# Investor Sentiment and Employment[†]

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**Abstract**

We develop a multi-country model with moral hazard and noise traders, and show that investor sentiment should affect employment growth both domestically and abroad. Using a large sample of international industry-level data, we find strong support for the model's predictions. We show that US investor sentiment has a positive association with labor market conditions around the world, due to spillover effects as well as foreign direct investments from the US. We also find that US sentiment amplifies the negative effect of local financial crises on job losses, which supports the idea that financial development has a "dark side".

*JEL classification*: G10, G30, F21, J30.

*Keywords*: Investor sentiment; Labor market; Financial development; Financial crises.

*This draft*: February 2019.

## 1. Introduction

It is well known that financial development is positively correlated with a country's economic growth (King and Levine, 1993a, 1993b; Beck, Levine, and Loayza, 2000a, 2000b; Demirgüç–Kunt and Levine, 2001). Rajan and Zingales (1998), however, identify a specific channel through which finance has a causal effect on growth. They show that industries that rely more on external finance grow disproportionately faster if located in countries with a higher level of financial development. Subsequent studies show that this mechanism also affects employment (Pagano and Pica, 2012; Benmelech, Bergman, and Seru, 2015). In this paper, we look to shed further light on the link between finance and labor. Drawing on the recent literature that relates investor sentiment with firms' investment decisions (see, e.g., Baker and Wurgler, 2011), we explore the role of sentiment in the creation of jobs worldwide.

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[†]JFQA, forthcoming. We thank an anonymous referee, Jennifer Conrad (the editor), Tony Cookson, Ingolf Dittmann, David Dorn, Byoung-Hyoun Hwang, Giovanni Immordino, Torsten Jochem, Matti Keloharju, Doron Kliger, Andres Liberman, Albert Menkveld, Evren Ors, Marco Pagano, Florian Peters, Valerio Poti, Rachel Shalom-Gilo, Ken Singleton, Elvira Sojli, David Solomon, Geoffrey Tate, Patrick Verwijmeren, Qingwei Wang, Toni Whited, Wei Xiong, Fernando Zapatero, and the participants at the NED Conference at the Dutch Central Bank, University College Dublin, the IFABS Corporate Finance Conference at the University of Oxford, the Helsinki Finance Seminar, the Israel Behavioral Finance Conference at Tel Aviv University, Vrije Universiteit Amsterdam, the Auckland Finance Meeting, the Research in Behavioral Finance Conference, and the Erasmus Research Institute of Management for many insightful comments and suggestions.

We develop a multi-country model with moral hazard and noise traders, and show that investor sentiment should affect employment growth both domestically and abroad. Using international industry-level data for the period 1970-2003, we find strong support for the model's predictions. Our main result is that higher sentiment among US investors leads to more hiring in foreign labor markets, due to spillover effects as well as foreign direct investments from the US. These patterns are statistically strong, robust to the inclusion of local and global sentiment, and unlikely to reflect a genuine improvement in the economic outlook or production technology.

We also show that the additional hiring that follows high sentiment turns into greater job losses in times of crisis. This result provides new insights to the view that financial development has a "dark side", as the firms that benefit the most from financial development are also those that are hit the hardest during economic or financial downturns (Braun and Larrain, 2005; Kroszner, Laeven, and Klingebiel, 2007; Pagano and Pica, 2012). Finally, we find that US sentiment increases real wages growth, but only in countries whose workforce exhibits fewer years of schooling. This is consistent with the idea that low-skilled labor is particularly sensitive to financial development (Beck, Levine, and Levkov, 2010), and to the investments of multinational enterprises (Braconier, Norbäck, and Urban, 2005).

The mechanism through which investor sentiment affects labor markets works as follows. In times of high sentiment, US firms increase their real investment (see, e.g., Baker, 2009), and hire more workers (MacLean and Zhao, 2014). Building on the fact that US investor sentiment has spillover effects on foreign financial markets (Baker, Wurgler, and Yuan, 2012), we show that high US sentiment also prompts non-US firms to hire more, when located in financially developed countries and operating in industries that rely more on external finance. Sentiment, then, works through (and strengthens) the Rajan and Zingales (1998) channel. In additional tests, we also find that higher US sentiment increases employment growth in countries that receive more foreign direct investments from the US. This alternative hiring channel reflects the fact that US firms carry out part of their operations outside the national boundaries.

To the best of our knowledge, this is the first paper that looks into the effect of investor sentiment on employment in an international setting. The results speak to the vast literature that analyzes the relation between finance and growth.[1] The evidence also lends support to the view that the US plays a leading role in the world economy (Harvey, 1991; Campbell and Hamao, 1992; Kwark, 1999; Kim, 2001; Lumsdaine and Prasad, 2003) and financial markets (Albuquerque, Bauer, and Schneider, 2009; Baker, Wurgler, and Yuan, 2012; Rapach, Strauss, and Zhou, 2013), especially through foreign direct investments (Nadiri, 1991; Caves, 1996; Albuquerque, Loayza, and Servén, 2005).

[1]Previous literature unveils a causal link between these two variables using a variety of empirical methods, including country-level data (King and Levine, 1993a, 1993b; Demirgüç–Kunt and Maksimovic, 1996; Levine and Zervos, 1998; Beck, Levine, and Loayza, 2000a, 2000b), natural experiments (Jayaratne and Strahan, 1996; Dehejia and Lleras-Muney, 2007; Beck, Levine, and Levkov, 2010; Benmelech, Bergman, and Seru, 2015), and industry-level data (Rajan and Zingales, 1998; Braun and Larrain, 2005; Kroszner, Laeven, and Klingebiel, 2007; Pagano and Pica, 2012). Similarly, a related strand finds that investor sentiment affects firms' investment decisions (Morck, Shleifer, and Vishny, 1990; Baker and Wurgler, 2000, 2002; Baker, Stein, and Wurgler, 2003; Chirinko and Schaller, 2001; Baker, 2009; Polk and Sapienza, 2009; McLean and Zhao, 2014).

To derive theoretical guidance, we consider the economy from Pagano and Pica (2012), where a manager-entrepreneur needs to fund a project. However, we introduce three elements of novelty. First, the project is risky and has a binary outcome, i.e., repay or default. Second, we replace the banking sector with a stock market. Third, we expand the setting to two countries, which share economic and financial ties. Each economy has its own financial market, and a representative firm that carries out part of the operations abroad.

The manager launches an IPO in the local financial market, and caters to a population of investors that includes arbitrageurs and noise traders. Arbitrageurs know the exact probability of default of the project, and correctly estimate the expected final cash flow from the stock. Noise traders, instead, estimate the probability of default with a bias, which can be thought of as a form of sentiment. Neither arbitrageurs nor noise traders, though, can verify the firm's cash flow, which creates a moral hazard issue.

Each country has a different type of workers with their own peculiar expertise. These two types of labor are complement to capital, and both enter the production function of the representative firm. As such, we propose a model of vertical integration, which represents an important motive for cross-border investments.[2] Upon receiving the funding, then, the manager hires new employees both domestically and abroad. To hire foreign workers, however, the firm can incur additional costs in terms of trade barriers, such as, e.g., employment protection. The higher these costs, the lower the optimal proportion of foreign labor to be employed.

After starting production, the manager extracts private benefits by appropriating a proportion of the firm's cash flow, then pays the employees, and leaves the remainder to the shareholders. In this setting, there are three key variables: the level of development of the financial system, which reduces the moral hazard issue through features such as, e.g., monitoring ability or investor protection; the profitability of the project, which increases the capacity of the firm to rely on external finance; and investor sentiment, which modifies the price that noise traders are willing to pay for the stock.

When noise traders are optimistic, they underestimate the probability of default of the project. As a consequence, they overestimate the firm's pledgeable income, and overpay for the stock. The manager invests part of this money in the firm, and hires more employees than it would be optimal to maximize profits. Depending on the elasticity of labor supply, the hiring activity can also lead to an increase in real wages growth.

Even though firms get funding in the local financial market, employment growth is also a function of foreign sentiment. We identify two channels. First, if the foreign economy is large enough, foreign sentiment can have spillover effects on sentiment in the local financial market, which affects the hiring decisions of local firms. This mechanism is especially strong for firms that rely more on equity funding and operate in a developed financial system. Second, foreign sentiment can increase local employment through the activity of foreign firms, such as foreign direct investments. We refer to these as the spillover and the investment

[2]See, e.g., Hanson, Mataloni, and Slaughter (2001), Hummels, Ishii, and Yi (2001), and Braconier, Norbäck, and Urban (2005).

channel, respectively.[3]

Interestingly, we find that investor sentiment and economic fundamentals do not affect all firms equally, leading to cross-sectional effects. An increase in sentiment is especially beneficial for firms with speculative projects, i.e., lower profitability and/or a higher probability of default. This is due to the fact that optimism introduces an upward bias in the evaluations of unsophisticated investors, which makes the market willing to fund projects of lower quality. On the contrary, an improvement in economic conditions crowds out speculative firms through an increase in the equilibrium wage.

Finally, we find that investor sentiment should amplify the negative effect of local crises on employment growth. A positive shock in the probability of default of the firm is followed not only by a decrease in the first-best (i.e., optimal) level of employment, but also by a decrease in its sentiment-driven component. Therefore, the additional hiring that follows high investor sentiment actually translates into larger layoffs.

In the second part of the paper, we take the model's predictions to the data. We study the effect of investor sentiment on labor markets worldwide, and identify the US as the foreign country from the model. The reason for this choice is twofold. First, the US is a large and highly developed market-based economy that plays a leading role in international markets (Rapach, Strauss, and Zhou, 2013), and whose investor sentiment has spillover effects on sentiment in other countries (Baker, Wurgler, and Yuan, 2012). Second, US firms typically carry out a nontrivial part of their operations abroad (Nadiri, 1991). Therefore, US sentiment should affect employment in foreign countries through both channels described in the model.

We consider a large panel of international data from the Unido Indstat-3 database, which provides annual industry-level statistics on growth for a large number of countries. Following Pagano and Pica (2012), we choose the 2006 release, which spans the period 1970-2003, as the following ones have more missing observations. We only consider countries for which at least ten observations are available, and only manufacturing industries to reduce the dependence on country-specific factors such as, e.g., natural resources (Rajan and Zingales, 1998). In total, we include 60 countries and 28 industries.

The model requires the identification of three key parameters: financial development, financial dependence, and investor sentiment. With regard to the first two, we follow Pagano and Pica (2012) and Rajan and Zingales (1998). We primarily define a country's level of financial development as the ratio between stock market capitalization and GDP, calculated as an average between 1980 and 1995 to allay endogeneity concerns. On the other hand, our main definition of an industry's degree of dependence on external finance is as the industry's median capital expenditures minus cash flow from operations divided by capital expenditures for US listed firms in the Compustat database, calculated as an average between 1980 and 1990.

These two variables are crucial to establish causality between finance and growth. Rajan and Zingales (1998) find that financial development helps industries relying on external finance grow disproportionately faster, as financial markets and institutions alleviate asymmetric information issues. The value of this con-

[3]This dual mechanism formalizes the intuition that sentiment can propagate across countries through capital flows on the one hand, and word-of-mouth and the media on the other hand (Baker, Wurgler, and Yuan, 2012).

tribution lies in the fact that it suggests a specific mechanism through which finance should affect growth.

Pagano and Pica (2012) build on this methodology, and document a similar effect for employment. To understand the magnitude, manufacturing industries that lie at the $75^{th}$ and the $25^{th}$ percentile of financial dependence (textiles versus non-metal products), exhibit a growth differential in employment that is 0.19% higher if they are located in a country at the $75^{th}$ percentile of financial development (Ireland) rather than in a country at the $25^{th}$ percentile of financial development (Panama).

To define investor sentiment, we follow McLean and Zhao (2014) and proceed in two ways. Our primary specification is Baker and Wurgler's (2006) index, which captures changes in asset demand not explained by fundamentals.[4] As such, it represents the closest empirical proxy to the definition of sentiment we propose in the model. The second specification is the University of Michigan consumer sentiment index (see, e.g., Carroll, Fuhrer, and Wilcox, 1994). For both measures, we consider the original series, the series orthogonalized to business cycle indicators, and the rank of the index, i.e., we add the minimum value of the series to all observations to make the index non-negative.

Consistent with the spillover hypothesis, we find that a one standard deviation increase in sentiment in the US stock market is followed by higher employment growth in industries located in foreign countries. In particular, US sentiment amplifies the effect of financial development and financial dependence by roughly two-thirds per year. For example, the differential in employment growth between the textiles and non-metal products industries rises to 0.33% if located in Ireland rather than in Panama, i.e., 0.14% higher than in the absence of sentiment. This finding is robust to a variety of alternative definitions of financial development, financial dependence, and investor sentiment, different econometric specifications and sample periods, and alternative explanations such as aggregate stock market liquidity.

Next, we test the model's prediction that investor sentiment should amplify the negative consequences of local crises on employment. To this purpose, we consider the list of country-level banking crises from Laeven and Valencia (2010). Conditioning on the previous year's level of US investor sentiment, we find that a local banking crisis indeed prompts a significant drop in employment growth. In keeping with the theoretical predictions, the effect takes place through the Rajan and Zingales (1998) channel. In particular, we find that the effect is concentrated around OECD countries, which suggests that the interaction of sentiment and crises is particularly severe for countries that share strong economic and financial ties.

Investor sentiment should also affect foreign employment through the investment channel. To test this hypothesis, our primary candidate is US foreign direct investments, as they allow investors to exercise a certain degree of influence and control (at least 10%) over the company, including employment decisions. We find empirical support for our expectations. The effect of US investor sentiment on foreign employment growth is stronger if the country attracts a higher level of US foreign direct investments. The results are

[4]This measure is based on a number of proxies suggested in previous literature, including the closed-end fund discount, the NYSE share turnover, the number and average first-day returns on IPOs, the equity share in new issues, and the dividend premium.

robust to controlling for US imports, and do not hold for US portfolio investments (i.e., minor US stakes in foreign companies).

Next, we identify trade costs of foreign labor as the degree of employment protection of the country, measured by the labor market indices on employment laws, the power of unions, and the protection of workers during collective disputes from Botero, Djanjov, La Porta, Lopez-de-Silanes, and Shleifer (2004). The trade-off between local and foreign labor from our model implies that when these indices are low, it should be optimal to hire more foreign workers. Consistent with this line of reasoning, we find that the effect of US sentiment on foreign employment through the investment channel is confined to countries that exhibit a below-median score on these three dimensions.

The model predicts that local sentiment should also have an impact on the hiring activity of local firms. To introduce local sentiment in the analysis, we consider country-level indicators of consumer confidence from the OECD, and the returns on the country-specific MSCI equity indices, both orthogonalized to US sentiment and local real value added growth. In keeping with the theoretical predictions, we find that an increase in local sentiment is followed by higher employment growth in the local labor market, especially for industries relying more on external finance and located in financially developed countries. The effect of local sentiment then perfectly co-exists with that of US sentiment.

One potential concern is that the results may reflect the level of sentiment of global financial markets, rather than US-specific investors. To address this issue, we construct two measures of global sentiment. In the spirit of Baker, Wurgler, and Yuan (2012), we aggregate the two sets of local sentiment indicators across the G7 countries, excluding the US. We find that global consumer sentiment and global stock returns have no significant impact on labor markets worldwide, while the coefficients of US and local sentiment are robust to the inclusion of either measure.

The fact that US sentiment affects employment in a similar way to US or local fundamentals deserves further attention. To make sure that we are capturing a genuine sentiment effect, we go on to test the model's cross-sectional predictions on firms with speculative projects. Following Baker and Wurgler (2006, 2007), we define such firms as those with highly subjective valuations. Therefore, we identify industries with low market capitalization, low dividend-to-price ratios, high stock return volatility, and extreme values of book-to-market, EBIT-to-price, and EBITDA-to-price ratios. We find that the positive effect of US sentiment on employment growth is largely confined to these industries. The results, then, lend support to the sentiment hypothesis.

Finally, we provide some evidence that high US sentiment also prompts an increase in real wages growth. In particular, we find two additional patterns. First, the effect is asymmetric over the business cycle, as it is concentrated in periods of economic growth. This finding suggests that sentiment primarily affects frictional labor, as workers are more likely to seek better jobs when employment opportunities increase. Second, we find that the effect of US sentiment on wages takes place in countries whose workforce exhibits fewer years of schooling. This is consistent with the idea that finance affects labor by increasing wages especially for

low-skilled workers (Beck, Levine, and Levkov, 2010).

Overall, however, we find that US sentiment does not affect labor productivity or capital intensity, which suggests that sentiment has a stronger impact on employment than on wages. This result speaks to Pagano and Pica (2012), who show that following an increase in financial development firms expand output by raising both labor and capital, rather than replacing the former with the latter by switching to more capital-intensive technologies. We find that an analogous effect takes place following an increase in US sentiment.

The rest of the paper is organized as follows. Section 2 introduces the model. Section 3 presents the data. Section 4 shows the empirical results. Section 5 concludes.

## 2. The model

We consider the economy from Pagano and Pica (2012), where a manager-entrepreneur needs to fund a project. However, we modify the original setting in three ways. First, the project is risky. Second, we replace the banking sector with a stock market, where the manager launches an IPO to fund the project.[5] Third, we expand the setting to two countries, which we denote by 1 and 2, respectively. Each economy has a different type of labor, a separate financial market, and a unit mass of identical firms that carry out part of their operations in the other country.

The economy in country 1 works as follows. Upon receiving external funding, the manager hires workers and starts production. Workers, as insiders, can observe the firm's cash flow, but shareholders cannot, which creates a moral hazard problem. In particular, the manager can appropriate a fraction $1-\lambda_1$ of the firm's operating profits. Therefore, $\lambda_1$ can be thought of as a measure of the level of development of the financial system the firm operates in, such as, e.g., monitoring ability or investor protection in country 1.

Production is stochastic, and depends on parameter $\tilde{\theta}_1$, which represents the profitability of the project. Without loss of generality, we consider a binary outcome, where profitability is equal to $\theta_1$ with probability $1-\pi_1$, and zero with probability $\pi_1$, so that the expected value is $\bar{\theta}_1 \equiv (1-\pi_1)\theta_1$. If the project is profitable, then the manager pays workers, extracts private benefits, and leaves the remainder to shareholders.

The revenues of the representative firm are generated by the Cobb-Douglas production function

$$\tilde{y}_1 = \tilde{\theta}_1 K_1^{1-\alpha_1-\alpha_2} L_{11}^{\alpha_1} L_{12}^{\alpha_2}, \tag{1}$$

where $K_1$ is the firm's capital, given by the sum of the manager's initial wealth, which consists of assets $A_1$, and the amount of equity funding $F_1$; $L_{11}$ is the firm's demand for domestic labor, and $L_{12}$ is the firm's demand for labor in country 2. The manager solves (see Appendix A.1):

$$\max_{L_{11},L_{12}} E(\tilde{B}_1) = (1-\lambda_1)\left(E(\tilde{y}_1) - w_1 L_{11} - c_{12} w_2 L_{12}\right), \tag{2}$$

subject to the participation constraint $E(\tilde{B}_1) \geq A_1$, where $E(\tilde{B}_1)$ represents the manager's expected private benefit, $w_1$ and $w_2$ represent the competitive wages of domestic and foreign workers, respectively, and $c_{12} \geq 1$

[5] Note that the arguments that follow would hold for SEOs as well, but we use the IPO setting for ease of exposition.

captures trade barriers that might increase the cost of foreign labor, such as, e.g., the difference in regulatory framework between the two countries.

The first-order conditions yield the following trade-off between domestic and foreign labor: it is optimal to hire more local workers when they are more productive, and/or when foreign labor is more expensive. The expected private benefit for the manager can be expressed as $(1-\lambda_1)\phi_1 K_1$, where $\phi_1$ represents the profit per dollar invested. The complement $\lambda_1\phi_1 K_1$ represents pledgeable income, i.e., expected cash flow to external financiers. Note, then, that the capacity of the firm to rely on external finance increases with the profitability of the project.

Investors are risk-neutral and can be either arbitrageurs or noise traders, whose populations are of mass $\delta_1$ and $1-\delta_1$, respectively. The difference between these two groups is that arbitrageurs know the exact probability of default of the project, whereas noise traders estimate it with a bias, i.e., $\pi_1^{'} \neq \pi_1$.

We consider a stock market from Hong and Sraer (2013), in which investor $j$ solves:

$$\max_{n_{1j}} \left( n_{1j}(E_j(\tilde{v}_1) - p_1) - \frac{1}{2}\frac{n_{1j}^2}{\gamma_1} \right), \tag{3}$$

where $n_{1j}$ is the number of shares traded by investor $j$, $E_j(\tilde{v}_1)$ is investor $j$'s subjective evaluation of the firm's cash flow, equal to $\bar{v}_1(\pi_1)$ for arbitrageurs and $\bar{v}_1(\pi_1^{'})$ for noise traders, $p_1$ is the stock price, and $\gamma_1$ captures transaction costs.[6]

The ratio between the two evaluations reduces to a function of the ratio between the probability of survival estimated by noise traders $(1-\pi_1^{'})$ and the (correct) probability estimated by arbitrageurs $(1-\pi_1)$. This measure represents a measure of local investor sentiment, as a ratio greater (less) than one implies an upward (downward) bias in the estimate of the probability of survival of the firm.

If the two economies are integrated, sentiment can propagate from one country to the other through non-economic mechanisms such as word-of-mouth and the media (Baker, Wurgler, and Yuan, 2012). We acknowledge this channel in our setup, and refer to it as a spillover effect. As a result, we define sentiment in country 1 as the sum of an idiosyncratic component, $s_1$, and a foreign component, $\rho_1 s_2$, where $\rho_1$ reflects the degree to which optimism in country 2 affects optimism in country 1.

The first-order condition yields investor $j$'s optimal stock demand $n_{1j}^* = \gamma_1(E_j(\tilde{v}_1) - p_1)$. Given unit stock supply, the equilibrium price is:

$$p_1^* = S_1\lambda_1\phi_1 K_1 - \frac{1}{\gamma_1}, \tag{4}$$

where $S_1 \equiv ((s_1 + \rho_1 s_2)(1-\delta_1) + \delta_1)$, and $S_1 > 1$ ($S_1 < 1$) implies optimistic (pessimistic) noise traders, i.e., positive (negative) sentiment. Therefore, a positive bias in noise traders' evaluations also inflates the equilibrium price. In turn, this also affects the firm's equilibrium level of capital and labor, and the manager's private benefit.

It is instructive to express labor demand (either domestic or foreign) as the sum of the following two

[6] A type of transaction cost that is characterized by such a convex function is the bid-ask spread, as larger trades are typically associated with more unfavorable price movements.

components:

$$\hat{L}_1(K_1^*) = \hat{L}_1(K_1^*)|_{S_1=1} + \Delta\hat{L}_1|_{S_1\neq 1}, \tag{5}$$

where the former represents the firm's first-best, based on the project's true probability of default, while the latter represents the deviation from the efficient level of employment due to investor sentiment (see Appendix A.2. for details):

$$\Delta\hat{L}_1|_{S_1\neq 1} = (S_1 - 1)\frac{\lambda_1\phi_1}{1-\lambda_1\phi_1}\hat{L}_1(K_1^*)|_{S_1=1}. \tag{6}$$

Then, high sentiment ($S_1 > 1$) leads the firm to seek an employment level above the first-best, while low sentiment ($S_1 < 1$) has the opposite effect.

The above dynamics symmetrically apply to country 2, whose firms hire $L_{21}^*$ and $L_{22}^*$. Then, the labor market equilibrium in the two countries implies $L_1(w_1^*) = L_{11}^* + L_{21}^*$ and $L_2(w_2^*) = L_{22}^* + L_{12}^*$, where we define labor supply as a generic upward-sloping function of local wages, as in Pagano and Pica (2012).

The breakdown of investor sentiment into a local and a foreign component yields interesting insights on how sentiment affects labor, as (see appendix A.3. for details)

**Proposition 1.** *Higher foreign sentiment leads to higher employment growth in the local labor market, due to spillover effects and investments from foreign firms.*

$$\frac{dL_1^*}{ds_2}\frac{s_2}{L_1^*} = \frac{s_2\rho_1(1-\delta_1)\frac{\lambda_1\phi_1}{1-\lambda_1\phi_1 S_1} + \frac{L_{21}^*}{L_{11}^*}s_2(1-\delta_2)\frac{\lambda_2\phi_2}{1-\lambda_2\phi_2 S_2}}{1 + \frac{1}{\epsilon_1}\frac{1-\alpha_2-S_1\lambda_1\phi_1(1-\alpha_1-\alpha_2)}{(1-\alpha_1-\alpha_2)(1-\lambda_1\phi_1 S_1)} + \frac{L_{21}^*}{L_{11}^*}\left(1 + \frac{1}{\epsilon_1}\frac{1-\alpha_2-S_2\lambda_2\phi_2(1-\alpha_1-\alpha_2)}{(1-\alpha_1-\alpha_2)(1-\lambda_2\phi_2 S_2)}\right)} > 0. \tag{7}$$

The magnitude of the spillover effect is captured by the first addend. It depends on parameter $\rho_1$, and becomes stronger if the country has high financial development ($\lambda_1$) and if the local firm relies more on external finance ($\phi_1$). The magnitude of the investment effect, instead, is captured by the second addend, and depends on the size of investment that country 1 receives from country 2 ($L_{21}^*$). Note also that $\epsilon_1$ is the elasticity of domestic labor supply, so that high (low) elasticity implies a larger (smaller) effect on employment than on wages. On the other hand:

**Proposition 2.** *Higher idiosyncratic sentiment leads to higher employment growth in the local labor market.*

$$\frac{dL_1^*}{ds_1}\frac{s_1}{L_1^*} = \frac{s_1(1-\delta_1)\frac{\lambda_1\phi_1}{1-\lambda_1\phi_1 S_1}}{1 + \frac{1}{\epsilon_1}\frac{1-\alpha_2-S_1\lambda_1\phi_1(1-\alpha_1-\alpha_2)}{(1-\alpha_1-\alpha_2)(1-\lambda_1\phi_1 S_1)} + \frac{L_{21}^*}{L_{11}^*}\left(1 + \frac{1}{\epsilon_1}\frac{1-\alpha_2-S_2\lambda_2\phi_2(1-\alpha_1-\alpha_2)}{(1-\alpha_1-\alpha_2)(1-\lambda_2\phi_2 S_2)}\right)} > 0. \tag{8}$$

Similarly to the spillover channel, the effect of local sentiment becomes more pronounced for countries with high financial development and firms that rely more on external finance.

Investor sentiment and economic fundamentals have opposite effects on the quality of firms that have access to equity funding. We define $\pi_1^c$ as the maximum probability of default that the market is willing to bear, and derive (see Appendix A.4. for details)

**Proposition 3.** *An increase in local fundamentals improves the quality of firms in the financial market through an increase in wages, while an increase in sentiment grants funding to firms with a higher probability of default:*

$$\frac{d\pi_1^c}{dA_1} \propto (-1)\left(\frac{dw_1}{dA_1}\frac{\alpha_1}{w_1} + \frac{dw_2}{dA_1}\frac{\alpha_2}{w_2}\right) < 0, \tag{9}$$

$$\frac{d\pi_1^c}{dS_1} \propto \frac{1-\alpha_1-\alpha_2}{\theta_1 S_1}\left(1 - \frac{\alpha_1}{1-\alpha_1-\alpha_2}\frac{dw_1}{dS_1}\frac{S_1}{w_1} - \frac{\alpha_2}{1-\alpha_1-\alpha_2}\frac{dw_2}{dS_1}\frac{S_1}{w_2}\right) > 0. \tag{10}$$

Finally, we look into how investor sentiment affects labor in times of crisis. We first show (see Appendix A.5.):

**Proposition 4.** *An increase in the probability of default is followed by a decrease in the equilibrium rate of employment growth:*

$$\frac{dL_1^*}{d\pi_1}\frac{\pi_1}{L_1^*} = \frac{\frac{\pi_1}{1-\pi_1}\frac{1}{(1-\alpha_1-\alpha_2)(1-\lambda_1\phi_1 S_1)}}{1 + \frac{1}{\epsilon_1}\frac{1-\alpha_2-S_1\lambda_1\phi_1(1-\alpha_1-\alpha_2)}{(1-\alpha_1-\alpha_2)(1-\lambda_1\phi_1 S_1)} + \frac{L_{21}^*}{L_{11}^*}\left(1 + \frac{1}{\epsilon_1}\frac{1-\alpha_2-S_2\lambda_2\phi_2(1-\alpha_1-\alpha_2)}{(1-\alpha_1-\alpha_2)(1-\lambda_2\phi_2 S_2)}\right)} < 0. \tag{11}$$

Since the effect is entirely driven by local labor demand, we find that

**Proposition 5.** *The presence of high investor sentiment amplifies the real effects of crises, leading to further job losses:*

$$\frac{dL_{11}^*|_{S_1\neq 1}}{d\pi_1} = \underbrace{\frac{dL_{11}^*|_{S_1=1}}{d\pi_1}\frac{1-\lambda_1\phi_1}{1-S_1\lambda_1\phi_1}}_{<0} + \underbrace{L_{11}^*|_{S_1=1}(S_1-1)\lambda_1\frac{\partial\phi_1}{\partial\pi_1}}_{<0} < 0. \tag{12}$$

Then, a shock in the probability of default prompts a decrease in both the first-best and the sentiment-driven component of employment when sentiment is high ($S_1 > 1$). For foreign sentiment, the effect increases with parameters $\lambda_1$ and $\phi_1$, and therefore works through the spillover channel.

### *2.1. Testable implications*

The model generates a number of testable implications. We first focus on the impact of foreign sentiment on employment through the spillover channel. From Proposition 1, we derive

**Hypothesis 1** *Higher foreign sentiment leads to an increase in local employment growth. The effect increases with the level of financial development of the country and the degree of financial dependence of the firm.*

while using Propositions 4 and 5, we derive

**Hypothesis 2** *Following high foreign sentiment, the impact of a local crisis on employment growth becomes more severe. The effect increases with the degree of development of the financial system and the degree of financial dependence of the firm.*

Hypotheses 1 and 2 provide a link with Rajan and Zingales (1998), who predict that financial development helps financially dependent firms overcome asymmetric information issues and get more funding. This is also the primary mechanism through which foreign sentiment affects local employment in our model.

Using Proposition 1, we then move on to the investment channel:

**Hypothesis 3** *Higher foreign sentiment leads to an increase in local employment growth. The effect increases with the magnitude of the investment that the local economy receives from the foreign country, and therefore decreases with the cost of local labor.*

while using Proposition 2, we derive

**Hypothesis 4** *Higher idiosyncratic sentiment leads to an increase in local employment growth. The effect increases with the level of financial development of the country and the degree of financial dependence of the firm.*

Hypotheses 3 and 4 formalize the argument proposed by previous literature that sentiment can propagate across countries through capital flows, and that local sentiment is relevant to local firms in a number of non-US countries (Baker, Wurgler, and Yuan, 2012).

Finally, from Proposition 3 we derive a cross-sectional test on the quality of firms:

**Hypothesis 5** *Investor sentiment and economic fundamentals have different cross-sectional implications. An improvement in fundamentals benefits firms with good projects, while an increase in sentiment grants funding to firms with speculative projects.*

while from Proposition 1 we derive a test on wages:

**Hypothesis 6** *Higher investor sentiment leads to an increase in real wages growth.*

Hypothesis 5 predicts that the cross-sectional effects of US sentiment from Baker and Wurgler (2006, 2007) should also shape the creation of jobs worldwide. Hypothesis 6 speaks to Beck, Levine, and Levkov (2010), suggesting that finance affects workers' wages also through investor sentiment.

Next, we take this set of hypotheses to the data.

## 3. Data

In the empirical analysis that follows, we study the effect of investor sentiment on labor markets worldwide, and define the US as the foreign country from the model. There are two reasons for this choice. First, the US is a large and highly developed market-based economy that plays a leading role in international markets, and whose investor sentiment has spillover effects on sentiment in other countries. Second, US firms typically carry out a nontrivial part of their operations abroad. Therefore, US investor sentiment should have an effect on employment in foreign countries.

We consider a panel of international data from the Unido Indstat-3 database (United Nations Industrial Development Organization, Industrial Statistics), which provides annual industry-level statistics on growth for a large number of countries. Following Pagano and Pica (2012) we consider the 2006 release, which spans the period 1970-2003, as the following ones have more missing observations.[7] We include countries for which

[7]We thank Marco Pagano for graciously sharing the data.

at least ten observations are available, and only consider manufacturing industries, to reduce the dependence on country-specific factors such as, e.g., natural resources (Rajan and Zingales, 1998). In total, we include 60 countries and 28 industries.[8]

The data set provides annual industry-level growth rates in employment and real wages across countries, for a total of 43,293 and 42,033 observations, respectively. Table 1 presents some summary statistics. The average annual employment growth in the full sample is 2.02%, while average wage growth is 1.81%. The industry breakdown reveals some dispersion in average growth rates. Employment growth varies considerably across sectors, from -1.28% for tobacco to 5.09% for plastic products. The range for real wages growth, on the other hand, is from 1.12% for metal products to 2.70% for tobacco. To allay the concern that some outliers could impact our results, in the analysis below we follow Rajan and Zingales (1998), and winsorize both employment and real wages growth in two alternative ways. First, we cut the distribution at the $1^{st}$ and the $99^{th}$ percentiles. Second, we constrain the distribution to be between -1 and 1.

The model requires the identification of three key parameters: financial development, financial dependence, and investor sentiment. With regard to the first two, we follow Pagano and Pica (2012) and Rajan and Zingales (1998). We primarily define a country's level of financial development as the ratio between stock market capitalization and GDP, calculated as an average between 1980 and 1995 to allay endogeneity concerns. On the other hand, our main definition of an industry's degree of dependence on external finance is as the industry's median capital expenditures minus cash flow from operations divided by capital expenditures for US listed firms in the Compustat database, calculated as an average between 1980 and 1990.

Following McLean and Zhao (2014), we define US sentiment in two ways. Our primary specification is Baker and Wurgler's (2006) index of investor sentiment, which is defined as the "propensity to speculate" and captures changes in asset demand not explained by fundamentals. As such, it represents the closest empirical proxy to our definition of sentiment from the model. We pick the version of the index expressed in levels. This measure is based on a number of sentiment proxies suggested in previous works, including the closed-end fund discount, the NYSE share turnover, the number and average first-day returns on IPOs, the equity share in new issues, and the dividend premium. The second definition of sentiment is the University of Michigan consumer sentiment index, which is a survey based on a minimum of 500 phone interviews conducted across the US each month. The questions asked cover a number of areas, including personal finances, business conditions, and inflation.

One concern is that sentiment may reflect, at least in part, the state of the economy. As a first step to address this issue, we include the version of Baker and Wurgler's (2006) index orthogonalized to business cycle indicators, namely industrial production growth, growth in consumer durables, nondurables, and ser-

[8]The countries we consider are: Australia, Austria, Bangladesh, Barbados, Belgium, Bolivia, Canada, Chile, Colombia, Costa Rica, Cote d'Ivoire, Cyprus, Denmark, Ecuador, Egypt, Fiji, Finland, France, Germany, Greece, Honduras, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kenya, Korea, Kuwait, Malaysia, Mauritius, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Panama, Paraguay, Philippines, Portugal, Singapore, South Africa, Spain, Sri Lanka, Swaziland, Sweden, Trinidad and Tobago, Tunisia, Turkey, United Kingdom, Uruguay, Venezuela, and Zimbabwe.

vices, and a dummy variable for NBER recessions. Since the US economy is integrated with the rest of the world, the orthogonalization allays the concern that the index might pick up economic conditions in foreign countries. Similarly, we orthogonalize consumer sentiment to the same set of economic indicators. We also express both indices in rank order, by adding the minimum value of the series to all observations, to make them non-negative, so that the coefficients of our interaction terms have an unambiguous interpretation.

Finally, we consider two measures of local (i.e., non-US) sentiment. First, we include country-level indicators of consumer confidence from the OECD.[9] Second, we use local stock returns, defined as the returns on country-specific MSCI equity indices, which allows us to include non-OECD countries too. Since these measures tend to exhibit positive and significant correlation with US sentiment as well as local fundamentals (specifically, real value added growth), we orthogonalize them to the effect of both, to make sure we identify the idiosyncratic level of optimism or pessimism of local investors.

## 4. Empirical results

We present our empirical results as follows. First, we analyze the joint effect of US investor sentiment on employment growth through the spillover channel. Second, we discuss our findings on the amplification effect of US sentiment on job losses during crises. Third, we consider the investment channel. Fourth, we introduce local sentiment in the analysis. Fifth, we address the concern that the results may be driven by a general improvement in economic fundamentals. Finally, we present our analysis of real wages growth.

### *4.1. Spillover channel*

Rajan and Zingales (1998) show that industries that rely more on external finance grow disproportionately faster if located in countries with a higher level of financial development, because the services that the financial sector provides help firms overcome asymmetric information issues. In our moral hazard model, this is also the primary mechanism through which sentiment affects employment growth. In light of this, we start the empirical analysis by looking into the effect of US sentiment on foreign labor through the spillover channel.

We expect this mechanism to be particularly important also because the US plays a leading role in international markets (Rapach, Strauss, and Zhou, 2013), and US investor sentiment has spillover effects on sentiment in other countries (Baker, Wurgler, and Yuan, 2012). From an econometric perspective, this is the most conservative specification, in that it allows us to use a large set of joint fixed effects and exploit the full sample.[10] From a theoretical perspective, we are implicitly assuming away foreign investments and idiosyncratic sentiment.[11] In the rest of the analysis, however, we relax both constraints and show that this

[9] Note that the consumer sentiment index introduced above is essentially the US version of the OECD consumer confidence indicator.

[10] Unfortunately, data on capital flows and local sentiment indicators is only available for a subset of countries and a shorter sample period.

[11] This amounts to imposing the restrictions $L_{21} = 0$ in Eq. (7) and $s_1 = 0$ in Eq. (8).

does not affect the results.

Our baseline regression is a modified version of the test equation from Pagano and Pica (2012), with the addition of investor sentiment:

$$\begin{aligned} y_{cit} = \beta_0 + \beta_1 share_{cit-1} + \beta_2(FD_c \times ED_i) + \beta_3(S_{t-1} \times ED_i) + \\ + \beta_4(S_{t-1} \times FD_c \times ED_i) + \mu_{ct} + \mu_i + \epsilon_{cit}, \end{aligned} \tag{13}$$

where $y_{cit}$ represents winsorized employment growth in country $c$, sector $i$, at time $t$; $share_{cit-1}$ denotes the industry's share of employment growth in the manufacturing sector in the previous year; $S_{t-1}$ is Baker and Wurgler's (2006) index of investor sentiment, orthogonalized to business cycle indicators and lagged one year; $FD_c$ is our main specification for the level of financial development of country $c$; $ED_i$ is our main specification for the degree of dependence on external finance of firms in sector $i$; $\mu_{ct}$ and $\mu_i$ are country-year and sector fixed effects, respectively. Standard errors are clustered by country.

Note that economic fundamentals are captured by three sets of variables in this setup. First, the interaction term $FD_c \times ED_i$ reflects the higher economic growth that financially dependent industries exhibit when located in economies with higher financial development. Second, the inclusion of the industry's share of employment growth allows us to control for the convergence effect of industry size over time (Rajan and Zingales, 1998). Third, country-year fixed effects capture time-varying country-level economic fundamentals, such as local business cycles.

The main variable of interest is the triple interaction term between investor sentiment, financial development, and financial dependence. Hypothesis 1 predicts $\beta_4 > 0$, while Pagano and Pica's (2012) effect implies $\beta_2 > 0$. We also include an interaction term between sentiment and financial dependence, to analyze the effect of sentiment on financially dependent firms without conditioning on financial development.

The estimates are in Table 2, Panel A, column (1). Consistent with Pagano and Pica (2012), we find that the interaction term between a country's level of financial development and an industry's degree of financial dependence is positive and significant (0.0287, $t$-stat 2.47). To understand the magnitude of the effect, we consider the industries that lie at the $75^{th}$ and the $25^{th}$ percentile of financial dependence (textiles versus non-metal products). The estimates imply that in a country at the $75^{th}$ percentile of financial development (Ireland), the differential in employment growth between these industries should be 0.19% higher than in a country at the $25^{th}$ percentile of financial development (Panama). Since the average annual growth rate of employment is 2.07%, this is a large number.

However, we find that this effect becomes even stronger when we condition the analysis on the previous year's level of US investor sentiment. Consistent with Hypothesis 1, the interaction term between investor sentiment, financial development, and financial dependence is positive and significant (0.0214, $t$-stat 3.04). In particular, a one standard deviation increase in sentiment makes the differential in employment growth between the textiles and non-metal products industries 0.33% higher when located in Ireland rather than Panama. Sentiment, then, amplifies the effect of financial development and financial dependence on employment growth by 0.14%, i.e., about a two-thirds increase.

Note that the coefficient of the interaction term between sentiment and financial dependence is negative and significant, which implies that investor sentiment may actually decrease employment growth in financially dependent industries located in countries with low financial development. Therefore, employment growth in a financially dependent industry can experience a substitution effect between countries with high and low financial development.

For example, consider the UK and Indonesia, two countries that respectively lie above the $75^{th}$ percentile and below the $25^{th}$ percentile of financial development, and electrical machinery, i.e., an industry that lies above the $75^{th}$ percentile of financial dependence. In the absence of sentiment, the total effect of financial development and financial dependence on employment growth in the electrical machinery industry is -0.44% for Indonesia, and 1.12% for the UK, for an overall difference of 1.56%. Following a one standard deviation increase in sentiment, however, the employment growth differential becomes even more pronounced, up to 2.01% (i.e., 0.45% higher).

For robustness, in columns (2) to (6) we test alternative fixed effects specifications, and also introduce an interaction term between sentiment and financial development where possible. The coefficient of our main interaction term between investor sentiment, financial development, and financial dependence is still positive and significant with country-industry and year fixed effects (0.0215, $t$-stat 3.02), industry-year and country fixed effects (0.0224, $t$-stat 3.00), country, industry, and year fixed effects (0.0215, $t$-stat 3.04), country-year, industry-year, and country-industry fixed effects all together (0.0210, $t$-stat 2.86), and country, year, industry, industry-year, and country-industry fixed effects (0.0292, $t$-stat 2.92), as in Kroszner, Laeven, and Klingebiel (2007). The coefficient of the interaction term between sentiment and financial development, instead, where present, always lies outside of the rejection region. In Table 2, Panel B, we repeat the analysis by winsorizing employment growth between -1 and 1, and obtain similar estimates.

Levine and Zervos (1998) find that measures of market liquidity are positively correlated with growth. One possible objection to these results, then, is that investor sentiment may actually reflect the level of liquidity in the financial market. To allay this concern, we consider the level of aggregate liquidity in the US stock market from Pástor and Stambaugh (2003), and interact it with our variables of interest. The results are in Table 3. The coefficients of these new interaction terms are not significant at any conventional level. On the contrary, the coefficient of the interaction term between investor sentiment, financial development, and financial dependence is highly significant all throughout.

In Table 4, we re-estimate Eq. (13) using some alternative measures of financial development. We consider the ratio between total domestic credit and GDP; the sum of total domestic credit and stock market capitalization scaled by GDP, known as the "capitalization ratio"; a country's accounting standards, as estimated by the Center for International Financial Analysis and Research in 1980, and its revision in 1983; the log-GDP per capita calculated in 1980, expressed in USD billions; and private credit by deposit money banks and other financial institutions scaled by GDP, calculated in 1980. The results are similar across specifications, and with both winsorization procedures.

To allay any residual endogeneity concerns, we predetermine our measures of financial development and financial dependence. To this purpose, we define the former as the log-GDP per capita, and the latter as the ratio of capital expenditure to net property plant and equipment, both calculated in year 1980. Then, we re-estimate our regressions in the post-1980 period. The results are in Table 5. The estimates are statistically significant, and become even stronger in terms of economic significance.

To understand the magnitude of the effect, we consider again the industries that lie at the $75^{th}$ and the $25^{th}$ percentile of financial dependence (in this case, other chemical products versus wood products). In our main specification (column 1), the estimates imply that in a country at the $75^{th}$ percentile of financial development (Australia), the differential in employment growth between these industries is 0.69% higher than in a country at the $25^{th}$ percentile of financial development (Peru). This effect is particularly large, since the average annual growth rate of employment is 0.57% in the post-1980 period.

Nonetheless, we find an even larger effect for investor sentiment. The interaction term between investor sentiment, financial development, and financial dependence is positive and significant (0.0641, $t$-stat 2.93). In particular, a one standard deviation increase in sentiment makes the differential in employment growth between other chemical products and wood products industries 1.19% higher when located in Australia rather than Peru.

The empirical evidence lends strong support to Hypothesis 1.

*4.2. Financial crises*

Previous literature shows that financial development may have a dark side. Braun and Larrain (2005) find that the more financially dependent industries are hit harder in recessions, but that this effect is less severe in countries with high accounting standards and in industries with more tangible assets. Kroszner, Laeven, and Klingebiel (2007) find that sectors that are heavily dependent on external finance suffer a much sharper contraction of value added in countries with a higher degree of financial development. Pagano and Pica (2012) find that a similar effect carries over to employment growth, which slows down significantly more in financially dependent industries during financial crises.

In line with these results, our model suggests that crises may have a stronger negative effect on employment in the presence of investor sentiment. In particular, crises are followed by a decrease in both the optimal and the sentiment-driven component of employment. Therefore, in Hypothesis 2, we argue that the "easy" hiring that follows high sentiment may translate into layoffs under financial downturns, thus leading to greater job losses. In particular, the impact of foreign sentiment on local crises should be higher for economies that are highly integrated. We test this hypothesis below.

We consider the list of country-level banking crises from Laeven and Valencia (2010), and add three

extra-terms to Eq. (13):

$$y_{cit} = \beta_0 + \beta_1 share_{cit-1} + \beta_2(FD_c \times ED_i) + \beta_3(S_{t-1} \times ED_i) + \beta_4(S_{t-1} \times FD_c \times ED_i) + \\ + \beta_5(FD_c \times ED_i \times crisis_{ct}) + \beta_6(S_{t-1} \times FD_c \times ED_i \times crisis_{ct}) + \beta_7(S_{t-1} \times ED_i \times crisis_{ct}) + \\ + \mu_{ct} + \mu_i + \epsilon_{cit}, \quad (14)$$

namely, a triple interaction term between financial development, financial dependence, and the crisis dummy, a quadruple interaction term between investor sentiment, financial development, financial dependence, and the crisis dummy, and a triple interaction term between investor sentiment, financial dependence, and the crisis dummy. Hypothesis 2 implies $\beta_6 < 0$. Following Pagano and Pica (2012), we also estimate these equations separately in the subsamples of OECD and non-OECD countries. In light of the argument on financial market integration, we expect the results to be stronger in the OECD subsample.

The estimates are in Table 6, Panel A. In column (1), we find that the coefficient of the quadruple interaction term is negative but not significant in the full sample ($t$-stat -0.50). In column (2), however, the coefficient is negative and significant in the subsample of OECD countries, in which a one standard deviation increase in investor sentiment amplifies the negative effect of a financial crisis on the employment growth differential between industries at the $75^{th}$ and at the $25^{th}$ percentile in terms of financial dependence, and located in countries at the $75^{th}$ and the $25^{th}$ percentile in terms of financial development, by 0.18% ($t$-stat -2.95). Since the growth differential between such industries during normal periods with no sentiment is 0.19%, the joint impact of the crisis and investor sentiment completely erodes this advantage. In column (3), on the other hand, this mechanism is not at work for non-OECD countries ($t$-stat 0.24).

Since we consider banking crises, we re-estimate Eq. (14) using our alternative measure of financial development based on the banking sector, i.e., total private credit over GDP. The results are similar. In column (4), the coefficient of the quadruple interaction term is negative but not significant for the full sample ($t$-stat -1.06). In column (5), however, the coefficient is negative and significant for OECD countries ($t$-stat -3.01). In column (6), this result does not hold for non-OECD countries ($t$-stat 1.12). The estimates are analogous in Panel B, when we consider employment growth winsorized between -1 and 1.

These empirical patterns suggest that investor sentiment is an important channel through which banking crises can affect employment. The same countries that benefit the most from US sentiment are also the ones that are hit the hardest in crisis periods.

The findings lend support to Hypothesis 2, and specifically to the idea that finance has a dark side (Braun and Larrain, 2005; Kroszner, Laeven, and Klingebiel, 2007). We document a detrimental effect on employment growth as in Pagano and Pica (2012), but our results differ from theirs in two ways. First, we find strong, rather than mild, statistical evidence for the negative effect of financial crises on employment. Second, we show that the investor sentiment effect dominates that of financial development and financial dependence alone.

*4.3. Investment channel*

Baker, Wurgler, and Yuan (2012) show that capital flows represent a key mechanism through which sentiment propagates across countries. Similarly, our model predicts that the effect of foreign sentiment on local employment is proportional to the investment that the local country receives from the foreign one. We refer to this as the investment channel.

To test this hypothesis, our primary candidate is foreign direct investments. Such investments allow investors to exercise a certain degree of influence and control (at least 10%) over the company, including employment decisions, and constitute an important means for US firms to contribute to foreign growth (Nadiri, 1991; Caves, 1996; Albuquerque, Loayza, and Servén, 2005). Furthermore, the mechanism of vertical integration inherent in our model is a key driver of foreign direct investments. Multinational enterprises outsource a substantial amount of production to their foreign affiliates to exploit the peculiar input characteristics of host countries (Hanson, Mataloni, and Slaughter, 2001), especially where less-skilled labor is relatively cheap (Braconier, Norbäck, and Urban, 2005). As a result, vertical integration has grown significantly and steadily since the 1970s (Hummels, Ishii, and Yi, 2001).

We consider three data sets of US foreign direct investments data from the Bureau of Economic Analysis: a general one, which reports the direct investment position abroad on a historical-cost basis (FDI), available from 1983 and expressed in USD billions; and two labor-specific ones, which include the direct investment in employment at majority-owned nonbank foreign affiliates (FDIL), and the direct investment in employment in all nonbank foreign affiliates (FDIL2), both available from 1998 and expressed in millions of employees. Due to the later start of the series, our sample size unfortunately shrinks in each of these data sets.

We begin our analysis following a conservative approach. Our baseline specification is an augmented version of Eq. (13):

$$\begin{aligned} y_{cit} = \beta_0 + \beta_1 share_{cit-1} + \beta_2(FD_c \times ED_i) + \beta_3(S_{t-1} \times ED_i) + \\ + \beta_4(S_{t-1} \times FD_c \times ED_i) + \beta_5(S_{t-1} \times ED_i \times FDI_{ct}) + \mu_{ct} + \mu_i + \epsilon_{cit}, \end{aligned} \tag{15}$$

where we add an interaction term between US sentiment, financial dependence, and US foreign direct investments. Hypothesis 3 implies $\beta_5 > 0$. From an econometric perspective, this test allows us to control for a battery of fixed effects, which is important to allay the concern that foreign direct investments might be partly driven, for example, by local business cycles. From a theoretical perspective, we are implicitly assuming that the profitability of firms is equal across countries (i.e., $\phi_1 = \phi_2$ in Eq. (7)). Again, we relax this assumption in the analysis that follows.

The results are in Table 7. We find that the coefficient of the interaction term between sentiment, financial dependence, and FDI is positive and significant all throughout. To understand the magnitude, in countries that receive one standard deviation of US foreign direct investments (20.48 USD billions), manufacturing industries that lie at the $75^{th}$ and the $25^{th}$ percentile of financial dependence exhibit an increase in employment growth differential between 0.07% and 0.35% following a one standard deviation increase in US sentiment. The coefficient of the interaction term between sentiment, financial development, and financial dependence is

also positive and significant in all specifications, which implies that the spillover and the investment channel are both simultaneously at work. We find similar results for FDIL and FDIL2 (unreported).

Note that the magnitude of the spillover effect in Table 7 is similar to the estimates from Table 2. For example, in the baseline specification (i.e., column (1), Panel A), the coefficient of the triple interaction term between sentiment, financial development, and financial dependence is 2.26 ($t$-stat 2.72) for Eq. (15) and 2.14 ($t$-stat 3.04) for Eq. (13). This is important to allay the concern that Eq. (13) might suffer from an omitted variable bias, and thus capture the overall effect of US sentiment (i.e., Eq. (7) as a whole) rather than the effect of the spillover channel only (i.e., the first addend of Eq. (7)).

The model predicts that it is optimal to invest less in foreign labor when it is more costly. As a result, the effect of the investment channel should be weaker in countries where labor costs are high. To test this prediction, we consider the cross-country labor market indices on employment laws, the power of unions, and the protection of workers during collective disputes from Botero, Djanjov, La Porta, Lopez-de-Silanes, and Shleifer (2004). In particular, we split the sample above and below the median values of these indices. The results are in Table 8. Consistent with the theoretical conjecture, we find that the investment channel is at work only in countries that exhibit a low score on all three dimensions. Conversely, the spillover channel is operational in all subsamples, as it is based on financial market integration rather than investments.

An alternative channel through which US sentiment can propagate across countries is trade, and specifically US imports. To test whether this is the case in our data, we set up a horse race between each of the three specifications of foreign direct investments introduced above and the panel of cross-country US imports from the Census Bureau, available from 1985 and expressed in USD billions.

The results are in Table 9. We find that trade has a significant and positive effect on employment when included on its own, in column (1). To get a sense of the magnitude, in countries that receive one standard deviation of US imports (29.09 USD billions), manufacturing industries that lie at the $75^{th}$ and the $25^{th}$ percentile of financial dependence exhibit a growth differential in employment that is 0.12% higher following a one standard deviation increase in US sentiment.

However, the effect vanishes when we alternatively introduce FDI, FDIL, and FDIL2, in columns (2) to (4), whose coefficients are positive and highly significant. In particular, the growth differential mentioned above is equal to 0.11% for FDI, which then explains away the effect of import also in terms of magnitude, and to 0.29% and 0.26%, respectively, for FDIL and FDIL2. Consistent with our model's predictions, then, the investment channel is still significant after controlling for the trade channel.

Next, we relax the assumption that the profitability of firms is equal across countries, and go on to estimate a simpler specification without joint fixed effects. As a result, we can no longer control, for instance, for unobserved time-varying country-level variables. However, the results from the previous tests suggest that this specification should not bias our analysis in any obvious way. Besides, we orthogonalize our measures of sentiment to economic fundamentals.

Note that if a country structurally relies on foreign capital, then foreign investors may have an incentive

to invest more in that country (Bekaert, Harvey, and Lundblad, 2011). To account for a country's reliance on foreign capital, then, we control for country-level net foreign direct investments (net FDI), defined as the difference between FDI made abroad by a given country and FDI received from foreign countries. The reason is that if FDI inflows are consistently greater than FDI outflows, the country has a strong need for foreign capital to grow, as opposed to a country which also has a comparable amount of FDI outflows. We consider the series of net FDI from the International Monetary Fund's Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources, and expressed in USD billions.

In the following test, we also consider portfolio investments as an additional measure of capital flows. The main difference from foreign direct investments is that they do not entail active management of the firm, as their only purpose is the pursuit of a financial gain. Specifically, we retrieve data on US portfolio investments (PI) from the International Monetary Fund's Coordinated Portfolio Investment Survey, available from 1997 and expressed in USD billions. Unfortunately, this is a much shorter panel with more missing observations.[12]

Our test equation becomes:

$$\begin{aligned} y_{cit} = \beta_0 + \beta_1 share_{cit-1} + \beta_2(FD_c \times ED_i) + \beta_3(S_{t-1} \times ED_i) + \\ + \beta_4(S_{t-1} \times FD_c \times ED_i) + \beta_5(S_{t-1} \times FD_c) + \beta_6(S_{t-1} \times channel_{ct-1}) + \\ + \gamma X_{ct-1} + \mu_c + \mu_t + \mu_i + \epsilon_{cit}, \end{aligned} \tag{16}$$

where we introduce the following new main regressors: an interaction term between investor sentiment and the investment "channel", defined as FDI, FDIL, FDIL2, and PI, respectively; and the interaction term between investor sentiment and financial development. The main coefficient of interest in this setting is therefore $\beta_6$, which Hypothesis 3 predicts to be positive. We also introduce a vector of controls, $X_{ct-1}$, which includes: the investment channel and net FDI as separate regressors; the interaction term between the two; and the interaction term between investor sentiment and net FDI, as sentiment may matter more in countries that receive more foreign investments, not necessarily from the US.

In Table 10, we present the estimates of Eq. (16). In column (1), we find that the coefficient of the interaction term between US investor sentiment and US FDI is positive and highly significant (0.0005, $t$-stat 4.08). Therefore, the effect of US investor sentiment on local employment is proportional to the level of foreign direct investments received from the US. In countries that attract one standard deviation of US FDI, a one standard deviation increase in US investor sentiment is followed by a 1.52% increase in local employment growth.

In column (2), we replace FDI with its first labor-specific counterpart, FDIL. The coefficient of the interaction term between investor sentiment and FDIL is positive and significant (0.0603, $t$-stat 2.08), which

[12]This is the reason why we do not include portfolio investments in the specifications above with the full battery of fixed effects. The number of degrees of freedom is very low.

implies that in countries that attract one standard deviation of US foreign direct investments in labor (0.27 millions of employees), a one standard deviation increase in US investor sentiment is followed by a 2.20% increase in employment growth. Interestingly, the magnitude of this effect is quite similar to that from column (1). In column (3), the results for our second labor-specific measure, FDIL2, are analogous (0.0632, $t$-stat 2.16). In column (4), we consider portfolio investments. The coefficient of the interaction term between investor sentiment and PI is practically zero, however, both in magnitude and significance (0.0000, $t$-stat 0.06). The results are then in line with our expectations, and specifically, with Hypothesis 3.

We perform three unreported robustness checks. First, we repeat the analysis using the University of Michigan consumer sentiment index, orthogonalized to Baker and Wurgler's (2006) business cycle indicators, and expressed in rank order. Second, we pre-determine our measures of financial development and financial dependence. To this purpose, we define financial development as the log-GDP per capita and financial dependence as the ratio of capital expenditure to net property plant and equipment, both calculated in year 1980, before the sample start for the US investment series. Third, we follow some of the previous literature on growth and scale our measures of foreign investments by the foreign country's GDP (see, e.g., Beck, Levine, and Loayza, 2000b), deflated and expressed in logs. The pattern of our coefficient estimates mirrors the one from Table 10, both in magnitude and significance.

*4.4. Local sentiment*

The model predicts that idiosyncratic sentiment in local financial markets should also have an impact on the hiring activity of local firms. To introduce local sentiment in the analysis, we define it as the country-level indicators of consumer confidence from the OECD. For robustness, we alternatively consider the returns on the country-specific MSCI equity indices. Even though the latter measure is only a noisy proxy for sentiment, it allows us to control for local fundamentals, and include some non-OECD countries too. In either case, however, the coverage is for approximately one-third of the countries in the sample.

In our preliminary analysis of the data, we find that many of the indicators of local consumer confidence exhibit positive and significant correlation with the University of Michigan consumer sentiment index and real value added growth. For this reason, we orthogonalize local indicators to the effect of both. We find a similar pattern for local stock returns, except that they tend to correlate with Baker and Wurgler's (2006) investor sentiment index. In light of this, we perform the same orthogonalization on returns, purging them from the effect of real value added growth and US investor sentiment.

In the first batch of tests, we address the concern that the results so far may partly reflect the idiosyncratic optimism of local investors. To test for this, we re-estimate Eq. (15) by including both US and local sentiment in the analysis, and defining the channel as US foreign direct investments. Following the model's guidance, and specifically Eq. (7), we split the sample into two subsamples where US foreign direct investments represent a high (above-median) and low (below-median) fraction of local employment, respectively. We expect the investment channel to have a stronger effect in the first subsample, and the correlation channel to have higher explanatory power in the second one.

In Table 11, we present the results for consumer confidence indices. In the full sample (column 1), we find that the coefficient of the interaction term between FDI and US sentiment is positive and highly significant (0.00003, $t$-stat 2.46), with a similar magnitude to the previous set of results. The coefficient of the interaction term between financial development, financial dependence, and US sentiment is also positive, but lies outside the rejection region (0.0026, $t$-stat 1.34). The interaction terms with local sentiment are also positive but not significant ($t$-stats 0.08 and 1.56, respectively).

The sample breakdown, however, reveals an interesting pattern. In column (2), we find that the coefficient of the interaction term between FDI and US sentiment is positive and significant for the the above-median subsample (0.00003 $t$-stat 2.32), and very close to the estimate from column (1). On the other hand, none of the other coefficients of interest are significant at any conventional level.

In column (3), we consider the below-median subsample. The coefficient of the interaction term between FDI and sentiment lies outside of the rejection region for US sentiment (0.00020, $t$-stat 1.54), while it is positive and marginally significant for local sentiment (0.00102, $t$-stat 1.62). On the contrary, the coefficient of the triple interaction term between sentiment, financial development, and financial dependence is positive and highly significant for both US sentiment (0.0043, $t$-stat 3.17) and local sentiment (0.0128, $t$-stat 3.48). We obtain similar estimates when we consider the orthogonalized version of local consumer confidence, in columns (4) to (6).

These empirical patterns lend support to Hypothesis 4, as idiosyncratic sentiment benefits employment growth in financially dependent industries when located in financially developed countries. To understand the magnitude, we consider the industries that lie at the $75^{th}$ and the $25^{th}$ percentile of financial dependence, and focus on countries that receive a below-median amount of US foreign direct investments. In the orthogonalized specification, the estimates imply that in a country at the $75^{th}$ percentile of financial development, the differential in employment growth between these industries is 0.08% higher than in a country at the $25^{th}$ percentile of financial development. Following a one standard deviation increase in idiosyincratic sentiment, however, the growth differential between these industries rises by an additional 0.13%. The effect is then economically large.

In Table 12, we present the results for local stock returns and the US investor sentiment index. In column (1), we find that the full-sample estimates again unveil a dominant effect of US sentiment. The coefficient of the interaction term between financial development, financial dependence, and US sentiment is positive and significant (0.0246, $t$-stat 2.03), and the coefficient of the interaction term between FDI and US sentiment is positive and highly significant (0.00036, $t$-stat 2.73). The two coefficients, instead, are not significant for local stock returns ($t$-stats 0.53 and 0.94, respectively).

Again, the sample breakdown yields interesting insights. In the above-median subsample, in column (2), we find that the coefficient of the interaction term between FDI and US sentiment is positive and highly significant (0.00037, $t$-stat 2.89), and quite similar to the estimate from column (1), while the coefficient of the interaction term between financial development, financial dependence, and US sentiment is positive but

not significant (0.0088, $t$-stat 0.81). The coefficient is also not significant for either of the interaction terms with local stock returns ($t$-stats -0.26 and -1.19, respectively).

In the below-median subsample, in column (3), we find that the coefficient of the interaction term between financial development, financial dependence, and local stock returns is positive and marginally significant (0.3423, $t$-stat 1.92), while the coefficient of the interaction term between FDI and local stock returns is positive but outside the rejection region (0.00700, $t$-stat 1.45). Neither coefficient, instead, is significant for US sentiment ($t$-stat -0.15 and 0.42, respectively).

One potential concern is that either idiosyncratic or US sentiment may be driven by the level of sentiment in global financial markets. To test for this, we proceed as follows. In the spirit of Baker, Wurgler, and Yuan (2012), we construct global sentiment by aggregating the two sets of local sentiment indicators introduced above across the G7 countries, excluding the US. Therefore, we introduce measures of global consumer sentiment and global stock returns, and again orthogonalize them with respect to US sentiment and local real value added growth. With these new variables, we set up a horse race between US, local, and global sentiment. To this purpose, we re-estimate Eq. (15) by introducing extra-terms that include both local and global sentiment.

The results are in Table 13. We find that the coefficient of the interaction term between financial development, financial dependence, and the orthogonalized version of local consumer sentiment is positive and significant (0.0171, $t$-stat 2.30). The coefficient of the interaction term between US foreign direct investments and local sentiment, instead, is close to zero (0.00002, $t$-stat 0.13). These two coefficients are both positive and significant for US sentiment ($t$-stats 2.02 and 1.87, respectively), while neither of them is significant for global sentiment ($t$-stats -1.32 and -0.52, respectively). The results are qualitatively similar when using stock returns and Baker and Wurgler's sentiment index, with the only exception that local sentiment loses its explanatory power.

Overall, then, global sentiment does not seem to affect labor markets worldwide, and its inclusion in the analysis does not take away the explanatory power of US sentiment.

### *4.5. Sentiment vs. fundamentals*

In this section, we test the model's cross-sectional predictions on the quality of firms. Our aim is to rule out the possibility that sentiment may still capture economic fundamentals to some extent, even after the orthogonalization.[13] To address this issue, we turn to Hypothesis 5, and look into the model's cross-sectional prediction that high sentiment increases investments in speculative projects. This is an important test, because an improvement in economic fundamentals is also linked with more capital flows from abroad, but leads to an increase in the quality of the investment projects in the economy (see, e.g., Bekaert, Harvey, and Lundblad, 2011).

[13]This seems less likely, however, for Baker and Wurgler's (2006) measure of investor sentiment, especially in light of the negative sentiment beta for low volatility stocks (see DeVault, Sias, and Starks (2018) for an excellent discussion).

Following Baker and Wurgler (2006, 2007), we define firms with speculative projects as those with highly subjective valuations. Such firms are characterized by low market capitalization, low dividend-to-price ratios, high stock return volatility, and extreme values of book-to-market, EBIT-to-price, and EBITDA-to-price ratios. In the spirit of Braun and Larrain (2005), we split our industries in two subsamples along each of these dimensions, and re-estimate Eq. (15) in each subsample.

The results are in Tables 14 and 15. Consistent with the theoretical arguments, we find that the coefficient of the interaction term between US foreign direct investments and US consumer sentiment is positive and highly significant for industries with above-median market capitalization (0.00003, $t$-stat 2.40), below-median dividend-to-price ratio (0.00006, $t$-stat 3.26), above-median stock return volatility (0.00003, $t$-stat 2.90), extreme book-to-market ratios ($t$-stat 0.00003, $t$-stat 2.63), extreme EBIT-to-price (0.00003, $t$-stat 2.71), and extreme EBITDA-to-price (0.00004, $t$-stat 2.31). These effects are similar, both in magnitude and significance, to the estimates from the full sample. On the contrary, the coefficient is never significant and mostly close to zero in the other subsamples.

The empirical evidence, then, lends support to the idea that it is indeed sentiment that drives the results, rather than an improvement in economic fundamentals. This is consistent with Hypothesis 5.

*4.6. Real wages growth*

Finally, we turn to Hypothesis 6, and re-estimate our main equations using real wages growth as a dependent variable. The results are in Table 16. In column (1), we find that the coefficient of the triple interaction term between financial development, financial dependence, and US consumer sentiment is positive and highly significant (0.0018, $t$-stat 3.20). In column (2), we find that the coefficient of the interaction term between US sentiment and US FDI is also positive and highly significant (0.00006, $t$-stat 4.23). The results are qualitatively similar, even though not significant, for US investor sentiment.[14]

The analysis of earnings allows us to shed light on the type of labor that is most affected by sentiment. If it is frictional unemployment, defined as the temporary loss of employment resulting from job changes, the effect should be asymmetric over the business cycle, and specifically, stronger in periods of economic growth. The intuition is that jobs are in a higher supply in booming economies, which makes workers more likely to leave their current occupation to seek better employment opportunities.

To identify local business cycles, we follow Braun and Larrain (2005) and distinguish between cases in which the cyclical component of the country's real GDP is above or below a given threshold. Therefore, we construct two subsamples, considering observations that lie above or below the median value of the cyclical component of local real GDP, expressed in levels and estimated through the Hodrick-Prescott (1997) filter.

The results are in columns (3) and (4). We find that the coefficient of the interaction term between US sentiment and US FDI is positive and significant during expansions ($t$-stat 2.71), but not during economic downturns ($t$-stat 1.12). Similarly, the coefficient of the interaction term between US sentiment, financial

[14]Note, however, that data on real wages growth includes a substantial amount of noise (Solon, Barsky, and Parker, 1994).

development, and financial dependence is positive and significant in the first subsample ($t$-stat 3.13), but not in the second one ($t$-stat -1.13).

Another point of interest is whether sentiment affects the wages of workers with high or low skills. To assess this, we rank countries on the level of human capital, defined as the average years of schooling in population over 25 from the Barro and Lee (1993) files. We then form two subsamples, considering observations that lie above or below the median value of human capital (i.e., nine years of schooling). We argue that the average worker hired in such countries is likely to be high-skilled and low-skilled, respectively.

The results are in columns (5) and (6). We find that the coefficient of the interaction term between US sentiment and US FDI is positive and significant for low human capital countries ($t$-stat 2.59), but insignificant when human capital is high ($t$-stat 0.21). Similarly, the coefficient of the interaction term between US sentiment, financial development, and financial dependence is positive, even though only marginally significant, when human capital is low ($t$-stat 1.73), while the coefficient even flips sign when human capital is high ($t$-stat -1.64).

Overall, the results suggest that US sentiment primarily affects frictional labor, and specifically, employees with fewer years of schooling. This finding lends support to the idea that finance affects labor by increasing wages for low-skilled workers (Beck, Levine, and Levkov, 2010).

Note that a higher wage might induce firms to replace labor with capital, and increase the productivity of workers. In our last batch of tests, we shed light on this issue. To this end, we look into the effect of US sentiment on the following four additional economic outcomes: output, defined as growth in real value added; labor productivity, defined as the difference between real value added and employment growth; capital, defined as growth in fixed assets; and capital intensity, defined as the growth differential between capital and employment. In particular, we re-estimate Eq. (13), along with all the alternative fixed effects specifications presented in Table 2, for each of these new dependent variables.

The results are in Tables 17 and 18. We find that the effect of US sentiment on output is positive, but the coefficient is slightly outside of the rejection region. The effect on capital formation is also positive, even though marginally significant. The coefficients of labor productivity and capital intensity, however, are both insignificant and close to zero, which indicates that the growth in output and capital that follows high US sentiment is not significantly different from employment growth.

In the full sample, then, the effect of US sentiment on foreign labor markets primarily seems to affect employment rather than wages. As such, the results complement those from Pagano and Pica (2012), who show that an increase in financial development allows firms to expand output by increasing labor and capital in equal measure, rather than shifting to more capital-intensive technologies. Our results suggest that US sentiment has a similar effect.

## 5. Conclusion

We find that in a world with moral hazard and noise traders, investor sentiment should affect employment growth both domestically and abroad. Consistent with the model's predictions, we show that higher US sentiment leads to higher employment growth worldwide. This effect is driven by spillover effects of US sentiment to other financial markets, and capital flows from US firms. The findings are robust to a variety of empirical specifications and alternative explanations.

In keeping with the theoretical predictions, we show that country-level sentiment also has a positive impact on the hiring activity of local firms. This effect, however, only takes place in countries that receive a small amount of US investments, and does not take away any explanatory power from US sentiment. In additional tests, we also show that global sentiment does not affect our results, and that the empirical patterns we document are consistent with a genuine sentiment story rather than an improvement in economic fundamentals.

We also show, both theoretically and empirically, that investor sentiment exacerbates the negative effect of local crises on employment growth. This is consistent with the idea that financial development has a dark side, i.e., the firms that benefit the most from financial development are also the ones that are hit the hardest during financial crises. Our findings suggest that US sentiment amplifies this mechanism, especially in financial markets that are more tied to the US. The hiring that follows high investor sentiment, then, actually translates into layoffs under financial downturns, thus leading to greater labor instability.

Finally, we show that US sentiment also has a positive impact on real wages growth. The effect, however, is entirely concentrated around economic expansions rather than recessions, and in countries whose workforce exhibits fewer years of schooling. These empirical patterns suggest that sentiment primarily affects frictional and low-skilled labor.

Overall, our findings contribute to the view that investor sentiment has real effects.

## Appendix A

### *A.1. Manager's problem*

The first-order conditions yield the manager's optimal trade-off between domestic and foreign labor:

$$L_{11}^{*} = \frac{\alpha_1}{\alpha_2}\frac{w_2}{w_1}L_{12}^{*}. \tag{A.1}$$

The optimal demand for labor is a function of capital, wages, and the expected profitability of the project:

$$L_{11}^{*} = \bar{\theta}_1^{\frac{1}{1-\alpha_1-\alpha_2}}\left(\frac{\alpha_1}{w_1}\right)^{\frac{1-\alpha_2}{1-\alpha_1-\alpha_2}}\left(\frac{\alpha_2}{c_{12}w_2}\right)^{\frac{\alpha_2}{1-\alpha_1-\alpha_2}}K_1, \tag{A.2}$$

$$L_{12}^{*} = \bar{\theta}_1^{\frac{1}{1-\alpha_1-\alpha_2}}\left(\frac{\alpha_2}{c_{12}w_2}\right)^{\frac{1-\alpha_1}{1-\alpha_1-\alpha_2}}\left(\frac{\alpha_1}{w_1}\right)^{\frac{\alpha_1}{1-\alpha_1-\alpha_2}}K_1. \tag{A.3}$$

Using these results into the manager's objective function yields the expected private benefit for the manager:

$$E(\tilde{B}_1^{*}) = (1-\lambda_1)\left(\bar{\theta}_1\left(\frac{\alpha_1}{w_1}\right)^{\alpha_1}\left(\frac{\alpha_2}{c_{12}w_2}\right)^{\alpha_2}\right)^{\frac{1}{1-\alpha_1-\alpha_2}}(1-\alpha_1-\alpha_2)K_1 \equiv (1-\lambda_1)\phi_1 K_1. \tag{A.4}$$

Given the stock market equilibrium, and the equality $F_1 = p_1^*$, then the firm's equilibrium level of capital is:

$$K_1^* = \frac{A_1 - \frac{1}{\gamma}}{1 - \lambda_1 \phi_1 S_1}, \tag{A.5}$$

which, in turn, determines the manager's private benefit:

$$E(\tilde{B}_1^*) = (1 - \lambda_1)\phi_1 \frac{A_1 - \frac{1}{\gamma_1}}{1 - \lambda_1 \phi_1 S_1}, \tag{A.6}$$

and the firm's demand for labor:

$$L_{11}^* = \bar{\theta}_1^{\frac{1}{1-\alpha_1-\alpha_2}} \left(\frac{\alpha_1}{w_1}\right)^{\frac{1-\alpha_2}{1-\alpha_1-\alpha_2}} \left(\frac{\alpha_2}{c_{12} w_2}\right)^{\frac{\alpha_2}{1-\alpha_1-\alpha_2}} \frac{A_1 - \frac{1}{\gamma_1}}{1 - \lambda_1 \phi_1 S_1}, \tag{A.7}$$

$$L_{12}^* = \bar{\theta}_1^{\frac{1}{1-\alpha_1-\alpha_2}} \left(\frac{\alpha_2}{c_{12} w_2}\right)^{\frac{1-\alpha_1}{1-\alpha_1-\alpha_2}} \left(\frac{\alpha_1}{w_1}\right)^{\frac{\alpha_1}{1-\alpha_1-\alpha_2}} \frac{A_1 - \frac{1}{\gamma_1}}{1 - \lambda_1 \phi_1 S_1}. \tag{A.8}$$

The above dynamics symmetrically apply to country 2, whose firms hire

$$L_{21}^* = \bar{\theta}_2^{\frac{1}{1-\alpha_2-\alpha_1}} \left(\frac{\alpha_1}{c_{21} w_1}\right)^{\frac{1-\alpha_2}{1-\alpha_2-\alpha_1}} \left(\frac{\alpha_2}{w_2}\right)^{\frac{\alpha_2}{1-\alpha_2-\alpha_1}} \frac{A_2 - \frac{1}{\gamma_2}}{1 - \lambda_2 \phi_2 S_2} \tag{A.9}$$

in country 1, and

$$L_{22}^* = \bar{\theta}_2^{\frac{1}{1-\alpha_2-\alpha_1}} \left(\frac{\alpha_2}{w_2}\right)^{\frac{1-\alpha_1}{1-\alpha_2-\alpha_1}} \left(\frac{\alpha_1}{c_{21} w_1}\right)^{\frac{\alpha_1}{1-\alpha_2-\alpha_1}} \frac{A_2 - \frac{1}{\gamma_2}}{1 - \lambda_2 \phi_2 S_2} \tag{A.10}$$

in country 2, where $c_{21}$ is the counterpart to $c_{12}$ from country 1. These demand functions then determine the labor market equilibrium in the two countries.

### *A.2. Deviation from the efficient level of employment*

The difference between the second- and first-best level of local labor demand for firms in country 1 is:

$$\hat{L}_{11}(K_1^*) - \hat{L}_{11}(K_1^*)|_{S_1=1} = \left(\bar{\theta}_1 \left(\frac{\alpha_1}{w_1}\right)^{1-\alpha_2} \left(\frac{\alpha_2}{c_{12} w_2}\right)^{\alpha_2}\right)^{\frac{1}{1-\alpha_1-\alpha_2}} \left(\frac{A_1 - \frac{1}{\gamma_1}}{1 - \lambda_1 \phi_1 S_1} - \frac{A_1 - \frac{1}{\gamma_1}}{1 - \lambda_1 \phi_1}\right) \tag{A.11}$$

or equivalently:

$$\Delta \hat{L}_{11}|_{S_1 \neq 1} = (S_1 - 1) \frac{\lambda_1 \phi_1}{1 - \lambda_1 \phi_1} \hat{L}_{11}(K_1^*)|_{S_1=1}. \tag{A.12}$$

The same holds for foreign labor demand ($\hat{L}_{12}(K_1^*)$).

### *A.3. Effect of sentiment on employment*

For total sentiment $S_1$, it is easy to see that it affects the equilibrium level of employment through local wages:

$$\frac{dL_1^*}{dS_1} = \underbrace{\frac{\partial L_1^s}{\partial S_1}}_{=0} + \frac{\partial L_1^s}{\partial w_1}\frac{dw_1}{dS_1} + \underbrace{\frac{\partial L_1^s}{\partial w_2}}_{=0}\frac{dw_2}{dS_1}, \tag{A.13}$$

or equivalently:

$$\frac{dL_1^*}{dS_1} = \frac{\partial L_1^s}{\partial w_1}(-1)\frac{F'_{S_1}}{F'_{w_1}}, \tag{A.14}$$

where $F = 0$ represents the labor market clearing condition, and:

$$F'_{S_1} = \bar{\theta}_1^{\frac{1}{1-\alpha_1-\alpha_2}} \left(\frac{\alpha_1}{w_1}\right)^{\frac{1-\alpha_2}{1-\alpha_1-\alpha_2}} \left(\frac{\alpha_2}{c_{12} w_2}\right)^{\frac{\alpha_2}{1-\alpha_1-\alpha_2}} \frac{A_1 - \frac{1}{\gamma_1}}{(1 - \lambda_1 \phi_1 S_1)^2} \lambda_1 \phi_1 \equiv L_{11}^* \frac{\lambda_1 \phi_1}{1 - \lambda_1 \phi_1 S_1}, \tag{A.15}$$

$$F'_{w_1} = \frac{\partial L^*_{11}}{\partial w_1}\frac{-(1-\alpha_2)+S_1\lambda_1\phi_1(1-\alpha_1-\alpha_2)}{(1-\alpha_1-\alpha_2)(1-S_1\lambda_1\phi_1)}+ \\ +\frac{\partial L^*_{21}}{\partial w_1}\frac{-(1-\alpha_2)+S_2\lambda_2\phi_2(1-\alpha_2-\alpha_2)}{(1-\alpha_1-\alpha_2)(1-S_2\lambda_2\phi_2)} - \frac{\partial L^s_1}{\partial w_1}. \tag{A.16}$$

Similarly, the effect of sentiment on wages is:

$$\frac{dw^*_1}{dS_1} = (-1)\frac{F'_{S_1}}{F'_{w_1}}. \tag{A.17}$$

When breaking down sentiment into a local and a foreign component, the two derivatives are the result of:

$$\frac{dw_1}{ds_1} = (-1)\frac{F'_{s_1}}{F'_{w_1}}, \tag{A.18}$$

$$\frac{dw_1}{ds_2} = (-1)\frac{F'_{s_2}}{F'_{w_1}}, \tag{A.19}$$

where:

$$F'_{s_1} = L^*_{11}\frac{\lambda_1\phi_1}{1-\lambda_1\phi_1 S_1}(1-\delta_1), \tag{A.20}$$

$$F'_{s_2} = L^*_{11}\rho_1(1-\delta_1)\frac{\lambda_1\phi_1}{1-\lambda_1\phi_1 S_1} + L^*_{21}(1-\delta_2)\frac{\lambda_2\phi_2}{1-\lambda_2\phi_2 S_2}. \tag{A.21}$$

*A.4. Maximum probability of default*

Investors participate if the profit per dollar invested is at least equal to one. This implies:

$$(s_1+\rho_1 s_2)\phi_1(1-\delta_1)+\phi_1\delta_1 \equiv \phi_1 S_1 \geq 1, \tag{A.22}$$

which identifies a critical level for $\phi_1$:

$$\phi^c_1 = \frac{1}{S_1}, \tag{A.23}$$

or in terms of probability of default:

$$\pi^c_1 = 1-\frac{1}{\theta_1}\left(\frac{w_1}{\alpha_1}\right)^{\alpha_1}\left(\frac{c_{12}w_2}{\alpha_2}\right)^{\alpha_2}\left(\frac{1}{1-\alpha_1-\alpha_2}\frac{1}{S_1}\right)^{1-\alpha_1-\alpha_2}. \tag{A.24}$$

Differentiating the critical probability of default with respect to $A_1$ yields:

$$\frac{d\pi^c_1}{dA_1} = \underbrace{\frac{\partial \pi^c_1}{\partial A_1}}_{=0} + \frac{\partial \pi^c_1}{\partial w_1}\frac{dw_1}{dA_1} + \frac{\partial \pi^c_1}{\partial w_2}\frac{dw_2}{dA_1} \tag{A.25}$$

where the first addend is zero as there is no direct effect of $A_1$ on $\pi^c_1$. The overall effect is negative because:

$$\frac{dw_1}{dA_1} = -\frac{F'_{A_1}}{F'_{w_1}} \equiv -\frac{1}{F'_{w_1}}\frac{L^*_{11}}{A_1-\frac{1}{\gamma_1}} > 0, \tag{A.26}$$

and the same argument applies to $w_2$.

On the other hand, differentiating the critical probability of default with respect to $S_1$ yields:

$$\frac{d\pi^c_1}{dS_1} = \underbrace{\frac{\partial \pi^c_1}{\partial S_1}}_{>0} + \frac{\partial \pi^c_1}{\partial w_1}\frac{dw_1}{dS_1} + \frac{\partial \pi^c_1}{\partial w_2}\frac{dw_2}{dS_1}, \tag{A.27}$$

where sentiment has a direct effect on $\pi^c_1$. The overall effect is positive because for a generic firm $i$ from country 1:

$$\frac{dL^i_{11}}{dS_1} \propto \left(1-\frac{\alpha_1}{1-\alpha_1-\alpha_2}\frac{dw_1}{dS_1}\frac{S_1}{w_1}-\frac{\alpha_2}{1-\alpha_1-\alpha_2}\frac{dw_2}{dS_1}\frac{S_1}{w_2}\right) > 0 \tag{A.28}$$

for at least one firm.

*A.5. Effect of sentiment on employment during crises*

A shock in the probability of default affects the equilibrium level of employment through wages:

$$\frac{dL_1^*}{d\pi_1} = \frac{\partial L_1^s}{\partial w_1}(-1)\frac{F'_{\pi_1}}{F'_{w_1}} \equiv \frac{\partial L_1^s}{\partial w_1}\frac{1}{F'_{w_1}}\frac{L_{11}^*}{(1-\alpha_1-\alpha_2)(1-\pi_1)(1-S_1\lambda_1\phi_1)} < 0. \tag{A.29}$$

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**Table 1. Sample statistics: Industry-level growth in employment and real wages**

Sample statistics for industry-level annual growth in employment and real wages, from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. The data set includes 28 manufacturing industries and 60 countries. The sample period is 1970-2003.

| | **Employment** | | | **Real wages** | | |
|---|---|---|---|---|---|---|
| Industry | Mean | Std. Dev. | Freq. | Mean | Std. Dev. | Freq. |
| Apparel | 0.0283 | 0.2282 | 1,613 | 0.0176 | 0.1902 | 1,570 |
| Beverages | 0.0168 | 0.1438 | 1,680 | 0.0194 | 0.1945 | 1,618 |
| Electrical machinery | 0.0316 | 0.2060 | 1,590 | 0.0191 | 0.1861 | 1,547 |
| Food products | 0.0274 | 0.1298 | 1,697 | 0.0146 | 0.1832 | 1,650 |
| Footwear | −0.0046 | 0.2322 | 1,535 | 0.0137 | 0.2105 | 1,492 |
| Furniture | 0.0294 | 0.2232 | 1,607 | 0.0128 | 0.2006 | 1,551 |
| Glass and products | 0.0141 | 0.2277 | 1,547 | 0.0227 | 0.2171 | 1,505 |
| Industrial chemicals | 0.0208 | 0.2888 | 1,649 | 0.0247 | 0.2475 | 1,603 |
| Iron and steel | 0.0194 | 0.2551 | 1,482 | 0.0163 | 0.2280 | 1,444 |
| Leather | 0.0023 | 0.2070 | 1,541 | 0.0122 | 0.2120 | 1,494 |
| Machinery | 0.0369 | 0.2721 | 1,590 | 0.0177 | 0.2134 | 1,547 |
| Metal products | 0.0222 | 0.1519 | 1,650 | 0.0145 | 0.1830 | 1,607 |
| Non-ferrous metal | 0.0272 | 0.2506 | 1,268 | 0.0246 | 0.2199 | 1,223 |
| Non-metal products | 0.0176 | 0.1511 | 1,546 | 0.0197 | 0.1892 | 1,503 |
| Other chemical products | 0.0279 | 0.1225 | 1,580 | 0.0230 | 0.1752 | 1,537 |
| Other manufacturing | 0.0184 | 0.3212 | 1,655 | 0.0189 | 0.2275 | 1,608 |
| Paper products | 0.0244 | 0.1803 | 1,694 | 0.0177 | 0.1935 | 1,645 |
| Petroleum and coal | 0.0100 | 0.3950 | 968 | 0.0150 | 0.2422 | 943 |
| Plastic products | 0.0509 | 0.1680 | 1,561 | 0.0189 | 0.1898 | 1,517 |
| Pottery | 0.0236 | 0.4328 | 1,467 | 0.0230 | 0.3434 | 1,415 |
| Printing | 0.0217 | 0.1401 | 1,575 | 0.0187 | 0.1790 | 1,531 |
| Professional equipment | 0.0507 | 0.2706 | 1,381 | 0.0200 | 0.2196 | 1,346 |
| Refineries | 0.0223 | 0.3321 | 1,351 | 0.0157 | 0.2741 | 1,308 |
| Rubber products | 0.0054 | 0.2601 | 1,599 | 0.0154 | 0.2317 | 1,556 |
| Textiles | −0.0001 | 0.1669 | 1,669 | 0.0146 | 0.1901 | 1,623 |
| Tobacco | −0.0128 | 0.2022 | 1,487 | 0.0270 | 0.2311 | 1,431 |
| Transport equipment | 0.0192 | 0.2443 | 1,628 | 0.0190 | 0.2066 | 1,583 |
| Wood products | 0.0152 | 0.2055 | 1,683 | 0.0112 | 0.1976 | 1,636 |
| Total | 0.0202 | 0.2364 | 43,293 | 0.0181 | 0.2145 | 42,033 |

**Table 2. Investor sentiment, financial development, and financial dependence**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; and an interaction term between US investor sentiment and financial development. The specifications include country-year and industry fixed effects in column (1); country-industry and year fixed effects in column (2); industry-year and country fixed effects in column (3); country, year, and industry fixed effects in column (4); country-year, industry-year, and country-industry fixed effects in column (5); and country, year, industry, industry-year, and country-industry fixed effects in column (6). In Panel A, we winsorize the 1% tails of the employment growth distribution. In Panel B, we constrain employment growth to be between -1 and 1. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Wins. Employment Growth (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1696^{***}$ | $-1.0983^{***}$ | $-0.1647^{***}$ | $-0.1693^{***}$ | $-1.2105^{***}$ | $-1.1961^{***}$ |
| | $(-4.44)$ | $(-7.41)$ | $(-4.18)$ | $(-4.42)$ | $(-6.46)$ | $(-6.69)$ |
| FD x ED | $0.0287^{**}$ | | $0.0291^{**}$ | $0.0286^{**}$ | | |
| | (2.47) | | (2.59) | (2.44) | | |
| ED x Sentiment | $-0.0072^{**}$ | $-0.0064^{*}$ | | $-0.0072^{**}$ | | |
| | $(-2.14)$ | $(-1.87)$ | | $(-2.14)$ | | |
| FD x ED x Sentiment | $0.0214^{***}$ | $0.0215^{***}$ | $0.0224^{***}$ | $0.0215^{***}$ | $0.0210^{***}$ | $0.0219^{***}$ |
| | (3.04) | (3.02) | (3.00) | (3.04) | (2.86) | (2.92) |
| FD x Sentiment | | 0.0016 | 0.0017 | 0.0021 | | 0.0015 |
| | | (0.32) | (0.35) | (0.42) | | (0.30) |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 43,293 | 43,293 | 43,293 | 43,293 | 43,293 | 43,293 |
| Adj. R-Squared | 0.0070 | 0.0050 | 0.0554 | 0.0538 | 0.2890 | 0.1132 |

Panel B

| Wins. Employment Growth (−1, 1) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1796^{***}$ | $-1.2224^{***}$ | $-0.1823^{***}$ | $-0.1806^{***}$ | $-1.3040^{***}$ | $-1.3342^{***}$ |
| | $(-4.50)$ | $(-6.87)$ | $(-4.16)$ | $(-4.50)$ | $(-6.40)$ | $(-6.24)$ |
| FD x ED | $0.0283^{*}$ | | $0.0270^{*}$ | $0.0279^{*}$ | | |
| | (1.95) | | (1.96) | (1.92) | | |
| ED x Sentiment | $-0.0079^{**}$ | $-0.0078^{**}$ | | $-0.0080^{**}$ | | |
| | $(-2.19)$ | $(-2.09)$ | | $(-2.23)$ | | |
| FD x ED x Sentiment | $0.0225^{***}$ | $0.0208^{**}$ | $0.0220^{**}$ | $0.0225^{***}$ | $0.0217^{***}$ | $0.0211^{**}$ |
| | (2.88) | (2.56) | (2.58) | (2.87) | (2.64) | (2.50) |
| FD x Sentiment | | 0.0041 | 0.0042 | 0.0043 | | 0.0040 |
| | | (0.47) | (0.48) | (0.50) | | (0.45) |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 43,614 | 43,614 | 43,614 | 43,614 | 43,614 | 43,614 |
| Adj. R-Squared | 0.0047 | 0.0047 | 0.0602 | 0.0607 | 0.3852 | 0.1143 |

**Table 3. Investor sentiment and liquidity**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; an interaction term between the level of aggregate liquidity in the US equity market from Pástor and Stambaugh (2003) and financial dependence; an interaction term between US liquidity, financial development, and financial dependence; an interaction term between US investor sentiment and financial development; and an interaction term between US liquidity and financial development. The specifications include country-year and industry fixed effects in column (1); country-industry and year fixed effects in column (2); industry-year and country fixed effects in column (3); country, year, and industry fixed effects in column (4); country-year, industry-year, and country-industry fixed effects in column (5); and country, year, industry, industry-year, and country-industry fixed effects in column (6). We winsorize the 1% tails of the employment growth distribution. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

| Wins. Employment Growth (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1698^{***}$ | $-1.1017^{***}$ | $-0.1650^{***}$ | $-0.1695^{***}$ | $-1.2120^{***}$ | $-1.1983^{***}$ |
| | $(-4.44)$ | $(-7.40)$ | $(-4.18)$ | $(-4.42)$ | $(-6.46)$ | $(-6.68)$ |
| FD x ED | $0.0306^{**}$ | | $0.0334^{**}$ | $0.0308^{**}$ | | |
| | (2.27) | | (2.56) | (2.27) | | |
| ED x Sentiment | $-0.0080^{**}$ | $-0.0071^{*}$ | | $-0.0080^{**}$ | | |
| | $(-2.23)$ | $(-1.97)$ | | $(-2.22)$ | | |
| FD x ED x Sentiment | $0.0210^{***}$ | $0.0196^{***}$ | $0.0216^{***}$ | $0.0211^{***}$ | $0.0190^{**}$ | $0.0196^{***}$ |
| | (2.88) | (2.72) | (2.83) | (2.88) | (2.52) | (2.59) |
| ED x Liquidity | 0.1346 | 0.1093 | | 0.1326 | | |
| | (1.31) | (1.07) | | (1.29) | | |
| FD x ED x Liquidity | 0.0571 | 0.2916 | 0.1269 | 0.0632 | 0.3066 | $0.3490^{*}$ |
| | (0.35) | (1.58) | (0.73) | (0.38) | (1.58) | (1.82) |
| FD x Sentiment | | $-0.0001$ | $-0.0001$ | 0.0002 | | $-0.0000$ |
| | | $(-0.01)$ | $(-0.02)$ | (0.04) | | $(-0.01)$ |
| FD x Liquidity | | 0.2532 | 0.2862 | 0.2942 | | 0.2435 |
| | | (1.00) | (1.05) | (1.14) | | (0.91) |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 43,293 | 43,293 | 43,293 | 43,293 | 43,293 | 43,293 |
| Adj. R-Squared | 0.0067 | 0.0050 | 0.0556 | 0.0541 | 0.2890 | 0.1134 |

**Table 4. Alternative specifications for financial development**

Panel regression of industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD) and the industry's degree of dependence on external finance (ED); an interaction term between financial dependence and US investor sentiment; and an interaction term between US investor sentiment, financial development, and financial dependence. US investor sentiment is defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year. Financial dependence is defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average). Financial development is defined as the ratio between total domestic credit and GDP in column (1); the sum of total domestic credit and stock market capitalization scaled by GDP in column (2); a country's accounting standards, as estimated by the Center for International Financial Analysis and Research in 1980 in column (3), and its revision in 1983 in column (4); the log-GDP per capita calculated in 1980, expressed in USD billions, in column (5); and private credit by deposit money banks and other financial institutions scaled by GDP, calculated in 1980, in column (6). All specifications include country-year and industry fixed effects. In Panel A, we winsorize the 1% tails of the employment growth distribution. In Panel B, we constrain employment growth to be between -1 and 1. The dataset includes 28 manufacturing industries for 113 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Wins. Employment Growth (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1643^{***}$ | $-0.1627^{***}$ | $-0.1644^{***}$ | $-0.1193^{*}$ | $-0.1260^{***}$ | $-0.1924^{***}$ |
| | $(-4.81)$ | $(-4.43)$ | $(-2.84)$ | $(-1.83)$ | $(-3.48)$ | $(-6.10)$ |
| FD x ED | $-0.0088^{*}$ | $-0.0113^{**}$ | $-0.0163^{*}$ | $-0.0207^{**}$ | $-0.0390^{*}$ | $-0.0052$ |
| | $(-1.74)$ | $(-2.34)$ | $(-1.87)$ | $(-2.47)$ | $(-1.86)$ | $(-1.22)$ |
| ED x Sentiment | $0.0382^{***}$ | $0.0206^{***}$ | $0.0007^{***}$ | $0.0005^{**}$ | $0.0110^{***}$ | $0.0463^{***}$ |
| | (3.27) | (3.30) | (3.37) | (2.22) | (6.17) | (3.46) |
| FD x ED x Sentiment | $0.0141^{**}$ | $0.0117^{***}$ | $0.0003^{*}$ | $0.0003^{**}$ | $0.0048^{*}$ | $0.0188^{**}$ |
| | (2.15) | (2.87) | (2.01) | (2.65) | (1.97) | (1.99) |
| Country-Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Observations | 45,533 | 42,573 | 26,575 | 21,912 | 32,522 | 48,630 |
| Adj. R-Squared | 0.0047 | 0.0058 | 0.0115 | 0.0121 | 0.0041 | 0.0057 |

Panel B

| Wins. Employment Growth (−1, 1) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1843^{***}$ | $-0.1725^{***}$ | $-0.1746^{***}$ | $-0.1242^{*}$ | $-0.1352^{***}$ | $-0.2121^{***}$ |
| | $(-4.98)$ | $(-4.51)$ | $(-2.86)$ | $(-1.81)$ | $(-3.59)$ | $(-6.17)$ |
| FD x ED | $-0.0090^{*}$ | $-0.0123^{**}$ | $-0.0160^{*}$ | $-0.0223^{**}$ | $-0.0436^{**}$ | $-0.0060$ |
| | $(-1.71)$ | $(-2.39)$ | $(-1.76)$ | $(-2.60)$ | $(-2.09)$ | $(-1.29)$ |
| ED x Sentiment | $0.0376^{***}$ | $0.0213^{***}$ | $0.0007^{***}$ | $0.0005^{*}$ | $0.0125^{***}$ | $0.0452^{***}$ |
| | (3.11) | (3.01) | (3.64) | (1.81) | (7.06) | (3.14) |
| FD x ED x Sentiment | $0.0143^{**}$ | $0.0124^{***}$ | $0.0003^{*}$ | $0.0004^{**}$ | $0.0054^{**}$ | $0.0204^{*}$ |
| | (2.07) | (2.81) | (1.88) | (2.72) | (2.20) | (1.97) |
| Country-Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Observations | 45,927 | 42,894 | 26,629 | 21,964 | 32,660 | 49,044 |
| Adj. R-Squared | 0.0028 | 0.0037 | 0.0094 | 0.0096 | 0.0027 | 0.0043 |

**Table 5. Post-1980 investor sentiment, pre-1980 financial development and financial dependence**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as the log-GDP per capita, expressed in USD billions, and the industry's degree of dependence on external finance (ED), defined as the ratio of capital expenditure to net property plant and equipment, both calculated in year 1980; an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; and an interaction term between US investor sentiment and financial development. The specifications include country-year and industry fixed effects in column (1); country-industry and year fixed effects in column (2); industry-year and country fixed effects in column (3); country, year, and industry fixed effects in column (4); country-year, industry-year, and country-industry fixed effects in column (5); and country, year, industry, industry-year, and country-industry fixed effects in column (6). In Panel A, we winsorize the 1% tails of the employment growth distribution. In Panel B, we constrain employment growth to be between -1 and 1. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database, but we estimate the regressions in the post-1980 period. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Wins. Employment Growth (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1190^{***}$ | $-1.2738^{***}$ | $-0.1033^{***}$ | $-0.1176^{***}$ | $-1.4233^{***}$ | $-1.3593^{***}$ |
| | $(-3.57)$ | $(-5.99)$ | $(-2.82)$ | $(-3.48)$ | $(-5.45)$ | $(-5.56)$ |
| FD x ED | $0.0375^{***}$ | | $0.0334^{**}$ | $0.0370^{***}$ | | |
| | (2.76) | | (2.26) | (2.69) | | |
| ED x Sentiment | $-0.5644^{***}$ | $-0.5427^{***}$ | | $-0.5671^{***}$ | | |
| | $(-2.96)$ | $(-2.96)$ | | $(-2.97)$ | | |
| FD x ED x Sentiment | $0.0641^{***}$ | $0.0616^{***}$ | $0.0679^{***}$ | $0.0646^{***}$ | $0.0624^{***}$ | $0.0640^{***}$ |
| | (2.93) | (2.92) | (2.94) | (2.94) | (2.74) | (2.81) |
| FD x Sentiment | | $-0.0129^{**}$ | $-0.0143^{**}$ | $-0.0140^{**}$ | | $-0.0134^{**}$ |
| | | $(-2.46)$ | $(-2.42)$ | $(-2.44)$ | | $(-2.35)$ |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 20,348 | 20,348 | 20,348 | 20,348 | 20,348 | 20,348 |
| Adj. R-Squared | 0.0003 | 0.0012 | 0.0520 | 0.0542 | 0.3344 | 0.1309 |

Panel B

| Wins. Employment Growth (−1, 1) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1319^{***}$ | $-1.3846^{***}$ | $-0.1103^{***}$ | $-0.1305^{***}$ | $-1.5605^{***}$ | $-1.4734^{***}$ |
| | $(-3.85)$ | $(-4.93)$ | $(-2.83)$ | $(-3.77)$ | $(-5.37)$ | $(-4.53)$ |
| FD x ED | $0.0402^{***}$ | | $0.0311^{*}$ | $0.0391^{***}$ | | |
| | (3.09) | | (1.96) | (2.96) | | |
| ED x Sentiment | $-0.6514^{***}$ | $-0.6776^{***}$ | | $-0.6596^{***}$ | | |
| | $(-3.01)$ | $(-3.24)$ | | $(-3.04)$ | | |
| FD x ED x Sentiment | $0.0741^{***}$ | $0.0774^{***}$ | $0.0837^{***}$ | $0.0751^{***}$ | $0.0723^{***}$ | $0.0801^{***}$ |
| | (3.00) | (3.22) | (3.19) | (3.04) | (2.85) | (3.12) |
| FD x Sentiment | | $-0.0196^{***}$ | $-0.0211^{***}$ | $-0.0199^{***}$ | | $-0.0202^{***}$ |
| | | $(-2.84)$ | $(-2.74)$ | $(-2.70)$ | | $(-2.72)$ |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 20,458 | 20,458 | 20,458 | 20,458 | 20,458 | 20,458 |
| Adj. R-Squared | 0.0002 | 0.0017 | 0.0471 | 0.0513 | 0.4089 | 0.1218 |

**Table 6. Investor sentiment and financial crises**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average) in columns (1) to (3) and as total domestic credit over GDP (1980-1995 average) in columns (4) to (6), and the industry's degree of financial dependence (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; an interaction term between US investor sentiment, financial dependence, and a banking crisis dummy, defined as the list of country-level banking crises from Laeven and Valencia (2010); and an interaction term between US investor sentiment, financial development, financial dependence, and the banking crisis dummy. All specifications include country-year and industry fixed effects. We consider the full sample in columns (1) and (4), OECD countries in columns (2) and (5), and non-OECD countries in columns (3) and (6). In Panel A, we winsorize the 1% tails of the employment growth distribution. In Panel B, we constrain employment growth to be between -1 and 1. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Employment Growth (1%) | Stock Market Cap | | | Total Domestic Credit | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Full | OECD | Other | Full | OECD | Other |
| Share | $-0.1004^{***}$ | $-0.0090$ | $-0.1344^{***}$ | $-0.1032^{***}$ | $-0.0149$ | $-0.1286^{***}$ |
| | $(-4.88)$ | $(-0.50)$ | $(-4.79)$ | $(-5.55)$ | $(-0.84)$ | $(-5.30)$ |
| FD x ED | $-0.0062^{*}$ | $-0.0036$ | $-0.0076$ | $-0.0084$ | $-0.0035$ | $-0.0162^{**}$ |
| | $(-1.78)$ | $(-0.79)$ | $(-1.52)$ | $(-1.59)$ | $(-0.47)$ | $(-2.13)$ |
| ED x Sentiment | $0.0661^{***}$ | $0.0857^{***}$ | $0.0552^{***}$ | $0.0500^{***}$ | $0.0400^{***}$ | $0.0687^{***}$ |
| | (5.70) | (5.02) | (4.16) | (8.52) | (6.80) | (8.83) |
| FD x ED x Sentiment | $0.0208^{***}$ | 0.0143 | $0.0222^{**}$ | $0.0140^{**}$ | 0.0049 | $0.0385^{**}$ |
| | (2.89) | (1.44) | (2.62) | (2.08) | (0.62) | (2.63) |
| ED x Sentiment x Crisis | $-0.0085$ | $0.0200^{**}$ | $-0.0197$ | $-0.0060$ | $0.0233^{**}$ | $-0.0507$ |
| | $(-0.58)$ | (2.52) | $(-0.87)$ | $(-0.47)$ | (2.03) | $(-1.72)$ |
| FD x ED x Crisis | $-0.0012$ | 0.0463 | $-0.0359$ | $-0.0078$ | 0.0056 | $-0.0232$ |
| | $(-0.03)$ | (1.29) | $(-0.68)$ | $(-0.67)$ | (0.74) | $(-0.57)$ |
| FD x ED x Sentiment x Crisis | $-0.0243$ | $-0.1126^{***}$ | 0.0169 | $-0.0126$ | $-0.0373^{***}$ | 0.0959 |
| | $(-0.50)$ | $(-2.95)$ | (0.24) | $(-0.69)$ | $(-2.88)$ | (1.26) |
| Country-Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Observations | 43,293 | 18,758 | 24,535 | 45,533 | 18,758 | 26,775 |
| Adj. R-Squared | 0.0019 | 0.0016 | 0.0036 | 0.0013 | 0.0041 | 0.0042 |

Panel B

| Wins. Employment Growth (-1, 1) | Stock Market Cap | | | Total Domestic Credit | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Full | OECD | Other | Full | OECD | Other |
| Share | $-0.1054^{***}$ | $-0.0129$ | $-0.1398^{***}$ | $-0.1176^{***}$ | $-0.0188$ | $-0.1460^{***}$ |
| | $(-5.00)$ | $(-0.72)$ | $(-4.85)$ | $(-5.36)$ | $(-1.08)$ | $(-5.10)$ |
| FD x ED | $-0.0069^{*}$ | $-0.0036$ | $-0.0085$ | $-0.0087$ | $-0.0035$ | $-0.0166^{**}$ |
| | $(-1.84)$ | $(-0.79)$ | $(-1.60)$ | $(-1.59)$ | $(-0.46)$ | $(-2.08)$ |
| ED x Sentiment | $0.0651^{***}$ | $0.0877^{***}$ | $0.0529^{***}$ | $0.0504^{***}$ | $0.0406^{***}$ | $0.0677^{***}$ |
| | (4.90) | (5.13) | (3.29) | (8.33) | (6.89) | (7.12) |
| FD x ED x Sentiment | $0.0218^{***}$ | 0.0143 | $0.0234^{**}$ | $0.0143^{**}$ | 0.0048 | $0.0389^{**}$ |
| | (2.73) | (1.42) | (2.47) | (2.03) | (0.60) | (2.46) |
| ED x Sentiment x Crisis | $-0.0063$ | $0.0202^{**}$ | $-0.0165$ | $-0.0026$ | $0.0255^{*}$ | $-0.0482$ |
| | $(-0.42)$ | (2.07) | $(-0.71)$ | $(-0.19)$ | (1.89) | $(-1.56)$ |
| FD x ED x Crisis | 0.0031 | 0.0499 | $-0.0319$ | $-0.0053$ | 0.0068 | $-0.0164$ |
| | (0.08) | (1.32) | $(-0.59)$ | $(-0.45)$ | (1.01) | $(-0.37)$ |
| FD x ED x Sentiment x Crisis | $-0.0288$ | $-0.1178^{***}$ | 0.0128 | $-0.0186$ | $-0.0423^{***}$ | 0.0928 |
| | $(-0.56)$ | $(-2.82)$ | (0.18) | $(-1.06)$ | $(-3.01)$ | (1.12) |
| Country-Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Observations | 43,614 | 18,807 | 24,807 | 45,927 | 18,807 | 27,120 |
| Adj. R-Squared | 0.0010 | 0.0010 | 0.0021 | 0.0005 | 0.0029 | 0.0024 |

**Table 7. Investor sentiment, financial dependence, and investments in foreign countries**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; an interaction term between US investor sentiment, financial dependence, and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions and lagged one year, from the Bureau of Economic Analysis; and an interaction term between US investor sentiment and financial development. The specifications include country-year and industry fixed effects in column (1); country-industry and year fixed effects in column (2); industry-year and country fixed effects in column (3); country, year, and industry fixed effects in column (4); country-year, industry-year, and country-industry fixed effects in column (5); and country, year, industry, industry-year, and country-industry fixed effects in column (6). In Panel A, we winsorize the 1% tails of the employment growth distribution. In Panel B, we constrain employment growth to be between -1 and 1. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Wins. Employment Growth (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1083^{**}$ | $-1.4237^{***}$ | $-0.1080^{**}$ | $-0.1085^{***}$ | $-1.5480^{***}$ | $-1.5328^{***}$ |
| | $(-2.64)$ | $(-6.48)$ | $(-2.54)$ | $(-2.65)$ | $(-6.12)$ | $(-6.31)$ |
| FD x ED | 0.0129 | | 0.0135 | 0.0128 | | |
| | (1.41) | | (1.55) | (1.38) | | |
| ED x Sentiment | $-0.0174^{***}$ | $-0.0168^{***}$ | | $-0.0176^{***}$ | | |
| | $(-3.08)$ | $(-2.91)$ | | $(-3.11)$ | | |
| FD x ED x Sentiment | $0.0226^{***}$ | $0.0143^{*}$ | $0.0187^{*}$ | $0.0223^{***}$ | 0.0100 | 0.0101 |
| | (2.72) | (1.75) | (1.97) | (2.72) | (1.18) | (1.09) |
| ED x Sentiment x FDI | $0.0001^{**}$ | $0.0003^{*}$ | $0.0004^{**}$ | $0.0001^{**}$ | $0.0002^{***}$ | $0.0004^{**}$ |
| | (2.24) | (1.78) | (2.33) | (2.55) | (3.19) | (1.98) |
| FD x Sentiment | | $-0.0129$ | $-0.0141$ | $-0.0147$ | | $-0.0126$ |
| | | $(-0.85)$ | $(-0.87)$ | $(-0.96)$ | | $(-0.77)$ |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 22,947 | 22,947 | 22,947 | 22,947 | 22,947 | 22,947 |
| Adj. R-Squared | 0.0097 | 0.0014 | 0.0438 | 0.0445 | 0.3064 | 0.1297 |

Panel B

| Wins. Employment Growth (−1, 1) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1137^{**}$ | $-1.5865^{***}$ | $-0.1252^{**}$ | $-0.1150^{***}$ | $-1.6512^{***}$ | $-1.6955^{***}$ |
| | $(-2.66)$ | $(-5.86)$ | $(-2.55)$ | $(-2.68)$ | $(-6.11)$ | $(-5.66)$ |
| FD x ED | 0.0056 | | 0.0061 | 0.0055 | | |
| | (0.41) | | (0.49) | (0.40) | | |
| ED x Sentiment | $-0.0208^{***}$ | $-0.0188^{**}$ | | $-0.0209^{***}$ | | |
| | $(-3.01)$ | $(-2.67)$ | | $(-3.01)$ | | |
| FD x ED x Sentiment | $0.0308^{***}$ | $0.0206^{*}$ | $0.0246^{**}$ | $0.0306^{***}$ | $0.0164^{*}$ | 0.0145 |
| | (3.46) | (1.93) | (2.29) | (3.40) | (1.86) | (1.29) |
| ED x Sentiment x FDI | $0.0001^{**}$ | $0.0003^{*}$ | $0.0005^{**}$ | $0.0001^{**}$ | $0.0002^{**}$ | $0.0005^{**}$ |
| | (2.02) | (1.73) | (2.45) | (2.36) | (2.51) | (2.07) |
| FD x Sentiment | | $-0.0120$ | $-0.0131$ | $-0.0133$ | | $-0.0116$ |
| | | $(-0.72)$ | $(-0.75)$ | $(-0.77)$ | | $(-0.66)$ |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 23,113 | 23,113 | 23,113 | 23,113 | 23,113 | 23,113 |
| Adj. R-Squared | 0.0074 | 0.0016 | 0.0499 | 0.0524 | 0.4041 | 0.1308 |

**Table 8. Investor sentiment, investment in foreign countries, and labor market conditions**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; and an interaction term between US investor sentiment, financial dependence, and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions and lagged one year, from the Bureau of Economic Analysis. The specifications include country-year and industry fixed effects. The sample is split along three labor market characteristics from Botero, Djanjov, La Porta, Lopez-de-Silanes, and Shleifer (2004): the employment laws index, the power of unions, and the protection of workers during collective disputes. Columns (1), (3), and (5) report the estimates for the countries whose score is above the median value, while columns (2), (4), and (6) report the estimates for the countries below the median. In Panel A, we winsorize the 1% tails of the employment growth distribution. In Panel B, we constrain employment growth to be between -1 and 1. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Wins. Employment Growth (1%) | Employment Laws | | Unions' Power | | Workers' Protection | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | $\geq$ Median | $<$ Median | $\geq$ Median | $<$ Median | $\geq$ Median | $<$ Median |
| Share | $-0.0721$ | $-0.1624^{**}$ | $-0.0892^{**}$ | $-0.1534^{*}$ | $-0.0897^{**}$ | $-0.1765^{*}$ |
| | $(-1.56)$ | $(-2.12)$ | $(-2.11)$ | $(-1.84)$ | $(-2.22)$ | $(-1.83)$ |
| FD x ED | 0.0136 | $0.0209^{*}$ | $-0.0005$ | $0.0237^{**}$ | $0.0209^{**}$ | 0.0017 |
| | (0.37) | (1.86) | $(-0.04)$ | (2.16) | (2.22) | (0.12) |
| ED x Sentiment | $-0.0400^{***}$ | $-0.0194^{*}$ | $-0.0191^{**}$ | $-0.0274^{**}$ | $-0.0239^{***}$ | $-0.0172^{*}$ |
| | $(-3.55)$ | $(-2.01)$ | $(-2.51)$ | $(-2.34)$ | $(-2.93)$ | $(-1.80)$ |
| FD x ED x Sentiment | $0.1347^{**}$ | $0.0211^{*}$ | $0.0307^{*}$ | $0.0286^{**}$ | $0.0313^{**}$ | $0.0225^{*}$ |
| | (2.77) | (2.04) | (1.77) | (2.26) | (2.73) | (1.74) |
| ED x Sentiment x FDI | 0.0003 | $0.0001^{**}$ | 0.0003 | $0.0001^{**}$ | 0.0002 | $0.0001^{**}$ |
| | (1.28) | (2.41) | (1.09) | (2.86) | (0.73) | (2.35) |
| Country-Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Observations | 9,377 | 10,026 | 12,322 | 7,081 | 12,046 | 7,357 |
| Adj. R-Squared | 0.0127 | 0.0110 | 0.0115 | 0.0117 | 0.0099 | 0.0133 |

Panel B

| Wins. Employment Growth ($-1$, 1) | Employment Laws | | Unions' Power | | Workers' Protection | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | $\geq$ Median | $<$ Median | $\geq$ Median | $<$ Median | $\geq$ Median | $<$ Median |
| Share | $-0.0767$ | $-0.1677^{**}$ | $-0.0944^{**}$ | $-0.1626^{*}$ | $-0.0964^{**}$ | $-0.1764$ |
| | $(-1.56)$ | $(-2.02)$ | $(-2.11)$ | $(-1.80)$ | $(-2.23)$ | $(-1.72)$ |
| FD x ED | 0.0124 | 0.0131 | $-0.0183$ | $0.0216^{*}$ | $0.0217^{*}$ | $-0.0117$ |
| | (0.35) | (0.79) | $(-1.04)$ | (1.77) | (2.03) | $(-0.52)$ |
| ED x Sentiment | $-0.0390^{***}$ | $-0.0277^{*}$ | $-0.0194^{**}$ | $-0.0393^{**}$ | $-0.0237^{***}$ | $-0.0285^{*}$ |
| | $(-3.62)$ | $(-2.00)$ | $(-2.65)$ | $(-2.29)$ | $(-2.90)$ | $(-1.81)$ |
| FD x ED x Sentiment | $0.1327^{**}$ | $0.0342^{**}$ | $0.0405^{***}$ | $0.0419^{**}$ | $0.0336^{***}$ | $0.0408^{**}$ |
| | (2.76) | (2.54) | (3.05) | (2.45) | (2.97) | (2.37) |
| ED x Sentiment x FDI | 0.0003 | $0.0002^{*}$ | 0.0002 | $0.0001^{*}$ | 0.0001 | $0.0001^{*}$ |
| | (1.17) | (2.08) | (0.98) | (2.12) | (0.54) | (1.91) |
| Country-Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Observations | 9,445 | 10,042 | 12,395 | 7,092 | 12,077 | 7,410 |
| Adj. R-Squared | 0.0088 | 0.0092 | 0.0079 | 0.0104 | 0.0088 | 0.0073 |

**Table 9. Investor sentiment, investment in foreign countries, and trade**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; an interaction term between US investor sentiment, financial dependence, and US trade, defined as US imports from the Census Bureau, expressed in USD billions and lagged one year; and an interaction term between US investor sentiment, financial dependence, and US foreign direct investments, retrieved from the Bureau of Economic analysis, lagged one year, and alternatively defined as the US direct investment position with respect to a foreign country on a historical-cost basis (FDI), expressed in USD billions, US direct investment in employment at majority-owned nonbank foreign affiliates (FDIL), expressed in millions of employees, and the US direct investment in employment at all nonbank foreign affiliates (FDIL2), expressed in millions of employees. The specifications include country-year and industry fixed effects. In Panel A, we winsorize the 1% tails of the employment growth distribution. In Panel B, we constrain employment growth to be between -1 and 1. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Wins. Employment Growth (1%) | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Share | $-0.1069^{***}$ | $-0.0774^{**}$ | $-0.0371$ | $-0.0149$ |
| | $(-3.04)$ | $(-2.50)$ | $(-0.71)$ | $(-0.29)$ |
| FD x ED | 0.0135 | 0.0117 | 0.0142 | 0.0053 |
| | (1.28) | (1.11) | (0.59) | (0.23) |
| ED x Sentiment | $-0.0208^{**}$ | $-0.0240^{***}$ | $-0.0306^{**}$ | $-0.0339^{**}$ |
| | $(-2.60)$ | $(-3.08)$ | $(-2.12)$ | $(-2.48)$ |
| FD x ED x Sentiment | 0.0162 | 0.0137 | $-0.0002$ | 0.0053 |
| | (1.01) | (0.85) | $(-0.01)$ | (0.22) |
| ED x Sentiment x Import | $0.00012^{*}$ | 0.00003 | 0.00001 | 0.00002 |
| | (1.93) | (0.63) | (0.01) | (0.33) |
| ED x Sentiment x FDI | | $0.00016^{**}$ | | |
| | | (2.54) | | |
| ED x Sentiment x FDIL | | | $0.03174^{***}$ | |
| | | | (2.76) | |
| ED x Sentiment x FDIL2 | | | | $0.03262^{***}$ |
| | | | | (3.14) |
| Country-Year and Industry Fixed Effects | Y | Y | Y | Y |
| Observations | 18,750 | 17,337 | 3,957 | 4,164 |
| Adj. R-Squared | 0.0111 | 0.0113 | 0.0204 | 0.0215 |

Panel B

| Wins. Employment Growth ($-1$, 1) | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Share | $-0.1153^{***}$ | $-0.0805^{**}$ | $-0.0426$ | $-0.0173$ |
| | $(-3.14)$ | $(-2.50)$ | $(-0.78)$ | $(-0.33)$ |
| FD x ED | 0.0056 | 0.0035 | 0.0186 | 0.0080 |
| | (0.36) | (0.23) | (0.75) | (0.33) |
| ED x Sentiment | $-0.0294^{***}$ | $-0.0326^{***}$ | $-0.0413^{**}$ | $-0.0447^{**}$ |
| | $(-2.69)$ | $(-2.96)$ | $(-2.13)$ | $(-2.43)$ |
| FD x ED x Sentiment | 0.0235 | 0.0232 | 0.0045 | 0.0107 |
| | (1.32) | (1.39) | (0.16) | (0.40) |
| ED x Sentiment x Import | $0.00017^{**}$ | 0.00006 | 0.00001 | 0.00004 |
| | (2.06) | (0.95) | (0.16) | (0.51) |
| ED x Sentiment x FDI | | $0.00018^{**}$ | | |
| | | (2.43) | | |
| ED x Sentiment x FDIL | | | $0.04275^{**}$ | |
| | | | (2.51) | |
| ED x Sentiment x FDIL2 | | | | $0.04281^{***}$ |
| | | | | (2.78) |
| Country-Year and Industry Fixed Effects | Y | Y | Y | Y |
| Observations | 18,898 | 17,474 | 3,988 | 4,195 |
| Adj. R-Squared | 0.0082 | 0.0085 | 0.0164 | 0.0174 |

**Table 10. Investor sentiment and investments in foreign countries**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of the dependent variable in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; an interaction term between US investor sentiment and financial development; an interaction term between US investor sentiment and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions, from the Bureau of Economic Analysis; an interaction term between US investor sentiment and the US direct investment in employment at majority-owned nonbank foreign affiliates (FDIL), expressed in millions of employees, from the Bureau of Economic Analysis; an interaction term between US investor sentiment and the US direct investment in employment at all nonbank foreign affiliates (FDIL2), expressed in millions of employees, from the Bureau of Economic Analysis; and an interaction term between US investor sentiment and US portfolio investments (PI), expressed in USD billions, from from the International Monetary Fund's Coordinated Portfolio Investment Survey. All capital flow measures are lagged one year. All specifications include country, year, and industry fixed effects, and the following battery of controls: the level of FDI, FDIL, FDIL2, and PI, in columns (1) to (4), respectively; a country's net foreign direct investments, defined as the difference between foreign direct investments made abroad by a given country and foreign direct investments received from foreign countries, expressed in USD billions, from the International Monetary Fund's Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources; an interaction term between US investor sentiment and net foreign direct investments; and an interaction term between net foreign direct investments and FDI, FDIL, FDIL2, and PI, in columns (1) to (4), respectively. We winsorize the 1% tails of the employment growth distribution. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. The data set, however, only starts in 1983 for FDI, in 1998 for FDIL and FDIL2, and in 1997 for PI. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

| Wins. Employment Growth (1%) | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Share | $-0.1106^{**}$ | $-0.0910$ | $-0.0653$ | $-0.1160$ |
| | $(-2.64)$ | $(-1.24)$ | $(-0.94)$ | $(-0.86)$ |
| FD x ED | 0.0115 | 0.0218 | 0.0154 | $-0.0276$ |
| | (1.26) | (0.98) | (0.69) | $(-0.79)$ |
| FD x Sentiment | $-0.0202$ | $-0.0061$ | $-0.0071$ | 0.0042 |
| | $(-1.31)$ | $(-0.31)$ | $(-0.37)$ | (0.17) |
| ED x Sentiment | $-0.0171^{***}$ | $-0.0325^{***}$ | $-0.0351^{***}$ | $-0.0558^{**}$ |
| | $(-2.92)$ | $(-2.75)$ | $(-3.11)$ | $(-2.10)$ |
| FD x ED x Sentiment | $0.0261^{***}$ | 0.0160 | 0.0196 | 0.0694 |
| | (2.99) | (0.75) | (0.95) | (1.42) |
| Sentiment x FDI | $0.0005^{***}$ | | | |
| | (4.08) | | | |
| Sentiment x FDIL | | $0.0603^{**}$ | | |
| | | (2.08) | | |
| Sentiment x FDIL2 | | | $0.0632^{**}$ | |
| | | | (2.16) | |
| Sentiment x PI | | | | 0.0002 |
| | | | | (0.72) |
| Country Fixed Effects | Y | Y | Y | Y |
| Year Fixed Effects | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y |
| Controls | Y | Y | Y | Y |
| Observations | 22,165 | 4,004 | 4,212 | 1,923 |
| Adj. R-Squared | 0.0482 | 0.0891 | 0.0897 | 0.1668 |

**Table 11. US vs. local consumer sentiment**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and investor sentiment, lagged one year, and defined as the University of Michigan consumer confidence index for the US (UMC), orthogonalized to US business cycle indicators and expressed in rank order, and country-specific consumer confidence indicators from the OECD (CCI); an interaction term between investor sentiment, financial development, and financial dependence; an interaction term between investor sentiment and financial development; and an interaction term between investor sentiment and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions and lagged one year, from the Bureau of Economic Analysis. In columns (4) to (6), the measures of local consumer sentiment are orthogonalized to real GDP growth and US consumer sentiment. Columns (2) and (5) only include the countries that received a high (above-median) amount of FDI over the previous year, normalized by local employment, while columns (3) and (6) include the other countries. All specifications include country, year, and industry fixed effects, and the following battery of controls: the level of FDI; a country's net foreign direct investments, defined as the difference between foreign direct investments made abroad by a given country and foreign direct investments received from foreign countries, expressed in USD billions, from the International Monetary Fund's Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources; an interaction term between investor sentiment and net foreign direct investments; and an interaction term between net foreign direct investments and FDI. We winsorize the 1% tails of the employment growth distribution. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. The data set for FDI, however, is only available from 1983. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

| Wins. Employment Growth (1%) | Non-Orthog. Sentiment | | | Orthog. Sentiment | | |
|---|---|---|---|---|---|---|
| | (1) Full Sample | (2) High FDI | (3) Low FDI | (4) Full Sample | (5) High FDI | (6) Low FDI |
| Share | $-0.0558$ | $-0.1802^{***}$ | $0.0369$ | $-0.0565$ | $-0.1789^{***}$ | $0.0336$ |
| | $(-1.00)$ | $(-2.83)$ | $(0.43)$ | $(-1.01)$ | $(-2.81)$ | $(0.39)$ |
| FD x ED | $-0.9606^{*}$ | $0.4197$ | $-1.4227^{***}$ | $-0.0824$ | $-0.0741$ | $-0.1347^{***}$ |
| | $(-1.69)$ | $(0.25)$ | $(-3.75)$ | $(-1.14)$ | $(-0.98)$ | $(-2.72)$ |
| FD x CCI | $0.0133$ | $0.0292^{***}$ | $-0.0015$ | $0.0128$ | $0.0274^{**}$ | $-0.0077$ |
| | $(1.24)$ | $(2.82)$ | $(-0.28)$ | $(0.99)$ | $(2.10)$ | $(-0.97)$ |
| ED x CCI | $-0.0000$ | $0.0064$ | $-0.0020$ | $-0.0019$ | $0.0046$ | $-0.0022$ |
| | $(-0.01)$ | $(0.67)$ | $(-0.85)$ | $(-0.45)$ | $(0.43)$ | $(-0.68)$ |
| FD x ED x CCI | $0.0087$ | $-0.0050$ | $0.0128^{***}$ | $0.0122^{*}$ | $-0.0056$ | $0.0188^{***}$ |
| | $(1.56)$ | $(-0.29)$ | $(3.48)$ | $(1.71)$ | $(-0.30)$ | $(3.70)$ |
| CCI x FDI | $0.0000$ | $-0.0001$ | $0.0010^{*}$ | $0.0000$ | $-0.0001$ | $0.0014^{**}$ |
| | $(0.08)$ | $(-1.35)$ | $(1.62)$ | $(0.17)$ | $(-1.05)$ | $(2.09)$ |
| FD x UMC | $-0.0038^{***}$ | $-0.0035^{*}$ | $-0.0038^{***}$ | $-0.0040^{***}$ | $-0.0040^{*}$ | $-0.0037^{***}$ |
| | $(-3.83)$ | $(-1.70)$ | $(-3.45)$ | $(-3.96)$ | $(-1.79)$ | $(-3.30)$ |
| ED x UMC | $0.0000$ | $-0.0007$ | $0.0008$ | $0.0002$ | $-0.0005$ | $0.0008$ |
| | $(0.00)$ | $(-0.59)$ | $(0.90)$ | $(0.19)$ | $(-0.35)$ | $(0.81)$ |
| FD x ED x UMC | $0.0026$ | $0.0022$ | $0.0043^{***}$ | $0.0023$ | $0.0020$ | $0.0041^{***}$ |
| | $(1.34)$ | $(1.20)$ | $(3.17)$ | $(1.20)$ | $(0.98)$ | $(2.89)$ |
| UMC x FDI | $0.00002^{**}$ | $0.00003^{**}$ | $0.00022$ | $0.00002^{**}$ | $0.00004^{***}$ | $0.00023$ |
| | $(2.46)$ | $(2.32)$ | $(1.54)$ | $(2.17)$ | $(2.67)$ | $(1.50)$ |
| Country Fixed Effects | Y | Y | Y | Y | Y | Y |
| Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Controls | Y | Y | Y | Y | Y | Y |
| Observations | 7,181 | 4,620 | 2,561 | 7,181 | 4,620 | 2,561 |
| Adj. R-Squared | 0.0913 | 0.1263 | 0.0949 | 0.0908 | 0.1261 | 0.0957 |

**Table 12. US investor sentiment vs. local stock returns**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and investor sentiment, defined as Baker and Wurgler's (2006) investor sentiment index for the US, orthogonalized to US business cycle indicators, and returns on country-specific MSCI equity indices; an interaction term between investor sentiment, financial development, and financial dependence; an interaction term between investor sentiment and financial development; and an interaction term between investor sentiment and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions and lagged one year, from the Bureau of Economic Analysis. In columns (4) to (6), local stock returns are orthogonalized to real GDP growth and US consumer sentiment. Columns (2) and (5) only include the countries that received a high (above-median) amount of FDI over the previous year, normalized by local employment, while columns (3) and (6) include the other countries. All specifications include country, year, and industry fixed effects, and the following battery of controls: the level of FDI; a country's net foreign direct investments, defined as the difference between foreign direct investments made abroad by a given country and foreign direct investments received from foreign countries, expressed in USD billions, from the International Monetary Fund's Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources; an interaction term between investor sentiment and net foreign direct investments; and an interaction term between net foreign direct investments and FDI. We winsorize the 1% tails of the employment growth distribution. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. The data set for FDI, however, is only available from 1983. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

| Wins. Employment Growth (1%) | Non-Orthog. Sentiment | | | Orthog. Sentiment | | |
|---|---|---|---|---|---|---|
| | (1) Full Sample | (2) High FDI | (3) Low FDI | (4) Full Sample | (5) High FDI | (6) Low FDI |
| Share | $-0.1007^{***}$ | $-0.0963^{**}$ | $-0.2000^{**}$ | $-0.1006^{***}$ | $-0.0968^{**}$ | $-0.2022^{**}$ |
| | $(-2.68)$ | $(-2.18)$ | $(-2.31)$ | $(-2.67)$ | $(-2.18)$ | $(-2.31)$ |
| FD x ED | 0.0087 | 0.0038 | 0.0024 | 0.0104 | $-0.0034$ | $0.0450^{**}$ |
| | (1.07) | (0.31) | (0.09) | (1.20) | $(-0.29)$ | (2.10) |
| FD x Returns | 0.0313 | 0.0405 | $-0.0301$ | 0.0441 | 0.0458 | 0.0306 |
| | (0.95) | (0.89) | $(-0.16)$ | (1.11) | (0.92) | (0.16) |
| ED x Returns | $-0.0044$ | 0.0308 | $-0.0410^{**}$ | $-0.0037$ | 0.0297 | $-0.0471^{**}$ |
| | $(-0.31)$ | (1.39) | $(-2.00)$ | $(-0.27)$ | (1.46) | $(-2.30)$ |
| FD x ED x Returns | 0.0201 | $-0.0540$ | $0.3423^{*}$ | 0.0097 | $-0.0693$ | $0.4052^{**}$ |
| | (0.53) | $(-1.19)$ | (1.92) | (0.25) | $(-1.52)$ | (2.18) |
| Returns x FDI | 0.0006 | $-0.0001$ | 0.0070 | 0.0005 | $-0.0003$ | 0.0068 |
| | (0.94) | $(-0.26)$ | (1.45) | (0.71) | $(-0.60)$ | (1.12) |
| FD x Sentiment | $-0.0307^{**}$ | $-0.0316^{**}$ | $-0.0804$ | $-0.0308^{**}$ | $-0.0319^{**}$ | $-0.0879$ |
| | $(-2.28)$ | $(-2.45)$ | $(-1.42)$ | $(-2.34)$ | $(-2.47)$ | $(-1.88)$ |
| ED x Sentiment | $-0.0192^{**}$ | $-0.0078$ | $-0.0238^{*}$ | $-0.0192^{**}$ | $-0.0077$ | $-0.0255^{**}$ |
| | $(-2.39)$ | $(-1.09)$ | $(-1.76)$ | $(-2.38)$ | $(-1.06)$ | $(-1.98)$ |
| FD x ED x Sentiment | $0.0246^{**}$ | 0.0088 | $-0.0075$ | $0.0249^{**}$ | 0.0091 | $-0.0029$ |
| | (2.03) | (0.81) | $(-0.15)$ | (2.03) | (0.79) | $(-0.08)$ |
| Sentiment x FDI | $0.0004^{***}$ | $0.0004^{***}$ | 0.0015 | $0.0004^{**}$ | $0.0004^{***}$ | 0.0019 |
| | (2.73) | (2.89) | (0.42) | (2.56) | (2.79) | (0.54) |
| Country Fixed Effects | Y | Y | Y | Y | Y | Y |
| Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Controls | Y | Y | Y | Y | Y | Y |
| Observations | 11,330 | 7,049 | 4,281 | 11,330 | 7,049 | 4,281 |
| Adj. R-Squared | 0.0815 | 0.1035 | 0.1025 | 0.0819 | 0.1042 | 0.1040 |

**Table 13. Local vs. US vs. Global sentiment**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and investor sentiment; an interaction term between investor sentiment, financial development, and financial dependence; an interaction term between investor sentiment and financial development; and an interaction term between investor sentiment and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions and lagged one year, from the Bureau of Economic Analysis. In columns (1) and (2), we define US sentiment as the University of Michigan consumer confidence index, orthogonalized to US business cycle indicators and expressed in rank order; local sentiment as the country-specific consumer confidence indicators from the OECD (CCI); and global sentiment as country-specific sentiment aggregated across the G7 countries, excluding the US. In columns (3) and (4), we define US sentiment as Baker and Wurgler's (2006) investor sentiment index for the US, orthogonalized to US business cycle indicators; local sentiment as the returns on country-specific MSCI equity indices; and global sentiment as country-specific returns aggregated across the G7 countries (CCI G7), excluding the US. In columns (2) and (4), the measures of local (and global) consumer sentiment are orthogonalized to real GDP growth and US consumer sentiment. All sentiment measures are lagged one year. All specifications include country, year, and industry fixed effects, and the following battery of controls: the level of FDI; a country's net foreign direct investments, defined as the difference between foreign direct investments made abroad by a given country and foreign direct investments received from foreign countries, expressed in USD billions, from the International Monetary Fund's Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources; an interaction term between investor sentiment and net foreign direct investments; and an interaction term between net foreign direct investments and FDI. We winsorize the 1% tails of the employment growth distribution. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. The data set for FDI, however, starts in 1983. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

| Wins. Employment Growth (1%) | Consumer Confidence | | Stock Returns | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| | Non-Orthog. | Orthog. | Non-Orthog. | Orthog. |
| Share | −0.0581 | −0.0587 | −0.1004*** | −0.1001*** |
| | (−1.06) | (−1.06) | (−2.66) | (−2.64) |
| FD x ED | 3.4817 | −0.1529** | 0.0013 | 0.0094 |
| | (1.52) | (−2.00) | (0.11) | (0.97) |
| FD x CCI | 0.0118 | 0.0171 | 0.0436* | 0.0585* |
| | (1.07) | (1.36) | (1.56) | (1.73) |
| ED x CCI | −0.0011 | −0.0046 | 0.0010 | 0.0028 |
| | (−0.31) | (−1.06) | (0.06) | (0.17) |
| FD x ED x CCI | 0.0107** | 0.0171** | −0.0130 | −0.0234 |
| | (1.98) | (2.30) | (−0.21) | (−0.34) |
| CCI x FDI | 0.00007 | 0.00001 | 0.00121 | 0.00090 |
| | (0.79) | (0.13) | (1.20) | (0.94) |
| FD x UMC | −0.0058*** | −0.0008 | −0.0276* | −0.0280* |
| | (−3.20) | (−0.54) | (−1.71) | (−1.85) |
| ED x UMC | −0.0019 | −0.0013 | −0.0171** | −0.0171** |
| | (−1.58) | (−1.07) | (−2.02) | (−2.11) |
| FD x ED x UMC | 0.0063** | 0.0044** | 0.0184 | 0.0194 |
| | (2.37) | (2.02) | (1.25) | (1.37) |
| UMC x FDI | 0.00004*** | 0.00002* | 0.00039*** | 0.00039*** |
| | (4.61) | (1.87) | (3.05) | (2.75) |
| FD x CCI G7 | 0.0254 | −0.0354** | −0.0691 | −0.0932 |
| | (1.65) | (−2.41) | (−0.99) | (−1.38) |
| ED x CCI G7 | 0.0260* | 0.0208 | −0.0319 | −0.0436 |
| | (1.65) | (1.38) | (−0.70) | (−0.99) |
| FD x ED x CCI G7 | −0.0475** | −0.0306 | 0.1224 | 0.1371 |
| | (−2.11) | (−1.32) | (0.94) | (0.94) |
| CCI G7 x FDI | −0.00039*** | −0.00009 | −0.00083 | −0.00058 |
| | (−2.85) | (−0.52) | (−1.03) | (−0.70) |
| Industry Fixed Effects | Y | Y | Y | Y |
| Year Fixed Effects | Y | Y | Y | Y |
| Country Fixed Effects | Y | Y | Y | Y |
| Controls | Y | Y | Y | Y |
| Observations | 7,181 | 7,181 | 11,330 | 11,330 |
| Adj. R-Squared | 0.0929 | 0.0929 | 0.0822 | 0.0828 |

**Table 14. Cross-industry effects: Above vs. below median portfolios**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and investor sentiment, lagged one year, and defined as the University of Michigan consumer confidence index for the US (UMC), orthogonalized to US business cycle indicators and expressed in rank order, and country-specific consumer confidence indicators from the OECD (CCI); an interaction term between investor sentiment, financial development, and financial dependence; an interaction term between investor sentiment and financial development; and an interaction term between investor sentiment and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions and lagged one year, from the Bureau of Economic Analysis. For each year in the sample, we divide industries into those that lie above and below the median level of the following three characteristics from Baker and Wurgler (2006): market capitalization, dividend-to-price ratio, and volatility of stock returns. All specifications include country, year, and industry fixed effects, and the following battery of controls: the level of FDI; a country's net foreign direct investments, defined as the difference between foreign direct investments made abroad by a given country and foreign direct investments received from foreign countries, expressed in USD billions, from the International Monetary Fund's Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources; an interaction term between investor sentiment and net foreign direct investments; and an interaction term between net foreign direct investments and FDI. We winsorize the 1% tails of the employment growth distribution. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. The data set for FDI, however, is only available from 1983. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

| Wins. Employment Growth (1%) | Size | | Dividend-to-Price | | Volatility | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | $\geq$ Median | $<$ Median | $\geq$ Median | $<$ Median | $\geq$ Median | $<$ Median |
| Share | $-0.1116^{**}$ | 0.0338 | $-0.0738$ | $-0.0371$ | $-0.0184$ | $-0.0769$ |
| | $(-2.15)$ | (0.41) | $(-1.29)$ | $(-0.39)$ | $(-0.18)$ | $(-1.52)$ |
| FD x ED | $-4.5018^{***}$ | 0.4872 | $-3.5354^{***}$ | 0.8532 | $-0.4516$ | $-3.0633^{**}$ |
| | $(-3.08)$ | (0.53) | $(-3.28)$ | (0.57) | $(-0.85)$ | $(-2.57)$ |
| FD x CCI | 0.0088 | 0.0152 | 0.0115 | 0.0141 | 0.0132 | 0.0118 |
| | (0.95) | (1.18) | (1.11) | (1.03) | (1.22) | (0.97) |
| ED x CCI | $-0.0009$ | 0.0019 | $-0.0031$ | 0.0062 | 0.0032 | $-0.0077$ |
| | $(-0.13)$ | (0.44) | $(-0.55)$ | (1.10) | (1.04) | $(-1.29)$ |
| FD x ED x CCI | $0.0445^{***}$ | $-0.0061$ | $0.0345^{***}$ | $-0.0109$ | 0.0027 | $0.0315^{***}$ |
| | (3.00) | $(-0.69)$ | (3.02) | $(-0.79)$ | (0.52) | (2.62) |
| CCI x FDI | 0.00003 | 0.00001 | 0.00003 | $-0.00006$ | $-0.00004$ | 0.00006 |
| | (0.28) | (0.14) | (0.29) | $(-0.62)$ | $(-0.43)$ | (0.51) |
| FD x UMC | $-0.0021$ | $-0.0046^{***}$ | $-0.0027^{**}$ | $-0.0085^{***}$ | $-0.0049^{***}$ | $-0.0021$ |
| | $(-1.31)$ | $(-4.33)$ | $(-2.14)$ | $(-2.89)$ | $(-3.59)$ | $(-1.53)$ |
| ED x UMC | $-0.0006$ | 0.0005 | 0.0011 | $-0.0005$ | $-0.0009$ | 0.0038 |
| | $(-0.29)$ | (0.40) | (0.84) | $(-0.19)$ | $(-1.37)$ | (1.33) |
| FD x ED x UMC | 0.0017 | 0.0035 | 0.0024 | 0.0075 | $0.0047^{**}$ | $-0.0022$ |
| | (0.58) | (1.40) | (1.10) | (1.36) | (2.20) | $(-0.66)$ |
| UMC x FDI | 0.00000 | $0.00001^{**}$ | 0.00001 | $0.00003^{***}$ | $0.00002^{***}$ | 0.00002 |
| | (0.07) | (2.40) | (0.95) | (3.26) | (2.90) | (1.47) |
| Country Fixed Effects | Y | Y | Y | Y | Y | Y |
| Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Controls | Y | Y | Y | Y | Y | Y |
| Adj. R-Squared | 3,273 | 3,656 | 5,053 | 1,876 | 3,797 | 3,320 |
| Observations | 0.0685 | 0.1211 | 0.0789 | 0.1370 | 0.1215 | 0.0723 |

**Table 15. Cross-industry effects: Extreme vs. middle portfolios**

Panel regression of annual industry-level employment growth in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and investor sentiment, lagged one year, and defined as the University of Michigan consumer confidence index for the US (UMC), orthogonalized to US business cycle indicators and expressed in rank order, and country-specific consumer confidence indicators from the OECD (CCI); an interaction term between investor sentiment, financial development, and financial dependence; an interaction term between investor sentiment and financial development; and an interaction term between investor sentiment and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions and lagged one year, from the Bureau of Economic Analysis. For each year in the sample, we divide industries into those that lie in the middle 40% and the top-bottom 30% observations for the following three characteristics from Baker and Wurgler (2006): book-to-market, EBIT-to-price, and EBITDA-to-price. All specifications include country, year, and industry fixed effects, and the following battery of controls: the level of FDI; a country's net foreign direct investments, defined as the difference between foreign direct investments made abroad by a given country and foreign direct investments received from foreign countries, expressed in USD billions, from the International Monetary Fund's Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources; an interaction term between investor sentiment and net foreign direct investments; and an interaction term between net foreign direct investments and FDI. We winsorize the 1% tails of the employment growth distribution. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. The data set for FDI, however, is only available from 1983. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

| Wins. Employment Growth (1%) | Book-to-Market | | EBIT-to-Price | | EBITDA-to-Price | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | Extreme | Middle | Extreme | Middle | Extreme | Middle |
| Share | −0.0575 | −0.0528 | −0.0964 | 0.0682 | −0.0592 | −0.0289 |
| | (−0.73) | (−0.74) | (−1.46) | (0.87) | (−0.71) | (−0.44) |
| FD x ED | −0.4886 | −0.6816 | −1.1426 | 0.4807 | −0.5525 | 0.1357 |
| | (−0.64) | (−0.94) | (−1.29) | (0.40) | (−0.61) | (0.13) |
| FD x CCI | 0.0126 | 0.0129 | 0.0103 | 0.0189 | 0.0116 | 0.0166 |
| | (1.09) | (1.71) | (0.98) | (1.56) | (1.07) | (1.68) |
| ED x CCI | 0.0025 | 0.0019 | 0.0037 | 0.0002 | 0.0049 | −0.0005 |
| | (0.52) | (0.53) | (0.77) | (0.05) | (1.24) | (−0.10) |
| FD x ED x CCI | 0.0036 | 0.0074 | 0.0102 | −0.0047 | 0.0044 | −0.0007 |
| | (0.50) | (1.04) | (1.21) | (−0.40) | (0.52) | (−0.07) |
| CCI x FDI | 0.00000 | 0.00003 | 0.00000 | 0.00004 | −0.00002 | 0.00011 |
| | (0.00) | (0.34) | (0.03) | (0.34) | (−0.24) | (0.83) |
| FD x UMC | −0.0044*** | −0.0009 | −0.0049*** | −0.0002 | −0.0045*** | −0.0000 |
| | (−4.85) | (−0.67) | (−3.37) | (−0.10) | (−3.62) | (−0.02) |
| ED x UMC | −0.0004 | 0.0017 | −0.0005 | 0.0012 | −0.0009 | 0.0019 |
| | (−0.41) | (1.44) | (−0.40) | (0.95) | (−1.03) | (1.47) |
| FD x ED x UMC | 0.0034 | −0.0015 | 0.0038 | −0.0005 | 0.0033 | −0.0023 |
| | (1.21) | (−0.59) | (1.11) | (−0.23) | (1.41) | (−0.87) |
| UMC x FDI | 0.00002*** | 0.00001 | 0.00002*** | −0.00000 | 0.00002** | −0.00000 |
| | (2.63) | (0.74) | (2.71) | (−0.33) | (2.31) | (−0.07) |
| Country Fixed Effects | Y | Y | Y | Y | Y | Y |
| Year Fixed Effects | Y | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Controls | Y | Y | Y | Y | Y | Y |
| Observations | 5,226 | 1,703 | 4,804 | 2,125 | 5,024 | 1,905 |
| Adj. R-Squared | 0.0945 | 0.1332 | 0.0881 | 0.1340 | 0.0922 | 0.1259 |

**Table 16. US vs. local consumer sentiment and real wages growth**

Panel regression of annual industry-level growth in real wages in non-US countries, on the following set of regressors: the industry's share of real wages growth in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and investor sentiment, defined as the University of Michigan consumer confidence index for the US (UMC), orthogonalized to US business cycle indicators and expressed in rank order, and country-specific consumer confidence indicators from the OECD (CCI); an interaction term between investor sentiment, financial development, and financial dependence; an interaction term between investor sentiment and financial development; and an interaction term between investor sentiment and US foreign direct investments (FDI), defined as the US direct investment position with respect to a foreign country on a historical-cost basis, expressed in USD billions and lagged one year, from the Bureau of Economic Analysis. In columns (3) and (4), we identify cases in which the cyclical component of the country's real GDP is above or below a given threshold. Specifically, we construct two subsamples, considering observations that lie above or below the median value of the cyclical component of local real GDP, expressed in levels, and estimated through the Hodrick-Prescott (1997) filter. In columns (5) and (6), we identify countries with above- and below-median levels of human capital, respectively, defined as the average years of schooling in population over 25 from the Barro and Lee (1993) files. In column (1), the regression includes country-year and industry fixed effects. Columns (2) to (6) include country, year, and industry fixed effects, and the following battery of controls: the level of FDI; a country's net foreign direct investments, defined as the difference between foreign direct investments made abroad by a given country and foreign direct investments received from foreign countries, expressed in USD billions, from the International Monetary Fund's Balance of Payments database, supplemented by data from the United Nations Conference on Trade and Development and official national sources; an interaction term between investor sentiment and net foreign direct investments; and an interaction term between net foreign direct investments and FDI. We winsorize the 1% tails of the real wages growth distribution. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. The data set for FDI, however, is only available from 1983. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

| Wins. Real Wages Growth (1%) | Full Sample | | GDP Growth | | Human Capital | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| | | | High | Low | High | Low |
| Share | $-0.0741^{***}$ | $-0.1004^{***}$ | $-0.1366^{***}$ | $-0.0512^{**}$ | $-0.1174^{***}$ | $-0.1017^{**}$ |
| | $(-7.43)$ | $(-3.41)$ | $(-3.60)$ | $(-2.39)$ | $(-5.82)$ | $(-2.21)$ |
| FD x ED | $-0.0504^{***}$ | $1.0730^{**}$ | $1.3861^{**}$ | 1.3582 | $-0.7251$ | $1.5047^{**}$ |
| | $(-3.23)$ | (2.37) | (2.31) | (0.69) | $(-1.01)$ | (2.52) |
| ED x UMC | $-0.0010^{***}$ | $-0.0005$ | $-0.0023^{**}$ | 0.0009 | $0.0012^{*}$ | $-0.0011$ |
| | $(-3.13)$ | $(-0.72)$ | $(-2.22)$ | (1.10) | (1.66) | $(-1.02)$ |
| FD x ED x UMC | $0.0018^{***}$ | 0.0012 | $0.0042^{***}$ | $-0.0015$ | $-0.0018$ | $0.0020^{*}$ |
| | (3.20) | (1.20) | (3.13) | $(-1.13)$ | $(-1.64)$ | (1.73) |
| FD x CCI | | 0.0137 | 0.0011 | $0.0557^{**}$ | 0.0045 | 0.0036 |
| | | (1.59) | (0.08) | (2.17) | (0.19) | (0.36) |
| ED x CCI | | 0.0037 | 0.0069 | 0.0033 | $-0.0063^{**}$ | $0.0120^{**}$ |
| | | (1.07) | (1.63) | (0.62) | $(-2.29)$ | (2.21) |
| FD x ED x CCI | | $-0.0112^{**}$ | $-0.0154^{**}$ | $-0.0131$ | 0.0076 | $-0.0156^{**}$ |
| | | $(-2.36)$ | $(-2.44)$ | $(-0.66)$ | (1.02) | $(-2.52)$ |
| CCI x FDI | | $-0.00031^{**}$ | $-0.00038$ | $-0.00065$ | $-0.00006$ | $-0.00073^{***}$ |
| | | $(-2.28)$ | $(-1.26)$ | $(-1.28)$ | $(-0.31)$ | $(-3.72)$ |
| FD x UMC | | $-0.0044^{***}$ | $-0.0030$ | $-0.0097^{***}$ | 0.0045 | $-0.0051^{***}$ |
| | | $(-3.11)$ | $(-0.80)$ | $(-2.59)$ | (0.56) | $(-2.60)$ |
| UMC x FDI | | $0.00006^{***}$ | $0.00007^{***}$ | 0.00010 | 0.00001 | $0.00027^{***}$ |
| | | (4.23) | (2.71) | (1.12) | (0.21) | (2.59) |
| Country-Year Fixed Effects | Y | N | N | N | N | N |
| Country Fixed Effects | N | Y | Y | Y | Y | Y |
| Year Fixed Effects | N | Y | Y | Y | Y | Y |
| Industry Fixed Effects | Y | Y | Y | Y | Y | Y |
| Controls | N | Y | Y | Y | Y | Y |
| Observations | 29,982 | 6,905 | 3,678 | 3,227 | 3,453 | 3,452 |
| Adj. R-Squared | 0.0138 | 0.4503 | 0.5039 | 0.5256 | 0.4711 | 0.4898 |

**Table 17. Investor sentiment, output, and labor productivity**

Panel regression of annual industry-level output (Panel A), defined as real value added growth, and labor productivity (Panel B), defined as the difference between output and employment growth, in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; and an interaction term between US investor sentiment and financial development. The specifications include country-year and industry fixed effects in column (1); country-industry and year fixed effects in column (2); industry-year and country fixed effects in column (3); country, year, and industry fixed effects in column (4); country-year, industry-year, and country-industry fixed effects in column (5); and country, year, industry, industry-year, and country-industry fixed effects in column (6). We winsorize the 1% tails of the distribution of the dependent variable. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Wins. Output (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.1291^{***}$ | $-0.8133^{***}$ | $-0.1213^{***}$ | $-0.1285^{***}$ | $-0.9135^{***}$ | $-0.8930^{***}$ |
| | $(-4.57)$ | $(-6.51)$ | $(-3.84)$ | $(-4.52)$ | $(-6.57)$ | $(-6.11)$ |
| FD x ED | $0.0326^{**}$ | | $0.0289^{**}$ | $0.0317^{**}$ | | |
| | (2.07) | | (2.01) | (2.03) | | |
| ED x Sentiment | $-0.0103^{**}$ | $-0.0091^{*}$ | | $-0.0103^{**}$ | | |
| | $(-2.12)$ | $(-1.99)$ | | $(-2.14)$ | | |
| FD x ED x Sentiment | 0.0232 | 0.0227 | 0.0244 | 0.0234 | 0.0223 | 0.0230 |
| | (1.63) | (1.58) | (1.65) | (1.64) | (1.49) | (1.54) |
| FD x Sentiment | | 0.0015 | 0.0014 | 0.0015 | | 0.0013 |
| | | (0.16) | (0.15) | (0.17) | | (0.14) |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 43,614 | 43,614 | 43,614 | 43,614 | 43,614 | 43,614 |
| Adj. R-Squared | 0.0036 | 0.0374 | 0.0651 | 0.0634 | 0.3450 | 0.1025 |

Panel B

| Wins. Labor Productivity (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $0.0419^{**}$ | $0.2752^{***}$ | $0.0478^{*}$ | $0.0433^{**}$ | $0.2779^{***}$ | $0.2893^{***}$ |
| | (2.17) | (2.96) | (1.98) | (2.19) | (3.78) | (2.84) |
| FD x ED | 0.0042 | | $-0.0007$ | 0.0035 | | |
| | (0.57) | | $(-0.09)$ | (0.48) | | |
| ED x Sentiment | $-0.0039$ | $-0.0030$ | | $-0.0039$ | | |
| | $(-0.98)$ | $(-0.79)$ | | $(-0.99)$ | | |
| FD x ED x Sentiment | 0.0017 | $-0.0006$ | 0.0007 | 0.0016 | 0.0006 | $-0.0006$ |
| | (0.18) | $(-0.07)$ | (0.08) | (0.17) | (0.06) | $(-0.07)$ |
| FD x Sentiment | | 0.0025 | 0.0021 | 0.0017 | | 0.0023 |
| | | (0.38) | (0.32) | (0.26) | | (0.34) |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 43,293 | 43,293 | 43,293 | 43,293 | 43,293 | 43,293 |
| Adj. R-Squared | 0.0012 | 0.0427 | 0.0536 | 0.0526 | 0.3228 | 0.0840 |

**Table 18. Investor sentiment, capital, and capital intensity**

Panel regression of annual industry-level capital (Panel A), defined as growth in fixed assets, and capital intensity (Panel B), defined as the difference between capital and employment growth, in non-US countries, on the following set of regressors: the industry's share of employment in the manufacturing sector in the previous year; an interaction term between the country's financial development (FD), defined as in Rajan and Zingales (1998) as stock market capitalization over GDP (1980-95 average), and the industry's degree of dependence on external finance (ED), defined as in Rajan and Zingales (1998) as the industry-level median fraction of capital expenditures not financed with cash flow from operations for US listed firms from the Compustat database (1980-1990 average); an interaction term between financial dependence and US investor sentiment, defined as Baker and Wurgler's (2006) index, orthogonalized to US business cycle indicators, normalized to have zero mean and unit variance, and lagged one year; an interaction term between US investor sentiment, financial development, and financial dependence; and an interaction term between US investor sentiment and financial development. The specifications include country-year and industry fixed effects in column (1); country-industry and year fixed effects in column (2); industry-year and country fixed effects in column (3); country, year, and industry fixed effects in column (4); country-year, industry-year, and country-industry fixed effects in column (5); and country, year, industry, industry-year, and country-industry fixed effects in column (6). We winsorize the 1% tails of the distribution of the dependent variable. The data set includes 28 manufacturing industries for 60 countries for the period 1970-2003 from the Unido Indstat-3 (United Nations Industrial Development Organization, Industrial Statistics) 2006 database. Heteroskedasticity-robust $t$-statistics, allowing for clustering by country, are reported in parentheses (* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$).

Panel A

| Wins. Capital (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | $-0.2026^{***}$ | $-1.4567^{***}$ | $-0.1652^{**}$ | $-0.1941^{***}$ | $-1.7944^{***}$ | $-1.5398^{***}$ |
| | $(-2.98)$ | $(-6.05)$ | $(-2.24)$ | $(-2.81)$ | $(-5.75)$ | $(-5.24)$ |
| FD x ED | 0.0188 | | 0.0194 | 0.0187 | | |
| | (1.16) | | (1.38) | (1.21) | | |
| ED x Sentiment | $-0.0102$ | $-0.0067$ | | $-0.0105$ | | |
| | $(-0.81)$ | $(-0.50)$ | | $(-0.83)$ | | |
| FD x ED x Sentiment | $0.0440^{*}$ | $0.0487^{*}$ | $0.0475^{*}$ | $0.0451^{*}$ | 0.0393 | $0.0457^{*}$ |
| | (1.92) | (1.90) | (1.93) | (1.96) | (1.42) | (1.67) |
| FD x Sentiment | | 0.0111 | 0.0115 | 0.0149 | | 0.0110 |
| | | (0.41) | (0.42) | (0.52) | | (0.39) |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 29,419 | 29,419 | 29,419 | 29,419 | 29,419 | 29,419 |
| Adj. R-Squared | 0.0009 | 0.0136 | 0.0267 | 0.0251 | 0.2382 | 0.0749 |

Panel B

| Wins. Capital Intensity (1%) | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| Share | 0.0273 | 0.0131 | 0.0485 | 0.0312 | $-0.1295$ | 0.0730 |
| | (0.45) | (0.07) | (0.78) | (0.52) | $(-0.75)$ | (0.39) |
| FD x ED | $-0.0130$ | | $-0.0151$ | $-0.0134$ | | |
| | $(-0.90)$ | | $(-1.09)$ | $(-0.96)$ | | |
| ED x Sentiment | $-0.0020$ | $-0.0002$ | | $-0.0020$ | | |
| | $(-0.17)$ | $(-0.01)$ | | $(-0.17)$ | | |
| FD x ED x Sentiment | 0.0324 | 0.0336 | 0.0342 | 0.0331 | 0.0275 | 0.0316 |
| | (1.23) | (1.19) | (1.22) | (1.25) | (0.92) | (1.07) |
| FD x Sentiment | | 0.0112 | 0.0101 | 0.0114 | | 0.0107 |
| | | (0.48) | (0.42) | (0.48) | | (0.44) |
| Country-Year Fixed Effects | Y | N | N | N | Y | N |
| Industry Fixed Effects | Y | N | N | Y | N | Y |
| Country-Industry Fixed Effects | N | Y | N | N | Y | Y |
| Year Fixed Effects | N | Y | N | Y | N | Y |
| Industry-Year Fixed Effects | N | N | Y | N | Y | Y |
| Country Fixed Effects | N | N | Y | Y | N | Y |
| Observations | 29,358 | 29,358 | 29,358 | 29,358 | 29,358 | 29,358 |
| Adj. R-Squared | 0.0001 | 0.0159 | 0.0205 | 0.0201 | 0.2218 | 0.0676 |