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DO MUTUAL FUNDS OUTPERFORM DURING RECESSIONS? INTERNATIONAL (COUNTER-) EVIDENCE

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Do Mutual Funds Outperform During Recessions? International (Counter-) Evidence

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Abstract

Glode (2011) shows, both theoretically and empirically, that U.S. equity mutual funds have a systematically better performance during periods of economic downturn and that investors are willing to pay higher fund fees for this recession insurance. In this paper, we test these hypotheses out-of-sample using international mutual fund data from 16 different countries. Surprisingly, we cannot confirm that mutual funds outperform during recessions and do not find that funds with high recession alphas can charge higher fees to investors. Hence, our study raises doubts about the validity of Glode (2011)'s model and looks for alternative explanations of mutual fund's state-specific performance and optimal fee-setting.

JEL Classification: F30; G01; G11; G15; G23
Keywords: International Mutual Fund Performance; Mutual Funds; Recession

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1 Introduction

"[A] mutual fund [is] an investment company [...] that buys a portfolio of securities selected by a professional investment adviser to meet a specified financial goal (investment objective)."(ICI (2013)) Over the past few decades, the mutual fund industry worldwide has flourished as an investment vehicle for both retail and institutional investors. The number of mutual funds worldwide increased from about 50,200 in 1998 to about 73,000 in 2012. The assets managed grew from 9.6 trillion USD at the end of 1998 to 26.84 trillion USD at the end of 2012, with about 40% of the assets invested into equity mutual funds (see ICI (2013)).

While the global fund industry has gained importance as a whole, academic studies on the performance of mutual funds have mainly focused on the U.S. market. Among others, Malkiel (1995), Jensen (2012), and Fama and French (2010) show that actively managed U.S. equity mutual funds in general underperform the market, net of fees. However, unconditional performance measures may understate the value added by active mutual fund managers: Moskowitz (2000) and Kosowski (2011) document that U.S. equity mutual fund managers perform significantly better during economic downturns than during economic upturns. So far, this empirical finding is not well understood: Is there a systematic outperformance of mutual funds during recessions? If so, do mutual fund managers outperform in recessions because they want to outperform or is it simply easier for them to outperform?

A first attempt to rationalize the answers to this puzzle is proposed by Glode (2011). He develops a model in which a fund manager can generate state-specific active fund returns. These conditional returns come at a disutility to the manager, as they require an effort to generate and their pay-off will be highest in states in which investors are willing to pay more for these returns. Hence, a fund manager exercises more effort in generating high returns in times when the economy is performing badly because then the investors' marginal utility of consumption is large and investors are willing to pay higher

fund fees for this insurance. As a result, the theoretical model predicts that mutual funds outperform during economic downturns and that funds with high alphas during recessions charge high fees to investors. For the time period 1980 until 2005, Glode (2011) documents both in his empirical analysis and in an earlier working paper version (Glode (2008)) that, in the USA, mutual funds have a systematically better performance when the economy is in a bad state and that these funds demand higher fees.

This paper empirically tests Glode (2011)'s theoretical hypotheses using a worldwide dataset of equity mutual funds in 16 different countries for the sample period from 1980 to 2010.[1] To determine whether a country is in a bad economic condition, we use the recession indicators from the National Bureau of Economic Research (NBER) for the USA and recession indicators from the Economic Cycle Research Institute (ECRI) for the 15 remaining countries.

Our empirical analysis reveals the following surprising results. First, we do not find evidence that mutual funds outperform during recessions. To the contrary, based on results of our pooled worldwide sample, mutual funds *underperform* by a statistically significant -0.4% in the months of economic downturns.[2] On a country level, we find that mutual funds underperform during recessions in 15 of the 16 countries with the underperformance being statistically significant at the 1% level.[3] Second, we do not find a positive relationship between mutual fund performance in recessions and a fund's fee structure. Based on results of the pooled worldwide sample, we show that mutual funds in the quintile with the highest recession performance have total fund fees (expense ratios) of 0.08% (0.21%) lower than funds in the quintile with the lowest recession performance.

[1]The sample period for each country begins with the availability of country-specific mutual fund data in the Morningstar database.

[2]Recession performance of funds is based on the Carhart (1997) four-factor model (results remain robust for the Fama and French (1993) three factor model). We compute Carhart factors based on country-specific market and accounting information and use Carhart factors from various sources. Our results also remain stable when we compute Carhart (1997) alphas based on regional factors (see Table A.4).

[3]During our sample period from 1980 to 2010, we also find an underperformance of mutual funds during recessions within the U.S. This result is in contrast to the empirical findings of Glode (2008). We reveal that the reason for the differences is the longer sample period applied in our study; we obtain similar results as in Glode (2011) when we restrict the sample to the period from 1980 to 2005.

Our study raises doubts on the validity of Glode (2011)'s theoretical model and thus consequently looks for alternative investigations and explanations. Hence, we conduct additional analyses and robustness checks to shed light on the empirically documented underperformance of mutual funds during recessions. Our results remain stable even when we compute fund alphas based on alternative asset pricing risk factors and use recession indicators for each country obtained from the OECD (instead of NBER and ECRI). In addition, our empirical results indicate that recession underperformance is not specific to the fund's investment style and stronger if the recession is global (instead of national magnitude).

How can one explain the negative performance of funds during recessions? A potential explanation is that mutual fund managers *aim* to generate superior returns during recessions but *fail* to do so. In times of economic downturns fund managers disproportionally try to generate high pay-offs by engaging in 'excessive active trading'. However, due to disproportionally high liquidity costs during crises, these trades finally worsen the recession performance. Consistent with this idea, we find that the average tracking error (i.e., a fund's deviation from its benchmark) of mutual funds is higher in recessions than in non-recessions. In addition, during times of economic downturns, funds with a high tracking error empirically underperform funds with a low tracking error. Hence, empirical evidence suggests that mutual fund managers strive to generate high pay-offs during times in which investors' marginal utility of consumption is large but actually achieve the opposite result.

Finally, we extend our analysis by investigating the recession performance of *hedge funds* using data from the TASS database in the period from 1994 to 2012. As in the case of mutual funds, we find compelling empirical evidence that hedge funds, on average, underperform during months of economic downturns. Moreover, this state-specific underperformance is found across the majority of different hedge fund investment styles.

The rest of the paper is organized as follows. Section 2 gives an overview of the related literature. In Section 3 we describe our dataset and explain the methodology

of our analysis. Section 4 provides the main empirical results of our study. Finally, in Section 5, we conclude.

2 Literature Review

Our study is related to two strands of literature. First, we contribute to the literature investigating performance measurement of mutual funds in an international context. Ferreira et al. (2013) investigate the determinants of the performance of equity mutual funds in 27 countries. They document that in most of the countries actively managed funds underperform passive investment strategies. Keswani et al. (2013) find significant performance persistence of equity mutual funds around the world and show that performance persistence is related to differences in mutual fund industry development across countries. Cremers et al. (2014) document that actively managed funds in many countries choose portfolios that track their stated benchmark index closely. This degree of 'closet indexing' of active funds is positively associated with fees and negatively with performance and exists less in countries with a higher market share of passive index funds. Finally, Breloer et al. (2014) find that a majority of international equity mutual funds exhibit significant exposure to country momentum or sector momentum indicating that these factors matter for risk-adjusted fund performance evaluation.

Second, our paper contributes to the literature of time-varying performance measurement of mutual funds. Moskowitz (2000), Staal (2006), and Kosowski (2011) document that risk-adjusted performance of U.S. mutual funds is negatively correlated with the business cycle and that mutual fund alphas are 1-3.5% p.a. higher in recessions than in expansions. Lynch and de Souza (2012) and Badrinath and Gubellini (2012) document that this counter-cyclical outperformance depends on the fund's specific investment style and that for many fund styles, conditional outperformance switches from counter-cyclical to pro-cyclical over time.

Glode (2011) is the first to rationalize the empirical findings of counter-cyclical out-

performance of mutual funds in a theoretical framework and shows that previous unconditional performance measures seem to be misspecified. In his model, a skilled, active fund manager is able to generate returns that depend on the state of the economy. Assuming rational investors, the fund manager will generate outperformance during economic downturns as the pay-off will be highest in states in which investors are willing to pay more for these returns. Moreover, mutual funds that perform well during recessions can charge higher fees as they provide an insurance for investors when the economy is in a bad state. Hence, in this setup, mutual fund investing and negative unconditional expected fund returns can simultaneously arise.[4]

Finally, in a recent paper, Kacperczyk et al. (2013) provide evidence that fund manager abilities are time-varying and change with the business cycle. In particular, skilled managers successfully pick stocks well in expansions and time the market well in recessions. Fund managers who exhibit this time-varying skill outperform the market by 50-90 basis points per year.

In this paper, we extend the literature by using a worldwide sample of 16 different countries to investigate the time-varying performance of domestic equity mutual funds. In particular, this paper is the first to empirically test two implications of Glode (2011)'s model using a large international sample: (i) We analyze whether mutual funds outperform during recessions worldwide and (ii) we investigate whether funds that outperform during recessions charge higher fees to investors.

[4]Besides the consumption-based argument put forward by Glode (2011), there exist different alternative explanations to rationalize recession outperformance. Kothari et al. (2009) argue that corporate managers delay disclosure of bad news relative to good news. Hence, during recessions, experienced investors, such as fund managers, could have an informational advantage over unexperienced retail investors and therefore earn higher returns. Other potential explanations include time-varying trading and liquidity costs during recessions and expansions (see e.g., Kosowski (2011)). Finally, time variation in risk exposures (e.g., time-varying market betas of mutual funds in recessions and expansions) without any active portfolio rebalancing can potentially explain outperformance during economic downturns.

3 Data and Methodology

From the Morningstar mutual fund database, we retrieve data on all actively-managed open-end equity mutual funds domiciled in Australia, Austria, Canada, China, Denmark, France, Germany, India, Italy, Japan, Mexico, Norway, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, United Kingdom, and the USA.[5] The sample time period ranges from 1980 until 2010 with some countries having shorter time periods due to data availability. We narrow the data sample to only domestic equity mutual funds.[6]

As the mutual fund data is reported on a share class level, the multiple share classes are aggregated based on the fund's total net assets (TNA).[7] To have a sufficient number of observations in our regression analysis in Section 4, we delete countries that have less than 30 funds, which removes Austria from our sample. Furthermore, we drop all funds from the sample that do not go through at least one recession and have less than 12 months of observations.

To determine whether a country is in a poor or good economic condition, we use the recession indicators from the National Bureau of Economic Research (NBER) for the USA and the recession indicators from the Economic Cycle Research Institute (ECRI) for the remaining countries.[8] We delete all countries that do not go through at least one recession or spent less than 5% of their sample time in a recession. This restriction removes Australia, China and India from our sample. All the other countries spend about 10% to 40% of their sample time in recessions.

We display summary statistics and data availability for all countries in Table 1. The average time a country spends in a recession is displayed in Panel A of Figure 1.

[5]The selection of countries includes all continents and uses the United Nations Development Index (HDI) to select countries with higher financial education.

[6]Funds are identified by their classifications 'Global Category', 'Morningstar Category' and 'Investment Area'.

[7]As a robustness check, we perform our empirical analysis just based on the share class with the maximum TNA. Our main results remain unchanged.

[8]ECRI does not provide recession indicators for Norway and Denmark. Instead we retrieve recession indicators for those countries from the OECD business cycle measure as in Christoffersen (2000) and Steigum (2004). We also use the OECD business cycle indicators for all countries in our sample as a robustness test in Section 4.3.3.

[Insert Table 1 about here]

[Insert Figure 1 about here]

Table 1 shows that the highest number of domestic equity funds are located in the USA (3,692), followed by Japan (811), and South Korea (524). U.S. equity funds also have the highest average fund TNA with a mean value of 553m USD.

From Panel A of Figure 1, we see that Italy (41.9% of the time) and UK (41.6% of the time) spend most of their sample time in a recession. The least time in recessions is spent by South Korea (11.4%) and the USA (15.8%).

In Panel B of Figure 1, we take a look at the percentage of countries that are in a recession at the same point in time. The first subplot shows the development of recession clustering in all countries over time. We find that the number of worldwide recessions is high during the beginning of the 1980s, 1990s, 2000s, and in 2009, which can be related to worldwide economic downturns (oil price shock and restrictive monetary policy of the FED in the 1980s, banking crises at the beginning of the 1990s, the burst dot-com bubble in the beginning of the 2000s and the financial crisis in 2009 following the collapse of the U.S. mortgage market).[9] The subplots North America, Europe, Asia and rest of the world show periods of time in which at least one of the countries in the respective region was in a recession. Hence, there are time periods in which recession periods in the different continents do not overlap.

To get a first impression of the distribution of monthly fund returns in our sample, we provide summary statistics of average monthly fund returns in Figure 2.

[Insert Figure 2 about here]

Figure 2 shows that the highest average returns in percent per month are found in South Africa (1.18%) and Sweden (0.97%), whereas the lowest returns are found in Italy (-0.37%) and Japan (-0.21%). The average monthly return over all funds and all countries is 0.48%.

[9] A further differentiation into global/national recessions per country can be found in Table A.1 in the Appendix.

Performance Evaluation. In our empirical analysis in Section 4, we evaluate (conditional) mutual fund performance (in recessions) using the Carhart (1997) four factor model. We differentiate between two specifications.

Specification (1) estimates the Carhart (1997) model including a business cycle dummy (BC) variable for the recession performance

$$r_{it} = \alpha_{it} + BC_t + \beta_1 RMRF_t + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t. \quad (1)$$

In specification (2), we additionally interact the asset pricing risk factors with the business cycle variable

$$\begin{aligned} r_{it} &= \alpha_{it} + BC_t + \beta_1 RMRF_t + \beta_2 RMRF_t \times BC_t + \beta_3 SMB_t + \beta_4 SMB_t \times BC_t \quad (2) \\ &\quad + \beta_5 HML_t + \beta_6 HML_t \times BC_t + \beta_7 MOM_t + \beta_8 MOM_t \times BC_t, \end{aligned}$$

where r_{it} is the monthly fund return in excess of the risk-free rate, $RMRF$ is the market factor, SMB is the size factor, HML is the value factor, and MOM is the momentum factor.

We generally use monthly factor returns for the performance evaluation from two different sources. Data for the USA are taken from Kenneth French's webpage; for the remaining countries we obtain factor returns from the webpage of Sandy Lai.[10] As a robustness check in Section 4.3.3, we also verify our results using the individual factor returns obtained from Andrea Frazzini's[11] and Stefano Marmi's[12] webpages, and the international regional factor returns from the webpage of Kenneth French.[13] Besides

[10]We would like to thank the author for the provision of the data. The dataset contains the four Carhart (1997) factors for all countries in our sample usually beginning in the 1980s. The data can be obtained from http://www.sandylai-research.com/html/research___data.html and is also described in Eun et al. (2010) and Hau and Lai (2012).

[11]Data Library: http://www.econ.yale.edu/∼af227/data_library.htm

[12]Data Library: http://homepage.sns.it/marmi/Data_Library.html

[13]Data Library: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html Kenneth

the usage of the described factors, we also test the stability of our results by calculating own individual factor returns based on the basis of domestic total return indices retrieved from Datastream.[14] The start dates for mutual fund data in Morningstar and the different factor returns for all individual countries in our sample are displayed in Table 1.

4 Empirical Results

4.1 Mutual Fund Performance During Recessions

4.1.1 Pooled Sample

We investigate the conditional performance of equity mutual funds during recessions in a worldwide sample of 16 different countries. As described above, we apply the Carhart (1997) four factor model to investigate risk-adjusted performance. If not otherwise specified, the return factors for the USA are obtained from Kenneth French's webpage and for the remaining countries from Sandy Lai's webpage. To identify recession periods in the respective country, we use the NBER indicators for the USA and the ECRI indicators for the remaining countries. Recession indicators are indicated by the BC variable, a dummy variable that takes on the value one if the country is an recession and zero if not. We provide results of a panel regression with fixed effects on the fund level for the worldwide sample of all funds in 16 countries in Table 2.

[Insert Table 2 about here]

Regression (1) of Table 2 documents the results of a regression of monthly excess returns on the four Carhart (1997) factors. In line with previous research (see e.g.,

French provides regional risk-free interest rates, market, size, and book-to-market factors for Europe, North America, Japan and Asia. We assign our sample countries to the different factors based on their geographical location.

[14] We approximate the market portfolio using the broadest equity market index of the country and the risk-free rate by a domestic deposit rate. The SMB factor is calculated as the difference between the monthly returns of the small cap and large cap equity indices, and the HML factor is computed as the difference between the domestic value and growth indices. A disadvantage of using the domestic indices from Datastream is their short availability and that these indices are not appropriate for constructing the momentum factor.

Ferreira et al. (2012), Ferreira et al. (2013), and Cremers et al. (2014)), we find negative unconditional performance of mutual funds with an alpha of -0.0229% per month, which is statistically significantly different from zero at the one percent level. In addition, our results indicate that mutual funds display positive factor loadings on the market, SMB, and HML as well as a negative loading on momentum (MOM).

Regression (2) shows the results when we extend our model with the *BC* recession dummy. *BC* has a coefficient estimate of -0.402% and is statistically significant at the one percent level. Hence, on our worldwide sample, mutual funds *underperform* during times of recessions by -0.402% per month based on the Carhart (1997) four factor model. Regressions (3) and (4) re-estimate specification (1) in a subsample of recession and non-recession months, respectively. In line with the results of regression (1), we find that the alpha is negative during recession months and slightly positive in non-recession months.

Finally, in regression (5), we account for time-varying factor sensitivities by additionally including interaction terms of the business cycle dummy with the Carhart (1997) factors. The result of negative fund performance during recessions remains unchanged: mutual funds underperform during times of recessions by a statistically significant -0.480% per month.

Our results contradict the findings of Glode (2011) based on a worldwide sample. We do not find evidence that mutual funds outperform during periods of economic downturns; instead we find that mutual funds underperform during periods of economic downturns.[15]

4.1.2 Country-Specific Analysis

We proceed to analyze country-specific risk-adjusted performance of mutual funds using a fixed effects regression framework on the fund level. Table 3 repeats regressions (2) and (5) of Table 2 separately for the 16 different countries of our sample.[16]

[15]Our results remain unchanged if we evaluate mutual fund performance using the Fama and French (1993) three-factor model. In each case, we obtain a significantly negative impact of the recession dummy on mutual fund performance.

[16]Table A.2 in the Appendix repeats regression (1) of Table 2 separately for the 16 different countries. It documents that unconditional risk-adjusted performance of mutual funds is significantly negative at

[Insert Table 3 about here]

Panel A of Table 3 shows the results of country-specific regressions of excess returns on the Carhart (1997) factors and the *BC* recession dummy variable. Strikingly, we find that in 15 of the 16 countries the *BC* dummy has a negative impact on the performance of mutual funds and is statistically significantly different from zero at the one percent level. The most negative impact of recessions on the performance is found in South Africa (-2.18% per month), Switzerland (-1.391% per month), and Sweden (-1.209% per month). The only positive (but statistically insignificant) impact of *BC* is found in Germany with a tiny outperformance of 0.035% per month.

In Panel B, we redo the analysis of Panel A but also include the interaction terms of all Carhart (1997) factors with the *BC* variable. Our results remain qualitatively unchanged; we find significant outperformance of mutual funds during recessions only in Germany (0.189% per month) and Spain (0.34% per month), while in 11 of the 16 countries *BC* is negative at the one percent significance level. The most negative impact of recessions on the performance of mutual funds is found in South Africa (-2.27% per month), Sweden (-1.319% per month) and Norway (-0.98% per month). In untabulated results we also run regression specifications (3) and (4) of Table 2 for all individual countries in our sample. In line with our previous results, the alpha during recession periods is worse than the alpha in non-recessions in 12 of the 16 countries.

To summarize, we find strong evidence that mutual funds *underperform* during times of recession. This result not only holds on our pooled worldwide sample (as shown in Section 4.1) but is also valid for the majority of individual countries.

Revisiting Fund Performance During Recessions in the USA Panel A of Table 3 indicates that for the USA, *BC* is significantly negative at the one percent significance level. When interacting all Carhart (1997) factors with the *BC* variable in Panel B, we obtain a slightly positive impact of the recession dummy; however, the effect is not

the one percent level in 5 of the 16 countries. Even though the unconditional negative performance is in line with previous research, we expected more countries to have an unconditional negative performance.

significantly different from zero. Both findings are in contrast to the empirical results of Glode (2011, 2008),[17] who finds a *significantly positive* recession performance of mutual funds in the USA.

To evaluate these differences in results, we replicate the sample of Glode (2011) using CRSP mutual fund data and identical data cleaning procedures for the USA (see Glode (2011), p.558 and his Table 1) in the time period from 1980 - 2005 (Glode (2011)'s sample period) and from 1980 - 2010 (our sample period). Results are displayed in Table 4.

[Insert Table 4 about here]

Regression (1) shows regression (3) of Table 3 in Glode (2008) with CRSP mutual fund data from 1980 - 2005. The impact of the recession dummy is positive and statistically significant at the one percent significance level indicating an average mutual funds' outperformance of 0.414% per month. In regressions (2) and (3), we replicate the empirical results of Glode (2008) for the identical time period (1980 - 2005) using data from CRSP and Morningstar, respectively. In both cases, we obtain similar results: The coefficient estimate for BC is positive and statistically significant at the one percent significance level. Then, in regressions (4) and (5), we expand the sample period until the year 2010, again using data from CRSP and Morningstar, respectively. Surprisingly, the extended sample period now delivers different results: For both datasets, we do not obtain a significant positive correlation between times of recessions and average mutual fund performance - instead, the relationship is insignificant for both datasets.

Our results show that differences in results for the USA between our study and Glode (2008) can be attributed to the extended sample period from 1980 - 2010. Instead of finding support in favor of a positive relationship, we fail to do so and document no significant relationship between recessions and average mutual fund performance in the USA.[18]

[17] In addition, we refer here to an earlier version of Glode (2011) as it contains additional regression tables.

[18] When we do not include interaction terms of the BC dummy with the Carhart (1997) factors, we find a negative relationship between recessions and mutual fund performance for the USA, see Panel A of Table 3.

4.2 Mutual Fund Performance and Fund Fees

According to Glode (2011)'s model, a skilled fund manager delivering outperformance during recessions can charge higher fees to the fund's investors. Hence, empirically we should see a positive relation between a fund's recession performance and the total fees a fund charges.[19] We analyze this prediction on our worldwide dataset. Since Morningstar does not contain historical fund fee data, we use the last fund fee observation from the Morningstar Mutual Fund Database as of September, 2012 in our empirical analysis.[20]

As in Sirri and Tufano (1998), Barber et al. (2005) and Glode (2011), we compute the total fund fees as "the expense ratio plus the up-front load amortized over a seven-year holding period (which is the average holding period for equity mutual funds)" (Sirri and Tufano (1998)). If there is a fee schedule for the up-front load, we use the starting fee for the lowest investment amount. We set negative expense ratios to zero.[21] Figure 3 plots the average total fund fees (in % of a fund's TNA) per country. The highest average total fees in percent are found in Italy (2.65%) and France (2.58%) whereas the lowest average fees are found in Sweden (1.27%) and South Korea (1.38%). In order to analyze the fund fee - recession performance relation, we relate the fund performance during recessions of all funds to their charged average total fee.[22]

[Insert Figure 3 about here]

Then, based on the fund's recession performance, all funds are sorted into quintile portfolios. Table 5 shows the average total fund fees and average expense ratios for these quintiles.

[Insert Table 5 about here]

[19] Glode (2011) provides empirical evidence for this relation in the USA in the time period from 1980 to 2005. He finds that the best performing funds during recessions indeed charge higher fund fees.

[20] This does not create a survivorship bias as the last fund fee observation is also stored for dead funds.

[21] Fund fees are available for all countries in our sample except for Canada.

[22] Besides the raw performance during recessions, we estimate specification (2) (Carhart adjusted performance) for each fund in the sample and use the BC coefficient as our measure of fund-specific recession performance. Results remain qualitatively the same.

Panel A documents that there is a *negative* relationship between a fund's recession performance and its total fund fee. The quintile with the best (worst) recession alpha charges average fund fees of 1.97% (2.05%) p.a. Hence, the quintile of funds with the highest recession performance have fund fees of 0.08% p.a. lower than the quintile of funds with the lowest recession alpha. However, this difference fails to be statistically significant. When analyzing the relationship between a fund's recession performance and its total fund fee for each country separately, we find a similar picture. For nine countries, the quintile containing funds with the best recession performance has lower total fund fees than the quintile containing funds with the worst recession performance. For four countries, this negative difference is statistically significant at the 10 percent level. None of the funds shows significantly higher total fund fees for the conditionally better performing funds in quintile five.

Panel B repeats the same analysis with the fund's expense ratio instead of the total fund fees. Results are qualitatively the same for the pooled sample, only this time the difference of -0.21% between the expense ratios is significant at the one percent level. Furthermore, in 3 out of 14 countries[23] the quintile containing funds with the best recession performance has significantly (at the five percent level) lower total fund fees than the quintile containing funds with the worst recession alpha. Again, none of the countries shows significantly higher expense ratios for better performing funds.[24]

In summary, our results speak against Glode (2011)'s insurance argument, in which funds that outperform during recessions charge higher fund fees. In contrast, our worldwide empirical evidence is in favor of the opposite: Funds that display superior recession performance have no other fee structure and sometimes charge even lower fund fees.

[23]Canada and Japan are missing in both panels since almost no observations are available for the fund expense ratio.

[24]When analyzing the total fee and expense ratio relation sorted on unconditional performance, we find a similar picture. Comparing the two sorts, we find that conditionally better performing funds charge even lower fees.

4.3 Additional Analyses and Robustness

4.3.1 Mutual Fund Performance and Fund Flows

Glode (2011)'s model assumes that investors are willing to pay for high returns when the economy is in a bad state. If this is the case, one should see large inflows to funds with a top recession performance, or at least no outflows in funds that perform well during recessions.

Following Sirri and Tufano (1998), Guercio and Tkac (2002) and Ferreira et al. (2013), we calculate fund i's flow in month t as

$$flow_{i,t} = \frac{TNA_{i,t} - TNA_{i,t-1} \cdot (1 + r_{i,t})}{TNA_{i,t-1}}, \tag{3}$$

where $TNA_{i,t}$ and $r_{i,t}$ denote the fund total net asset value and raw return of fund i in month t.[25]

To test the idea that funds with a top recession performance receive large inflows or at least no outflows, we perform portfolio double sorts. First, we sort funds based on their unconditional performance in month t. Then, within each quintile, we sort funds based on their conditional performance. We analyze the fund flow in month $t + 1$ for these 25 portfolios. The sort is based on the raw performance of the funds, as we assume that investors focus on this performance metric when making their investment decisions.[26] Table 6 reports the results of the double sort for the pooled sample.[27]

[Insert Table 6 about here]

If we sort funds according to their unconditional performance, we find a strong positive flow-performance relationship, which is in line with Sirri and Tufano (1998) and Ferreira et al. (2013). In contrast to the notion that investors value high returns during

[25]To ensure that extreme values do not drive our results, we truncate outliers above -100% and 500% and winsorize fund flows at the bottom and top one percent level of the distribution.

[26]The results remain qualitatively the same if we sort according to the Carhart (1997) adjusted recession performance.

[27]Individual country sorts of unconditional and conditional performance can be found in Table A.3 in the Appendix.

recessions, we do not find higher inflows to funds with high recession performance. On average, future fund flows decrease when conditional performance increases. Controlling for unconditional performance, funds in the quintile with the lowest recession performance have higher future fund flows than funds in the quintile with the highest recession performance. This indicates that investors generally do not value good recession performance with high future inflows into these funds. The individual country sorts (in Table A.3 in the Appendix) of unconditional and conditional performance and fund flows show a similar picture. There is a positive flow-performance relationship in the unconditional performance sort; however, it does not prevail in the conditional performance sort. Concluding, we do not find supporting evidence that funds receive inflows based on their recession performance.

4.3.2 Fund Style Analysis

Badrinath and Gubellini (2012) find for the USA that funds with different investment styles display different state-specific performance. In particular, they argue that managers of small-cap and mid-cap growth equity funds are able to deliver recession outperformance but managers of value funds are not. We also test whether alternative styles of mutual funds differ in their recession performance in our worldwide dataset.[28] We run regression specification (2) for small/mid-cap/large as well as value/growth/income funds.

[Insert Table 7 about here]

Table 7 shows that all fund styles display a negative recession performance, as indicated by a negative coefficient estimate of the BC variable. The most negative recession performance is shown by the income fund style (-0.524% per month) followed by the large (-0.513% per month) and mid-cap (-0.398% per month) fund style. Hence, we do not find that conditional performance during recessions can only be attributed to certain mutual

[28]The identification of fund styles is based on the filtration of the Morningstar fields 'Broad Category', 'Global Category', 'Morningstar Category' as well as the fund name.

fund styles. Instead, negative performance during economic downturns seems to be a general phenomenon.

4.3.3 Risk Factors and Business Cycles

In this section, we perform different robustness checks to confirm our main result of mutual funds' negative recession performance. In particular, we show that our results are stable if we use different asset pricing risk factors and alternative business cycle measures. Table 8 shows the results of regression specification (2) on the pooled worldwide sample.

[Insert Table 8 about here]

Risk Factors In the following regressions we use different risk factor sets, which are all described in Section 3. Regression (1) repeats our main result from Table 2 using the monthly factor returns from the webpage of Sandy Lai. In regressions (2) and (3) we apply the asset pricing risk factors obtained from Andrea Frazzini and Stefano Marmi. In both cases, we obtain negative coefficient estimates for BC of -0.34 and -0.11, which are both statistically significant at the one percent level. As risk factors, regression (4) uses self-constructed individual factor returns which are based on domestic total return indices retrieved from Datastream. Again, our results are virtually unchanged. In regression (5), we verify our results using international regional factor returns from Kenneth French. Our results indicate a negative coefficient estimate for BC of -0.33, which is statistically significant at the one percent level.

OECD business cycle measure The business cycle measure is an important variable that determines the recession performance of mutual funds. To gain robustness in our main findings, we repeat our analyses with an additional business cycle measure obtained from the Organisation for Economic Co-operation and Development (OECD). Recession and expansion periods are signified by their deviation from a growth trend. The main

reference for this trend is the industrial production of the respective countries.[29] This is in contrast to the ECRI and NBER measures that use an ex-post recession classification based on the GDP of the respective countries. Regression (6) shows the results when we apply the OECD business cylcle measure in the analysis: Mutual funds show a statistically significant underperformance of -0.28% per month during recessions.[30]

Recession Type Analysis To examine the recession performance of mutual funds in more detail, we classify recessions into two categories: global recessions and national recessions. To do so, we manually go through the recessions indicated by the NBER/ECRI measure for each country in our sample and categorize this recession month as a global recession if it not only affected the country itself but also affected other geographical regions. An example of a national recession would be the Japanese asset price bubble in 1992. Global crises include the Asian financial crisis at the end of the 1990s and the mortgage bubble burst starting in 2007. Table A.1 in the Appendix provides an overview of how many months a country spends in the respective categories.

To investigate if the type of a recession has a specific impact on mutual funds' recession performance, we analyze this relationship separately in regressions (7) and (8) of Table 8. Independent of the type of the crisis, we find that there is no significant outperformance of mutual funds during recessions. The coefficient estimate for the BC-variable is -0.62 (significant at the one percent level) for the global recession and insignificant 0.02 for the national recession.

To conclude, we find that our main result of mutual funds' negative recession performance is stable if we use different asset pricing risk factors and alternative business cycle measures. Detailed results of the robustness checks for different countries are shown in

[29]The leading indicators can be retrieved from the OECD database: http://www.oecd.org/std/leading-indicators/

[30]Applying the OECD business cycle measure in our country-specific analysis, we find that in 9 of the 16 countries the BC coefficient shows a significant negative influence. In three countries it has an insignificant impact, and in four countries it has significantly positive impact. The worst performing countries during recession periods are Mexico (-1.24%), Sweden (-1.18%) and UK (-0.98%), whereas the best performing countries are South Korea (0.71%), Spain (0.17%), Canada (0.14%), and the USA (0.01%).

Appendix A.4.

4.3.4 Explanation Approaches

How can one explain the negative performance of funds during recessions? In this section, we provide empirical evidence that is consistent with the notion that mutual fund managers *aim* to generate superior returns during recessions but *fail* to do so. In addition, we exploit country-specific characteristics to explain differences in mutual funds' recession performance across different markets.

Active Fund Management and Recession Underperformance A potential explanation of mutual funds' negative performance during recessions is that fund managers *try* to generate active fund returns but are not successful in achieving them. In times of economic downturns mutual fund managers put additional effort into generating abnormal returns for investors - in doing so, they possibly engage in 'excessive trading' and disproportionately high active fund management. However, due to increased trading and liquidity costs, this active management is likely to worsen performance instead of improving it.

To measure active fund investment, we investigate mutual funds' *tracking errors* over time and analyze the relationship between the tracking error and (recession) performance. We compute the tracking error of mutual fund i as the square root of the second moment of the difference between r_i and the main domestic stock market index return r_m in the respective country[31]:

$$TE_i = \sqrt{E(r_i - r_m)^2}. \tag{4}$$

To be consistent with our explanation approach, we first document that tracking errors of funds generally increase during recessions. Indeed, we empirically find that the

[31]Without the stock holding data of the fund, we use the country's main stock market index as benchmark for the fund. This approach gives an imprecise measure of activism, but we think it fulfills its purpose as all funds invest into domestic equity.

tracking error during recessions is 4.16, whereas it is 3.41 in non-recessions. The difference of 0.74 is statistically significant at the one percent level and also economically significant. In addition, we find that in 15 of the 16 countries, mutual funds show a tracking error that is higher during recessions than it is during non-recessions. The results of this test are presented in Table A.5.

[Insert Table 9 about here]

In order to investigate the relationship between a fund's tracking error and recession performance, we sort funds into quintiles according to their tracking error during recession times. Then, we compute the average returns for these portfolios. In line with the results of Huij and Jeroen (2011), untabulated results show that the relationship between a fund's tracking error and unconditional performance is significantly positive (at the one percent level). Funds in quintiles with a higher tracking error achieve a better unconditional performance. Table 9 below reports the results. As visible in Table 9, mutual funds with a high tracking error perform worse than low tracking error mutual funds. The raw performance is -1.23 percent lower for high tracking error funds than it is for low tracking error funds[32] Only in 2 of the 16 countries (Japan and South Africa), we find a significantly higher (at the one percent level) recession performance for high tracking error funds. For all other countries, the recession performance of funds with a high tracking error is not significantly increased, or even decreased. Hence, empirical evidence suggests that mutual fund managers strive to generate high pay-offs in states in which investors' marginal utility of consumption is large but actually achieve the opposite result.

Country Characteristics We now proceed to examine how the recession performance depends on different country characteristics.[33] The motivation for this analysis is based on the findings of Ferreira et al. (2013). They examine the unconditional fund performance in a large international sample and find that different country characteristics have

[32]This result is qualitatively the same with the Carhart (1997) adjusted conditional performance measure.

[33]All these characteristics are seen as fairly time invariant and allow us to do cross-sectional sorts.

an influence on the unconditional performance of mutual funds. Our international data sample allows us to examine some of the Ferreira et al. (2013) characteristics and determine whether they also have an influence on the conditional fund performance during recessions.[34]

First, we analyze the recession performance depending on the development of the respective country in terms of GDP per capita, internet access, number of listed domestic stocks, stocks traded per GDP, and institutional investment of all financial assets. We construct a capital market development index based on the mean ranks between all countries out of all these characteristics. We then sort the fund observations into high and low developed capital markets, separated by the mean index value. Regressions (1) and (2) of Table 10 show the results.

[Insert Table 10 about here]

The higher the development of the capital market, the less negative the recession performance. Regressions (3) and (4) of Table 10 document the recession performance for a high and low developed mutual fund industry. This sort is based on a mutual fund industry development index. The index is calculated in the same manner as the capital market index only that it is based on mutual fund assets per GDP per capita as well as on the number mutual fund companies in the respective countries. As in the capital market development subsamples, the recession performance is less negative for funds in a highly developed mutual fund industry. The recession performance in subsamples of a high and low security regulation index is shown in regressions (5) and (6) respectively. The security regulation index is based on data on public enforcement, disclosure requirements, and prospectus requirements for the respective countries from La Porta et al. (2006). The values of these variables are added up and a security regulation index is built. Funds in countries with a high security regulation face less negative recession performance than funds in countries with low security regulation. As in the capital market index case,

[34]A short description of the country variables is given in Panel A of Table A.6 in the Appendix. In addition, correlations among those variables are shown in Panel B of the same table.

countries with a more developed capital market in terms of security laws face less severe recession performance.

Overall, we find that countries with less developed capital markets and a less developed mutual fund industry face a more negative recession performance. It could be more costly for investors to inform themselves and participate in these capital markets. Furthermore, Ferreira et al. (2012) show for countries with less developed and regulated financial markets the fund flow-performance relationship is more convex. This effect induces fund managers in these countries to take on more risk, as they have more to gain.

Regressions (7) and (8) of Table 10 show the funds sorted according to their home bias. The home bias variable is taken from the paper by Chan et al. (2005) and based on all mutual fund holdings in a respective country in 1999/2000. It signifies how much the mutual fund holdings of country i in the domestic market deviate from its holdings in the world market portfolio. According to Chan et al. (2005), higher relative domestic holdings stand for a more pronounced home bias. As shown by regression (7), the recession performance for countries with a high home bias is about -0.6% more negative than for a countries with low home bias. This result speaks against the Glode (2011) hypothesis as we would expect that investors with a strong home bias are even more dependent on the national business cycle, as they are underdiversified, and therefore would require the fund manager to generate higher returns in recession periods.

To sum up, we find that certain country characteristics are significantly related to the degree of mutual fund performance during recessions. In particular, a less negative recession performance is correlated with the country's development of its capital markets and mutual fund industry as well as with its security regulation laws. Furthermore, mutual funds in countries with a strong home bias show more negative recession performance

4.4 International Funds: Domicile and Region of Sale

This section provides an additional test of the Glode (2011) hypothesis in which fund managers generate positive returns in recession periods where investors' marginal utility

is high. This time we use an alternative data sample consisting of international funds: in contrast to domestic equity funds, these funds invest in foreign equity. Our sample consists of international equity funds that have their domicile located in a European country (Austria, Denmark, France, Germany, Norway, Sweden, Switzerland, UK) and invest into seven (non-European) different investment areas (Australia, China, Japan, India, South Africa, Taiwan, USA). We now split this sample into two different subsamples. Subsample ($D = RoS$) consists of funds where the fund's domicile is *identical* to the fund's region of sale. In contrast, subsample ($D \neq RoS$) consists of funds where the domicile and region of sale *differ*. Summary statistics of the sample of international funds and the subsamples are shown in Table A.7.

To determine the state of economic condition, we use the ECRI (OECD) recession indicators for the *fund's domicile country*.[35] According to Glode (2011), one would expect that, during recessions, funds in which the domicile country equals the region of sale country outperform funds where this is not the case. This outperformance is due to the additional effort of fund managers put into generating positive recession performance for investors in the fund's region of sale. Empirical results of this recession performance test between the two subsamples are displayed in Table 11 below.

[Insert Table 11 about here]

In contrast to our initial notion, we empirically find the opposite result: During recessions the ($D \neq RoS$)-subsample on average outperforms the ($D = RoS$)-subsample. This result holds for both sets of recession indicators (ECRI/OECD). Hence, funds with identical domicile and region of sale do not deliver better conditional performance if all of their investors face a recession. In summary, we again do not find evidence in support of Glode (2011)'s theoretical model using an additional out-of-sample tests of international mutual funds.

[35]These results also hold if we only analyze the recessions that have a national impact as defined in Section 4.3.3.

4.5 Hedge Fund Performance During Recessions

Besides the mutual fund data sample, we extend our analysis to hedge funds. We obtain hedge fund returns and characteristics from the TASS database in the time period 1994 until 2012. Summary statistics of the sample of hedge funds are shown in Table A.8 in the Appendix.

We perform similar regressions as in Table 3 with hedge funds instead of mutual funds. Panel A of Table 12 presents the results for the pooled sample of hedge funds.[36] To control for specific hedge fund risk factors, we use the seven factor model of Fung and Hsieh (2004). These seven factors comprise a market factor derived from the S&P 500 monthly total return as well as a size factor calculated from the spread between the monthly return of the Russell 2000 and the S&P 500 index. Furthermore, the monthly change in the 10-year treasury yield, and the monthly change in yields between Moody's Baa yield and the 10-year treasury constant maturity yield are contained as factors. In addition, three trend-following factors for foreign-exchange, commodities, and bonds are included.[37]

[Insert Table 12 about here]

In regression (1), we can see the monthly unconditional performance of hedge funds in the USA between 1994 and 2012. In line with previous academic literature, overall adjusted hedge fund performance is significantly positive. If we include the recession measure (BC) in regression (2), the recession indicator has a negative significant impact on hedge fund performance. In regression (3) and non-recession (4) subsamples, we find that the performance is negative in the recession subsample and positive in the non-recession subsample. Regression (5) shows the conditional performance with factor interactions. Here, the influence of the BC variable is negative as well. Up to this

[36] The sample contains a pooled sample of all hedge fund strategies (Convertible Arbitrage, Dedicated Short Bias, Emerging Markets, Equity Market Neutral, Event Driven, Fixed Income Arbitrage, Fund of Funds, Global Macro, Long/Short Equity Hedge, Managed Futures, Multi-Strategy, Options Strategy, Other).

[37] The factors are from David Hsieh's webpage: https://faculty.fuqua.duke.edu/∼dah7/HFRFData.htm

point, the hedge fund analysis produces similar results to the mutual fund analysis. The results of this analysis might change if we differentiate between the hedge fund strategies. Consequently, we analyze different hedge fund investment styles in Panel B of Table 12.

Regressions (1) to (10) show the recession performance for the subsamples of all hedge fund strategies. As in the full sample, almost all business cycle dummies have a negative influence, indicating a recession underperformance. Only the (1) Convertible / Fixed Income Arbitrage, (2) Dedicated Short Bias, and (7) Global Macro strategies show no significantly different under- or outperformance and seem not to be exposed to business cycle risk.

Overall, one can say that hedge funds show a similar recession underperformance to that of mutual funds. Hedge funds show a recession performance that is not significantly negative only in strategies in which hedge fund managers invest according to global macroeconomic conditions or in which the performance is not related to the business cycle.

5 Conclusion

Glode (2011)'s theoretical model predicts that mutual funds outperform during times of economic downturns and that funds with strong performance during recessions charge high fees to investors. Our paper is the first to test these hypotheses empirically applying a worldwide sample of domestic equity mutual funds.

Using mutual fund data from 16 different countries in the sample period from 1980 to 2010 and applying recession indicators from the NBER, ECRI and OECD as measures of economic downturns as well as factor data from six different factor data sets, our analysis reveals the following results. First, we are not able to find evidence that mutual funds outperform during recessions; in contrast, our results indicate that mutual funds underperform by statistically significant -0.4% in months of economic downturns worldwide. Furthermore, various tests show that the results of the Glode (2011) study do not hold

in an extended data sample. Second, we do not detect a positive relationship between mutual fund performance in recessions and a fund's fee structure. Based on results from the pooled worldwide sample, we document that funds with a high recession performance charge lower fees than funds with low recession performance. Third, the recession performance is negative for all different mutual fund styles and particularly bad in times of global recessions. In addition, controlling for unconditional performance, funds with good recession performance do not receive high future inflows from investors. Fourth, applying a subsample of international funds, we find that the recession performance of funds seems to stand in no relation to the proximity of the investor clientele. Finally, our empirical results also indicate recession underperformance for most hedge funds styles.

Our study raises doubt on the validity of Glode (2011)'s theoretical model and looks for alternative explanations. An explanation approach that would be consistent with our empirical findings is the idea that mutual fund managers engage in excessive active trading in recessions to generate superior returns. However, due to increased trading and liquidity costs, these trades actually worsen recession performance.

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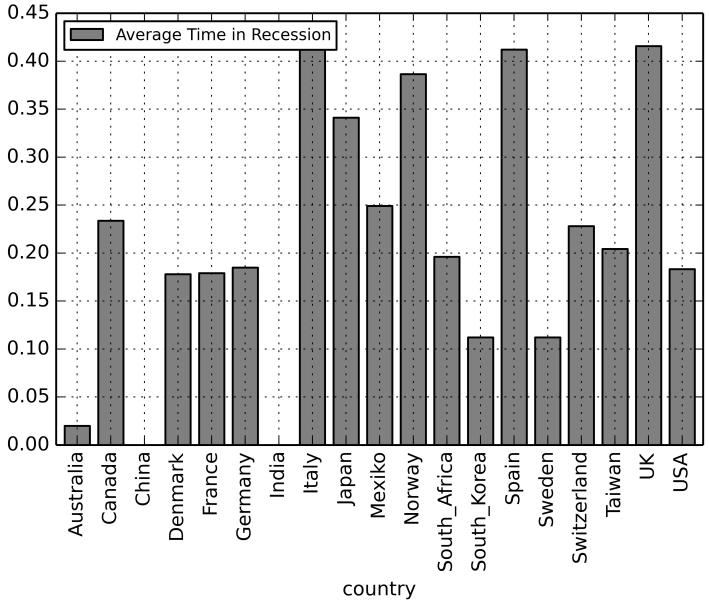
Figures and Tables

Figure 1: ***Mutual Funds in Recessions (per Country)***

Panel A: Times in Recessions The figure displays the percentage of months a country spent in a recession during the sample period.



Panel B: Time Series of Recession Clustering The figure displays the clustering of recessions in the sample period. The panel 'All Countries' shows the percentage of all sample countries that are in a recession. The panels 'North America', 'Europe', 'Asia', and 'Rest of the World' display the value of one if at least one country was in a recession in a certain month. North America includes: USA, Canada, Mexico; Europe includes: Denmark, France, Germany, Italy, Norway, Spain, Sweden, Switzerland, UK; Asia includes: Japan, South Korea; Rest of the World includes: South Africa, Australia.

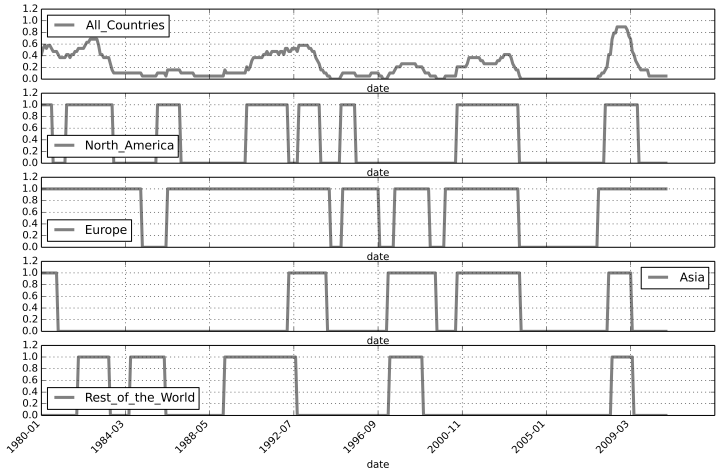


Figure 2: ***Average Returns of Funds per Country***
The figure displays the average monthly returns (in %) of funds in the observed time period per country.

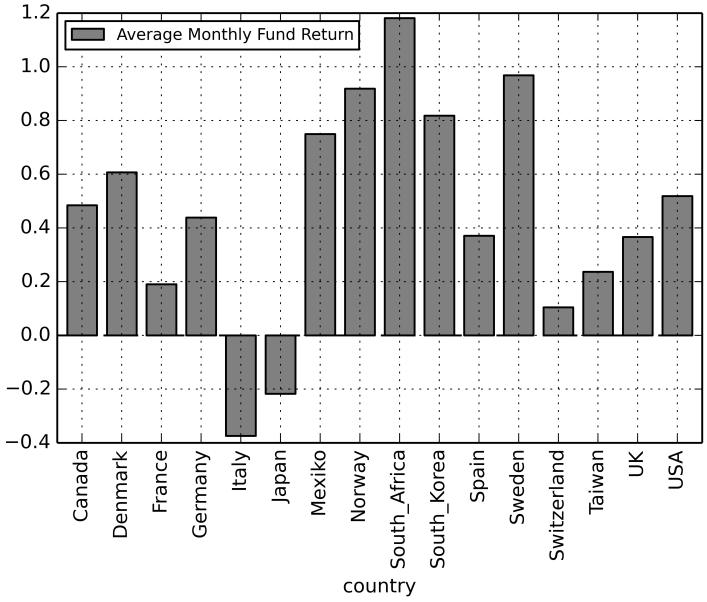


Figure 3: ***Total Expenses***
The figure displays the total expenses (in %) in the observed time period per country. It is calculated as in Sirri and Tufano (1998) as "the expense ratio plus the up-frond load amortized over a seven-year holding period".

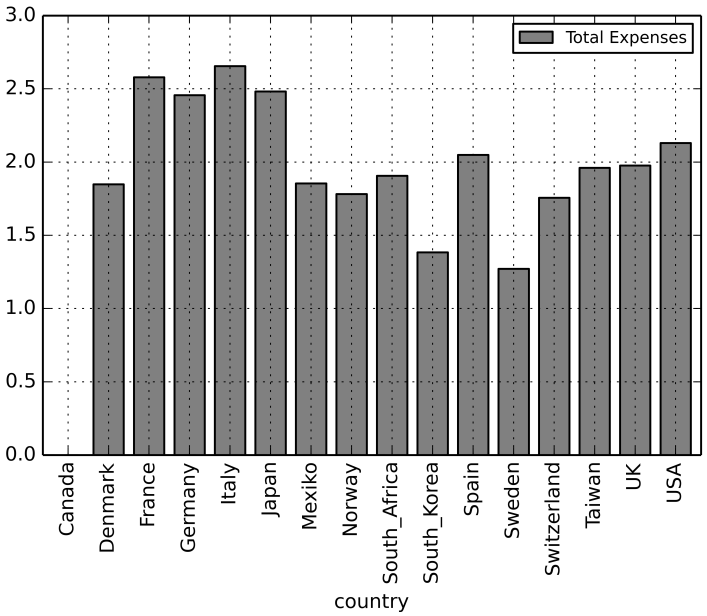


Table 1: ***Data Availability***

This table provides summary statistics and reports the time horizon over which the mutual fund data and factor data is available. The number of funds gives the number of mutual funds (per fund id) per country (after filtering, see Section 3). Australia, Austria, China and India drop out of the sample because the number of funds in the respective country or because the number of recession observations is not sufficient. The mean fund TNA displays the average total net assets per fund. Fund Data (Start / End) shows the start / end time points of the mutual fund return data. The columns Individual, Regional, Frazzini, Marmi and Lai factors report the starting point of the factor data sets for the respective countries. All factor sets end in December 2010.

Country	Number of Funds (ID)	Number of Observations	Mean Fund TNA (in local currency)	Fund Data (Start)	Fund Data (End)	Individual Factors (Start)	Regional Fama-French Factors (Start)	Frazini Factors (Start)	Marmi Factors (Start)	Lai Factors (Start)
Australia	-	-	-	1980-01	2010-12	2001-01	1990-11	1990-07	1988-07	1981-07
Austria	-	-	-	1986-07	2010-12	2001-02	1991-07	1991-07	-	1991-07
Canada	432	54,185	264m	1980-01	2010-12	2001-02	1990-11	1990-07	1990-07	1981-07
China	-	-	-	2002-07	2010-12	2001-01	1993-01	-	1998-07	1996-07
Denmark	39	5,765	566m	1980-01	2010-12	2001-02	1990-11	1990-07	-	1989-07
France	299	34,906	159m	1980-04	2010-12	2001-02	1990-11	1990-07	1988-07	1981-07
Germany	113	9,131	311m	1990-11	2010-12	2001-02	1990-11	1990-07	1988-07	1981-07
India	-	-	-	1986-10	2010-12	1997-01	1993-01	-	1993-07	1993-07
Italy	75	5,566	145m	1984-11	2010-12	2001-02	1990-11	1990-07	1988-07	1988-07
Japan	811	104,495	14.9bn	1980-01	2010-12	2001-02	1994-11	1990-07	1988-07	1981-07
Mexico	49	3,262	314m	1980-01	2010-12	1996-06	1993-02	-	-	1993-07
Norway	61	7,049	774m	1981-03	2010-12	2001-02	1993-01	1990-07	-	1990-07
South Africa	173	13,826	408m	1980-01	2010-12	1994-06	1993-01	-	-	1993-01
South Korea	524	42,600	69.4bn	1996-02	2010-12	1997-01	1992-02	-	1992-07	1989-07
Spain	139	11,463	53m	1990-10	2010-12	2001-02	1990-11	1990-07	-	1989-07
Sweden	108	4,655	2.1bn	1985-01	2010-12	2001-02	1990-11	1990-07	1988-07	1988-07
Switzerland	169	13,675	267m	1980-01	2010-12	2001-02	1990-11	1990-07	1988-07	1988-07
Taiwan	182	20,553	1.7bn	1986-02	2010-12	1997-01	1990-11	-	-	1994-07
UK	458	23,417	117m	1980-01	2010-12	2001-02	1990-11	1990-07	1988-07	1981-07
USA	3,692	469,523	553m	1980-01	2010-12	1980-01	1980-01	1990-07	1988-07	1981-07

Table 2: ***International Excess Returns - Pooled Results***
This table shows the results of panel fixed effect regressions (on the fund id level) of unconditional and conditional mutual fund performance for our pooled sample of 16 countries. The dependent variable is the TNA-weighed monthly fund return (excess over risk-free rate) as calculated in Section 3. The independent variables are the Carhart (1997) factors per country from the Lai factor dataset as described in Section 3, and a business cycle variable (BC) based on the countries respective business cycle measure (NBER, ECRI). Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

	(1) Unconditional Performance	(2) Performance and BC	(3) Recessions Subsample	(4) No Recessions Subsample	(5) Conditional Performance and Interactions
BC		-0.402***			-0.480***
		(0.00996)			(0.0106)
Market	0.789***	0.783***	0.686***	0.798***	0.797***
	(0.00307)	(0.00312)	(0.00414)	(0.00316)	(0.00314)
Market*BC					-0.110***
					(0.00300)
SMB	0.180***	0.181***	0.0686***	0.186***	0.187***
	(0.00484)	(0.00485)	(0.00693)	(0.00497)	(0.00497)
SMB*BC					-0.127***
					(0.00646)
HML	0.00918**	0.00721	-0.0177***	0.0138***	0.0137***
	(0.00443)	(0.00442)	(0.00549)	(0.00469)	(0.00468)
HML*BC					-0.0242***
					(0.00465)
MOM	-0.0218***	-0.0247***	-0.156***	0.0213***	0.0208***
	(0.00195)	(0.00197)	(0.00291)	(0.00261)	(0.00260)
MOM*BC					-0.172***
					(0.00379)
Constant	-0.0229***	0.0647***	-0.466***	0.0220***	0.0211***
	(0.00239)	(0.00367)	(0.00725)	(0.00383)	(0.00371)
Observations	757,859	757,859	156,112	601,747	757,859
R-squared	0.668	0.669	0.725	0.629	0.673
Number of funds	7,321	7,321	7,287	7,298	7,321

Table 3: ***Conditional Fund Performance***

This table summarizes results from various panel fixed effect regressions (on the fund id level). The dependent variable is the TNA-weighed monthly fund return (excess over risk-free rate) as calculated in Section 3 for 16 countries. The independent variables are the Carhart (1997) factors per country, from the Lai factor dataset as described in Section 3, and a business cycle variable (BC) based on the countries respective business cycle measure (NBER, ECRI). Fund performance is regressed on the Carhart Factors and the business cycle variable as as well as their interactions. In Panel A, fund performance is regressed on the Carhart factors and a business cycle variable. In Panel B, fund performance is regressed on Carhart factors and the business cycle variable as well as their interactions. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

Panel A: Mutual Fund Performance and the Business Cycle

	(1) Canada	(2) Denmark	(3) France	(4) Germany	(5) Italy	(6) Japan	(7) Mexiko	(8) Norway	(9) South_Africa	(10) South_Korea	(11) Spain	(12) Sweden	(13) Switzerland	(14) Taiwan	(15) UK	(16) USA
Market	0.532***	0.608***	0.573***	0.610***	0.578***	0.796***	0.592***	0.635***	0.231***	0.633***	0.588***	0.592***	0.500***	0.888***	0.509***	0.993***
	(0.00714)	(0.00764)	(0.00862)	(0.0125)	(0.0187)	(0.00695)	(0.0209)	(0.0120)	(0.00857)	(0.00446)	(0.00846)	(0.00850)	(0.0103)	(0.00566)	(0.00882)	(0.00292)
SMB	0.101***	-0.301***	-0.0339	-0.0230	-0.244***	0.0576***	-0.111***	-0.147***	-0.480***	0.0962***	-0.0608***	-0.0808*	-0.397***	0.505***	-0.372***	0.176***
	(0.0124)	(0.0361)	(0.0300)	(0.0490)	(0.0413)	(0.0116)	(0.0304)	(0.0389)	(0.0277)	(0.00789)	(0.0180)	(0.0418)	(0.0299)	(0.0128)	(0.0220)	(0.00674)
HML	0.0624***	-0.104***	-0.114***	0.159***	-0.0207	-0.0268*	0.157***	0.0755***	-0.338***	-0.0868***	-0.183***	0.0307	0.00863	-0.243***	-0.104***	0.0673***
	(0.00961)	(0.0155)	(0.0161)	(0.0184)	(0.0202)	(0.0143)	(0.0167)	(0.0150)	(0.0215)	(0.00732)	(0.00735)	(0.0516)	(0.0207)	(0.00765)	(0.0136)	(0.00639)
MOM	-0.0191***	-0.153***	-0.223***	-0.139***	-0.103***	-0.0430***	-0.203***	-0.0756***	0.0334***	0.158***	-0.0509***	-0.0523***	-0.0772***	0.154***	-0.300***	0.00357*
	(0.00452)	(0.0113)	(0.00970)	(0.0105)	(0.0260)	(0.00730)	(0.0395)	(0.00868)	(0.0103)	(0.00462)	(0.00829)	(0.00956)	(0.00869)	(0.00623)	(0.00925)	(0.00209)
BC	-0.638***	-0.880***	-0.655***	0.0352	-1.154***	-0.247***	-0.607***	-1.266***	-2.181***	-0.603***	-0.325***	-1.209***	-1.391***	-0.141**	-0.130***	-0.0849***
	(0.0413)	(0.0998)	(0.0465)	(0.0863)	(0.0732)	(0.0243)	(0.165)	(0.0817)	(0.104)	(0.0373)	(0.0351)	(0.188)	(0.0736)	(0.0584)	(0.0366)	(0.00944)
Constant	0.0205	0.332***	0.308***	0.00669	0.323***	-0.193***	0.482***	0.707***	1.108***	0.243***	-0.000707	0.323***	0.351***	0.154***	0.470***	-0.0278***
	(0.0127)	(0.0402)	(0.0153)	(0.0334)	(0.0451)	(0.00896)	(0.0580)	(0.0417)	(0.0210)	(0.0109)	(0.0218)	(0.0422)	(0.0274)	(0.0132)	(0.0166)	(0.00325)
Observations	49,799	4,971	31,756	8,095	4,920	96,332	2,727	6,046	11,866	36,550	10,222	3,743	11,809	18,554	19,286	441,210
R-squared	0.627	0.702	0.571	0.713	0.755	0.569	0.700	0.769	0.553	0.767	0.772	0.776	0.555	0.784	0.712	0.756
Number of funds	432	39	299	113	75	811	49	61	173	524	139	108	169	182	458	3,692

Panel B: Mutual Fund Performance and the Business Cycle with Interactions

	(1) Canada	(2) Denmark	(3) France	(4) Germany	(5) Italy	(6) Japan	(7) Mexiko	(8) Norway	(9) South_Africa	(10) South_Korea	(11) Spain	(12) Sweden	(13) Switzerland	(14) Taiwan	(15) UK	(16) USA
BC	-0.635***	-0.174	-0.123**	0.189**	-0.927***	-0.217***	-0.979***	-0.988***	-2.274***	-2.947***	0.344***	-1.319***	-0.442***	-0.269***	0.0585	0.00451
	(0.0462)	(0.117)	(0.0494)	(0.0909)	(0.0560)	(0.0264)	(0.158)	(0.0736)	(0.0891)	(0.126)	(0.0581)	(0.147)	(0.0654)	(0.0651)	(0.0409)	(0.00905)
Market	0.531***	0.644***	0.650***	0.655***	0.602***	0.803***	0.575***	0.502***	0.224***	0.658***	0.551***	0.605***	0.401***	0.894***	0.688***	0.986***
	(0.00823)	(0.00892)	(0.0109)	(0.0150)	(0.0184)	(0.00713)	(0.0212)	(0.0132)	(0.00834)	(0.00424)	(0.0314)	(0.00932)	(0.00728)	(0.00570)	(0.00826)	(0.00280)
Market*BC	0.00542	-0.103***	-0.404***	-0.282***	-0.251***	-0.177***	-0.127***	0.0263*	-0.0935***	-0.677***	-0.112***	-0.158***	-0.128***	-0.0662***	-0.383***	0.0527***
	(0.00712)	(0.0161)	(0.0145)	(0.0239)	(0.0201)	(0.00922)	(0.0183)	(0.0138)	(0.0110)	(0.0251)	(0.0284)	(0.0317)	(0.0204)	(0.00884)	(0.00996)	(0.00273)
SMB	0.140***	-0.350***	0.0452	0.00949	-0.210***	0.211***	-0.0446	-0.128***	-0.448***	0.0990***	-0.178***	-0.0221	-0.492***	0.505***	-0.101***	0.180***
	(0.0129)	(0.0322)	(0.0323)	(0.0413)	(0.0442)	(0.0112)	(0.0318)	(0.0240)	(0.0250)	(0.00764)	(0.0270)	(0.0459)	(0.0362)	(0.0137)	(0.0260)	(0.00685)
SMB*BC	-0.246***	0.282***	-0.274***	-0.0494	-0.173***	-0.471***	-0.487***	-0.158***	-0.410***	-0.877***	-0.0331	-0.354***	0.306***	-0.0456**	-0.519***	-0.0235***
	(0.0211)	(0.0454)	(0.0277)	(0.0577)	(0.0473)	(0.0108)	(0.0571)	(0.0334)	(0.0321)	(0.0290)	(0.0244)	(0.0503)	(0.0551)	(0.0176)	(0.0257)	(0.00482)
HML	0.0993***	-0.0731***	-0.133***	0.142***	-0.0942***	0.0443***	0.198***	0.199***	-0.336***	-0.0733***	-0.188***	0.187***	0.133***	-0.233***	-0.137***	0.0945***
	(0.0102)	(0.0149)	(0.0162)	(0.0192)	(0.0257)	(0.0145)	(0.0250)	(0.0118)	(0.0162)	(0.00763)	(0.0113)	(0.0325)	(0.0257)	(0.00771)	(0.0233)	(0.00682)
HML*BC	-0.251***	-0.202***	0.0303	0.0986***	0.0884***	-0.105***	0.200***	-0.438***	-0.0507	-0.164***	0.134***	-1.112***	-0.288***	-0.0683***	-0.0533**	-0.143***
	(0.0147)	(0.0288)	(0.0247)	(0.0299)	(0.0298)	(0.0155)	(0.0453)	(0.0266)	(0.0400)	(0.0297)	(0.0136)	(0.0716)	(0.0271)	(0.00974)	(0.0232)	(0.00446)
MOM	-0.0277***	-0.112***	-0.132***	-0.0333***	0.170***	0.0821***	0.0647*	0.225***	0.118***	0.190***	0.465***	-0.0508***	0.268***	0.168***	0.0961***	0.0162***
	(0.00540)	(0.0105)	(0.00950)	(0.0114)	(0.0338)	(0.00872)	(0.0337)	(0.0159)	(0.0185)	(0.00499)	(0.0692)	(0.0118)	(0.0123)	(0.00651)	(0.0297)	(0.00287)
MOM*BC	-0.00484	-0.174***	-0.582***	-0.383***	-0.573***	-0.407***	-0.757***	-0.505***	-0.239***	-1.041***	-0.709***	-0.219***	-0.910***	-0.105***	-0.597***	-0.0162***
	(0.00800)	(0.0275)	(0.0218)	(0.0312)	(0.0393)	(0.0105)	(0.0517)	(0.0203)	(0.0423)	(0.0457)	(0.0715)	(0.0394)	(0.0389)	(0.0129)	(0.0318)	(0.00308)
Constant	-0.0149	0.209***	0.197***	-0.0722**	0.0441	-0.247***	0.258***	0.699***	0.993***	0.145***	-0.724***	0.290***	0.148***	0.138***	0.0850***	-0.0424***
	(0.0135)	(0.0384)	(0.0132)	(0.0323)	(0.0365)	(0.00973)	(0.0535)	(0.0365)	(0.0364)	(0.0108)	(0.0532)	(0.0408)	(0.0276)	(0.0129)	(0.0294)	(0.00347)
Observations	49,799	4,971	31,756	8,095	4,920	96,332	2,727	6,046	11,866	36,550	10,222	3,743	11,809	18,554	19,286	441,210
R-squared	0.632	0.713	0.601	0.726	0.785	0.597	0.723	0.803	0.561	0.803	0.823	0.798	0.650	0.785	0.737	0.757
Number of funds	432	39	299	113	75	811	49	61	173	524	139	108	169	182	458	3,692

Table 4: *USA - Glode Comparison*
This table summarizes results from various regressions. In all regressions the excess fund return is regressed on the four U.S. Carhart factors from Kenneth Frenchs website and a business cycle variable (BC) based on the NBER business cycle measure as well as their interactions. All regressions are panel fixed effects regressions (on the fund id level) with a specification as in Formula (2). Regression (1) is directly taken from the results of Glode (2008). Regressions (2) and (4) are a replication of the Glode (2008) results with data from the CRSP database in the time period from 1980 - 2005 and from 1980 - 2010, respectively. Regressions (3) and (5) repeat the same regressions with Morningstar mutual fund data. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

	(1) Glode (2008) 1980-2005	(2) CRSP 1980-2005	(3) Morningstar 1980-2005	(4) CRSP 1980-2010	(5) Morningstar 1980-2010
BC	0.414***	0.000973***	0.0704***	-9.12e-05	0.00451
	(0.078)	(0.000198)	(0.0159)	(0.000113)	(0.00905)
Market	0.994***	0.985***	1.000***	0.974***	0.986***
	(0.004)	(0.00436)	(0.00310)	(0.00390)	(0.00280)
Market*BC	0.028	-0.0340***	-0.0621***	0.0470***	0.0527***
	(0.020)	(0.00851)	(0.00872)	(0.00321)	(0.00273)
SMB	0.207***	0.187***	0.187***	0.181***	0.180***
	(0.009)	(0.00767)	(0.00724)	(0.00734)	(0.00685)
SMB*BC	-0.114***	-0.0318***	-0.0366***	-0.0381***	-0.0235***
	(0.017)	(0.00744)	(0.00647)	(0.00570)	(0.00482)
HML	0.050***	0.0867***	0.126***	0.0623***	0.0945***
	(0.009)	(0.00953)	(0.00802)	(0.00836)	(0.00682)
HML*BC	-0.034	-0.0950***	-0.0745***	-0.147***	-0.143***
	(0.032)	(0.00853)	(0.00664)	(0.00587)	(0.00446)
MOM	0.037***	0.0106***	0.0112***	0.0140***	0.0162***
	(0.005)	(0.00350)	(0.00325)	(0.00313)	(0.00287)
MOM*BC	-0.076***	-0.0682***	-0.0944***	-0.0250***	-0.0162***
	(0.016)	(0.0108)	(0.00990)	(0.00335)	(0.00308)
Constant	-0.367***	-0.000672***	-0.0755***	-0.000384***	-0.0424***
	(0.019)	(5.54e-05)	(0.00520)	(3.98e-05)	(0.00347)
Observations	82.081	273.632	285.765	393.124	441,210
R-squared	0.74	0.661	0.680	0.723	0.757
Number of funds	3,260	2.444	3.128	2.678	3,692

Table 5: *Fund Fees*

This table shows the total fund fees (Panel A) and fund expense ratios (Panel B) sorted according to their conditional fund performance in 14 countries and for the pooled sample. The total fund fees are calculated as described in Section 3 and presented in %. Canada and Japan are missing from the list of countries, as there not enough observations of the fund fees. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively.

Panel A: Total Fund Fees sorted on Conditional Performance

	Q1	Q2	Q3	Q4	Q5	Q5-Q1	Q5-Q1 t-value
ALL	2.05	2.06	2.14	2.05	1.97	-0.08	-1.14
Denmark	1.59	1.83	1.72	1.13	1.32	-0.27	-0.78
France	2.62	2.91	2.56	3.37	2.46	-0.15	-0.59
Germany	2.63	2.35	2.24	2.36	2.90	0.27	0.93
Italy	2.56	3.32	2.67	2.81	2.92	0.36	1.07
Mexiko	2.38	2.30	2.07	2.12	2.48	0.09	0.13
Norway	1.58	1.66	1.61	1.47	1.38	-0.21	-0.74
South Africa	1.90	1.84	1.81	2.03	1.92	0.01	0.10
South Korea	1.53	1.26	1.54	1.39	1.34	-0.19*	-1.93
Spain	2.19	2.16	2.12	1.82	1.78	-0.41*	-2.50
Sweden	1.99	0.88	1.02	1.31	1.06	-0.92*	-2.17
Switzerland	1.78	1.94	1.44	1.50	2.04	0.26	1.09
Taiwan	2.03	1.99	1.87	1.95	2.00	-0.03	-0.53
UK	2.08	2.03	1.65	1.77	1.84	-0.24**	-2.20
USA	2.28	2.04	2.09	2.04	2.15	-0.13	-0.88

Panel B: Expense Ratio sorted on Conditional Performance

	Q1	Q2	Q3	Q4	Q5	Q5-Q1	Q5-Q1 t-value
ALL	1.65	1.29	1.32	1.31	1.44	-0.21***	-3.97
Denmark	1.35	1.59	1.47	0.95	1.12	-0.23	-0.67
France	2.16	2.54	2.16	2.98	2.06	-0.10	-0.41
Germany	2.02	1.65	1.57	1.80	2.11	0.09	0.34
Italy	2.21	2.93	2.45	2.50	2.65	0.44	1.50
Mexiko	2.38	2.30	2.07	2.12	2.48	0.09	0.13
Norway	1.36	1.48	1.38	1.33	1.28	-0.08	-0.29
South Africa	1.36	1.44	1.39	1.57	1.50	0.14	1.02
South Korea	1.71	1.50	1.73	2.14	1.61	-0.10	-1.06
Spain	2.18	2.05	2.09	1.78	1.72	-0.46***	-2.71
Sweden	1.79	0.81	0.90	1.04	0.88	-0.92**	-2.17
Switzerland	1.30	1.52	1.01	0.97	1.57	0.27	1.28
Taiwan	1.78	1.76	1.65	1.73	1.76	-0.02	-0.54
UK	1.57	1.50	1.24	1.32	1.34	-0.23***	-2.65
USA	1.33	1.12	1.23	1.20	1.36	0.03	0.46

Table 6: *Fund Flows*
This table shows dependent portfolio double sorts based on unconditional and conditional fund performance in month t of the pooled sample. Fund flows in month $t+1$ for the 25 portfolios are calculated as described in Section 3. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively.

	Quintile (conditional)						
	Q1	**Q2**	**Q3**	**Q4**	**Q5**	**Q5-Q1** [T-value]	**Conditional Quintile Average**
Quintile (unconditional)							
Q1	0.0174	0.0202	0.0211	0.0103	0.0049	-0.0126*** [-2.58]	0.0148
Q2	0.0182	0.0266	0.0237	0.0183	0.0120	-0.0062* [-1.87]	0.0198
Q3	0.0195	0.0240	0.0192	0.0184	0.0118	-0.0078** [-1.97]	0.0186
Q4	0.0181	0.0260	0.0284	0.0195	0.0137	-0.0044 [-0.98]	0.0211
Q5	0.0298	0.0092	0.0257	0.0227	0.0419	0.0122*** [3.07]	0.0259
Q5-Q1	0.0123***	-0.0111***	0.0046	0.0125**	0.037***		
[T-value]	[4.34]	[-3.36]	[1.16]	[2.32]	[6.61]		
Unconditional Quintile Average	0.0206	0.0212	0.0236	0.0178	0.0169		

Table 7: *Fund Style*
This table shows the conditional mutual fund performance for different fund styles (small/large/mid/value/growth/income/other). All regressions are panel fixed effects regressions (on the fund id level) with a specification as outline in formula (2). The dependent variable is the TNA-weighed monthly fund return (excess over risk-free rate) as calculated in Section 3, pooled over 16 countries. The independent variables are the Carhart (1997) factors per country, calculated as described in Section 3, and a business cycle variable (BC) based on the countries respective business cycle measures (NBER, ECRI). Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

	(1) small	(2) large	(3) mid	(4) value	(5) growth	(7) income	(8) other
BC	-0.221***	-0.513***	-0.398***	-0.204***	-0.141***	-0.524***	-0.461***
	(0.0330)	(0.0125)	(0.0317)	(0.0284)	(0.0187)	(0.0453)	(0.0265)
Market	0.876***	0.773***	0.866***	0.860***	0.947***	0.664***	0.624***
	(0.00793)	(0.00395)	(0.00876)	(0.00840)	(0.00595)	(0.0194)	(0.00642)
Market*BC	-0.0272***	-0.113***	-0.0316***	-0.0288***	-0.0267***	-0.135***	-0.229***
	(0.00780)	(0.00387)	(0.00828)	(0.00760)	(0.00541)	(0.0144)	(0.00773)
SMB	0.594***	0.0117***	0.377***	0.154***	0.261***	-0.0355***	-0.191***
	(0.00903)	(0.00374)	(0.00912)	(0.0112)	(0.00919)	(0.00823)	(0.0154)
SMB*BC	-0.100***	-0.146***	-0.138***	-0.00325	-0.153***	-0.0687***	-0.196***
	(0.0145)	(0.00724)	(0.0149)	(0.0135)	(0.0113)	(0.0231)	(0.0167)
HML	0.0315**	-0.0136**	-0.0440***	0.369***	-0.128***	0.162***	-0.0479***
	(0.0144)	(0.00535)	(0.0126)	(0.00887)	(0.00779)	(0.0140)	(0.00884)
HML*BC	-0.0187*	-0.0107**	-0.0899***	-0.117***	-0.104***	0.00406	-0.107***
	(0.0104)	(0.00546)	(0.0104)	(0.0108)	(0.00682)	(0.0162)	(0.0162)
MOM	0.0581***	0.0158***	0.0623***	-0.0782***	0.0830***	-0.0643***	0.0130
	(0.00617)	(0.00310)	(0.00711)	(0.00407)	(0.00417)	(0.00750)	(0.00791)
MOM*BC	-0.143***	-0.167***	-0.167***	-0.000467	-0.145***	-0.0600***	-0.375***
	(0.00824)	(0.00513)	(0.00951)	(0.00632)	(0.00562)	(0.0116)	(0.00920)
Constant	0.0176*	0.00290	0.106***	-0.0137	-0.0423***	0.0611***	0.0475***
	(0.00970)	(0.00363)	(0.00838)	(0.00985)	(0.00574)	(0.0176)	(0.0113)
Observations	137,458	396,677	120,102	118,480	261,320	31,220	65,642
R-squared	0.700	0.725	0.699	0.762	0.718	0.683	0.729
Number of fund_id	1,325	3,773	1,182	1,085	2,174	325	796

Table 8: ***Risk Factors and Business Cycles***
This table summarizes results from various panel fixed effects regressions (on the fund id level). In all regressions the excess fund return is regressed on the Carhart (1997) factors and a business cycle variable (BC) based on the countries respective business cycle measure (NBER, ECRI,OECD) as well as their interactions. Regressions (1), (6), (7) and (8) are all based on the Carhart (1997) factors of the Lai factor dataset, whereas regressions (2), (3), (4) and (5) are based on the Frazzini, Marmi, Individual and Regional factor datasets as described in Section 3. Regressions (1)-(5) use the NBER and ECRI business cycle measure, whereas regression (6) uses the OECD business cycle measure. Regressions (7) and (8) use the NBER and ECRI business cycle measure but characterize the recession as global / national recession. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

	(1) Lai Factor-Set	(2) Frazzini Factor-Set	(3) Marmi Factor-Set	(4) Individual Factor-Set	(5) Regional Factor-Set	(6) OECD Recession	(7) Global Recession	(8) National
BC	-0.480***	-0.340***	-0.113***	-0.109***	-0.333***	-0.283***	-0.622***	0.0182
	(0.0106)	(0.0102)	(0.00944)	(0.00864)	(0.00969)	(0.00923)	(0.0116)	(0.0283)
Market	0.797***	0.854***	0.972***	0.945***	0.851***	0.787***	0.784***	0.790***
	(0.00314)	(0.00336)	(0.00247)	(0.00216)	(0.00280)	(0.00319)	(0.00317)	(0.00691)
Market*BC	-0.110***	-0.0921***	-0.00490*	0.0263***	-0.0862***	-0.0359***	-0.107***	-0.0567***
	(0.00299)	(0.00295)	(0.00281)	(0.00213)	(0.00259)	(0.00192)	(0.00345)	(0.00704)
SMB	0.187***	0.189***	0.151***	0.199***	0.198***	0.185***	0.187***	0.197***
	(0.00497)	(0.00583)	(0.00474)	(0.00499)	(0.00574)	(0.00517)	(0.00517)	(0.0123)
SMB*BC	-0.127***	-0.168***	-0.0438***	-0.0209***	-0.119***	-0.0413***	-0.105***	-0.274***
	(0.00646)	(0.00644)	(0.00518)	(0.00472)	(0.00700)	(0.00337)	(0.00612)	(0.0111)
HML	0.0137***	0.0417***	0.0792***	0.0507***	0.0470***	0.0426***	0.00325	-0.111***
	(0.00468)	(0.00488)	(0.00474)	(0.00508)	(0.00528)	(0.00419)	(0.00502)	(0.00940)
HML*BC	-0.0242***	-0.100***	-0.0475***	-0.0715***	-0.182***	-0.00907**	0.0340***	-0.136***
	(0.00465)	(0.00378)	(0.00445)	(0.00435)	(0.00487)	(0.00425)	(0.00510)	(0.00979)
MOM	0.0208***	0.00658***	0.0467***		0.0318***	0.0467***	0.0230***	0.00220
	(0.00260)	(0.00212)	(0.00232)		(0.00259)	(0.00309)	(0.00276)	(0.00715)
MOM*BC	-0.172***	-0.139***	-0.0240***		-0.152***	-0.124***	-0.177***	-0.0544***
	(0.00379)	(0.00305)	(0.00289)		(0.00375)	(0.00334)	(0.00413)	(0.0106)
Constant	0.0211***	-0.0299***	-0.0835***	-0.00544**	-0.0238***	0.0373***	0.0440***	-0.122***
	(0.00371)	(0.00352)	(0.00310)	(0.00260)	(0.00330)	(0.00467)	(0.00358)	(0.00633)
Observations	757,859	686,410	691,281	705,744	738,459	754,803	708,507	104,478
R-squared	0.673	0.685	0.760	0.782	0.639	0.668	0.674	0.617
Number of fund_id	7,321	6,393	6,678	7,321	7,321	7,524	6,621	654

Table 9: *Tracking Error*
This table shows the conditional fund performance for funds that are sorted according to their monthly tracking-error (TE). (Q1) is the quintile of funds with the lowest TE and (Q5) is the quintile of funds with the highest TE loading. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively.

	Q1	Q2	Q3	Q4	Q5	Q5-Q1	Q5-Q1 t-value
ALL	-1.31	-1.38	-1.70	-1.63	-2.54	-1.23***	-17.40
Canada	-0.86	-0.88	-1.33	-0.76	-0.44	0.42	1.56
Denmark	-0.56	-0.07	-1.18	-4.12	-5.40	-4.84***	-7.76
France	-2.12	-2.77	-3.03	-3.11	-2.87	-0.75*	-1.76
Germany	-2.94	-2.44	-4.07	-3.61	-3.76	-0.83	-1.21
Italy	-1.66	-1.50	-1.74	-1.34	-1.23	0.43	0.96
Japan	-2.51	-2.74	-2.35	-2.05	-1.70	0.82***	3.59
Mexiko	-1.30	-1.02	-1.35	-0.84	-0.06	1.24	1.45
Norway	-1.81	-1.31	-1.01	-1.41	-1.47	0.34	0.57
South Africa	-1.69	-2.14	-1.76	-1.86	-0.03	1.66***	4.28
South Korea	-1.88	-2.10	-5.24	-5.55	-4.25	-2.38***	-10.94
Spain	-0.80	-0.30	-0.40	-0.71	-0.64	0.16	0.58
Sweden	-4.47	-3.80	-4.49	-5.54	-4.26	0.21	0.23
Switzerland	-1.07	-1.67	-2.17	-2.47	-1.62	-0.55	-0.55
Taiwan	-4.30	-4.11	-4.07	-4.11	-3.88	0.41*	1.65
UK	0.08	-0.15	-0.30	-0.08	-0.22	-0.30	-1.43
USA	-1.37	-1.31	-1.36	-1.29	-1.40	-0.03	-0.32

Table 10: ***Country Characteristics***
This table shows the results of fixed-effect regressions of fund performance (TNA-weighed monthly fund return (excess over risk-free rate)) on the Carhart (1997) factors per country, a business cycle variable (BC) and their interactions for the pooled sample. The countries are sorted each into two portfolios based on the median of a capital market development index (regressions 1 and 2), mutual fund development index (regressions 3 and 4), security regulation index (regressions 5 and 6), and home bias index (regressions 7 and 8). The detailed sorting criteria are explained in Section 4. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Capital Market Index		Mutual Fund Industry Index		Security Regulation Index		Domestic Bias	
	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW
BC	-0.155***	-0.722***	-0.370***	-0.525***	-0.281***	-0.529***	-0.657***	-0.0498***
	(0.0105)	(0.0200)	(0.0132)	(0.0194)	(0.0131)	(0.0184)	(0.0188)	(0.00947)
Market	0.935***	0.656***	0.859***	0.691***	0.900***	0.703***	0.676***	0.973***
	(0.00320)	(0.00351)	(0.00394)	(0.00485)	(0.00472)	(0.00365)	(0.00359)	(0.00282)
Market*BC	-0.00865**	-0.201***	-0.0404***	-0.167***	-0.0407***	-0.236***	-0.197***	0.00500
	(0.00340)	(0.00517)	(0.00384)	(0.00501)	(0.00398)	(0.00516)	(0.00469)	(0.00337)
SMB	0.188***	0.106***	0.188***	0.154***	0.188***	0.147***	0.129***	0.185***
	(0.00635)	(0.00631)	(0.00593)	(0.00760)	(0.00624)	(0.00706)	(0.00630)	(0.00669)
SMB*BC	-0.00898	-0.374***	0.00711	-0.360***	-0.0207***	-0.360***	-0.342***	-0.0283***
	(0.00550)	(0.00941)	(0.00482)	(0.00884)	(0.00527)	(0.00867)	(0.00844)	(0.00515)
HML	0.0393***	0.0148**	0.0272***	0.0216***	0.0733***	-0.0356***	-0.00871	0.0889***
	(0.00657)	(0.00607)	(0.00604)	(0.00657)	(0.00614)	(0.00564)	(0.00533)	(0.00671)
HML*BC	-0.0936***	-0.0973***	0.0329***	-0.182***	-0.0706***	-0.131***	-0.159***	-0.112***
	(0.00435)	(0.00984)	(0.00596)	(0.00767)	(0.00465)	(0.00882)	(0.00837)	(0.00459)
MOM	0.0119***	0.0677***	0.0189***	0.0486***	0.00618**	0.0872***	0.0715***	0.0136***
	(0.00281)	(0.00429)	(0.00290)	(0.00456)	(0.00286)	(0.00422)	(0.00381)	(0.00290)
MOM*BC	-0.0545***	-0.371***	-0.0826***	-0.322***	-0.0614***	-0.418***	-0.353***	-0.0369***
	(0.00357)	(0.00700)	(0.00404)	(0.00669)	(0.00342)	(0.00745)	(0.00656)	(0.00330)
Constant	0.00403	-0.00470	0.0384***	-0.0209***	-0.0103**	0.00866	0.00347	-0.0232***
	(0.00383)	(0.00670)	(0.00428)	(0.00736)	(0.00470)	(0.00612)	(0.00604)	(0.00342)
Observations	494,575	263,284	509,516	248,343	510,295	247,564	297,363	460,496
R-squared	0.737	0.631	0.716	0.623	0.719	0.643	0.636	0.749
Number of funds	4,606	2,715	4,515	2,806	4,582	2,739	3,171	4,150

Table 11: ***Domicile and Region of Sale of International Funds: Cross-Country Study***
This table shows the recession performance of a sample of international funds. All funds in this analysis have their domicile (D) located in an European country (Austria, Denmark, France, Germany, Norway, Sweden, Switzerland, UK) and invest into seven different investment areas (Australia, China, Japan, India, South Africa, Taiwan, USA). All regressions are panel fixed effects regressions (on the fund id level) with a specification as outline in formula (2). The dependent variable is the TNA-weighed monthly fund return (excess over risk-free rate) as calculated in Section 3. The independent variables are the Carhart (1997) factors per country, calculated as described in Section 3, and a business cycle variable (BC) based on the countries respective business cycle measure (NBER, ECRI or OECD). Regressions (1) and (3) show the recession performance in the subsample of funds where the domicile equals the region of sale ($D = RoS$), whereas regression (2) and (4) show the performance in a subsample where they differ ($D \neq RoS$). Regressions (1)-(2) use the NBER/ECRI BC measure, whereas regressions (3)-(4) use the OECD BC measure. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

	(1)	(2)	(3)	(4)
	NBER / ECRI BC		OECD BC	
	Domicile = Region of Sale	Domicile ≠ Region of Sale	Domicile = Region of Sale	Domicile ≠ Region of Sale
BC	-0.132**	0.238**	-0.292***	0.00192
	(0.0617)	(0.0967)	(0.0481)	(0.0879)
Market	0.805***	0.831***	0.768***	0.815***
	(0.0120)	(0.0171)	(0.0121)	(0.0197)
Market*BC	-0.128***	-0.0964***	-0.0599***	-0.0718***
	(0.0151)	(0.0163)	(0.0137)	(0.0153)
SMB	0.0913***	0.0808***	0.111***	0.0937***
	(0.0169)	(0.0219)	(0.0173)	(0.0196)
SMB*BC	-0.0978***	-0.0772**	-0.0490***	-0.0703**
	(0.0267)	(0.0338)	(0.0188)	(0.0348)
HML	-0.0221	0.0414**	0.0761***	0.101***
	(0.0199)	(0.0161)	(0.0193)	(0.0193)
HML*BC	-0.106***	-0.0964***	-0.308***	-0.234***
	(0.0250)	(0.0356)	(0.0290)	(0.0353)
MOM	0.0136*	0.0321***	0.0448***	0.0419***
	(0.00786)	(0.0108)	(0.0103)	(0.0139)
MOM*BC	-0.0467***	-0.00598	-0.0741***	-0.0283
	(0.0164)	(0.0244)	(0.0164)	(0.0238)
Constant	-0.269***	-0.228***	-0.175***	-0.162***
	(0.0150)	(0.0289)	(0.0189)	(0.0346)
Observations	23,371	9,996	23,278	10,200
R-squared	0.582	0.644	0.586	0.645
Number of funds	328	145	324	148

Table 12: ***Hedge Funds (USA)***

Panel A: This table shows the results of unconditional and conditional hedge fund performance measurement in panel fixed effects regressions (on the fund level) for the USA based on the seven-factor model by Fung and Hsieh (2004) and the NBER, ECRI business cycle variable (BC). The dependent variable is the monthly fund return (excess over risk-free rate) from the TASS database for the sample of all hedge funds. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

	(1) Unconditional Performance	(2) Performance and BC	(3) Recessions Subsample	(4) No Recessions Subsample	(5) Conditional Performance and Interactions
BC		-0.00571***			-0.00362***
		(0.000146)			(0.000147)
Market	0.190***	0.184***	0.172***	0.217***	0.215***
	(0.00292)	(0.00311)	(0.00358)	(0.00425)	(0.00421)
Market*BC					-0.0445***
					(0.00452)
SMB	0.0512***	0.0603***	-0.105***	0.100***	0.0992***
	(0.00302)	(0.00328)	(0.00522)	(0.00360)	(0.00361)
SMB*BC					-0.205***
					(0.00593)
PTFSBD	-0.00137***	0.00204***	0.0149***	0.00367***	0.00367***
	(0.000432)	(0.000476)	(0.00122)	(0.000581)	(0.000583)
PTFSBD*BC					0.0113***
					(0.00114)
PTFSFX	0.00473***	0.00106***	-0.0111***	0.00523***	0.00549***
	(0.000269)	(0.000297)	(0.000700)	(0.000376)	(0.000376)
PTFSFX*BC					-0.0157***
					(0.000785)
PTFSCOM	0.00670***	0.00762***	0.00541***	0.00904***	0.00955***
	(0.000395)	(0.000454)	(0.00107)	(0.000520)	(0.000519)
PTFSCOM*BC					-0.00558***
					(0.00110)
Treasurychange	0.00347***	0.00376***	0.0127***	-0.00731***	-0.00669***
	(0.000283)	(0.000310)	(0.000617)	(0.000349)	(0.000350)
Treasurychange*BC					0.0194***
					(0.000671)
Moodieschange	-0.0173***	-0.0159***	-0.0134***	-0.0230***	-0.0219***
	(0.000309)	(0.000323)	(0.000345)	(0.000519)	(0.000521)
Moodieschange*BC					0.00817***
					(0.000573)
Constant	0.000710***	0.00266***	-0.00208***	0.00218***	0.00205***
	(1.87e-05)	(4.20e-05)	(9.74e-05)	(4.46e-05)	(4.93e-05)
Observations	623,228	484,754	121,818	362,936	484,754
R-squared	0.117	0.124	0.152	0.109	0.136
Number of funds	15,332	15,058	9,398	13,830	15,058

Table 12: ***Hedge Funds (USA) (ctd.)***

Panel B: This table shows the results of conditional hedge fund performance measurement in panel fixed effects regressions (on the fund level) for the USA based on the seven-factor model by Fung and Hsieh (2004) and the NBER, ECRI business cycle variable (BC). The dependent variable is the monthly fund return (excess over risk-free rate) from the TASS database for the strategy subsamples of (1) Convertible/Fixed Income Arbitrage, (2) Dedicated Short Bias, (3) Emerging Markets, (4) Equity Market Neutral, (5) Event Driven, (6) Fund of Funds, (7) Global Macro, (8) Long/Short Equity Hedge, (9) Managed Futures, (10) Multi Strategy hedge funds. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively. Clustered robust standard errors (by fund id) are in parentheses.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
VARIABLES	Strategy 1	Strategy 2	Strategy 3	Strategy 4	Strategy 5	Strategy 6	Strategy 7	Strategy 8	Strategy 9	Strategy 10
BC	0.000433	0.00220	-0.00514***	-0.00178***	-0.00497***	-0.00522***	0.00114	-0.00216***	-0.00271***	-0.00360***
	(0.000798)	(0.00262)	(0.000728)	(0.000552)	(0.000524)	(0.000167)	(0.00103)	(0.000326)	(0.000696)	(0.000672)
Market	0.0534***	-0.758***	0.380***	0.0266**	0.159***	0.172***	0.143***	0.350***	0.204***	0.127***
	(0.0105)	(0.0802)	(0.0166)	(0.0105)	(0.00873)	(0.00479)	(0.0183)	(0.00966)	(0.0166)	(0.00996)
Market*BC	0.0751***	0.326***	0.0384*	0.0299**	0.0263**	-0.0400***	-0.0207	-0.0616***	-0.300***	-0.00232
	(0.0136)	(0.0817)	(0.0219)	(0.0143)	(0.0133)	(0.00499)	(0.0228)	(0.0105)	(0.0254)	(0.0112)
SMB	0.0440***	-0.233***	0.112***	0.0378***	0.0876***	0.0867***	-0.00496	0.190***	-0.0183	0.0400***
	(0.00828)	(0.0463)	(0.0114)	(0.0108)	(0.00909)	(0.00501)	(0.0162)	(0.00850)	(0.0131)	(0.00855)
SMB*BC	-0.176***	-0.0922	-0.254***	-0.125***	-0.130***	-0.232***	-0.141***	-0.269***	-0.0243	-0.127***
	(0.0220)	(0.119)	(0.0301)	(0.0221)	(0.0178)	(0.00662)	(0.0331)	(0.0139)	(0.0310)	(0.0193)
PTFSFD	-0.0107***	-0.0283***	-0.00979***	-0.00751***	-0.0119***	0.00166**	0.00420	0.00606***	0.0508***	0.00142
	(0.00163)	(0.00896)	(0.00223)	(0.00199)	(0.00159)	(0.000779)	(0.00291)	(0.00109)	(0.00339)	(0.00172)
PTFSFD*BC	-0.00597	-0.0299	0.0403***	0.00557	-0.000917	0.00752***	0.00298	0.0157***	0.00248	0.00573
	(0.00429)	(0.0236)	(0.00517)	(0.00543)	(0.00377)	(0.00134)	(0.00648)	(0.00266)	(0.00654)	(0.00354)
PTFSFX	-0.00256***	-0.00581	0.000421	0.00240**	0.000900	0.00481***	0.0202***	0.00352***	0.0339***	-0.00261**
	(0.000853)	(0.00512)	(0.00175)	(0.00106)	(0.000943)	(0.000517)	(0.00247)	(0.000636)	(0.00249)	(0.00114)
PTFSFX*BC	-0.000185	0.0362**	-0.0316***	-0.00856***	0.00761***	-0.0116***	-0.0349***	-0.0132***	-0.0742***	-0.00139
	(0.00286)	(0.0144)	(0.00388)	(0.00275)	(0.00259)	(0.000982)	(0.00507)	(0.00169)	(0.00528)	(0.00258)
PTFSCOM	0.000443	0.00722	0.00848***	0.00781***	0.000602	0.00921***	0.0144***	0.00785***	0.0389***	0.00761***
	(0.00106)	(0.00768)	(0.00273)	(0.00141)	(0.00100)	(0.000589)	(0.00253)	(0.00104)	(0.00369)	(0.00151)
PTFSCOM*BC	-0.0277***	-0.0133	0.0144***	-0.0110***	-0.0164***	-0.0164***	0.00950	0.00132	0.0640***	-0.00941***
	(0.00466)	(0.0212)	(0.00542)	(0.00397)	(0.00347)	(0.00134)	(0.00745)	(0.00237)	(0.00729)	(0.00359)
Treasurychange	-0.0156***	0.000775	-0.00738***	-0.00416***	-0.00805***	-0.00430***	-0.0107***	-0.00496***	-0.0151***	-0.00592***
	(0.00155)	(0.00484)	(0.00175)	(0.00104)	(0.000903)	(0.000433)	(0.00245)	(0.000644)	(0.00243)	(0.00110)
Treasurychange*BC	-0.000143	-0.0412***	0.0302***	0.00593**	0.0186***	0.0143***	0.0179***	0.0227***	0.0345***	0.0138***
	(0.00311)	(0.0127)	(0.00344)	(0.00268)	(0.00229)	(0.000746)	(0.00407)	(0.00156)	(0.00338)	(0.00204)
Moodieschange	-0.0404***	-0.0124	-0.0248***	-0.0115***	-0.0373***	-0.0203***	-0.0262***	-0.0174***	-0.0294***	-0.0177***
	(0.00254)	(0.00814)	(0.00263)	(0.00189)	(0.00185)	(0.000598)	(0.00357)	(0.00113)	(0.00289)	(0.00160)
Moodieschange*BC	0.0107***	-0.00249	0.0112***	-0.000691	0.0148***	0.00113*	0.0299***	0.00885***	0.0403***	0.00376**
	(0.00270)	(0.00969)	(0.00302)	(0.00225)	(0.00210)	(0.000659)	(0.00425)	(0.00125)	(0.00330)	(0.00171)
Constant	0.00214***	0.000245	0.00542***	0.00134***	0.00371***	0.000757***	0.00193***	0.00255***	0.00279***	0.00300***
	(0.000147)	(0.000593)	(0.000232)	(0.000154)	(0.000133)	(7.35e-05)	(0.000291)	(9.19e-05)	(0.000173)	(0.000203)
Observations	24,222	2,066	30,460	20,747	31,064	163,708	17,853	129,150	28,880	36,604
R-squared	0.145	0.424	0.229	0.047	0.215	0.251	0.039	0.198	0.082	0.094
Number of funds	622	50	870	606	736	5,506	686	3,345	830	1,807

Appendix

Table A.1: ***Recession Categories***
This table tabulates how many months the different countries spent in global and national recessions. The recession months are based on the ECRI/NBER recession indicator and manually categorized into global or national recessions. By categorization, global recessions have an impact not only on the country in recession.

Country	Global Recession	National Recession
Austria	79	
Canada	19	2
Denmark	34	8
France	81	
Germany	115	
Japan	17	44
Italy	3	58
Mexico	68	27
Norway	92	
South Africa	28	84
South Korea	26	
Spain	86	
Sweden	53	
Switzerland	53	
Taiwan	12	14
UK	38	
USA	52	

Table A.2: ***International Unconditional Mutual Fund Performance***

This table shows the results of international unconditional mutual fund performance measurement with panel fixed effect regressions (on the fund id level) for 16 different countries. The dependent variable is the TNA-weighed monthly fund return (excess over risk-free rate) as calculated in Section 3 for 16 countries. The independent variables are the Carhart (1997) factors from Sandy Lai as described in section 3, and a business cycle variable (BC) based on the countries respective business cycle measure (NBER, ECRI). Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively.

	(1) Canada	(2) Denmark	(3) France	(4) Germany	(5) Italy	(6) Japan	(7) Mexiko	(8) Norway	(9) South_Africa	(10) South_Korea	(11) Spain	(12) Sweden	(13) Switzerland	(14) Taiwan	(15) UK	(16) USA
Market	0.539***	0.621***	0.581***	0.609***	0.600***	0.800***	0.600***	0.660***	0.240***	0.639***	0.594***	0.617***	0.533***	0.890***	0.512***	0.995***
	(0.00698)	(0.00746)	(0.00886)	(0.0123)	(0.0170)	(0.00685)	(0.0203)	(0.0121)	(0.00851)	(0.00433)	(0.00818)	(0.00835)	(0.0101)	(0.00542)	(0.00854)	(0.00294)
SMB	0.112***	-0.280***	-0.0302	-0.0235	-0.211***	0.0582***	-0.108***	-0.112***	-0.460***	0.105***	-0.0533***	-0.0713*	-0.369***	0.505***	-0.369***	0.175***
	(0.0123)	(0.0383)	(0.0301)	(0.0488)	(0.0432)	(0.0116)	(0.0307)	(0.0391)	(0.0272)	(0.00793)	(0.0180)	(0.0415)	(0.0299)	(0.0128)	(0.0219)	(0.00672)
HML	0.0675***	-0.109***	-0.107***	0.158***	-0.0292	-0.0305**	0.149***	0.0727***	-0.386***	-0.0861***	-0.181***	0.0118	0.00895	-0.243***	-0.102***	0.0682***
	(0.00976)	(0.0149)	(0.0160)	(0.0180)	(0.0188)	(0.0142)	(0.0164)	(0.0143)	(0.0229)	(0.00734)	(0.00729)	(0.0588)	(0.0205)	(0.00765)	(0.0137)	(0.00637)
MOM	-0.00481	-0.160***	-0.229***	-0.139***	-0.0878***	-0.0432***	-0.184***	-0.0685***	0.0654***	0.160***	-0.0436***	-0.0535***	-0.0865***	0.154***	-0.295***	0.00455**
	(0.00408)	(0.0118)	(0.00975)	(0.0106)	(0.0239)	(0.00732)	(0.0388)	(0.00908)	(0.0108)	(0.00462)	(0.00811)	(0.00927)	(0.00892)	(0.00624)	(0.00906)	(0.00211)
Constant	-0.104***	0.187***	0.189***	0.0144	-0.119***	-0.275***	0.324***	0.226***	0.650***	0.161***	-0.149***	0.0734***	-0.00827	0.125***	0.413***	-0.0432***
	(0.00957)	(0.0264)	(0.0115)	(0.0210)	(0.0231)	(0.00845)	(0.0316)	(0.0196)	(0.0206)	(0.00834)	(0.0111)	(0.0258)	(0.0197)	(0.00620)	(0.00664)	(0.00298)
Observations	49,799	4,971	31,756	8,095	4,920	96,332	2,727	6,046	11,866	36,550	10,222	3,716	11,809	18,554	19,286	441,210
R-squared	0.624	0.699	0.569	0.712	0.746	0.569	0.698	0.762	0.528	0.767	0.772	0.773	0.542	0.784	0.712	0.756
Number of funds	432	39	299	113	75	811	49	61	173	524	139	105	169	182	458	3,692

Table A.3: *Fund Flows*

This table shows the total fund flows in month t+1 sorted according to their unconditional and conditional fund performance in month t for 16 countries and the pooled sample. The funds are sorted according to their conditional performance. The fund flows are calculated as described in Section 3. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively.

Panel A: Fund Flows sorted on Unconditional Performance

	Q1	Q2	Q3	Q4	Q5	Q5-Q1	Q5-Q1 T-value
ALL	0.016	0.021	0.018	0.021	0.031	0.014***	7.57
Canada	0.050	0.030	0.025	0.016	0.046	-0.004	-0.42
Denmark	0.017	0.007	0.001	-0.003	0.003	-0.014	-0.99
France	0.010	0.012	0.008	0.007	0.025	0.016	1.29
Germany	-0.001	0.006	-0.004	-0.002	0.021	0.022**	2.07
Italy	0.012	0.005	0.006	0.002	-0.013	-0.026**	-2.15
Japan	0.008	-0.001	0.008	0.016	0.021	0.013**	2.13
Mexiko	0.018	0.026	0.029	0.019	0.030	0.012	0.68
Norway	0.051	-0.004	0.010	0.022	0.033	-0.019	-0.64
South Africa	0.017	0.025	0.009	0.010	0.011	-0.005	-0.79
South Korea	0.011	0.017	0.024	0.031	0.052	0.041***	5.17
Spain	0.017	-0.003	-0.002	-0.006	0.010	-0.007	-0.67
Sweden	0.032	0.040	0.041	0.019	0.011	-0.021	-1.16
Switzerland	0.011	0.005	0.001	0.018	0.026	0.015	1.37
Taiwan	-0.013	-0.005	-0.006	0.000	-0.001	0.012***	2.43
UK	-0.007	-0.005	0.001	0.001	0.023	0.031***	3.95
USA	0.026	0.030	0.022	0.025	0.035	0.009***	3.28

Panel B: Fund Flows sorted on Conditional Performance

	Q1	Q2	Q3	Q4	Q5	Q5-Q1	Q5-Q1 T-value
ALL	0.021	0.022	0.023	0.018	0.022	0.001	0.61
Canada	0.042	0.031	0.040	0.029	0.051	0.009	0.89
Denmark	0.011	0.008	-0.003	0.002	0.004	-0.008	-0.96
France	0.010	0.015	0.012	0.012	0.000	-0.010	-1.30
Germany	-0.001	0.007	0.003	0.007	-0.002	0.000	-0.02
Italy	0.002	-0.006	0.015	-0.003	0.011	0.009	0.64
Japan	0.019	0.013	0.002	-0.001	0.007	-0.012*	-1.72
Mexiko	0.024	0.021	0.025	0.024	0.026	0.002	0.10
Norway	0.037	0.016	0.025	0.011	0.037	0.001	0.03
South Africa	0.009	0.021	0.008	0.014	0.023	0.014	1.53
South Korea	0.027	0.037	0.035	-0.017	0.021	-0.006	-0.67
Spain	0.008	0.000	-0.007	-0.002	0.017	0.009	0.82
Sweden	0.027	0.031	0.022	0.014	0.040	0.013	0.70
Switzerland	0.003	-0.002	0.005	0.029	0.026	0.023**	2.01
Taiwan	-0.011	-0.002	-0.006	-0.004	-0.004	0.007	1.47
UK	-0.007	-0.005	-0.003	0.001	0.024	0.031***	3.83
USA	0.031	0.028	0.026	0.020	0.029	-0.002	-0.66

Table A.4: ***Overview Factor Set Results***

This table summarizes the recession coefficients of all factor set regressions. All regressions are panel fixed effect regressions (on the fund id level) for the pooled sample and the individual countries. Panel A gives the results of the Frazzini, Individual, Lai and Marmi factor sets whereas Panel B displays the factor set results of the regional factors. The dependent variable in all regressions is the TNA-weighed monthly fund return (excess over risk-free rate) as calculated in Section 3 for 16 countries. The independent variables are the Carhart (1997) factors (Market, SMB, HML, MOM) per country, from the respective factor dataset as listed in the table, and a business cycle variable (BC) based on the countries respective business cycle measure (NBER, ECRI,OECD). The *conditional* specification displays the recession coefficients of the following regressions: (1) fund performance regressed on the Carhart Factors and the business cycle variable (*dummy*), (2) fund performance regressed on the Carhart Factors and the business cycle variables as well as their interactions (*interactions*). Furthermore, in subsamples of recession and non-recession periods, the fund returns are regressed on the Carhart Factors (*recession*, *non-recession*). In addition, the *unconditional* overall fund performance for each country is shown. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively.

Panel A: Overview Results Factor Sets - Country Factors

Factor Set	BC-Variable	Specification	Alpha	Pooled	Canada	Denmark	France	Germany	Italy	Japan	Mexico	Norway	South Africa	South Korea	Spain	Sweden	Switzerland	Taiwan	UK	USA
Frazzini	NBER/ECRI	Conditional	BC-Dummy	-0.38***	-0.41***	-0.63***	-0.81***	-0.39***	-1.04***	-0.41***		-0.79***			0.01	-1.6***	-1.44***		0.38***	-0.08***
			Interactions	-0.34***	-0.43***	-0.66***	-0.84***	-0.45***	-1.1***	-0.01		-0.8***			0.32***	-1.34***	-1.14***		0.55***	0.00
			Non-Recession	-0.03***	-0.03***	0.25***	0.15***	0.14***	-0.04	-0.23***		0.6***			-0.45***	0.51***	-0.01		-0.23***	-0.04***
			Recession	-0.38***	-0.53***	-0.42***	-0.73***	-0.31***	-1.1***	-0.21***		-0.21***			-0.1***	-1.05***	-1.12***		0.35***	-0.03***
		Unconditional	Constant	-0.05***	-0.1***	0.2***	0.13***	0.15***	-0.26***	-0.26***		0.16***			-0.13***	0.11***	-0.23***		0.15***	-0.04***
	OECD	Conditional	BC-Dummy	-0.28***	0.08***	-0.84***	-1.02***	-0.89***	-0.49***	-0.22***		-0.31***			-0.22***	-0.84***	-0.88***		-0.79***	0.01
			Interactions	-0.23***	0.01	-0.69***	-0.85***	-0.8***	-0.44***	0.21***		-0.17***			0.01	-0.87***	-0.65***		-0.85***	0.02**
			Non-Recession	-0.04***	-0.11***	0.39***	0.17***	0.25***	-0.2***	-0.32***		0.24***			-0.29***	0.59***	-0.09***		0.51***	-0.04***
			Recession	-0.38***	-0.1***	-0.28***	-0.66***	-0.51***	-0.57***	-0.09***		0.07***			-0.29***	-0.31***	-0.7***		-0.34***	-0.03***
		Unconditional	Constant	-0.05***	-0.1***	0.19***	0.13***	0.15***	-0.26***	-0.26***		0.16***			-0.14***	0.12***	-0.23***		0.14***	-0.05***
Individual	NBER/ECRI	Conditional	BC-Dummy	-0.16***	-0.3***	0.31***	0.15***	-0.06	-0.08*	-0.3***	-0.16	0.3***	-0.63***	-0.03	0.09***	-0.25**	-0.07	-1.18***	0.00	-0.09***
			Interactions	-0.11***	-0.29***	0.21*	0.02	0.03	-0.07	-0.31***	-0.16	0.35***	-0.62***	-0.13***	0.06**	-0.34***	-0.06	-1.04***	0.00	-0.01
			Non-Recession	-0.01***	-0.04***	-0.12***	-0.26***	-0.09***	-0.04***	0.12***	0.12*	0.03	0.23***	0.1***	-0.17***	0.05	-0.08***	0.31***	-0.12***	-0.03***
			Recession	-0.11***	-0.35***	0.08	-0.24***	-0.04	-0.07***	-0.18***	-0.06	0.36***	-0.39***	-0.04	-0.09***	-0.33***	-0.16***	-0.76***	-0.11***	-0.03***
		Unconditional	Constant	-0.04***	-0.12***	-0.03***	-0.21***	-0.14***	-0.08***	0.06***	0.08*	0.11***	0.07***	0.1***	-0.19***	0.03**	-0.12***	0.08***	-0.1***	-0.04***
	OECD	Conditional	BC-Dummy	-0.06***	-0.01	0.24***	-0.17***	-0.24***	0.09***	-0.01	-0.03	0.39***	-0.28***	-0.31***	-0.05*	0.01	-0.09**		0.1***	0.00
			Interactions	-0.06***	-0.03	0.22***	-0.17***	-0.3***	0.1***	-0.04**	-0.02	0.33***	-0.33***	-0.31***	-0.05*	0.01	-0.08*		0.05	0.02*
			Non-Recession	-0.02***	-0.1***	-0.09***	-0.11***	-0.03	-0.1***	0.05***	0.04	0.03	0.2***	0.14***	-0.15***	-0.01	-0.08***		-0.01	-0.04***
			Recession	-0.11***	-0.13***	0.14***	-0.28***	-0.29***	0.00	0.01	0.01	0.36***	-0.14***	-0.2***	-0.2***	0.00	-0.17***		0.02*	-0.03***
		Unconditional	Constant	-0.05***	-0.12***	-0.03***	-0.21***	-0.14***	-0.08***	0.06***	0.08*	0.11***	0.07***	0.1***	-0.19***	0.03**	-0.12***		-0.09***	-0.05***
Lai	NBER/ECRI	Conditional	BC-Dummy	-0.4***	-0.64***	-0.88***	-0.65***	0.03	-1.15***	-0.25***	-0.61***	-1.27***	-2.18***	-0.6***	-0.33***	-1.17***	-1.39***	-0.14**	-0.13***	-0.08***
			Interactions	-0.48***	-0.63***	-0.18	-0.12**	0.19**	-0.93***	-0.22***	-0.98***	-0.99***	-2.27***	-2.95***	0.34***	-1.3***	-0.44***	-0.27***	0.06	0.00
			Non-Recession	0.02***	-0.01	0.21***	0.2***	-0.07**	0.02	-0.26***	0.26***	0.7***	1.01***	0.14***	-0.72***	0.3***	0.14***	0.15***	0.06**	-0.04***
			Recession	-0.47***	-0.69***	0.04	0.07**	0.13*	-0.83***	-0.45***	-0.71***	-0.29***	-1.34***	-2.83***	-0.38***	-1.05***	-0.29***	-0.17***	0.17***	-0.03***
		Unconditional	Constant	-0.02***	-0.1***	0.19***	0.19***	0.01	-0.12***	-0.28***	0.32***	0.23***	0.65***	0.16***	-0.15***	0.07***	-0.01	0.12***	0.41***	-0.04***
	OECD	Conditional	BC-Dummy	-0.32***	0.08***	-0.78***	-1.09***	-0.48***	-0.37***	-0.25***	-0.9***	-0.84***	-0.99***	0.44***	-0.31***	-0.9***	-1.01***		-0.93***	0.01
			Interactions	-0.28***	0.14***	-0.12	-0.53***	-0.31***	-0.03	0.01	-1.24***	-0.64***	-0.92***	0.71***	0.17***	-1.18***	-0.23***		-0.99***	0.02**
			Non-Recession	0.01**	-0.15***	0.19***	0.24***	0.07	-0.27***	-0.3***	0.36***	0.62***	0.5***	-0.21***	-0.52***	0.52***	-0.04		0.52***	-0.04***
			Recession	-0.48***	-0.02***	0.09**	-0.28***	-0.21***	-0.26***	-0.28***	-0.86***	-0.01	-0.46***	0.45***	-0.35***	-0.69***	-0.27***		-0.48***	-0.03***
		Unconditional	Constant	-0.03***	-0.11***	0.18***	0.19***	0.01	-0.12***	-0.28***	0.32***	0.23***	0.65***	0.16***	-0.15***	0.08***	-0.01		0.4***	-0.05***
Marmi	NBER/ECRI	Conditional	BC-Dummy	-0.14***	-0.17***		0.04	-0.39***	-0.04	-0.3***				-0.34***		-0.4***	-0.09*		0.09***	-0.09***
			Interactions	-0.11***	-0.31***		-0.1***	-0.62***	0.00	-0.27***				-0.38***		-0.38**	-0.01		0.15***	0.00
			Non-Recession	-0.08***	-0.24***		-0.27***	-0.05**	-0.16***	-0.04***				-0.11***		0.12**	-0.18***		-0.07***	-0.04***
			Recession	-0.19***	-0.56***		-0.36***	-0.6***	-0.14***	-0.3***				-0.59***		-0.31***	-0.21***		0.08***	-0.03***
		Unconditional	Constant	-0.1***	-0.29***		-0.27***	-0.13***	-0.16***	-0.14***				-0.13***		0.03	-0.17***		-0.19***	-0.04***
	OECD	Conditional	BC-Dummy	-0.1***	-0.29***		-0.04*	0.05	-0.11**	-0.17***				-0.39***		0.28**	-0.12***		-0.01	0.00
			Interactions	-0.09***	-0.3***		-0.07***	0.2***	-0.07*	-0.13***				-0.35***		0.47***	-0.07*		0.2***	0.02***
			Non-Recession	-0.09***	-0.16***		-0.3***	-0.32***	-0.14***	-0.1***				-0.05***		-0.02	-0.17***		-0.13***	-0.04***
			Recession	-0.19***	-0.46***		-0.36***	-0.07**	-0.19***	-0.22***				-0.4***		0.42***	-0.26***		0.07***	-0.02***
		Unconditional	Constant	-0.11***	-0.29***		-0.27***	-0.14***	-0.16***	-0.14***				-0.13***		0.02	-0.17***		-0.18***	-0.05***

Table A.4: *Overview Factor Set Results (ctd.)*

Panel B: Overview Results Factor Sets - Regional Factors

Factor Set	BC-Variable	Specification	Alpha	Pooled	Canada	Denmark	France	Germany	Italy	Japan	Mexico	Norway	South Africa	South Korea	Spain	Sweden	Switzerland	Taiwan	UK	USA
Regional	NBER/ECRI	Conditional	BC-Dummy	-0.28***	-0.44***	-1.19***	-0.34***	0.22***	-0.46***	-0.44***	-0.76***	-1.11***	-0.82***	-0.9***	-0.13***	-1.59***	-1.07***	-1.42***	0.29***	-0.03**
			Interactions	-0.22***	-0.3***	-1.15***	-0.36***	0.66***	-0.56***	-0.17***	-0.9***	-1.14***	-0.78***	-1.21***	-0.13***	-1.88***	-1.06***	-1.63***	0.3***	-0.05***
			Non-Recession	0.00	0.15***	0.42***	-0.05***	0.14***	-0.22***	-0.21***	1.16***	1.08***	1.08***	0.36***	-0.11***	0.88***	0.25***	-0.61***	0.08***	-0.09***
			Recession	-0.23***	-0.15***	-0.76***	-0.43***	0.81***	-0.81***	-0.35***	0.22***	-0.07	0.27***	-0.71***	-0.23***	-1.03***	-0.81***	-2.25***	0.46***	-0.14***
		Unconditional	Constant	-0.03***	0.1***	0.26***	-0.05***	0.1***	-0.59***	-0.31***	0.86***	0.46***	1.03***	0.28***	-0.18***	0.53***	-0.05***	-0.65***	0.24***	-0.09***
	OECD	Conditional	BC-Dummy	-0.22***	-0.24***	-0.91***	-0.81***	-0.58***	0.08	-0.19***	-0.25	-0.6***	-0.57***	-0.17***	0.18***	-1.12***	-0.68***		-0.62***	0.04***
			Interactions	-0.2***	-0.15***	-0.89***	-0.7***	-0.66***	0.13	0.13***	-0.37**	-0.48***	-0.48***	-0.25***	0.28***	-1.39***	-0.66***		-0.75***	0.02
			Non-Recession	0.01**	0.2***	0.64***	0.26***	0.4***	-0.61***	-0.35***	1.12***	0.73***	1.07***	0.38***	-0.29***	1.23***	0.21***		0.66***	-0.1***
			Recession	-0.21***	0.04***	-0.24***	-0.43***	-0.28***	-0.42***	-0.22***	0.7***	0.26***	0.55***	0.14***	-0.02	-0.22***	-0.45***		-0.07***	-0.1***
		Unconditional	Constant	-0.02***	0.1***	0.26***	-0.05***	0.09***	-0.58***	-0.31***	0.86***	0.46***	1.04***	0.28***	-0.18***	0.54***	-0.05***		0.23***	-0.1***
Regional (Momentum)	NBER/ECRI	Conditional	BC-Dummy	-0.3***	-0.22***	-1.53***	-0.4***	0.23***	-1.02***	-0.46***	-1.05***	-1.2***	-0.23***	-0.89***	-0.32***	-1.81***	-1.38***	-1.39***	0.07*	-0.01
			Interactions	-0.33***	-0.21***	-1.51***	-0.19***	0.87***	-0.86***	-0.22***	-1.15***	-0.8***	-0.95***	-1.37***	-0.13**	-2.12***	-1.49***	-2.28***	0.5***	-0.03***
			Non-Recession	-0.02***	0.1***	0.8***	0.05***	0.19***	-0.2***	-0.16***	1.11***	0.75***	0.77***	0.32***	-0.09*	0.98***	0.24***	-0.45***	-0.28***	-0.1***
			Recession	-0.35***	-0.08***	-0.75***	-0.18***	1.06***	-1.12***	-0.34***	-0.05	-0.05	-0.22**	-1.03***	-0.21***	-1.15***	-1.24***	-2.77***	0.27***	-0.13***
		Unconditional	Constant	-0.02***	0.06***	0.47***	0.12***	0.27***	-0.38***	-0.28***	0.85***	0.51***	0.89***	0.28***	-0.07***	0.68***	0.07***	-0.59***	0.29***	-0.1***
	OECD	Conditional	BC-Dummy	-0.22***	-0.07***	-1.02***	-0.93***	-0.91***	-0.35**	-0.16***	-0.4**	-0.65***	-0.05	-0.19***	-0.03	-1.66***	-0.98***		-0.94***	0.05***
			Interactions	-0.18***	0.04	-0.71***	-0.58***	-0.57***	-0.25	0.12***	-0.2	0.11	0.15***	-0.09***	-0.06	-1.48***	-0.83***		-1.02***	0.02**
			Non-Recession	-0.02***	0.1***	0.52***	0.09***	0.18***	-0.58***	-0.35***	1.12***	0.21***	0.57***	0.37***	0.00	0.71***	0.15***		0.61***	-0.1***
			Recession	-0.33***	0.13***	-0.16***	-0.47***	-0.34***	-0.74***	-0.21***	0.89***	0.33***	0.69***	0.26***	-0.06***	-0.76***	-0.65***		-0.4***	-0.1***
		Unconditional	Constant	-0.02***	0.06***	0.47***	0.12***	0.27***	-0.38***	-0.28***	0.85***	0.51***	0.89***	0.28***	-0.07***	0.69***	0.08***		0.28***	-0.11***

Table A.5: ***Tracking Error During Recessions and Non-Recessions***
This table shows the average tracking error of funds during recessions (conditional) and non-recession (unconditional) periods as well as the difference with corresponding t-values.

Country	Unconditional Tracking Error	Conditional Tracking Error	Difference	t-value
All	3.41	4.16	0.74	20.89
Canada	4.30	5.85	1.55	16.41
Denmark	3.70	4.89	1.19	7.08
France	4.50	5.45	0.96	8.45
Germany	4.22	5.57	1.35	6.48
Italy	3.94	4.23	0.29	2.18
Japan	3.91	4.09	0.19	2.70
Mexiko	4.58	6.78	2.20	5.59
Norway	4.55	4.51	-0.04	-0.27
South_Africa	6.26	9.18	2.92	21.62
South_Korea	5.35	9.10	3.75	41.08
Spain	4.07	5.15	1.09	8.08
Sweden	4.36	5.76	1.40	7.95
Switzerland	4.00	5.46	1.46	6.59
Taiwan	4.84	5.09	0.25	2.39
UK	3.74	4.46	0.73	9.71
USA	2.45	2.61	0.17	4.83

Table A.6: *Country Characteristics*

Panel A: This table provides summary statistics of the country characteristics. As country characteristics we use the business cycle variable (BC) which measures the average time in a recession, GDP per capita, institutional investment (per total financial asset), internet connectivity (per 100 inhabitants), the number of listed domestic stocks, the number of stocks traded (of GDP), the security regulation statistics from La Porta et al. (2006), total mutual funds assets from the ICI (2013) handbooks, and the number of mutual fund companies.

Country	BC	GDP (per capita)	Institutional Investment (per total financial asset)	Internet per 100 inhabitants	Listed domestic stocks	Stocks traded (of GDP)	Security Regulation	Mutual Funds Assets	Mutual Fund Companies
Canada	23	38.269.21	66.28	25.17	3,399.98	84.33	2.78	517,411.65	1,977.23
Denmark	18	47,061.43	40.51	29.05	209.32	47.52	1.63		439.14
France	18	34,821.92	34.28	21.45	837.78	73.56	1.77	1,375,956.01	7,635.36
Germany	18	38,870.67		25.61	636.42	59.22	0.67	300,786.29	1,690.81
Italy	42	33,556.89	26.64	17.01	287.33	46.54	1.26	322,841.94	807.45
Japan	34	36,517.08	11.98	17.68	3,131.08	80.34	1.41	540,228.24	3,479.40
Mexico	25	8,888.37	14.78	7.64	128.59	9.50	0.94	78,193.52	432.43
Norway	39	63,343.67		22.70	185.93	53.25	1.42	42,880.08	416.79
South Africa	20	6,236.31		1.05	378.29	110.15	1.79	98,831.47	845.22
South Korea	11	19,543.54	25.44	32.90	1,746.50	167.41	1.70		
Spain	41	29,352.18	19.12	17.12	3,306.29	134.43	1.53	291,414.05	2,720.96
Sweden	11	46,088.37	68.82	27.56	312.49	109.80	1.35	153,829.72	483.19
Switzerland	23	63,745.45		31.55	251.29	221.43	1.31	180,679.72	563.24
Taiwan	20						1.85	58,112.89	435.42
UK	42	39,302.10	63.45	28.18	2,303.46	178.16	2.16	738,710.36	2,117.91
USA	18	42,077.87	47.16	16.89	5,681.12	226.89	2.88	8,748,300.35	7,712.10

Panel B: This table shows the correlation of the country characteristics from Panel A. Statistical significance at the ten, five and one-percent level is indicated by *,**, and ***, respectively.

	BC	GDP	Institutional Investment	Internet	Stocks Stocks	Stocks traded	Security Regulation Regulation	Mutual Funds Assets	Mutual Fund Companies
BC	1								
GDP	0.130***	1							
Institutional Investment	-0.197***	0.416***	1						
Internet	0.103***	0.397***	-0.0220***	1					
Listed Stocks	-0.135***	0.0570***	0.327***	-0.439***	1				
Stocks traded	0.243***	0.445***	0.263***	0.0807***	0.281***	1			
Security Regulation	-0.123***	0.182***	0.750***	-0.213***	0.747***	0.439***	1		
Mutual Funds Assets	-0.0346***	0.466***	0.371***	0.0716***	0.450***	0.713***	0.719***	1	
Mutual Fund Companies	-0.0578***	0.255***	0.217***	-0.185***	0.592***	0.555***	0.671***	0.818***	1

Table A.7: ***Summary Statistics International Funds***
This table shows summary statistics of the data sample of international funds. The funds have their domicile country in Austria, Denmark, France, Germany, Norway, Sweden, Switzerland or the UK. The region of sale either equals the domicile country or is European Cross-Border, Global Cross-Border or Nordic Cross-Border.

Domicile Country (D)	Region of Sale Country (RoS)	Funds	Mean Monthly Return (in percent)	Mean Net Assets (in local currency)
Austria	Austria	6	-0.12	17m
Austria	European Cross-Border	17	0.18	1.1bn
Denmark	Denmark	29	0.13	451m
Denmark	European Cross-Border	8	0.68	715m
Denmark	Nordic Cross-border	1	0.06	463m
France	France	130	0.07	234m
France	European Cross-Border	24	0.19	1.5bn
France	Global Cross-Border	3	1.17	191m
Germany	Germany	18	0.09	46m
Germany	European Cross-Border	18	0.10	183m
Germany	Global Cross-Border	1	0.03	347m
Norway	Norway	5	0.39	1bn
Norway	Nordic Cross-border	1	-0.03	90m
Sweden	Sweden	13	-0.20	802m
Sweden	Nordic Cross-border	10	0.16	941m
Switzerland	Switzerland	43	-0.01	4.3bn
Switzerland	European Cross-Border	9	0.27	16bn
UK	UK	84	0.56	72m
UK	European Cross-Border	47	0.72	97m
UK	Global Cross-Border	14	0.62	123m
UK	Nordic Cross-border	1	1.21	4m

Table A.8: ***Summary Statistics Hedge Funds***
This table shows summary statistics of the data sample of hedge funds for the full sample and the subsamples sorted according to their strategy.

Strategy	Category	Funds	Mean Return	Mean SD	Mean Net Assets (in USD)
1-10	All	15,332	0.0013	0.0363	7.41bn
1	Fixed Income Arbitrage Convertible Arbitrage	623	0.0025	0.0275	4.72bn
2	Dedicated Short Bias	51	-0.0025	0.0547	618m
3	Emerging Markets	885	0.0032	0.0523	3.05bn
4	Equity Market Neutral	617	0.0010	0.0260	9.35bn
5	Event Driven	745	0.0033	0.0310	4.13bn
6	Fund of Funds	5,613	-0.0010	0.0270	947m
7	Global Macro	698	0.0026	0.0378	1.32bn
8	Long/Short Equity Hedge	3,387	0.0027	0.0429	7.8bn
9	Managed Futures	860	0.0016	0.0513	4.94bn
10	Multi-Strategy	1,853	0.0030	0.0312	39.49bn