Internet Appendix to "Individualism and Momentum around the World"[1]

A. *Sample Work-Goal Questions from Hofstede's Survey*

Hofstede (2001) uses the following six work-goal questions to illustrate the relationship between individualism and self-construal. All questions begin with the words "How important is it to you to…" and the respondent has five choices: 1 of the utmost importance and 5 of no importance. The common feature of the three work-goals that are positively related to the individualism index is their emphasis on the individual's independence from the organization, an expression of *independent* self-construal. The three work-goals that are negatively related to the individualism index stress the individual's dependence on the organization, an expression of *interdependent* self-construal. Although the "challenge" work-goal has to be done within the company, this work-goal emphasizes personal involvement. The "use of skills" work-goal, however, has no bearing on personal accomplishment. Hofstede (2001) argues that it is the contrast between work-goals stressing independence and dependence that leads the scores on the first factor to be named the individualism index. Hence, the individualism index can form the basis for the comparison of independent self-construal across countries. This individualism index is also aimed to review "a value system shared especially by the majority in the middle classes in a society" (Hofstede (2001, p. 225)).

Work goal	*Question*
I. Work goal that is positively correlated with the individualism index (the first factor score)	
Personal time	Have a job which leaves you sufficient time for your personal or family life
Freedom	Have considerable freedom to adapt your own approach to the job
Challenge	Have challenging work to do: work from which you can get a personal sense of accomplishment
II. Work goal that is negatively correlated with the individualism index (the first factor score)	
Training	Have training opportunities (to improve your skills or learn new skills)
Physical conditions	Have good physical working conditions (good ventilation and lighting, adequate work space, etc.)
Use of skills	Fully use your skills and abilities on the job

Source: Hofstede (2001, p. 256)

[1] Citation format: Chui, Andy C.W., Sheridan Titman, and K.C. John Wei, Internet Appendix to "Individualism and Momentum around the World," *Journal of Finance*, DOI: 10.1111/j.1540-6261.2009.01532.x Please note: Wiley-Blackwell is not responsible for the content or functionality of any supporting information supplied by the authors. Any queries (other than missing material) should be directed to the authors of the article.

B. Description of Variables

Variable	Type	Description
I. Cultural Values		
Individualism (*Indv*)	Cross-section	A higher score indicates a higher degree of individualism. Source: Hofstede (2001)
Masculinity (*MAS*)	Cross-section	A higher score indicates a higher degree of masculinity. Source: Hofstede (2001)
Power distance (*PDI*)	Cross-section	A higher score indicates a higher degree of power distance. Source: Hofstede (2001)
Uncertainty avoidance (*UAI*)	Cross-section	A higher score indicates a higher degree of uncertainty avoidance. Source: Hofstede (2001)
GLOBE's individualism ($Indv_{GLOBE}$)	Cross-section	$Indv_{GLOBE}$= (GLOBE's institutional collectivism index) multiplied by -1. A higher score indicates a higher degree of individualism. Source: House et al. (2004)
II. Variables Related to Behavioral Momentum Models		
Analyst coverage (*Ana*)	Cross-section & annual time-series	$Ana_{jt} = \frac{\sum_{i=1}^{n} Ncvg_{it} + 1}{n}$, where $Ncvg_{it}$ is the average number of analysts providing one-year ahead earnings forecasts of firm *i* in country *j* in year *y* and *n* is the number of firms. If a firm is not covered by I/B/E/S, then *Ncvg* of this firm is zero. Source: I/B/E/S
Dispersion of analyst forecasts (*Disp*)	Cross-section & annual time-series	$Disp_{jt} = \frac{\sum_{i=1}^{n} CV_{it}}{n}$, where CV_{it} is the absolute value of the coefficient of variation of one-year ahead earnings forecast of firm *i* in country *j* in year *y* and *n* is the number of observations. Each firm is required to have at least two earnings forecasts. Source: I/B/E/S
Volatility of cash flow growth rates (*Cfvol*)	Cross-section & annual time-series	*Cfvol* of country *j* in year *y* is the standard deviation of this country's monthly cash flow growth rate in the sixty-month period prior to year *y*. The cash flow (CF_{jt}) of country *j* in month *t* is the ratio between the price index of this country's global index and the price-to-cash flow index of the same global index. The growth rate in month *t* is computed as $[Ln(CF_{jt} / CF_{jt-12})] \times 100\%$. Source: Datastream

Variable	Type	Description
II. Variables Related to Behavioral Momentum Models (continued)		
Stock market volatility (*V*)	Cross-section & monthly time-series	Market volatility in month *t* is $V_t = \frac{1}{n}\sum_{i=1}^{n} R_{it}^2$, where R_{it}^2 is the squared return on stock *i* in month *t*. Source: Datastream
Market trading volume (*TN*)	Cross-section & monthly time-series	Market trading volume of country *j* in month *t* is measured as the market dollar trading volume of the Datastream Global index of this country divided by this index's market capitalization in month *t*. Source: Datastream
Median firm size (*SZ*)	Cross-section & annual time-series	*SZ* of country *j* in year *y* is the median of the average size of the firms in that country. The average size of a firm in year *y* is the average of the monthly market capitalization (in million USD) of this firm in year *y*. Source: Datastream
Book-to-market ratio (*BM*)	Cross-section & monthly time-series	*BM* is the book-to-market ratio of the Datastream global index of a country. Source: Datastream
III. Variables Related to Financial Market Development		
Total private credit (*Credit*)	Cross-section & annual time-series	Total private credit of country *j* in year *y* divided by this country's GDP in year *y*. Source: Beck and Al-Hussainy (2006)
Familiarity to foreign investors (*Lang*)	Cross-section	Average language dummy variable. This dummy variable takes the value of one if countries *i* and *j* share a major language and it is zero otherwise. Source: Chan, Covrig, and Ng (2005)
Index on capital flow restrictions (*Control*)	Cross-section	A higher value indicates more restrictions on capital flow. Source: Chan, Covrig, and Ng (2005)
Stock market openness (*Open*)	Cross-section & monthly time-series	The ratio of the market capitalization of the constituent firms comprising the Standard & Poor's/International Finance Corporation Investable index of country *j* to those comprising the Standard & Poor's/International Finance Corporation global index of this country. This ratio is one for developed markets. Source: Standard & Poor's Emerging Markets Database

Variable	Type	Description
IV. Variables Related to Institutional Quality		
Corruption index (*Crp*)	Cross-section & monthly time-series	A higher value indicates a lower corruption level. Source: International Country Risk Guide (ICRG)
Investor protection index (*Protection*)	Cross-section	A higher value indicates better investor protection. This index is the principal component of the indexes on disclosure, liability standards, and anti-director rights used by La Porta et al. (2006). Source: La Porta et al. (2006)
Insider (*Insider*)	Cross-section	A higher score indicates that insider trading is less prevalent. Source: La Porta et al. (2006)
Political risk index (*Political*)	Cross-section & monthly time-series	A higher value indicates a lower political risk. Source: International Country Risk Guide (ICRG)
Transaction costs of trading stocks (*Tran*)	Cross-section	A higher value indicates higher transaction costs. Source: Chan, Covrig, and Ng (2005)
Concentration of Ownership (*Own*)	Cross-section	A higher value indicates more concentration. Source: La Porta et al. (2006)
Law and Order index (*Law*)	Cross-section & monthly time-series	A higher value indicates a better law and order level. Source: International Country Risk Guide (ICRG)
V. Variables Related to Macroeconomic Risk Factors		
Real gross domestic product (GDP) per capita growth rate (*Gdppcgw*)	Cross-section & annual time-series	GDP per capita is in the constant 2000 U.S. dollars for all countries, except Taiwan. For Taiwan, the figures are in the constant 2001 U.S, dollars. *Gdppcgw* in year *y* in country *j* is measured as the average real GDP per capita growth rate of country *j* over the years from y-5 to y-1. Source: World Development Indicators and National Statistics (Taiwan)
Change of exchange rate (*Cfx*)	Cross-section & annual time-series	*Cfx* in year *y* in country *j* is the average change of the exchange rate (local currency against the U.S. dollar and is expressed in %) in the 60-month period before year *y*. To compute *Cfx*, we need to have at least twenty-four observations on the changes of exchange rate. The *Cfx* for the U.S. is zero. Source: Datastream
Dividend yield (*DY*)	Cross-section & monthly time-series	*DY* is the dividend yield of the Datastream global index of a country. Source: Datastream

Variable	Type	Description
VI. Variables Related to Rational Momentum Models		
Variation of betas (*StdBeta*)	Cross-section & annual time-series	*StdBeta* of country *j* in year *y* is the standard deviation of firm betas in year *y*. To adjust for thin trading, we estimate the Dimson beta for firm *i* in country *j* in year *y* from the following model over a sixty-month period prior to year y. $R_{ijt} = \alpha + \beta_1 R_{mjt} + \beta_2 R_{mjt-1} + \varepsilon$, where R_{ijt} is the stock return on firm i in country *j* in month *t*, the R_{mjt} is the value-weighted market return of country *j* in month *t*, and ε is the error term. The estimated beta for firm *i* in year *y* equals $\hat{\beta}_1 + \hat{\beta}_2$. To estimate beta, each stock should have at least twenty observations on returns in the estimation period. To compute *StdBeta*, each country is required to have at least thirty stocks in each year. Source: Datastream
Local growth opportunities (*LGO*)	Cross-section	*LGO* is the time-series mean of the log of a country's market price to earnings ratio. Source: Bekaert, Harvey, Lundblad, and Siegel (2007)
Volatility of earnings growth rates (*Eavol*)	Cross-section & annual time-series	*Eavol* of country *j* in year *y* is the standard deviation of this country's monthly earnings growth rate in the sixty-month period prior to year *y*. The earnings (E_{jt}) of country *j* in month *t* are the ratio between the price index of this country's global index and the price-to-earning index of the same global index. The growth rate in month *t* is computed as $[Ln(E_{jt} / E_{jt-12})] \times 100\%$. Source: Datastream
Volatility of dividends growth rates (*Divvol*)	Cross-section & annual time-series	*Divvol* of country *j* in year *y* is the standard deviation of this country's monthly dividend growth rate in the sixty-month period prior to year *y*. The dividend (Div_{jt}) of country *j* in month *t* is the ratio between the price index of this country's global index and the dividend yield of the same global index. The growth rate in month *t* is computed as $[Ln(Div_{jt} / Div_{jt-12})] \times 100\%$. Source: Datastream

Variable	Type	Description
VII. Additional Variables Related to Trading Volume and Volatility		
Volatility of exchange rates (*Fxvol*)	Cross-section & annual time-series	*Fxvol* in year *y* in country *j* is the coefficient of variation of country *j*'s currency against the U.S. dollars in the 60-month period before year *y*. To compute *Fxvol*, we need to have at least twenty-four observations on the exchange rate. The *Fxvol* for the U.S. is zero. Source: Datastream
Volatility of real GDP per capita growth rate (*Gwvol*)	Cross-section	*Gwvol88* and *Gwvol95* of country *j* are the standard deviation of this country's real GDP per capita growth rate over the period from 1988/1995 to 2003, respectively. Source: World Development Indicators and National Statistics (Taiwan)
Debt ratio (*Debt*)	Cross-section & annual time-series	The average leverage ratio of the firms in year *y* in country *j*. The leverage ratio of a firm is computed as total debt divided by total assets. Source: Datastream

C. The GLOBE cultural indexes

Given its wide use, Hofstede's cultural indexes have been reexamined by a number of scholars. Fernandex et al. (1997) reexamined Hofstede's country classification using recent data from nine countries and found that there have been shifts in the scores that Hofstede assigned to these countries. However, Fernandex et al. (1997) documented that only Mexico had a substantial change in its score on the individualism index. Whether or not the scores on Hofstede's cultural indexes have shifted during the past 20 plus years is still debatable. It is generally agreed that cultural beliefs have led to the development of societal structures and these structures, in turn, reinforce the cultural beliefs that led to their establishment (Greif (1994) and Hofstede (2001)). These societal structures, such as the legal system, are quite stable over time. In a more recent study involving 9,400 pilots in 19 countries, Merritt (2000) replicated the study of Hofstede's cultural indexes. Based on the data collected during the period of 1993-1997, Merritt (2000) found that the cultural indexes calculated from the pilot sample are highly correlated with the cultural indexes obtained from Hofstede's study.

To investigate the robustness of our results, we consider an alternative measure of individualism that comes from the GLOBE (Global Leadership and Organizational Behavior Effectiveness) project. In the early 1990s, the GLOBE project was started by a group of scholars in 61 countries who surveyed thousands of middle managers in various organizations in three industries including financial services (House, Javidan, Hanges, and Dorfman (2002)). The other two industries are food processing and telecommunications services. In terms of the institution collectivism dimension, close to fifty percent of the respondents come from the financial services industry. In this project, national cultures are classified into nine dimensions: performance orientation, future orientation, assertiveness, power distance, human orientation, institutional collectivism, in-group collectivism, uncertainty avoidance, and gender egalitarianism. Among these dimensions, the institutional collectivism is intended to reflect the same construct as Hofstede's individualism (House et al. (2002)). Therefore, the index on institutional collectivism can be regarded as an updated index of Hofstede's individualism index.

We obtained country scores for thirty-three of the countries in our sample from GLOBE's institutional collectivism index from House et al. (2004). In contrast to Hofstede's measure, GLOBE's institutional collectivism index reflects the degree of collectivism in each country, i.e., the higher a country's score in this index, the higher its degree of collectivism. To be consistent with Hofstede's individualism index, we define a new variable, $Indv_{GLOBE}$, which is equal to GLOBE's institutional collectivism index multiplied by -1. Therefore, a higher value of $Indv_{GLOBE}$ of a country indicates that this country has a higher degree of individualism.

Using $Indv_{GLOBE}$ in place of Hofstede's individualism index (*Indv*), we re-estimate our comprehensive model as specified in Equation (4). Consistent with our previous results, our results show that the estimated coefficient on $Indv_{GLOBE}$ is positive and significant (*t*-statistic = 1.90). Because of data availability on $Indv_{GLOBE}$, the multivariate regression in this analysis consists of only thirty-three countries. To check whether our result is sensitive to the sample size, we replace $Indv_{GLOBE}$ with Hofstede's individualism index (*Indv*) and re-estimate the Fama-MacBeth regressions using these thirty-three countries. We find similar results as those reported earlier. This suggests that the significantly positive relation between individualism and momentum is not due to the measure of individualism or the sample size.

D. Additional Tables

Table IA.I: This table shows the average returns on *Indv*-sorted momentum portfolios constructed from the samples using different screening processes. Following Hong, Lee, and Swaminathan (2003), we trimmed data from Datastream by including stock returns only with values within the 1st and the 99th percentiles of the return distribution in each month for each country. These results are reported in Panel A. Panel B reports the results excluding stocks with their monthly market capitalization in the top or bottom 5% of the market capitalization distribution in each month for each country.

Table IA.II: This table shows the results of trading volume from the Fama-MacBeth regression (Panel A) and the OLS cross-sectional regression (Panel B).

Table IA.III: This table shows the results of average stock volatility from the Fama-MacBeth regression (Panel A) and the OLS cross-sectional regression (Panel B).

Table IA.IV: Panel A (financial market development) and Panel B (institutional quality) of this table report the replicated results on Panel B and Panel C in Table V in the paper, while Panel C of this table reports the results related to Hofstede's other cultural indexes using a different starting data of February 1984.

Table IA.V: This table shows the additional Fama-MacBeth regression results related to the variables of behavioral momentum models (Panel A), institutional quality (Panel B), rational momentum models (Panel C), and macroeconomic factors (Panel D).

Table IA.VI: This table shows the results from a bootstrap test of the comprehensive model. Model 1 does not include the EAsia dummy, while Model 2 includes the EAsia dummy

Table IA.VII: This table shows additional results from the Fama-MacBeth regressions of the comprehensive models including a dummy variable for East Asia countries (Panels A and C), the interaction term between individualism and dispersion in analyst forecasts (Panels B and C), and other cultural variables (Panel D).

Table IA.VIII: This table reports the results from the estimation of the comprehensive model using alternative estimation methods. Panel A reports the OLS regression results clustered by country and month, while Panel B shows the findings from a simple time-series mean regression.

Table IA.IX: This table shows the results of the Fama-MacBeth regressions from the comprehensive models using GLOBE's measure of individualism ($Indv_{GLOBE}$).

Table IA.X: This table shows the results of the Fama-MacBeth regressions from the comprehensive model using the small stock sample. Model 1 does not include the EAsia dummy, while Model 2 includes the EAsia dummy

Table IA.XI: This table shows the post-holding period returns on *Indv*-sorted momentum portfolios constructed from the small stock sample. Panel A reports results from country-average portfolios and Panel B reports the results from composite portfolios.

Table IA.I
Momentum Profits and Individualism: Results from Alternative Screening Processes

This table reports average monthly momentum profits (%) in U.S. dollars for country-average portfolios and composite portfolios classified by Hofstede's individualism index (a lower score indicates a lower degree of individualism). See Table III in the paper for the detailed description of the constructions of these portfolios. At the end of each month, all countries in our sample are allocated into three groups, from low (bottom 30%) to high (top 30%) based on their scores on the individualism index. Country-average (or composite) portfolios are formed in each individualism-sorted group. The test period is from February 1984 to June 2003. Panel A reports the results from a sample that excludes stocks with their monthly returns in the bottom or top 1% of the return distribution in each month for each country. This filter is suggested by Hong, Lee, and Swaminathan (2003). Panel B shows the results from a sample that excludes stocks with their monthly capitalization in the bottom or top 5% of the market capitalization distribution in each month for each country. The other requirements for both samples are the same as those discussed in the paper. The corresponding *t*-statistics are in parentheses.

Panel A: Excluding stocks with their monthly returns in the bottom or top 1%

Portfolio formed method	Index on individualism	Winner (W)	Loser (L)	W minus L
Country-average	Low	1.470 (3.46)	1.211 (2.48)	0.259 (1.66)
	2	1.544 (4.82)	1.027 (2.93)	0.518 (4.49)
	High	1.574 (5.94)	0.679 (2.29)	0.896 (7.40)
	High minus Low	**0.104 (0.31)**	**-0.533 (-1.36)**	**0.636 (4.00)**
Composite	Low	1.430 (3.09)	1.261 (2.30)	0.169 (0.85)
	2	1.257 (3.74)	0.902 (2.42)	0.355 (2.56)
	High	1.558 (4.90)	0.796 (2.01)	0.761 (3.60)
	High minus Low	**0.127 (0.34)**	**-0.465 (-1.04)**	**0.592 (2.56)**

Panel B: Excluding stocks with their monthly capitalization in the bottom or top 5%

Portfolio formed method	Index on individualism	Winner (W)	Loser (L)	W minus L
Country-average	Low	1.648 (4.34)	1.253 (2.97)	0.395 (2.84)
	2	1.690 (5.25)	0.994 (2.87)	0.696 (5.98)
	High	1.766 (6.20)	0.702 (2.25)	1.064 (8.12)
	High minus Low	**0.118 (0.38)**	**-0.551 (-1.57)**	**0.669 (4.41)**
Composite	Low	1.541 (3.78)	1.249 (2.79)	0.292 (1.81)
	2	1.303 (3.77)	0.959 (2.57)	0.344 (2.34)
	High	1.609 (4.91)	0.621 (1.66)	0.988 (5.30)
	High minus Low	**0.068 (0.19)**	**-0.628 (-1.64)**	**0.696 (3.38)**

Table IA.II Trading Volume Regressions: Alternative Estimation Methods

Panel A of this table reports the time-series averages of cross-sectional OLS estimates of the regression coefficients using the Fama-MacBeth approach. The Newey-West heteroskedasticity and autocorrelation consistent estimates of standard errors are used to compute these *t*-statistics. Panel B shows the findings from a simple time-series means regression. The descriptions of all the variables are listed in Section B of this Appendix. The *t*-statistics are in parentheses.

Model	Panel A: Fama-MacBeth regression	Panel B: Simple mean regression
Intercept	-2.887 (-8.47)	-5.961 (-2.93)
Indv	**0.010** **(7.08)**	**0.013** **(2.37)**
Insider	-0.282 (-3.78)	-0.315 (-1.68)
Political	0.025 (2.69)	0.056 (3.60)
Fxvol	0.018 (4.03)	0.035 (3.58)
Credit	1.086 (5.68)	0.616 (2.17)
LnV	0.291 (3.93)	0.485 (1.94)
Min. # of countries	13	33
Max. # of countries	38	33
Median # of countries	34	33
Test period	January 1988- June 2003	January 1995 – June 2003

Table IA.III Average Stock Volatility Regressions: Alternative Estimation Methods

Panel A of this table reports the time-series averages of cross-sectional OLS estimates of the regression coefficients using the Fama-MacBeth approach. The Newey-West heteroskedasticity and autocorrelation consistent estimates of standard errors are used to compute these *t*-statistics. Panel B shows the findings from a simple time-series means regression. The descriptions of all the variables are listed in Section B of this Appendix. The *t*-statistics are in parentheses.

Model	Panel A: Fama-MacBeth regression	Panel B: Simple mean regression
Intercept	5.551	5.988
	(21.96)	(8.88)
Indv	**0.010**	**0.008**
	(7.34)	**(1.79)**
Insider	-0.198	-0.145
	(-6.36)	(-0.96)
Credit	0.130	0.188
	(1.41)	(0.65)
Gwvol88/Gwvol95	0.115	0.091
	(10.32)	(2.19)
Fxvol	0.000	0.013
	(0.02)	(1.77)
Open	-0.499	-1.301
	(-3.34)	(-2.35)
Debt	0.207	0.430
	(0.52)	(0.34)
MCap	0.000	0.001
	(0.06)	(0.83)
Min. # of countries	12	29
Max. # of countries	36	29
Median # of countries	31	29
Test period	January 1988 – June 2003	January 1995 – June 2003

Table IA.IV
Determinants of Momentum Profits across Countries:
Results from Fama-MacBeth Regressions with a Different Starting Date

Monthly returns on country-specific momentum portfolios are regressed on Hofstede's individualism index (*Indv*, a lower score indicates a lower degree of individualism) and different sets of explanatory variables. Panel A shows the results related to a set of proxies for the financial market development. These proxies are the total private credit expressed as a ratio of GDP (*Credit*), the average common language dummy variable (*Lang*), the ratio between the monthly market value of the S&P-IFC market index and the monthly market value of the S&P-IFC investable index (*Open*), and an index on control of capital flows (*Control*). Panel B reports the results related to a set of variables related to institutional quality. This set of variables includes the insider index (*Insider*, a higher score indicates that insider trading is less prevalent), the ICRG corruption index (*Crp*, a higher value indicates a lower corruption level), the ICRG political risk index (*Political*, a higher value indicates a lower political risk), the natural logarithm of the transaction cost index (*LnTran*, a higher value indicates a higher transaction cost), and the investor protection index (*Protection*, a higher score indicates a higher investor protection level). Panel C shows the results related to Hofstede's other cultural indexes. These indexes include masculinity (*MAS*), power distance (*PDI*), and uncertainty avoidance (*UAI*). The descriptions of all the variables are listed in Section B of this Internet Appendix. The row '*Starting date*' shows the starting month for the test in each panel and all the tests end in June 2003. This table reports the time-series averages of cross-sectional OLS estimates of the coefficients. The *t*-statistics are in parentheses. The Newey-West heteroskedasticity and autocorrelation consistent estimates of standard errors are used to compute these *t*-statistics. F_1 (an *F*-statistic) is used to test the hypothesis that all the estimated slope coefficients except the coefficient on *Indv* are jointly equal to zero. F_2 (an *F*-statistic) is used to test the hypothesis that all the estimated slope coefficients are jointly equal zero. The *p*-values are in parentheses.

	Panel A: Financial development	Panel B: Institutional quality	Panel C: Other cultural indexes
Intercept	0.368 (1.50)	-1.391 (-1.48)	-0.047 (-0.13)
Indv	**0.014 (5.75)**	**0.018 (5.86)**	**0.014 (5.49)**
Credit	-0.147 (-0.99)		
Lang	1.121 (1.76)		
Open	-0.161 (-0.42)		
Control	-0.030 (-0.99)		
Insider		-0.140 (-1.17)	
Crp		0.057 (0.78)	
Political		0.004 (0.32)	
LnTran		0.343 (2.30)	
Protection		0.017 (0.08)	
MAS			-0.002 (-0.62)
PDI			0.004 (0.99)
UAI			-0.002 (-0.87)
F_1	1.96 (0.10)	1.80 (0.11)	0.71 (0.55)
F_2	5.67 (0.00)	7.18 (0.00)	6.05 (0.00)
Min. # of countries	13	15	16
Max. # of countries	37	33	41
Med. # of countries	34	32	38
Starting date	February 1984	February 1984	February 1984

Table IA.V
Determinants of Momentum Profits across Countries:
Additional Results from the Fama-MacBeth Regressions

Monthly returns on country-specific momentum portfolios are regressed on Hofstede's individualism index (*Indv*, a lower score indicates a lower degree of individualism) and different sets of explanatory variables. Panel A reports the results related to a set of variables that are suggested by behavioral momentum models. These variables include the natural logarithm of market trading volume (*LnTN*), the natural logarithm of analyst coverage (*LnAna*), the natural logarithm of the dispersion of analyst forecasts (*LnDisp*), the logarithm of stock market volatility (*LnV*), the cash flows growth rate volatility (*Cfvol*), the logarithm of median firm size (*LnSZ*), and the logarithm of book-to-market ratio (*LnBM*). Panel B reports the results related to a set of variables related to institutional quality. This set of variables includes the insider index (*Insider*, a higher score indicates that insider trading is less prevalent), the ICRG corruption index (*Crp*, a higher value indicates a lower corruption level), the ICRG political risk index (*Political*, a higher value indicates a lower political risk), the natural logarithm of the transaction cost index (*LnTran*, a higher value indicates a higher transaction cost), the investor protection index (*Protection*, a higher score indicates a higher investor protection level), the concentration of ownership (*Own,* obtained from La Porta et al. (2006)), the ICRG law and order index (*Law*), and a dummy variable for common law countries (*DL*). DL tales a value of one for common law countries and it is zero, otherwise. Panel C shows the results related to a set of variables motivated by rational momentum models. This set of variables includes the average local growth opportunities (*LGO*), the standard deviation of beta estimates (*StdBeta*), earnings growth volatility (*Eavol*), and dividend growth volatility (*Divvol*). Panel D reports the results related to a set of variables on macroeconomic risk factors. This set of variables includes the real per capita GDP growth rates (*Gdppcgw*), the change in exchange rates (*Cfx*), and the dividend yield (*DY*). The descriptions of all the variables are listed in Section B of this Appendix. The row '*Starting date*' shows the starting month for the test in each panel and all the tests end in June 2003. This table reports the time-series averages of cross-sectional OLS estimates of the coefficients. The *t*-statistics are in parentheses. The Newey-West heteroskedasticity and autocorrelation consistent estimates of standard errors are used to compute these *t*-statistics. F_1 (an *F*-statistic) is used to test the hypothesis that all the estimated slope coefficients except the coefficient on *Indv* are jointly equal to zero. F_2 (an *F*-statistic) is used to test the hypothesis that all the estimated slope coefficients are jointly equal zero. The *p*-values are in parentheses.

Table IA.V - Continued

	Panel A: Behavioral models	Panel B: Institutional quality	Panel C: Rational models	Panel D: Macroeconomic factors
Intercept	6.066 (5.00)	-1.868 (-1.69)	0.075 (0.08)	-0.234 (-0.82)
Indv	**0.015 (4.32)**	**0.018 (6.30)**	**0.014 (3.89)**	**0.014 (4.00)**
LnTN	-0.171 (-0.99)			
LnDisp	0.188 (1.88)			
LnV	-0.866 (-4.35)			
Cfvol	-0.006 (-0.68)			
LnSZ	-0.334 (-3.38)			
LnAna	0.193 (1.48)			
LnBM	-0.139 (-0.71)			
Insider		-0.106 (-0.68)		
Crp		0.085 (0.88)		
Political		0.005 (0.34)		
LnTran		0.297 (2.36)		
Protection		0.362 (0.91)		
Own		0.770 (1.44)		
Law		-0.039 (-0.49)		
DL		-0.136 (-0.65)		
LGO			-0.230 (-0.72)	
StdBeta			0.243 (1.00)	
Eavol			0.007 (0.91)	
Divvol			0.011 (0.76)	
Gdppcgw				0.020 (0.38)
Cfx				0.170 (1.32)
DY				0.055 (1.03)
F_1	5.36 (0.00)	1.51 (0.16)	1.30 (0.27)	2.50 (0.06)
F_2	7.68 (0.00)	4.87 (0.00)	4.08 (0.00)	7.90 (0.00)
Min. # of countries	28	15	13	16
Max. # of countries	38	35	36	40
Med. # of countries	36	34	32	36
Starting date	January 1992	February1984	February1984	February1984

Table IA.VI
Fama-MacBeth Regressions of the Comprehensive Model: Results from Bootstrapping

This test is carried out in a balanced sample with thirty-five countries over the period from January 1995 to June 2003. The Fama-MacBeth regressions are used to estimate the comprehensive model using this balanced sample. This table reports the time-series averages of cross-sectional OLS estimates of the coefficients. To compute the *t*-statistics, we use the standard deviations estimated from a bootstrapping test. Specifically, we generate data by sequentially selecting the individualism score along with other variables in our comprehensive model and randomly assigning them to one of the thirty-five countries in our sample without replacement. We generate 1,000 random assignments, and for each random assignment, we repeat the Fama-MacBeth regressions to estimate the comprehensive model. We use the standard deviations of the time-series of the estimates from this bootstrapping test to compute the *t*-statistics. The descriptions of all the variables are listed in Section B of this Appendix. All *t*-statistics are in parentheses.

	January 1995 – June 2003	
	Model 1	Model 2
Indv	**0.019**	**0.019**
	(3.17)	**(2.38)**
LnDisp	0.330	0.277
	(1.67)	(1.28)
LnV	-0.999	-0.941
	(-6.20)	(-5.65)
LnSZ	-0.339	-0.338
	(-2.17)	(-2.20)
LnTran	0.106	0.106
	(0.34)	(0.25)
Lang	1.842	1.623
	(1.46)	(1.25)
EAsia		0.040
		(0.07)

Table IA.VII
Individualism and Momentum Profits: Additional Results from the Comprehensive Model

Monthly returns on country-specific momentum portfolios are regressed on Hofstede's individualism index (*Indv*, a lower score indicates a lower degree of individualism), the natural logarithm of dispersion of analyst forecast (*LnDisp*), the natural logarithm of stock market volatility (*LnV*), the natural logarithm of median firm size (*LnSZ*), the average common language dummy variable (*Lang*), the natural logarithm transaction cost index (*LnTran*, a higher value indicates a higher transaction cost), and a dummy variable for countries in East Asia (*EAsia*). *Indv*LnDisp* is an interaction term that equals *Indv* times the logarithm of the dispersion of analyst forecasts (*LnDisp*). Panel A reports the time-series averages of cross-sectional OLS estimates of the coefficients. Panel D shows the results related to Hofstede's other cultural indexes. These indexes include masculinity (*MAS*), power distance (*PDI*), and uncertainty avoidance (*UAI*). The descriptions of all the variables are listed in Section B of this Internet Appendix. All *t*-statistics are in parentheses. The Newey-West heteroskedasticity and autocorrelation consistent estimates of standard errors are used to compute these *t*-statistics.

	January 1987 – June 2003			
	Panel A	Panel B	Panel C	Panel D
Intercept	2.988	3.446	2.543	3.301
	(2.22)	(2.72)	(1.72)	(2.51)
Indv	**0.016**	**0.010**	**0.014**	**0.014**
	(3.25)	**(2.67)**	**(2.61)**	**(3.46)**
LnDisp	0.221			0.225
	(1.94)			(2.02)
Indv * LnDisp		**0.011**	**0.013**	
		(2.07)	**(2.09)**	
LnV	-0.634	-0.661	-0.662	-0.628
	(-4.10)	(-3.96)	(-4.41)	(-3.71)
LnSZ	-0.231	-0.271	-0.234	-0.228
	(-3.49)	(-4.04)	(-3.20)	(-3.69)
LnTran	0.369	0.303	0.423	0.334
	(2.67)	(2.22)	(2.63)	(2.70)
Lang	1.899	1.794	1.753	2.595
	(2.53)	(2.22)	(2.11)	(3.54)
MAS				-0.005
				(-1.53)
PDI				-0.002
				(-0.24)
UAI				0.003
				(1.06)
EAsia	-0.003		0.160	
	(-0.01)		(0.60)	
F_1	7.14	8.94	7.75	6.39
	(0.00)	(0.00)	(0.00)	(0.00)
F_2	10.20	12.49	10.51	8.43
	(0.00)	(0.00)	(0.00)	(0.00)
Min. # of countries	17	17	17	17
Max. # of countries	36	36	36	36
Median # of countries	35	35	35	35

Table IA.VIII
Determinants of Momentum Profits: Robustness Checks Using Alternative Estimation Methods

Panel A reports findings from the regression using the Petersen (2009) procedure to compute the standard errors clustered by country and month. Panel B shows the findings from a simple time-series means regression from 1995-2003. The descriptions of all the variables are listed in Section B of this Appendix. The *t*-statistics are in parentheses.

	Panel A:		Panel B:	
Model	OLS clustered by country and month		Simple mean regression	
Test period	January 1987 – June 2003		January 1995 – June 2003	
Intercept	4.749	4.842	2.739	4.868
	(4.08)	(4.07)	(1.23)	(4.44)
Indv	**0.014**	**0.013**	**0.019**	**0.013**
	(3.77)	**(3.27)**	**(3.85)**	**(3.12)**
LnDisp	0.074	0.073	0.233	0.067
	(0.72)	(0.71)	(0.83)	(0.70)
LnV	-0.932	-0.930	-0.412	-0.951
	(-4.19)	(-4.18)	(-1.61)	(-6.99)
LnSZ	-0.297	-0.297	-0.217	-0.292
	(-3.71)	(-3.71)	(-1.47)	(-3.52)
LnTran	0.305	0.295	0.064	0.310
	(1.99)	(1.88)	(0.25)	(1.65)
Lang	2.032	2.062	1.021	2.067
	(2.31)	(2.37)	(1.01)	(2.50)
EAsia		-0.060		-0.059
		(-0.28)		(-0.34)
Min. # of countries	17	17	35	35
Max. # of countries	36	36	35	35
Median # of countries	35	35	35	35

Table IA.IX
Determinants of Momentum Profits: Using the GLOBE Measure of Individualism

Panel A reports the Fama-MacBeth regressions results from the comprehensive model using GLOBE's individualism index ($Indv_{GLOBE}$), where $Indv_{GLOBE}$ = (GLOBE's institutional collectivism index) multiplied by -1. Panel B reports the findings from the Fama-MacBeth regressions of the comprehensive model using Hofstede's individualism index (*Indv*). The descriptions of all the variables are listed in Section B of this Appendix. All *t*-statistics are in parentheses. The Newey-West heteroskedasticity and autocorrelation consistent estimates of standard errors are used to compute these *t*-statistics.

Test period	January 1987 – June 2003	
Model	Panel A	Panel B
Intercept	7.705 (4.61)	3.904 (2.98)
$Indv_{GLOBE}$	**0.179** **(1.90)**	
Indv		**0.015** **(4.63)**
LnDisp	0.125 (1.06)	0.213 (1.93)
LnV	-0.709 (-4.24)	-0.713 (-4.42)
LnSZ	-0.370 (-5.37)	-0.250 (-3.82)
LnTran	-0.240 (-1.26)	0.238 (1.73)
Lang	3.017 (5.05)	2.392 (4.31)

Table IA.X
Momentum Profits and Individualism: Regression Results from the Small Stock Sample

A small stock is defined as a stock with their market capitalizations below the median of all the stocks within a given country in any month in our sample. This table shows the Fama-MacBeth regressions results from the comprehensive model for the small stock sample. Monthly returns on country-specific momentum portfolios are regressed on Hofstede's individualism index (*Indv*, a lower score indicates a lower degree of individualism), the natural logarithm of dispersion of analyst forecast (*LnDisp*), the natural logarithm of stock market volatility (*LnV*), the natural logarithm of median firm size (*LnSZ*), the average common language dummy variable (*Lang*), the natural logarithm transaction cost index (*LnTran*, a higher value indicates a higher transaction cost), and a dummy variable for countries in East Asia (*EAsia*). The descriptions of all the variables are listed in Section B of this Appendix. This table reports the time-series averages of cross-sectional OLS estimates of the coefficients. All robust *t*-statistics are in parentheses. The Newey-West heteroskedasticity and autocorrelation consistent estimates of standard errors are used to compute these *t*-statistics. F_1 (an *F*-statistic) is used to test the hypothesis that all the estimated slope coefficients except the coefficient on *Indv* are jointly equal to zero. F_2 (an *F*-statistic) is used to test the hypothesis that all the estimated slope coefficients are jointly equal zero. The *p*-values are in parentheses.

Test period	January 1987 – June 2003	
	Model 1	Model 2
Intercept	1.317	1.602
	(0.73)	(0.77)
Indv	**0.016**	**0.013**
	(4.00)	**(1.93)**
LnDisp	0.226	0.359
	(1.36)	(1.97)
LnV	-0.531	-0.514
	(-2.42)	(-2.26)
LnSZ	-0.196	-0.172
	(-1.72)	(-1.66)
LnTran	0.686	0.640
	(2.49)	(2.31)
Lang	1.534	1.384
	(0.72)	(0.89)
EAsia		-0.214
		(-0.56)
F_1	7.33	6.86
	(0.00)	(0.00)
F_2	10.15	9.64
	(0.00)	(0.00)
Min. # of countries	15	15
Max. # of countries	33	33
Median # of countries	31	31

Table IA.XI
Return Reversals on Individualism-sorted Momentum Portfolios: Evidence from the Small Stock Sample

A small stock is defined as a stock with their market capitalizations below the median of all the stocks within a given country in any month in our sample. To be included in this table, each winner/loser portfolios is required to have at least 30 firms in each portfolio at formation month. There are twenty-two countries included in this test. Country-average and composite portfolios classified by individualism are formed from these twenty-two countries. This table presents average monthly momentum profits (%) in U.S. dollars for these country-average portfolios (Panel A) and composite portfolios (Panel B). The construction of these portfolios is discussed in Table III in the paper. The average monthly momentum profits are calculated over different post-holding periods. There is a one-month gap between the portfolio formation period and the holding period. The test period for Panel A and Panel B is from February 1989 to June 2003. All *t*-statistics are in parentheses. The Newey-West heteroskedasticity and autocorrelation consistent estimates of standard errors are used to compute those *t*-statistics.

Panel A: Country-average portfolios

Individualism rank	Months 1-12	Months 13-24	Months 25-36	Months 13-36
Indv-Low	-0.105	-0.192	-0.163	-0.212
	(-0.56)	(-1.23)	(-1.17)	(-2.16)
Indv-2	0.440	-0.056	-0.235	-0.166
	(4.37)	(-0.46)	(-2.39)	(-2.14)
Indv-High	0.780	-0.685	-0.272	-0.505
	(3.10)	(-3.34)	(-1.32)	(-3.31)
High minus Low	**0.885**	**-0.493**	**-0.110**	**-0.293**
	(4.21)	**(-2.07)**	**(-0.55)**	**(-1.80)**

Panel B: Composite portfolios

Individualism rank	Months 1-12	Months 13-24	Months 25-36	Months 13-36
Indv-Low	-0.152	-0.104	-0.194	-0.178
	(-0.78)	(-0.58)	(-1.66)	(-1.60)
Indv-2	0.319	0.018	-0.149	-0.087
	(3.13)	(0.11)	(-0.99)	(-0.75)
Indv-High	0.531	-1.075	-0.509	-0.822
	(1.94)	(-4.50)	(-1.80)	(-4.67)
High minus Low	**0.683**	**-0.971**	**-0.314**	**-0.644**
	(3.29)	**(-2.83)**	**(-1.27)**	**(-3.26)**

REFERENCES

Beck, Thorsten and Ed Al-Hussainy, 2006, *Financial Structure Dataset* (The World Bank).

Bekaert, Geert, Campbell R. Harvey, Christian Lundblad, and Stephan Siegel, 2007, "Global growth opportunities and market integration," *Journal of Finance* 62, 1081-1137.

Chan, Kalok, Vicentiu Covrig, and Lilian Ng, 2005, "What determines the domestic bias and foreign bias? Evidence from mutual fund equity allocations worldwide," *Journal of Finance* 60, 1495-1534.

Fernandex, Demise Rotondo, Dawn S. Carlson, Lee P. Stepina, and Joel D. Nicholson, 1997, "Hofstede's country classification 25 years later," *Journal of Social Psychology* 137, 43-53.

Greif, Avner, 1994, "Cultural beliefs and the organization of society: A historical and theoretical reflection on collectivist and individualist societies," *Journal of Political Economy* 102, 912-950.

Hofstede, Geert, 2001, *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations across Nations*, 2nd edition (Sage Publication: Beverly Hills, CA).

Hong, Dong, Charles Lee, and Bhaskaran Swaminathan, 2003, "Earnings momentum in international markets," Working paper, Cornell University.

House, Robert, Mansour Javidan, Paul Hanges, and Peter Dorfman, 2002, "Understanding cultures and implicit leadership theories across the globe: an introduction to project GLOBE," *Journal of World Business* 37, 3-10.

House, Robert. J., Hanges, P. J., Javidan, M., Dorfman, P.W., and Gupta, V., 2004, eds.: *Culture, Leadership, and Organizations: The GLOBE study of 62 societies* (Sage Publication: Thousand Oaks, CA).

La Porta, Rafael, Florencio Lopez-de-Silanes, and Andrei Shleifer, 2006, "What works in securities laws," *Journal of Finance* 61, 1-32.

Merritt, Ashleigh, 2000, "Culture in the cockpit: Do Hofstede's dimensions replicate?" *Journal of Cross-Cultural Psychology* 31, 283-301.

Petersen, Mitchell A, 2009, "Estimating standard errors in finance panel data sets: Comparing approaches," *Review of Financial Studies* 22, 435-480.