

Internet Appendix for  
*THE CAPM HOLDS*

For Online Publication

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## A. Additional Results

In this Internet Appendix, we present additional results using monthly and daily returns, for both value-weighted and equal-weighted 25 size-and-operating-profitability-, 25 size-and-investment-, 25 size-and-momentum-, 49 industry-sorted portfolios. The results are consistent with those reported in the main paper.

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- Table IA.1 presents panel regressions for the 25 size-and-operating-profitability sorted portfolios.
- Table IA.2 presents panel regressions for the 25 size-and-investment sorted portfolios.
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- Table IA.4 presents panel regressions for the 49 industry sorted portfolios.

Table IA.1

## Panel Regressions: 25 Size-and-Operating-Profitability Sorted Portfolios

This table presents results from regression of portfolio equity excess returns on month or day  $t + 1$  on the implied returns for the market risk component and the Fama and French (1993, 2015) and Carhart (1997) risk components on month or day  $t + 1$  for the 25 size-and-operating-profitability sorted portfolios. Specifically, we estimate:

$$R_{i,t+1} = a + b[\beta_{i,t}^M R_{M,t+1}] + h[\beta_{i,t}^{HML} HML_{t+1}] + s[\beta_{i,t}^{SMB} SMB_{t+1}] \\ + m[\beta_{i,t}^{MOM} MOM_{t+1}] + r[\beta_{i,t}^{RMW} RMW_{t+1}] + c[\beta_{i,t}^{CMA} CMA_{t+1}] + e_{i,t+1},$$

Each  $\beta$  coefficients are estimated using the 24 months (250 trading days) strictly prior to month (day)  $t + 1$  for each asset  $i$  and for each of the respective factor. Panels A and B report the results using monthly and daily returns, respectively for both value-weighted and equal-weighted portfolios. The standard errors are reported in parentheses and are calculated using Driscoll-Kraay with 12 month lags when using monthly returns and 250 trading day lags when using daily returns. The table further reports the adjusted  $R^2$ , the number of observations ( $N$ ), and the  $p$ -values of the Wald statistics testing the joint hypothesis of  $H_0: a = 0$  and  $b = 1$  and  $H_0: \forall a_i = 0$  and  $b = 1$  when the intercepts are estimated separately for each portfolio  $i$ . \*\*\*, \*\*, and \* indicate a two-tailed test significance level of less than 1, 5, and 10%, respectively. The sample period is from January 1, 1926 to December 31, 2017 in Columns (1) to (5) and from July 1, 1963 to December 31, 2017 in Columns (6) to (9).

Panel A. Monthly returns  
Value-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.001 (0.001)	0.008*** (0.002)	0.004** (0.002)	0.006** (0.002)	0.000 (0.001)	0.001 (0.001)	0.008*** (0.002)	0.009*** (0.002)	0.001 (0.001)
$R_M$ (b)	0.976*** (0.022)				0.871*** (0.025)	0.976*** (0.022)			0.862*** (0.025)
$HML$ (h)		0.669*** (0.083)			0.057** (0.022)				0.003 (0.039)
$SMB$ (s)			0.841*** (0.054)		0.503*** (0.027)				0.487*** (0.025)
$MOM$ (m)				0.507*** (0.130)	0.018 (0.029)				0.018 (0.027)
$RMW$ (r)							0.664*** (0.094)		0.133*** (0.031)
$CMA$ (c)								0.633*** (0.095)	0.016 (0.033)
$R^2$	0.76	0.09	0.28	0.06	0.86	0.76	0.10	0.08	0.86
$N$	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750
$p$ -value $a=0, b=1$	0.264				<0.001	0.264			<0.001
$p$ -value $\forall a_i=0, b=1$	0.005				<0.001	0.005			<0.001

## Equal-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.002 (0.001)	0.008*** (0.002)	0.005** (0.002)	0.007*** (0.002)	0.001 (0.001)	0.002 (0.001)	0.008*** (0.002)	0.009*** (0.002)	0.001 (0.001)
$R_M$ (b)	0.980*** (0.026)				0.870*** (0.028)	0.980*** (0.026)			0.855*** (0.028)
$HML$ (h)		0.656*** (0.103)			0.046 (0.042)				-0.029 (0.045)
$SMB$ (s)			0.836*** (0.061)		0.492*** (0.034)				0.481*** (0.033)
$MOM$ (m)				0.592*** (0.135)	0.074 (0.064)				0.075 (0.064)
$RMW$ (r)							0.659*** (0.118)		0.112** (0.050)
$CMA$ (c)								0.612*** (0.112)	0.083* (0.046)
$R^2$	0.74	0.08	0.27	0.08	0.84	0.74	0.10	0.07	0.84
$N$	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750
$p$ -value $a=0, b=1$	0.249				<0.001	0.249			<0.001
$p$ -value $\forall a_i=0, b=1$	0.007				<0.001	0.007			<0.001

**Table IA.1**  
**Panel Regressions (continue)**

Panel B. Daily returns  
Value-weighted

		1926-2017					1963-2017			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	(a)	0.0001* (0.0000)	0.0004*** (0.0001)	0.0003*** (0.0001)	0.0002 (0.0001)	0.0001* (0.0000)	0.0001* (0.0000)	0.0004*** (0.0001)	0.0004*** (0.0001)	0.0001** (0.0000)
$R_M$	(b)	1.0038*** (0.0082)				0.9072*** (0.0109)	1.0034*** (0.0082)			0.8936*** (0.0124)
$HML$	(h)		0.9733*** (0.0421)			0.0928*** (0.0250)				0.0471 (0.0278)
$SMB$	(s)			0.8678*** (0.0799)		0.3416*** (0.0601)				0.3175*** (0.0594)
$MOM$	(m)				0.8498*** (0.0728)	0.0975*** (0.0181)				0.0887*** (0.0157)
$RMW$	(r)							0.9735*** (0.0502)		0.1641*** (0.0419)
$CMA$	(c)								0.9044*** (0.0502)	0.0142 (0.0279)
$R^2$		0.81	0.23	0.15	0.20	0.83	0.81	0.18	0.15	0.84
$N$		336,750	336,750	336,750	336,750	336,750	330,400	336,750	336,750	336,750
$p$ -value $a=0, b=1$		0.151				<0.001	0.177			<0.001
$p$ -value $\forall a_i=0, b=1$		0.002				<0.001	0.003			<0.001

Equal-weighted

		1926-2017					1963-2017			
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	(a)	0.0002*** (0.0000)	0.0005*** (0.0001)	0.0004*** (0.0001)	0.0003** (0.0001)	0.0002*** (0.0000)	0.0002*** (0.0000)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0002*** (0.0000)
$R_M$	(b)	1.0144*** (0.0124)				0.9191*** (0.0106)	1.0140*** (0.0125)			0.9005*** (0.0120)
$HML$	(h)		1.0042*** (0.0517)			0.0844** (0.0357)				0.0246 (0.0315)
$SMB$	(s)			0.8526*** (0.0847)		0.3214*** (0.0645)				0.2972*** (0.0636)
$MOM$	(m)				0.8801*** (0.0770)	0.1203*** (0.0317)				0.1090*** (0.0302)
$RMW$	(r)							0.9941*** (0.0702)		0.1682*** (0.0391)
$CMA$	(c)								0.9273*** (0.0656)	0.0626** (0.0243)
$R^2$		0.81	0.23	0.13	0.21	0.83	0.81	0.17	0.16	0.83
$N$		336,750	336,750	336,750	336,750	336,750	330,400	336,750	336,750	336,750
$p$ -value $a=0, b=1$		0.001				<0.001	0.002			<0.001
$p$ -value $\forall a_i=0, b=1$		<0.001				<0.001	<0.001			<0.001

**Table IA.2**  
**Panel Regressions: 25 Size-and-Investment Sorted Portfolios**

This table presents results from regression of portfolio equity excess returns on month or day  $t + 1$  on the implied returns for the market risk component and the Fama and French (1993, 2015) and Carhart (1997) risk components on month or day  $t + 1$  for the 25 size-and-investment sorted portfolios. Specifically, we estimate:

$$R_{i,t+1} = a + b[\beta_{i,t}^M R_{M,t+1}] + h[\beta_{i,t}^{HML} HML_{t+1}] + s[\beta_{i,t}^{SMB} SMB_{t+1}] \\ + m[\beta_{i,t}^{MOM} MOM_{t+1}] + r[\beta_{i,t}^{RMW} RMW_{t+1}] + c[\beta_{i,t}^{CMA} CMA_{t+1}] + e_{i,t+1},$$

Each  $\beta$  coefficients are estimated using the 24 months (250 trading days) strictly prior to month (day)  $t + 1$  for each asset  $i$  and for each of the respective factor. Panels A and B report the results using monthly and daily returns, respectively for both value-weighted and equal-weighted portfolios. The standard errors are reported in parentheses and are calculated using Driscoll-Kraay with 12 month lags when using monthly returns and 250 trading day lags when using daily returns. The table further reports the adjusted  $R^2$ , the number of observations ( $N$ ), and the  $p$ -values of the Wald statistics testing the joint hypothesis of  $H_0: a = 0$  and  $b = 1$  and  $H_0: \forall a_i = 0$  and  $b = 1$  when the intercepts are estimated separately for each portfolio  $i$ . \*\*\*, \*\*, and \* indicate a two-tailed test significance level of less than 1, 5, and 10%, respectively. The sample period is from January 1, 1926 to December 31, 2017 in Columns (1) to (5) and from July 1, 1963 to December 31, 2017 in Columns (6) to (9).

Panel A. Monthly returns  
Value-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.002** (0.001)	0.008*** (0.002)	0.005** (0.002)	0.006*** (0.002)	0.001 (0.001)	0.002** (0.001)	0.008*** (0.002)	0.009*** (0.002)	0.001 (0.001)
$R_M$ (b)	0.977*** (0.022)				0.866*** (0.025)	0.977*** (0.022)			0.856*** (0.026)
$HML$ (h)		0.671*** (0.081)			0.065*** (0.023)				0.001 (0.037)
$SMB$ (s)			0.855*** (0.050)		0.520*** (0.030)				0.505*** (0.027)
$MOM$ (m)				0.488*** (0.135)	0.010 (0.028)				0.014 (0.025)
$RMW$ (r)							0.670*** (0.083)		0.114*** (0.028)
$CMA$ (c)								0.641*** (0.091)	0.044 (0.032)
$R^2$	0.76	0.10	0.30	0.05	0.86	0.76	0.11	0.09	0.86
$N$	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750
$p$ -value $a=0, b=1$	0.133				<0.001	0.133			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

Equal-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.002** (0.001)	0.008*** (0.002)	0.005** (0.002)	0.007*** (0.002)	0.001 (0.001)	0.002** (0.001)	0.009*** (0.002)	0.010*** (0.002)	0.001* (0.001)
$R_M$ (b)	0.980*** (0.026)				0.869*** (0.028)	0.980*** (0.026)			0.853*** (0.028)
$HML$ (h)		0.656*** (0.103)			0.051 (0.042)				-0.036 (0.044)
$SMB$ (s)			0.842*** (0.059)		0.505*** (0.033)				0.494*** (0.032)
$MOM$ (m)				0.572*** (0.137)	0.053 (0.067)				0.056 (0.067)
$RMW$ (r)							0.663*** (0.112)		0.104** (0.043)
$CMA$ (c)								0.616*** (0.112)	0.106** (0.046)
$R^2$	0.73	0.08	0.28	0.08	0.83	0.73	0.10	0.08	0.84
$N$	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750	15,750
$p$ -value $a=0, b=1$	0.128				<0.001	0.128			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

**Table IA.2**  
**Panel Regressions (continue)**

Panel B. Daily returns									
Value-weighted									
	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.0001** (0.0000)	0.0004*** (0.0001)	0.0003*** (0.0001)	0.0002 (0.0001)	0.0001** (0.0000)	0.0001** (0.0000)	0.0004*** (0.0001)	0.0004*** (0.0001)	0.0001** (0.0000)
$R_M$ (b)	1.0028*** (0.0086)				0.9049*** (0.0125)	1.0024*** (0.0087)			0.8919*** (0.0135)
$HML$ (h)		0.9668*** (0.0434)			0.0906*** (0.0253)				0.0401 (0.0283)
$SMB$ (s)			0.8736*** (0.0775)		0.3483*** (0.0593)				0.3268*** (0.0591)
$MOM$ (m)				0.8431*** (0.0735)	0.0963*** (0.0193)				0.0920*** (0.0174)
$RMW$ (r)							0.9671*** (0.0500)		0.1246*** (0.0430)
$CMA$ (c)								0.9045*** (0.0467)	0.0477 (0.0310)
$R^2$	0.81	0.23	0.15	0.19	0.83	0.81	0.17	0.16	0.84
$N$	336,750	336,750	336,750	336,750	336,750	330,400	336,750	336,750	336,750
$p$ -value $H_0 : a=0, b=1$	0.070				<0.001	0.084			<0.001
$p$ -value $H_0 : \forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

Equal-weighted									
	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.0002*** (0.0000)	0.0006*** (0.0001)	0.0004*** (0.0001)	0.0003*** (0.0001)	0.0002*** (0.0000)	0.0002*** (0.0000)	0.0005*** (0.0001)	0.0006*** (0.0001)	0.0002*** (0.0000)
$R_M$ (b)	1.0138*** (0.0119)				0.9194*** (0.0109)	1.0134*** (0.0120)			0.9016*** (0.0118)
$HML$ (h)		1.0001*** (0.0510)			0.0838** (0.0345)				0.0217 (0.0301)
$SMB$ (s)			0.8561*** (0.0829)		0.3256*** (0.0639)				0.3029*** (0.0633)
$MOM$ (m)				0.8743*** (0.0770)	0.1132*** (0.0314)				0.1058*** (0.0302)
$RMW$ (r)							0.9919*** (0.0695)		0.1401*** (0.0387)
$CMA$ (c)								0.9275*** (0.0609)	0.0813*** (0.0243)
$R^2$	0.80	0.23	0.13	0.21	0.82	0.80	0.17	0.16	0.83
$N$	336,750	336,750	336,750	336,750	336,750	330,400	336,750	336,750	336,750
$p$ -value $a=0, b=1$	<0.001				<0.001	<0.001			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

**Table IA.3**  
**Panel Regressions: 25 Size-and-Momentum Sorted Portfolios**

This table presents results from regression of portfolio equity excess returns on month or day  $t + 1$  on the implied returns for the market risk component and the Fama and French (1993, 2015) and Carhart (1997) risk components on month or day  $t + 1$  for the 25 size-and-momentum sorted portfolios. Specifically, we estimate:

$$R_{i,t+1} = a + b[\beta_{i,t}^M R_{M,t+1}] + h[\beta_{i,t}^{HML} HML_{t+1}] + s[\beta_{i,t}^{SMB} SMB_{t+1}] \\ + m[\beta_{i,t}^{MOM} MOM_{t+1}] + r[\beta_{i,t}^{RMW} RMW_{t+1}] + c[\beta_{i,t}^{CMA} CMA_{t+1}] + e_{i,t+1},$$

Each  $\beta$  coefficients are estimated using the 24 months (250 trading days) strictly prior to month (day)  $t + 1$  for each asset  $i$  and for each of the respective factor. Panels A and B report the results using monthly and daily returns, respectively for both value-weighted and equal-weighted portfolios. The standard errors are reported in parentheses and are calculated using Driscoll-Kraay with 12 month lags when using monthly returns and 250 trading day lags when using daily returns. The table further reports the adjusted  $R^2$ , the number of observations ( $N$ ), and the  $p$ -values of the Wald statistics testing the joint hypothesis of  $H_0: a = 0$  and  $b = 1$  and  $H_0: \forall a_i = 0$  and  $b = 1$  when the intercepts are estimated separately for each portfolio  $i$ . \*\*\*, \*\*, and \* indicate a two-tailed test significance level of less than 1, 5, and 10%, respectively. The sample period is from January 1, 1926 to December 31, 2017 in Columns (1) to (5) and from July 1, 1963 to December 31, 2017 in Columns (6) to (9).

Panel A. Monthly returns  
Value-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.001 (0.001)	0.007*** (0.002)	0.006*** (0.002)	0.008*** (0.002)	0.001 (0.001)	0.001 (0.001)	0.008*** (0.002)	0.008*** (0.002)	0.000 (0.001)
$R_M$ (b)	1.011*** (0.026)				0.831*** (0.021)	0.971*** (0.028)			0.832*** (0.030)
$HML$ (h)		0.763*** (0.077)			0.025 (0.038)				-0.041 (0.034)
$SMB$ (s)			0.820*** (0.065)		0.411*** (0.050)				0.433*** (0.029)
$MOM$ (m)				0.799*** (0.089)	0.265*** (0.035)				0.319*** (0.050)
$RMW$ (r)							0.632*** (0.106)		0.078** (0.036)
$CMA$ (c)								0.586*** (0.107)	0.082* (0.047)
$R^2$	0.74	0.28	0.26	0.24	0.83	0.70	0.09	0.06	0.81
$N$	26,694	26,694	26,694	26,694	26,694	15,750	15,750	15,750	15,750
$p$ -value $a=0, b=1$	0.313				<0.001	0.379			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

Equal-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.002* (0.001)	0.008*** (0.002)	0.006*** (0.002)	0.008*** (0.002)	0.001* (0.001)	0.002* (0.001)	0.008*** (0.002)	0.009*** (0.002)	0.001 (0.001)
$R_M$ (b)	1.013*** (0.028)				0.817*** (0.022)	0.970*** (0.028)			0.825*** (0.030)
$HML$ (h)		0.772*** (0.076)			0.042 (0.038)				-0.042 (0.036)
$SMB$ (s)			0.823*** (0.061)		0.423*** (0.049)				0.448*** (0.030)
$MOM$ (m)				0.811*** (0.096)	0.273*** (0.041)				0.309*** (0.055)
$RMW$ (r)							0.637*** (0.102)		0.092** (0.035)
$CMA$ (c)								0.575*** (0.109)	0.078 (0.048)
$R^2$	0.72	0.29	0.27	0.24	0.82	0.69	0.09	0.06	0.80
$N$	26,694	26,694	26,694	26,694	26,694	15,750	15,750	15,750	15,750
$p$ -value $a=0, b=1$	0.142				<0.001	0.210			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

**Table IA.3**  
**Panel Regressions (continue)**

Panel B. Daily returns									
Value-weighted									
	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.0001** (0.0001)	0.0004*** (0.0001)	0.0004*** (0.0001)	0.0003*** (0.0001)	0.0002** (0.0001)	0.0001* (0.0000)	0.0004*** (0.0001)	0.0004*** (0.0001)	0.0001* (0.0000)
$R_M$ (b)	1.0028*** (0.0109)				0.8431*** (0.0160)	1.0104*** (0.0149)			0.8500*** (0.0085)
$HML$ (h)		0.9746*** (0.0269)			0.1596*** (0.0292)				0.0458* (0.0239)
$SMB$ (s)			0.8774*** (0.0418)		0.3087*** (0.0580)				0.3194*** (0.0549)
$MOM$ (m)				0.8321*** (0.0526)	0.2169*** (0.0254)				0.2681*** (0.0270)
$RMW$ (r)							0.9792*** (0.0729)		0.1237*** (0.0306)
$CMA$ (c)								0.9122*** (0.0646)	0.0486* (0.0270)
$R^2$	0.58	0.23	0.11	0.16	0.61	0.77	0.17	0.14	0.81
$N$	593,500	593,500	593,500	593,500	593,500	330,400	336,750	336,750	336,750
$p$ -value $a=0, b=1$	0.053				<0.001	0.193			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

  

Equal-weighted									
	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.0003*** (0.0001)	0.0006*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0003*** (0.0001)	0.0002*** (0.0000)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0002*** (0.0000)
$R_M$ (b)	1.0029*** (0.0112)				0.8429*** (0.0176)	1.0095*** (0.0144)			0.8564*** (0.0088)
$HML$ (h)		0.9735*** (0.0263)			0.1645*** (0.0317)				0.0319 (0.0237)
$SMB$ (s)			0.8721*** (0.0435)		0.3062*** (0.0633)				0.2957*** (0.0593)
$MOM$ (m)				0.8271*** (0.0523)	0.2132*** (0.0258)				0.2670*** (0.0270)
$RMW$ (r)							0.9748*** (0.0709)		0.1281*** (0.0312)
$CMA$ (c)								0.9127*** (0.0638)	0.0509* (0.0270)
$R^2$	0.56	0.23	0.10	0.16	0.59	0.77	0.17	0.14	0.81
$N$	593,500	593,500	593,500	593,500	593,500	330,400	336,750	336,750	336,750
$p$ -value $a=0, b=1$	0.003				<0.001	0.007			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001



**Table IA.4**  
**Panel Regressions: 49 Industry Portfolios**

This table presents results from regression of portfolio equity excess returns on month or day  $t + 1$  on the implied returns for the market risk component and the Fama and French (1993, 2015) and Carhart (1997) risk components on month or day  $t + 1$  for the 49 industry-sorted portfolios. Specifically, we estimate:

$$R_{i,t+1} = a + b[\beta_{i,t}^M R_{M,t+1}] + h[\beta_{i,t}^{HML} HML_{t+1}] + s[\beta_{i,t}^{SMB} SMB_{t+1}] \\ + m[\beta_{i,t}^{MOM} MOM_{t+1}] + r[\beta_{i,t}^{RMW} RMW_{t+1}] + c[\beta_{i,t}^{CMA} CMA_{t+1}] + e_{i,t+1},$$

Each  $\beta$  coefficients are estimated using the 24 months (250 trading days) strictly prior to month (day)  $t + 1$  for each asset  $i$  and for each of the respective factor. Panels A and B report the results using monthly and daily returns, respectively for both value-weighted and equal-weighted portfolios. The standard errors are reported in parentheses and are calculated using Driscoll-Kraay with 12 month lags when using monthly returns and 250 trading day lags when using daily returns. The table further reports the adjusted  $R^2$ , the number of observations ( $N$ ), and the  $p$ -values of the Wald statistics testing the joint hypothesis of  $H_0: a = 0$  and  $b = 1$  and  $H_0: \forall a_i = 0$  and  $b = 1$  when the intercepts are estimated separately for each portfolio  $i$ . \*\*\*, \*\*, and \* indicate a two-tailed test significance level of less than 1, 5, and 10%, respectively. The sample period is from January 1, 1926 to December 31, 2017 in Columns (1) to (5) and from July 1, 1963 to December 31, 2017 in Columns (6) to (9).

Panel A. Monthly returns  
Value-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.001* (0.000)	0.007*** (0.002)	0.006*** (0.002)	0.006*** (0.002)	0.001 (0.000)	0.001 (0.001)	0.006*** (0.002)	0.008*** (0.002)	0.000 (0.001)
$R_M$ (b)	0.967*** (0.014)				0.881*** (0.018)	0.948*** (0.017)			0.855*** (0.021)
$HML$ (h)		0.656*** (0.089)			0.046 (0.032)				0.109*** (0.034)
$SMB$ (s)			0.633*** (0.066)		0.265*** (0.044)				0.296*** (0.025)
$MOM$ (m)				0.654*** (0.121)	0.104** (0.041)				0.167*** (0.046)
$RMW$ (r)							0.478*** (0.112)		0.037 (0.041)
$CMA$ (c)								0.611*** (0.085)	0.078** (0.032)
$R^2$	0.56	0.14	0.11	0.10	0.58	0.51	0.04	0.07	0.55
$N$	49,507	49,507	49,507	49,507	49,507	30,774	30,774	30,774	30,774
$p$ -value $a=0, b=1$	0.020				<0.001	0.010			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

Equal-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.003** (0.001)	0.008*** (0.002)	0.007*** (0.002)	0.009*** (0.002)	0.002** (0.001)	0.002 (0.002)	0.009*** (0.003)	0.009*** (0.003)	0.001 (0.001)
$R_M$ (b)	0.984*** (0.025)				0.796*** (0.024)	0.954*** (0.032)			0.763*** (0.032)
$HML$ (h)		0.731*** (0.077)			0.073* (0.042)				0.056 (0.045)
$SMB$ (s)			0.793*** (0.048)		0.455*** (0.036)				0.550*** (0.036)
$MOM$ (m)				0.711*** (0.112)	0.161*** (0.056)				0.143** (0.071)
$RMW$ (r)							0.621*** (0.092)		0.108** (0.043)
$CMA$ (c)								0.530*** (0.113)	0.062 (0.046)
$R^2$	0.53	0.19	0.24	0.13	0.61	0.46	0.07	0.04	0.59
$N$	49,507	49,507	49,507	49,507	49,507	30,774	30,774	30,774	30,774
$p$ -value $a=0, b=1$	0.050				<0.001	0.138			<0.001
$p$ -value $\forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001

**Table IA.4**  
**Panel Regressions (continue)**

Panel B. Daily returns  
Value-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.0001** (0.0000)	0.0004*** (0.0001)	0.0003*** (0.0001)	0.0002** (0.0001)	0.0001** (0.0000)	0.0000 (0.0000)	0.0003*** (0.0001)	0.0004*** (0.0001)	0.0001 (0.0000)
$R_M$ (b)	0.9961*** (0.0060)				0.9104*** (0.0090)	0.9978*** (0.0073)			0.8859*** (0.0102)
$HML$ (h)		0.9556*** (0.0274)			0.1205*** (0.0143)				0.0659*** (0.0183)
$SMB$ (s)			0.8321*** (0.0538)		0.1335*** (0.0374)				0.1490*** (0.0390)
$MOM$ (m)				0.7877*** (0.0547)	0.0984*** (0.0212)				0.1453*** (0.0231)
$RMW$ (r)							0.9324*** (0.0527)		0.0953*** (0.0214)
$CMA$ (c)								0.9146*** (0.0489)	0.1140*** (0.0274)
$R^2$	0.45	0.16	0.07	0.10	0.46	0.53	0.08	0.11	0.54
$N$	1,097,219	1,097,219	1,097,219	1,097,219	1,097,219	646,105	658,043	658,043	658,043
$p$ -value $H_0 : a=0, b=1$	0.030				<0.001	0.504			<0.001
$p$ -value $H_0 : \forall a_i=0, b=1$	0.016				<0.001	0.130			<0.001

Equal-weighted

	1926-2017					1963-2017			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept (a)	0.0005*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0006*** (0.0001)	0.0005*** (0.0001)	0.0004*** (0.0001)	0.0007*** (0.0001)	0.0007*** (0.0001)	0.0004*** (0.0001)
$R_M$ (b)	1.0016*** (0.0138)				0.8582*** (0.0189)	1.0078*** (0.0186)			0.8489*** (0.0204)
$HML$ (h)		0.9641*** (0.0299)			0.1751*** (0.0338)				0.0631 (0.0444)
$SMB$ (s)			0.8671*** (0.0411)		0.3573*** (0.0618)				0.3960*** (0.0588)
$MOM$ (m)				0.7805*** (0.0601)	0.1260*** (0.0346)				0.1993*** (0.0354)
$RMW$ (r)							0.9488*** (0.0676)		0.1442*** (0.0458)
$CMA$ (c)								0.9001*** (0.0648)	0.0771* (0.0453)
$R^2$	0.36	0.14	0.07	0.08	0.37	0.44	0.09	0.09	0.47
$N$	1,097,219	1,097,219	1,097,219	1,097,219	1,097,219	646,105	658,043	658,043	658,043
$p$ -value $H_0 : a=0, b=1$	<0.001				<0.001	<0.001			<0.001
$p$ -value $H_0 : \forall a_i=0, b=1$	<0.001				<0.001	<0.001			<0.001