

Sector-Wise Stock Return Analysis: An Evidence from Dhaka Stock Exchange in Bangladesh

Mostofa Mahmud Hasan

Department of Business Administration (Finance), Stamford University Bangladesh

51, Siddeswari, Dhaka – 1217, Bangladesh

Tel: 880-171-182-6210 E-mail: mmhasanku@yahoo.com

Received: March 12, 2010 Accepted: July 10, 2010 doi:10.5539/ijbm.v6n6p276

Abstract

This paper aims at identifying sector-wise return characteristics of selected stocks of Dhaka Stock Exchange. Here, 48 months return data of 126 stocks listed in the DSE have been used. The stocks have been divided in 10 different sectors and found individual sector's return and risk. Considering monthly return and risk analysis, stocks in the Garments Sector generated the highest return during this period. Stocks in the Banking and Insurance sectors also achieved higher return. Stocks of these two industries also have lower degree of risk compared to those of garments sector. Considering the risk – return trade off, I found Banking Sector is the best place to invest. Negative return in the food & allied and service sectors was found. Macro economic factors' impact on those selected industry return, following multi factor stock return analysis proposed in the Arbitrage Pricing Theory have also been tested. Out of the 10 sectors, used in this paper, only return of the banking sector is significantly influenced by the macro economic condition.

Keywords: Stock return, Risk, APT, CAPM

1. Introduction

Stock Market in any country is considered as the hub of making equity investment. Stock Market also reflects the economic condition of any country. Moreover, in any financially developed country stock market is considered to be one of the alternatives to financing. Investors get into the stock market primarily with a return seeking motive. The reform brought by the financial liberalization and Financial Sector Reform Program open up new dimension to the equity investors to invest in the stock market to earn return as a prime field of investment in Bangladesh. Development of stock market is required to have persistent return from the investment as well as to have diversified field of equity investment. It is a growing interest to the domestic as well as international investors to find potential return from the undervalued stock in an emerging market like Bangladesh. This initial enthusiasm by the domestic and foreign investors calls for additional cash inflow to the stock markets of Bangladesh. However, during mid 90s response from the investors got a large shock due to sudden debacle of the stock market of Bangladesh. Since then initiatives taken by Securities & Exchange Commission, Dhaka Stock Exchange, Chittagong Stock Exchange and Board of Investment helped much to get the investors confidence back to the market. Different regulations like lock in provision, circuit breaker, prohibition of insider trading etc has been enacted to control the bad moves of the market. With all these initiatives investment in Dhaka Stock Exchange & Chittagong Stock Exchange is still considered to be risky. Part of the risk is associated with the political, economic and social turmoil of the country. Elimination of the elements of risk is not possible by the regulators of these markets alone because risk in the stock market sometimes sourced from the investors' erratic behavior also. Investors' don't always rely on the fundamental features of the stocks for their investment decision rather they tend to rely on the irrational herding behavior leading to kind of contagion effect on the whole investment environment. These contagion results in irrational hike in stock price which is impossible to predict by the stock fundamentals hence out of control of the policymakers. All the sectors of stock investment in Bangladesh are however not similarly prone to risk. They tend to show different attitude to change in the fundamentals as well as irrational behaviors. In this paper I have tried to reveal sector wise return characteristics of stocks of Dhaka Stock Exchange by finding out the factors explaining the pricing movement. Specifically I tried to find out stock fundamentals as well as economic factors explaining the sector specific stock return and if there is any existence of irrational herding behavior.

The primary objective of this study is to find out risk & return characteristics of different sectors of Dhaka Stock Exchange. In this regard, I want to find out which sector shows maximum return with minimum risk. Secondary objective of this paper is to find out macro economic factors' impact on the sector wise return. I want to see which sector is more susceptible to macro economic variability.

2. Methodology

In this paper we have selected 126 stocks from the listed securities of Dhaka Stock Exchange. I have selected only those stocks, which are being traded for more than four years. In this paper I have calculated monthly return of the stocks using general formula of stock return considering capital gain and dividend as the source of return from the stock. In finding the effect of macro economic variables I have used linear regression model following multi factor Arbitrage Pricing Theory. In this paper I have used those factors, which have been proposed in the APT. Data used in this paper are collected from secondary sources.

In connection of this study, these factors can also be used in multiple regression analysis, under both (Ordinary Least Square) OLS and WLS (Weighted Least Square), method for determining the significance level of the factor, thereby, this may result more cohesive outcome, which be tried in the further study.

3. Literature Review

Harry Markowitz introduced new dimension of security return when he considered portfolio of securities instead of finding out single security return and risk in 1952 published in Journal of Finance. Markowitz considered overall risk and return of the securities in a portfolio. He asserted that overall risk on the securities could be minimized by diversification. James Tobin (1958) advanced Markowitz's work by adding risk free asset in the portfolio. Sharp (1964) introduced the concept of CAPM, which notified that security return depends on the market performance. Sharp introduced the concept of beta in determining stock return. Lintner (1965), Mossin (1966) and Treynor (1961) performed similar works on CAPM independently based on the works of Markowitz. Though the single period CAPM gave fundamental asset pricing model, which is still being widely exercised, it suffered from many loopholes emerged from some of its unrealistic assumption. In some cases CAPM has failed to properly explain the variability of stock return. Empirical study shows that low beta stock may offer higher return than the model would predict (Black et al, 1972). The CAPM holds that market portfolio should include all the securities traded in the market. In reality such a portfolio is rarely seen and investors normally proxy market portfolio by stock index, which might invalidate the CAPM. This problem was initially identified by Roll (1977) and widely known as Roll's Critique. Roll (1977) in his paper showed that CAPM might not be empirically testable. This problem was addressed and tried to be resolved by the Arbitrage Pricing Theory. The APT (Ross, 1976) holds that return of a stock depends on several economic and industry factors rather than assuming only the market factor like CAPM. In the APT, sensitivity to any of the macro economic factors are represented by their respective beta coefficient. The APT assumes that there exist a linear relationship between return of the risky assets and macro economic variables. Chen, Ross and Roll (1986) identified five factors model to analyze stock return.

Boyer & Fillion (2004) tested Canadian oil and Gas stock return for their fundamental as well as common factors. They have found that oil and Gas stocks' return is positively related to the market return, appreciation of price, growth of the sectors, growth of the internal cash flow and reserve. Bae & Duvall (1996) examined Aerospace Industry Stock to verify whether there is any industry and market effect on those securities return using multi index CAPM. They have found that stock return is positively related to the market return as measured by S&P 500 Index and Defense Expenditure. They also found that including macro economic and industry variables in the regression model improves predictability of the stock return. Carlos & Davila (2001) tested stock return of the Latin American region and found that stocks are generally volatile and non-normally distributed. They also found that returns on the stock are being increasingly correlated across the region. They asserted that there is strong presence of international markets' influence on the security return and usual multi factor model, which only combines industry variable failed to explain stock return properly.

Apart from macro economic and industry specific factors some researchers explained stock return by the firm specific factors. Basu (1977) showed that stocks with high earnings/price ratios (or low P/E ratios) earned significantly higher returns than stocks with low earnings/price ratios. Banz (1981) showed that the stocks of firms with low market capitalization have higher average returns than large capitalization stocks. Rosenberg, Reid and Lanstein (1985) showed that stocks with high ratios of book value to market value had significantly higher returns than stocks with low book value to market value.

4. Stylized facts about Dhaka Stock Exchange: Stock Market Development

In order to get clear picture about the development of the stock markets of Bangladesh and compare the development with other competing countries I relied on the financial indicators provided by Demirgüç-Kunt et al. (1995) and Beck et al. (2000) for the analysis of stock market development across countries and over time.

In table 1 (Market Capitalization of DSE), relative size of the stock market measured by the ratio of market capitalization to GDP is growing over time since 2001. Yet during this period size of the stock market of Bangladesh remains small as I found the ratio is between 3 to 9 percent compared to 10 to 25 percent in the SAARC region and 34 to 286 percent in developed countries. However, annual percentage growth of market capitalization gets maximum pace in 2004. Number of listed securities of Dhaka Stock exchange is still low compared to both regional and internal markets. As shown in **Table 2**.

In terms of the liquidity of the stock market as measured by the turnover ratio (value of total share traded to market capitalization) is also low by international standard. It's revealed from the following table that liquidity of the market is getting low as the time progresses (**table 3**). That indicates growth of market capitalization grossly crosses the growth of total turnover in Dhaka Stock Exchange. In absolute term both the market capitalization and volume traded are also low by international standard.

Moreover, trading volume is volatile in the Dhaka Stock Exchange. Apart from the sufferings of liquidity Dhaka Stock Exchange also suffered from business losses measured by delisting of securities in the market. Growing number of securities are being delisted from the Dhaka Stock Exchange over the years. Arrival of new firms in the market is not steady and suffered immensely in 2004. Not only the number of companies listed every year but also the size of public offer faced severe turmoil during this period (**shown in table 4**). From 2000 to 2002 Dhaka Stock Exchange faced negative growth of size of public offer. However, the situation improves greatly during 2005.

5. Sector wise return characteristics of Dhaka Stock Exchange

In finding the sector wise return characteristics of Dhaka Stock Exchange I have divided the sectors in 10 classes as follows – Bank, Investment, Engineering, Food & Allied, Fuel & Energy, Garments, Pharmaceuticals & Chemicals, Service, Insurance and Miscellaneous. In calculating the return I have used the following formula:

$$R_i = \{(P_t - P_{t-1}) + D_t\} / P_{t-1}$$

Where, P_t is the market price of the current month, P_{t-1} is market price of the previous month, D_t is the dividend declared during the period. I have adjusted dividend according to the date of declaration so that exact effect of dividend can be captured in the pricing of stock. While calculating risk of the stocks I have used standard deviation of monthly return.

Considering the monthly closing data of the selected 126 stocks for 48 months I have found that Garments sector generated maximum return. During this period, Garments sector generated 13.55% return with standard deviation of 5.4727 (**shown in table 5**). Banking and Insurance Sector rank second and third on the basis of return generating 8.42% and 5.16% respectively during this period. Food & Allied Sector and Service Sector generated negative return during this period. Engineering, Pharmaceuticals and Miscellaneous sectors also generated positive return during this period. Considering the risk – return trade-off banking sector ranks first among all other sectors. Pharmaceuticals & Chemicals sector generated maximum risk per unit of return among the sectors having positive return during this period.

5.1 Explaining Sector wise stock return

Researchers & authors have argued for different means of stock return determination. In this paper, my objective is not to find out appropriate way of determining stock return rather I want to see which macro economic factors influence the variation of stock return. CAPM is a simple model that is assumed on sound reasoning, some of the assumptions that resemble the model are unrealistic. Few extensions of the basic CAPM were based on that relaxed one or more of these assumptions (Black, 1972). In lieu of simply broadening an existing theory, Ross (1976) proposes this concern by offering a completely different model: the Arbitrage Pricing Theory (APT).

Being the different of the CAPM, the newly developed APT begins with the assumption that arbitrage opportunities should not be seen in efficient financial markets. This hypothesis is much less restrictive than those are required to develop the CAPM. Moderately proposed APT begins by assuming that there are n factors, which cause asset returns to systematically differ from their expected values. Which does not notify how large the number n is, nor does it specify the factors. It simply starts with the assumption that these n factors cause returns to be different together. There may be other firm-specific factors for returns to vary from their expected values,

but these firm-specific differences are not connected with across stocks. All return variations which are not related to the n common factors could be diversified away because the firm-specific deviations are not related to one another. From these assumptions, Ross presents that, with a view to prevent arbitrage, an asset's expected return should be a linear function on the basis of its sensitivity to the n common factors:

$$E(R_j) = R_f + \beta_{j1} \lambda_1 + \beta_{j2} \lambda_2 + \dots + \beta_{jn} \lambda_n + \epsilon_i$$

$E(R_j)$ is defined as expected return and R_f is the risk free rate. Each β_{jk} coefficient is for the sensitivity of asset j to risk factor k , and λ_k means the risk premium for factor k . According to the assumptions of APT, there are n sources of systematic risk, but there is only one in a CAPM world.

In this paper I have used the essence of APT to find out the effect of macro economic variables on security return. Chen, Ross and Roll (1986) hypothesized and tested a set of economic variables. They reason that return on stock should be affected by any influence that affects either future cash flow from holding a security or the value of this cash flow to the investors (change in discount rate). They used four variables like – inflation, term structure of interest rate, risk premium and industrial production as the predictors. They have tested APT for whole set of stock. Since I have targeted to explain the sector wise return, primarily I have selected four macro economic variables like – growth of GDP in absolute term, growth of broad money supply, short-term interest rate & inflation.

5.2 Analysis of the Result

I have identified the effect of macro economic variables on the sector wise return of Dhaka Stock Exchange by running linear regression. I have set 5% level of significance for acceptance of any variable. For the purpose of finding the effect of macro economic variables on sector wise stock return, I have calculated semiannual return of the stocks. Data of the macro economic variables is also semi annual. Among the sectors I have classified in this paper, return of stocks of banking sector is influenced largely by the macro economic factors. All the four factors have significant influence on the banking sector return. These four macro economic variables can explain more than 96% variation in the banking sector return. None of these four variables have any significant effect on the investment sector, engineering sector, garments sector, paper & processing sector, service sector, insurance sector and miscellaneous sector. Return of the food & allied sector is not influenced by these four variables at 5% significance level. However, inflation and interest rate do have influence if level of significance is extended to 10%. In the Pharmaceuticals & Chemicals sector rate of inflation have influence on the return at a 10% level of significance.

6. Conclusion and policy implication

It's a matter of growing concern for many researchers what actually explains return of the stock. Some of those proposed that stock return can be explained by the market return while some other proposed that return can be explained more meticulously by firm specific, industry specific and macro economic factors. Very few of them actually made their effort to find out the effect of these factors on the sector wise return. From that viewpoint this paper demands special attention for finding the effect of macro economic variables on the sector wise return along with their return characteristics. Since return of the maximum sector could not be explained by the macro economic factors, certainly there are some other factors, which could explain them more rigorously. Further research can be made from this point. Stock Exchange being the reflector of the economy should be influenced by the economic condition. The result I have found from the analysis points that information might not be reflected properly in the stock price and the investors are not taking rational decision based on information.

References

- Bae, S. C., Duvall & G. S. (1996). An empirical analysis of market and industry factors in stock returns of U.S. Aerospace industry. *Journal of Financial and Strategic Decision*, Vo.-9, No. 2, 1996.
- Banz, R. (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics*, Vol. 9, pp. 3-18.
- Basu, S. (1977). Investment performance of common stocks in relation to their price-earnings ratios: A test of the efficient market hypothesis. *Journal of Finance*, 32, pp. 663—82.
- Beck, Demirgüç-Kunt and Levine. (2000). A New Database on the Structure and Development of the Financial Sector. *World Bank Economic Review*, 14, 597-605.
- Black, F., Jensen, M., and Scholes, M. (1972). *The Capital Asset Pricing Model: Some Empirical Tests*, in M. Jensen ed. Studies in the Theory of Capital Markets.
- Boyer, M., & Filion, D. (2004). Common and Fundamental Factors in Stock Returns of Canadian Oil and Gas

Companies. *Working Paper*, CIRANO, No-62.

Carlos, J., & Davila, W. (2001). What factors explain stock returns in Latin America? An analysis of the period 1995-2000. *Journal of Financial and Strategic Decision*, Vol-19, No – 2.

Chen, Nai-Fu, Ross, S., & Roll, R. (1986). Economic Forces and the Stock Market. *Journal of Business*, 59, P. 386-403.

Data Sources: Economic Trend (*Bangladesh Bank Publication*), Dhaka Stock Exchange & IFS (IFC Data Bank).

Demirgüç-Kunt, A., and Levine, R. (1995). Stock market development and financial intermediaries. *World Bank working paper series* 1462.

Elton, E. J., & Gruber, M. J. (2003). *Modern Portfolio Theory and Investment Analysis*, 6th Edition, John Wiley & Sons, Inc, P. 130-178.

Lintner, J. (1965). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets, *Review of Economics and Statistics*, 47: 13-37.

Markowitz, Harry M. (1952). Portfolio selection. *Journal of Finance*, 7 (1), 77-91.

Mossin, J. (1966). Equilibrium in a Capital Asset Market. *Econometrica*, 34, 768-783.

Roll, R. (1977). A Critique of the Asset Pricing Theory's Tests: Part I: On Past and Potential Testability of the Theory. *Journal of Financial Economics*, 4(2), 129-176.

Rosenberg, B., Reid, K., and Lanstein, R. (1985). Persuasive Evidence of Market Inefficiency. *Journal of Portfolio Management*, 11, pp. 9-17

Ross, S. (1976). The arbitrage theory of capital asset pricing. *Journal of Economic Theory*, V13, issue 3.

Ross, S. (1996). *Corporate Finance*, 4th Edition, The McGraw-Hill Companies, Inc, p. 248-309.

Sharpe, William F. (1964). Capital asset prices: A theory of market equilibrium under conditions of risk. *Journal of Finance*, 19 (3), 425-442.

Tobin, J. (1958). Liquidity preference as behavior towards risk. *The Review of Economic Studies*, 25, 65-86.

Table 1. Market Capitalization of DSE

Market Capitalization	2001	2002	2003	2004
-Tk. Million	63,769.00	71,261.75	97,442.26	224,159.21
-US\$ million	1,118.75	1,228.65	1,668.53	3,831.78
% Of Annual Growth	1.34	11.75	36.74	130.04
Market Capitalization/GDP	.0296	.0251	.0411	.089

Source: Dhaka Stock Exchange

Table 2. Capital Market Development Indicators of regional & international Markets

Name of the Stock Markets	Indices Year ending 2003	Indices Current June 2004	Listed Issues	Market Cap in US\$ mn (2003)	Turnover in US\$ mn (2003)	Market cap as % of GDP (2002)
Colombo Stock Exchange	1897.80	1358.50	215	2,711	73,838	10.12
Dhaka Stock Exchange	973.88	1318.92	267	1,668	327	2.51
Karachi	4471.60	5299.81	701	16,579	66,598	17.27
Mumbai	1531.40	1886.00	5644	279,093	284,802	25.78
Philippines	1442.40	1579.40	234	23,565	2,635	50.06
Kuala Lumpur	823.68	821.01	897	168,376	50,135	130.53
Singapore	1764.50	1840.84	475	145,117	6,141	117.17
Stock Exchange of Thailand	772.10	644.00	405	118,705	96,573	36.31
Hong Kong	12575.90	12278.61	1029	714,597	331,615	286.70
Japan	1043.70	1167.10	3116	3,040,665	2,272,989	39.40
London	4476.90	4509.90	2311	2,412,434	2,150,753	119.90
USA	1111.90	1136.20	5295	14,266,266	15,547,431	106.45
Germany	3965.20	4084.63	684	1,079,026	1,147,209	34.57

Source: Dhaka Stock Exchange

Table 3. Turnover and Liquidity of Dhaka Stock Exchange

Total Turnover	2001	2002	2003	2004
Volume in million	1,107.20	1,309.14	612.74	681.38
Value (Tk. million)	39,869.29	34,984.32	19,152.27	53,181.17
Value (US\$ million)	699.46	603.18	327.95	902.91
% Of Annual Growth	(1.00)	(12.25)	(45.25)	177.68
Turnover/Market Capitalization	.017363	.018373	.006288	.00304

Source: Dhaka Stock Exchange

Table 4. Initial Public Offering in Dhaka Stock Exchange

INITIAL PUBLIC OFFERING	2000	2001	2002	2003	2004	2005
No. Of Public Issues	7	11	8	14	3	17
Size of Public offer:						
-Tk. Million	122.50	220.00	198.00	1,351.17	473.88	1265.695
-US\$ million	2.27	3.86	3.41	23.30	8.10	19.13
% Of Annual Growth	(64.49)	79.59	(10.00)	582.41	(64.93)	167.09
Size of pre IPO placement						
-Tk. Million	290.25	309.64	252.19	1,626.50	20.00	145.90
-US\$ million	5.38	5.43	4.35	27.85	0.34	2.21
% of Annual Growth	(55.35)	6.68	(18.55)	544.95	(98.77)	629.50

Source: Dhaka Stock Exchange

Table 5. Sector wise stock return and risk

Industry	Average Return	STDEV
Bank	0.084182	1.73018
Investment	0.032407	3.337489
Engineering	0.037803	3.111896
Food & Allied	-0.01022	5.9272
Fuel & Energy	0.039325	5.348404
Garments	0.135526	5.274766
Pharma & Chemicals	0.02468	4.374959
Service	-0.00081	104.844
Insurance	0.051612	2.094087
Miscellaneous	0.007433	9.753532

Appendix**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.995(a)	.990	.965	.082698550

a. Predictors: (Constant), DSE Return, M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-90.066	9.952		-9.050	.012
	M2	-150.586	16.482	-4.557	-9.136	.012
	Int Rate	1170.306	128.002	14.576	9.143	.012
	GDP (g)	171.189	21.825	2.882	7.844	.016
	Inf	259.450	27.031	6.994	9.598	.011

a. Dependent Variable: Banking Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.840(a)	.705	-.032	.09271487

a. Predictors: (Constant), M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-18.657	11.157		-1.672	.236
	M2	-28.390	18.478	-4.153	-1.536	.264
	Int Rate	235.596	143.505	14.185	1.642	.242
	GDP (g)	40.083	24.469	3.262	1.638	.243
	Inf	49.884	30.305	6.501	1.646	.241

a. Dependent Variable: Investment Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.767(a)	.588	-.443	.260648950

a. Predictors: (Constant), M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.371	31.365		.076	.947
	M2	28.033	51.947	1.725	.540	.643
	Int Rate	-70.231	403.436	-1.778	-.174	.878
	GDP (g)	-19.443	68.789	-.665	-.283	.804
	Inf	9.091	85.196	.498	.107	.925

a. Dependent Variable: Engineering Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.965(a)	.931	.760	.0902167965 31434

a. Predictors: (Constant), M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-35.451	10.856		-3.265	.082
	M2	-50.314	17.980	-3.651	-2.798	.108
	Int Rate	445.224	139.639	13.295	3.188	.086
	GDP (g)	63.943	23.810	2.581	2.686	.115
	Inf	106.142	29.488	6.861	3.599	.069

a. Dependent Variable: Food & Allied Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.594(a)	.353	-1.265	.55486801

a. Predictors: (Constant), M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.211	66.770		-.018	.987
	M2	29.878	110.585	1.082	.270	.812
	Int Rate	-35.117	858.833	-.523	-.041	.971
	GDP (g)	-17.511	146.439	-.353	-.120	.916
	Inf	20.704	181.365	.668	.114	.920

a. Dependent Variable: Garments Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.976(a)	.953	.837	.08510166

a. Predictors: (Constant), M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-26.808	10.241		-2.618	.120
	M2	-38.110	16.961	-2.412	-2.247	.154
	Int Rate	329.435	131.722	8.582	2.501	.130
	GDP (g)	58.861	22.460	2.072	2.621	.120
	Inf	78.976	27.816	4.453	2.839	.105

a. Dependent Variable: Pharmaceuticals & Chemicals Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.751(a)	.564	-.526	.271347263

a. Predictors: (Constant), M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-27.866	32.653		-.853	.483
	M2	-49.471	54.079	-3.007	-.915	.457
	Int Rate	379.625	419.995	9.496	.904	.461
	GDP (g)	31.108	71.613	1.052	.434	.706
	Inf	82.095	88.693	4.445	.926	.452

a. Dependent Variable: Paper & Processing Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.886(a)	.784	.245	.13114942

a. Predictors: (Constant), M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-13.876	15.782		-.879	.472
	M2	-22.461	26.138	-1.987	-.859	.481
	Int Rate	172.682	202.995	6.287	.851	.485
	GDP (g)	33.647	34.612	1.656	.972	.434
	Inf	42.978	42.868	3.387	1.003	.422

a. Dependent Variable: Service Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.873(a)	.762	.168	.194486501

a. Predictors: (Constant), M2, GDP (g), Inf, Int Rate

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-16.089	23.404		-.687	.563
	M2	-29.625	38.761	-1.855	-.764	.525
	Int Rate	208.491	301.029	5.371	.693	.560
	GDP (g)	37.001	51.328	1.288	.721	.546
	Inf	51.342	63.570	2.863	.808	.504

a. Dependent Variable: Insurance Sector

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.873(a)	.762	.168	.194486501

a. Predictors: (Constant), M2, GDP g, Inf, Int Rate

b.

Coefficients (a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-16.089	23.404		-.687	.563
	M2	-29.625	38.761	-1.855	-.764	.525
	Int Rate	208.491	301.029	5.371	.693	.560
	GDP (g)	37.001	51.328	1.288	.721	.546
	Inf	51.342	63.570	2.863	.808	.504

a. Dependent Variable: Miscellaneous Sector