

Betting Against Correlation:  
Testing Theories of the Low-Risk Effect

**Internet Appendix**

Cliff Asness, Andrea Frazzini, Niels Joachim Gormsen,  
and Lasse Heje Pedersen

**Table A1**  
**Betting Against Volatility – Three Factor Alphas**

This table shows returns to the betting against volatility factor in each correlation quintile, along with the equal-weighted average of these factors, which constitute our overall BAV factor. Panel A reports the BAV performance in the U.S. sample and panel B reports the performance in the global sample. At the beginning of each month stocks are ranked in ascending order based on the estimate of correlation at the end of the previous month. The ranked stocks are assigned to one of five quintiles. U.S. sorts are based on NYSE breakpoints. Within each quintile, stocks are assigned to one of two portfolios: low volatility and high volatility. In these portfolios, stocks are weighted by ranked volatility (lower volatility stocks have larger weights in the low- volatility portfolios and larger volatility stocks have larger weights in the high- volatility portfolios), and the portfolios are rebalanced every calendar month. The portfolios are (de)levered to have a beta of one at formation. Within each correlation quintile, a self-financing BAC portfolio is made that is long the low-correlation portfolio and short the high-correlation portfolio. We form one set of portfolios in each country and compute global portfolios by weighting each country's portfolio by the country's total (lagged) market capitalization. Alpha is the intercept in a regression of monthly excess return. The explanatory variables are the monthly excess return to the CRSP value-weighted market portfolio and the monthly returns to the SMB and HML factors of Fama and French (2015). Returns and alphas are in monthly percent,  $t$ -statistics are shown in parenthesis below the coefficient estimates, and 5% statistical significance is indicated in bold. '\$ long' and '\$ short' measures how many dollars the betting against correlation portfolio is long and short. Sharpe ratios and information ratios are annualized.

Panel A: U.S. Sample (1963-2015)						
Correlation quintile	1	2	3	4	5	BAV
Excess return	-0.10 (-0.31)	<b>0.63</b> (2.68)	<b>0.59</b> (2.76)	<b>0.57</b> (3.20)	0.30 (1.93)	<b>0.40</b> (1.99)
Alpha	0.07 (0.23)	<b>0.57</b> (2.65)	<b>0.54</b> (2.90)	<b>0.55</b> (3.74)	<b>0.30</b> (2.51)	<b>0.40</b> (2.40)
MKT	<b>-0.16</b> (-2.3)	0.07 (1.3)	0.04 (1.0)	0.01 (0.4)	0.00 (0.03)	-0.01 (-0.2)
SMB	<b>-0.97</b> (-10.2)	<b>-0.67</b> (-9.3)	<b>-0.69</b> (-11.1)	<b>-0.65</b> (-13.3)	<b>-0.65</b> (-16.5)	<b>-0.73</b> (-12.9)
HML	<b>0.49</b> (4.8)	<b>0.60</b> (7.8)	<b>0.61</b> (9.1)	<b>0.53</b> (9.9)	<b>0.50</b> (11.9)	<b>0.55</b> (9.0)
SR	-0.04	0.37	0.38	0.44	0.27	0.27
IR	0.03	0.37	0.41	0.53	0.35	0.34
R2	0.22	0.21	0.27	0.34	0.44	0.32
# obs	630	630	630	630	630	630
Panel B: Global Sample (1990-2015)						
Correlation quintile	1	2	3	4	5	BAV
Excess return	-0.06 (-0.18)	<b>0.53</b> (2.08)	<b>0.58</b> (2.44)	<b>0.52</b> (2.51)	<b>0.35</b> (1.98)	0.38 (1.68)
Alpha	-0.16 (-0.57)	<b>0.41</b> (1.98)	<b>0.48</b> (2.62)	<b>0.48</b> (2.97)	<b>0.31</b> (2.30)	0.31 (1.73)
MKT	<b>-0.27</b> (-4.2)	<b>-0.21</b> (-4.4)	<b>-0.26</b> (-6.3)	<b>-0.29</b> (-7.8)	<b>-0.25</b> (-8.21)	<b>-0.26</b> (-6.4)
SMB	<b>-1.04</b> (-7.8)	<b>-0.68</b> (-6.8)	<b>-0.62</b> (-7.0)	<b>-0.54</b> (-7.0)	<b>-0.45</b> (-7.1)	<b>-0.67</b> (-7.9)
HML	<b>0.85</b> (6.9)	<b>0.79</b> (8.6)	<b>0.77</b> (9.5)	<b>0.62</b> (8.8)	<b>0.56</b> (9.5)	<b>0.72</b> (9.3)
SR	-0.04	0.41	0.48	0.50	0.39	0.33
IR	-0.12	0.40	0.53	0.60	0.46	0.35
R2	0.33	0.35	0.41	0.42	0.45	0.42
# obs	306	306	306	306	306	306

**Table A2**  
**Betting Against Volatility – Five Factor Alphas**

This table shows returns to the betting against volatility factor in each correlation quintile, along with the equal-weighted average of these factors, which constitute our overall BAV factor. Panel A reports the BAV performance in the U.S. sample and panel B reports the performance in the global sample. At the beginning of each month stocks are ranked in ascending order based on the estimate of correlation at the end of the previous month. The ranked stocks are assigned to one of five quintiles. U.S. sorts are based on NYSE breakpoints. Within each quintile, stocks are assigned to one of two portfolios: low volatility and high volatility. In these portfolios, stocks are weighted by ranked volatility (lower volatility stocks have larger weights in the low- volatility portfolios and larger volatility stocks have larger weights in the high- volatility portfolios), and the portfolios are rebalanced every calendar month. The portfolios are (de)levered to have a beta of one at formation. Within each correlation quintile, a self-financing BAC portfolio is made that is long the low-correlation portfolio and short the high-correlation portfolio. We form one set of portfolios in each country and compute global portfolios by weighting each country's portfolio by the country's total (lagged) market capitalization. Alpha is the intercept in a regression of monthly excess return. The explanatory variables are the monthly excess return to the CRSP value-weighted market portfolio and the monthly returns to the SMB, HML, RMW, and CMA factors of Fama and French (2015). Returns and alphas are in monthly percent, *t*-statistics are shown in parenthesis below the coefficient estimates, and 5% statistical significance is indicated in bold. '\$ long' and '\$ short' measures how many dollars the betting against correlation portfolio is long and short. Sharpe ratios and information ratios are annualized.

Panel A: U.S. Sample (1963-2015)						
Correlation quintile	1	2	3	4	5	BAV
Excess return	-0.10 (-0.31)	<b>0.63</b> (2.68)	<b>0.59</b> (2.76)	<b>0.57</b> (3.20)	0.30 (1.93)	<b>0.40</b> (1.99)
Alpha	-0.48 (-1.77)	0.04 (0.18)	0.06 (0.35)	0.17 (1.26)	-0.03 (-0.32)	-0.05 (-0.34)
MKT	-0.05 (-0.7)	<b>0.19</b> (3.9)	<b>0.15</b> (3.6)	<b>0.10</b> (3.0)	<b>0.08</b> (3.02)	<b>0.09</b> (2.6)
SMB	<b>-0.65</b> (-7.0)	<b>-0.39</b> (-5.8)	<b>-0.43</b> (-7.4)	<b>-0.44</b> (-9.7)	<b>-0.48</b> (-13.3)	<b>-0.48</b> (-9.3)
HML	<b>0.29</b> (2.2)	<b>0.28</b> (3.0)	<b>0.37</b> (4.5)	<b>0.34</b> (5.3)	<b>0.30</b> (6.0)	<b>0.31</b> (4.4)
RMW	<b>1.43</b> (10.5)	<b>1.23</b> (12.3)	<b>1.17</b> (13.8)	<b>0.94</b> (14.0)	<b>0.76</b> (14.2)	<b>1.11</b> (14.6)
CMA	<b>0.41</b> (2.1)	<b>0.67</b> (4.7)	<b>0.51</b> (4.3)	<b>0.40</b> (4.2)	<b>0.42</b> (5.6)	<b>0.48</b> (4.5)
SR	-0.04	0.37	0.38	0.44	0.27	0.27
IR	-0.26	0.03	0.05	0.18	-0.05	-0.05
R2	0.33	0.36	0.44	0.50	0.58	0.49
# obs	630	630	630	630	630	630

**Table A2 (continued)**  
**Betting Against Volatility – Five Factor Alphas**

Panel B: Global Sample (1990-2015)						
Correlation quintile	1	2	3	4	5	BAV
Excess return	-0.06 (-0.18)	<b>0.53</b> (2.08)	<b>0.58</b> (2.44)	<b>0.52</b> (2.51)	<b>0.35</b> (1.98)	0.38 (1.68)
Alpha	<b>-0.62</b> (-2.16)	-0.05 (-0.23)	-0.01 (-0.07)	-0.07 (-0.46)	-0.19 (-1.67)	-0.19 (-1.12)
MKT	-0.06 (-0.8)	0.00 (-0.0)	-0.03 (-0.7)	-0.03 (-0.8)	-0.02 (-0.63)	-0.03 (-0.6)
SMB	<b>-0.80</b> (-5.7)	<b>-0.44</b> (-4.3)	<b>-0.35</b> (-4.1)	<b>-0.25</b> (-3.5)	<b>-0.18</b> (-3.3)	<b>-0.40</b> (-4.9)
HML	<b>0.56</b> (3.2)	<b>0.46</b> (3.6)	<b>0.39</b> (3.6)	<b>0.21</b> (2.4)	<b>0.20</b> (2.9)	<b>0.37</b> (3.6)
RMW	<b>0.97</b> (4.6)	<b>0.93</b> (6.0)	<b>0.99</b> (7.4)	<b>1.09</b> (10.1)	<b>1.01</b> (11.8)	<b>1.00</b> (8.0)
CMA	0.41 (1.8)	<b>0.49</b> (3.0)	<b>0.58</b> (4.1)	<b>0.61</b> (5.3)	<b>0.53</b> (5.8)	<b>0.52</b> (4.0)
SR	-0.04	0.41	0.48	0.50	0.39	0.33
IR	-0.47	-0.05	-0.01	-0.10	-0.36	-0.24
R2	0.37	0.42	0.51	0.58	0.63	0.53
# obs	306	306	306	306	306	306

**Table A3**  
**Correlation vs. Volatility: Using FF-Betas**

This table shows properties of 25 portfolios of U.S. stocks from 1926 to 2015. At the beginning of each calendar month, stocks are sorted first on ex ante volatility and then conditionally on ex ante correlation. Specifically, the stocks are assigned to one of five volatility quintiles based on NYSE breakpoints. Within each quintile, stocks are assigned to one of five correlation quintile portfolios based on NYSE breakpoints. Portfolios are value-weighted, refreshed every calendar month, and rebalanced every calendar month to maintain value weights. The long-short portfolios are self-financing portfolios that are long \$1 in the portfolio with highest correlation (volatility) within each volatility (correlation) quintile and short \$1 in the portfolio with lowest correlation (volatility) within the same volatility (correlation) quintiles. Volatility is monthly volatility measured on a five-year rolling window. Correlation is estimated as the Dimson (1979) beta divided by the volatility of the stock and multiplied by the volatility of the market. The beta is estimated in a five-year rolling regression on monthly data. Panel A reports CAPM betas and Panel B reports CAPM alphas, i.e., respectively the slope and intercept in a regression of monthly excess return on excess returns to the CRSP value-weighted market portfolio (MKT). Panel B reports three-factor alphas, i.e., the intercept in a regression of monthly excess return on MKT, size (SMB), and value (HML) factors of Fama and French (1993). Returns and alphas are in monthly percent,  $t$ -statistics are shown in parenthesis below the coefficient estimates and 5% statistical significance is indicated in bold.

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US 1930-2015

Panel A: CAPM beta		Conditional sort on correlation					
		P1	P2	P3	P4	P5	LS
		(low)				(high)	
Sort on volatility	P1 (low)	<b>0.5</b>	<b>0.7</b>	<b>0.7</b>	<b>0.8</b>	<b>0.9</b>	<b>0.3</b> (19.0)
	P2	<b>0.8</b>	<b>1.0</b>	<b>1.0</b>	<b>1.1</b>	<b>1.1</b>	<b>0.4</b> (17.3)
	P3	<b>0.9</b>	<b>1.1</b>	<b>1.1</b>	<b>1.3</b>	<b>1.4</b>	<b>0.5</b> (18.4)
	P4	<b>0.9</b>	<b>1.1</b>	<b>1.3</b>	<b>1.4</b>	<b>1.5</b>	<b>0.6</b> (17.6)
	P5 (high)	<b>1.0</b>	<b>1.2</b>	<b>1.3</b>	<b>1.5</b>	<b>1.7</b>	<b>0.7</b> (17.2)
	LS	<b>0.5</b>	<b>0.6</b>	<b>0.6</b>	<b>0.8</b>	<b>0.8</b>	

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US 1930-2015

Panel B: CAPM alpha		Conditional sort on correlation					
		P1	P2	P3	P4	P5	LS
		(low)				(high)	
Sort on volatility	P1 (low)	<b>0.3</b> (4.0)	<b>0.2</b> (2.0)	<b>0.1</b> (2.1)	<b>0.2</b> (2.6)	<b>0.1</b> (2.0)	<b>-0.2</b> (-2.3)
	P2	<b>0.3</b> (3.0)	<b>0.2</b> (2.5)	<b>0.2</b> (2.3)	0.1 (1.0)	0.0 (-0.5)	<b>-0.3</b> (-2.7)
	P3	0.2 (1.9)	0.1 (0.6)	0.0 (0.4)	-0.1 (-0.8)	-0.1 (-1.8)	<b>-0.4</b> (-2.6)
	P4	0.2 (1.3)	0.1 (0.5)	0.0 (0.4)	-0.1 (-1.0)	<b>-0.2</b> (-2.0)	<b>-0.4</b> (-2.2)
	P5 (high)	0.0 (0.2)	-0.1 (-0.3)	-0.1 (-0.9)	-0.1 (-0.6)	<b>-0.4</b> (-2.7)	<b>-0.4</b> (-2.1)
	LS	-0.3 (-1.4)	-0.2 (-1.1)	-0.3 (-1.5)	-0.3 (-1.4)	<b>-0.5</b> (-2.9)	

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**Table A3**  
**Correlation vs. Volatility: Using FF-Betas (Continued)**

US 1930-2015

Panel C: Three-factor alpha

		Conditional sort on correlation					LS
		P1 (low)	P2	P3	P4	P5 (high)	
Sort on volatility	P1 (low)	<b>0.3</b> (3.9)	0.1 (1.6)	<b>0.1</b> (2.2)	<b>0.2</b> (2.7)	<b>0.1</b> (2.7)	-0.2 (-1.9)
	P2	<b>0.2</b> (2.4)	0.1 (1.5)	0.1 (1.7)	0.0 (0.3)	0.0 (-0.7)	<b>-0.3</b> (-2.4)
	P3	0.1 (1.2)	0.0 (-0.5)	-0.1 (-0.8)	<b>-0.2</b> (-2.0)	<b>-0.2</b> (-2.6)	<b>-0.3</b> (-2.5)
	P4	0.0 (0.3)	-0.1 (-0.6)	-0.1 (-1.0)	<b>-0.2</b> (-2.5)	<b>-0.3</b> (-3.2)	<b>-0.4</b> (-2.1)
	P5 (high)	-0.2 (-1.2)	-0.2 (-1.1)	<b>-0.3</b> (-2.3)	-0.2 (-1.8)	<b>-0.5</b> (-3.8)	-0.3 (-1.6)
	LS	<b>-0.5</b> (-2.9)	-0.3 (-1.7)	<b>-0.4</b> (-2.9)	<b>-0.4</b> (-2.6)	<b>-0.7</b> (-4.2)	

**Table A4**  
**Betting Against Correlation Using FF-Betas**

This table shows returns to the betting against correlation (BAC) factor in each volatility quintile, along with the equal-weighted average of these factors, which constitute our overall BAC factor. At the beginning of each month stocks are ranked in ascending order based on the estimate of volatility at the end of the previous month. The ranked stocks are assigned to one of five quintiles. U.S. sorts are based on NYSE breakpoints. Within each quintile, stocks are assigned to one of two portfolios: low correlation and high correlation. In these portfolios, stocks are rank-weighted by correlation (lower correlation stocks have larger weights in the low-correlation portfolios and larger correlation stocks have larger weights in the high-correlation portfolios), and the portfolios are rebalanced every calendar month. The portfolios are (de)levered to have a beta of one at formation. Within each volatility quintile, a self-financing BAC portfolio is made that is long the low-correlation portfolio and short the high-correlation portfolio. Volatility is monthly volatility measured on a five-year rolling window. Correlation is estimated as the Dimson (1979) beta divided by the volatility of the stock and multiplied by the volatility of the market. The beta is estimated in a five-year rolling regression on monthly data. Alpha is the intercept in a regression of monthly excess return. The explanatory variables are the monthly excess return to the CRSP value-weighted market portfolio and the monthly returns to the SMB, HML, RMW, and CMA factors of Fama and French (2015). Returns and alphas are in monthly percent, *t*-statistics are shown in parenthesis below the coefficient estimates, and 5% statistical significance is indicated in bold. ‘\$ long’ and ‘\$ short’ measures how many dollars the betting against correlation portfolio is long and short. Sharpe ratios and information ratios are annualized.

U.S. Sample (1963-2015)						
Volatility quintile	1	2	3	4	5	BAC
Excess return	<b>0.24</b> (2.76)	<b>0.33</b> (3.46)	<b>0.53</b> (4.62)	<b>0.74</b> (5.25)	<b>0.56</b> (2.70)	<b>0.48</b> (4.46)
Alpha	<b>0.23</b> (3.08)	<b>0.24</b> (2.85)	<b>0.38</b> (3.52)	<b>0.57</b> (4.38)	<b>0.44</b> (2.32)	<b>0.37</b> (3.91)
MKT	<b>-0.19</b> (-10.2)	<b>-0.11</b> (-5.4)	-0.03 (-1.3)	0.05 (1.7)	<b>0.12</b> (2.7)	-0.03 (-1.4)
SMB	<b>0.27</b> (10.4)	<b>0.40</b> (13.9)	<b>0.39</b> (10.7)	<b>0.49</b> (10.9)	<b>0.63</b> (9.8)	<b>0.44</b> (13.4)
HML	<b>0.17</b> (4.7)	<b>0.13</b> (3.2)	<b>0.25</b> (4.9)	<b>0.22</b> (3.6)	0.10 (1.1)	<b>0.17</b> (3.8)
RMW	<b>-0.11</b> (-2.9)	-0.03 (-0.8)	-0.04 (-0.8)	<b>-0.18</b> (-2.8)	<b>-0.42</b> (-4.4)	<b>-0.16</b> (-3.3)
CMA	0.00 (0.0)	0.01 (0.2)	-0.01 (-0.2)	-0.03 (-0.3)	-0.11 (-0.8)	-0.03 (-0.4)
SR	0.38	0.48	0.64	0.72	0.37	0.61
IR	0.45	0.41	0.51	0.64	0.34	0.57
R2	0.31	0.28	0.21	0.24	0.25	0.30
# obs	630	630	630	630	630	630

**Table A5**  
**The Low-Risk Effect without Overpriced High-IVOL Stocks: Using FF-Betas**

This table the results of factor regression for ten beta-sorted portfolios based on a subset of U.S. stocks from 1965 to 2015. At the beginning of each month, we rank all stocks in descending order based on their estimated beta at the end of the previous month. Following Liu Stambaugh and Yu (2017), we delete from the CRSP universe the stocks that are both in the top quintile of their mispricing measure and have IVOL in the top quartile of the distribution. The ranked stocks are sorted into decile portfolios based on NYSE breakpoints. The portfolios are value-weighted based on the market capital at the end of the previous month and they are rebalanced and refreshed every calendar month. The long-minus-short portfolio is long \$1 in the high-beta portfolio and short \$1 in the low-beta portfolio. The ex ante beta is estimated in a five-year rolling regression on monthly data following Dimson (1979). CAPM alpha is the intercept in a regression of monthly excess return where the explanatory variable is the excess return to the CRSP value-weighted market portfolio. The three-factor alpha is the intercept in a regression where the explanatory variables are the monthly excess return to the CRSP value-weighted market portfolio and the monthly returns to the SMB, HML of Fama and French (1993). Returns and alphas are in monthly percent, *t*-statistics are shown in parenthesis below the coefficient estimates, and 5% statistical significance is indicated in bold. Sharpe ratios and information ratios are annualized.

US sample (1965-2015)	1 (low beta)	2	3	4	5	6	7	8	9	10 (high beta)	LS
Excess return	<b>0.44</b> (3.03)	<b>0.54</b> (3.54)	<b>0.51</b> (3.15)	<b>0.51</b> (2.98)	<b>0.61</b> (3.31)	<b>0.54</b> (2.69)	<b>0.52</b> (2.40)	<b>0.51</b> (2.15)	0.53 (1.94)	0.54 (1.61)	0.10 (0.34)
CAPM alpha	0.18 (1.66)	<b>0.21</b> (2.37)	0.14 (1.74)	0.11 (1.38)	<b>0.16</b> (2.27)	0.04 (0.59)	-0.02 (-0.29)	-0.09 (-1.24)	-0.14 (-1.42)	-0.26 (-1.74)	<b>-0.43</b> (-1.98)
FF3 alpha	0.02 (0.25)	0.14 (1.76)	0.08 (1.14)	0.04 (0.58)	0.10 (1.51)	-0.02 (-0.27)	-0.08 (-1.08)	-0.11 (-1.61)	-0.10 (-1.11)	-0.14 (-1.23)	-0.17 (-0.94)
Mkt	<b>0.63</b> (27.17)	<b>0.76</b> (39.83)	<b>0.84</b> (49.60)	<b>0.91</b> (54.59)	<b>0.98</b> (60.85)	<b>1.08</b> (69.56)	<b>1.13</b> (67.37)	<b>1.20</b> (73.24)	<b>1.27</b> (62.49)	<b>1.44</b> (51.97)	<b>0.81</b> (19.01)
SMB	<b>-0.07</b> (-2.14)	<b>-0.24</b> (-9.13)	<b>-0.19</b> (-7.96)	<b>-0.17</b> (-7.20)	<b>-0.10</b> (-4.53)	<b>-0.05</b> (-2.37)	0.02 (0.85)	<b>0.16</b> (7.08)	<b>0.35</b> (12.24)	<b>0.59</b> (15.20)	<b>0.66</b> (11.10)
HML	<b>0.38</b> (10.73)	<b>0.26</b> (8.93)	<b>0.20</b> (7.63)	<b>0.21</b> (8.48)	<b>0.18</b> (7.18)	<b>0.15</b> (6.48)	<b>0.12</b> (4.84)	-0.01 (-0.31)	<b>-0.24</b> (-7.76)	<b>-0.49</b> (-11.59)	<b>-0.86</b> (-13.46)
SR	0.43	0.50	0.44	0.42	0.47	0.38	0.34	0.30	0.27	0.23	0.05
R vol	0.08	0.07	0.06	0.06	0.06	0.05	0.06	0.06	0.07	0.10	0.15
IR	0.04	0.25	0.16	0.08	0.22	-0.04	-0.16	-0.23	-0.16	-0.18	-0.14
R <sup>2</sup>	0.56	0.73	0.81	0.84	0.87	0.90	0.90	0.92	0.90	0.88	0.65
Obs	604	604	604	604	604	604	604	604	604	604	604

**Table A6**  
**The Low-Risk Effect without Overpriced High-IVOL Stocks: Using FP-Betas**

This table the results of factor regression for ten beta-sorted portfolios based on a subset of U.S. stocks from 1965 to 2015. At the beginning of each month, we rank all stocks in descending order based on their estimated beta at the end of the previous month. Following Liu Stambaugh and Yu (2017), we delete from the CRSP universe the stocks that are both in the top quintile of their mispricing measure and have IVOL in the top quartile of the distribution. The ranked stocks are sorted into decile portfolios based on NYSE breakpoints. The portfolios are value-weighted based on the market capital at the end of the previous month and they are rebalanced and refreshed every calendar month. The long-minus-short portfolio is long \$1 in the high-beta portfolio and short \$1 in the low-beta portfolio. The ex ante beta is estimated following the method in Frazzini and Pedersen (2014). CAPM alpha is the intercept in a regression of monthly excess return where the explanatory variable is the excess return to the CRSP value-weighted market portfolio. The three-factor alpha is the intercept in a regression where the explanatory variables are the monthly excess return to the CRSP value-weighted market portfolio and the monthly returns to the SMB, HML of Fama and French (1993). Returns and alphas are in monthly percent, *t*-statistics are shown in parenthesis below the coefficient estimates, and 5% statistical significance is indicated in bold. Sharpe ratios and information ratios are annualized.

US sample (1965-2015)	1 (low beta)	2	3	4	5	6	7	8	9	10 (high beta)	LS
Excess return	<b>0.59</b> (3.88)	<b>0.59</b> (4.23)	<b>0.60</b> (4.13)	<b>0.53</b> (3.39)	<b>0.64</b> (3.84)	<b>0.50</b> (2.78)	<b>0.52</b> (2.67)	<b>0.44</b> (2.02)	0.44 (1.75)	0.26 (0.83)	-0.33 (-1.17)
CAPM alpha	<b>0.35</b> (2.85)	<b>0.32</b> (3.36)	<b>0.29</b> (3.34)	<b>0.18</b> (2.18)	<b>0.26</b> (3.13)	0.07 (0.93)	0.05 (0.63)	-0.09 (-1.04)	<b>-0.18</b> (-2.13)	<b>-0.49</b> (-3.76)	<b>-0.84</b> (-4.04)
FF3 alpha	0.17 (1.43)	0.17 (1.94)	0.15 (1.90)	0.06 (0.76)	<b>0.16</b> (2.11)	-0.02 (-0.23)	-0.04 (-0.49)	<b>-0.18</b> (-2.24)	<b>-0.22</b> (-2.51)	<b>-0.47</b> (-3.83)	<b>-0.63</b> (-3.20)
Mkt	<b>0.55</b> (20.04)	<b>0.63</b> (30.98)	<b>0.70</b> (36.69)	<b>0.80</b> (45.18)	<b>0.88</b> (50.28)	<b>0.94</b> (55.32)	<b>1.02</b> (56.60)	<b>1.14</b> (58.53)	<b>1.27</b> (62.34)	<b>1.43</b> (49.94)	<b>0.89</b> (19.05)
SMB	<b>0.11</b> (3.00)	-0.05 (-1.88)	-0.03 (-1.01)	<b>-0.07</b> (-2.75)	<b>-0.14</b> (-5.81)	<b>-0.11</b> (-4.43)	<b>-0.07</b> (-2.83)	-0.02 (-0.72)	<b>0.06</b> (2.14)	<b>0.37</b> (9.14)	<b>0.25</b> (3.88)
HML	<b>0.38</b> (9.24)	<b>0.37</b> (12.00)	<b>0.34</b> (11.69)	<b>0.31</b> (11.53)	<b>0.29</b> (10.80)	<b>0.25</b> (9.52)	<b>0.23</b> (8.45)	<b>0.23</b> (7.82)	0.06 (1.81)	<b>-0.19</b> (-4.46)	<b>-0.57</b> (-8.16)
SR	0.55	0.60	0.58	0.48	0.54	0.39	0.38	0.29	0.25	0.12	-0.16
R vol	0.10	0.07	0.07	0.06	0.06	0.06	0.06	0.07	0.07	0.10	0.16
IR	0.21	0.28	0.27	0.11	0.30	-0.03	-0.07	-0.32	-0.36	-0.55	-0.46
R <sup>2</sup>	0.44	0.62	0.70	0.78	0.81	0.84	0.85	0.86	0.88	0.85	0.53
Obs	604	604	604	604	604	604	604	604	604	604	604

**Table A7**  
**Correlation between MD and Other Measures of Funding Liquidity**

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U.S. 1963-2015, quarterly

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Panel A: Levels

	MD	Ted Spread	Noise	Leverage
MD	1.000	-0.002	-0.079	0.032
Ted Spread	-0.002	1.000	0.631	-0.118
Noise	-0.079	0.631	1.000	-0.361
Leverage	0.032	-0.118	-0.361	1.000

  

Panel B: Changes

	$\Delta$ MD	$\Delta$ Ted Spread	$\Delta$ Noise	$\Delta$ Leverage
$\Delta$ MD	1.000	-0.223	-0.229	0.255
$\Delta$ Ted Spread	-0.223	1.000	0.465	-0.214
$\Delta$ Noise	-0.229	0.465	1.000	-0.452
$\Delta$ Leverage	0.255	-0.214	-0.452	1.000

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