Determinants of Firm Performance: A Conceptual Analysis

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Abstract

What could be the sources of variation in firm performance have led a number of empirical studies in economics, strategy and corporate finance which investigate the impact of various factors on different measures of firm performance. The objective of this study is to review the factors which are considered as determinants of firm performance in empirical researches of these streams. In addition performances measures are also discussed. This issue is of immense value because resources are limited in supply and stakeholders interests used to be at risk. Optimum utilization of resources and appropriate strategy can make a company outperformer and a country prosperous.

Keywords: Determinants, Macroeconomic Variables, Factors In Strategy, Firm Factors

Introduction

Businesses are always important and such are their determinants. Every country tries to create a convenient environment for businesses to run. However it has been found that some industries are more flourishing than others. Even within an industry there is much diversity. Few firms used to be outperformers while other being laggard. This heterogeneity has led several studies to come out with various determinants. As Goddard et al. (2005) have expressed that identification of the sources of variation in firm-level profitability is an important research theme in economics, strategic management and accounting and finance.

The literature on factors affecting firm's value is broadly classified into two categories. The first is traditional micro economics and industrial economics view in which industry structure and size are the most important determinants of firm's profitability. In strategy, this is best represented by Porter's (1980) five forces model (Galbreath and Galvin, 2008). The traditional Structure–Conduct–Performance approach focuses on industry characteristics such as concentration, economies of scale and entry and exit barriers (representation of size), Goddard et al. (2005). According to SCP approach this is industry structure which determines the conduct of management which in turn determines the performance of the firm. The second is resource based view which states that firm specific management capabilities and practices determine the performance of firms. This view is similar to corporate finance literature in the respect that it gives importance to firm specific factors, but the factors used in resource based approach are much different to that of

corporate finance literature. But, both these approaches have ignored the macroeconomic variables which are discussed extensively as very important in determining stock return and firm performance. The paper aims to shed some light on various macro economic factors, industry and firm specific factors used by strategists and factors used in corporate finance. The paper is divided in four parts. Part 2 discusses about macro economic variables, factors studied in strategy and corporate finance and part 3 discusses various performance measures used in these studies briefly, part 4 has discussion and arguments about these factors and part 5 concludes.

Determinants of firm performance

Substantial empirical literature is available that has sought to ascertain the determinants of firm performance. One section is of macro economists who believe that systematic factors affect firm performance however they also accept that the effect is not direct. As Chen, Roll and Ross (1986) have expressed that such variable would have no direct effect on current cash flows but does describe the changing investment opportunity set. The focus of this segment is to find out the relation between state variables and stock returns. Second group is of strategists who are divided into two groups. One group who is inspired by classists believes that industry structure and size of firm play dominant role in explaining the profitability of the firm (SCP approach). The second group is of those strategists who believe that firms internal resources and its management has prominent role in its success or failure (resource based view). There is vast debate on relative importance of industry factors and firm factors. Similar to the second group of strategists, finance

literature also consider firm level factors important, however treatment of factors and techniques of analysis differ a lot in these two streams.

Macroeconomic variables

In classical economics, industry holds a dominant position and firms used to be similar except their size in long run. They are not much concern about either the macroeconomic variables or the other firm- specific factors that could possibly affect performance of firm. However, a branch of economics that was trying to formalize the relationship between risk and return identified two types of risks, 1) Systematic and 2) Unsystematic which affects stock return. In his seminal work on capital assets pricing, Sharpe (1964) articulated that it is systematic risk which can't be avoided and only the responsiveness of an asset's rate of return to the level of economic activity is relevant in assessing its risk. It can be measured by a single coefficient and only this portion of risk is paid. In 1976 Ross argued that it not only one factor that is efficient portfolio return as explained by Sharpe which determines a stock return and introduced APT model. In 1980, Roll and Ross theoretically proved that there are four factors which are priced by market. In 1986, Chen, Roll and Ross introduced four macroeconomic (state) variables in support of APT model which systematically affect stock returns: the spread between long and short interest rates, expected and unexpected inflation, industrial production, and the spread between high- and low-grade bonds. Very similar to the idea of Chen, Roll and Ross, there took place a number of studies in search of a relationship between stock return and macroeconomic variables. Few among those studies are as follows:

Table1. Macro economic variables

S.N.	Authors	Year	Performance measure	Determinants
1	Chen, Roll and Ross	1986	Individual stock returns	IP, UI and DEI, UTS, PREM
2	Poon and Taylor	1991	Return on stock	IP, UI, DEI, UTS, PREM, no factor was significant
4	He and Ng	1994	Return on individual stock	IP, UI, DEI, UTS, PREM, B/M, Size, Market return
5	Chen et al	1998	Return on Equity real estate investment trusts	Market index, Size, B/M, UI, CEI, UTS, UPR
6	James Macdonald	1999	Ratio of profit to sales	Capital intensity, Firm's market share, Union density, Import intensity, Wage inflation and Market concentration, Unemployment rate, Real wage inflation
7	Driemieir et al	2006	Total factor productivity, investment rate, sales growth rate	Foreign and domestic ownership, Regulatory burden, Corruption, Technological infrastructure, Labor market flexibility
8	Rehman et al	2011	Malaysian stock index	Money supply, Interest rate, Exchange rate, Reserves and Industrial production
9	Fadzlan Sufian	2011	Profitability of banks through ROA and ROE	GDP, Rate of inflation, CR3, Ratio of stock market capitalization to GDP, Dummy for economic crisis
10	Kumar and Padhi	2012	BSE Sensex	IIP, WPI, Money supply, Treasury bill rate, Exchange rate,
11	Samveg Patel	2012	BSE Sensex, CNX Nifty	Interest rate, CPI, Exchange rate, Money supply, IIP, Gold price, Silver price, Oil price

However Poon and Taylor (1991) found no significant relation between the same macroeconomic variables used by Chen, Roll and Ross and stock return in their study of UK. In 1993 Fama and French argued that two empirically determined variables, size and book-to-market equity, do a good job explaining the cross-section of average returns on NYSE, Amex, and NASDAQ stocks for the 1963-1990 period. They argued that term and default risk which are most significant in CRR study are too small to explain much variation in the cross section of average stock return. He and Ng (1999) also found that size and BE/ME have explanatory power but they are not able to sufficiently substitute the CRR factors, although when size, BE/ME and market factor was included with CRR factors in regression, all the CRR factors became insignificant. Later on many studies have been conducted on the same line using different performance measures and some subtraction and addition to CRR factors. But, CRR factors like industrial production, interest rate, term structure remains important in such studies. In addition factors like money supply, gold price, silver price, oil price, exchange rate, GDP etc are given due importance in such studies.

Factors used in Strategy Researches

Strategic literature has emphasized the role of firm's internal factors, although they have paid much attention to industry factors also. A major discussion in strategy is about the relative importance of industry and firm specific factors in determining the profitability of firm. Starting from Schmalensee (1985), who shown using 1975 data from the Line of Business program of the U.S. Federal Trade Commission (FTC), that 75% variation in firm profitability is due to industry effects, while firm and market share effects are negligible, the debate took a fresh beginning. The biggest weakness of Schmalensee was that his data was able to explain only 20% of total profitability of firm, rest was undecided. Rumelt (1991) analysed this theme using variance decomposition method with 1974-1977 data and found that firms' effects are the strongest and his data was able to explain around 63.1% of the profitability. Similarly Mcganan and Porter (1997) found firm effect to be more prominent, but they argued that Industry effects account for a smaller portion of profit variance in manufacturing but in service sector it is more pronounced. In a very comprehensive analysis using data of 10 years and performance measures as EVA and TMV Hawawini et. al found that there are few outperformers and few laggard in every industry and due their presence firm heterogeneity seems to explain much of the variation in firms performance. In general, for a majority of the industry's firms, when the industry's outliers (leaders and losers) are removed, industry effects seem to dominate firm effects in explaining the variation in performance.

Table 2. Determinants: Strategy Researches

1	Richard Schmalensee	1985	Operating income to total assets ratio	Dummy for industry effect, market share of the firm
2	Hensen and Wernerfelt	1989	5- year average return on assets	Organisational Factors - HRM EMPH. Goal EMPH. Industry factor- Industry profit, Firm specific factors- Market share of the firm (CR4), Size
3	Richard P. Rumelt	1991	PBIT/TA	Avg. profit, Industry, Firm, Year (macro economic factors), Interaction of industry and year effects (all measured through dummies)
4	McGagan and Porter	1997	Operating Income/TA	Avg. profit, D ifference between Avg. profit a nd Avg. profit of the segment, Indus try, Corporate parent and S egment effects (through dummy)
5	Hawawini et. al	2003	Economic profit/capital employed (EP/CE), TMV/CE	Avg. profit, I ndustry, Year (macro economic factors), Interaction of industry and Y ear effects, F irm effect (all measured through dummies)

6	Caloghirou et. al	2004	Subjective profitability	Marketing assets, Financial assets, R econfiguration an d transformation capabilities, Concentration ratio and Industry growth
7	Goddard et. al	2005	ROA	Size, Market share, Gear, Liquidity
8	Jeremy Galbreath, Peter Galvin	2008	sales turnover, market share, and profitability	Size, Age, Firm specific factors- Intangible assets, Capabilities, Industry structure - Entry, BPOW, Substitutes,
9	Short et. al	2009	Total sales, sales growth, survival	Size(ln of employees), N ew venture funding, 5 digit industry classification

The basic characteristic of these studies are that they have tried to combine both industry as well as firm factors, but they have used dummies to analyze most of the factors instead of raw data. Secondly, the results obtained vary a lot in whether it is overall explanatory power or magnitudes of coefficients, a fact that may be attributed to different samples, time, treatment of performance measures, and econometric specification employed. Lastly, these studies in the firm-industry structure stream do not reveal which resources or industry structure variables actually explain performance variation, (Galbreath and Galvin, 2008).

However, following studies have tried to get rid of these limitations. Goddard et.al, using raw data of five European countries – Belgium, France, Italy, Spain and the UK have shown that abnormal profits may persist year after year. This implies that industry forces are not sufficient to wipe out all abnormal profits, due to their own resources; firms are able to earn extra profits. They have found that gear ratio and liquidity have strategic importance in determining firm's performance especially in volatile competitive environment. Similarly, Galbreath and Galvin (2008), Caloghirou et. al (2005) and Short (2009), have also found that industry factors are losing their shine as an important determinants of firm performance. In their analysis of Australian firms Galbreath and Galvin (2008) have found that attention should be paid on intangible assets rather than traditional tangible assets. For Greek manufacturing firms, Caloghirou et. al (2005) have found that for large firms, some industry factors like industry concentration and growth are important, but firm factors like different assets explain around 2.5 to 3 times of variation than industry factors. For new ventures in Sweden, Short et. al have also found that industry matters less in survival of new firms using size, new venture funding and industry classification as determinants.

There is another view that divides these factors into organizational and external economic factors and claims that economic factors determine only 15- 40% of firm's value and rest is defined by organizational and extraneous factors (Hansen and Wernerfelt, 1989). Contrary to this, according to Buzzel and Gale, 1987, elements of strategies cannot be readily measured, or perhaps measured at all. No doubt companies differ in terms of their cultures, and such differences unquestionably affect performance. But we know no way to measure the key policies, management processes, or personality factors that shape corporate cultures (p. 21).

Factors used in Finance Researches

Similar to resource based views of strategic researches, corporate finance also consider firm- specific factors as major determinants of firm performance. Fama and French have identified two firm- specific factors firm size and BE/ME ratio having key explanatory influence, if used in combination. There are many researches which are focused on determinants of firm value; however researches which are concerned with one variable as prime and others as control variables are in dominance. Like studies on ownership structure considers types of ownership as prime factor and other variables like size, age, liquidity and total assets etc as control variables. The most used determinants of firm performance and value are however almost similar whether it is single variable study or study on many determinants.

Another special feature of corporate researches is use of raw data instead of use of dummies as in strategic researches and rigorous econometric treatment of the data. Time dummy is used to denote macroeconomic fluctuations, industries classification is used to control for industry effects.

Table 3. Determinants: finance researches

1	Chibber and Majumdar	1991	RONW	D/E Ratio, Size, Age, Diversity, Group Belongingness, Liquidity, Advertising, Excise Duty, Inventory, Time
2	Fama and French	1993	Return on stock	Size, BE/ME
3	Keith Glancey	1998	Profitability and Growth	Size (no. of employees), Age, Location, Industry Dummy, Profitability and Growth
4	Kakani et. al	2001	ROA, ROCE, RONW, MBVR, Proxy of Tobin's Q, Cash flow margin	Size, Age, Leverage, Net Export, International Diversification, Marketing Expenses
5	Jayesh Kumar	2004	ROA, ROE, MBVR, Proxy of Tobin's Q	Size, Advertising, Import, Tax, Debt, Age, Managerial and Institutional Ownership
6	M. Patibandla	2006	Net profit/ Sales	Size, Advertising, Foreign Equity, DFI, D/TA, Time, Interaction Of D/TA And Time
7	Chandrapala and Knapkova	2013	ROA	Size, Total Debt/ TA, Inventory, Sales Growth, Capital Turnover Ratio, Time Dummy
8	Sorana Vătavu	2014	ROA	Debt, Tang ibility, Size, Liquidity Variable of Inflation and Crisis
9	Pratheepan	2014	ROA	Size, Tangibility
10	Jafari and Samman	2015	ROA, Profit Margin	Size, Growth, Fixed Assets, Working Capital, Leverage

Size, age, leverage, liquidity and fixed assets are the most commonly used factors in such studies. However except age, these all other factors are measured differently by different authors. Like size is measured by Goddard et.al (2005), Chandrapala and Knapkova (2013) as natural log of total assets, while Chibber and Majumdar (1991), Asimakopoulas et. al (2009), Pratheepan (2014) have measured it as natural log of sales. Fama and French (1993) have measured it through market capitalization of firm, Glancey (1998) as number of employees and Patibandla (2006) has gauged it through market share. Same is the case for all other factors. Along with this, different authors used different factors in their analysis. This can explain the fact, that different authors have shown different result in their analysis not only in terms of variance but in coefficient also.

Performance Measures

There is a wide range of performance measures used in these studies. The strongest motive behind picking a particular performance measure could be purpose of the study. Since the macro economic studies discussed in this paper are dealing with asset pricing, return on stock is used as performance measure to gauge the impact of systematic risk on asset price. However in subsequent studies relation between index return and macro economic factors have also been studied. The reason behind this might be that indices are considered to be representative of overall economy and an efficient market reflects all the relevant information about the changes in macroeconomic factors in the current stock prices (Fama, 1970). There are few studies which have

analyzed the impact of macroeconomic factors on a particular industry (Sufian, 2011). In such studies ROA and ROE are used to measure firm performance.

Strategists have also used a number of measures to explore the effect of determinants on firm's performance. Initial studies like Schmalensee (1985), Hensen and Wernerfelt, (1989), Rumelt (1991) and McGanan and Porter (1997), have used accounting measures. But later on measures as well techniques of analysis have also been changed. To avoid the conceptual shortcomings of accounting measures such as ROA, EVA/CE and TMV/CE have been used by Hawawini et.al, (2003). Both these measures are based on the concept of residual income, i.e., income that is adjusted for the time value of money. EVA measures the operating performance while TMV reflects market's expectation of the firm's future economic profitability. Subjective profit has been used by Caloghirou et. al to investigate the relationship in which CEOs were asked to indicate their firms' performance relative to competition. They have reasoned that small firms are generally reluctant to provide hard financial data.

In finance researches proxy of Tobin's Q, ROA and ROE are the most used measures. MBVR, RONW and EVA are another important measure used widely. Along with these many other sales growth, cash flow margin, ROCE have also been used, but less frequently. Tobin's Q is a ratio of market value of debt and all kind of stocks to the replacement cost of all assets. It is used as valuation measure which depicts changes in shareholders' value. However due to

unavailability of data, exact Tobin's q is difficult to calculate, so proxy of Tobin's q is frequently used. Despite all their allegations of accounting manipulations ROA and ROE are much in use due to ease of use. MBVR is considered to be a market oriented measure which reflects the expectations of market and time value of money. Sales growth, cash flow margin and ROCE are also used to measure current profit and measure operational efficiency.

Discussion

We have viewed determinants from three major streams those are macro economic variables, industry variables and firm level variables. Macro economic variables seems to be general economic forces that affects all firms, although not equally. Like interest rate changes may affect banking firms more directly than consumer goods, but it affects all firms by affecting their cost of capital and subsequently profit and return on stock. The very foundation of Chen, Roll and Ross' macro economic factors is also based on the argument that stock prices can be written as expected discounted dividend and in general the systematic forces that affect return are those that changes discount rates and expected cash flow. Thus, although CRR have not considered industry or firm level factors in determining firm's profit and its cost of capital directly, but the factors they have taken in their analysis are crucial in influencing these two through trickledown effect. Similarly other macro economic factors like real and nominal GDP, oil pricing affect general consumption by affecting income of general public which in turn affect demand and profitability of firms. Gold and silver pricing exert indirect influence on stock return by affecting directly their demand. Macroeconomic variable causes the stock prices in the long-run but not in the short-run (Kumar and Puja, 2012).

There is much discussion on relative importance of industry and firm level factors in resource based literature and most of them support firm specific factors as more influencing. Rumelt (1991) argued that business units differ from one another within industries a great deal more that industries differ from one another. Similarly, Galbreath and Galvin (2008) contented that due to changed environment in order to successfully compete, firms need to manage their resources effectively, rather than control and manipulate structural forces or otherwise be positioned in 'attractive' industries. Their argument seems logical in the light of the fact that governments around the world are taking severe measures to control anti competition practices and easing the procedure of liquidation. Hawawini et. al have a view that that superior or poor management leads to superior or poor performance of a firm irrespective of the industry, that is industry structure matters more for the firm with average managerial capabilities and performance. On the basis of

these views firm specific factors are scoring over industry factors. In their analysis, Goddard et.al (2005) have used firm level factors, which are strategically important. They have used ratio of firm's sales to total industry sales as a measure of market share and argue that European manufacturing firms are engaged in costly strategies in order to gain market share and discourage new competition. In the same way, according to Galbreath and Galvin (2008), intangible assets of a plays important role in determining the profits of a firm than industry factors like barrier to entry, bargaining power of buyers and threat of substitutes. Most of the finance literature has used concrete firm level financial data to study the relation between determinants and performance measures. To assess industry effects, these studies have used industry dummies based on industry classification and to predict macroeconomic effects time dummies are used (Chibber and Majumdar, 1991, Jayesh Kumar, 2004, Patibandla, 2006, Chandrapala and Knapkova, 2013). These studies give immense importance to firm level factors like total assets, intangible assets, sales, R&D expenses, advertising, liquidity, working capital, age, leverage, ownership etc in influencing firm profits.

Conclusion

The paper primarily tried to explore the factors used in three streams as determinants. We have discussed factors at macro level, industry level and firm level. Macro level factors usually affect all industry and firm, although the severity felt may differ in degree. As far as industry and firm level factors are concerned there is a huge discussion and conflicting arguments. At one extreme micro economists and strategists like Porter and Schmalensee believe that industry structure and size are the most important factors in determining firm profit; resource based view argues that firm's internal resources and capabilities are source of deviation in (Kumar, 2004) firms' profits. On basis of argument and results presented firm level factors seems dominate the scene. It may be argued that firm level factors have ability to expound industry heterogeneity because firms in different sectors differ in terms of areas such as fixed assets, expenditure on advertising, research and development, inventory and liquidity etc. Firms in an industry also show significant discrepancy in terms of size, sales and profits. Due to large diversity at every level the argument of firm level factors to be most important appears to be logical and in the line of reasoning because firms are the unit of analysis.

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