Financial Management

Distress Anomaly and Shareholder Risk: International Evidence

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Financially distressed stocks in the United States earn puzzlingly low returns giving rise to the distress risk anomaly. We provide evidence that the anomaly exists in developed countries, but not in emerging ones. Using cross-country analyses, we explore several potential drivers of returns to distressed stocks. The distress anomaly is stronger in countries with stronger takeover legislation, lower barriers to arbitrage, and higher information transparency. In contrast, shareholder bargaining power and expected stock return skewness in a country do not affect the anomaly. These findings suggest that various aspects of shareholders' risk play an important role in shaping distressed stocks returns.

Since Fama and French (1992) suggested financial distress risk as a potential explanation for the value premium, several academic studies have examined the performance of financially distressed stocks (see, for example, Dichev, 1998; Griffin and Lemmon, 2002; Campbell, Hilscher, and Szilagyi, 2008). However, contrary to the general intuition, distressed equities are typically found to have lower returns, a finding inconsistent with risk-based theory. Furthermore, the excess returns to most distressed stocks are negative (Campbell et al., 2008). We refer to this phenomenon as the "distress risk puzzle." While a few potential explanations have been proposed, there is still no consensus in the literature as to what drives this anomaly.

To the extent that distress risk represents a priced risk factor, Campbell et al. (2008) find that financially distressed firms have high market betas and high loadings on SMB (small minus big) and HML (high minus low) factors. From a risk perspective, it is hard to reconcile this finding with low returns to distressed equities. Garlappi, Shu, and Yan (2008) propose a model in which distressed stocks become safer as they approach the default boundary due to violations of the absolute priority rule. However, their model cannot account for negative excess returns to distressed equities (and appears to contradict the finding that distressed stocks usually have high loadings on risk factors).

The distress anomaly may result from unexpected developments during the sample period, as suggested by Campbell et al. (2008). In support of this view, Chava and Purnanandam (2010) argue that the association between distress risk and expected returns is actually positive, and the negative relation between distress risk and realized returns is due to a streak of surprisingly low realized returns on distressed stocks in the United States in the 1980s that were not anticipated by investors. That is, the distress anomaly may be an in-sample phenomenon that is unlikely to continue in the future and is most likely specific to the United States.

We thank Bing Han (Editor), an anonymous referee, Tarun Chordia, Norman Schürhoff, Christian Wagner, and Josef Zechner for valuable comments and suggestions. Amit Goyal would like to thank Rajna Gibson for her support through her NCCR-FINRISK project.

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The distress anomaly might also have a misvaluation explanation. For example, investors may not fully understand how to predict failure risk and, as such, may not discount the prices of distressed stocks enough to offset their failure probability. Campbell et al. (2008), however, cast doubt on this argument by showing that returns to distressed firms are not concentrated around earnings announcements.

Some alternative explanations have also been proposed. Campbell et al. (2008) point out that investors could exhibit preferences for positively skewed returns and, therefore, are willing to hold distressed stocks (that are likely positively skewed) despite their low returns. It could also be that the majority owners of distressed companies can extract private benefits, for example, by purchasing the company's output or assets at bargain prices.

In this paper, we go beyond the limitations of the United States data and study the performance of distressed stocks around the globe. We pursue two goals. First, we examine whether the distress anomaly is specific to the United States or is present in other countries as well. This evidence can help us evaluate some of the potential explanations for this anomaly. For example, if the poor performance of distressed equities is caused by the divergence between expected and realized returns due to some specific events that occurred in the United States, we are unlikely to observe a similar pattern in most other countries. Second, an international study allows us to relate returns to distressed stocks to various country-level characteristics (e.g., measures of shareholder protection or the friendliness of takeover legislation, among others). By doing so, and measuring which of these country-specific variables affect returns to distressed stocks, we can also better understand what drives the distress anomaly in the United States.

We study returns to distressed companies in 34 countries over the period 1992–2010. Firm-specific data are taken from WorldScope, while country-level data are obtained both from aggregation of firm-specific data and from sources used in prior international studies. Identifying financially distressed companies in different countries is challenging for several reasons. Econometric models of financial distress are typically based on a large set of accounting variables (see, for example, Altman, 1968; Ohlson, 1980; Campbell et al., 2008), which are missing for many international firms. Moreover, the parameters of most of these models were estimated using US stocks and may not be suitable for other countries (see Altman, 2005). We therefore employ the distance-to-default measure derived from Merton's (1974) model (also employed by Moody's KMV) to measure the extent of a firm's financial distress (see also Vassalou and Xing, 2004). Unlike most alternative models, the distance-to-default measure uses only equity value, equity volatility, and the face value of debt, allowing us to estimate this measure on a large cross-section of international firms.

We present two main findings. First, we find that the distress anomaly only appears to exist in developed countries (with a magnitude comparable to that reported in the United States), but not in emerging markets. In developed countries, value-weighted portfolios of stocks in the bottom distress quintile underperform the portfolios of stocks in the top distress quintile by an average of 0.17% to 0.63% a month (measured by excess return and alphas from factor models).[1] In emerging markets, however, no such effect is found. In fact, in some specifications, results for emerging markets indicate that returns to distressed stocks are higher than those on solvent stocks. We verify this result by running firm level monthly Fama and MacBeth (1973) regressions of excess stock return on the extent of financial distress separately for firms in developed and emerging countries. Thus, while the distress puzzle is not US-specific, it is more pronounced in developed markets than in emerging markets. This finding also suggests that the distress anomaly goes beyond an in-sample phenomenon, as suggested by Chava and Purnanandam (2010).

[1] The distress effect using the KMV measure is weaker than when using other distress models (see Campbell et al., 2008).

One reason for the divergence in results between developed and emerging markets may be related to market capitalization. Prior evidence for the United States indicates that the distress effect is stronger in smaller companies. Consistent with this, we also find that the distress puzzle is stronger in small cap companies, but nonexistent in large cap companies in developed markets. However, partitioning on market capitalization still reveals no evidence of the distress puzzle in emerging markets.

To further investigate these differences, as well as to better understand the source of the distress puzzle, we turn to individual country analysis. While classifying countries into developed and emerging markets is standard practice, this aggregation leaves a lot of unexplored heterogeneity across countries. Accordingly, we proceed to examine the relation between returns to distressed stocks and individual country characteristics.

We construct several country-specific variables to capture various risks inherent to distressed stocks and other features of distressed stocks that can make them particularly attractive to investors in certain countries. We assess the effect of each characteristic on distressed stock returns using both portfolio and regression approaches. We explore the average distress effect (the difference between the excess returns on the portfolios of the bottom and top distress quintiles) of countries with the lowest and highest values of the characteristic of interest. We replicate this analysis separately for developed and emerging markets for each characteristic. In addition, we run monthly cross-sectional Fama and MacBeth (1973) regressions of excess stock return on an interaction term between the country characteristic and a distress quintile dummy.

When constructing our country-level variables, we consider five different categories of possible drivers of returns to distressed stocks. The first is the bargaining power of shareholders versus bondholders in financial distress or debt enforcement risk. Some studies conjecture that distressed stocks might be safer due to the possibility of renegotiation or deviations from the absolute priority rule (see, for example, Garlappi and Yan, 2011; Hackbarth, Haselmann, and Schoenherr, 2015). Even if distressed stocks are not safer, on average, vis-à-vis solvent ones, variations in shareholders' bargaining power should affect their risk and, as such, their returns. In countries where shareholders have more bargaining power in renegotiation or where it is easier to renegotiate, distressed stocks are likely to be relatively safer and should, therefore, earn lower returns. However, we do not find support for this theory. There is no evidence that distressed stocks earn lower returns in countries with high shareholder bargaining power.

The second explanation that we explore is the limits-to-arbitrage. Distressed stocks are harder to arbitrage (see, for example, Campbell et al., 2008; Eisdorfer, Goyal, and Zhdanov, 2017). General market illiquidity exacerbates this effect, which makes distressed stocks riskier. We use three countrywide measures of illiquidity and institutional ownership to test this hypothesis and find mixed support for it. Depending upon the specification and/or the markets, there is some positive association between returns to distressed stocks and limits-to-arbitrage.

The third potential explanation is takeover legislation. Many distressed companies are acquired, so the possibility of acquisition makes them less risky. In addition, another potential effect of active acquisition markets on prices and returns has been proposed by Edmans, Goldstein, and Jiang (2012), who argue that stock prices endogenously incorporate the likelihood of takeover. This effect leads to higher prices and lower expected returns. We, therefore, expect lower returns on distressed stocks in countries with more takeover friendly legislation. We measure the friendliness of countrywide takeover legislation using a takeover index variable (Nenova, 2006), and a rule of law variable (assessment of the law and order tradition in the country; see LaPorta et al., 1998). The results using both measures support this explanation as distressed stocks do earn much lower returns in countries with stronger takeover legislation.

We also examine the effect of information transparency on the distress anomaly. Low quality of accounting standards/disclosures makes it harder to assess the value of a firm in general. This induces an element of risk to investors (i.e., risk of being less informed with regard to the true value of the company). We argue that this risk effect is especially relevant for firms in financial distress. The reason is that the value of these firms is largely driven by their prospect of bankruptcy, and assessing the true probability of bankruptcy is a difficult task that relies primarily on accounting information. Thus, low information transparency represents an additional source of risk that investors in distressed stocks would have to bear implying high returns on distressed stocks in countries with low information/accounting transparency. The results strongly support this hypothesis indicating that the distress effect is stronger among countries with better accounting standards and higher analyst coverage per firm (Chang, Khanna, and Palepu, 2000). Results using a third measure, disclosure requirements in a country, are mixed.

We also consider the effect of return skewness on the distress anomaly. Distressed stocks are similar to options/lotteries and may attract investors who seek positive skewness. Therefore, in countries where stock returns, in general, are more positively skewed, the demand for distressed stocks will be lower resulting in higher returns on such stocks. We follow Boyer, Mitton, and Vorkink (2010) in constructing a measure of expected return skewness. The results, however, reveal no relation between expected skewness and returns to distressed stocks.

Note that while some of our country variables are static, others change over time thereby allowing us to capture not only cross-country, but also the time-series variation of the corresponding country characteristics. For example, the takeover law dummy is determined by the enactment of takeover laws that occurred at different times in various countries and allows us to examine the effect of exogenous shocks to takeover legislation on the performance of distressed stocks. We discuss this and other country characteristics in detail in Section III.

There are surprisingly very few studies of distress premium in ex-US data. Agarwal and Taffler (2008) study the relation between momentum and distress in a sample of UK companies. Aretz, Florackis, and Kostakis (2018) explore distress risk in a sample of 14 developed countries. The paper most closely related to ours is a contemporaneous independent study by Gao, Parsons, and Shen (2018). Unlike us, these authors show that the distress anomaly is stronger in countries that stress individualism and, following good market returns, both are consistent with a behavioral explanation for the anomaly based on investor overconfidence. While we share with them the conclusion that the distressed risk puzzle outside of the United States is limited primarily to developed markets, we explore a much richer set of cross-country differences to identify the drivers of the puzzle. This allows us to examine the role of many more dimensions of risk, as well as investor preferences, in the distress risk puzzle.

I. Data and Variables

A. International Firm-Level Data

We obtain stock returns and accounting data for international firms from Datastream. Our sample consists of 34 countries. Twenty are classified as developed by Morgan Stanley Capital International (MSCI) (Developed) and 14 are classified as emerging by MSCI (Emerging). The availability of data varies across countries and is very scarce prior to the early 1990s, so we begin our sample in 1992. To ensure that we have a reasonable number of stocks for our cross-sectional tests, we drop country-years with less than 100 firms with available data. We winsorize all variables at the 1st and 99th percentiles and convert all values to US dollars. We follow standard

filters in cleaning up the data (see, for example, Ince and Porter, 2006; Griffin, Kelly, and Nardari, 2010). Our final sample contains 2,526,041 firm-year observations representing data on 26,584 firms over the period 1992–2010. Data for US firms are obtained from Center for Research in Security Prices (CRSP) and Compustat. Table A1 provides descriptive statistics on the first year of the sample and the total/average of companies for each country. Data for most of the developed countries are available from the early 1990s, while data coverage for most of emerging markets is more limited.

B. Estimating the Probability of Bankruptcy for International Firms

There are multiple studies that use various accounting inputs to estimate a firm's probability of going bankrupt in the short run. The different models are usually constructed using a multiple discriminant analysis (see, for example, Altman, 1968; Aziz, Emanuel, and Lawson, 1988), or multiple choice analysis, such as logit (see, for example, Ohlson, 1980; Zavgren, 1985; Shumway, 2001; Campbell et al., 2008) or probit (see, for example, Zmijewski, 1984). The models typically rely on various financial ratios that indicate proximity to financial distress (e.g., book leverage), as well as some measures of profitability (e.g., return on assets, profit margin), liquidity (e.g., the current ratio), efficiency (e.g., asset turnover), growth prospects (e.g., market-to-book ratio), and more.

These models, however, are not appropriate for the purpose of our study for two reasons. First, the parameters in these models are estimated using data on US companies and, as such, are unlikely to be applicable to firms in other countries (Altman, 2005). Second, they require a large number of firm-specific accounting variables, many of which are missing in our international data set. One cannot use a firm's credit rating for international firms either as it is only available for a small fraction of companies. We therefore use the Merton (1974) distance-to-default measure (see Crosbie and Bohn, 2002; Vassalou and Xing, 2004). This measure uses only the market value of equity, equity volatility, and the face value of debt as inputs and, thus, can be implemented for the majority of firms in our sample.

The distance-to-default measure is based on the two-equation contingent-claim method of Ronn and Verma (1986). The first equation, based on Merton (1974), expresses the value of a firm's equity as the value of a call option written on the firm's assets using the Black and Scholes (1973) formula:

$$V_E = V_A N(d_1) - Fe^{-rT} N(d_2)\,, \tag{1}$$

where V_E is the equity value, V_A is the total asset value, $N(\cdot)$ is the cumulative function of a standard normal distribution, $d_1 = [\ln(V_A/F) + (r + \sigma_A^2/2)T]/\sigma_A\sqrt{T}$, $d_2 = d_1 - \sigma_A\sqrt{T}$, σ_A is asset volatility, F is the face value of debt, r is the risk-free rate, and T is debt maturity. The second equation, which is derived from Ito's lemma, represents the relation between equity volatility, σ_E, and asset volatility, σ_A:

$$\sigma_E = [V_A N(d_1)\sigma_A] \big/ V_E\,. \tag{2}$$

The unobservable variables, V_A and σ_A, are then calculated using observable inputs. V_E is the market capitalization, F is measured by the total book value of debt, the short-term risk-free rate r is proxied by the yield on one-year Treasuries, T is assumed to be one year for all firms (see, for example, Crosbie and Bohn, 2002; Hillegeist et al., 2004), and σ_E is approximated by the annualized standard deviation of monthly returns in the past year.

Table I. Descriptive Statistics

The table presents descriptive statistics for a sample of US firms, for a pooled sample of international firms from 34 countries (see list in Table A1), and separately for developed and emerging countries. All variables are winsorized at the 1st and 99th percentiles. Excess return is the stock's monthly raw return minus the risk-free rate (in percent per month) where we use the yield on one-year US treasuries as the risk-free rate. Size is market equity value (in billions of dollars). Book-to-market is the book equity value divided by market equity value. Past return is the cumulative stock return in the past 12 months (in percent). Distance-to-default and risk-neutral probability of default are derived from the Merton (1974) model (see Section I.B for details). Speculative grade is a bond credit rating of BB+ and lower. The sample period is 1992–2010.

	US		International		Developed Countries		Emerging Countries	
	Mean	**Median**	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
Excess return	0.841	−0.230	0.880	−0.157	0.641	−0.238	1.375	−0.012
Size	1.721	0.170	0.930	0.106	1.146	0.122	0.484	0.079
Book-to-market	0.752	0.543	0.957	0.690	0.835	0.645	1.213	0.817
Past return	13.945	4.439	14.820	2.709	11.546	2.160	21.58	4.173
Distance-to-default	10.831	6.752	9.341	5.684	10.082	6.379	7.810	4.314
Probability of default	0.019	0.000	0.017	0.000	0.010	0.000	0.032	0.000
% of speculative grade	0.520	1.000	0.116	0.000	0.092	0.000	0.289	0.000

Every month, we solve the two equations simultaneously for each firm in our sample. Since there are no closed-form solutions for V_A and σ_A, we use a numerical algorithm with $V_E + F$and σ_E as the initial values. The risk-neutral probability of bankruptcy is then defined as the probability that the face value of debt exceeds the asset value at maturity, and is given as $1 - N(d_2)$. The distance-to-default is defined by d_2.[2]

Because our classification for distressed firms relies on the Merton's (1974) contingent claim approach, it is important to highlight the relation between default probability and equity returns derived by this approach and its implications for our study. Friewald, Wagner, and Zechner (2014) argue that looking at the relation between equity returns and physical default probability is not enough, as equity returns are related to both physical default probability and risk-neutral default probability. While their arguments could provide a rational theoretical ground for the negative relation between stock returns and default probability, they are unable to explain the empirical facts of distressed stocks' returns lower than the risk-free rate and negative alphas on returns of these stocks.

Table A1 reports the country-level statistics on the distance-to-default. For ease of exposition, these are aggregated into regions in Table I that provides the summary statistics for the distance-to-default, the probability of default, the percentage of firms with speculative grades (bond credit rating of BB+ and lower), as well as excess returns (the stock's monthly raw return minus the risk-free rate), firm size (market value of equity), the book-to-market ratio (book equity value divided by the market equity value), and past return (past 12-month returns

[2] Moody's KMV uses a more involved proprietary model to estimate Expected Default Frequency. It transforms the risk-neutral probability of default into physical probability using a proprietary data set of actual bankruptcies. It also makes additional adjustments to account for the complexity of capital structure, such as short-term and long-term liabilities and convertible debt.

skipping the most recent month). International firms are generally smaller with less growth opportunities (as proxied by book-to-market) than US firms. Stock returns in emerging markets have been considerably higher in our sample period than in the developed ones (including the United States). The risk-neutral probability of default and distance-to-default are similar between international and US firms, with firms in emerging economies facing a slightly greater likelihood of bankruptcy. There is a substantial difference in bond ratings. The percentage of firms with speculative grade ratings in the United States is 52.0%, while it is only 11.6% among international firms. This can be partly explained by different bond rating criteria across countries, but is most likely due to the small fraction of firms with credit rating data, which does not represent the entire population of firms, especially in the international sample. Only 1.2% of the international firm-year observations have credit rating data compared to 8.8% of the United States firm-years. Comparison between firms in developed and emerging markets indicates that the former are much larger, have more growth opportunities (however, it is possible that our international sample misses some small, low book-to-market firms in emerging markets), have lower realized stock returns in the past two decades, and are less likely to go bankrupt.

II. Distress Effect in International Sample

A. Portfolio Sort Analysis

Using the distance-to-default measure, at the end of every calendar quarter, we sort all stocks in each country into five equal-sized portfolios. Quintile 1 contains the most distressed stocks while Quintile 5 consists of the least distressed stocks. We hold these portfolios for the subsequent quarter. We skip one month between portfolio formation and the future return measurement period.[3] We then compute value-weighted monthly returns for distress-risk sorted quintiles in each country.

We provide detailed country-by-country results in Table A2. However, to reduce clutter, we choose to present only aggregate results in the main text. We select three different regional aggregations: 1) all countries (International), 2) developed countries (Developed), and 3) emerging counties (Emerging). Aggregation also allows us to address power concerns as combining securities/portfolios across countries produces especially diversified portfolios. We aggregate the results in three different ways. We equally weight or value weight portfolios across countries in a region (value weighting is done using a country's aggregate market capitalization from the prior month). Value weighting countries has obvious advantages except in some circumstances where one or two large countries can dominate the overall portfolio. In these circumstances, equal-weighted portfolios provide additional information. Both these weighting schemes ensure that all countries are represented in the aggregate portfolio. This is the approach followed by Fama and French (1998). A third approach is to pool all securities within a region. The resulting long-short portfolio need not contain securities from all countries at a point in time, but is still broadly diversified. This is the approach used by Fama and French (2012), who combine 23 developed markets into 4 regions. All three approaches produce diversified portfolios, albeit in different ways.

In some of our tests, we also calculate factor-model alphas. There is, however, little agreement about the right asset pricing model. Fama and French (1998) demonstrate the failure of the

[3] Da and Gao (2010) show that the short-term return reversal effect may contaminate the relationship between the default likelihood and future short-term stock returns.

international capital asset pricing model (CAPM) and propose a two-factor model that includes a value factor. Griffin (2002) asks whether these factors should be local or global. Hou, Karolyi, and Kho (2011) find that momentum and value factors capture much of the common variation in global stock returns. There is also little consensus about the right way to construct the factors. Some of the variation in construction methods is undoubtedly due to views about market integration and/or the precise nature of the tests.

Unlike the authors noted above, we have no direct asset pricing purpose and, therefore, take a stripped down approach. We calculate one-, three-, and four-factor alphas. In calculating these alphas, factors are built using Worldscope data in an analogous manner as the construction of the portfolios. The CAPM one-factor model uses the market factor. The factors in the three-factor model are the Fama and French (1993) factors. The factors employed in the four-factor model are the Fama and French (1993) factors augmented with a momentum factor.

Table II reports the difference between the average monthly excess returns of the bottom (most distressed) and top (least distressed) quintiles for each region. We further report the alphas from factor models for the long-short portfolios that buy the bottom and short the top quintiles. All returns and alphas are in percent per month and numbers in parentheses denote the corresponding *t*-statistics. Note that a negative sign in Table II indicates that distressed stocks underperform solvent ones (either on a raw or risk-adjusted basis) and is consistent with the distress risk puzzle found in the United States. On the contrary, a positive sign indicates superior returns to distressed stocks.

Table II reveals several interesting observations. First, the distress effect in the United States sample is weaker than reported in prior studies when using the distance-to-default measure as a proxy for distress. In fact, it appears only in the three- and four-factor alphas (–0.68% and –0.33% per month, respectively) and is not found in raw or market-adjusted returns.[4] Second, the distress anomaly appears to exist in developed countries with a similar magnitude to that of the United States. For instance, the three-factor alpha for the equal-weighted aggregate sample of developed countries is –0.63% with a *t*-statistic of –3.55. The effect is weaker when considering value-weighted or pooled developed market portfolios. Interestingly, the distress effect is diluted by the inclusion of the momentum factor. This is likely due to the fact that distressed stocks are often past losers and, as such, load negatively on the momentum factor.

Third, the distress effect does not exist in emerging countries. On the contrary, distressed stocks in emerging markets, on average, generate higher returns than solvent stocks (although the difference is not always significant). The presence of the distress anomaly in only developed countries, coupled with the variation in the distress effect across countries (reported in Table A2), points to the presence of country-specific characteristics that drive returns to distressed stocks and generate the distress effect. We explore the role of these characteristics in Section III.

We also analyze the distress effect separately in large and small companies. We classify a company as large if its market capitalization is greater than the median market capitalization within the country (the breakpoint for large corresponds to that used by MSCI). The four-factor alphas of large cap and small cap spread portfolios are reported in the last two columns in Table II. In developed markets, the distress effect is stronger for smaller firms than it is for larger firms. For example, for equally weighted returns the four-factor alphas of the long-short portfolio (long in most distressed, short in least distressed) is −0.31% (*t*-statistic of −2.41) for small companies, versus −0.11% (*t*-statistic of −0.70) for large companies. We continue to find no strong evidence of distress effect in emerging countries even for the subsample of small firms.

[4] Campbell et al. (2008) find similar results when comparing the distress anomaly using the distance-to-default measure and other measures of financial distress. The KMV model yields a strong distress effect in a regressions analysis, both in Campbell et al. and in our study.

Table II. Returns and Alphas on Distress Sorted Portfolios

For each country, we sort all stocks each calendar quarter into five equal-sized quintiles (most distressed, D1, to least distressed, D5) based on the distance-to-default measure. We calculate the value-weighted returns of each quintile and form a zero-investment portfolio of buying D1 and shorting D5. Country-specific portfolios are then aggregated into regional portfolios for all international countries (Int.), all developed countries (Dev.), and all emerging countries (Emg.). "ew" refers to equal-weighting of country returns, "vw" refers to value-weighting (using the total country market capitalization of last month) of country returns, and "pool" refers to pooling all securities within a region. We provide mean excess returns (in excess of the risk-free rate) and alphas from factor models. The CAPM one-factor model uses the market factor. The three factors in the three-factor model are the Fama and French (1993) factors. The four factors in the four-factor model are the Fama and French (1993) factors augmented with a momentum factor. Four-factor alphas are also presented separately for small and large cap firms divided by the sample median. Factors are constructed separately for each region analogous to the method of aggregation. All returns and alphas are in percent per month and the corresponding *t*-statistics are in parentheses. The sample period is 1992–2010.

	Excess Return	CAPM Alpha	3-Factor Alpha	4-Factor Alpha	Small Cap	Large Cap
US	0.17	−0.06	−0.68	−0.33	−0.41	−0.34
	(0.45)	(−0.18)	(−2.47)	(−1.39)	(−2.23)	(−1.38)
Int. (ew)	0.05	−0.38	−0.55	−0.14	−0.29	−0.09
	(0.20)	(−2.45)	(−3.30)	(−0.99)	(−2.19)	(−0.60)
Int. (vw)	−0.03	−0.14	−0.18	0.15	−0.05	0.19
	(−0.12)	(−0.77)	(−0.88)	(0.87)	(−0.40)	(1.04)
Int. (pool)	−0.07	−0.23	−0.45	−0.02	−0.22	−0.03
	(−0.18)	(−0.69)	(−1.33)	(−0.06)	(−0.74)	(−0.09)
Dev. (ew)	−0.20	−0.53	−0.63	−0.16	−0.31	−0.11
	(−0.80)	(−3.06)	(−3.55)	(−1.01)	(−2.41)	(−0.70)
Dev. (vw)	−0.17	−0.27	−0.30	0.07	−0.16	0.11
	(−0.62)	(−1.29)	(−1.38)	(0.38)	(−1.16)	(0.57)
Dev. (pool)	−0.48	−0.59	−0.46	0.01	−0.12	0.02
	(−1.35)	(−2.03)	(−1.51)	(0.05)	(−0.44)	(0.08)
Emg. (ew)	0.58	0.08	−0.00	0.23	−0.15	0.26
	(1.89)	(0.32)	(−0.01)	(0.86)	(−0.52)	(0.93)
Emg. (vw)	0.68	0.50	0.53	0.59	0.25	0.60
	(2.40)	(2.02)	(1.99)	(2.23)	(0.95)	(2.17)
Emg. (pool)	0.50	0.16	−0.08	0.12	−0.09	0.11
	(0.90)	(0.32)	(−0.17)	(0.28)	(−0.26)	(0.24)

B. Fama-MacBeth Regressions

We complement the evidence from portfolio sorts by running cross-sectional Fama and MacBeth (1973) regressions. Beyond serving as an additional diagnostic check, these regressions allow for multivariate analysis and let us control for other determinants of stock returns thereby establishing the marginal influence of distress on returns. We run cross-sectional regressions of excess stock returns on the lagged distance-to-default measures. To avoid extreme outliers, we use the quintile number of the distance-to-default measure as our main independent variable. The control variables are (log) firm size, (log) market-to-book, and past 12-month return. We run these regressions on the pooled sample of all international or developed or emerging countries' firms. All regressions include country-specific fixed effects. In addition, we run the same regressions on samples

of firms in each country separately, and report the mean coefficients across all countries in the geographic region. All reported coefficients are multiplied by 100 and their *t*-statistics (in parentheses) are corrected for autocorrelation using the Newey and West (1987) procedure for six-month lag. The results are reported in Table III.

Univariate regressions with the distance-to-default quintile dummy do not provide strong evidence of the distress effect. This is similar to the weak evidence of the distress effect in excess returns in Table II. However, since the default measure is correlated with size, book-to-market, and past returns, it is important to control for these additional characteristics. Successive inclusion of these controls indicates that the regression results are consistent with the portfolio sort results and are sometimes even stronger. In the United States, there is a significant negative effect of financial distress on returns after controlling for size, book-to-market, and past returns (the *t*-statistic of the distance-to-default coefficient is 2.09) consistent with the distress anomaly documented in the literature. The distress anomaly also exists in the international sample (*t*-statistic of 1.72 in the pooled regressions and 4.96 in the country-specific regressions). More importantly, breaking down the international sample reveals that the distress anomaly comes almost solely from developed countries (*t*-statistics of 1.93 and 6.25) and does not exist in emerging markets (*t*-statistic of 0.31 and 0.36).

When looking separately at the performance of small and large stocks, we continue to find stronger distress effects for the small cap subsample, both in the United States and in developed countries. For example, in pooled Fama and MacBeth (1973) regressions with control variables for developed countries, the coefficient on the distance-to-default quintile is 0.056 (*t*-statistic of 1.01) for large firms, but 0.112 (*t*-statistic of 2.89) for small firms. Consistent with our portfolio-based results, there appears to be no distress effect in emerging countries in either the small cap or large cap companies.

Our evidence on the performance of distressed stocks in emerging and developed markets is different from that of Aretz et al. (2018) who find a positive default risk premium in developed countries using the reduced form approach of Campbell et al. (2008). There are multiple potential reasons for this apparent difference. First, the sample compositions are different. Our sample spans 20 developed countries and begins in 1992, while Aretz et al. (2018) examine 14 countries starting from 2000. In addition, Aretz et al. (2018) use six countries to estimate their bankruptcy prediction models. Three of those six countries (Canada, Japan, and the United Kingdom) have positive four-factor alphas in our regressions of returns on distressed portfolios (see Table A2) indicating an absence of the distress puzzle in those countries. All other developed countries in our sample, with the exception of Finland, have negative four-factor alphas. Finally, there are fundamental differences in the proxies for financial distress that our paper and Aretz et al. (2018) employ. Note that similar to our results, Gao et al. (2018) find a negative relation between credit risk and subsequent equity returns in developed countries using Moody-KMV's Expected Default Frequency estimates.

III. Distress Effect and Country Characteristics

Financially distressed stocks differ from solvent ones on a number of dimensions. They might be subject to specific sources of risk, which are much less relevant for companies that do not face a significant probability of bankruptcy. For example, due to inherently high bankruptcy risk, distressed stocks and their returns are likely to be affected by bankruptcy laws and by the division of assets between claimholders in the event of liquidation. Likewise, they might depend upon the relative bargaining power of equity holders versus bondholders in a debt workout or renegotiation.

Table III. Fama-MacBeth Regressions of Excess Return on Distance-to-Default

The table presents the results of a monthly cross-sectional firm-level Fama and MacBeth (1973) regression. The dependent variable is excess stock return. The main independent variable is the quintile number corresponding to the distant-to-default measure (1 is most distressed and 5 is least distressed). The control variables are (log) size, (log) book-to-market ratio (measured by the equity book value divided by the equity market value), and the past 12-month return (we skip one month in calculating the past returns). We run these regressions on four different samples: US firms, all international firms (the 34 countries listed in Table A1), developed countries firms, and emerging countries firms. Regressions reported in columns 3 to 5 include country-fixed effects. The bottom panel shows the coefficient of the distant-to-default from the full regression model separately for small and large cap firms divided by the sample median. All coefficients are multiplied by 100 and Newey and West (1987) *t*-statistics using six lags are reported in parentheses. The sample period is 1992–2010.

		Pooled Fama-MacBeth Regressions With Country-Fixed Effects			Means of Country-Specific Fama-MacBeth Regressions		
	US	International Countries	Developed Countries	Emerging Countries	International Countries	Developed Countries	Emerging Countries
Intercept	1.16	0.09	0.01	1.94	1.01	0.61	1.59
	(2.07)	(0.15)	(0.02)	(1.70)	(5.59)	(3.18)	(4.86)
Distance-to-default	−0.10	0.01	0.05	−0.13	−0.03	0.06	−0.16
	(−1.28)	(0.24)	(1.07)	(−1.67)	(−0.34)	(3.44)	(−3.43)
Intercept	3.13	0.61	0.22	4.22	1.55	0.66	2.83
	(2.32)	(0.69)	(0.22)	(3.11)	(3.80)	(1.00)	(4.64)
Distance-to-default	0.07	0.06	0.08	−0.00	0.03	0.10	−0.07
	(1.48)	(1.28)	(1.63)	(−0.00)	(3.43)	(5.30)	(−0.88)
Log (Size)	0.53	−0.04	−0.01	−0.20	−0.05	0.01	−0.12
	(3.04)	(−1.23)	(−0.32)	(−3.16)	(−0.07)	(2.39)	(−2.86)
Log (BM)	−0.17	0.43	0.37	0.56	0.42	0.40	0.45
	(−2.04)	(5.02)	(3.55)	(6.93)	(14.46)	(11.10)	(9.26)
Intercept	3.07	1.00	0.72	4.16	1.49	0.94	2.27
	(2.36)	(1.23)	(0.81)	(3.21)	(4.60)	(2.60)	(4.03)
Distance-to-default	0.10	0.07	0.08	0.02	0.06	0.11	−0.00
	(2.09)	(1.72)	(1.93)	(0.31)	(4.96)	(6.25)	(−0.36)

(*Continued*)

Table III. Fama-MacBeth Regressions of Excess Return on Distance-to-Default (*Continued*)

		Pooled Fama-MacBeth Regressions With Country-Fixed Effects			Means of Country-Specific Fama-MacBeth Regressions		
	US	International Countries	Developed Countries	Emerging Countries	International Countries	Developed Countries	Emerging Countries
Log (Size)	−0.18	−0.08	−0.06	−0.21	−0.09	−0.05	−0.13
	(−2.22)	(−2.51)	(−1.62)	(−3.41)	(−3.45)	(−1.58)	(−3.44)
Log (BM)	0.61	0.40	0.33	0.55	0.39	0.35	0.46
	(3.85)	(5.09)	(3.55)	(6.85)	(14.47)	(10.79)	(9.62)
Past return	0.22	0.55	0.78	0.05	0.28	0.80	−0.47
	(0.68)	(1.98)	(2.51)	(0.17)	(6.01)	(8.44)	(−0.56)
Small cap							
Distance-to-default	0.23	0.09	0.11	0.02	0.08	0.13	−0.01
	(4.70)	(2.39)	(2.89)	(0.22)	(5.30)	(6.48)	(−0.61)
Large cap							
Distance-to-default	−0.01	0.07	0.06	0.04	0.04	0.07	0.01
	(−0.10)	(1.23)	(1.01)	(0.57)	(2.61)	(3.09)	(0.42)

Many distressed stocks are acquired by other companies making distressed equities subject to takeover risk.

Alternatively, distressed stocks could have return properties that appeal to some investors. For instance, returns to distressed stocks are positively skewed. Thus, distressed stocks may be attractive to investors seeking positive skewness. Distressed stocks may also be subject to liquidity risk and limits-to-arbitrage. These and other specific factors and sources of risk are likely to play a role in shaping returns to distressed stocks and in driving the distress anomaly.

Because many of these factors are country-specific (e.g., bankruptcy legislation, takeover legislation, market illiquidity, and accounting standards), one cannot examine their role in a single-country study (for example, by looking solely at returns to distressed stocks in the United States). Our international setting, therefore, offers a clear advantage. There are substantial differences in the potential sources of the distress anomaly across countries (reported below), as well as a large variation in returns to distressed stocks. This allows us to examine how the distress effect varies with country characteristics. In addition, examining country characteristics eliminates the noise involved in estimating firm-specific characteristics.

A. Country Characteristics and Hypotheses Development

We divide potential drivers of returns to distressed stocks into two broad categories. The first represents various types of risks that distressed stocks bear, while the second relates to demand for distressed stocks caused by specific investor preferences. On the risk front, we identify four subcategories of risk: 1) debt enforcement risk, 2) limits to arbitrage (liquidity) risk, 3) takeover risk, and 4) information transparency risk. Investor preferences pertinent to distressed stocks are those relating to positive skewness. We combine these categories into five groups of country-specific measures (one measure proxies for two different drivers of returns) in our analysis. We obtain all countrywide variables from the aggregation of firm-specific data and from databases used in prior international studies. Table IV provides the descriptions and sources of all variables. The five categories and corresponding variables are discussed below.

1. Debt Enforcement Risk

The tightness of debt enforcement procedures and potential deviations from the absolute priority rule in bankruptcy clearly affect the riskiness of distressed stocks and can, therefore, influence their returns. Prior studies have demonstrated theoretically that equity in distressed firms can become relatively safe if the shareholders have strong bargaining power against bondholders in bankruptcy situations due to potential deviations from the absolute priority rule (see Garlappi et al., 2008; Garlappi and Yan, 2011). The possibility of renegotiation and concessions and the extent to which bondholders can enforce the absolute priority rule in bankruptcy largely depend upon the corporate law and corporate culture of a country. Therefore, in countries where shareholders have more bargaining power vis-à-vis bondholders, where it is easier to renegotiate, or where debt enforcement laws are less tight, distressed stocks are expected to be safer and, therefore, earn lower returns.

We use four proxies for debt enforcement risk in a country. The first is "renegotiation failure," a proxy for the probability that renegotiations between equity holders and bondholders fail. If this probability is high, distressed stocks become riskier and it is reasonable to expect them to earn higher returns. The second is "debt priority." If creditors are given higher priority by the law, distressed stocks become riskier and could earn higher returns as a result. The third and fourth are "creditors' recovery rate" and "creditors' rights." Using the same logic, when creditors' recovery rate is high and that of shareholders is low, and when creditors have more rights, distressed stocks

Table IV. Country Variables

The table provides the description and sources of the country proxies divided into five categories. An * on a variable indicates that this variable is available in a time-series dimension. Absence of an * indicates that this variable is fixed over time.

Variable	Description	Source
Debt enforcement risk		
Renegotiation failure	An index that summarizes a number of characteristics of debt enforcement procedures that protect creditors from shareholders' strategic default.	Favara et al. (2012)
Debt priority	An index that ranges from one to four and equals four in countries where creditors are ranked first in the distribution of proceeds during an insolvency procedure (see Djankov et al., 2008).	Andrei Shleifer's Web site
Creditors' recovery rate	An inverse measure of the shareholder benefits to engage in strategic default (see Djankov et al., 2008).	Andrei Shleifer's Web site
Creditors' rights*	An index aggregating creditors' rights (see Djankov et al., 2008).	Andrei Shleifer's Web site
Limits to arbitrage		
Institutional ownership*	The average proportion of institutional ownership.	Datastream
Short sales constraints*	A dummy variable that is equal to one for country-years in which short sales are not allowed and zero otherwise.	Bris et al. (2007)
Idiosyncratic volatility	The country average of standard deviations of the residuals from the regression of monthly stock returns on the market return over the past two years.	Datastream
Amihud's (2002) illiquidity	The absolute value of stock return divided by the dollar trading volume on a given trading day (firm average).	Ng et al. (2016)
Takeover legislation		
Takeover index	An index that measures the friendliness of takeover laws to investors.	Nenova (2006)
Takeover law*	A dummy variable that is equal to one for the country-year with a takeover law otherwise.	Lel and Miller (2015)
Rule of law	Assessment of the law and order tradition in the country (see LaPorta et al., 1998).	Andrei Shleifer's Web site
Information transparency		
Accounting standard index	Index created by examining and rating companies' 1990 annual reports on 90 items covering general information, income statements, balance sheets, fund flow statements, accounting standards, and stock data (see LaPorta et al., 1998).	Andrei Shleifer's Web site
Disclosure requirement index	The arithmetic mean of six subindexes: prospectus, compensation, shareholders, inside ownership, contracts irregular, and transactions (see LaPorta et al., 2006).	Andrei Shleifer's Web site
Number of analysts	The number of analysts providing annual earnings forecast per firm.	Chang et al. (2000)
Skewness		
Stock return skewness*	The country average of the fitted values from the regression of skewness in monthly stock returns over the next two years on skewness over the past two years, and control variables including idiosyncratic volatility, the log of firm size, the log of the book-to-market ratio, and stock return over the past six months (see Boyer et al., 2010).	Datastream

become riskier for shareholders, which can be reflected in their returns. We follow Djankov et al. (2008) in constructing the measures of debt priority, creditors' recovery rates, and creditors' rights (we use data from Andrei Shleifer's Web site). We follow Favara, Schroth, and Valta (2012) in constructing the measure of renegotiation failure.

2. Limits to Arbitrage

Arbitrage risk has been frequently suggested in the literature to explain anomalies (Shleifer and Vishny, 1997). Arbitrage risk can have a disproportionally strong effect on distressed stocks as they are particularly difficult to arbitrage. They are small, illiquid, have low institutional ownership, scarce analyst coverage, and higher beta and idiosyncratic risk (see, for example, Eisdorfer et al., 2017). In markets with greater barriers to arbitrage, we expect distressed stocks to be riskier and, as such, earn higher returns. To measure this effect, we use the cross-country variation in limits to arbitrage. We use four common proxies for the limits to arbitrage at the country level: 1) institutional ownership, 2) short sale constraints, 3) idiosyncratic volatility, and 4) Amihud's (2002) illiquidity (per firm). Institutional ownership is defined as the average institutional ownership within a country for firms with coverage on Datastream. We follow Bris, Goetzmann, and Zhu (2007) and define a measure of short sales constraints as a dummy variable that is equal to one for country-years in which short sales are not allowed and zero otherwise. Idiosyncratic volatility is defined as the country average of the standard deviations of the residuals from regressions of monthly stock returns on the market return over the past two years. Amihud's (2002) illiquidity is the average of the absolute values of daily returns scaled by trading volume.

3. Takeover Legislation

Distressed companies often provide acquisition opportunities to large companies. Wruck (1990) reports that about 7% of companies that undergo a legal bankruptcy procedure in the United States are acquired by other companies. The possibility of an acquisition as a viable exit reduces the risk that investors in distressed stocks bear. An active acquisition market partly protects investors from downside risk resulting from bankruptcies of viable companies due to negative cash flow shocks. In addition, as suggested by Edmans et al. (2012), stock prices endogenously incorporate the likelihood of takeover. Thus, prices adjust upward for companies facing possible acquisition signifying a negative effect on future expected returns.

Our hypothesis states therefore that distressed stocks earn lower returns in countries with more takeover-friendly legislation. Our proxies for the likelihood of a friendly takeover in a country are takeover index, takeover law, and rule of law. Takeover index is a proxy for the degree of takeover friendliness in the country and is obtained from Nenova (2006), who constructs it using multiple layers of takeover-related variables, such as mandatory offer disclosure, antitakeover tactics, and others. Takeover law is a dummy variable that is equal to one if there is a takeover law in a country in a given year and zero otherwise. We follow Lel and Miller (2015) in constructing this proxy. Rule of law represents an assessment of the law and order tradition in the country and is taken from Andrei Shleifer's Web site (see LaPorta et al. (1998) for details).

4. Information Transparency

Low information transparency induces an element of risk to investors (i.e., risk of being less informed with regard to the true value of the company). Investors demand high returns to compensate for this uncertainty.[5] We argue further that this risk effect is stronger for distressed

[5] Note that this argument does not suggest that high stock returns correct for underpricing, but rather compensate for high risk of mispricing (mispricing itself can go in both directions).

firms. The reason is that the value of distressed firms is largely driven by the prospect of their bankruptcy and assessing the true probability of bankruptcy is a difficult task that relies primarily on accounting information. As discussed in Section I.B, most bankruptcy prediction models rely on a large set of accounting variables. Accuracy and reliability of such data are of key importance for investors who want to assess the likelihood of default. Hence, in countries where the quality of accounting standards/disclosures is low, it is even harder to estimate the true probability of bankruptcy. This represents an additional source of risk that investors in distressed stocks would have to bear in these countries. Thus, it is reasonable for investors to demand higher returns to distressed stocks in countries with low information/accounting transparency. We use three proxies for the degree of information transparency and the quality of accounting standards: accounting standard index, disclosure requirement index, and number of analysts per firm. The accounting standard is created by examining and rating companies' 1990 annual reports on 90 items covering general information, income statements, balance sheets, fund flow statements, accounting standards, and stock data (please refer to LaPorta et al. (1998) for details). The disclosure requirement index is the arithmetic mean of six subindexes: prospectus, compensation, shareholders, inside ownership, contracts irregular, and transactions (see LaPorta, López-de-Silanes, and Shleifer, 2006). Both accounting and disclosure requirement indexes are obtained from Andrei Shleifer's Web site.

5. Preference for Positive Skewness

The equity of a levered firm is analogous to a call option written on the assets of the firm (see Merton, 1974). This view is particularly relevant for highly levered and financially distressed companies. Distressed stocks, like financial call options, provide investors with a highly positively skewed return distribution (see, for example, Campbell et al., 2008). They are, thus, lottery-like investments and tend to spur demand from investors seeking positive skewness. Investors' appetite for distressed stocks will, however, also depend upon whether other (solvent) stocks also offer positive skewness. In particular, the demand for distressed stocks will decline if investors can generate positive skewness by investing in less distressed or solvent stocks. We would then expect lower returns on distressed stocks in countries where returns, in general, are less positively skewed. In these countries, investors seeking positive skewness have fewer options and will likely overweight distressed stocks and drive down their returns. We base our measure of expected skewness on the approach proposed by Boyer et al. (2010). We compute this measure as the country average of the fitted values from the regression of skewness in monthly stock returns over the next two years on skewness over the past two years, and control variables including idiosyncratic volatility, the log of firm size, the log of the book-to-market ratio, and stock returns over the past six months.

We emphasize that while some of our country variables are static, others vary over time within countries allowing us to also capture the effect of their time-series variation on distressed stock returns. For example, the takeover law dummy is determined by the passage of takeover laws in various countries and represents a time-varying exogenous shock to takeover legislation. Other country variables that vary not only across countries, but also over time, are creditor rights, insider ownership, institutional ownership, and return skewness. We summarize our hypotheses below:

Hypothesis 1. Debt enforcement risk: Returns to distressed stocks are likely to be higher in countries with a greater probability of renegotiation failure, higher debt priority, greater creditor recovery, and stronger creditor rights.

Hypothesis 2. Limits to arbitrage risk: Returns to distressed stocks are likely to be higher in countries with lower institutional ownership, more short sale constraints, higher idiosyncratic volatility, and higher Amihud's (2002) illiquidity.

Hypothesis 3. Takeover legislation risk: Returns to distressed stocks are likely to be lower in countries with a higher takeover index, takeover laws, and rules of law.

Hypothesis 4. Informational transparency risk: Returns to distressed stocks are likely to be higher in countries with greater information uncertainty and a lower quality of accounting/disclosure standards.

Hypothesis 5. Investor preferences: Returns to distressed stocks are likely to be higher in countries with greater average stock return (expected) skewness.

B. First Look: Comparison of Developed and Emerging Markets

Since the distress anomaly appears to exist in developed countries and not in emerging ones, we begin by examining whether there are differences in the countrywide proxies between the developed and the emerging markets as groups. Table V provides descriptive statistics for our country-level variables.

First, debt enforcement risk is higher in developed countries than in emerging countries as indicated by all four proxies that we employ. This is inconsistent with our first hypothesis as we find that distressed stocks earn higher returns in emerging countries. In addition, and unsurprisingly, emerging markets are more illiquid than developed markets and also have lower institutional ownership. Both variables suggest a higher level of arbitrage risk in emerging markets. This is consistent with our second hypothesis of a positive relation between returns to distressed stocks and limits to arbitrage. Moreover, all three proxies of takeover friendliness are higher in developed countries. This is consistent with our third hypothesis of a negative relation between returns to distressed stocks and takeover legislation. The data also indicate that two proxies of information transparency (accounting standards and analyst coverage) are higher in developed countries. The third measure, disclosure requirements, is higher in emerging markets, which is somewhat surprising. This broad cut of the data, therefore, does not present clear evidence for or against our fourth hypothesis. Finally, firms in emerging countries exhibit more positively skewed return distributions than firms in developed markets. This is consistent with our hypothesis regarding the relation between distressed stock returns and investor preferences. These differences in countrywide characteristics between developed and emerging countries, some of which are consistent with the extent of distress anomaly found in these two country groups, provide a first indication of the ability of these characteristics to explain the distress anomaly.

In the next two subsections, we analyze the effect of these characteristics on the distress stock returns in more detailed cross-country analyses. Garlappi and Yan (2011) and Favara et al. (2012) test their theoretical models by examining the pattern of conditional betas. Instead, we focus directly on returns for two reasons. First, even from a strictly theoretical point of view, cross-sectional variation in betas is identical to that of returns for a one-factor model. Thus, focusing on betas is no more powerful than focusing on returns. Additionally, analysis of returns avoids over reliance on factor models. Since the empirically documented distress anomaly is about the failure of factor models to explain the returns, we believe it is more prudent to analyze our hypotheses in the context of returns directly.

Table V. Descriptive Statistics of Country Characteristics

The table presents descriptive statistics of the country variables described in Table IV. We present pooled means, medians, and standard deviations separately for all countries, developed countries, and emerging countries. The predicted sign of the difference in returns is listed in parentheses next to the characteristic. A positive sign indicates that the country/region with higher values of that characteristic has higher relative returns to distressed stocks than does a country/region with a lower value of that same characteristic.

	International			Developed Countries			Emerging Countries		
	Mean	Med	SD	Mean	Med	SD	Mean	Med	SD
Debt enforcement risk									
Renegotiation failure (+)	0.537	0.540	0.270	0.611	0.550	0.267	0.414	0.495	0.237
Debt priority (+)	3.406	4.000	0.911	3.700	4.000	0.657	2.917	3.000	1.084
Creditors' recovery rate (+)	0.624	0.595	0.265	0.750	0.830	0.203	0.414	0.405	0.222
Creditors' rights (+)	2.292	2.130	1.025	2.424	2.478	1.082	2.090	2.000	0.936
Limits to arbitrage									
Institutional ownership (−)	0.126	0.103	0.091	0.150	0.115	0.100	0.084	0.088	0.052
Short sales constraints (+)	0.227	0.000	0.419	0.059	0.000	0.236	0.584	1.000	0.493
Idiosyncratic volatility (+)	0.133	0.110	0.087	0.117	0.097	0.071	0.160	0.136	0.102
Amihud's illiquidity (+)	−0.915	−0.974	1.766	−1.216	−1.101	1.385	−0.451	0.004	2.213
Takeover legislation									
Takeover index (−)	0.607	0.590	0.191	0.676	0.620	0.191	0.508	0.540	0.146
Takeover law (−)	0.456	0.516	0.383	0.597	0.645	0.395	0.238	0.290	0.244
Rule of law (−)	7.803	8.542	2.264	8.984	9.617	1.421	5.440	5.267	1.719
Information transparency									
Accounting standard (−)	66.690	65.000	8.014	68.700	68.500	7.277	62.222	64.000	8.151
Disclosure requirement (−)	0.680	0.667	0.178	0.650	0.667	0.181	0.735	0.750	0.166
Number of analysts (−)	14.844	12.870	7.219	17.708	18.435	7.366	10.438	9.770	4.287
Skewness									
Stock return skewness (+)	0.497	0.485	0.207	0.471	0.459	0.203	0.553	0.545	0.202

C. Portfolio Sorts

We construct distress risk portfolios as in Section II.A. For each country, and in every calendar quarter, we sort all stocks into five equal-sized quintiles based on the Merton (1974) distance-to-default measure and we hold these portfolios for the subsequent quarter. We then calculate a hedge portfolio that is long in Quintile 1 of most distressed stocks and short in Quintile 5 of least distressed stocks.

Our interest in this section is to study the effect of country characteristics on the returns of this hedge portfolio. To do this, we sort all countries by the characteristic of interest, and compare the mean returns of the hedge portfolios in countries with low versus high values of the characteristic. In particular, for the sample of all international countries, we construct two groups of five countries each with the lowest and the highest values of a characteristic. When we consider developed and emerging samples separately, we include only three countries in each lowest and highest value group. For each group of countries, we calculate the equal-weighted average of the country hedge portfolios. Finally, we also calculate the differences of returns in these aggregate hedge portfolios across the two groups of countries.[6]

Table VI presents the results. We list the predicted sign of the difference in returns in parentheses next to the characteristic. A positive sign indicates that the country/region with a greater value of that characteristic has higher predicted relative returns to distressed stocks than does a country/region with a lower value of that same characteristic.

There is mixed evidence in favor of Hypothesis 1. The renegotiation failure proxy works in the predicted direction (higher returns to distressed stocks in countries with a greater degree of renegotiation failure) in developed countries (t-statistic of 2.20), but is insignificant in emerging markets. The effect of the creditors' recovery rate is positive though insignificant in developed countries, but negative in emerging markets and also in the pooled sample of international firms.

Evidence in support of Hypothesis 2 is also mixed. Distressed stocks in countries with higher institutional ownership earn lower returns, although the effect is statistically insignificant. The effect of Amihud's (2002) illiquidity measure is significant and has a positive sign for both developed and emerging countries. However, there is no clear pattern in the effect of short sale constraints and idiosyncratic volatility on returns to distressed stocks.

The effects of our proxies of takeover friendliness are consistent with Hypothesis 3 for emerging countries. Distressed stocks earn lower returns in countries with a higher takeover index (t-statistic of –4.34) and rule of law (t-statistic of –5.33). There is no such effect, however, in developed countries where the difference between the top and bottom three countries is insignificant for both measures.

From Hypothesis 4, we expect negative signs for all three measures of information transparency. Two of them (accounting standards and the number of analysts) have the expected sign in the overall sample and are statistically significant. Because accounting standards and the number of analysts are higher in developed countries, the difference in these measures between emerging and developed markets might contribute to our finding that the distress risk puzzle is stronger in developed markets. In the subsample of emerging countries, accounting standards and disclosure requirements work in the expected direction and are statistically significant with t-statistics of –3.10 and –2.47, respectively. The effect of all three measures in the developed countries, as well as the effect of the number of analysts in emerging countries, is not statistically significant.

[6] A few country characteristics that we use are dummies or indexes that take only a few values (e.g., 1 to 4). We are unable to divide countries into top five and bottom five by these characteristics. Therefore, we do not use these characteristics in portfolio sorts, but use them in regressions in Section III.D.

Table VI. Distress Effect by Country Characteristics: Portfolio Sorts

We sort all stocks, separately for each of our 34 countries, each calendar quarter into five equal-sized quintiles (most distressed, D1, to least distressed, D5) based on the distance-to-default measure. We then calculate the returns to the long-short portfolio that goes long in D1 and short in D5. We also sort countries into two groups, Lo and Hi, with the lowest and highest values of a set of characteristics described in Table IV. These two groups consist of five countries each for the international sample and three countries each for the developed/emerging sample. Finally, we calculate the equal-weighted average of country long-short portfolios for each group and present statistics on these aggregate portfolios. For each group of countries, we also report the difference in average returns and its *t*-statistics. The predicted sign of the difference in returns is listed in parentheses next to the characteristic. A positive sign indicates that the country/region with a higher value of that characteristic has higher relative returns to distressed stocks than does a country/region with a lower value of that same characteristic. All returns are in percent per month. The sample period is 1992–2010.

	International				Developed Countries				Emerging Countries			
	Lo	Hi	Difference		Lo	Hi	Difference		Lo	Hi	Difference	
Debt enforcement risk												
Renegotiation failure (+)	0.02	−0.05	−0.07	(−0.54)	−0.38	−0.06	0.32	(2.20)	0.83	0.85	0.03	(0.14)
Creditors' recovery rate (+)	0.50	−0.18	−0.68	(−5.80)	−0.33	−0.17	0.17	(1.19)	1.29	0.61	−0.68	(−3.32)
Limits to arbitrage												
Institutional ownership (−)	0.41	0.32	−0.10	(−0.59)	0.21	0.09	−0.12	(−0.55)	0.35	0.68	0.33	(1.85)
Short sales constraints (+)	−0.38	0.30	−0.68	(−1.36)	0.33	0.62	−0.29	(−0.49)	−0.48	−0.48	0.00	(0.00)
Idiosyncratic volatility (+)	0.49	0.34	0.15	(0.24)	0.07	0.32	−0.25	(−0.59)	−0.14	−0.70	0.55	(0.77)
Amihud's illiquidity (+)	−0.19	0.62	0.80	(7.36)	−0.35	0.02	0.37	(3.19)	0.08	0.83	0.75	(4.03)
Takeover legislation												
Takeover index (−)	0.48	0.08	−0.40	(−3.35)	−0.19	−0.01	0.18	(1.52)	0.70	−0.09	−0.80	(−4.34)
Rule of law (−)	0.66	−0.20	−0.86	(−7.63)	−0.25	−0.21	0.05	(0.35)	1.23	0.18	−1.05	(−5.33)
Information transparency												
Accounting standard (−)	0.22	−0.05	−0.27	(−2.30)	−0.27	−0.11	0.16	(1.20)	1.18	0.56	−0.62	(−3.10)
Disclosure requirement (−)	−0.18	0.14	0.32	(2.39)	−0.10	0.12	0.22	(1.50)	0.70	0.26	−0.44	(−2.47)
Number of analysts (−)	0.21	−0.19	−0.41	(−3.29)	−0.22	−0.07	0.15	(1.02)	0.34	0.51	0.17	(1.07)
Skewness												
Stock return skewness (+)	−0.20	0.06	−0.26	(−0.37)	0.33	0.54	−0.21	(−0.37)	−0.24	−0.82	0.58	(0.68)

Finally, there is no evidence in support of Hypothesis 5. There are no significant differences in returns to distress spread portfolios in countries with high and low expected skewness.

To summarize, 5 of the 12 characteristics that we examine affect the extent of the distress anomaly significantly in the predicted direction in the pooled sample of all countries. Examining the effect of the same characteristics in emerging countries shows very similar results as in the entire sample with only two differences, both representing information transparency. The effect of the number of analysts is not significant in emerging markets, but the effect of disclosure requirements becomes significant and has the predicted sign.

The effect of our country characteristics in the sample of developed countries is weaker, with only one characteristic (Amihud's (2002) illiquidity) being statistically significant and having the predicted sign. A possible explanation for this could be that the variation in some characteristics in developed countries is much lower than that of emerging countries. Consider, for example, information transparency. When the quality of accounting standards is very low (which is more likely the case in emerging markets), any small improvement in this quality could significantly enhance the investors' ability to analyze a firm and, particularly, to assess its probability of bankruptcy. However, when the quality of accounting standards is already high (as in most developed countries), and most important accounting variables are easily available and bias free, any additional improvement in accounting quality might not make a big difference for investors. Therefore, these characteristics will matter more for emerging countries than developed countries in explaining the returns on distressed stocks.

D. Fama-MacBeth Regressions

We further examine the effect of each of the country characteristics using Fama and MacBeth (1973) regressions. We run firm-level monthly cross-sectional regressions on the pooled sample of all countries. The dependent variable is excess stock return in the next month. The independent variables are the country characteristics, distress dummy, and an interaction term between the country characteristic and the distress dummy. The distress dummy is equal to one for the most distressed firms (the ones that belong to the bottom distress quintile). All regressions also include the control variables (log) size, (log) book-to-market ratio, and past 12-month returns. We include only one characteristic at a time in these regressions. We repeat this procedure separately for the subsamples of firms in developed countries and in emerging countries.

Regressions offer a few advantages over portfolio sorts. First, we are able to include control variables, such as past return in regressions. Second, the regressions use the entire cross-section of countries, while the portfolio sorts look at only the extremes of the country characteristics. Third, the regressions give equal weight to all firms, whereas portfolio sorts overweight countries with fewer companies.

Table VII reports only the coefficients and *t*-statistics on the interaction terms for each characteristic. We list the predicted sign of the difference in returns in parentheses next to the characteristic. A positive sign indicates that the country/region with a higher value of that characteristic has greater predicted relative returns to distressed stocks than does a country/region with a lower value of that same characteristic.

As in portfolio sorts, in the sample of all countries, many characteristics affect the distress anomaly as predicted by Hypotheses 3 and 4, with limited support for Hypothesis 2. In particular, two proxies of limits to arbitrage, all three proxies of takeover legislation, and all three proxies of information transparency have the expected signs and are statistically significant at the 5% level (with the exception of takeover law, which is significant at the 10% level). There is no evidence in favor of Hypothesis 1, however, as none of the four proxies for debt enforcement risk has the

Table VII. Fama-MacBeth Regressions of Excess Return on the Interaction between Country Characteristics and Distress

The table reports the results of monthly cross-sectional Fama and MacBeth (1973) regressions. The dependent variable is excess stock return. The independent variables are (log) size, (log) book-to-market ratio (measured by the equity book value divided by the equity market value), past 12-month return (we skip one month in calculating the past returns), a country characteristic (described in Table IV), distress dummy (D), and an interaction term between the country characteristic and the distress dummy. The distress dummy is equal to one for the most distressed firms (the ones that belong to the bottom distress quintile). The table reports only the interaction term coefficients (multiplied by 100) and Newey and West (1987) corrected *t*-statistics with six lags in parentheses. The results are presented for a pooled sample of international firms and separately for developed and emerging countries. The predicted sign of the difference in returns is listed in parentheses next to the characteristic. A positive sign indicates that the country/region with a higher value of that characteristic has higher relative returns to distressed stocks than does a country/region with a lower value of that same characteristic. The sample period is 1992–2010.

	International	Developed	Emerging
Debt enforcement risk			
D × Renegotiation failure (+)	−0.463 (−2.34)	−0.341 (−1.75)	−0.530 (−1.71)
D × Debt priority (+)	−0.084 (−2.50)	−0.073 (−2.03)	−0.036 (−0.65)
D × Creditors' recovery rate (+)	−0.403 (−2.49)	−0.304 (−1.85)	−0.449 (−1.27)
D × Creditors' rights (+)	−0.118 (−1.87)	−0.102 (−1.56)	−0.069 (−0.77)
Limits to arbitrage			
D × Institutional ownership (−)	−0.065 (−2.57)	−0.055 (−2.32)	−0.016 (−0.22)
D × Short sales constraints (+)	−0.020 (−0.27)	−0.043 (−0.52)	0.192 (2.41)
D × Idiosyncratic volatility (+)	−0.089 (−0.12)	0.570 (0.66)	−1.257 (−0.93)
D × Amihud's illiquidity (+)	0.095 (2.08)	0.073 (1.13)	0.236 (2.72)
Takeover legislation			
D × Takeover index (−)	−0.411 (−2.32)	−0.331 (−1.87)	−0.231 (−0.80)
D × Takeover law (−)	−0.283 (−1.87)	−0.319 (−2.08)	0.099 (0.57)
D × Rule of law (−)	−0.036 (−2.25)	−0.031 (−2.09)	−0.011 (−0.39)
Information transparency			
D × Accounting standard (−)	−0.004 (−2.09)	−0.004 (−1.99)	−0.001 (−0.30)
D × Disclosure requirement (−)	−0.372 (−2.13)	−0.333 (−1.78)	−0.213 (−1.07)
D × Number of analysts (−)	−0.020 (−2.78)	−0.016 (−2.34)	−0.015 (−1.25)
Skewness			
D × Stock return skewness (+)	−0.148 (−0.48)	−0.242 (−0.50)	−0.641 (−1.27)

predicted sign. Like portfolio sorts, skewness in stock returns has no significant effect on the distress anomaly.

Unlike the portfolio sorts, the regression results for the developed countries sample are almost identical to those in all countries. The results for the emerging markets, however, are much weaker. While the signs of the coefficients on many characteristics are the same as predicted, only two characteristics (Amihud's (2002) illiquidity and short sale constraints) have significant effects on the distress anomaly. The regression results thus supplement the portfolio sort results. Most characteristics are associated with the difference between the stock returns of distressed and solvent firms. These effects are also partially present in the subsamples of the developed countries, but only in the extremes of the emerging countries.

While our findings suggest several sources of risk that affect returns to distressed stocks, the one imposed by takeover friendliness legislation can also be verified ex post; specifically, by

examining whether distressed firms are indeed acquired more often in countries with friendly takeover legislation (and stronger distress effect, as shown above). Using international merger and acquisition (M&A) data obtained from Thomson One Banker, we find that the cross-country correlation between the frequency of takeovers of distressed firms and the takeover friendliness legislation index is 0.38 and statistically significant. This relation is also meaningful in economic terms. For example, the mean distressed takeover frequency for the top five countries with most takeover friendly legislation is 18.4% compared to 9.6% for the bottom five countries. This ex post evidence supports our conclusion that distressed stocks in countries with more takeover friendly legislation are safer as they are more likely to be saved by acquisition.

E. Summary

To summarize the results in this section, we find first that the variation in the relative performance of distressed stocks is related to the variation in many country characteristics. Takeover risk, accounting standards, and disclosure quality (and the associated risk of failing to assess the likelihood of bankruptcy correctly) appear important. In addition, there are clear differences in these characteristics between developed countries and emerging markets. The effect of the countrywide characteristic on the distress anomaly is somewhat captured by the differences between developed and emerging markets, but not entirely. The extent of the distress effect still varies with the country characteristics in samples of only developed and only emerging countries.

We also run Fama and MacBeth (1973) regressions separately for large and small firms as in Section II.B. As before, we find, in untabulated results, that the effect of country characteristics on distress risk comes primarily from small firms and does not exist for the sample of large firms.

While we do not have a comprehensive answer regarding the drivers of the distress risk puzzle in the United States, our evidence suggests that a few key factors likely play a role in giving rise to this phenomenon. As information transparency, takeover friendliness, and, to some extent, market liquidity (limits to arbitrage) tend to affect returns to distressed stocks in a significant way, and US markets load positively on all of these dimensions, it is less surprising that distressed stocks in the United States tend to earn lower returns.

It is also likely that a similar mechanism is responsible for the absence of the distress risk puzzle in emerging markets. Emerging markets are less liquid, have a lower degree of information transparency (as proxied by the quality of accounting standards and the number of analysts, see Table V), and are subject to less takeover-friendly legislation. As our results indicate, all of these factors appear to pose additional risks for distressed stocks and, as such, lead to higher returns on those stocks in emerging markets.

IV. Conclusions

In the United States, distressed stocks earn puzzlingly low returns. We study this anomaly in 34 countries around the world. Portfolio sorts and regression analyses indicate that the distress anomaly is limited to developed countries and is not present in emerging countries. In emerging markets, distressed stocks earn higher returns than the solvent companies' stocks. In addition, the variation in the distress anomaly across all countries and, to some extent, within the separate groups of developed and emerging countries, is explained by a set of countrywide characteristics that are proxies for various aspects of risk associated with holding distressed stocks. Distressed stocks earn relatively lower returns in countries with stronger takeover legislation, lower barriers to arbitrage, and higher information transparency. Thus, low returns on distressed stocks are

associated with conditions that reduce the risk of the shareholders' claims when approaching bankruptcy. We do not attempt to provide evidence, however, whether the distress anomaly is driven by stock mispricing. These findings can help us advance our understanding of the puzzling return patterns of distressed stocks.

Appendix

Table A1. Country Descriptives

For each country, we report the first year of data, the total number of firms, the average number of firms per month, and the means and medians of distance-to-default. The countries are ordered alphabetically within developed markets (first 20 countries) and emerging markets (last 14 countries). The overall sample period is 1992–2010.

	First Year of Data	Total Number of Firms	Average Number of Firms	Distance-to-Default	
				Mean	Median
Australia	1992	2,116	715	14.3	8.7
Belgium	2000	189	121	10.1	7.5
Canada	1992	1576	575	12.1	7.3
Denmark	1992	280	151	9.0	6.9
Finland	2000	159	116	9.2	6.8
France	1992	1,249	579	8.4	6.0
Germany	1992	1,129	519	11.3	7.1
Greece	1996	360	228	7.2	3.9
Hong Kong	1996	218	165	8.7	5.0
Israel	2006	421	379	7.5	4.0
Italy	1992	394	179	8.1	5.7
Japan	1992	2,863	1,987	8.3	5.6
Netherlands	1992	221	135	10.7	7.7
New Zealand	2005	146	111	11.5	7.4
Norway	1997	327	136	8.3	5.1
Singapore	1995	581	307	8.7	5.3
Spain	1997	194	127	9.5	7.1
Sweden	2000	556	305	11.3	6.6
Switzerland	1992	302	170	9.7	7.6
UK	1992	3,234	1,319	11.1	7.3
Chile	1999	227	165	13.0	8.8
China	2000	871	720	7.6	5.6
India	1993	2,353	652	5.8	3.0
Indonesia	1996	425	223	8.2	3.6
Korea	1993	1,831	671	6.3	3.2
Malaysia	1992	952	507	9.0	5.3
Mexico	1999	156	104	10.1	5.7
Philippines	1997	249	167	11.5	4.9
Poland	2006	259	172	6.8	4.4
Russia	2007	306	190	8.8	3.7
South Africa	1993	685	249	9.6	5.9
Taiwan	1995	838	485	7.3	4.6
Thailand	1993	600	298	8.9	4.9
Turkey	1999	317	208	8.0	3.6

Table A2. Returns and Alphas on Distress Sorted Portfolios: Individual Country Results

For each country, we sort all stocks each calendar quarter into five equal-sized quintiles (most distressed, D1, to least distressed, D5) based on the distance-to-default measure. We calculate value-weighted returns of each quintile and form zero-investment portfolios of buying D1 and shorting D5. We report mean excess returns (in excess of the risk-free rate) and alphas from factor models. The CAPM one-factor model uses the market factor. The three factors in the three-factor model are the Fama and French (1993) factors. The four factors in the four-factor model are the Fama and French (1993) factors augmented with a momentum factor. Factors are constructed separately for each country. Four-factor alphas are also presented separately for small and large cap firms divided by sample median. All returns and alphas are in percent per month and the corresponding *t*-statistics are in parentheses. The countries are ordered alphabetically within developed markets (first 20 countries) and emerging markets (last 14 countries). The sample period is 1992–2010.

	Excess Return	CAPM Alpha	3-Factor Alpha	4-Factor Alpha	Small Cap	Large Cap
Australia	−0.03	−0.24	−0.18	−0.04	−0.42	0.02
	(−0.08)	(−0.77)	(−0.55)	(−0.14)	(−1.28)	(0.06)
Belgium	−0.52	−0.72	−0.74	−0.43	0.11	−0.29
	(−0.77)	(−1.45)	(−1.45)	(−0.92)	(0.25)	(−0.60)
Canada	−0.05	−0.23	−0.19	0.12	−0.24	0.06
	(−0.15)	(−0.64)	(−0.52)	(0.33)	(−0.75)	(0.16)
Denmark	−0.37	−0.62	−0.94	−0.43	−0.14	−0.43
	(−0.85)	(−1.43)	(−2.19)	(−1.03)	(−0.38)	(−0.96)
Finland	−0.33	−0.32	−0.12	0.04	−0.61	−0.01
	(−0.43)	(−0.48)	(−0.16)	(0.06)	(−1.14)	(−0.01)
France	−0.48	−0.79	−1.21	−0.39	−0.24	−0.40
	(−0.85)	(−1.52)	(−2.35)	(−0.83)	(−0.96)	(−0.81)
Germany	0.14	−0.15	−0.15	−0.06	−0.54	0.02
	(0.33)	(−0.41)	(−0.41)	(−0.15)	(−2.13)	(0.05)
Greece	−0.41	−0.65	−0.95	−0.88	−0.95	−0.92
	(−0.54)	(−0.98)	(−1.55)	(−1.46)	(−2.03)	(−1.46)
Hong Kong	0.23	−0.28	−0.58	−0.48	−0.56	−0.20
	(0.23)	(−0.32)	(−0.71)	(−0.61)	(−0.97)	(−0.20)
Israel	−0.37	−1.34	−1.11	−0.51	−0.79	−0.44
	(−0.28)	(−1.25)	(−0.99)	(−0.60)	(−1.14)	(−0.49)
Italy	−0.33	−0.42	−0.36	−0.17	0.10	−0.19
	(−0.90)	(−1.18)	(−1.01)	(−0.50)	(0.31)	(−0.54)
Japan	−0.10	−0.06	0.11	0.09	0.09	0.11
	(−0.28)	(−0.22)	(0.45)	(0.42)	(0.43)	(0.47)
Netherlands	−0.35	−0.87	−0.86	−0.04	0.13	0.23
	(−0.57)	(−1.61)	(−1.58)	(−0.07)	(0.34)	(0.38)
New Zealand	−0.49	−0.50	−0.55	−0.53	−1.16	0.07
	(−0.70)	(−0.71)	(−0.77)	(−0.73)	(−1.09)	(0.06)
Norway	−0.43	−0.65	−0.77	−0.50	−1.51	−0.33
	(−0.83)	(−1.30)	(−1.54)	(−0.98)	(−2.63)	(−0.59)
Singapore	0.02	−0.38	−0.55	−0.49	−0.68	−0.41
	(0.02)	(−0.85)	(−1.33)	(−1.22)	(−1.83)	(−0.92)
Spain	−0.43	−0.73	−0.69	−0.67	−0.52	−0.64
	(−0.83)	(−1.54)	(−1.46)	(−1.39)	(−1.30)	(−1.27)

(*Continued*)

Table A2. Returns and Alphas on Distress Sorted Portfolios: Individual Country Results (*Continued*)

	Excess Return	CAPM Alpha	3-Factor Alpha	4-Factor Alpha	Small Cap	Large Cap
Sweden	−0.26	−0.67	−0.66	−0.19	−1.25	0.34
	(−0.26)	(−0.79)	(−0.76)	(−0.24)	(−3.21)	(0.41)
Switzerland	−0.27	−0.64	−1.16	−0.30	−0.47	−0.27
	(−0.56)	(−1.38)	(−2.49)	(−0.74)	(−1.77)	(−0.62)
UK	−0.19	−0.39	−0.53	0.41	−0.09	0.43
	(−0.49)	(−1.07)	(−1.45)	(1.29)	(−0.40)	(1.30)
Chile	0.67	0.08	0.13	0.14	0.16	0.18
	(1.39)	(0.20)	(0.31)	(0.32)	(0.32)	(0.36)
China	−0.04	−0.10	−0.91	−0.84	−0.32	−0.87
	(−0.10)	(−0.22)	(−2.66)	(−2.57)	(−1.53)	(−2.41)
India	0.34	−0.13	−0.21	−0.30	−0.38	−0.16
	(0.61)	(−0.26)	(−0.42)	(−0.64)	(−0.86)	(−0.29)
Indonesia	0.88	0.43	−0.08	−0.28	−0.92	−0.29
	(1.07)	(0.58)	(−0.12)	(−0.45)	(−1.13)	(−0.43)
Korea	−0.26	−0.73	−0.81	−1.03	−1.08	−0.99
	(−0.44)	(−1.56)	(−1.73)	(−2.20)	(−2.25)	(−1.92)
Malaysia	0.02	−0.46	−0.71	−0.60	−0.85	−0.54
	(0.02)	(−0.88)	(−1.46)	(−1.48)	(−2.28)	(−1.27)
Mexico	0.83	0.20	−0.33	−0.01	0.55	0.12
	(1.06)	(0.26)	(−0.46)	(−0.01)	(0.58)	(0.15)
Philippines	1.92	1.62	1.61	1.52	1.14	1.21
	(2.27)	(2.51)	(2.46)	(2.32)	(1.21)	(1.64)
Poland	2.29	2.10	0.49	0.50	0.16	0.63
	(1.55)	(1.45)	(0.39)	(0.41)	(0.14)	(0.49)
Russia	0.47	0.32	0.60	0.10	0.39	−0.03
	(0.28)	(0.20)	(0.36)	(0.06)	(0.37)	(−0.02)
South Africa	0.30	0.25	0.13	0.22	−0.38	−0.08
	(0.60)	(0.50)	(0.24)	(0.42)	(−0.85)	(−0.13)
Taiwan	−0.02	−0.23	−0.39	−0.42	−0.31	−0.37
	(−0.04)	(−0.50)	(−0.92)	(−0.98)	(−1.00)	(−0.78)
Thailand	0.52	0.08	−0.19	0.00	−1.05	0.07
	(0.71)	(0.15)	(−0.38)	(0.01)	(−2.42)	(0.13)
Turkey	0.88	0.48	0.58	0.65	−0.85	0.61
	(1.19)	(0.68)	(0.83)	(0.92)	(−1.51)	(0.95)

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