



BETTING AGAINST BETA: EVIDENCE FROM BOURSA KUWAIT

أحد مشاريع



رؤية بنك الكويت المركزي والبنوك الكويتية
لتطوير الشباب الكويتي

The Winning Research Paper for the 2018
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BETTING AGAINST BETA: EVIDENCE FROM BOURSA KUWAIT

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الاستثمار ضد معامل "بيتا" في بورصة الكويت

تشير الأبحاث الأكاديمية إلى قيام المستثمرين بشراء الأسهم ذات معاملات "بيتا" العالية بكميات كبيرة، مما يؤدي إلى ارتفاع أسعار هذه الأسهم، وبالتالي انخفاض معدلات عوائدها. بناء على ذلك، ظهرت في الأعوام القليلة الماضية سياسة استثمارية أثبتت نجاحها من خلال مجموعة من الأبحاث الأكاديمية، وهي استراتيجية الاستثمار ضد معامل "بيتا" في أسواق الأسهم. بشكل أساسي، تعمل هذه السياسة الاستثمارية على شراء الأسهم ذات معاملات "بيتا" المنخفضة، والاستثمار ضد الأسهم ذات معاملات "بيتا" العالية، وذلك من خلال عمليات البيع المكشوف. بناء على ذلك، يهدف هذا البحث إلى دراسة الجدوى الاقتصادية لهذه السياسة ومدى قابليتها للتطبيق في بورصة الكويت، وتشير النتائج إلى نجاح سياسة الاستثمار ضد معامل "بيتا" في بورصة الكويت، حيث حققت هذه الاستراتيجية عوائد تفوق عائد السوق (المؤشر)، على مدى الثلاثة سنوات السابقة. حتى بعد احتساب المخاطر، تظل عوائد استراتيجية الاستثمار ضد "بيتا" أعلى من عائد المؤشر. لمحاولة شرح هذه العوائد، تم استخدام تحليل الانحدار من خلال تطبيق نموذج تقييم الأصول الرأسمالية للتنبؤ بعوائد استراتيجية الاستثمار ضد "بيتا"، إلا أن النموذج فشل بالتنبؤ بهذه العوائد. بعد إضافة عامل "السيولة" إلى النموذج، ارتفعت القدرة التنبؤية للنموذج بشكل بسيط، خصوصاً بالنسبة للشركات ذات معاملات "بيتا" المنخفضة، مما يشير إلى أهمية السيولة لهذه الشركات.

ABSTRACT

This paper reviews the betting against beta (BAB) investment strategy, which is an important recent development in asset pricing. BAB attempts to exploit the risk-reward continuum to generate excess returns by short-selling high-beta stocks and buying low-beta stocks. To test the strategy in the Kuwaiti equity market, firms in the Premier Market index of Boursa Kuwait are allocated to the long and short portfolios based on their beta coefficients. Consequently, evidence suggests that BAB generates abnormal returns in Boursa Kuwait, in excess of the risk-free rate. Furthermore, this return persists even on a risk-adjusted basis, as documented by an average Sharpe ratio of 1.56 for the BAB portfolio. Moreover, liquidity seems to matter more for low-beta stocks than high-beta stocks, as low-beta stocks might be perceived as less-popular.

1.0 INTRODUCTION

Since the inception of the capital asset pricing model (CAPM) of Treynor (1962), Sharpe (1964), Lintner (1965), and Mossin (1966), researchers have paid a great deal of attention to the beta coefficient. As such, betting against beta (hereafter BAB) put forth by Frazzini and Pedersen (2014) is a recent development in asset pricing research. As an investment strategy, BAB involves buying low-beta stocks, and shorting high-beta stocks. In essence, the strategy is based on the notion that high-beta stocks are inherently riskier and can hence be used by investors to generate higher Sharpe ratios. Because of this, investors tend to focus on high-beta stocks, which increases the prices of these stocks, thereby reducing their returns.

Hence, this paper attempts to add to the existing literature by exploring whether BAB is a viable investment strategy in Kuwait's stock market, Boursa Kuwait. To this end, firms in the Premier Market index are observed over a period of 3 years. During such period, a BAB portfolio is constructed, following the methodology of Frazzini and Pedersen (2014). Consequently, the results suggest that BAB does "beat" the index; the strategy generates positive excess returns for the period under study, even on a risk-adjusted basis. To elucidate, the BAB strategy produced an average Sharpe ratio of 1.56 over the sample period, compared to a market Sharpe ratio of approximately zero, for the same period. Furthermore, BAB's excess returns are not explained by the CAPM, as documented by the CAPM's poor explanatory power. Moreover, augmenting the CAPM with a variable that captures a stock's liquidity does increase the explanatory power of the model. However, this marginal increase in explanatory power is miniscule, in the grand scheme of things. Additionally, when adding liquidity into the CAPM, low-beta stocks exhibit a higher increase in explanatory power, when compared to high-beta stocks. This result is quite intuitive since low-beta stocks are less volatile, and hence benefit more from a surge in volume, compared to high-beta stocks.

It is important, however, to assert a couple of caveats. First, unlike Frazzini and Pedersen (2014), the assumption of leverage is relaxed. Instead, a simpler approach is utilized in this paper where an investor longs low-beta stocks and shorts high-beta stocks, with no access to leverage. Second, as of now, short-selling is prohibited in Boursa Kuwait. There are future

plans, however, to allow short-selling, as part of the upcoming strategies to promote Boursa Kuwait². As such, the investment strategy reviewed in this paper is still relevant. To the best of my knowledge, no paper has yet explored BAB in Boursa Kuwait.

The rest of the paper is organized as follows: section 2 reviews the existing literature on BAB and the beta anomaly, section 3 discusses the data and sampling process, section 4 explains the methodology utilized in this study, section 5 presents the results, while section 6 concludes the paper.

2. <http://www.alraimedia.com/Home/Details?id=660afa40-3cd1-4a9f-a2c2-02b57ab7825d>

2. RELATED LITERATURE

The evidence that low-beta stocks generate higher returns than high-beta stocks is not new; it dates back to the early work of Jensen et al. (1972). Indeed, the authors show that returns are not proportional to their covariance with the market, thereby violating the CAPM. These findings led to the rise of the “low-beta” anomaly³, where less volatile stocks produce higher risk-adjusted returns than volatile high-beta stocks. Indeed, the results of Black (1972) and Haugen and Heins (1975)⁴ suggest that the security market line for U.S stocks is too flat, thereby destabilizing the risk-return relationship. These findings were later confirmed by Fama and French (1992) as well. By the same token, Ang et al. (2006) show that volatile stocks produce lower average returns, when compared to less volatile stocks⁵. Additionally, Blitz and Vliet (2007) also confirm the existence of the beta anomaly, and postulate that investors in fact overpay for riskier stocks. To elaborate, the authors find that the low volatility anomaly is persistent, even after controlling for factors such as value, size, and momentum.

Because of these findings, Frazzini and Pedersen (2014) propose BAB as an investment strategy. In their paper, the authors differentiate between investors who have access to leverage, and those who do not. As a result, investors with an access to leverage short-sell high-beta stocks and long low-beta stocks, using leverage. On the other hand, investors with no access to leverage overweight high-beta stocks in the hopes of generating higher Sharpe ratios⁶. Furthermore, an important feature in Frazzini and Pedersen (2014) is the zero-cost setup. To elaborate, the authors construct the BAB portfolio in such a way that the “long” portfolio is leveraged to a beta of 1, while the “short” portfolio is deleveraged to a beta of 1,

3.Also known as the “beta” anomaly, or the “low-volatility” anomaly.

4.Haugen and Heins (1975)⁴ in fact show an inversion in the security market line.

5.The authors confirm their findings in Ang et al. (2009) as well.

6.To reaffirm, because of this, prices of high-beta stocks increase, which lowers their returns.

while the “short” portfolio is deleveraged to a beta of 1. Consequently, Frazzini and Pedersen (2014) observe that BAB produces significant returns, as long as there are no severe credit constraints. It is also worth mentioning that the authors study BAB’s performance over a long period; spanning from the years 1926 to 2009 in the U.S equity market. More importantly, BAB’s excess returns are persistent and robust across different asset pricing models. To elaborate, BAB still generates significant returns, even after adjusting for market, size, liquidity, and momentum factors. Interestingly, Frazzini and Pedersen (2014) also show that BAB produces significant returns beyond the U.S equity market; they examine a sample of global equities and show that the BAB strategy yields significant excess returns. In addition, Auer and Schuhmacher (2015) also document the existence of abnormal returns for BAB in the Dow Jones Industrial Average (DJIA) stocks, even after controlling for transaction costs. By the same token, Buchner and Wagner (2016) provide empirical evidence that is consistent with the findings of Frazzini and Pedersen (2014). Moreover, in the Indian stock market, evidence for the BAB anomaly is documented by Agarwalla et al. (2014). To explain the returns of BAB, Barroso and Maio (2018) utilize the same dataset used by Frazzini and Pedersen (2014). However, Barroso and Maio (2018) attempt to provide a different explanation by focusing on the volatility of BAB returns. Consequently, the authors show that BAB’s volatility is successful in predicting BAB’s performance.

Nonetheless, Cederburg and O’Doherty (2016) cast doubt in the previous findings. To elaborate, the authors show that conditional returns of BAB portfolios are significantly smaller and statistically insignificant, when compared to their unconditional counterparts. As such, the authors argue that one should be vigilant in interpreting BAB’s returns. In other words, the authors argue that in an unconditional setting, it is natural for BAB to produce significant returns, because of the absence of time-varying beta distribution.

3. DATA AND SAMPLING

This paper utilizes data from Thomson Reuters as well as Boursa Kuwait. The data obtained includes daily returns of Boursa Kuwait's Premier Market index, along with its' constituents, from November 2015, to December 2018. Initially, all the companies in the index were included. However, due to discrepancies in data, some firms had to be discarded. Examples of such data discrepancies include loss of data points for some firms. As such, this resulted in a final sample of 45 firms included in this study. Table (1) below provides a list of the firms included in the study, ranked by their size, as measured by market capitalization:

Table (1): Key metrics of firms under study

The table provides key metrics for the firms included in this study, based on the data available on Boursa Kuwait's website, as well as on Thomson Reuters. All the companies listed on this table are part of the Premier Market index of Boursa Kuwait. "Market Cap" refers to the market capitalization of the firm, and is captured by multiplying a firm's share price by its' number of shares outstanding, whereas P/E refers to the "price-to-earnings" ratio. Similarly, EPS is the "earnings per share", which is commonly calculated as the ratio of net income to the number of shares outstanding. And finally, "Div. Yield" is the dividend yield of a stock, measured by dividing a stock's dividend by the stock's market price. Market Cap and EPS figures are reported in Kuwaiti Dinars (K.D.)

Table 1

Firm	Market Cap. (K.D.)	P/E	EPS (K.D.)	Div. Yield
National Bank of Kuwait	5.18B	14.95	0.06	3.43%
Kuwait Finance House	3.88B	18.13	0.03	2.52%
Zain	1.94B	11.11	0.04	7.81%
Boubyan Bank	1.36B	27.47	0.02	1.12%
Agility Public Warehousing	1.21B	14.63	0.05	1.65%
Commercial Bank of Kuwait	911.01M	15.71	0.03	3.27%
Gulf Bank of Kuwait	783.37M	13.70	0.02	3.50%
Burgan Bank	697.50M	8.71	0.03	2.39%
Ahli United Bank KSC	581.49M	11.86	0.02	4.18%
Boubyan Petrochemical	530.54M	79.81	0.01	4.54%
Al Ahli Bank of Kuwait	477.65M	11.66	0.03	4.07%
VIVA	399.99M	8.13	0.10	3.75%
Qurain Petrochemical	383.62M	10.61	0.03	4.01%
Kuwait Projects	321.83M	7.79	0.03	4.58%
Warba Bank	315.00M	39.18	0.01	0.00%
Kuwait Int Bank	274.89M	12.55	0.02	3.77%
Gulf Finance Group	262.67M	4.25	0.10	5.54%
National Industries	213.50M	4.24	0.04	6.37%
Commercial RE	164.41M	11.75	0.01	5.43%
Alimtiaaz Investment	153.04M	9.92	0.01	5.19%
National Real Estate	124.43M	11.28	0.01	0.00%
Ithmaar**	78.21M	0.00	-0.01	0.00%
National Investments Co	72.29M	7.21	0.01	8.48%
Al-Mazaya Holding	48.87M	8.65	0.01	11.27%
Kuwait Real Estate Co	48.15M	17.41	0.00	0.00%
Soor Fuel Marketing	46.54M	13.05	0.01	4.35%
Oula Fuel Marketing	46.53M	11.42	0.01	4.35%
Aayan Leasing**	30.04M	0.00	-0.01	0.00%
Kuwait Business Town RE	27.60M	9.17	0.01	6.18%
Jiyad	25.34M	12.95	0.01	0.00%
First Investment	25.20M	24.04	0.00	0.00%
Coast Investment	19.38M	9.84	0.00	0.00%
Bayan Investment**	18.97M	0.00	0.00	0.00%
Abyaar Real Estate**	17.61M	0.00	0.00	0.00%
AAN Digital Services**	15.70M	0.00	-0.35	0.00%
Al Arabiya Real Estate**	15.45M	0.00	-1.51	0.00%
Al Enmaa RE**	14.87M	0.00	-0.02	0.00%
Gulf Petroleum**	13.13M	0.00	-2.96	0.00%
Al-Salam Group**	9.81M	0.00	-1.29	0.00%
Al Madina Finance**	8.67M	0.00	-0.10	0.00%
Investors Hld Group**	7.54M	0.00	-0.08	0.00%
Amar Finance&Leasing**	6.84M	0.00	-0.60	0.00%
Al Mal Investment**	6.17M	0.00	-1.28	0.00%
Boubyan Int Industries**	4.61M	0.00	-46.95	0.00%
Al Deera Holding**	3.75M	0.00	-0.01	0.00%

** Indicates a company with a negative EPS. Hence, P/E ratios of such companies are set equal to zero, in order not to distort averages. It is also worth mentioning that market capitalizations are calculated based on the most recent available market price, at the time of writing this paper. By the same token, P/E ratios, EPS, and dividend yields are also based on the most recent year for the stock under study.

4. METHODOLOGY

4.1. Calculating ex-ante betas

The methodology in this paper largely follows that of Frazzini and Pedersen (2014). As a starting point, ex-ante betas are calculated using Equation (1) below:

$$\hat{\beta}_{it} = \hat{\rho}_{it} \frac{\hat{\sigma}_{it}}{\hat{\sigma}_{mt}} \quad \text{Equation (1)}$$

Where $\hat{\rho}_{it}$ is the correlation between each stock and the market, at each time t . By the same token, $\hat{\sigma}_{it}$ is the estimated volatility of each stock at each time t , whereas $\hat{\sigma}_{mt}$ is the estimated volatility of the market at each time t . It is worth mentioning that both volatilities are estimated on a rolling basis. In other words, $\hat{\sigma}_{it}$ and $\hat{\sigma}_{mt}$ are three-point centred moving standard deviations.

4.2. Shrinkage beta estimator

Furthermore, as argued by Agarwalla et al. (2014), the shrinkage beta estimator proposed by Vasicek (1973) attempts to produce more reliable estimates of beta. As such, Equation (2) below is utilized to arrive at more stable estimates of ex-ante betas:

$$\beta_i^s = \beta_i w_i + \beta_m (1 - w_i) \quad \text{Equation (2)}$$

Where β_m is the beta coefficient of the market, and is assumed to be equal to one. Moreover, w_i , the weight of each stock, is calculated through Equation (3) below:

$$w_i = \frac{1}{T} \sum_{t=1}^T \frac{\sigma_{\beta_t}^2}{\sigma_{\beta_{it}}^2 + \sigma_{\beta_t}^2} \quad \text{Equation (3)}$$

4.3. Constructing the BAB portfolio

In Equation (3) above, $\sigma_{\beta_t}^2$ is the variance of the beta estimates, taken at the cross-sectional level. On the other hand, $\sigma_{\beta it}$ is the three-point centred moving standard deviation of the beta estimates produced from Equation (1). Thus, the weight of each stock is calculated individually. Consequently, the mean of w_i across all stocks was found to be approximately 0.64, which is quite close to the value of 0.60, taken by Frazzini and Pedersen (2014) in their paper. Results of shrunk betas are reported in Table (A1), in the appendix section.

After calculating the shrunk betas, monthly BAB portfolios are constructed, following the methodology utilized by Frazzini and Pedersen (2014). To begin, all the stocks included in the sample are sorted based on their betas calculated earlier. Afterwards, the median beta value is calculated for each calendar month. Hence, stocks with betas above the median are allocated to “high-beta” portfolios, whereas stocks with betas below the median are allocated to “low-beta” portfolios. As such, this results in 74 portfolios, two for each of the 37 months in the sample period. These portfolios are rebalanced on a monthly basis, based on the change in betas in the previous month. In other words, the weights in the portfolio will stay the same, but the firms assigned to each weight will change every month, based on the change in their monthly betas. As such, Equation (4) below is utilized to calculate the weight of each stock in each portfolio:

$$w_i = \frac{2 \times |RANK_i - \overline{RANK}|}{\sum_{i=1}^n ||RANK_i - \overline{RANK}||} \quad \text{Equation (4)}$$

In Equation (4) above, w_i is the weight of each individual stock in each portfolio, whereas $RANK_i$ is the rank of each stock based on its' beta. For example, for the 45 firms under study, a rank of “1” is assigned to the firm with the highest beta, while a rank of “45” is assigned to the firm with the lowest beta. This mechanism ensures that the highest weight in the “high-beta” portfolio is allocated to the firm with the highest beta. By the same token, this ensures that the firm with the lowest beta is assigned the highest weight in the “low-beta” portfolio. Constructed portfolios are reported in Table (A2), in the appendix section. It is also worth mentioning that during the construction of portfolios, the month November of year 2015 was dropped out, because November's data start on the 22nd, which

is not representative of the entire month. Thus, following the calculation of weights, the investment strategy proposed by Frazzini and Pedersen (2014) is utilized. As such, for each month, an investor would short the “high-beta” portfolio, and long the “low-beta” portfolio. Therefore, to calculate the returns for such an investment strategy, Equation (5) below is employed

$$BAB_t = \frac{1}{\bar{\beta}_L} (\bar{R}_{L,t} - R_{F,t}) - \frac{1}{\bar{\beta}_H} (\bar{R}_{H,t} - R_{F,t}) \quad \text{Equation (5)}$$

Where BAB_t is the overall monthly return generated by buying the “low-beta” portfolio and short-selling the “high-beta” portfolio. Furthermore, $\bar{\beta}_L$ is the weighted-average beta of the “low-beta” portfolio and $\bar{R}_{L,t}$ is the weighted-average return of the “low-beta” portfolio. By the same token, $\bar{\beta}_H$ is the weighted-average beta of the “high-beta” portfolio and $\bar{R}_{H,t}$ is the weighted-average return of the “high-beta” portfolio. Moreover, $R_{F,t}$ is the risk-free rate, which is calculated as the average of the discount rate for the past three years, as published by the Central Bank of Kuwait. However, to preserve simplicity, the assumption of zero-cost portfolio construction, set by Frazzini and Pedersen (2014) is relaxed in this paper. In other words, I assume that leverage is absent. As such, the terms $\frac{1}{\bar{\beta}_L}$ and $\frac{1}{\bar{\beta}_H}$ are dropped from Equation (5) above, since there is no apparent need to scale returns by betas in the absence of leverage.

5. RESULTS AND DISCUSSION

5.1. Performance of the BAB portfolio

BAB generated positive returns in excess of the risk-free rate for all the calendar months included in the sample, except for two months. These excess monthly returns are reported in Table (2) below:

Table (2): BAB excess returns		
This table provides BAB returns, in excess of the risk-free rate, for each calendar month in the sample period. These excess returns are compared to the returns of the Premier Market index for the same period. As can be seen from the table, BAB's returns were superior to the index, for all the months included in the study, except for two months. It is worth mentioning that bootstrapping techniques cannot be used to generate more data points, as the number of calendar month is less than optimal.		
Month-Year	BAB Return	Index Return
Dec-15	1.05%	-0.15%
Jan-16	1.72%	-0.46%
Feb-16	0.71%	0.09%
Mar-16	2.13%	0.02%
Apr-16	-0.23%	0.15%
May-16	2.47%	0.01%
Jun-16	0.34%	-0.03%
Jul-16	0.82%	0.09%
Aug-16	1.06%	-0.02%
Sep-16	1.43%	-0.02%
Oct-16	0.21%	0.00%
Nov-16	1.15%	0.13%
Dec-16	0.83%	0.17%
Jan-17	0.45%	0.79%
Feb-17	3.04%	-0.03%
Mar-17	0.19%	0.16%
Apr-17	2.02%	-0.13%
May-17	1.15%	-0.03%
Jun-17	1.52%	-0.02%
Jul-17	1.22%	0.06%
Aug-17	1.61%	0.03%
Sep-17	1.44%	-0.18%
Oct-17	1.34%	-0.11%
Nov-17	1.00%	-0.23%
Dec-17	-0.52%	0.17%
Jan-18	1.80%	0.20%
Feb-18	1.23%	0.07%
Mar-18	1.79%	-0.10%
Apr-18	0.72%	-1.37%
May-18	1.08%	-0.08%
Jun-18	1.21%	0.25%
Jul-18	0.91%	0.34%
Aug-18	1.23%	-0.04%
Sep-18	1.34%	0.08%
Oct-18	0.15%	-0.09%
Nov-18	1.31%	0.09%
Dec-18	0.31%	-0.06%
Average:	1.11%	-0.01%

Furthermore, to visualise Table (2) above, Figure (1) below plots BAB returns in comparison to index returns, for the sample period:

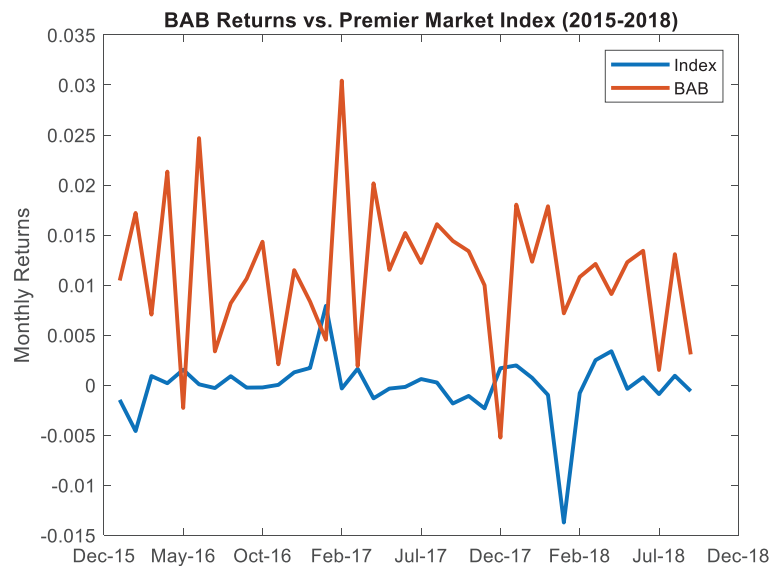


Figure (1): BAB Returns vs. Premier Market Index (2015-2018)

Despite the low negative correlation (-0.12) between the two portfolios, they do exhibit some co-movement, albeit the BAB portfolio tends to slightly lag the market when it comes to upward spikes, as can be seen from the plot above.

On a risk-adjusted basis, the BAB portfolio produced an average Sharpe ratio of 1.56, averaged over the entire sample period, compared to an average Sharpe ratio of approximately zero for the index. Sharpe ratios for individual months can be found in Table (A3) in the appendix.

5.2. Does the CAPM explain BAB returns?

By definition, the presence of consistent excess returns for the BAB portfolio represents a departure from the traditional CAPM. Put differently, BAB presents itself as an anomaly, from an asset pricing perspective. Nonetheless, regressing BAB returns on the CAPM represents a classic asset pricing test, in order to reveal whether the CAPM can explain the variation in BAB returns. As such, the regression model presented in Equation (6) below is run for all the portfolios, across the 37 months included in the study:

$$BAB_t = \alpha_t + \lambda_t R_{m,t} + \varepsilon_t$$

Equation (6)

Where *BAB_t* is the excess return for each monthly portfolio, and *R_{m,t}* is the excess monthly return for the Premier Market index. The results of this regression are reported in Table (3) below:

Table (3): CAPM & BAB				
$BAB_t = \alpha_t + \lambda_t R_{m,t} + \varepsilon_t$				
This regression model attempts to examine whether the CAPM captures any of the variation in BAB returns. Unsurprisingly, the model has a very poor explanatory power, since BAB manifests itself as a potential asset pricing anomaly, which is unexplained by the most traditional asset pricing model. As such, more sophisticated regressions need to be employed.				
	Coefficient	Std. Error	t-Statistic	P-Value
α_t	-0.024493***	0.0009	-26.94	0.0000
$R_{m,t}$	-0.05162	0.0689	-0.74863	0.45894
Root Mean Squared Error				0.00299
R^2	1.53%	Adjusted R^2		-1.20%
F-statistic vs. constant model	0.56			0.459
*** Indicates statistical significance at the 1% level.				

As expected, the CAPM produced very poor explanatory power, as measured by R^2 . This is consistent with the notion that BAB itself is an anomaly that represents a departure from the CAPM, mentioned earlier. In other words, a traditional asset pricing model such as the CAPM fails to capture the variation in BAB returns. As such, more sophisticated asset pricing models such as the Fama-French three factor (FF3) model and the Fama-French five factor (FF5) model could perhaps deliver a better explanatory power.

5.3. CAPM, BAB, and the optimal portfolio

Because the BAB portfolio assigns weights to stocks based on their beta coefficients, low beta stocks might drive down the explanatory power of the CAPM, due to their lower co-movement with the index. In this section, I regress the returns of stocks with the highest and lowest beta coefficients on market returns, on an individual basis. The aim of this task is to check whether high-beta stocks are better explained by index movements than low-beta stocks. To this end, Equation (7) below is utilized:

$$R_{i,t} = \alpha_t + \lambda_t R_{m,t} + \varepsilon_{i,t} \qquad \text{Equation (7)}$$

Where $R_{i,t}$ is the return of the individual stock. The results of this regression are reported in Table (4) below. It is perhaps worth mentioning that intercept coefficients are omitted from the table. Furthermore, in the table below, stocks are sorted from highest to lowest, based on their beta coefficients acquired from Equation (2).

Table (4): Beta coefficients and the CAPM

$$R_{i,t} = \alpha_t + \lambda_t R_{m,t} + \varepsilon_{i,t}$$

This regression model attempts to examine whether index returns serve as a better explanator for high-beta stocks, than they do for low-beta stocks. The results of this regression could shed light on why index returns have a poor explanatory power for BAB returns. This is particularly important since low-beta stocks tend to be less volatile than high-beta stocks.

Stock	Beta*	R _{m,t}	R ²	P-Value
VIVA	1.20	0.4328***	62.70%	0.00
BOUB	1.03	0.2265***	52.80%	0.00
AAYA	1.02	0.2244***	20.20%	0.00
ZAIN	1.02	0.2728***	46.40%	0.00
BIHC	1.02	0.1940***	4.78%	0.00
WARB	1.01	0.2835***	53.50%	0.00
ITHMR	1.00	0.2247***	13.30%	0.00
KREK	0.98	0.1855***	23.30%	0.00
NBK	0.98	0.2413***	49.80%	0.00
AAN	0.88	0.1488***	6.91%	0.00
GFHK	0.84	0.1196***	5.35%	0.00
GBK	0.81	0.1587***	27.50%	0.00
CBK	0.75	0.0978***	3.74%	0.00
MALK	0.72	0.1357***	1.56%	0.00
MADI	0.67	0.0735***	1.53%	0.00
ABYR	0.67	0.0897***	3.44%	0.00
ALQK	0.66	0.0992***	10.20%	0.00
KBTK	0.66	0.0849***	5.00%	0.00
TIJK	0.59	0.0686***	5.11%	0.00
NREK	0.57	0.0602***	1.65%	0.00
BPCC	0.54	0.0609***	3.85%	0.00
KFH	0.53	0.0836*	0.46%	0.06
OLAK	0.46	0.0443***	1.12%	0.00
KIB	0.46	0.0576***	5.40%	0.00
DEER	0.43	0.0323	0.17%	0.24

Table (4): Beta coefficients and the CAPM

$$R_{i,t} = \alpha_t + \lambda_t R_{m,t} + \varepsilon_{i,t}$$

This regression model attempts to examine whether index returns serve as a better explainer for high-beta stocks, than they do for low-beta stocks. The results of this regression could shed light on why index returns have a poor explanatory power for BAB returns. This is particularly important since low-beta stocks tend to be less volatile than high-beta stocks.

Stock	Beta*	R _{m,t}	R ²	P-Value
KPRO	0.40	0.0446***	2.81%	0.00
MAZA	0.40	0.0352***	0.96%	0.00
AGLT	0.39	0.0369***	1.29%	0.00
SOOR	0.37	0.0296**	0.67%	0.02
COAS	0.36	0.0280	0.20%	0.14
INVK	0.32	0.0238	0.20%	0.17
AMAR	0.32	0.0182	0.06%	0.48
SAGH	0.24	0.0145	0.00%	0.46
JIYAD	0.20	-0.0995***	1.81%	0.00
ALIMK	0.16	-0.0715***	3.77%	0.00
BAYK	0.15	-0.0347*	0.35%	0.09
BKME	0.14	-0.0304***	1.40%	0.00
ABK	0.14	-0.0373***	0.93%	0.00
NIND	0.12	-0.0193	0.28%	0.13
ENMA	0.10	-0.0124	0.00%	0.41
OULA	0.10	-0.0149	0.19%	0.21
BURG	0.08	0.0053	0.00%	0.57
GPIK	0.03	0.0020	0.00%	0.89
ARAB	0.00	0.0000	0.00%	0.99
NINV	0.00	0.0001	0.00%	0.99

* This is a stock's shrunk beta, acquired from Equation (2).

* Indicates statistical significance at the 10% level.

** Indicates statistical significance at the 5% level.

*** Indicates statistical significance at the 1% level.

Unsurprisingly, the results of Table (4) above illustrate that excess returns of stocks with a higher beta coefficient tend to be better explained by index returns. This comes as no surprise since the beta coefficient in the CAPM essentially captures the co-movement of the underlying stock with the index. Nonetheless, it proves especially helpful for Boursa Kuwait since beta coefficients of the firms in the Premier Market are relatively low⁷, particularly for the sample period under study.

5.4. Does liquidity explain BAB returns?

As postulated by Frazzini and Pedersen (2014), investors tend to overweight high-beta stocks in order to generate higher returns per unit of risk. As such, it is plausible to think that high-beta stocks would be more liquid than low-beta stocks. Therefore, this section of the paper attempts to explore whether liquidity, in terms of trading volume, exerts explanatory power over BAB returns. To this end, Equation (8) below augments Equation (7) with an extra variable that captures a stock's liquidity:

$$R_{i,t} = \alpha_t + \lambda_t R_{m,t} + \psi_{i,t} VOL_{i,t} + \varepsilon_{i,t} \quad \text{Equation (8)}$$

Where $VOL_{i,t}$ is the daily trading volume, in number of shares, for each stock included in the sample. Consequently, Table (5) below presents the results of this regression. However, provide a better test of the explanatory power of trading volume, Table (5) below reports the adjusted R^2 instead of the unadjusted version utilized in Table (4), earlier:

⁷ As measured by the shrunk estimator in Equation (2).

Table (5): Does liquidity explain BAB returns?

$$R_{i,t} = \alpha_t + \lambda_t R_{m,t} + \psi_{i,t} VOL_{i,t} + \varepsilon_{i,t}$$

This regression model augments Equation (7) with the trading volume (in number of shares) for each stock in the sample. The regression is based on the notion that high beta stocks tend to be more popular among investors seeking to acquire a higher return per unit of risk (i.e. Sharpe ratio). As such, they would overweight high-beta stocks (Frazzini and Pedersen, 2014). In the table below “Adj. R²” refers to the adjusted r-squared, while ΔR^2 is the change in explanatory power between Equation (8) and Equation (7). This is done to capture the explanatory contribution of trading volume.

Stock	Beta*	R _{m,t}	VOL _{i,t}	Adj. R ²	ΔR ²
VIVA	1.20	0.4331***	0.0000	62.70%	0.00%
BOUB	1.03	0.2269***	0.0000**	52.90%	0.10%
AAYA	1.02	0.2251***	0.0000***	21.50%	1.30%
ZAIN	1.02	0.2733***	0.0000*	46.40%	0.00%
BIHHC	1.02	0.1982***	0.0000***	6.70%	1.92%
WARB	1.01	0.2841***	0.0000***	57.20%	3.70%
ITHMR	1.00	0.2260***	0.0000***	14.80%	1.50%
KREK	0.98	0.1855***	0.0000***	23.20%	-0.10%
NBK	0.98	0.2414***	0.0000***	49.70%	-0.10%
AAN	0.88	0.1499***	0.0000***	8.67%	1.76%
GFHK	0.84	0.1211***	0.0000***	6.88%	1.53%
GBK	0.81	0.1593***	0.0000	27.50%	0.00%
CBK	0.75	0.0978***	-0.0000	3.49%	-0.25%
MALK	0.72	0.1377***	0.0000**	1.82%	0.26%
MADI	0.67	0.0755***	0.0000***	2.82%	1.29%
ABYR	0.67	0.0900***	0.0000***	4.54%	1.10%
ALQK	0.66	0.1001***	0.0000***	17.00%	6.80%
KBTK	0.66	0.0859***	0.0000***	6.34%	1.34%

Table (5): Does liquidity explain BAB returns?

$$R_{i,t} = \alpha_t + \lambda_t R_{m,t} + \psi_{i,t} \text{VOL}_{i,t} + \varepsilon_{i,t}$$

This regression model augments Equation (7) with the trading volume (in number of shares) for each stock in the sample. The regression is based on the notion that high beta stocks tend to be more popular among investors seeking to acquire a higher return per unit of risk (i.e. Sharpe ratio). As such, they would overweight high-beta stocks (Frazzini and Pedersen, 2014). In the table below “Adj. R²” refers to the adjusted r-squared, while ΔR^2 is the change in explanatory power between Equation (8) and Equation (7). This is done to capture the explanatory contribution of trading volume.

Stock	Beta*	R _{m,t}	VOL _{i,t}	Adj. R ²	ΔR^2
TIJK	0.59	0.0690***	0.0000**	5.55%	0.44%
NREK	0.57	0.0611***	0.0000***	3.06%	1.41%
BPCC	0.54	0.0614***	0.0000*	4.02%	0.17%
KFH	0.53	0.0798*	0.0000***	1.38%	0.92%
OLAK	0.46	0.0454***	0.0000***	1.65%	0.53%
KIB	0.46	0.0588***	0.0000***	8.04%	2.64%
DEER	0.43	0.0341	0.0000***	2.13%	1.96%
KPRO	0.40	0.0447***	0.0000***	2.58%	-0.23%
MAZA	0.40	0.0359***	0.0000***	2.62%	1.66%
AGLT	0.39	0.0380***	0.0000***	1.78%	0.49%
SOOR	0.37	0.0303**	0.0000***	1.40%	0.73%
COAS	0.36	0.0298	0.0000***	1.68%	1.48%
INVK	0.32	0.0243	0.0000***	2.75%	2.55%
AMAR	0.32	0.0196	0.0000***	2.32%	2.25%
SAGH	0.24	0.0168	0.0000***	2.42%	2.42%
JIYAD	0.20	-0.0991***	0.0000	1.57%	-0.24%
ALIMK	0.16	-0.0702***	0.0000***	5.99%	2.22%
BAYK	0.15	-0.0331	0.0000***	1.84%	1.49%
BKME	0.14	-0.0307***	0.0000	1.57%	0.17%
ABK	0.14	-0.037*	0.0000	0.90%	-0.03%
NIND	0.12	-0.0179	0.0000***	2.65%	2.37%
ENMA	0.10	-0.0118	0.0000**	0.53%	0.53%
OULA	0.10	-0.0140	0.0000***	1.49%	1.30%

Table (5): Does liquidity explain BAB returns?

$$R_{i,t} = \alpha_t + \lambda_t R_{m,t} + \psi_{i,t} VOL_{i,t} + \varepsilon_{i,t}$$

This regression model augments Equation (7) with the trading volume (in number of shares) for each stock in the sample. The regression is based on the notion that high beta stocks tend to be more popular among investors seeking to acquire a higher return per unit of risk (i.e. Sharpe ratio). As such, they would overweight high-beta stocks (Frazzini and Pedersen, 2014). In the table below “Adj. R²” refers to the adjusted r-squared, while ΔR^2 is the change in explanatory power between Equation (8) and Equation (7). This is done to capture the explanatory contribution of trading volume.

Stock	Beta*	R _{m,t}	VOL _{i,t}	Adj. R ²	ΔR^2
BURG	0.08	0.0069	0.0000***	5.08%	5.08%
GPIK	0.03	0.0043	0.0000***	3.14%	3.14%
ARAB	0.00	0.0009	0.0000***	0.65%	0.65%
NINV	0.00	0.0021	0.0000***	2.53%	2.53%

* This is a stock’s shrunk beta, acquired from Equation (2).

* Indicates statistical significance at the 10% level.

** Indicates statistical significance at the 5% level.

*** Indicates statistical significance at the 1% level.

As can be observed from Table (5) above, trading volume starts to take on a more important role as beta starts to get smaller. In other words, while liquidity matters for high beta stocks, it plays a more important role for low-beta stocks, as documented by higher figures of ΔR^2 for low-beta stocks. This finding is quite intuitive because it is consistent with the notion that low-beta stocks are less popular and could therefore be less liquid. To elaborate, because these stocks are less popular, they respond more violently to a surge in volume. As such, they exhibit higher price movements when volume levels change significantly. Furthermore, this increase in explanatory power can be seen in Figure (2) below; changes in ΔR^2 start to pick up, as beta levels decrease. Indeed, a linear trend line confirms this slight increase in ΔR^2 across the sample firms:

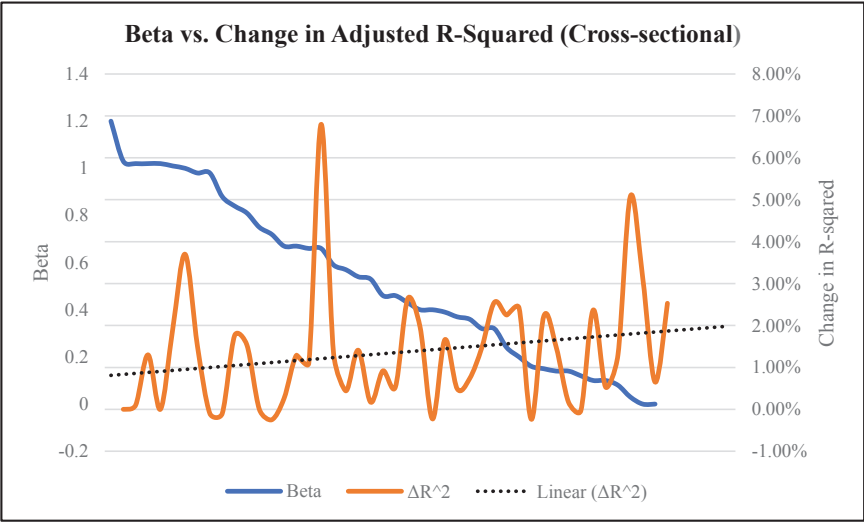


Figure (2): Change in adjusted r-squared in response to including trading volume as an explanatory variable.

The improved explanatory power of Equation (8) can also be seen by averaging the explanatory powers of Equations (7) and (8). To elucidate, the regression model in Equation (7) had an average R^2 of 9.43%, while the average adjusted R^2 of Equation (8) is 10.78%.

5.4.1. Are low-beta stocks inherently less liquid?

To explore the question whether low-beta stocks are less liquid than high-beta stocks, Amihud's measure of illiquidity is utilized in this section. The illiquidity measure, proposed by Amihud (2002) is quite a popular measure in the literature to gauge the illiquidity of stocks. This illiquidity measure is captured by Equation (9) below:

$$ILLIQ_{i,t} = 10^8 \times \left[\frac{1}{N} \times \sum_{i=1}^N \frac{|r_{i,t}|}{KDVOL_{i,t}} \right] \quad \text{Equation (9)}$$

Where $|r_{i,t}|$ is the absolute value of daily returns, covering the entire period of the sample. On the other hand, $dVOL_{i,t}$ is the daily K.D volume of each stock. It is worth mentioning that 10^8 is included in Equation (9) above to produce more presentable figures, as the equation usually yields very small figures when volumes are large, compared to daily returns. Intuitively, then, Amihud's measure of illiquidity is essentially a measure of price impact. Put differently, the larger the price impact of a stock, compared to its' traded volume, the more illiquid it is, and vice versa. Hence, the larger $ILLIQ_{i,t}$, the less liquid is the stock. The results of Equation (9) are reported in Table (6) below, where stocks are sorted from highest to lowest, based on their illiquidity:

Table (6): Amihud's measure of illiquidity

Amihud's measure of illiquidity, proposed by Amihud (2002), is a quite simple yet intuitive measure of a stock's illiquidity; it is essentially a measure of the price impact induced by trades. As such, stocks with a higher price impact have a higher illiquidity ratio, and vice versa.

Firm	ILLIQ_{i,t}	β_i	β_s
DEER	270.987	0.184	0.425
BIIHC	152.958	1.047	1.019
MADI	58.010	0.433	0.673
JIYAD	27.172	-0.465	0.201
AMAR	25.613	0.120	0.315
CBK	22.485	0.550	0.751
ARAB	21.937	0.001	0.002
ENMA	11.040	-0.069	0.104
AAN	10.911	0.719	0.875
COAS	9.143	0.143	0.358
KBTK	9.092	0.403	0.662
OLAK	9.079	0.214	0.460
ABK	5.541	-0.184	0.139
BAYK	5.351	-0.195	0.150
SAGH	3.493	0.074	0.235
NINV	3.249	0.000	0.001
TIJK	3.034	0.318	0.588
NREK	2.884	0.316	0.571
MAZA	2.838	0.166	0.397
GFHK	2.480	0.681	0.839
GPIK	2.179	0.008	0.033
ITHMR	1.506	0.988	0.995
BKME	0.900	-0.140	0.141
KIB	0.846	0.208	0.459
MALK	0.815	0.482	0.722
ALIMK	0.506	-0.321	0.159
BPCC	0.405	0.278	0.536
SOOR	0.402	0.145	0.368
OULA	0.368	-0.073	0.102
KPRO	0.265	0.181	0.402
AAYA	0.239	1.063	1.025
KREK	0.238	0.966	0.985
INVK	0.104	0.117	0.316
ABYR	0.098	0.407	0.666
NIND	0.034	-0.092	0.120
VIVA	0.033	1.625	1.206
ALQK	0.031	0.405	0.664
BURG	0.021	0.019	0.080
WARB	0.008	1.031	1.012
BOUB	0.007	1.069	1.031
AGLT	0.003	0.160	0.389
GBK	0.002	0.625	0.807
ZAIN	0.002	1.055	1.022
KFH	0.001	0.251	0.528
NBK	0.001	0.957	0.980

While the evidence is not perfectly clear, it can still be seen that low-beta stocks are more likely to be less liquid, as shown by their larger propensity to yield a higher than average $ILLIQ_{i,t}$ measure. To elaborate, all the stocks in the sample had an average $ILLIQ_{i,t}$ measure of 14.780, with only seven firms producing an illiquidity measure above that average. These seven firms have a combined average beta of 0.267, thereby confirming the statistical likelihood of low-beta firms being less liquid. Moreover, as can be seen from Figure (3) below, positive spikes in $ILLIQ_{i,t}$ are often associated with stocks with a lower beta:

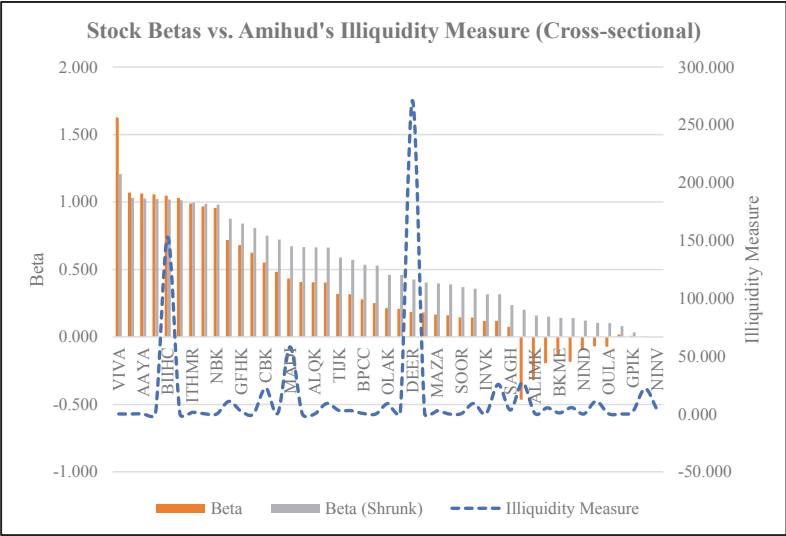


Figure (3): Change in adjusted r-squared in response to including trading volume as an explanatory variable.

6. CONCLUSION

This paper reviewed an important recent development in asset pricing, which is the betting against beta (BAB) strategy. More precisely, this paper explored the viability of BAB as an investment strategy in Boursa Kuwait, by observing firms in the Premier Market index, over a period of three years. Consequently, it is documented that BAB generates abnormal returns in excess of the risk-free rate, even on a risk-adjusted basis. In addition, the results suggest that liquidity matters more for low-beta stocks, perhaps because they are perceived as low volatile by investors, which causes them to be less popular. As such, they become less liquid and benefit substantially from a surge in trading volume.

Nonetheless, it is important to highlight the limitations of this study. First, due to data-related issues, the sample period has shrunk substantially. As a result, representativeness issues may arise, and thus the results of this paper are not meant to be generalized. Second, this paper employs exaggeratedly simple asset pricing models such as the CAPM, to predict the variation in BAB returns. This is extremely naïve, as more sophisticated asset pricing models, such as FF3 and FF5 could prove more robust. Third, to maintain simplicity, transaction costs are left out of the analysis, this brings into question the practicality of BAB as an investment strategy in Boursa Kuwait. Hence, there exist several exciting future research avenues for BAB applicability and existence in Boursa Kuwait. To illustrate, future research could observe the existence and persistence of BAB over a larger and longer sample period than the one employed in this paper. In addition, future research could apply more sophisticated asset pricing models, such as the ones mentioned earlier, to potentially explain the variation in BAB returns. Furthermore, it is interesting to explore whether transaction costs would render the BAB strategy inferior.

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APPENDIX

Table (A1): Shrunk beta estimator

This table reports the shrunk betas for the stocks under study, using Equation (2)*, where $\hat{\beta}_{it}$ is the beta estimated under Equation (1)*, and w_i is the weight of each individual stock, calculated through Equation (3): $w_i = \frac{1}{T} \sum_{t=1}^T \frac{\sigma_{\hat{\beta}_i}^2}{\sigma_{\hat{\beta}_{it}} + \sigma_{\hat{\beta}_i}^2}$, the aim of this task is to produce more robust figures of beta for each stock.

Firm	w_i	$(1 - w_i)$	$\hat{\beta}_{it}$	β_i^S
NBK	0.457	0.543	0.957	0.980
KFH	0.631	0.369	0.251	0.528
GBK	0.515	0.485	0.625	0.807
ABK	0.727	0.273	-0.184	0.139
CBK	0.553	0.447	0.550	0.751
KIB	0.683	0.317	0.208	0.459
BURG	0.938	0.062	0.019	0.080
BOUB	0.446	0.554	1.069	1.031
BKME	0.754	0.246	-0.140	0.141
WARB	0.408	0.592	1.031	1.012
ZAIN	0.391	0.609	1.055	1.022
AGLT	0.727	0.273	0.160	0.389
KPRO	0.731	0.269	0.181	0.402
KREK	0.448	0.552	0.966	0.985
KBTK	0.566	0.434	0.403	0.662
AAN	0.444	0.556	0.719	0.875
AAYA	0.396	0.604	1.063	1.025
ABYR	0.563	0.437	0.407	0.666
ARAB	0.998	0.002	0.001	0.002
DEER	0.704	0.296	0.184	0.425
MADI	0.576	0.424	0.433	0.673
MALK	0.536	0.464	0.482	0.722
ENMA	0.838	0.162	-0.069	0.104
AMAR	0.778	0.222	0.120	0.315

Table (A1): Shrunk beta estimator

This table reports the shrunk betas for the stocks under study, using Equation (2)*, where $\hat{\beta}_{it}$ is the beta estimated under Equation (1)*, and w_i is the weight of each individual stock, calculated through Equation (3): $w_i = \frac{1}{T} \sum_{t=1}^T \frac{\sigma_{\hat{\beta}_{it}}^2}{\sigma_{\hat{\beta}_{it}}^2 + \sigma_{\beta_{it}}^2}$, the aim of this task is to produce more robust figures of beta for each stock.

Firm	w_i	$(1 - w_i)$	$\hat{\beta}_{it}$	β_i^S
ALIMK	0.637	0.363	-0.321	0.159
SAGH	0.826	0.174	0.074	0.235
MAZA	0.723	0.277	0.166	0.397
BAYK	0.712	0.288	-0.195	0.150
BIHC	0.398	0.602	1.047	1.019
BPCC	0.643	0.357	0.278	0.536
COAS	0.750	0.250	0.143	0.358
TIJK	0.605	0.395	0.318	0.588
OLAK	0.687	0.313	0.214	0.460
GFHK	0.504	0.496	0.681	0.839
GPIK	0.974	0.026	0.008	0.033
INVK	0.775	0.225	0.117	0.316
ITHMR	0.394	0.606	0.988	0.995
JIYAD	0.545	0.455	-0.465	0.201
VIVA	0.330	0.670	1.625	1.206
NREK	0.627	0.373	0.316	0.571
NINV	0.999	0.001	0.000	0.001
NIND	0.806	0.194	-0.092	0.120
ALQK	0.565	0.435	0.405	0.664
OULA	0.837	0.163	-0.073	0.102
SOOR	0.738	0.262	0.145	0.368

* Equation (1): $\hat{\beta}_{it} = \hat{\rho}_{it} \frac{\hat{\sigma}_{it}}{\hat{\sigma}_{mkt}}$

* Equation (2): $\beta_i^S = \beta_i w_i + \beta_m (1 - w_i)$

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Dec. 2015	Beta	Returns	Jan. 2016	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(VIVA)	2.446459699	-0.37%	(MALK)	1.03507299	5.20%
	2	21	0.083003953	(ZAIN)	1.171888085	-0.11%	(ITHMR)	0.612145296	-1.59%
	3	20	0.079051383	(AAYA)	1.047782689	0.01%	(AAYA)	0.546107477	0.34%
	4	19	0.075098814	(ITHMR)	1.045846019	-0.07%	(GFHK)	0.478134985	0.34%
	5	18	0.071146245	(BOUB)	0.990452141	0.00%	(AAN)	0.459596069	-0.83%
	6	17	0.067193676	(WARB)	0.972182053	-0.18%	(ZAIN)	0.459362083	-0.13%
	7	16	0.063241107	(KREK)	0.936910044	-0.30%	(BOUB)	0.45579148	-0.45%
	8	15	0.059288538	(GFHK)	0.889201582	0.86%	(NBK)	0.440011248	-0.50%
	9	14	0.055335968	(GBK)	0.639146354	-0.24%	(WARB)	0.43501969	-0.57%
	10	13	0.051383399	(KBTk)	0.556422408	-0.09%	(GBK)	0.430418494	-1.00%
	11	12	0.04743083	(NBK)	0.535755064	-0.11%	(KREK)	0.41349387	-1.29%
	12	11	0.043478261	(ABYR)	0.519647262	-0.26%	(VIVA)	0.411266382	-0.25%
	13	10	0.039525692	(KFH)	0.461346688	-0.31%	(ABYR)	0.331259978	-1.01%
	14	9	0.035573123	(AAN)	0.441518732	-0.21%	(KBTk)	0.328660847	-0.90%
	15	8	0.031620553	(CBK)	0.417459902	0.38%	(BIHC)	0.318457077	-1.21%
	16	7	0.027667984	(BIHC)	0.410120155	-0.23%	(CBK)	0.293133866	-0.11%
	17	6	0.023715415	(BPCC)	0.369714395	0.01%	(KFH)	0.292006174	-0.87%
	18	5	0.019762846	(ALQK)	0.362262517	-0.09%	(ALQK)	0.259836284	-0.70%
	19	4	0.015810277	(MALK)	0.337745945	0.52%	(BPCC)	0.235122121	-0.48%
	20	3	0.011857708	(NREK)	0.281597902	0.37%	(TIJK)	0.147082388	0.08%
	21	2	0.007905138	(DEER)	0.249481568	-1.21%	(MADI)	0.124058645	-0.87%
	22	1	0.003952569	(TIJK)	0.245704206	0.06%	(NREK)	0.118347898	0.04%
Long "low-beta" portfolio.	23	0	0	(MADI)	0.237249584	-0.07%	(KIB)	0.115005362	-0.55%
	24	1	0.003952569	(AGLT)	0.232202191	-0.17%	(SOOR)	0.108089615	0.05%
	25	2	0.007905138	(MAZA)	0.21353715	0.01%	(OLAK)	0.090556867	-1.08%
	26	3	0.011857708	(INVK)	0.160332857	-0.79%	(INVK)	0.082002299	-0.75%
	27	4	0.015810277	(SOOR)	0.150241777	-0.15%	(COAS)	0.073417225	-0.97%
	28	5	0.019762846	(KIB)	0.131613557	-0.16%	(KPRO)	0.070490811	-0.35%
	29	6	0.023715415	(KPRO)	0.127554733	-0.22%	(AGLT)	0.068120697	-0.69%
	30	7	0.027667984	(COAS)	0.107620823	-0.63%	(MAZA)	0.063727196	-0.28%
	31	8	0.031620553	(OLAK)	0.097634568	-0.06%	(AMAR)	0.040280812	0.77%
	32	9	0.035573123	(AMAR)	0.078208772	-0.75%	(DEER)	0.03579771	-0.17%
	33	10	0.039525692	(SAGH)	0.073471314	-0.53%	(SAGH)	0.032438236	-0.37%
	34	11	0.043478261	(BURG)	0.016300138	-0.17%	(BURG)	0.010661763	-1.00%
	35	12	0.04743083	(GPIK)	0.011610248	0.41%	(GPIK)	0.002803667	-0.88%
	36	13	0.051383399	(ARAB)	0.000463986	-0.52%	(ARAB)	0.000150451	-0.23%
	37	14	0.055335968	(NINV)	-0.00042226	-0.06%	(NINV)	-0.000112301	-0.75%
	38	15	0.059288538	(ENMA)	-0.069567642	0.23%	(ENMA)	-0.021768051	0.16%
	39	16	0.063241107	(NIND)	-0.078571971	-0.37%	(OULA)	-0.036174177	-0.16%
	40	17	0.067193676	(BAYK)	-0.107598311	-0.28%	(NIND)	-0.043424067	-0.70%
	41	18	0.071146245	(ABK)	-0.111708329	-0.15%	(BAYK)	-0.057482345	-0.76%
	42	19	0.075098814	(OULA)	-0.11516364	-0.14%	(BKME)	-0.06925708	-0.18%
	43	20	0.079051383	(BKME)	-0.155982928	0.09%	(ABK)	-0.093533486	-0.16%
	44	21	0.083003953	(ALIMK)	-0.318854298	0.01%	(ALIMK)	-0.104880014	-0.25%
	45	22	0.086956522	(JIYAD)	-0.436384156	1.48%	(JIYAD)	-0.276182808	0.68%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				3.58%	4.63%	1.05%	2.91%	4.63%	1.72%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (Ri)	Ri - Avg. (Ri)	Wi	Feb. 2016	Beta	Returns	Mar. 2016	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(ZAIN)	1.449183404	0.24%	(BOUB)	10.60353975	-0.13%
	2	21	0.083003953	(ITHMR)	1.306760582	-0.20%	(KREK)	5.611079385	0.63%
	3	20	0.079051383	(NBK)	1.190076583	0.09%	(NBK)	4.790533937	-0.56%
	4	19	0.075098814	(WARB)	1.18962811	0.08%	(GFHK)	4.723516909	0.86%
	5	18	0.071146245	(VIVA)	1.185716774	0.12%	(VIVA)	4.612759648	0.27%
	6	17	0.067193676	(KREK)	0.993483419	0.47%	(WARB)	4.471759509	0.01%
	7	16	0.063241107	(AAYA)	0.806705346	-0.40%	(CBK)	2.830107207	-0.38%
	8	15	0.059288538	(GFHK)	0.706654072	1.38%	(AAYA)	2.696224587	-0.26%
	9	14	0.055335968	(BOUB)	0.685450903	0.01%	(ZAIN)	2.553153175	-0.10%
	10	13	0.051383399	(ABYR)	0.550255637	0.36%	(GBK)	2.08371371	0.05%
	11	12	0.04743083	(KBTK)	0.493364091	0.30%	(ITHMR)	2.035175244	0.77%
	12	11	0.043478261	(AAN)	0.484587637	0.68%	(AAN)	1.269497704	0.18%
	13	10	0.039525692	(TLJK)	0.483424128	-0.58%	(BIHC)	1.144929083	-0.51%
	14	9	0.035573123	(BIHC)	0.47341014	0.29%	(MADI)	1.085493217	-0.66%
	15	8	0.031620553	(GBK)	0.462448998	-0.23%	(KBTK)	1.038277859	0.56%
	16	7	0.027667984	(CBK)	0.436772871	-0.18%	(NREK)	1.006533211	0.29%
	17	6	0.023715415	(OLAK)	0.345411769	-0.70%	(TLJK)	0.808346206	0.23%
	18	5	0.019762846	(ALQK)	0.325289674	0.71%	(ABYR)	0.704486923	0.01%
	19	4	0.015810277	(KFH)	0.31816142	0.64%	(ALQK)	0.6849747	0.19%
	20	3	0.011857708	(MADI)	0.309127778	-1.09%	(COAS)	0.664952917	0.60%
	21	2	0.007905138	(COAS)	0.258773356	1.37%	(OLAK)	0.626476287	0.00%
	22	1	0.003952569	(NREK)	0.249949119	-0.10%	(BPCC)	0.439150845	-0.09%
Long "low-beta" portfolio.	23	0	0	(BPCC)	0.235883613	-0.34%	(KPRO)	0.431395311	-0.08%
	24	1	0.003952569	(KPRO)	0.21475231	0.11%	(AMAR)	0.429664092	-0.90%
	25	2	0.007905138	(KIB)	0.212941096	-0.13%	(MAZA)	0.423406081	0.60%
	26	3	0.011857708	(MALK)	0.202768739	0.08%	(KFH)	0.400422435	-0.38%
	27	4	0.015810277	(MAZA)	0.19829299	-0.08%	(INVK)	0.388861374	0.56%
	28	5	0.019762846	(AGLT)	0.194141664	0.04%	(KIB)	0.379969157	0.05%
	29	6	0.023715415	(INVK)	0.135078337	-0.09%	(MALK)	0.350391867	-1.97%
	30	7	0.027667984	(SAGH)	0.117694798	-0.35%	(DEER)	0.318687402	0.49%
	31	8	0.031620553	(DEER)	0.078203733	-0.49%	(SOOR)	0.231358343	-0.07%
	32	9	0.035573123	(SOOR)	0.073081904	0.19%	(AGLT)	0.146305473	0.22%
	33	10	0.039525692	(AMAR)	0.061823818	-0.22%	(SAGH)	0.059915727	0.04%
	34	11	0.043478261	(BURG)	0.032662533	0.52%	(BURG)	0.053987277	-0.14%
	35	12	0.04743083	(GPIK)	0.009605072	-0.49%	(GPIK)	0.050821816	-0.04%
	36	13	0.051383399	(ARAB)	0.000689251	-0.56%	(ARAB)	0.001052663	0.51%
	37	14	0.055335968	(NINV)	-0.000467572	-1.55%	(NINV)	-0.00080032	0.78%
	38	15	0.059288538	(ENMA)	-0.048643283	-0.46%	(ENMA)	-0.091403852	-0.42%
	39	16	0.063241107	(OULA)	-0.073802375	0.20%	(NIND)	-0.168905992	-0.06%
	40	17	0.067193676	(ABK)	-0.082054899	-0.31%	(OULA)	-0.351730128	0.02%
	41	18	0.071146245	(NIND)	-0.130833082	0.22%	(BKME)	-0.466004992	-0.39%
	42	19	0.075098814	(BAYK)	-0.142265277	-0.05%	(ABK)	-0.72225862	-0.10%
	43	20	0.079051383	(BKME)	-0.173732974	-0.32%	(BAYK)	-0.778091573	-0.05%
	44	21	0.083003953	(ALIMK)	-0.386287279	0.38%	(ALIMK)	-0.78771836	-0.11%
	45	22	0.086956522	(JIYAD)	-0.454208518	-2.19%	(JIYAD)	-1.344762225	0.98%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				3.55%	4.26%	0.71%	3.54%	5.67%	2.13%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Apr. 2016	Beta	Returns	May. 2016	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(VIVA)	2.049555083	0.01%	(KREK)	1.419636335	0.27%
	2	21	0.083003953	(ITHMR)	1.200206339	0.38%	(VIVA)	1.324117154	-0.41%
	3	20	0.079051383	(KREK)	1.157737909	-0.06%	(AAN)	1.323045223	0.47%
	4	19	0.075098814	(NBK)	1.117738246	0.01%	(WARB)	1.261752819	-0.05%
	5	18	0.071146245	(AAYA)	1.026801312	-0.22%	(ZAIN)	1.261623333	-0.12%
	6	17	0.067193676	(BOUB)	0.911553914	0.13%	(AAYA)	1.09723376	-0.45%
	7	16	0.063241107	(ZAIN)	0.872772078	0.07%	(NBK)	1.055646593	-0.16%
	8	15	0.059288538	(WARB)	0.737622113	0.00%	(GBK)	0.86072212	-0.26%
	9	14	0.055335968	(GBK)	0.711173925	0.73%	(BOUB)	0.814301535	-0.16%
	10	13	0.051383399	(MALK)	0.70931907	1.65%	(BIHC)	0.408357668	-0.88%
	11	12	0.04743083	(AAN)	0.693100201	1.34%	(ITHMR)	0.744821742	0.01%
	12	11	0.043478261	(BIHC)	0.674793611	-0.60%	(CBK)	0.675130766	0.22%
	13	10	0.039525692	(MADI)	0.404576323	0.92%	(AGLT)	0.662024726	-0.25%
	14	9	0.035573123	(KBTk)	0.375533627	-0.17%	(NREK)	0.462713151	-0.71%
	15	8	0.031620553	(GFHK)	0.356077316	0.52%	(ABYR)	0.452108782	-0.26%
	16	7	0.027667984	(KIB)	0.299136134	0.11%	(MALK)	0.417853227	0.31%
	17	6	0.023715415	(BPCC)	0.2877248	0.65%	(MADI)	0.408357668	-0.11%
	18	5	0.019762846	(TLJK)	0.284980256	-0.12%	(ALQK)	0.395530893	0.01%
	19	4	0.015810277	(ABYR)	0.27940886	0.11%	(KBTk)	0.386520764	-0.04%
	20	3	0.011857708	(KFH)	0.236143411	0.28%	(GFHK)	0.384360493	-0.37%
	21	2	0.007905138	(ALQK)	0.224079752	0.45%	(BPCC)	0.323767362	0.28%
	22	1	0.003952569	(NREK)	0.22377502	0.90%	(TLJK)	0.318180282	-0.05%
Long "low-beta" portfolio.	23	0	0	(CBK)	0.216510469	0.09%	(KIB)	0.300440751	0.10%
	24	1	0.003952569	(DEER)	0.211453939	-0.26%	(OLAK)	0.277296094	0.44%
	25	2	0.007905138	(OLAK)	0.200654521	0.41%	(KFH)	0.265438467	-0.19%
	26	3	0.011857708	(AMAR)	0.185799638	0.01%	(COAS)	0.247290439	0.40%
	27	4	0.015810277	(KPRO)	0.163825548	-0.05%	(INVK)	0.2272897	-0.06%
	28	5	0.019762846	(MAZA)	0.157860696	-0.44%	(MAZA)	0.225553803	0.76%
	29	6	0.023715415	(COAS)	0.142742911	0.74%	(DEER)	0.181170551	-0.20%
	30	7	0.027667984	(AGLT)	0.140905687	0.23%	(AMAR)	0.151676431	0.29%
	31	8	0.031620553	(SOOR)	0.125019994	-0.17%	(KPRO)	0.139592805	-0.24%
	32	9	0.035573123	(INVK)	0.118358176	0.13%	(SOOR)	0.109199951	0.10%
	33	10	0.039525692	(SAGH)	0.073401807	0.34%	(SAGH)	0.076122251	0.53%
	34	11	0.043478261	(BURG)	0.017828467	-0.14%	(BURG)	0.023746252	0.01%
	35	12	0.04743083	(GPIK)	0.00440138	-0.30%	(GPIK)	0.006640113	0.41%
	36	13	0.051383399	(ARAB)	0.000400527	-0.05%	(ARAB)	0.000784477	0.78%
	37	14	0.055335968	(NINV)	-0.000219407	0.45%	(NINV)	-0.000419233	1.72%
	38	15	0.059288538	(ENMA)	-0.044223846	0.02%	(OULA)	-0.051385119	0.18%
	39	16	0.063241107	(NIND)	-0.062301014	0.26%	(ENMA)	-0.081413005	0.11%
	40	17	0.067193676	(OULA)	-0.063836062	-0.08%	(NIND)	-0.09925461	0.03%
	41	18	0.071146245	(BKME)	-0.110646875	-0.28%	(ABK)	-0.114094248	0.32%
	42	19	0.075098814	(ABK)	-0.112863428	-0.20%	(BAYK)	-0.211996568	0.23%
	43	20	0.079051383	(BAYK)	-0.132483863	0.59%	(BKME)	-0.270239665	0.16%
	44	21	0.083003953	(ALIMK)	-0.306743948	-0.05%	(ALIMK)	-0.39272836	-0.30%
	45	22	0.086956522	(JIYAD)	-0.403711884	-3.02%	(JIYAD)	-0.431842602	-0.79%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				5.10%	4.88%	-0.23%	3.58%	6.05%	2.47%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Jun. 2016	Beta	Returns	Jul. 2016	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(KREK)	1.816147439	-0.32%	(VIVA)	2.184036582	0.07%
	2	21	0.083003953	(AAYA)	1.691491754	-0.10%	(AAYA)	1.712053514	-0.55%
	3	20	0.079051383	(NBK)	1.560634397	-0.28%	(ZAIN)	1.699210723	0.01%
	4	19	0.075098814	(ZAIN)	1.498341084	-0.13%	(BOUB)	1.418593484	0.15%
	5	18	0.071146245	(CBK)	1.487681333	-0.49%	(NBK)	1.416383497	0.10%
	6	17	0.067193676	(BIHC)	1.454520003	0.84%	(WARB)	1.351247405	0.13%
	7	16	0.063241107	(BOUB)	1.32708976	-0.23%	(BIHC)	1.208825495	0.16%
	8	15	0.059288538	(AAN)	1.242313556	-0.20%	(KREK)	1.179159011	0.01%
	9	14	0.055335968	(WARB)	1.205407941	-0.16%	(ALQK)	1.044339294	0.01%
	10	13	0.051383399	(GBK)	1.055517636	0.14%	(GBK)	0.842629975	0.10%
	11	12	0.04743083	(VIVA)	1.015390288	0.00%	(MALK)	0.795672722	-1.02%
	12	11	0.043478261	(ITHMR)	0.813666665	-0.48%	(GFHK)	0.772850695	0.26%
	13	10	0.039525692	(MADI)	0.75765083	0.62%	(AAN)	0.771442475	0.29%
	14	9	0.035573123	(GFHK)	0.720616874	-0.12%	(CBK)	0.681953469	0.03%
	15	8	0.031620553	(BPCC)	0.600830054	0.02%	(BPCC)	0.6394954	-0.39%
	16	7	0.027667984	(ALQK)	0.577618349	-0.40%	(ITHMR)	0.630813477	-0.16%
	17	6	0.023715415	(ABYR)	0.54918714	-0.28%	(DEER)	0.496548217	0.28%
	18	5	0.019762846	(MALK)	0.54050255	0.24%	(MADI)	0.494338391	1.44%
	19	4	0.015810277	(KBTK)	0.421473554	-0.04%	(KFH)	0.472239582	-0.11%
	20	3	0.011857708	(TLJK)	0.406883722	-0.05%	(KBTK)	0.464151394	-0.07%
	21	2	0.007905138	(KPRO)	0.400382593	-0.08%	(OLAK)	0.429761086	-0.19%
	22	1	0.003952569	(NREK)	0.372371071	-0.54%	(KPRO)	0.353244083	-0.21%
Long "low-beta" portfolio.	23	0	0	(OLAK)	0.36761063	-0.15%	(KIB)	0.339630836	-0.17%
	24	1	0.003952569	(KFH)	0.35330218	-0.09%	(MAZA)	0.296928374	0.02%
	25	2	0.007905138	(DEER)	0.319501864	-1.01%	(SOOR)	0.265968093	-0.28%
	26	3	0.011857708	(KIB)	0.312369351	-0.23%	(INVK)	0.262331023	0.69%
	27	4	0.015810277	(MAZA)	0.277355877	-0.14%	(NREK)	0.210458459	-0.21%
	28	5	0.019762846	(COAS)	0.250689866	0.05%	(TLJK)	0.207790239	-0.07%
	29	6	0.023715415	(AGLT)	0.233035986	-0.13%	(COAS)	0.191425713	-0.61%
	30	7	0.027667984	(SOOR)	0.190793359	0.17%	(AMAR)	0.168685968	0.31%
	31	8	0.031620553	(AMAR)	0.18047334	-0.06%	(AGLT)	0.158506522	-0.11%
	32	9	0.035573123	(INVK)	0.103460785	-0.30%	(ABYR)	0.134726463	0.25%
	33	10	0.039525692	(BURG)	0.055703587	0.02%	(SAGH)	0.080693771	0.46%
	34	11	0.043478261	(SAGH)	0.032585337	0.02%	(BURG)	0.012143113	0.00%
	35	12	0.04743083	(GPIK)	0.009746352	0.12%	(GPIK)	0.008823761	-0.38%
	36	13	0.051383399	(ARAB)	0.000580652	-0.26%	(ARAB)	0.000521984	0.03%
	37	14	0.055335968	(NINV)	-0.001071524	-0.42%	(NINV)	-0.00064355	-0.14%
	38	15	0.059288538	(ENMA)	-0.062072198	0.40%	(OULA)	-0.059412235	-0.10%
	39	16	0.063241107	(OULA)	-0.101687883	-0.08%	(ENMA)	-0.125289877	-0.97%
	40	17	0.067193676	(ABK)	-0.143326329	-0.24%	(BKME)	-0.136899541	-0.14%
	41	18	0.071146245	(BKME)	-0.15956525	-0.04%	(ABK)	-0.239506738	-0.38%
	42	19	0.075098814	(BAYK)	-0.212292483	-0.18%	(NIND)	-0.269864187	0.13%
	43	20	0.079051383	(NIND)	-0.260804583	-0.35%	(ALIMK)	-0.283975582	0.00%
	44	21	0.083003953	(ALIMK)	-0.404745018	-0.06%	(BAYK)	-0.297283457	0.03%
	45	22	0.086956522	(JIYAD)	-0.406328553	0.01%	(JIYAD)	-0.449670604	-0.23%
	Avg. Rank			RH	RL	BAB	RH	RL	BAB
	23			4.46%	4.80%	0.34%	4.23%	5.05%	0.82%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Aug. 2016	Beta	Returns	Sep. 2016	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(NBK)	1.444855442	-0.13%	(VIVA)	2.642506367	-0.20%
	2	21	0.083003953	(VIVA)	1.037043592	-0.14%	(NBK)	2.262479776	0.11%
	3	20	0.079051383	(BIHC)	1.02978272	0.26%	(ZAIN)	2.191536331	0.29%
	4	19	0.075098814	(ZAIN)	0.986356568	-0.13%	(AAYA)	1.750000627	-0.09%
	5	18	0.071146245	(KREK)	0.9416681	-0.07%	(WARB)	1.639633025	0.01%
	6	17	0.067193676	(ITHMR)	0.940070968	0.51%	(ITHMR)	1.572948674	-0.50%
	7	16	0.063241107	(BOUB)	0.880362265	-0.11%	(BOUB)	1.492105458	0.08%
	8	15	0.059288538	(WARB)	0.868608559	-0.15%	(KREK)	1.310461804	-0.12%
	9	14	0.055335968	(AAYA)	0.796124965	-0.27%	(CBK)	1.132397968	-0.70%
	10	13	0.051383399	(AAN)	0.738110037	-0.20%	(GFHK)	1.119415949	0.29%
	11	12	0.04743083	(MALK)	0.671206429	0.14%	(BIHC)	1.066112413	0.01%
	12	11	0.043478261	(CBK)	0.66120226	0.03%	(MADI)	0.801891973	0.24%
	13	10	0.039525692	(ALQK)	0.626697984	0.10%	(AAN)	0.784261223	-0.07%
	14	9	0.035573123	(GFHK)	0.526386005	0.49%	(ABYR)	0.740191511	-0.12%
	15	8	0.031620553	(ABYR)	0.502461959	-0.27%	(MALK)	0.617970769	-0.42%
	16	7	0.027667984	(GBK)	0.450902315	-0.15%	(GBK)	0.608913493	0.11%
	17	6	0.023715415	(KBTk)	0.37989422	0.01%	(ALQK)	0.521505264	0.00%
	18	5	0.019762846	(NREK)	0.354616981	-0.33%	(KBTk)	0.508580958	-0.23%
	19	4	0.015810277	(MADI)	0.354536978	-0.11%	(SOOR)	0.370142833	-0.51%
	20	3	0.011857708	(SOOR)	0.315044943	0.58%	(TIJK)	0.367579109	-0.08%
	21	2	0.007905138	(BPCC)	0.296509819	0.01%	(BPCC)	0.355253428	-0.12%
	22	1	0.003952569	(KFH)	0.288971268	0.10%	(KIB)	0.345448231	-0.13%
Long "low-beta" portfolio.	23	0	0	(TIJK)	0.277160325	0.06%	(KFH)	0.339150921	0.13%
	24	1	0.003952569	(OLAK)	0.222172737	0.06%	(NREK)	0.29110162	0.18%
	25	2	0.007905138	(KIB)	0.20918546	0.14%	(DEER)	0.284472404	1.14%
	26	3	0.011857708	(MAZA)	0.171826716	-0.14%	(KPRO)	0.270129391	0.12%
	27	4	0.015810277	(KPRO)	0.164681816	0.34%	(AGLT)	0.240464702	-0.38%
	28	5	0.019762846	(COAS)	0.149410428	0.02%	(OLAK)	0.191444222	-0.31%
	29	6	0.023715415	(AGLT)	0.126155326	0.10%	(COAS)	0.157084712	0.31%
	30	7	0.027667984	(DEER)	0.123874595	0.27%	(AMAR)	0.147946299	-0.40%
	31	8	0.031620553	(INVK)	0.10393703	-0.27%	(SAGH)	0.147281756	0.42%
	32	9	0.035573123	(AMAR)	0.086898613	0.04%	(MAZA)	0.136858936	0.01%
	33	10	0.039525692	(SAGH)	0.07552594	0.72%	(INVK)	0.118213944	-0.28%
	34	11	0.043478261	(BURG)	0.018469738	-0.05%	(BURG)	0.008885719	0.00%
	35	12	0.04743083	(GPIK)	0.004712524	-0.21%	(GPIK)	0.005634392	-0.07%
	36	13	0.051383399	(ARAB)	0.000413391	-0.12%	(ARAB)	0.000826795	0.22%
	37	14	0.055335968	(NINV)	-0.000527892	0.03%	(NINV)	-0.0007289	-0.10%
	38	15	0.059288538	(ENMA)	-0.043942191	0.01%	(OULA)	-0.126367832	-0.53%
	39	16	0.063241107	(NIND)	-0.093497646	0.08%	(ENMA)	-0.130299194	-0.77%
	40	17	0.067193676	(OULA)	-0.119003961	0.50%	(NIND)	-0.136690577	-0.10%
	41	18	0.071146245	(BKME)	-0.173008486	-0.10%	(BAYK)	-0.150980918	-0.64%
	42	19	0.075098814	(ABK)	-0.201770433	0.14%	(BKME)	-0.192244868	-0.07%
	43	20	0.079051383	(BAYK)	-0.220690182	0.22%	(ALIMK)	-0.318807111	0.00%
	44	21	0.083003953	(ALIMK)	-0.24800867	0.13%	(ABK)	-0.367537373	0.36%
	45	22	0.086956522	(JIYAD)	-0.405029089	-0.06%	(JIYAD)	-0.580425182	0.02%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				4.04%	5.11%	1.06%	3.81%	5.24%	1.43%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Oct. 2016	Beta	Returns	Nov. 2016	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(VIVA)	2.123941219	-0.10%	(ITHMR)	2.11773555	0.79%
	2	21	0.083003953	(ZAIN)	2.000551151	0.69%	(VIVA)	1.825179081	0.16%
	3	20	0.079051383	(AAYA)	1.830350808	-0.12%	(ZAIN)	1.608338284	0.18%
	4	19	0.075098814	(NBK)	1.583353891	0.01%	(WARB)	1.497504014	0.23%
	5	18	0.071146245	(WARB)	1.551386244	0.66%	(GFHK)	1.37418001	1.90%
	6	17	0.067193676	(BOUB)	1.419061494	0.01%	(KREK)	1.359056907	0.50%
	7	16	0.063241107	(ITHMR)	1.379511135	-0.40%	(BOUB)	1.334503085	0.12%
	8	15	0.059288538	(ABYR)	0.985651597	-0.42%	(NBK)	1.134250393	0.31%
	9	14	0.055335968	(KREK)	0.971553707	-0.04%	(AAYA)	0.894783584	-0.31%
	10	13	0.051383399	(AAN)	0.932429583	-0.04%	(ABYR)	0.887878411	0.05%
	11	12	0.04743083	(MALK)	0.929087926	-0.67%	(AAN)	0.876609813	0.71%
	12	11	0.043478261	(CBK)	0.856606097	-0.42%	(BIHC)	0.715882671	0.04%
	13	10	0.039525692	(GFHK)	0.816091684	0.44%	(MALK)	0.613807061	-0.05%
	14	9	0.035573123	(BIHC)	0.755061109	-0.31%	(ALQK)	0.594093344	0.35%
	15	8	0.031620553	(GBK)	0.542817905	0.00%	(GBK)	0.591046545	0.08%
	16	7	0.027667984	(KBTk)	0.510418615	-0.32%	(KBTk)	0.547972524	0.72%
	17	6	0.023715415	(BPCC)	0.431996473	-0.34%	(MADI)	0.408948226	-0.38%
	18	5	0.019762846	(OLAK)	0.384960833	-0.06%	(TLJK)	0.406852328	0.30%
	19	4	0.015810277	(TLJK)	0.346251538	0.07%	(KFH)	0.370498635	0.28%
	20	3	0.011857708	(ALQK)	0.336184323	0.19%	(KIB)	0.344519149	0.38%
	21	2	0.007905138	(KIB)	0.261957339	-0.05%	(BPCC)	0.317450103	0.11%
Long "low-beta" portfolio.	22	1	0.003952569	(MADI)	0.239785624	-0.24%	(AGLT)	0.277761317	0.65%
	23	0	0	(KFH)	0.237143551	0.11%	(MAZA)	0.25926077	0.27%
	24	1	0.003952569	(SOOR)	0.230353307	0.19%	(NREK)	0.256924963	0.14%
	25	2	0.007905138	(KPRO)	0.206634343	-0.26%	(SOOR)	0.201069566	-0.06%
	26	3	0.011857708	(MAZA)	0.199065656	-0.25%	(INVK)	0.18578823	0.57%
	27	4	0.015810277	(COAS)	0.193719792	-0.37%	(OLAK)	0.177940141	-0.09%
	28	5	0.019762846	(DEER)	0.188888083	0.68%	(CBK)	0.162930785	0.09%
	29	6	0.023715415	(INVK)	0.158640633	-0.08%	(DEER)	0.143745856	0.04%
	30	7	0.027667984	(NREK)	0.155039387	-0.20%	(COAS)	0.135823314	-0.10%
	31	8	0.031620553	(AMAR)	0.11757595	0.06%	(SAGH)	0.128580552	-0.15%
	32	9	0.035573123	(AGLT)	0.116350788	0.16%	(AMAR)	0.117132175	-0.29%
	33	10	0.039525692	(SAGH)	0.074402472	-0.66%	(KPRO)	0.106802167	-0.18%
	34	11	0.043478261	(BURG)	0.017945693	-0.08%	(BURG)	0.016418138	-0.06%
	35	12	0.04743083	(GPIK)	0.005624243	-0.05%	(GPIK)	0.008423799	0.02%
	36	13	0.051383399	(ARAB)	0.000386173	-0.54%	(ARAB)	0.000585411	0.12%
	37	14	0.055335968	(NINV)	-0.000317384	0.46%	(NINV)	-0.000513003	-0.12%
	38	15	0.059288538	(ENMA)	-0.054365792	-0.50%	(ENMA)	-0.081390255	0.02%
	39	16	0.063241107	(OULA)	-0.075350152	0.09%	(OULA)	-0.103014693	0.11%
	40	17	0.067193676	(JIYAD)	-0.084508796	-0.11%	(NIND)	-0.122153308	0.35%
	41	18	0.071146245	(NIND)	-0.106354276	-0.42%	(BKME)	-0.133950939	0.06%
	42	19	0.075098814	(BKME)	-0.131012797	0.01%	(BAYK)	-0.191536144	-0.49%
	43	20	0.079051383	(BAYK)	-0.162798401	0.09%	(ABK)	-0.345984802	-0.09%
	44	21	0.083003953	(ABK)	-0.181672848	-0.06%	(JIYAD)	-0.480271805	0.78%
	45	22	0.086956522	(ALIMK)	-0.392364273	0.28%	(ALIMK)	-0.990579844	1.61%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				4.35%	4.56%	0.21%	4.28%	5.43%	1.15%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	[RI - Avg. (RI)]	WI	Dec. 2016	Beta	Returns	Jan. 2017	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(KREK)	3.414740152	0.55%	(VIVA)	1.101043161	-0.19%
	2	21	0.083003953	(AAYA)	3.149904003	0.96%	(NBK)	0.943366323	0.54%
	3	20	0.079051383	(ZAIN)	2.836908012	0.07%	(AAYA)	0.926638365	2.42%
	4	19	0.075098814	(NBK)	2.50643096	0.18%	(ZAIN)	0.914576522	0.93%
	5	18	0.071146245	(VIVA)	1.7833221	0.22%	(ITHMR)	0.864949416	2.85%
	6	17	0.067193676	(WARB)	1.781594862	0.19%	(KREK)	0.678725215	1.32%
	7	16	0.063241107	(BOUB)	1.777639316	0.00%	(WARB)	0.636262823	0.33%
	8	15	0.059288538	(BIHC)	1.710678169	-0.15%	(BOUB)	0.591572713	0.18%
	9	14	0.055335968	(ABYR)	1.206650333	0.75%	(GBK)	0.590096449	0.58%
	10	13	0.051383399	(ITHMR)	1.19034485	0.27%	(AAN)	0.518377299	2.33%
	11	12	0.04743083	(GBK)	1.179374385	0.09%	(ABYR)	0.469333911	2.71%
	12	11	0.043478261	(MALK)	1.067390235	-0.43%	(BIHC)	0.46331401	0.03%
	13	10	0.039525692	(MADI)	1.042112028	0.04%	(ALQK)	0.405373081	1.22%
	14	9	0.035573123	(GFHK)	0.988947576	0.74%	(CBK)	0.399962065	-1.19%
	15	8	0.031620553	(AAN)	0.97094391	-0.28%	(MALK)	0.332613325	-0.42%
	16	7	0.027667984	(KFFH)	0.936259849	0.40%	(GFHK)	0.315868425	0.80%
	17	6	0.023715415	(CBK)	0.71082174	0.01%	(KBTk)	0.295381837	1.53%
	18	5	0.019762846	(NREK)	0.647279044	0.56%	(NREK)	0.220818031	0.77%
	19	4	0.015810277	(AGLT)	0.473467635	0.81%	(KFFH)	0.206194184	0.64%
	20	3	0.011857708	(KBTk)	0.469137202	-0.11%	(BPCC)	0.19314414	0.62%
	21	2	0.007905138	(BPCC)	0.413213299	0.27%	(TIJK)	0.176698688	0.44%
	22	1	0.003952569	(KPRO)	0.40517063	0.11%	(SOOR)	0.170072466	0.51%
Long "low-beta" portfolio.	23	0	0	(TIJK)	0.380801081	0.00%	(KIB)	0.149802942	0.46%
	24	1	0.003952569	(KIB)	0.363728358	0.15%	(OLAK)	0.136652816	1.26%
	25	2	0.007905138	(INVK)	0.338866777	-0.04%	(MAZA)	0.126911022	0.57%
	26	3	0.011857708	(OLAK)	0.338758897	0.12%	(AGLT)	0.121521814	0.42%
	27	4	0.015810277	(MAZA)	0.322722051	-0.17%	(KPRO)	0.109188988	-0.09%
	28	5	0.019762846	(ALQK)	0.311054285	0.19%	(MADI)	0.099525484	0.11%
	29	6	0.023715415	(AMAR)	0.27380279	0.08%	(INVK)	0.097708542	1.89%
	30	7	0.027667984	(DEER)	0.220150581	-0.31%	(DEER)	0.08435233	0.20%
	31	8	0.031620553	(SAGH)	0.159134853	0.26%	(AMAR)	0.064479133	0.39%
	32	9	0.035573123	(COAS)	0.140782326	-0.12%	(COAS)	0.062049821	1.55%
	33	10	0.039525692	(SOOR)	0.138216431	0.09%	(SAGH)	0.031755309	0.44%
	34	11	0.043478261	(BURG)	0.034583971	-0.15%	(BURG)	0.015157229	0.45%
	35	12	0.04743083	(GPIK)	0.014089947	0.28%	(GPIK)	0.004007208	1.05%
	36	13	0.051383399	(ARAB)	0.000561468	-0.08%	(ARAB)	0.000302935	0.99%
	37	14	0.055335968	(NINV)	-0.000381889	-0.37%	(NINV)	-9.04589E-05	-0.18%
	38	15	0.059288538	(ENMA)	-0.090247503	0.02%	(ENMA)	-0.027339932	-0.28%
	39	16	0.063241107	(OULA)	-0.098612641	0.18%	(NIND)	-0.048283536	0.29%
	40	17	0.067193676	(NIND)	-0.152039319	0.52%	(OULA)	-0.054366144	0.48%
	41	18	0.071146245	(ABK)	-0.239241395	-0.06%	(BKME)	-0.057754304	0.12%
	42	19	0.075098814	(BAYK)	-0.291600072	0.60%	(ABK)	-0.091059457	-0.19%
	43	20	0.079051383	(BKME)	-0.456634172	-0.04%	(BAYK)	-0.100298809	0.09%
	44	21	0.083003953	(ALIMK)	-0.833915458	0.14%	(JIYAD)	-0.259809733	0.13%
	45	22	0.086956522	(JIYAD)	-1.015420457	-0.64%	(ALIMK)	-0.554250979	2.07%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				4.25%	5.09%	0.83%	6.11%	6.56%	0.45%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Feb. 2017	Beta	Returns	Mar. 2017	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(WARB)	0.964777043	0.78%	(VIVA)	1.011766108	0.47%
	2	21	0.083003953	(ITHMR)	0.918754926	-1.20%	(AAYA)	0.856604265	-0.18%
	3	20	0.079051383	(ZAIN)	0.85815436	-0.14%	(ZAIN)	0.841971471	-0.32%
	4	19	0.075098814	(AAYA)	0.791492782	-0.55%	(ITHMR)	0.69276223	-0.37%
	5	18	0.071146245	(VIVA)	0.76518194	-0.24%	(WARB)	0.688852464	-0.33%
	6	17	0.067193676	(GBK)	0.686739655	-0.42%	(KREK)	0.646119258	-0.55%
	7	16	0.063241107	(KBTB)	0.646782728	0.01%	(BOUB)	0.580466629	0.07%
	8	15	0.059288538	(AAN)	0.604925418	-1.10%	(NBK)	0.564267381	-0.28%
	9	14	0.055335968	(BOUB)	0.592626785	0.19%	(BIHC)	0.42401489	-0.90%
	10	13	0.051383399	(KREK)	0.453439399	-0.38%	(AAN)	0.410267073	-0.31%
	11	12	0.04743083	(BIHC)	0.429505733	-0.27%	(ALQK)	0.34726552	0.23%
	12	11	0.043478261	(ALQK)	0.419258155	0.53%	(GBK)	0.3318975	0.04%
	13	10	0.039525692	(GFHK)	0.415897214	1.08%	(MADI)	0.316528813	-0.21%
	14	9	0.035573123	(NBK)	0.389347152	0.08%	(ABYR)	0.31039073	-0.68%
	15	8	0.031620553	(ABYR)	0.357144925	-0.92%	(MALK)	0.287453523	2.07%
	16	7	0.027667984	(MADI)	0.306164754	1.76%	(NREK)	0.282921478	-0.48%
	17	6	0.023715415	(NREK)	0.265826354	1.31%	(KBTB)	0.276275126	0.19%
	18	5	0.019762846	(CBK)	0.247147485	0.47%	(CBK)	0.264359662	-0.59%
	19	4	0.015810277	(BPCC)	0.236743506	0.21%	(GFHK)	0.24667666	-0.28%
	20	3	0.011857708	(MAZA)	0.232935969	0.43%	(KFH)	0.14028635	-0.21%
	21	2	0.007905138	(KIB)	0.211414317	0.33%	(TLJK)	0.139634423	-0.32%
	22	1	0.003952569	(KFH)	0.187635485	-0.08%	(BPCC)	0.127262891	0.01%
Long "low-beta" portfolio.	23	0	0	(MALK)	0.158217939	0.45%	(OLAK)	0.123544019	-0.63%
	24	1	0.003952569	(OLAK)	0.157619151	0.05%	(KIB)	0.122975745	-0.03%
	25	2	0.007905138	(TLJK)	0.149231014	-0.17%	(KPRO)	0.116413966	-0.43%
	26	3	0.011857708	(AGLT)	0.148904479	-0.26%	(AGLT)	0.112989909	-0.27%
	27	4	0.015810277	(COAS)	0.133622577	0.48%	(SOOR)	0.080058603	-0.13%
	28	5	0.019762846	(INVK)	0.087042615	-0.78%	(COAS)	0.07674203	-0.70%
	29	6	0.023715415	(KPRO)	0.086392316	0.42%	(MAZA)	0.066343786	0.01%
	30	7	0.027667984	(SOOR)	0.072098211	0.18%	(DEER)	0.0651884	-0.54%
	31	8	0.031620553	(SAGH)	0.062141346	1.26%	(INVK)	0.063444326	0.03%
	32	9	0.035573123	(AMAR)	0.048127303	3.77%	(SAGH)	0.052345364	-0.13%
	33	10	0.039525692	(DEER)	0.033456551	-0.05%	(AMAR)	0.047789036	-1.18%
	34	11	0.043478261	(BURG)	0.014034391	-0.24%	(BURG)	0.007624545	0.15%
	35	12	0.04743083	(GPIK)	0.007065975	0.15%	(GPIK)	0.005037339	-0.29%
	36	13	0.051383399	(ARAB)	0.000478225	1.93%	(ARAB)	0.000251062	-1.22%
	37	14	0.055335968	(NINV)	-0.000217348	1.27%	(NINV)	-0.000175134	0.52%
	38	15	0.059288538	(OULA)	-0.033320382	0.02%	(OULA)	-0.041698059	0.02%
	39	16	0.063241107	(BAYK)	-0.046450818	2.96%	(ENMA)	-0.044587731	-0.50%
	40	17	0.067193676	(ENMA)	-0.054408601	2.04%	(NIND)	-0.065446629	-0.45%
	41	18	0.071146245	(ABK)	-0.076937889	-0.23%	(BKME)	-0.077876366	-0.10%
	42	19	0.075098814	(NIND)	-0.078794163	0.77%	(ABK)	-0.083240309	0.02%
	43	20	0.079051383	(BKME)	-0.107771674	0.63%	(BAYK)	-0.124663015	-0.34%
	44	21	0.083003953	(ALIMK)	-0.342167396	0.27%	(ALIMK)	-0.230050607	0.24%
	45	22	0.086956522	(JIYAD)	-0.351065526	2.39%	(JIYAD)	-0.301866397	0.08%
	Avg. Rank								
	23			RH	RL	BAB	RH	RL	BAB
				4.91%	7.95%	3.04%	3.60%	3.79%	0.19%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Apr. 2017	Beta	Returns	May, 2017	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(VIVA)	1.944608877	-0.55%	(VIVA)	0.864845599	-0.01%
	2	21	0.083003953	(ITHMR)	1.272359652	-0.20%	(NBK)	0.60239393	-0.05%
	3	20	0.079051383	(BIHC)	1.259125842	0.92%	(AAYA)	0.579673934	-0.52%
	4	19	0.075098814	(KREK)	1.168893482	-0.62%	(BOUB)	0.576954679	0.06%
	5	18	0.071146245	(NBK)	0.991978464	0.23%	(ZAIN)	0.55997979	-0.10%
	6	17	0.067193676	(ZAIN)	0.949147738	-0.11%	(ITHMR)	0.551849364	-0.28%
	7	16	0.063241107	(AAYA)	0.91214685	0.44%	(KREK)	0.551348075	-0.12%
	8	15	0.059288538	(BOUB)	0.908522085	0.07%	(BIHC)	0.519445933	1.07%
	9	14	0.055335968	(WARB)	0.857907965	-0.17%	(WARB)	0.48663885	0.00%
	10	13	0.051383399	(GBK)	0.793663975	-0.03%	(AAN)	0.477336625	-0.45%
	11	12	0.04743083	(CBK)	0.689030095	-0.82%	(ALQK)	0.377513244	0.09%
	12	11	0.043478261	(GFHK)	0.551315186	-0.28%	(ABYR)	0.351602366	-0.69%
	13	10	0.039525692	(KFH)	0.549428964	-0.33%	(MALK)	0.315999491	-1.12%
	14	9	0.035573123	(KIB)	0.548364011	0.14%	(GFHK)	0.266046591	0.02%
	15	8	0.031620553	(AAN)	0.536551122	-0.45%	(KBTk)	0.256217963	-0.17%
	16	7	0.027667984	(MALK)	0.509822647	-0.91%	(CBK)	0.249520985	0.95%
	17	6	0.023715415	(ALQK)	0.494475496	-0.14%	(GBK)	0.188274858	-0.18%
	18	5	0.019762846	(MADl)	0.483060711	0.14%	(BPCC)	0.1832272	-0.14%
	19	4	0.015810277	(KBTk)	0.444957347	-0.07%	(KFH)	0.181877055	-0.10%
	20	3	0.011857708	(BPCC)	0.351066047	-0.07%	(MADl)	0.168610803	-0.81%
	21	2	0.007905138	(TIJK)	0.250519661	-0.12%	(TIJK)	0.164900436	-0.22%
	22	1	0.003952569	(ABYR)	0.23634863	-0.25%	(KPRO)	0.149415945	-0.74%
Long "low-beta" portfolio.	23	0	0	(NREK)	0.223350753	-0.39%	(MAZA)	0.147531566	-0.19%
	24	1	0.003952569	(OLAK)	0.210253535	-0.08%	(NREK)	0.14232931	-0.22%
	25	2	0.007905138	(AGLT)	0.196426289	0.26%	(OLAK)	0.122583172	-0.62%
	26	3	0.011857708	(MAZA)	0.192678223	-0.62%	(AGLT)	0.119772081	0.45%
	27	4	0.015810277	(SOOR)	0.183060462	-0.06%	(KIB)	0.117947422	-0.10%
	28	5	0.019762846	(AMAR)	0.174671606	0.65%	(SOOR)	0.103866378	-0.26%
	29	6	0.023715415	(KPRO)	0.173887534	-0.25%	(INVK)	0.071806154	-0.69%
	30	7	0.027667984	(DEER)	0.127798185	-0.03%	(COAS)	0.069903242	-0.67%
	31	8	0.031620553	(SAGH)	0.111397323	-0.48%	(AMAR)	0.066007681	0.60%
	32	9	0.035573123	(COAS)	0.087554394	0.17%	(DEER)	0.057343617	-0.26%
	33	10	0.039525692	(INVK)	0.087059485	-0.35%	(SAGH)	0.036197231	-0.06%
	34	11	0.043478261	(BURG)	0.02116628	-0.14%	(BURG)	0.012294535	0.33%
	35	12	0.04743083	(GPIK)	0.005472773	0.02%	(GPIK)	0.004023849	-0.91%
	36	13	0.051383399	(ARAB)	0.000601284	0.63%	(ARAB)	0.000215143	-1.06%
	37	14	0.055335968	(NINV)	-0.000450851	-0.75%	(NINV)	-0.000194829	-0.68%
	38	15	0.059288538	(OULA)	-0.06193116	-0.22%	(ENMA)	-0.027559854	-0.14%
	39	16	0.063241107	(ENMA)	-0.095338109	-0.39%	(OULA)	-0.038955897	0.01%
	40	17	0.067193676	(BAYK)	-0.171825059	-0.21%	(ABK)	-0.074333061	0.01%
	41	18	0.071146245	(ABK)	-0.183233488	-0.23%	(NIND)	-0.081933691	-0.41%
	42	19	0.075098814	(NIND)	-0.18851935	-0.40%	(BKME)	-0.090174775	-0.01%
	43	20	0.079051383	(BKME)	-0.197428002	0.07%	(BAYK)	-0.150337523	-0.07%
	44	21	0.083003953	(ALIMK)	-0.33305374	-0.15%	(ALIMK)	-0.218529331	-0.40%
	45	22	0.086956522	(JIYAD)	-0.492822043	-0.69%	(JIYAD)	-0.222305902	0.19%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				3.52%	5.54%	2.02%	2.77%	3.92%	1.15%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (Ri)	Ri - Avg. (Ri)	Wi	Jun. 2017	Beta	Returns	Jul. 2017	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(VIVA)	1.625189384	-0.12%	(VIVA)	2.482624911	-0.07%
	2	21	0.083003953	(ZAIN)	0.915977125	-0.06%	(ZAIN)	1.31094095	0.32%
	3	20	0.079051383	(NBK)	0.83560284	-0.03%	(WARB)	1.059042078	0.18%
	4	19	0.075098814	(BIHC)	0.805643488	-1.01%	(MADI)	1.013068529	-0.25%
	5	18	0.071146245	(WARB)	0.801716778	0.27%	(AAYA)	0.936177863	0.42%
	6	17	0.067193676	(GFHK)	0.781809501	-0.58%	(AAN)	0.830813626	0.51%
	7	16	0.063241107	(AAN)	0.779796088	0.11%	(BIHC)	0.817591007	-0.43%
	8	15	0.059288538	(AAYA)	0.719041055	-0.15%	(MALK)	0.739377767	-0.55%
	9	14	0.055335968	(ITHMR)	0.655719163	-0.14%	(ITHMR)	0.724993451	0.05%
	10	13	0.051383399	(NREK)	0.457937139	0.57%	(KREK)	0.635729318	0.40%
	11	12	0.04743083	(MALK)	0.444330518	0.48%	(GBK)	0.628596953	0.01%
	12	11	0.043478261	(KBTk)	0.417804538	-0.24%	(ALQK)	0.535964385	0.20%
	13	10	0.039525692	(BOUB)	0.416169401	-0.20%	(GFHK)	0.484797368	0.13%
	14	9	0.035573123	(KREK)	0.394719237	-0.10%	(NBK)	0.46124097	0.15%
	15	8	0.031620553	(GBK)	0.379178254	0.21%	(BOUB)	0.383220439	0.10%
	16	7	0.027667984	(CBK)	0.335877849	0.43%	(NREK)	0.334675562	-0.01%
	17	6	0.023715415	(TIJK)	0.327299797	-0.06%	(CBK)	0.290104111	0.33%
	18	5	0.019762846	(KFH)	0.237145873	-0.03%	(TIJK)	0.264635984	0.49%
	19	4	0.015810277	(MADI)	0.215632562	0.33%	(ABYR)	0.263075318	0.41%
	20	3	0.011857708	(ALQK)	0.209141582	-0.03%	(KBTk)	0.261831052	0.15%
	21	2	0.007905138	(ABYR)	0.184183486	0.23%	(OLAK)	0.251391713	-0.07%
	22	1	0.003952569	(KPRO)	0.181652032	-0.66%	(KIB)	0.201203267	-0.03%
Long "low-beta" portfolio.	23	0	0	(KIB)	0.165452947	0.10%	(BPCC)	0.171759322	-0.12%
	24	1	0.003952569	(AGLT)	0.163738729	0.89%	(COAS)	0.158954658	0.24%
	25	2	0.007905138	(BPCC)	0.159264576	0.32%	(SOOR)	0.152031942	0.12%
	26	3	0.011857708	(COAS)	0.144371961	-0.27%	(KPRO)	0.151779929	0.04%
	27	4	0.015810277	(OLAK)	0.133554269	0.32%	(AGLT)	0.145784622	0.59%
	28	5	0.019762846	(SOOR)	0.100170664	0.06%	(KFH)	0.138991823	0.56%
	29	6	0.023715415	(DEER)	0.098941035	2.25%	(DEER)	0.135135196	-0.56%
	30	7	0.027667984	(MAZA)	0.094648256	0.11%	(MAZA)	0.128291358	0.28%
	31	8	0.031620553	(INVK)	0.092244591	0.02%	(INVK)	0.113543574	0.46%
	32	9	0.035573123	(AMAR)	0.083467498	-1.12%	(SAGH)	0.087752481	-0.44%
	33	10	0.039525692	(SAGH)	0.073960961	0.04%	(AMAR)	0.073023671	-0.17%
	34	11	0.043478261	(BURG)	0.015875003	0.04%	(BURG)	0.021906677	0.43%
	35	12	0.04743083	(GPIK)	0.005341556	0.18%	(GPIK)	0.004808763	0.43%
	36	13	0.051383399	(ARAB)	0.00032554	0.01%	(ARAB)	0.000488692	0.20%
	37	14	0.055335968	(NINV)	-0.000447186	0.27%	(NINV)	-0.000339111	-0.03%
	38	15	0.059288538	(OULA)	-0.024283415	-0.18%	(OULA)	-0.037322775	0.00%
	39	16	0.063241107	(ENMA)	-0.044787626	-0.46%	(ENMA)	-0.056189736	-0.01%
	40	17	0.067193676	(BKME)	-0.073108048	0.35%	(NIND)	-0.093536838	0.73%
	41	18	0.071146245	(NIND)	-0.076878261	-0.33%	(ABK)	-0.159880302	0.31%
	42	19	0.075098814	(ALIMK)	-0.136090352	0.01%	(BAYK)	-0.214257648	-0.68%
	43	20	0.079051383	(ABK)	-0.14185226	-0.18%	(BKME)	-0.220918298	-0.31%
	44	21	0.083003953	(BAYK)	-0.225604098	1.23%	(ALIMK)	-0.287656607	0.32%
	45	22	0.086956522	(JIYAD)	-0.441497044	-0.44%	(JIYAD)	-0.657641416	-0.20%
	Avg. Rank			RH	RL	BAB	RH	RL	BAB
	23			3.69%	5.21%	1.52%	4.17%	5.39%	1.22%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (Ri)	Ri - Avg. (Ri)	Wl	Aug. 2017	Beta	Returns	Sep. 2017	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(ITHMR)	1.805551547	-0.20%	(VIVA)	1.163525352	0.00%
	2	21	0.083003953	(ZAIN)	1.508261198	0.48%	(ZAIN)	0.967615062	0.17%
	3	20	0.079051383	(GFHK)	1.27924568	-0.75%	(NBK)	0.9222211	0.16%
	4	19	0.075098814	(AAYA)	1.231482042	-0.06%	(WARB)	0.748478876	-0.36%
	5	18	0.071146245	(KREK)	1.127915525	0.02%	(CBK)	0.744074376	-0.48%
	6	17	0.067193676	(CBK)	1.120313245	0.17%	(BOUB)	0.718098336	-0.14%
	7	16	0.063241107	(BIHIC)	1.111486591	-0.25%	(AAYA)	0.561851466	-0.05%
	8	15	0.059288538	(BOUB)	1.050499406	0.40%	(KREK)	0.553111488	0.35%
	9	14	0.055335968	(VIVA)	0.998089556	0.00%	(AAN)	0.523599904	-0.31%
	10	13	0.051383399	(AAN)	0.840510375	-0.55%	(BIHIC)	0.458263651	-0.05%
	11	12	0.04743083	(WARB)	0.816511761	-0.03%	(ITHMR)	0.451354371	-0.47%
	12	11	0.043478261	(NBK)	0.799101312	0.28%	(GBK)	0.433567718	-0.02%
	13	10	0.039525692	(MADI)	0.774488985	-0.08%	(KFH)	0.420598991	0.20%
	14	9	0.035573123	(ALQK)	0.597024868	0.11%	(ABYR)	0.377029869	0.11%
	15	8	0.031620553	(TIJK)	0.554743539	0.96%	(ALQK)	0.375845609	-0.23%
	16	7	0.027667984	(MALK)	0.533713713	-0.59%	(GFHK)	0.345771428	-0.41%
	17	6	0.023715415	(KBTk)	0.402307845	-0.11%	(KBTk)	0.336427971	0.12%
	18	5	0.019762846	(ABYR)	0.366634665	0.29%	(TIJK)	0.296224766	-0.14%
	19	4	0.015810277	(NREK)	0.354836365	0.45%	(MALK)	0.277027884	0.19%
	20	3	0.011857708	(GBK)	0.353883641	-0.13%	(BPCC)	0.247093779	0.12%
	21	2	0.007905138	(KPRO)	0.32022264	0.20%	(KPRO)	0.193973129	-0.04%
	22	1	0.003952569	(KFH)	0.320204657	0.37%	(KIB)	0.153957592	0.15%
Long "low-beta" portfolio.	23	0	0	(SOOR)	0.207785232	0.09%	(AGLT)	0.149464422	0.17%
	24	1	0.003952569	(KIB)	0.2073532	-0.02%	(NREK)	0.138442741	0.16%
	25	2	0.007905138	(DEER)	0.193183761	-0.37%	(DEER)	0.136125282	0.20%
	26	3	0.011857708	(BPCC)	0.181497278	0.64%	(MADI)	0.131497778	0.23%
	27	4	0.015810277	(OLAK)	0.157801096	0.06%	(OLAK)	0.112454577	0.44%
	28	5	0.019762846	(AGLT)	0.151591905	0.19%	(SOOR)	0.094468343	-0.09%
	29	6	0.023715415	(COAS)	0.148596269	0.43%	(MAZA)	0.072008746	0.06%
	30	7	0.027667984	(MAZA)	0.136845851	-0.19%	(COAS)	0.071921063	0.00%
	31	8	0.031620553	(AMAR)	0.119591543	0.65%	(AMAR)	0.067534788	0.08%
	32	9	0.035573123	(SAGH)	0.116558527	1.03%	(SAGH)	0.056442706	-0.52%
	33	10	0.039525692	(INVK)	0.073616552	-0.13%	(INVK)	0.049715789	-0.17%
	34	11	0.043478261	(BURG)	0.014508248	0.13%	(BURG)	0.019256564	-0.26%
	35	12	0.04743083	(GPIK)	0.005174896	-0.42%	(GPIK)	0.001544613	-0.15%
	36	13	0.051383399	(ARAB)	0.000296238	0.13%	(ARAB)	0.000188654	0.44%
	37	14	0.055335968	(NINV)	-0.00051607	0.31%	(NINV)	-0.000130701	0.11%
	38	15	0.059288538	(ENMA)	-0.083012821	0.17%	(ENMA)	-0.031941649	0.05%
	39	16	0.063241107	(OULA)	-0.100563719	0.17%	(NIND)	-0.044877105	0.09%
	40	17	0.067193676	(NIND)	-0.11332481	0.56%	(OULA)	-0.051683906	-0.09%
	41	18	0.071146245	(BKME)	-0.12242383	0.13%	(BKME)	-0.064927089	0.08%
	42	19	0.075098814	(ABK)	-0.127493842	-0.14%	(ABK)	-0.086477116	0.20%
	43	20	0.079051383	(BAYK)	-0.219567	0.31%	(BAYK)	-0.086979482	-0.37%
	44	21	0.083003953	(ALIMK)	-0.304254865	0.32%	(ALIMK)	-0.267116216	-0.09%
	45	22	0.086956522	(JIYAD)	-0.525381089	0.30%	(JIYAD)	-1.091818206	-0.28%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				3.86%	5.47%	1.61%	4.08%	5.52%	1.44%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Oct. 2017	Beta	Returns	Nov. 2017	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(BIHC)	1.267057523	0.53%	(VIVA)	1.099297734	-0.14%
	2	21	0.083003953	(ZAIN)	1.03131703	-0.43%	(ITHMR)	0.728625492	-0.83%
	3	20	0.079051383	(ITHMR)	0.868260923	-0.14%	(AAN)	0.651031114	-0.21%
	4	19	0.075098814	(VIVA)	0.758963445	-0.25%	(KREK)	0.549704258	-0.22%
	5	18	0.071146245	(WARB)	0.739286943	-0.30%	(MALK)	0.508068742	-0.39%
	6	17	0.067193676	(AAYA)	0.694654132	-0.13%	(AAYA)	0.463450747	-0.86%
	7	16	0.063241107	(CBK)	0.68365834	-0.43%	(ZAIN)	0.437966107	-0.23%
	8	15	0.059288538	(GBK)	0.618765134	0.31%	(BOUB)	0.380911066	-0.24%
	9	14	0.055335968	(AAN)	0.58209326	-0.63%	(GFHK)	0.370706537	0.09%
	10	13	0.051383399	(KREK)	0.520674638	-0.20%	(BIHC)	0.350064098	0.22%
	11	12	0.04743083	(GFHK)	0.514998579	-0.01%	(NBK)	0.324414147	-0.28%
	12	11	0.043478261	(BOUB)	0.475523429	0.00%	(WARB)	0.311641729	-0.39%
	13	10	0.039525692	(NBK)	0.472451876	0.03%	(TIJK)	0.250302512	-0.22%
	14	9	0.035573123	(TIJK)	0.332560637	-0.09%	(GBK)	0.230067141	-0.32%
	15	8	0.031620553	(ALQK)	0.319715536	-0.20%	(MADI)	0.224633635	-0.74%
	16	7	0.027667984	(NREK)	0.309542151	0.47%	(CBK)	0.197696323	-0.47%
	17	6	0.023715415	(MALK)	0.282021967	-0.27%	(KPRO)	0.194064632	-0.72%
	18	5	0.019762846	(KBTK)	0.266499993	-0.02%	(ALQK)	0.191602242	-0.08%
	19	4	0.015810277	(ABYR)	0.24929916	-0.59%	(KFH)	0.184338882	-0.18%
	20	3	0.011857708	(MADI)	0.231867052	-0.03%	(NREK)	0.17453539	-0.47%
	21	2	0.007905138	(KIB)	0.184260693	-0.12%	(KBTK)	0.155500457	-0.37%
	22	1	0.003952569	(DEER)	0.162174097	-0.25%	(KIB)	0.147858668	-0.34%
Long "low-beta" portfolio.	23	0	0	(OLAK)	0.152810962	-0.28%	(ABYR)	0.132301875	-0.65%
	24	1	0.003952569	(KFH)	0.14995215	-0.17%	(COAS)	0.131709896	-1.19%
	25	2	0.007905138	(KPRO)	0.148117987	-0.08%	(AMAR)	0.120182842	-0.51%
	26	3	0.011857708	(AGLT)	0.144555712	-0.56%	(BPCC)	0.109053855	-0.06%
	27	4	0.015810277	(COAS)	0.123274894	-0.28%	(SOOR)	0.107329993	-0.12%
	28	5	0.019762846	(BPCC)	0.119368635	-0.16%	(AGLT)	0.103870797	-0.06%
	29	6	0.023715415	(INVK)	0.110749811	-1.25%	(MAZA)	0.098537544	-0.28%
	30	7	0.027667984	(SOOR)	0.105616136	-0.21%	(OLAK)	0.097153784	-0.50%
	31	8	0.031620553	(MAZA)	0.078840705	-0.03%	(DEER)	0.096807152	-0.68%
	32	9	0.035573123	(AMAR)	0.071843784	-0.13%	(INVK)	0.076461054	0.15%
	33	10	0.039525692	(SAGH)	0.065225354	-0.06%	(SAGH)	0.034423102	-0.80%
	34	11	0.043478261	(BURG)	0.009559363	-0.18%	(BURG)	0.014516012	-0.45%
	35	12	0.04743083	(GPIK)	0.005124273	-0.52%	(GPIK)	0.00240709	-0.61%
	36	13	0.051383399	(ARAB)	0.000294272	0.06%	(ARAB)	0.000315953	-0.43%
	37	14	0.055335968	(NINV)	-0.000288025	-0.02%	(NINV)	-0.00020062	-0.39%
	38	15	0.059288538	(ENMA)	-0.025335817	-0.02%	(ENMA)	-0.025390434	-0.03%
	39	16	0.063241107	(OULA)	-0.042111796	-0.18%	(ABK)	-0.034063422	-0.38%
	40	17	0.067193676	(NIND)	-0.07731766	0.48%	(OULA)	-0.052879483	-0.17%
	41	18	0.071146245	(BKME)	-0.095750851	-0.18%	(BKME)	-0.064512253	-0.81%
	42	19	0.075098814	(BAYK)	-0.109928905	0.37%	(BAYK)	-0.078140215	-0.82%
	43	20	0.079051383	(ALIMK)	-0.204707172	-0.17%	(NIND)	-0.105248432	-0.49%
	44	21	0.083003953	(ABK)	-0.228299954	0.38%	(JIYAD)	-0.167533888	0.84%
	45	22	0.086956522	(JIYAD)	-0.975788559	0.51%	(ALIMK)	-0.236406816	-0.24%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				3.87%	5.21%	1.34%	3.41%	4.41%	1.00%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Dec. 2017	Beta	Returns	Jan. 2018	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(VIVA)	2.687747984	0.50%	(ITHMR)	2.286372113	1.17%
	2	21	0.083003953	(ITHMR)	1.153006863	2.11%	(NBK)	2.171214669	0.08%
	3	20	0.079051383	(WARB)	1.132963334	0.37%	(BIHC)	1.980333589	-0.78%
	4	19	0.075098814	(AAN)	1.082583964	-0.40%	(VIVA)	1.750089761	-0.04%
	5	18	0.071146245	(ZAIN)	0.727872523	-0.09%	(WARB)	1.522202883	-0.12%
	6	17	0.067193676	(BOUB)	0.721780703	0.23%	(ZAIN)	1.487896757	0.40%
	7	16	0.063241107	(NREK)	0.635580749	0.24%	(GBK)	1.353663997	0.19%
	8	15	0.059288538	(MADI)	0.539931186	-0.10%	(MALK)	0.950155959	0.31%
	9	14	0.055335968	(BIHC)	0.534131547	-0.40%	(BOUB)	0.881533931	0.25%
	10	13	0.051383399	(AAYA)	0.516573784	-0.12%	(GFHK)	0.754196729	-0.02%
	11	12	0.04743083	(KREK)	0.490948254	-0.13%	(MADI)	0.713436832	0.14%
	12	11	0.043478261	(ALQK)	0.488952551	0.07%	(ABYR)	0.702375095	0.49%
	13	10	0.039525692	(CBK)	0.415571942	0.67%	(AAYA)	0.688712326	0.36%
	14	9	0.035573123	(NBK)	0.4020421	0.05%	(ALQK)	0.65508825	0.20%
	15	8	0.031620553	(KIB)	0.339774342	0.15%	(KREK)	0.58748027	0.23%
	16	7	0.027667984	(KBTk)	0.299430311	-0.24%	(AAN)	0.58261102	0.38%
	17	6	0.023715415	(MALK)	0.267112735	-0.72%	(BPCC)	0.559167883	0.33%
	18	5	0.019762846	(GBK)	0.2607311	-0.02%	(OLAK)	0.43780538	0.49%
	19	4	0.015810277	(GFHK)	0.257216889	-0.54%	(KPRO)	0.414734735	0.34%
	20	3	0.011857708	(ABYR)	0.229719329	-0.06%	(CBK)	0.361833028	0.70%
	21	2	0.007905138	(TLJK)	0.182799024	0.15%	(AMAR)	0.357457637	1.06%
	22	1	0.003952569	(KPRO)	0.171546695	-0.10%	(NREK)	0.333556426	-0.06%
Long "low-beta" portfolio.	23	0	0	(DEER)	0.169672862	0.46%	(DEER)	0.32705326	-0.14%
	24	1	0.003952569	(KFH)	0.138297296	0.13%	(KBTk)	0.281669644	0.33%
	25	2	0.007905138	(AGLT)	0.134770401	0.13%	(AGLT)	0.269111443	0.38%
	26	3	0.011857708	(BPCC)	0.124105639	0.26%	(SOOR)	0.235696609	0.29%
	27	4	0.015810277	(SAGH)	0.115073303	-0.14%	(KIB)	0.196316741	-0.04%
	28	5	0.019762846	(OLAK)	0.106614826	-0.31%	(SAGH)	0.181079312	0.46%
	29	6	0.023715415	(MAZA)	0.096532156	0.15%	(TLJK)	0.178998075	-0.03%
	30	7	0.027667984	(AMAR)	0.093613063	-0.42%	(COAS)	0.160125017	0.36%
	31	8	0.031620553	(SOOR)	0.07111873	-0.04%	(KFH)	0.153742927	0.08%
	32	9	0.035573123	(COAS)	0.042578711	0.08%	(INVK)	0.089108767	0.06%
	33	10	0.039525692	(INVK)	0.040688687	-0.23%	(MAZA)	0.056436387	0.12%
	34	11	0.043478261	(BURG)	0.023965369	-0.03%	(BURG)	0.036007309	0.16%
	35	12	0.04743083	(GPIK)	0.004150543	0.06%	(GPIK)	0.034713043	0.70%
	36	13	0.051383399	(ARAB)	0.000335447	-0.83%	(ARAB)	0.001236	0.78%
	37	14	0.055335968	(NINV)	-0.000156701	-0.10%	(NINV)	-0.000365818	0.18%
	38	15	0.059288538	(OULA)	-0.031996798	-0.04%	(OULA)	-0.107195071	0.21%
	39	16	0.063241107	(ENMA)	-0.060066845	-0.79%	(NIND)	-0.110114009	0.54%
	40	17	0.067193676	(BKME)	-0.071521355	0.14%	(BKME)	-0.110147896	0.02%
	41	18	0.071146245	(NIND)	-0.084064748	0.19%	(ABK)	-0.149848964	-0.01%
	42	19	0.075098814	(ABK)	-0.116210399	-0.07%	(ENMA)	-0.206439376	0.01%
	43	20	0.079051383	(BAYK)	-0.122981079	-0.67%	(BAYK)	-0.383960979	1.11%
	44	21	0.083003953	(JIYAD)	-0.146095841	1.01%	(JIYAD)	-0.477738126	2.21%
	45	22	0.086956522	(ALIMK)	-0.173027575	-0.06%	(ALIMK)	-0.756710532	-0.16%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				4.80%	4.28%	-0.52%	4.51%	6.31%	1.80%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Feb. 2018	Beta	Returns	Mar. 2018	Beta	Returns
Short "high beta" portfolio.	1	22	0.086956522	(ITHMR)	1.502090503	-2.32%	(VIVA)	2.534352608	0.92%
	2	21	0.083003953	(VIVA)	1.239216112	0.07%	(BIHC)	1.62879457	0.34%
	3	20	0.079051383	(BIHC)	1.050198465	-0.05%	(AAYA)	1.607913764	-0.65%
	4	19	0.075098814	(WARB)	0.621567841	0.44%	(WARB)	1.537465649	-0.11%
	5	18	0.071146245	(ZAIN)	0.617244931	0.08%	(ITHMR)	1.426369975	-0.21%
	6	17	0.067193676	(AAN)	0.543908852	-1.57%	(NBK)	1.345182164	0.12%
	7	16	0.063241107	(BOUB)	0.42318533	0.18%	(MADI)	0.940310367	-0.18%
	8	15	0.059288538	(NBK)	0.380853417	0.22%	(ZAIN)	0.824312168	0.03%
	9	14	0.055335968	(GFHK)	0.353361435	-0.32%	(BOUB)	0.766834002	0.09%
	10	13	0.051383399	(KREK)	0.337163512	-0.54%	(GFHK)	0.763724043	0.07%
	11	12	0.04743083	(MADI)	0.311717413	-0.12%	(AAN)	0.752269517	-0.32%
	12	11	0.043478261	(AAYA)	0.292545328	-0.67%	(GBK)	0.73432184	-0.08%
	13	10	0.039525692	(ALQK)	0.270718772	-0.04%	(KREK)	0.65784525	-0.54%
	14	9	0.035573123	(MALK)	0.25836127	-0.71%	(TIJK)	0.512158641	-0.45%
	15	8	0.031620553	(GBK)	0.257170553	0.29%	(ABYR)	0.450321539	-0.34%
	16	7	0.027667984	(CBK)	0.236739505	-0.12%	(ALQK)	0.421231893	0.02%
	17	6	0.023715415	(ABYR)	0.224612103	-0.77%	(MALK)	0.407188087	-0.16%
	18	5	0.019762846	(KBTK)	0.195845926	0.53%	(NREK)	0.396912322	-0.16%
	19	4	0.015810277	(TIJK)	0.135194298	0.00%	(BPCC)	0.357014371	0.40%
	20	3	0.011857708	(BPCC)	0.115722211	-0.03%	(KBTK)	0.346211881	0.20%
	21	2	0.007905138	(KIB)	0.110096634	0.20%	(DEER)	0.241104764	-0.09%
	22	1	0.003952569	(DEER)	0.097027235	-0.33%	(AMAR)	0.20600461	-0.05%
Long "low beta" portfolio.	23	0	0	(OLAK)	0.088984423	-0.52%	(OLAK)	0.176117727	-0.03%
	24	1	0.003952569	(KPRO)	0.07786053	-0.20%	(KPRO)	0.161729484	-0.28%
	25	2	0.007905138	(SOOR)	0.075527457	-0.03%	(KIB)	0.158493415	-0.10%
	26	3	0.011857708	(COAS)	0.075042301	-0.45%	(COAS)	0.116975728	-0.45%
	27	4	0.015810277	(NREK)	0.072073317	-0.09%	(MAZA)	0.111109075	-0.04%
	28	5	0.019762846	(AGLT)	0.059727408	-0.09%	(AGLT)	0.109220319	0.01%
	29	6	0.023715415	(MAZA)	0.058315196	-0.14%	(INVK)	0.104875155	-0.44%
	30	7	0.027667984	(SAGH)	0.055526133	-0.60%	(KFH)	0.104060333	0.00%
	31	8	0.031620553	(INVK)	0.047534053	-0.50%	(SOOR)	0.10080745	-0.16%
	32	9	0.035573123	(KFH)	0.044266497	0.01%	(SAGH)	0.085650108	-0.21%
	33	10	0.039525692	(AMAR)	0.028547252	-0.55%	(CBK)	0.061021924	0.10%
	34	11	0.043478261	(BURG)	0.009432031	-0.55%	(BURG)	0.015446242	-0.10%
	35	12	0.04743083	(GPIK)	0.003032101	-0.97%	(GPIK)	0.011376257	-0.65%
	36	13	0.051383399	(ARAB)	0.000268071	-0.01%	(ARAB)	0.000848051	0.19%
	37	14	0.055335968	(NINV)	-0.000162773	-0.37%	(NINV)	-0.000408135	0.16%
	38	15	0.059288538	(OULA)	-0.026291078	0.05%	(OULA)	-0.049349014	-0.20%
	39	16	0.063241107	(BKME)	-0.034034306	-0.16%	(NIND)	-0.067685808	-0.33%
	40	17	0.067193676	(ENMA)	-0.035502568	0.50%	(ENMA)	-0.099466817	-0.25%
	41	18	0.071146245	(NIND)	-0.036142755	-0.16%	(BKME)	-0.135724824	-0.28%
	42	19	0.075098814	(BAYK)	-0.048514703	-0.22%	(BAYK)	-0.153983986	-0.56%
	43	20	0.079051383	(ABK)	-0.114037661	-0.06%	(ABK)	-0.263610185	-0.16%
	44	21	0.083003953	(ALIMK)	-0.118832423	-0.37%	(ALIMK)	-0.280992833	-0.16%
	45	22	0.086956522	(JIYAD)	-0.404992681	-1.58%	(JIYAD)	-0.407083724	0.69%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				3.56%	4.80%	1.23%	3.41%	5.19%	1.79%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (Ri)	Ri - Avg. (Ri)	Wl	Apr. 2018	Beta	Returns	May. 2018	Beta	Returns
Short "high beta" portfolio.	1	22	0.086956522	(VIVA)	2.570030872	-1.30%	(BIIHC)	2.674668923	-0.08%
	2	21	0.083003953	(BIIHC)	1.642175415	-0.31%	(VIVA)	1.115155826	-0.09%
	3	20	0.079051383	(AAYA)	1.301481957	0.19%	(AAYA)	0.946718006	0.18%
	4	19	0.075098814	(ITHMR)	0.794462239	-0.63%	(AAN)	0.852620716	-0.04%
	5	18	0.071146245	(CBK)	0.786198877	0.48%	(ITHMR)	0.801768328	0.57%
	6	17	0.067193676	(AAN)	0.771172446	0.17%	(BOUB)	0.784619486	0.14%
	7	16	0.063241107	(BOUB)	0.709311494	0.26%	(NREK)	0.690204281	-0.58%
	8	15	0.059288538	(MALK)	0.648624461	-0.46%	(WARB)	0.678380888	-0.05%
	9	14	0.055335968	(ZAIN)	0.570164696	-0.96%	(GBK)	0.676039398	-0.07%
	10	13	0.051383399	(WARB)	0.569098163	0.08%	(KREK)	0.642809458	-0.08%
	11	12	0.04743083	(MADI)	0.543728567	-0.51%	(ZAIN)	0.62439799	-0.17%
	12	11	0.043478261	(NREK)	0.531016857	0.10%	(GFHK)	0.54455885	0.36%
	13	10	0.039525692	(GBK)	0.4513504	0.19%	(MALK)	0.529440383	0.25%
	14	9	0.035573123	(ABYR)	0.424836458	0.38%	(TIJK)	0.462116134	-0.03%
	15	8	0.031620553	(KBTk)	0.415977575	-0.75%	(MADI)	0.428238758	-0.19%
	16	7	0.027667984	(TIJK)	0.394172345	-0.57%	(KBTk)	0.40258128	-0.35%
	17	6	0.023715415	(KREK)	0.300866074	0.01%	(BPCC)	0.402433771	0.10%
	18	5	0.019762846	(GFHK)	0.277921427	-0.62%	(ABYR)	0.297544583	-0.15%
	19	4	0.015810277	(NBK)	0.258858324	-0.02%	(CBK)	0.269511106	-0.04%
	20	3	0.011857708	(BPCC)	0.240631458	0.43%	(ALQK)	0.266995081	-0.20%
	21	2	0.007905138	(OLAK)	0.231515448	-0.32%	(MAZA)	0.237259979	-0.39%
Long "low beta" portfolio.	22	1	0.003952569	(ALQK)	0.230794993	0.15%	(OLAK)	0.234626991	0.37%
	23	0	0	(DEER)	0.209740649	-0.40%	(DEER)	0.199373442	-0.27%
	24	1	0.003952569	(KIB)	0.168155056	-0.14%	(SOOR)	0.192059105	0.60%
	25	2	0.007905138	(KPRO)	0.147266298	-0.43%	(NBK)	0.171247523	-0.14%
	26	3	0.011857708	(AMAR)	0.146053783	0.32%	(KPRO)	0.149946636	-0.12%
	27	4	0.015810277	(SOOR)	0.086760427	0.05%	(KIB)	0.129766439	-0.08%
	28	5	0.019762846	(MAZA)	0.086211533	-0.39%	(KFH)	0.128170956	-0.01%
	29	6	0.023715415	(KFH)	0.085677388	-0.15%	(AGLT)	0.125895727	0.03%
	30	7	0.027667984	(AGLT)	0.085226676	-0.05%	(COAS)	0.124518538	0.56%
	31	8	0.031620553	(COAS)	0.077332897	0.12%	(AMAR)	0.120566358	-0.01%
	32	9	0.035573123	(SAGH)	0.067808928	-0.35%	(INVK)	0.110066578	-0.24%
	33	10	0.039525692	(INVK)	0.059972643	-0.19%	(SAGH)	0.049477757	-0.11%
	34	11	0.043478261	(BURG)	0.011560206	-0.14%	(BURG)	0.015497511	-0.24%
	35	12	0.04743083	(GPIK)	0.005576002	0.54%	(GPIK)	0.006280269	-0.10%
	36	13	0.051383399	(ARAB)	0.000790084	-0.52%	(ARAB)	0.000860103	0.17%
	37	14	0.055335968	(NINV)	-0.000409324	0.08%	(NINV)	-0.000563463	-0.51%
	38	15	0.059288538	(OULA)	-0.038319104	0.13%	(NIND)	-0.064307782	-0.16%
	39	16	0.063241107	(NIND)	-0.085772817	0.23%	(OULA)	-0.091432983	0.67%
	40	17	0.067193676	(BAYK)	-0.092819273	-0.58%	(ENMA)	-0.10340125	0.07%
	41	18	0.071146245	(ENMA)	-0.15129225	-0.28%	(BKME)	-0.107266084	-0.44%
	42	19	0.075098814	(BKME)	-0.172007325	-0.14%	(ABK)	-0.238384759	0.37%
	43	20	0.079051383	(ABK)	-0.221585305	0.27%	(ALIMK)	-0.249724406	0.07%
	44	21	0.083003953	(ALIMK)	-0.234239177	-0.30%	(BAYK)	-0.28947886	-0.39%
	45	22	0.086956522	(JIYAD)	-0.646164497	0.61%	(JIYAD)	-0.328475337	-0.03%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				3.90%	4.62%	0.72%	4.19%	5.27%	1.08%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Jun. 2018	Beta	Returns	Jul. 2018	Beta	Returns
Short "high beta" portfolio.	1	22	0.086956522	(BIHC)	1.125378633	-0.12%	(BIHC)	0.750695918	0.37%
	2	21	0.083003953	(VIVA)	1.012352592	0.06%	(VIVA)	0.695948384	0.17%
	3	20	0.079051383	(WARB)	0.622142785	-0.50%	(WARB)	0.511251423	0.40%
	4	19	0.075098814	(ZAIN)	0.540296898	0.84%	(AAYA)	0.424244801	0.22%
	5	18	0.071146245	(CBK)	0.487582611	0.20%	(ITHMR)	0.398835108	0.14%
	6	17	0.067193676	(ITHMR)	0.484784493	-0.54%	(AAN)	0.274524324	-0.25%
	7	16	0.063241107	(KREK)	0.431409911	0.32%	(ZAIN)	0.272482705	0.49%
	8	15	0.059288538	(BOUB)	0.386040472	0.00%	(KREK)	0.258496612	0.05%
	9	14	0.055335968	(AAYA)	0.348491789	-0.14%	(GBK)	0.250531976	0.45%
	10	13	0.051383399	(GBK)	0.328189993	-0.53%	(BOUB)	0.20162985	0.11%
	11	12	0.04743083	(NREK)	0.274424378	0.87%	(TIJK)	0.196603453	0.23%
	12	11	0.043478261	(MADI)	0.268127595	-0.07%	(NBK)	0.169429991	0.34%
	13	10	0.039525692	(GFHK)	0.264902123	0.11%	(KBTk)	0.168718531	0.56%
	14	9	0.035573123	(AAN)	0.254148358	-0.10%	(MALK)	0.15005544	0.02%
	15	8	0.031620553	(KBTk)	0.223329001	0.43%	(KFH)	0.147041352	0.37%
	16	7	0.027667984	(NBK)	0.207615966	0.21%	(ABYR)	0.140425774	0.04%
	17	6	0.023715415	(BPCC)	0.188081149	-0.08%	(MADI)	0.137111984	0.06%
	18	5	0.019762846	(ABYR)	0.177654344	-0.17%	(ALQK)	0.125733171	-0.07%
	19	4	0.015810277	(TIJK)	0.14215116	-0.07%	(KIB)	0.120089172	0.63%
	20	3	0.011857708	(DEER)	0.123477435	-0.56%	(GFHK)	0.116835108	-0.08%
	21	2	0.007905138	(KFH)	0.123411442	0.22%	(CBK)	0.11058522	0.83%
	22	1	0.003952569	(MAZA)	0.114486959	-0.17%	(NREK)	0.109077679	0.30%
Long "low beta" portfolio.	23	0	0	(ALQK)	0.110849648	0.02%	(BPCC)	0.08908558	0.43%
	24	1	0.003952569	(SOOR)	0.102682334	-0.29%	(DEER)	0.080286208	0.06%
	25	2	0.007905138	(MALK)	0.10065044	-0.50%	(OLAK)	0.064694203	0.09%
	26	3	0.011857708	(KIB)	0.092286261	0.16%	(INVK)	0.055163014	0.45%
	27	4	0.015810277	(AGLT)	0.079883545	0.34%	(MAZA)	0.051366679	0.01%
	28	5	0.019762846	(OLAK)	0.078553056	0.05%	(KPRO)	0.049251661	-0.19%
	29	6	0.023715415	(COAS)	0.059299096	0.01%	(SOOR)	0.048823788	0.02%
	30	7	0.027667984	(AMAR)	0.05331921	-0.30%	(AGLT)	0.048114912	0.31%
	31	8	0.031620553	(INVK)	0.052891611	0.01%	(COAS)	0.037865508	-0.13%
	32	9	0.035573123	(KPRO)	0.049421307	0.21%	(SAGH)	0.033428031	0.28%
	33	10	0.039525692	(SAGH)	0.018510104	0.01%	(AMAR)	0.032701226	0.03%
	34	11	0.043478261	(BURG)	0.007805547	0.44%	(BURG)	0.009779991	0.20%
	35	12	0.04743083	(GPIK)	0.003346956	-0.10%	(GPIK)	0.00280101	0.02%
	36	13	0.051383399	(ARAB)	0.000562906	-0.01%	(ARAB)	0.000334057	0.45%
	37	14	0.055335968	(NINV)	-8.68914E-05	0.07%	(NINV)	-0.000107052	0.11%
	38	15	0.059288538	(NIND)	-0.024955131	0.26%	(NIND)	-0.02744614	0.09%
	39	16	0.063241107	(ENMA)	-0.031257029	0.01%	(BAYK)	-0.029476046	0.07%
	40	17	0.067193676	(OULA)	-0.057396969	-0.46%	(ENMA)	-0.039795262	0.23%
	41	18	0.071146245	(ALIMK)	-0.112832306	0.38%	(OULA)	-0.040162357	0.03%
	42	19	0.075098814	(BKME)	-0.154982681	0.50%	(BKME)	-0.053695572	0.28%
	43	20	0.079051383	(ABK)	-0.208763158	0.22%	(ALIMK)	-0.121336444	-0.15%
	44	21	0.083003953	(BAYK)	-0.230080791	1.24%	(JIYAD)	-0.170621666	-0.16%
	45	22	0.086956522	(JIYAD)	-0.381703518	-0.29%	(ABK)	-0.262151938	-0.15%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				4.08%	5.30%	1.21%	4.72%	5.63%	0.91%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Aug. 2018	Beta	Returns	Sep. 2018	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(VIVA)	1.295162615	-0.03%	(AAYA)	1.56767679	-0.25%
	2	21	0.083003953	(AAYA)	1.183170814	1.31%	(BIHC)	1.488582336	-0.45%
	3	20	0.079051383	(BIHC)	0.696943703	0.07%	(BOUB)	0.930434787	0.34%
	4	19	0.075098814	(ZAIN)	0.627337824	-0.10%	(VIVA)	0.782494024	-0.05%
	5	18	0.071146245	(ITHMR)	0.580597591	-0.22%	(GBK)	0.689637208	0.05%
	6	17	0.067193676	(KBTk)	0.547703469	0.49%	(AAN)	0.650573306	-0.19%
	7	16	0.063241107	(AAN)	0.46236226	0.11%	(WARB)	0.603419744	-0.02%
	8	15	0.059288538	(GBK)	0.452941864	-0.22%	(ZAIN)	0.589661761	-0.01%
	9	14	0.055335968	(BOUB)	0.417620256	0.15%	(KREK)	0.561564911	-0.26%
	10	13	0.051383399	(NBK)	0.390189934	-0.05%	(ITHMR)	0.430253922	-0.08%
	11	12	0.04743083	(KREK)	0.388514088	-0.14%	(NBK)	0.425020242	0.19%
	12	11	0.043478261	(TIJK)	0.369619168	-0.05%	(MALK)	0.42233443	0.46%
	13	10	0.039525692	(MADI)	0.343685065	-0.32%	(KBTk)	0.416929532	-0.26%
	14	9	0.035573123	(WARB)	0.333252067	0.00%	(MAZA)	0.390715378	-0.09%
	15	8	0.031620553	(CBK)	0.322286918	0.41%	(GFHK)	0.382105692	-0.20%
	16	7	0.027667984	(GFHK)	0.301588624	-0.11%	(CBK)	0.37065395	-0.32%
	17	6	0.023715415	(ABYR)	0.25002366	0.17%	(TIJK)	0.369624897	0.37%
	18	5	0.019762846	(ALQK)	0.234569398	0.11%	(ALQK)	0.327773155	0.12%
	19	4	0.015810277	(OLAK)	0.210982579	0.30%	(BPCC)	0.291540827	0.17%
	20	3	0.011857708	(DEER)	0.194546319	-0.68%	(OLAK)	0.257482152	-0.12%
	21	2	0.007905138	(BPCC)	0.178092197	0.48%	(MADI)	0.251528153	-0.36%
Long "low-beta" portfolio.	22	1	0.003952569	(MALK)	0.169724144	-0.68%	(ABYR)	0.190844185	-0.16%
	23	0	0	(NREK)	0.136680008	-0.31%	(DEER)	0.179099674	-0.24%
	24	1	0.003952569	(MAZA)	0.135996461	-0.54%	(NREK)	0.177145814	-0.27%
	25	2	0.007905138	(KFH)	0.131851484	0.02%	(KFH)	0.153339475	0.08%
	26	3	0.011857708	(SOOR)	0.097315256	-0.14%	(SOOR)	0.144391304	-0.03%
	27	4	0.015810277	(KIB)	0.089124151	-0.23%	(KIB)	0.140233466	-0.22%
	28	5	0.019762846	(AMAR)	0.088758708	0.30%	(AMAR)	0.139128847	0.23%
	29	6	0.023715415	(AGLT)	0.086761544	-0.01%	(COAS)	0.110092007	-0.14%
	30	7	0.027667984	(KPRO)	0.075808158	-0.30%	(INVK)	0.082435411	-0.06%
	31	8	0.031620553	(SAGH)	0.073306659	-0.30%	(AGLT)	0.07504872	0.00%
	32	9	0.035573123	(INVK)	0.069432404	-0.11%	(KPRO)	0.072251927	-0.37%
	33	10	0.039525692	(COAS)	0.06486099	-0.25%	(SAGH)	0.05083664	0.01%
	34	11	0.043478261	(BURG)	0.01626953	-0.50%	(BURG)	0.015205151	-0.08%
	35	12	0.04743083	(GPIK)	0.004558287	0.10%	(GPIK)	0.004221965	-0.17%
	36	13	0.051383399	(ARAB)	0.000439806	-0.16%	(ARAB)	0.000662293	-0.05%
	37	14	0.055335968	(NINV)	-0.000207726	-0.12%	(NINV)	-0.000270552	-0.34%
	38	15	0.059288538	(NIND)	-0.045214115	0.19%	(NIND)	-0.030435562	-0.09%
	39	16	0.063241107	(ENMA)	-0.048576363	-0.03%	(ENMA)	-0.061255581	-0.39%
	40	17	0.067193676	(OULA)	-0.054204109	-0.09%	(OULA)	-0.064919061	-0.08%
	41	18	0.071146245	(BKME)	-0.071178501	-0.05%	(BKME)	-0.13893773	-0.19%
	42	19	0.075098814	(ABK)	-0.095907801	0.38%	(ALIMK)	-0.277819197	0.17%
	43	20	0.079051383	(ALIMK)	-0.124481129	-0.36%	(JIYAD)	-0.394147385	-0.46%
	44	21	0.083003953	(BAYK)	-0.164364539	0.32%	(BAYK)	-0.4410731	1.05%
	45	22	0.086956522	(JIYAD)	-0.356351978	0.48%	(ABK)	-0.507578539	-0.76%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				3.76%	4.99%	1.23%	3.65%	4.99%	1.34%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (RI)	RI - Avg. (RI)	WI	Oct. 2018	Beta	Returns	Nov. 2018	Beta	Returns
Short "high-beta" portfolio.	1	22	0.086956522	(BIHC)	1.916096281	-1.01%	(VIVA)	2.549473891	0.38%
	2	21	0.083003953	(VIVA)	1.618975115	0.18%	(BIHC)	1.19747048	-0.37%
	3	20	0.079051383	(AAN)	0.942628955	-0.24%	(AAYA)	1.132069044	0.76%
	4	19	0.075098814	(AAYA)	0.87292053	-0.57%	(WARB)	1.089845409	0.17%
	5	18	0.071146245	(MALK)	0.702697354	1.07%	(AAN)	0.720097352	0.45%
	6	17	0.067193676	(BOUB)	0.645783589	-0.28%	(KREK)	0.651593397	0.86%
	7	16	0.063241107	(ALQK)	0.570436734	0.66%	(CBK)	0.651291159	-0.06%
	8	15	0.059288538	(WARB)	0.554149194	-0.13%	(DEER)	0.60500441	2.03%
	9	14	0.055335968	(KREK)	0.534585864	0.05%	(ITHMR)	0.553767044	-0.15%
	10	13	0.051383399	(KBTK)	0.522840187	-0.33%	(ZAIN)	0.429135078	0.21%
	11	12	0.04743083	(GFHK)	0.511316528	-0.15%	(BOUB)	0.409514934	0.17%
	12	11	0.043478261	(GBK)	0.502939875	0.11%	(MADI)	0.406266094	0.27%
	13	10	0.039525692	(TIJK)	0.483355877	0.64%	(KBTK)	0.403716823	0.13%
	14	9	0.035573123	(ZAIN)	0.399485691	-0.28%	(TIJK)	0.398043862	-0.62%
	15	8	0.031620553	(ITHMR)	0.369524704	-0.11%	(GBK)	0.342124812	0.20%
	16	7	0.027667984	(ABYR)	0.272992178	-0.34%	(OLAK)	0.315116284	0.56%
	17	6	0.023715415	(MADI)	0.271989457	-0.42%	(GFHK)	0.305482167	0.00%
	18	5	0.019762846	(NREK)	0.261390884	-0.48%	(MALK)	0.298110632	0.03%
	19	4	0.015810277	(NBK)	0.236149572	-0.06%	(ALQK)	0.253494787	-0.56%
	20	3	0.011857708	(CBK)	0.20174742	0.09%	(ABYR)	0.229532798	-0.13%
	21	2	0.007905138	(DEER)	0.190632201	0.20%	(NBK)	0.223335714	0.06%
	22	1	0.003952569	(BPCC)	0.188726334	-0.06%	(BPCC)	0.176241574	-0.05%
Long "low-beta" portfolio.	23	0	0	(MAZA)	0.183178249	-0.33%	(MAZA)	0.146483731	0.33%
	24	1	0.003952569	(OLAK)	0.153079578	-0.29%	(KIB)	0.141448353	0.59%
	25	2	0.007905138	(COAS)	0.152783678	-0.06%	(KPRO)	0.129649831	-0.11%
	26	3	0.011857708	(KPRO)	0.150122282	-0.06%	(COAS)	0.123147745	0.50%
	27	4	0.015810277	(KFH)	0.123165387	-0.03%	(KFH)	0.12049253	0.06%
	28	5	0.019762846	(KIB)	0.119486788	0.00%	(NREK)	0.117156047	0.13%
	29	6	0.023715415	(SOOR)	0.111009597	-0.03%	(INVK)	0.100924496	0.12%
	30	7	0.027667984	(INVK)	0.106240426	-0.25%	(SAGH)	0.082080199	0.58%
	31	8	0.031620553	(AMAR)	0.079156809	-0.28%	(SOOR)	0.080173345	-0.10%
	32	9	0.035573123	(SAGH)	0.06307322	-0.25%	(AGLT)	0.062660794	-0.13%
	33	10	0.039525692	(AGLT)	0.046704374	-0.05%	(AMAR)	0.049663392	0.12%
	34	11	0.043478261	(BURG)	0.022167427	0.42%	(BURG)	0.012124545	0.17%
	35	12	0.04743083	(GPIK)	0.006385892	0.07%	(GPIK)	0.008826902	0.34%
	36	13	0.051383399	(ARAB)	0.000556332	-0.31%	(ARAB)	0.000444896	0.24%
	37	14	0.055335968	(NINV)	-0.000248019	-0.19%	(NINV)	-0.000187451	0.29%
	38	15	0.059288538	(NIND)	-0.054137364	-0.16%	(NIND)	-0.037730429	0.19%
	39	16	0.063241107	(OULA)	-0.064410322	0.09%	(OULA)	-0.08260949	-0.24%
	40	17	0.067193676	(ABK)	-0.099678128	-0.03%	(BKME)	-0.088062343	0.22%
	41	18	0.071146245	(ENMA)	-0.108529967	0.09%	(ENMA)	-0.091893129	0.70%
	42	19	0.075098814	(BKME)	-0.111179452	-0.06%	(ALIMK)	-0.128081032	0.09%
	43	20	0.079051383	(ALIMK)	-0.160089327	-0.13%	(ABK)	-0.182220839	0.06%
	44	21	0.083003953	(BAYK)	-0.295543636	-1.47%	(BAYK)	-0.229284278	1.88%
	45	22	0.086956522	(JIYAD)	-0.506131566	-0.36%	(JIYAD)	-0.429218818	0.03%
Avg. Rank				RH	RL	BAB	RH	RL	BAB
23				4.49%	4.64%	0.15%	4.37%	5.68%	1.31%

Table (A2): BAB portfolios

This table reports the constructed BAB portfolios for each calendar month included in the study. As mentioned in the body of text, November 2015 was dropped out due to the limited number of data points in that month. The reported beta and return figures for each stock are the mean values for that calendar month, whereas the portfolio figures are weighted-averages. "RH" is the return of the short portfolio, whereas "RL" is the return of the long portfolio. By the same token, "BAB" is the overall return of the portfolio, in excess of the risk-free rate, which is the average discount rate, 2.50%.

	Rank (Ri)	Ri - Avg. (Ri)	Wi	Dec. 2018	Beta	Returns
Short "high beta" portfolio.	1	22	0.086956522	(BIIHC)	2.324949623	3.33%
	2	21	0.083003953	(WARB)	1.169997516	-0.12%
	3	20	0.079051383	(VIVA)	0.966388969	0.07%
	4	19	0.075098814	(AAYA)	0.594379238	-0.05%
	5	18	0.071146245	(AAN)	0.450512691	-0.29%
	6	17	0.067193676	(GBK)	0.442965734	-0.21%
	7	16	0.063241107	(KREK)	0.409119714	-0.10%
	8	15	0.059288538	(BOUB)	0.398778425	0.29%
	9	14	0.055335968	(ZAIN)	0.389897949	-0.17%
	10	13	0.051383399	(GFHK)	0.351634583	-1.50%
	11	12	0.04743083	(CBK)	0.320284078	0.04%
	12	11	0.043478261	(ITHMR)	0.235158222	-0.70%
	13	10	0.039525692	(TIJK)	0.21306944	0.55%
	14	9	0.035573123	(MALK)	0.211437049	-0.79%
	15	8	0.031620553	(DEER)	0.211432214	-0.46%
	16	7	0.027667984	(NBK)	0.201068169	0.01%
	17	6	0.023715415	(ALQK)	0.191359077	-0.12%
	18	5	0.019762846	(KBTk)	0.185407062	-0.08%
	19	4	0.015810277	(BPCC)	0.168504308	-0.09%
	20	3	0.011857708	(ABYR)	0.164186631	-0.16%
	21	2	0.007905138	(MADI)	0.137403776	-0.56%
	22	1	0.003952569	(OLAK)	0.136178089	-0.34%
Long "low beta" portfolio.	23	0	0	(KFH)	0.127363936	0.12%
	24	1	0.003952569	(COAS)	0.118581023	-0.19%
	25	2	0.007905138	(NREK)	0.115181067	-0.16%
	26	3	0.011857708	(KIB)	0.101852481	0.03%
	27	4	0.015810277	(SOOR)	0.086406307	-0.04%
	28	5	0.019762846	(MAZA)	0.085301151	-0.35%
	29	6	0.023715415	(INVK)	0.077383959	-0.31%
	30	7	0.027667984	(KPRO)	0.072877019	0.16%
	31	8	0.031620553	(AGLT)	0.038513697	-0.16%
	32	9	0.035573123	(AMAR)	0.026040858	0.14%
	33	10	0.039525692	(SAGH)	0.020401223	-0.31%
	34	11	0.043478261	(BURG)	0.007196733	-0.07%
	35	12	0.04743083	(GPIK)	0.0043788	0.34%
	36	13	0.051383399	(ARAB)	0.000232976	-0.18%
	37	14	0.055335968	(NINV)	-9.76867E-05	-0.12%
	38	15	0.059288538	(NEND)	-0.023326461	-0.13%
	39	16	0.063241107	(ENMA)	-0.023780949	-0.25%
	40	17	0.067193676	(OULA)	-0.042807643	0.01%
	41	18	0.071146245	(BKME)	-0.047724938	-0.03%
	42	19	0.075098814	(ALIMK)	-0.07335609	0.28%
	43	20	0.079051383	(ABK)	-0.09463778	0.12%
	44	21	0.083003953	(BAYK)	-0.165272936	-0.01%
	45	22	0.086956522	(JIYAD)	-0.285311955	-0.52%
Avg. Rank				RH	RL	BAB
23				4.59%	4.90%	0.31%

Table (A3): Sharpe ratios for BAB and the index

$$\text{Sharpe}_{BAB,t} = \frac{R_{BAB,t} - R_{f,t}}{\sigma_i}$$

To adjust returns for risk, this table provides the Sharpe ratios for the BAB portfolio for each calendar month in the sample period, using the formula above. The risk-free rate is still the average of the discount rate set by the Central Bank of Kuwait, over the past three years. In the equation above, the numerator captures the return in excess of the risk-free rate, while the denominator scales the excess return by volatility. Naturally, $\text{Sharpe}_{BAB,t}$ is replaced with $\text{Sharpe}_{INDEX,t}$ when calculating the Sharpe ratio for the index.

Month-Year	Sharpe _{BAB}	Sharpe _{INDEX}
Dec-15	1.47	-0.49
Jan-16	2.41	-1.54
Feb-16	0.99	0.31
Mar-16	2.99	0.06
Apr-16	-0.32	0.52
May-16	3.46	0.03
Jun-16	0.47	-0.10
Jul-16	1.15	0.30
Aug-16	1.49	-0.08
Sep-16	2.01	-0.08
Oct-16	0.29	0.01
Nov-16	1.61	0.43
Dec-16	1.17	0.58
Jan-17	0.64	2.66
Feb-17	4.26	-0.11
Mar-17	0.27	0.55
Apr-17	2.83	-0.44
May-17	1.61	-0.12
Jun-17	2.13	-0.06
Jul-17	1.71	0.20
Aug-17	2.25	0.09
Sep-17	2.02	-0.62
Oct-17	1.88	-0.36
Nov-17	1.40	-0.78
Dec-17	-0.73	0.57
Jan-18	2.53	0.66
Feb-18	1.73	0.24
Mar-18	2.51	-0.33
Apr-18	1.01	-4.61
May-18	1.51	-0.27
Jun-18	1.70	0.84
Jul-18	1.28	1.14
Aug-18	1.72	-0.12

Table (A3): Sharpe ratios for BAB and the index

$$\text{Sharpe}_{BAB,t} = \frac{R_{BAB,t} - R_{f,t}}{\sigma_i}$$

To adjust returns for risk, this table provides the Sharpe ratios for the BAB portfolio for each calendar month in the sample period, using the formula above. The risk-free rate is still the average of the discount rate set by the Central Bank of Kuwait, over the past three years. In the equation above, the numerator captures the return in excess of the risk-free rate, while the denominator scales the excess return by volatility. Naturally, $\text{Sharpe}_{BAB,t}$ is replaced with $\text{Sharpe}_{INDEX,t}$ when calculating the Sharpe ratio for the index.

Month-Year	Sharpe _{BAB}	Sharpe _{INDEX}
Sep-18	1.88	0.27
Oct-18	0.21	-0.30
Nov-18	1.83	0.32
Dec-18	0.43	-0.20
Average:	1.56	-0.02



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