ratio, return on assets ratio and debt to earnings ratio.

Figure 1: DPR of Different Banks
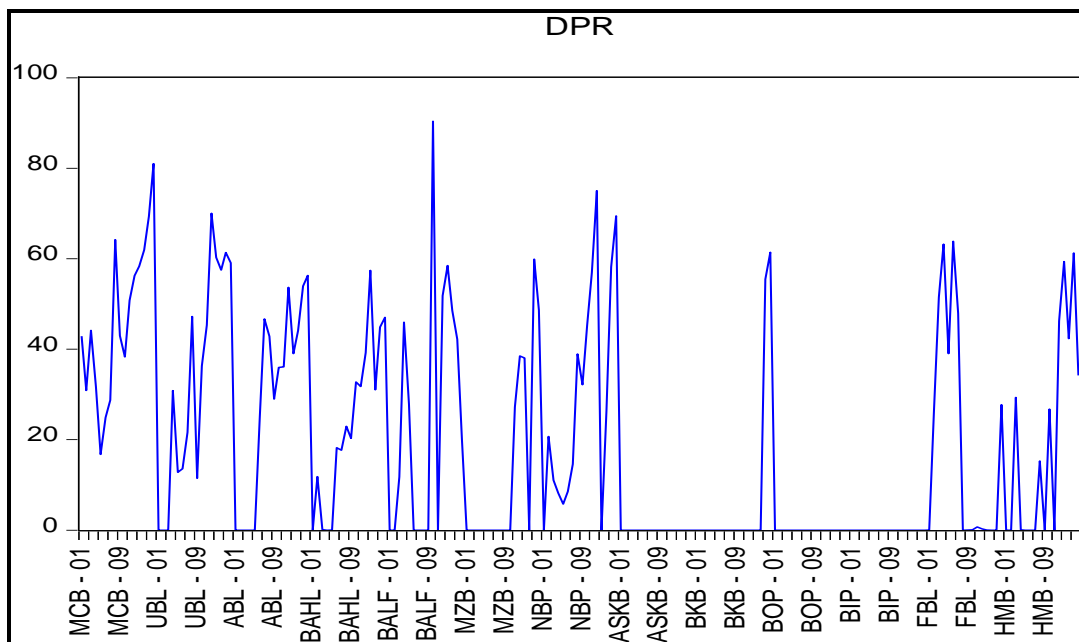
Above given graph shows the variation in dividend payout ratio by the Pakistani listed banks paid over the years. The data has been collected from the Thomson Reuters Data Bank from 2001 to 2016. The data has been checked for the normality for the dividend payout ratio variations.

Test of Stationary of Data:

Data has been collected from Thomson Reuters and we have found the data stationary. The data was tested for the shock and variations of the variables. The data was on annual basis for sixteen years from 2001 to 2016. Unit root test was checked by running the ADF (Augmented Dicky Fuller at level at level) test. If the data is not stationary it creates problems in the analysis of the data and ultimately unsatisfactory results. The impact on independent variables on dependent variables when there is a problem of data stationarity. The regression run on non-stationary data will give incorrect results, so it is necessary to check the data series. While running

unit root test we take null hypothesis that there is no unit root in the data of the variable under observation.

Ho = There is no unit root in the data series (data is stationary).

Table 2: Unit root test ADF

Variable	Compound t-statistics I (0)	Critical value of t at 5%	Decision of Null Hypothesis	Computed t-statistics I (1)	Decision of Hypothesis
EPS	-5.69	-2.88	Accepted	-12.49	Accepted
ROA	-6.25	-2.88	Accepted	-15.94	Accepted
ROE	-13.88	-2.88	Accepted	-10.77	Accepted
DER	-6.91	-2.88	Accepted	-11.28	Accepted
DPR	-7.16	-2.88	Accepted	-14.01	Accepted

Above table shows that the data is stationary and because there is no unit root in the data the null hypothesis is accepted. At level none of the variable has the unit root in the data series. Even we had our null hypothesis accepted at level the statistics have also been shown for the 1st level verification of the unit root. So we can go for the next step of running our analysis with the data we have.

Correlation Matrix:

Table 3: Correlation Matrix of variables for Pakistani Banks

Correlations		Earnings Per Share	Return on Assets	Return of Equity	Debt to Earning Ratio	Dividend Payout Ratio
Earnings Per Share	Pearson Correlation	1	.640**	.274**	.108	.613**
	Sig. (2-tailed)		.000	.000	.119	.000
	N	209	209	209	209	209
Return on Assets	Pearson Correlation	.640**	1	.366**	.168*	.463**
	Sig. (2-tailed)	.000		.000	.015	.000
	N	209	209	209	209	209
Return of Equity	Pearson Correlation	.274**	.366**	1	.249**	.076
	Sig. (2-tailed)	.000	.000		.000	.275
	N	209	209	209	209	209
Debt to Earning Ratio	Pearson Correlation	.108	.168*	.249**	1	.225**
	Sig. (2-tailed)	.119	.015	.000		.001
	N	209	209	209	209	209
Dividend Payout Ratio	Pearson Correlation	.613**	.463**	.076	.225**	1
	Sig. (2-tailed)	**.000**	**.000**	**.275**	**.001**	
	N	209	209	209	209	209
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

In the table above there are statistics for the correlation illustrating the association between independent and dependent variables.

At 95% confidence interval the tables show there is strong positive relationship between the dividend payout ratio and earning per share, return on assets and debt to equity ratio. While figure for return on equity shows that there is no significant relationship between the return on equity and dividend payout ratio.

Hypothesis Testing – Correlation Hypothesis:

Table 4: Alternative Hypothesis

Alternative Hypothesis	Accepted / Rejected	Significant level (0.05 at two tailed)
H1: There is significant relationship of Earning Per Share of Banks on Dividend Payout Ratio.	**Accepted**	**0.00**
H1: There is significant relationship of Return of Asset of Banks on Dividend Payout Ratio.	**Accepted**	**0.00**
H1: There is significant relationship of Return of Equity of Banks on Dividend Payout Ratio.	**Rejected**	**0.275**
H1: There is significant relationship of Debt to Earning Ratio of Banks on Dividend Payout Ratio.	**Accepted**	**0.00**

H1: There is a significant positive relationship between the earning per share (EPS) and dividend payout ratio (DPR) of the Pakistani listed banks. Hence hypothesis has been accepted at significance level 0.00 with 95% confidence interval.

H1: There is a significant positive relationship between the return on assets (ROA) and dividend payout ratio (DPR) of the Pakistani listed banks. Hence hypothesis has been accepted at significance level 0.00 with 95% confidence interval.

H1: There is no significant relationship between the return on equity (ROE) and dividend payout ratio (DPR) of the Pakistani listed banks. Hence hypothesis has been rejected at significance level 0.00 with 95% confidence interval.

H1: There is a significant positive relationship between the debt to equity ratio (DER) and dividend payout ratio (DPR) of the Pakistani listed banks. Hence hypothesis has been accepted at significance level 0.00 with 95% confidence interval.

Models Analysis-1:

Model 1: Hausman Test:

Hausman test sometimes called Hausman Specification test is run to detect the endogenous regressors in the model. Because if we have endogenous variables in our model it would affect the results of the model. For removing the expected error to confirm that there is no relationship between the predictors and the error term. Hausman test helps identify which model is better to run between the random effect model and the fixed effect model. In our data the Hausman test results are shown in the Table 5.

Table 5: Regression Predictive Power of the Model

Correlation Random Effects- Hausman Test				
Equation: Untitled				
Test period random effects				
Test Summary	**Chi-Sq. Statistics**	**Chi-Sq. d.f.**	**Prob.**	
Period random	20.974060	4	0.0003	
Period random effects test comparisons:				
Variables	Fixed	Random	Var(Diff.)	Prob.
EPS	1.552356	2.149590	0.019120	0.0000
ROA	4.983921	2.972835	0.262935	0.0001
ROE	-0.017472	-0.015867	0.000002	0.2353
DER	0.030801	0.031169	0.000004	0.8489

Null Hypothesis is that there is no relationship between the regressors and the error term. We will go for the random effect model (REM) if we accept the null hypothesis. But in our case we reject null hypothesis and we will go for the fixed effect model (FEM). As the p value is less than 0.05.

Models Analysis-2:

Model: Results of Fixed Effect Model:

The fixed effect model (FEM) captures the individual effect of the predictors on the dependent variable. In above results the variables are efficiently determining their relationship with the dividend payout ratio. Earnings per share is the most effective variable in the model. In the model high robustness is found to describe the relationship of the variables.

Table 6: Fixed Effect Model

Variable	Co-efficient (B)	t-statistics	Probability
C	5.004270	2.658862	0.0085
EPS	1.552356	5.042722	0.0000
ROA	4.983921	3.677078	0.0003
ROE	-0.017472	-3.376138	0.0009
DER	0.030801	3.394246	0.0008

Table 7: Model Summery Pakistan Listed Banks

Statistics	Values
R Square	0.525
Adjusted R2	0.477
Hanan Quien criterion	8.71
F-Statistics	10.94
Probability of F-Statistics	0.00
Husman Chi Square	21.92
Husman Significance Value	0.0002

The figure of R square is 0.525 for variables chosen for the listed Pakistani banks in Pakistan which means that the model is significant the relationship of the dividend payout ratio with the selected variables can be predicted from the variables and the figure for F statistics is

10.94 significant at 0.00 level of significance. The model is significant and variables can predict the dividend payout ratio of the listed Pakistani Banks.

Table 8: Alternative Hypothesis

Alternative Hypothesis	Accepted / Rejected	t-value (95% C.I)	Significant level (0.05 at two tailed)
H1: There is significant Impact of Earning Per Share of Banks on Dividend Payout Ratio.	Accepted	5.04	0.000
H1: There is significant Impact of Return of Asset of Banks on Dividend Payout Ratio.	Accepted	3.06	0.00
H1: There is significant Impact of Return of Equity of Banks on Dividend Payout Ratio.	Accepted	-3.3	0.003
H1: There is significant Impact of Debt to Earning Ratio of Banks on Dividend Payout Ratio.	Accepted	3.39	0.002

H1: There is significant Impact of Earning Per Share (EPS) of Banks on Dividend Payout Ratio and we accept the hypothesis at t 5.04 and P 0.00.

H2: There is significant Impact of Return of Asset (ROA) of Banks on Dividend Payout Ratio (DPR) of Pakistani Listed Banks and we accept the hypothesis at t 3.06 and P 0.00.

H3: There is significant Impact of Return of Equity of Banks (ROE) on Dividend Payout Ratio and we accept the hypothesis.

H4: There is significant Impact of Debt to Earning Ratio (DER) of Banks on Dividend Payout Ratio (DPR) of the listed Pakistani Banks. We will accept the hypothesis at t 3.39 and 9 0.002.

Conclusion:

This study measures the relationship of the earning per share, leverage and profitability on dividend payout ratio. There are multiple factors play role in defining the dividend payout of the Pakistani listed banks, but our results suggest that the earning per share, return on assets and financial leverage have a significant impact on the dividend payout of the banks. Our study was limited to the listed banks for the period from 2001 to 2016, we had selected 13 dividend paying banks to be included in our study. Alike ROA, EPS and DER the ROE has significant negative relationship with the dividend payout ratio. This suggest that we can use the earnings of the banks to predict the dividend payout policy. Whereas financial leverage can also be used efficiently to predict the dividend policy of the banks. Our research is in accordance with the available research. Higher values of the earnings mean higher the dividends banks pay. For the banks with lower profitability pay lesser dividends.

In this research the impact of EPS, DER, ROA and ROE was checked on dividend payout ratio (DPR) by running econometric models. We had checked the impact of the variables by estimating the data through fixed effect model. All the required tests were run to check the data

normality, heteroscedasticity, multicollinearity and autocorrelation to meet the basic OLS assumptions. The robustness check of the model showed significant results. The regression table shows significant t statistics at 95% confidence interval. The t statistics show that the ROA, EPS and DER have strong significant positive relationship with the dividend payout ratio (DPR) while ROE have significant negative relationship with the dividend payout ratio (DPR).

Research Implications:

This study predicts the dividend payout ratio of the Pakistani listed banks by using the earning per share, financial leverage and banking profitability. Earnings per share and banking profitability finds to have a significant impact on the dividend policy of the listed banks. Financial leverage is also a good indicator of the dividend policy of the banks. These ratios found to be a good predictor to understand how banks pay dividends. The research is beneficial to the shareholders and the investor to measure the dividend behavior of the banks and evaluate investment decision accordingly.

References

Abdul Raheman, T. A. (2010). Working Capital Management and Corporate Performance of Manufacturing Sector in Pakistan. *International Research Journal of Finance and Economics*, Issue 47.

Al-Kuwari, D. (2009). Determinants of Dividends in emerging stock exchanges: The Case of GCC countries. *Global Economy and Finance Journal*, 38-63.

Al-Malkawi, H. (2007). Determinants of Corporate Dividend Policy in Jordan An applicaiton of Tobit Model. *Journal of Economic and Administrative Sciences*.

Arnott. (2003). Surprise Higher dividends earning growth. *Financial Analysts Journal*.

Asif, A., Rasool, W., & Kamal, Y. (2011). Impact of financial leverage on dividend policy: Emperical Evidence from Karachi Stock Exchange Listed companies. *Aferican Journal of Business Management*, 5(4), 1312-1324.

Asness, R. D. (January/February 2003). Surprise! Higher Dividends = Higher Earnings Growth. *Financial Analysts Journal*.

Attiya, A. H. (2009). The Determinants of dividend policy in Pakistan. *International Research Journal of Economics and Finance*.

Bryman, A., & Bell, E. (2011). *Business Research Methods.* Malmö: Liber AB.

Chen et al. (2005). Ownership Concentration, Firm Performance and Dividend Policy in Hong Kong. *Pacific-Basin Finance Journal*, 13(4), 431-449.

Chen, I. a. (2003).

Creswell, J. (2011). Controversies in Mixed Methods Research. *The sage handbook of Qualitative Research*, 4, 269-284.

Cummin, R. (1957). The Mechanics of Corporate Growth. *The Analysts Journal*.

Eriotis, N. (2005). The Effect Of Distributed Earnings And Size Of The Firm To Its Dividend Policy: Some Greek Data. *International Business & Economics Journal*.

Eugene F. Fama, H. B. (1968). Dividend Policy: An Emperical Analysis. *Journal of American Statistical Association*.

Fama, E., & French, K. (2001). Disappearing Dividends: Chaning firm characteristics or lower propensity to pay? *Journal of Financial Economics*, 60(1), 3-43.

Fama, E., & French, K. (2002). Testing trade-off and pecking order predictions about dividends and debt. *The review of Financial Studies*, 15(1), 1-33.

French, F. a. (2002).

Gordon, M. J. (1959). Dividends, Earnings, and Stock Prices. *The Review of Economics and Statistics*, pp. 99-105, Vol. 41, No. 2, Part 1.

Grullon, G. R. (2002). Are Dividend Changes A sign of Firm Maturity. *The Jounal of Business*, 387-424.

Gustavo Grullon, R. M. (2002). Are Dividend Changes a Sign of Firm Maturity? *Journal of Business*, vol. 75, no. 3.

H.H., A. M. (2010). Reaction of stock prices to dividend announcements and market efficiency in Pakistan. *The Lahore Journal of Economics*.

Harry DeAngelo, L. D. (2004). Are Dividends Disappearing? Dividend Concentration and the Consolidation of Earnings. *Juornal of Financial Economics*.

Hashim Zameer, S. R. (2013). Determinants of Dividend Policy: A Case of Banking Sector in Pakistan. *Middle-East Journal of Scientific Research*, 410-424.

Ibbotson, R., & Chen, P. (2003). Long-Run Stock Return: Participating in the Real Economy. *Financial Analyst Journal*, 88.

Imran, K. (2011). Determinants of Dividend Payout Policy: A Case of Pakistani Engineering Sector. *Romanian Economic Journal*.

James A. Ohlson, B. E.-N. (August 2000). Expected EPS and EPS Growth as Determinants of Value.

Javid, H. A. (2008). The determinants of dividend policy in Pakistan. *Munich Personal RePEc Archive*.

Jensen, G. D. (1992). Simultaneous determination of insider ownership, debt and dividend policies. *Journal of Financial and Quantitative Analysis*.

John R. Graham, C. R. (June 2004). THE ECONOMIC IMPLICATIONS OF CORPORATE FINANCIAL REPORTING. *NATIONAL BUREAU OF ECONOMIC RESEARCH*.

Johnson, R. &. (2003). Indicator of successful companies. *European Management Journal*.

Joseph E. Murphy, J. (1967). Return on Equity Capital, Dividend Payout and Growth of Earnings per Share. *Financial Analysts Journal*, 91-93.

Kohli, H. S. (2011). *Asia 2050: realizing the Asian century.* . SAGE Publications India.

KR, F. E. (2002). Testing trade-off and pecking order predictions about dividends and debt. *The Review of Financial Studies*, 15(1), 1-33.

Lintner. (1956). Distribution of Incomes of Corporations among Dividends, Retained Earnings, and Taxes. *American Economic Review*.

M Gordon, J. L. (1956). Distribution of Income of Corporations Among Dividend, Retained Earning and Taxes. *The American Economic Review*.

Maniagi et al. (2013). Determinants Of Dividend Payout Policy Among Non-Financial Firms On Nairobi Securities Exchange, Kenya. *INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH*.

Mark, E. H. (1998). Dividend Policy Determinants: An Investigation of the Influences of stockholders. *Theory Financial Management*.

MC, J. (1986). Agency Cost of Free Cash Flow, Corporate Finance and Takeovers. *American Economic Review*.

Mehr-un-Nisa, M. N. (2011). The Determinants of Stock Prices in Pakistan. *Asian Economic and Financial Review*, Vol.1, No.4, pp.276-291.

Mian Sajid Nazir, T. A. (January 2009). Working Capital Requirements and the Determining Factors in Pakistan. *Government Sadiq College Women University*.

MICHAEL J. COOPER, H. G. (2008). Asset Growth and the Cross-Section. *THE JOURNAL OF FINANCE*, VOL. LXIII, NO. 4.

Modigliani, M. H. (1961). Dividend Policy, Growth, and the Valuation of Shares. *The Journal of Business*, pp. 411-433, Vol. 34, No. 4.

Myers, S. C. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics,* , 13(2), 187-221.

P Kotler, N. R. (2002). *Social Marketing:Improving the quality of life.* Sage.

Ross N. Dickens, K. M. (2002). Bank Dividend Policy: Explanatory Factors. *Journal of Business and Economics*.

Ruland, P. Z. (2006). Dividend Payout and Future Earnings Growth . *Financial Analysts Journal*, 58-69.

Ryan, A. (2006). Post-Positivist Appraoches to Research, Researching and and Writing your Thesis: A Guide for postgraduate students. 12-26.

Sajid Gul, S. M. (2012). The Determinants of Corporate Dividend Policy: An Investigation of Pakistani Banking Industry. *European Journal of Business and Management*.

Saunders, M. (2011). *Research Methods fir Business Students 5/e.* Pearson Education India.

Shlomo Benartzi, R. M. (Jul., 1997). Do Changes in Dividends Signal the Future or the Past? *The Journal of Finance*, Vol. 52, No. 3, pp. 1007-1034.

Spaarkman, G. P. (1979). The sensitvity of earnings per share growth to some of its financial components. *Financial Management*, 41-46.

Taani, K. (2011). THE EFFECT OF FINANCIAL RATIOS, FIRM SIZE AND CASH FLOWS ON EPS. *INTERNATIONAL JOURNAL OF SOCIAL SCIENCES AND HUMANITY STUDIES*.

Varouj Aivazian, L. B. (2003). Do Emerging Market Firms Follow Different Dividend Policies from U.S Firms? *Journal of Financial Research*.

Vasiliou, D., & Eriotis, E. (2003). The link between dividend policy and Corporate Leverage: An Empirical Analysis of the Greek Market.

Whittington, A. S. (Jan1975). The Size and Growth of Firms. *The Review of Economic Studies*, Vol. 42, No. 1, pp. 15-26.