Common Shares Performance Evaluation for Companies Listed at Amman Stock Exchange

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Abstract

In this paper an attempt was made to evaluate empirically the common stock performance for companies listed at Amman Stock Exchange (ASE) by adopting the security market line (SML) approach. The study used 82 of Jordanian Companies listed at Amman Stock Exchange (ASE), one of the emerging markets, and observed the monthly returns of these firms over the period January1996-August 2004. After adopting the Augmented Dickey-Fuller Unit Root for testing the stationarity assumption, the study revealed that companies listed at ASE seem, on average, being over priced. In addition, it could be strongly argued that banking sector had the best performance, where its shares prices were under priced. The insurance sector, on the other hand, had the worst performance and its prices in general were over priced. The study, therefore, supports the hypothesis that companies listed at ASE common stocks' prices were not fairly priced. From the point view of the investors, market inefficiency seems to have existed and making abnormal profit is fairly possible and consequently ASE efficiency is questionable.

Key words: Security Market Line; Common Shares; Performance Evaluation; Portfolio Management

ملخَص

تحاول هذة الورقة تقييم أداء الاسهم للشركات المدرجة في سوق عمان المالي باستخدام نموذج خط سوق الورقة المالية . تستخدم الدراسة بيانات العائد الشهري ل (82) شركة مساهمة عامة مدرجة في سوق عمان المالي، و الذي يعد من الاسواق المالية الناشئة، خلال الفترة من كانون الثاني 1996 ولغاية آب 2004. بعد أن تم تطبيق اختبار جذر الوحدة للاستقرارية باستخدام اختبار ديكي- فولر (ADF(و الذي بينت نتائجة تحقق شرط الاستقرارية، اوضحت نتائج الدراسة، بالمتوسط، ان الشركات المدرجة في سوق عمان المالي مسعَرة بأكبر من قيمتها الحقيقية . بالإضافة الى ذلك، يمكن القول و بقوة ان قطاع البنوك كان من افضل القطاعات أداء حيث أسعار اسهمه مسعَرة بأقل من قيمتها الحقيقية . في المقابل، قطاع التأمين كان من أسواء القطاعات أداء حيث أسعار اسهمه مسعَرة بأكبر من قيمتها الحقيقية. وعلية فالدراسة تدعم الفرضية ا لقائلة بأن أسعار أسهم الشركات المساهمة العامة المدرجة في سوق عمان المالي غير مسعَرة بشكل عادل. من وجهة نظر المستثمرين، عدم كفاءة السوق المالي يعني امكانية تحقيق أرباح غير عادية أمر محتمل و بالنتيجة كفاءة سوق عمان المالي تصبح محل تساؤل.

I. THEORETICAL BACKGROUND

The most popular model for assessing the value of a firm as a going concern starts from the observation that an investor in stock expects a return consisting of cash dividends and capital gains or losses (Arnold 1998). Thus, a stock's expected holding-period return is the sum of expected dividend yield and the expected rate of price appreciation, the capital gain yield. But what is the required rate of return for a stock?

It is known from the CAPM that when stock market prices are at equilibrium levels, the rate of return that investors can expect to earn on a security is $r_f + \beta[E(r_m) - r_f]$, discussed later. Thus, the CAPM may be viewed as providing the rate of return an investor can expect to earn on a security given its risk as measured by beta. This is the return that investors will require of any other investment with equivalent risk. We will denote this required rate of return as $r`_i$. If a stock is priced "correctly", its expected

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return will equal the required return. Of course, the goal of a security analyst is to find stocks that are mispriced. For example, an under-priced stock will provide an expected return greater than the "fair," or required, return.

Another way to see this is to compare the intrinsic value of a share of stock to its market price. The intrinsic value of stock is defined as the present value of all cash payments to the investor in the stock, including dividends as well as the proceeds from the ultimate sale of the stock, discounted at the appropriate risk-adjusted interest rate. Whenever the intrinsic value, or the investor's own estimate of what the stock is really worth, exceeds the market price, the stock is considered undervalued and a good investment. In market equilibrium, the current market price will reflect the intrinsic value estimates of all market participants. As the market is efficient, finding undervalued securities is hardly easy (Fama 1970; Fama and MacBeth 1973; Hodgkinson 1991; Samuels 1995).

On the other hand, there are enough gaps in the efficient market hypothesis that the search for such securities should not be dismissed out of hand (Brock et al. 1992; Fama and French 1992; Logue and Sweeney 1977; Sweeney 1986; Taylor 1992). More specifically when such securities traded in an emerging capital market such as ASE featured by the thin trading problem. The idea is that thin trading may affect the efficiency for the market proved empirically (Blume et al. 1994; Fisher 1966; Opong 1996; Scholes and Williams 1977). Such empirical studies argued that that although current prices may be efficient in the sense they contain all information implied by past prices, the use of non-price information in conjunction with past prices may enable traders to predict future price movements. Past volume trading considered as Non-price information. The key role played by volume is to enable market participants to determine the quality of information flowing to the market. Antoniou et al. (1997) in his study titled “Technical Analysis, Trading Volume and Efficiency; Evidence from an Emerging Market” concluded that technical analysis, which incorporates data on volume as well as returns, might provide evidence of return predictability. Therefore, it is the ongoing search for mispriced securities that maintains a nearly efficient market. Bodie et al. (2002) in their book titled “Investments” argued that even infrequent discoveries of minor mispricing would justify the salary of a stock market analyst.

The structure of the paper classified as issues to be investigated outlined in section II. Study aims presented in section III, where in section IV research methodology explored. Empirical results are discussed in section V, and conclusions and implications are given in section VI.

II. ISSUES TO BE INVESTIGATED

An attempt was made to evaluate empirically the common stock performance for companies listed at Amman Stock Exchange (ASE) by adopting the security market line (SML) approach.

III. STUDY AIMS

To test empirically the common stock performance for companies listed at Amman Stock Exchange (ASE) by adopting the security market line (SML) approach and making recommendations relevant to the conclusions.

IV. REASEARCH METHODOLOGY

The following general research design was employed to evaluate the common stock performance for companies listed at Amman Stock Exchange. The common stocks required rate of return and expected rate of return of the companies listed at ASE are compared and their performance is then evaluated. The database and methodological details are now discussed.

A. Data Base & Sample Selection Criteria

The primary data for this study is drawn from a data provided by ASE and Jordan Central Bank. The database represents over 205 firms. 18 were banks and financial companies, 26 insurance companies, 71 services companies, and 90 firms were industrial companies, which actually were traded on the ASE between January 1996 and August 2004.

For any given year under consideration, three criteria were used in selecting sample firms: (i) the fiscal year-end of the firm is August 31 (fiscal years being considered are 1996—2004); (ii) the relevant data required are not missing; and (iii) the firm was actively traded over the all period. A total of 82 firms satisfied the above requirements, therefore over the period under consideration.

B. Derivation of Models Adopted and Analysis

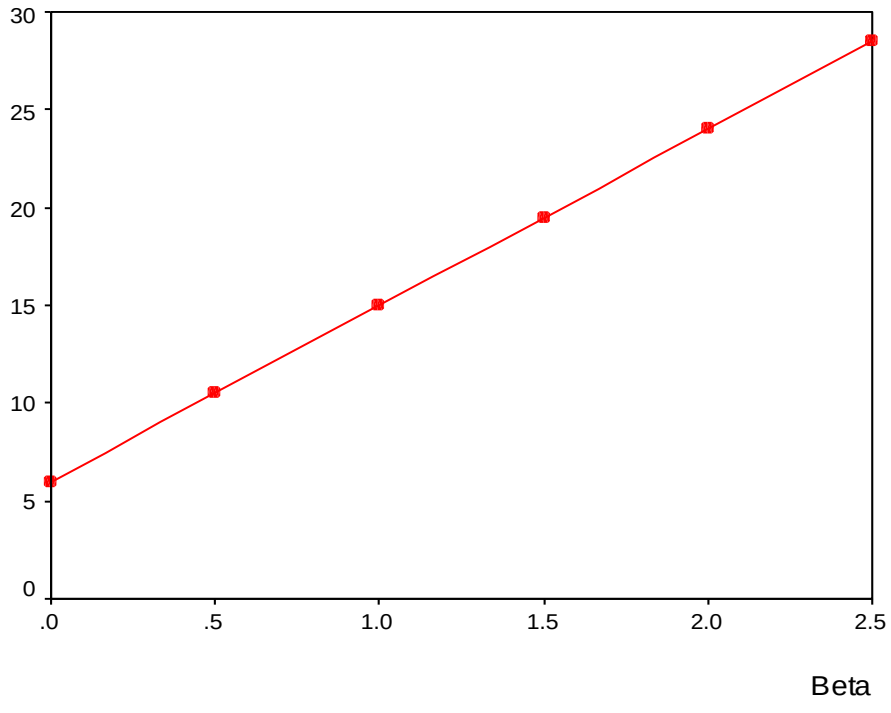
Along the capital market line (CML), all portfolios are perfectly correlated with the market. This follows because all portfolios along the CML are linear combinations of the market portfolio and the risk-less asset, and therefore by construction are perfectly correlated with the market (i.e. efficient portfolios) (Arnold 1998; Blake 2001; Bodie et al. 2002). Inefficient portfolios and individual securities will not be perfectly correlated with the market, and this is recognized by the SML. The SML shows that un-diversifiable risk has two components: the security's total risk and its correlation with the market. The SML is the correct way of pricing securities whether or, not the securities are efficient. It provides a unique relationship between the required return on a security and the amount of un-diversifiable risk (measured by β) contained in it.

In this regards, Blake (2001) compared the SML with the CML. The CML graphs the risk premiums of efficient portfolios (i.e., portfolios composed of the market and the risk-free asset) as a function of portfolio standard deviation. This is appropriate because standard deviation is a valid measure of risk for efficiently diversified portfolio that is candidates for an investor's overall portfolio. The SML, in contrast, graphs individual asset risk premiums as a function of asset risk. The relevant measure of risk for individual assets held as parts of well-diversified portfolios is not the asset's standard deviation or variance; it is, instead, the contribution of the asset to the portfolio variance, which we measure by the asset's beta. Therefore, the SML is valid for both *efficient portfolios* and *fairly priced* individual assets.

We can view the expected return-beta relationship as a reward-risk equation. The beta of a security is the appropriate measure of its risk because beta is proportional to the risk that the security contributes to the optimal risky portfolio (Bodie et al. 2002). The required return-beta relationship can be portrayed graphically as in Figure 1. Because the security market line is the graphic representation of the expected return-beta relationship, *"fairly priced"* assets plot exactly on the SML; that is their required returns are commensurate with their risk given the assumption that all securities must lie on the SML in market equilibrium. Because the market beta is 1, the slope is the risk premium of the market portfolio. At the point on the horizontal axis where $\beta = 1$, which is the market portfolio's beta, we can read off the vertical axis the required return on the market portfolio.

According to the Figure 1, shares perfectly correlated with the market return (M) will have a beta of 1.0 and are required to produce an annual return of 15 per cent in the circumstances of a risk-free rate of return at 6 per cent and the risk premium on the market portfolio of shares over safe securities at 9 per cent. Shares which are twice as risky, with a beta of 2.0, will have an required return of 24 per cent; shares which vary half as much as the market index are required to produce a return of 10.5 per cent in this particular hypothetical risk-return line.

Figure 1: A Hypothetical SML



We can also compare the CAPM (i.e required rate of return; $r`_i$) with the market model used for estimating the expected return (r_{it}), given respectively by:

$$r`_i = r_f + (r_m - r_f)\beta`_i, \qquad (1)$$

And

$$r_{it} = \gamma_i + \beta_i r_m + \varepsilon_{it} \qquad (2)$$

Or taking expectation of (2):

$$r`_i = \hat{\gamma}_i + \hat{\beta}_i r_m \qquad (3)$$

Where r_{it} = continuously compounded return on firm *i* in month *t*; computed as the natural logarithm of one plus the realized monthly return (wealth relative). r_m = continuously compounded return on "market portfolio"; measured by the natural logarithm of the equally weighted index developed by the researchers including all companies considered in the analysis.[1] r_f = continuously compounded "risk-free" return***;*** measured by the natural logarithm of one plus the monthly return on 30-day Jordanian Government Treasury Bills. $\hat{\gamma}_i$ = estimated intercept, $\hat{\beta}i$ = estimated slopes. εit = error term on firm i in month t.

It is argued that the market risk premium ($r_m - r_f$) is fairly stable over time as it is taken from a long-term historical relationship. Indeed, taking a short period to estimate this would result in wild fluctuations from year to year, none of which would reflect the premiums investors demand for holding a risky portfolio of shares compared with a risk-free security (Arnold 1998). Therefore, considering the period 1996-2004 using monthly observations eliminate such problem in estimating the risk premium.

According to CAPM all securities lie on the security market line, their exact position being determined by their beta. For shares under or above the SML, however, these are shares, which are not in equilibrium. Therefore, shares located above the SML offers a particularly high level of return for the risk its holders have to bear. This will not last for long in an efficient market because investors are looking for such shares. As they start to buy in large quantities the prices will rise and consequently the expected return will fall. This will continue until the share return is brought on to the SML. Conversely, share located under the SML will be sold until the price falls sufficiently to bring about equilibrium, that is, shares are placed exactly on the SML.

Risk-averse investors measure the risk of the optimal risky portfolio by its variance. In this world we would expect the reward, or the risk premium on individual assets, to depend on the contribution of the individual asset to the risk of the portfolio. The beta of a stock measures the stock's contribution to the variance of the market portfolio. Hence we expect, for any asset or portfolio, the required risk premium to be a function of beta. The CAPM confirms this intuition, stating further that the security's

[1] It has to be reported that using the ASE general index raised the problem of having very low estimators closed to zero, especially those for betas ranging from +0.042 to –0.028 except for the Arab Bank (representing almost 30% of ASE market capitalization) were beta was 1.25. Using equally weighted index developed by the researchers containing those 82 companies included in the study, however, shifted beta values to be around the accepted level ranging between +2 and –2 except that for the Arab Bank where beta was unrealistic (52.47). Therefore, the researchers exclude the Arab Bank from the sample used for developing the equally weighted index. Calculating the market beta by adding the included companies betas divided by the number of those companies gives the value 1.05 which is almost the recognized market beta (market beta equals 1) confirming the correctness of the index used for estimating the estimators (α and β). Further, running the correlation test between the ASE index and the equally weighted index developed by the researchers, the correlation were 0.98 which means any of the indices used representing the another in estimating the estimators. It has to be noted, however, that the market price of the Arab Bank was around 300 JD over the period under consideration, where all other market share price for the companies listed at ASE considered in this study ranging between 0.20 to 10 JD, an issue might created such a problem in estimating the companies' betas.

risk premium is directly proportional to both the beta and the risk premium of the market portfolio; that is:

$$\textit{Security's Risk Premium } (_i) = \hat{\beta} [E(r_m) - r_f] \qquad (4)$$

Clearly, the security market line provides a benchmark for the evaluation of investment performance. Given the risk of an investment, as measured by its beta, the SML provides the required rate of return necessary to compensate investors for both risk as well as the time value of money.

Suppose that the SML relation is used as a benchmark to assess the required return on a risky asset, then security analysis is performed to calculate the return actually expected (i.e. expected return). If a stock is perceived to be a good buy, or under-priced, it will provide an expected return in excess of the required return stipulated by the SML. Consequently, *Alpha* ($\hat{\alpha}_i$) measures the excess return on a security. It is equal to the difference between the actual rate of return (or expected return) on a security and its required rate of return using the CAPM (1):

$$\hat{\alpha}_i = r_i - \grave{r}_i \qquad (5)$$

If a security is correctly priced, $\hat{\alpha}_i = 0$. If a security is under-priced (or oversold), $\hat{\alpha}_i > 0$: the security is expected to rise in price and so is worth buying plots above the SML. If a security is over priced (or overbought), $\hat{\alpha}_i < 0$: the security is expected to fall in price and so is worth selling plots below the SML (Blake 2001; Blake et al. 1999; Lakonishok et al. 1992). The alpha for a portfolio of securities is the value-weighted sum of the alphas in the portfolio;

$$\alpha_p = \sum_{i=1}^{N} \theta_i \hat{\alpha}_i \qquad (6)$$

Portfolio manager, therefore, would then increase the weights of securities with positive alphas and decrease the weights of securities with negative alphas.

C. Statistical Models Adopted and Hypothesis to be Tested

Beginning with 1996, the required rate of return, expected rate of return, and beta of every sample security listed at Amman Stock Exchange included in this study was computed for testing the following null hypothesis using OLS approach:

> *"H01: Companies listed at ASE common stocks' prices were not fairly priced over the period 1996-2004".*

For adopting the OLS approach, however, different assumptions have to be met, more importantly; autocorrelation among residuals should not be existed. Autocorrelation measures the degree to which a single series moves relative to its own lagged values over time. If autocorrelation is present, a future series can be successfully predicted using the recent past explanatory variables. Therefore, Durbin-Watson (D-W) test used for testing the following hypothesis:

"H02: autocorrelation does not exist when adopting the market model".

Furthermore, many of the procedures used in conducting financial studies, such as regression, ARMA, and Granger Causality, require that a data series be stationary. Stationary means that a series is stable over time. More formally, stationary means that the mean and autocovariances of the series do not depend on time. Consequently, Augmented Dickey Fuller (ADF) Unit Root test has to be employed to verify that the data used not violating this key assumption. For testing the following null hypothesis:

> *"H03:* The estimated regression coefficients *using the market model were not stationary".*

V. EMPIRICAL RESULTS

Relative Performance Evaluation of the Common Stocks
Equation (2) was estimated by ordinary least squares (OLS) using months of monthly 103 return data (January 1996—August 2004). Table 1 shows the results.

TABLE 1
Industrial Sector Common Stocks Performance & Related Summary Statistics
(January 1996-August 2004)

Sector	Durbin-Watson	ADF Test Statistic	Constant (γ_i ^)	Beta ($ß$ ^ $_i$)	Yearly-Required Rate of Return[2] (%)	Yearly-Expected Rate of Return[3] (%)	Alpha (α ^i) (%)
Industrial Sector							
Arab Aluminum Industry	2.085	-4.581	-0.00946	1.106	8.45	9.13	0.68
National Steel Industry	1.840	-3.576	0.00308	1.247	8.69	10.30	1.61
The Jordan Pipes Man.	1.968	-4.148	0.00500	1.024	8.30	8.47	0.16
National Capel and Wire Man.	2.110	-3.799	-0.00479	1.608	9.33	13.28	3.95
Jordan New Cable Comp.	2.248	-3.539	0.01302	1.126	8.48	9.31	0.83
Jordan Steel	2.083	-3.834	0.01526	1.191	8.60	9.85	1.26
Arab Electrical Industries	1.644	-5.025	0.00393	1.176	8.57	9.72	1.15
RUM Metal Man.	1.980	-4.379	0.00322	0.815	7.94	6.74	-1.20
The Public Mining	2.027	-4.575	0.00710	1.215	8.64	10.04	1.40
Jordan Ceramic Industries	2.236	-4.136	-0.00916	0.881	8.05	7.27	-0.78
Jordan Phosphate Mines	1.790	-4.491	-0.00237	1.850	9.76	15.28	5.52
RAFIA Industries	2.252	-5.057	-0.02600	0.632	7.61	5.19	-2.42
Jordan Cement Factories	1.929	-5.000	0.00886	1.003	8.26	8.29	0.03
Jordan Industrial Resources	1.608	-3.933	-0.00671	0.771	7.86	6.36	-1.49
Jordan Petroleum Refinery	1.953	-4.719	-0.01001	1.286	8.76	10.61	1.85
Arab Potash	2.026	-4.899	-0.00229	0.880	8.05	7.27	-0.78
International Ceramic Industries	2.503	-3.779	-0.00110	0.899	8.08	7.43	-0.66
The Jordan Worsted Mills	2.124	-4.433	0.00037	1.075	8.39	8.88	0.49
The Jordan Tanning	1.974	-4.219	-0.00802	0.142	6.75	1.16	-5.59
Woolen Industries	2.012	-3.600	0.00059	0.703	7.74	5.81	-1.93
Jordan Rock Wool Industry	2.131	-4.137	0.00696	1.395	8.96	11.53	2.57

[2] $RRR_i = r_f + ß\hat{}_i (r_m - r_f)$, *where* $r_f = 0.065$, *and It* is the continuously compounded T-Bills of Jordanian government over the period January 1996 - August 2004.

[3] $R`_i = \alpha\hat{}_i + ß\hat{}_i (r_m)$, *where* $r_m = 0.0826$ *and It* is the continuously compounded market return over the period January 1996 - August 2004.

Sector	Durbin-Watson	ADF Test Statistic	Constant ($\hat{\gamma}_i$)	Beta ($\hat{\beta}_i$)	Yearly-Required Rate of Return[2] (%)	Yearly-Expected Rate of Return[3] (%)	Alpha ($\hat{\alpha}i$) (%)
EL-ZAY Ready Wear Man.	2.096	-4.318	-0.00694	0.671	7.68	5.54	-2.14
International Textile Man.	2.154	-4.621	-0.00374	1.189	8.59	9.82	1.23
National Textile and Plastic	2.035	-4.654	-0.01161	0.026	6.55	0.20	-6.34
Jordan Dairy	2.024	-4.589	0.00355	0.411	7.22	3.40	-3.83
General Investment	2.063	-4.055	0.00254	0.341	7.10	2.82	-4.28
International Tobacco and Cig.	1.716	-4.028	0.01097	1.015	8.29	8.40	0.11
Universal Modern Industries Co. for Edible Oil	2.003	-3.761	-0.00535	0.835	7.97	6.89	-1.08
Kawther Investment	1.998	-4.448	-0.01584	0.627	7.60	5.16	-2.44
Arab Investment and International Trade	2.003	-4.927	-0.01416	0.819	7.94	6.75	-1.19
Livestock and Poultry	2.259	-4.197	-0.01766	0.551	7.47	4.54	-2.93
The Union Tobacco and Cig. Industries	1.993	-3.936	0.01733	0.696	7.72	5.76	-1.96
Pearl Sanitary Paper Conv.	2.000	-3.659	0.01301	1.376	8.92	11.38	2.46
The Arab Pharmaceutical Man.	2.319	-3.743	-0.00013	0.933	8.14	7.71	-0.44
The Industrial, Commercial and Agricultural	1.957	-4.751	-0.01015	1.355	8.88	11.18	2.29
The Arab Chemical Detergents Industries	1.891	-4.330	0.00112	0.574	7.51	4.74	-2.77
Dar Al-Dawa Development and Investment	2.266	-4.252	-0.00216	1.493	9.13	12.33	3.20
Arab Center for Pharmaceuticals and Chemicals	1.997	-4.353	0.00536	0.912	8.10	7.54	-0.57
Jordan Chemical Industries	2.091	-4.133	-0.00267	0.188	6.83	1.55	-5.28
Universal Chemical Industries	1.794	-4.532	-0.00527	0.771	7.86	6.37	-1.49
Jordan Industries and Match / JIMCO	2.034	-4.277	0.00942	0.181	6.82	1.51	-5.31
Jordan Sulpha Chemicals	1.989	-5.119	-0.01540	0.910	8.10	7.50	-0.60
Union Chemical and Vegetable Oil	2.179	-4.011	-0.00168	1.187	8.59	9.80	1.21

Sector	Durbin-Watson	ADF Test Statistic	Constant (γ_i ^)	Beta ($ß$ ^ $_i$)	Yearly-Required Rate of Return[2] (%)	Yearly-Expected Rate of Return[3] (%)	Alpha (α ^i) (%)
Industries							
Average	**2.032**	**-4.292**	**-0.001**	**0.909**	**8.100**	**7.507**	**-0.593**
Bank Sector							
Cairo Amman Bank	1.776	-3.031	0.00549	1.730	9.54	14.29	4.75
Bank Of Jordan	1.770	-3.719	0.00236	1.404	8.97	11.60	2.63
The Housing Bank	2.062	-3.737	0.00119	1.285	8.76	10.61	1.85
Industrial Development Bank	2.234	-4.043	-0.00338	0.701	7.73	5.79	-1.94
Arab Jordan Investment Bank	2.266	-3.772	-0.00437	1.136	8.50	9.38	0.88
Jordan Kuwait Bank	2.222	-4.175	0.01400	1.601	9.32	13.24	3.92
Jordan Islamic Bank	1.889	-3.589	-0.00552	0.737	7.80	6.09	-1.71
Jordan Investment & Finance Bank	2.174	-3.786	-0.00436	1.053	8.35	8.69	0.34
Average	**2.049**	**-3.731**	**0.001**	**1.206**	**8.622**	**9.961**	**1.339**
Insurance Sector							
Jordan Insurance	1.966	-3.275	0.00740	0.491	7.36	4.06	-3.30
Middle East Insurance	2.078	-4.044	-0.00099	0.293	7.02	2.42	-4.60
United Insurance	2.350	-3.446	-0.00264	0.181	6.82	1.49	-5.33
Arabian Seas Insurance	2.133	-4.474	-0.00585	0.918	8.12	7.58	-0.54
Jerusalem Insurance	2.042	-4.029	-0.00496	0.495	7.37	4.08	-3.29
General Arabia Insurance	1.742	-3.096	-0.00267	0.075	6.63	0.62	-6.01
Jordan French Insurance	2.195	-5.198	-0.00261	0.001	6.50	0.01	-6.50
Yarmouk Insurance & Reinsurance	2.106	-3.607	-0.00243	0.671	7.68	5.54	-2.14
Holy Land Insurance	1.896	-4.170	-0.00010	0.588	7.53	4.85	-2.68
Philadelphia Insurance	1.955	-4.589	-0.00661	0.743	7.81	6.13	-1.68
Arab Life & Accident Insurance	2.326	-4.407	0.00024	0.228	6.90	1.88	-5.02
Al-Nisr Al-Arabi Insurance	2.500	-5.134	-0.00385	0.317	7.06	2.62	-4.44
Delta Insurance	2.402	-3.363	-0.00132	0.421	7.24	3.47	-3.77
Arab Union International Insurance	2.188	-4.985	-0.00559	0.901	8.09	7.44	-0.65

Sector	Durbin-Watson	ADF Test Statistic	Constant (γ_i ^)	Beta (β ^ $_i$)	Yearly-Required Rate of Return[2] (%)	Yearly-Expected Rate of Return[3] (%)	Alpha (α ^i) (%)
The National Ahlia Insurance	2.242	-3.824	-0.00737	0.192	6.84	1.58	-5.26
Average	**2.141**	**-4.109**	**-0.003**	**0.434**	**7.264**	**3.585**	**-3.679**
Services Sector							
Jordanian Electric Power	2.034	-4.772	0.00651	0.618	7.59	5.11	-2.48
Jordan Hotel & Tourism	1.779	-5.405	-0.01005	0.668	7.68	5.51	-2.17
Irbid District Electricity	1.862	-6.689	0.01056	0.843	7.98	6.97	-1.01
Vehicles Owners Federation	2.727	-4.195	-0.01147	1.649	9.40	13.61	4.20
Arab International Hotels	1.978	-5.768	-0.01074	1.390	8.95	11.47	2.53
Jordan National Shipping Lines	2.660	-4.018	0.00301	0.284	7.00	2.35	-4.65
National Portfolio Securities	1.937	-4.366	0.00598	1.846	9.75	15.25	5.50
Real Estate Investment	1.936	-4.481	0.00177	1.182	8.58	9.77	1.19
Jordan International Trading Center	1.933	-3.824	0.00159	0.932	8.14	7.70	-0.44
Jordan Press Foundation / Alra'i	1.957	-4.030	0.00547	1.344	8.87	11.11	2.24
Jordan Press & Publishing /Ad-Dustour	2.360	-6.631	-0.00353	1.571	9.27	12.98	3.71
United Middle East & Commodore Hotels	1.824	-5.277	-0.01074	0.954	8.18	7.87	-0.31
Arab Inter. For Investment & Education	1.929	-4.206	0.00089	1.033	8.32	8.53	0.21
Al-Zarqa For Education & Investment	2.298	-3.581	0.01121	0.521	7.42	4.31	-3.11
Unified Co. For Org. Land Trans.	1.704	-3.783	-0.00055	1.159	8.54	9.57	1.03
Union Land Development Corp.	2.011	-4.474	0.00498	0.918	8.12	7.59	-0.53
Average	**2.058**	**-4.719**	**0.000**	**1.057**	**8.360**	**8.731**	**0.371**
Total Average	**2.059**	**-4.279**	**-0.001**	**0.880**	**Total Average**	**2.059**	**-0.001**

The following observations on the results in Table 1 seem pertinent. First, consider the D-W test, clearly it can be seen that autocorrelation was not a problem. Second, the homogeneity of the estimated regression coefficients was tested statistically by adopting the ADF Unit Root test, in addition, and the results of this test appear in the second panel in Table 1. Since the 0.05 critical value of ADF test were –2.891, it has to be noted that none of the results indicates a non-stationary problem. Parameters being stationary over the 9-year period considered is a condition for being able to employ OLS in estimating such estimators more reliably.

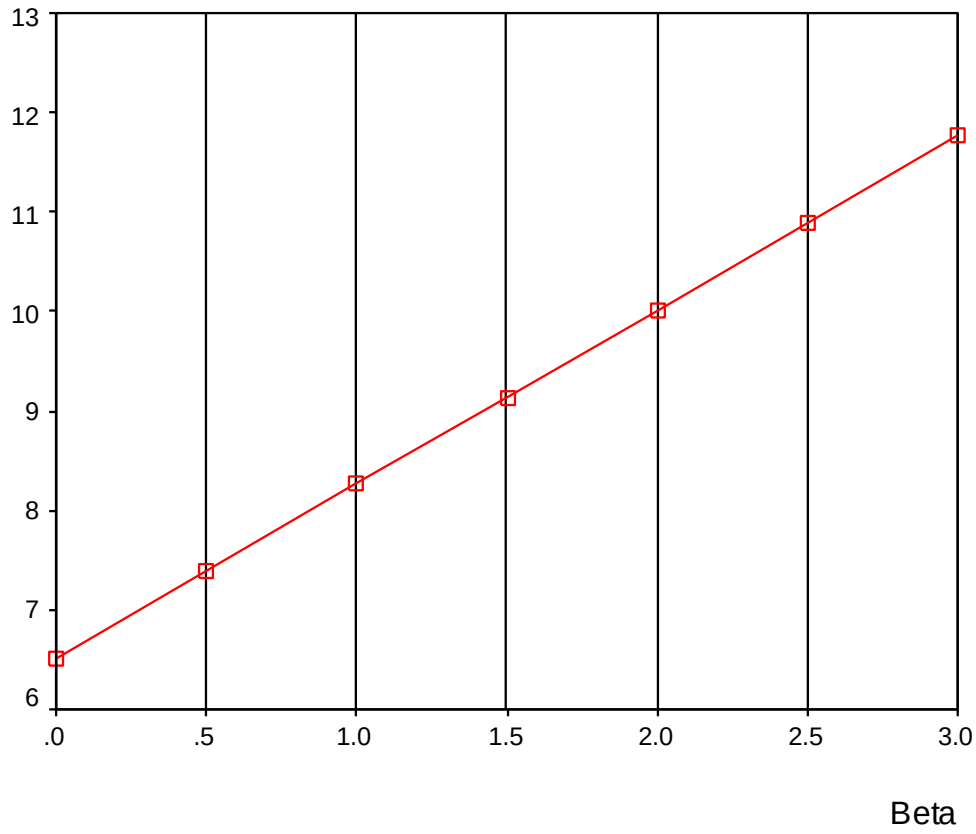
Third, the differences in common shares among sectors seem to be significant. It could be strongly argued that banking sector had the best performance ($\alpha\hat{} = 1.339$). Generally speaking, its prices were under priced and to lesser extent followed by the services sector ($\alpha\hat{} = 0.371$). The insurance sector, on the other hand, had the worst performance and its prices in general were over priced ($\alpha\hat{} = -3.679$) followed, but to less extent, by the industrial sector ($\alpha\hat{} = -0.593$). Overall, for the 82 companies included in this study, share prices were over priced ($\alpha\hat{} = -0.001$).

Exploring the results as an individual companies, clearly the best stock performances were for *Jordan Phosphate Mines, National Portfolio Securities, and Cairo Amman Bank*, respectively. Such shares were under priced and its recommended for investors to buy them since such action will create the opportunity of getting abnormal profits after the ASE modify the shares by raising them to their "*fair prices*". The worst stock performances were for *Jordan French Insurance, National Textile and Plastic Industries, and General Arabia Insurance*, respectively. Such shares were over priced and its recommended for investors to sell them since such action will create the opportunity of preventing losses after the ASE modify the shares by falling them to their "*fair prices*". As it is argued before, a common share said to be under priced when its ($\alpha\hat{}$) positive, which means the expected rate of return is higher than its required rate of return. Conversely, a common share said to be over priced when its ($\alpha\hat{}$) negative, which means the expected rate of return is lower than its required rate of return. Such results, more importantly, confirms the fact that ASE weak from efficiency is questionable (Blake 2001).

Common Stock Performance and SML

As it is presented in Table 1 and Figure 2 below, clearly it can be seen that common stocks having positive ($\alpha\hat{}$) performed very well plots over the SML (i.e. under priced) and providing yearly expected return more than what is required under priced.

FIGURE 2
COMMON STOCK PERFORMANCE AND SML
(April 1996-August 2004)



Common stocks having negative (αˆ), on other hand, performed badly and plots under the SML (i.e. over priced). Such stocks providing yearly expected return lower than what is required.

In an efficient market, however, expected rate of return should equal required rate of return and the common stock plots should be stand exactly on the SML representing the *equilibrium position* or what is called the *fair price*. Therefore, since αˆ for most of the companies' common stocks where not equal to zero, then the ASE efficiency is questionable.

VI. Summary and Conclusions

In this paper an attempt was made to evaluate empirically the common stock performance for companies listed at Amman Stock Exchange (ASE) by adopting the security market line (SML) approach. If a security is correctly priced, it plots on the SML. If a security is under-priced, the security is expected to rise in price and so is worth buying. If a security is over priced, the security is expected to fall in price and so is worth selling.

During the period April 1996-August 2004, companies listed at ASE seem, on average, being over priced. In addition, the differences in common shares among sectors seem to be significant. It could be strongly argued that banking sector had the best performance, where its prices were under priced and, to less extent, followed by the services sector. The insurance sector, on the other hand, had the worst

performance and its prices in general were over priced followed, but to less extent, followed by the industrial sector.

Although the banking sector had the best performance, however, such a result is not representing a healthy economy for greater development and growth. Rose (2002) argued that the types of banking organizations serving the public do *not* appear to be the key factor in the growth and development of the economy, though greater branching activity seems to accelerate economic growth somewhat. The real growth, therefore, comes from the industrial and service sectors where actual products and services produced and real economic value will be added contributing to the society's prosperity, a fact that was missed in the Jordanian economy according to our study results.

The results reported in this paper, in addition, are consistent with the view that common stock prices for companies listed at ASE were not fully fairly priced. Instead, it seems that disequilibria persisted in the capital market, and opportunities for earning abnormal returns were afforded to investors. From the point view of these investors, market inefficiency seems to have existed.

In conclusion, contrary to the growing belief that publicly available information is instantaneously impounded in security prices; there seem to be lags and frictions in the adjustment process making the prices a way from being *fair* and helping the capital market dealers to obtain *abnormal profits*. Some of the recommended factors urgently required for increasing the ASE efficiency, however, strengthening the regulations related to insider trading by taking action with whom practicing such an illegal activity, encouraging and enforcing companies listed at ASE toward more accurate, timely, and comprehensive disclosure, and also working toward licensing the Market-Makers activity.

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