# BUSINESS EXPECTATIONS & UNCERTAINTY IN DEVELOPING & EMERGING ECONOMIES[*]

Edgar Avalos[a]    Jose Maria Barrero[b]    Elwyn Davies[a]
Leonardo Iacovone[c]    Jesica Torres[a]

[a]The World Bank    [b]ITAM Business    [c]The World Bank & the Hertie School

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# ABSTRACT

We study the properties of business expectations and uncertainty in 27 developing and emerging economies. Our evidence comes from 14,000 businesses responding to the World Bank Group Business Pulse and Enterprise Surveys. Each survey elicits three-point subjective probability distributions about future own-firm sales. We measure expectations and uncertainty using the first and second moments of those distributions and verify they predict future sales growth outcomes and absolute forecast errors. Our analysis reveals two new facts about business uncertainty across countries. (1) Uncertainty is higher in our sample than in advanced economies, and it declines with GDP per capita even after accounting for firm size, sector, and other firm- and country-level predictors of uncertainty. (2) Absolute forecast errors are larger than our survey-based measures of business uncertainty imply; namely, managerial beliefs are *overprecise* (understate sales volatility) and particularly so in lower-income countries.

# RESEARCH QUESTIONS

**What do *business expectations and uncertainty* look like in developing and emerging economies?**

**Do they resemble those of businesses in *advanced economies*?**

**Are there <u>systematic differences</u> in the properties of expectations and uncertainty with a country's *level of development*?**

# MOTIVATION

**Business dynamics are central to developing/emerging economies' lack of "convergence" with advanced economies:**

▶ Lower growth rates and stagnation (e.g., Hsieh & Klenow, 2014)

▶ Underinvestment in managerial capital (Akcigit, Alp, & Peters, 2021)

▶ Volatility $\Rightarrow$ static misallocation (Asker, Collard-Wexler, & De Loecker, 2014)

▶ Risky capital (David, Henriksen, & Simonovska 2016)

**Q: What role do *business expectations & uncertainty* play?**

▶ Do they reflect some of these facts?

▶ Could they themselves contribute to stagnation/failure to "converge"?

# THIS PAPER

**We examine the properties of business expectations & uncertainty among 14,000 businesses in 27 developing and emerging economies**

1. **2020–2021 World Bank Business Pulse & Enterprise Surveys**
   3-point subjective probability distributions for future sales at a 6-month look-ahead horizon (cf. Altig et al., 2020)

2. **Measures of business expectations and uncertainty**
   First and second moments of those subjective distributions

3. **New facts about business expectations and uncertainty in developing/emerging economies**
   Two dimensions of heterogeneity: across *firms* vs. across *countries*

# KEY TAKEAWAYS

1. **It's <u>feasible</u> and <u>informative</u> to elicit subjective probability distributions from businesses in developing/emerging economies**

   **72%** of firms provide usable distributions vs. ∼**85%** in US Census surveys

2. **Business expectations and uncertainty have "nice" properties**

   *Predict* future sales & absolute forecast errors,
   *Reflect* shifts in macroeconomic environment, idiosyncratic shocks

3. **NEW FACT: Businesses in poorer countries (GDP/person) are <u>more uncertain</u> than businesses in richer countries**

   Even *controlling* for industry, firm size, idiosyncratic conditions...
   *Implications* for static misallocation, efficiency, nature of macro policy

# BUSINESS UNCERTAINTY VS. GDP/PERSON
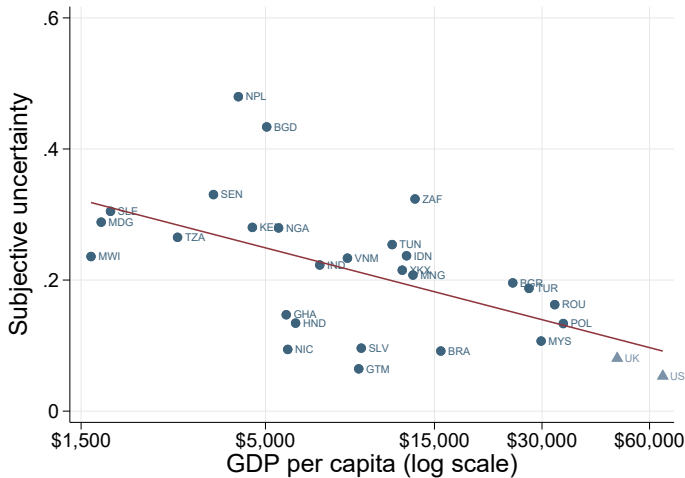


**Notes:** This figure plots employment-weighted subjective uncertainty in each country averaging across waves of the World Bank Business Pulse and Enterprise Surveys against the country's 2019 GDP per capita on the horizontal axis. We weight firms by employment within each country. UK and US values for second quarter of 2020.

# OUTLINE

Data & methodology

Features of expectations & uncertainty

▶ Firm level

▶ Across countries

Role of policy support

# OUTLINE

**Data & methodology**

Features of expectations & uncertainty

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Role of policy support

# WORLD BANK GROUP
# BUSINESS PULSE & ENTERPRISE SURVEYS

**Goal:** Information about firm operations, sales, employment, plus *quantitative* data on expectations and uncertainty about 6-months-ahead sales

**Survey coverage:** 60+ countries since COVID onset

▶ This paper: **27** countries from all WB lending regions, Apr. 2020–Mar. 2021

▶ *Registered firms* identified from Census listings, business registers
Should include informal employment at these businesses

▶ Small (5 to 10 employees) to large (100+ employees) firms

▶ Multiple waves per country ⇒ *panel dimension*

# SURVEY DESIGN & COLLECTION

**Survey design:** Uniform by World Bank

**Collection methodology:** Phone interviews with an enumerator

**Implementation**: collaboration with statistical agencies, govt. departments, or business associations in each country

- ▶ In practice, implementation varies modestly across countries
- ▶ **Note:** During COVID, so not seamless

# THE EXPECTATIONS & UNCERTAINTY MODULE

*Looking ahead to the next 6 months, do you expect that your sales will increase, decrease, or remain the same, compared to the same period last year [in 2019]?*

► *Increase [decrease] by how much?*

*On a scale of 0 to 100, what is the chance (probability) you believe this will happen?*

# THE EXPECTATIONS & UNCERTAINTY MODULE

*As you know, sometimes businesses don't go as we expect, given that businesses can go better or worse, let us talk about these possible alternative situations*

***In a more optimistic (better) scenario, do you expect that your sales for the next 6 months will increase, decrease, or remain the same, compared to the same period last year?***

- ► *Increase [decrease] by how much?*

- ► *On a scale of 0 to 100, what is the chance (probability) you believe this will happen?*

**Similar question for a** *pessimistic (worse)* **scenario**

# 3-POINT SUBJECTIVE PROBABILITY DISTRIBUTIONS

**For each firm $j$ and scenario $i$:** $\{g_{ij}, p_{ij}\}_{i=1}^{3}$

- $g_{ij} =$ 6-months-ahead sales in scenario $i$ (% relative to 2019)

- $p_{ij} =$ probability of scenario $i$ occurring

- Version of the methodology developed by Altig et al. (2020)

**Sales expectation (1st moment)** $\text{Mean}_j = \sum_{i=1}^{3} g_{ij} p_{ij}$

**Sales uncertainty (2nd moment):** $\text{Uncertainty}_j = \left[ \sum_{i=1}^{3} p_{ij}(g_{ij} - \text{Mean}_j)^2 \right]^{1/2}$

# HOW FEASIBLE IS IT TO ELICIT PROBABILITY DISTRIBUTIONS IN DEVELOPING & EMERGING ECONOMIES?

**72% of firms provide usable distributions**

- ▶ **41%** of distributions add to 100% and have Uncertainty $> 0$

- ▶ **31%** have 2+ scenarios and we impute or rescale missing probabilities
  - ▶ Altig et al. (2020): **support points** matter most for 1st & 2nd moments

**For comparison:** ~**85%** of usable distributions in Bloom et al. (2021)

- ▶ Similar module from the 2015/2020 Annual Survey of Manufacturers in the US

# LARGER FIRMS ARE LESS LIKELY TO PROVIDE UNUSABLE DISTRIBUTIONS
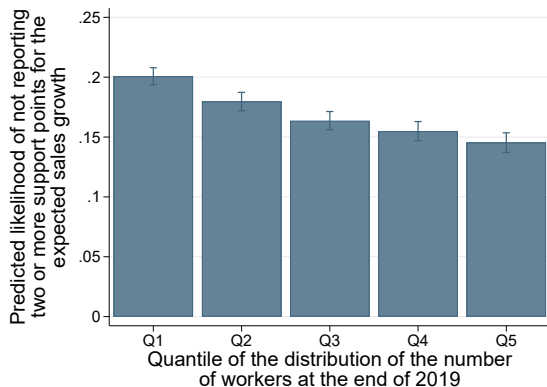


**Notes:** This figure plots the predicted likelihood of providing a distribution that does not have two or three support points. Each bar reports the average predicted probability across firms in a given quintile of the country-wave-sector size distrbution. Our estimates come from a regression of an indicator variable for providing an unusable distribution that includes country, size, and quarter fixed effects. Size is measured using the number of workers at the end of December 2019 (the pre-pandemic baseline).

▸ Well-formed distribution

# OUTLINE

Data & methodology

**Features of expectations & uncertainty**

► Firm level

► Across countries

Role of policy support

# OUTLINE

Data & methodology
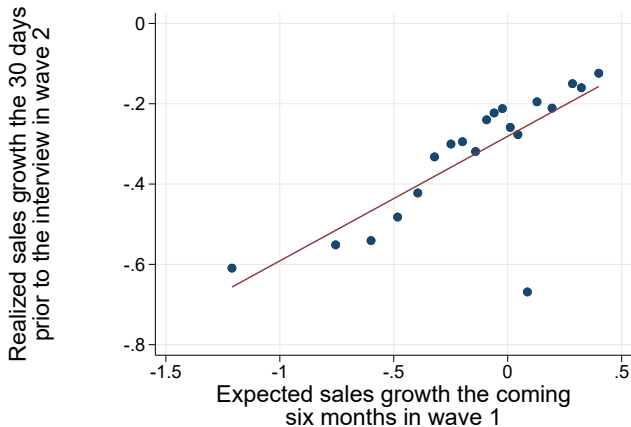
**Features of expectations & uncertainty**
- ▶ **Firm level**
- ▶ Across countries

Role of policy support

# FACTS ABOUT
# BUSINESS EXPECTATIONS & UNCERTAINTY

1. ***Predictive power for future outcomes & absolute errors***
   (Altig et al., 2020; Bloom et al., 2020; Barrero, 2021; )

# EXPECTATIONS PREDICT FUTURE SALES GROWTH



Coefficient: 0.31 with standard error of 0.063.

**Notes:** The figure shows a binned scatter plots of realized sales in the 30 days prior to the second-wave interview on the vertical-axis against sales expectations for the next six months on the horizontal axis. Both realized sales and future expected sales are expressed relative to the same periods of 2019. The sample includes only the firm-level balanced panel for the first two waves of the survey. See Table A4 in the appendix for a list of countries where a panel is available. We weight firms by employment within each country. The reported statistics below the figure correspond to the least squares regression in the underlying micro data and the corresponding robust standard error.

# UNCERTAINTY PREDICTS ABS. FORECAST ERRORS
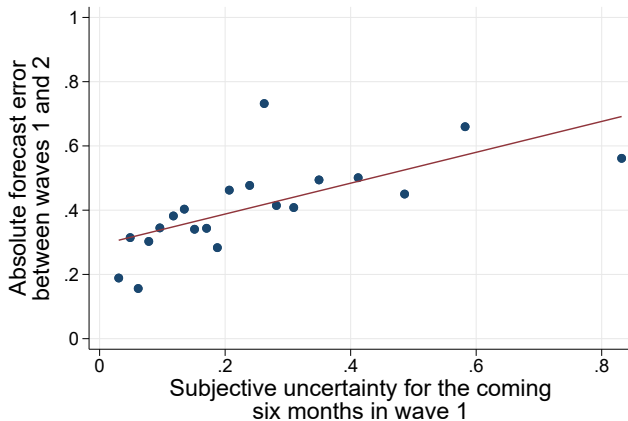


Coefficient: 0.48 with standard error of 0.104.

**Notes:** The figure shows a binned scatter plot of the absolute value of the error (difference) between six-months-ahead sales forecasts (expectations) elicited in wave 1 and realized sales in the 30 days leading to the wave 2 interview on the vertical-axis against subjective uncertainty about six-months-ahead sales elicited in wave 1 on the horizontal-axis. Sales expectations and realizations are all expressed relative to the same period in 2019. The sample includes only the firm-level balanced panel for the first two waves of the survey. We weight firms by employment in each country. The reported statistics below each figure correspond to the least squares regression in the underlying micro data and the corresponding robust standard error.

# FACTS ABOUT
# BUSINESS EXPECTATIONS & UNCERTAINTY

1. **Predictive power for future outcomes & absolute errors**
   (Barrero, 2021; Altig et al., 2020)

2. *Higher uncertainty in volatile and changing environments*
   (Altig et al. 2020; Bloom et al., 2021; Bachmann et al., 2021)

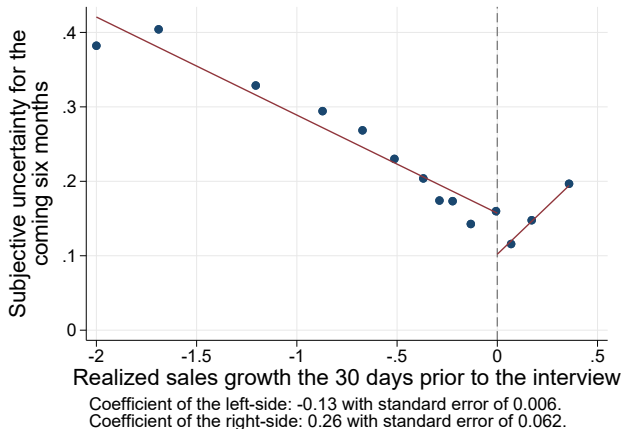# UNCERTAINTY IS V-SHAPED IN ||EXPECTATIONS||
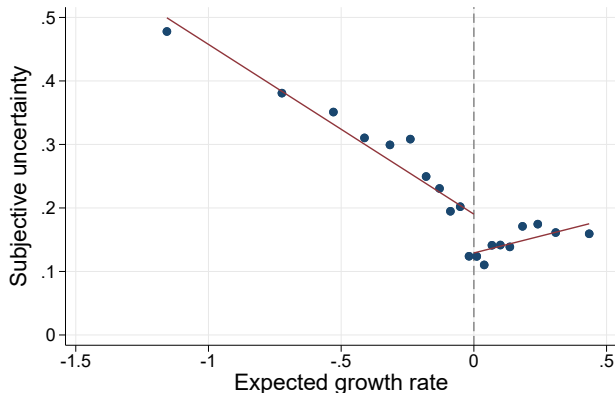


Coefficient of the left-side: -0.27 with standard error of 0.013.
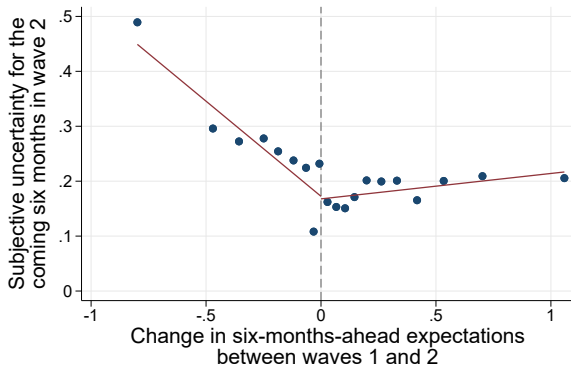Coefficient of the right-side: 0.11 with standard error of 0.027.

**Notes:** The figure shows an employment-weighted binned scatter plot of firm-level subjective uncertainty against sales expectations pooling the different country-wave cross-sections. Sales expectations and uncertainty concern the next 6 months relative to the same period of 2019. The reported statistics below the figure in panel b correspond to the least squares regression in the underlying micro data and the corresponding robust standard error. The sample includes businesses from all countries and waves.

▸ Across countries

# UNCERTAINTY IS V-SHAPED IN SALES SHIFTS



Coefficient of the left-side: -0.13 with standard error of 0.006.
Coefficient of the right-side: 0.26 with standard error of 0.062.

**Notes:** The figure shows an employment-weighted binned scatter plot of subjective uncertainty about six-months-ahead sales on the vertical axis against realized sales the 30 days prior to the interview on the horizontal axis. The reported statistics below each figure correspond to the least squares regression in the underlying micro data and the corresponding robust standard error. Both realized sales growth and future expected sales growth are expressed relative to the same periods of 2019. The sample includes businesses from all countries and waves.

# UNCERTAINTY IS V-SHAPED IN REVISIONS TO EXPECTATIONS



Coefficient of the left-side: -0.33 with standard error of 0.049.
Coefficient of the right-side: 0.05 with standard error of 0.019.

**Notes:** The figure shows an employment-weighted binned scatter plot of subjective uncertainty about six-months-ahead sales in wave 2 on the vertical axis against the change in expected sales growth between waves 1 and 2 on the horizontal axis. The sample includes only the firm-level balanced panel for the first two waves of the survey. The reported statistics below the figure correspond to the least squares regression in the underlying micro data and the corresponding robust standard error. Six-months-ahead sales are expressed in relation to to the same period of 2019.

23

# UNCERTAINTY RISES WITH LAGGED ABSOLUTE FORECAST ERRORS
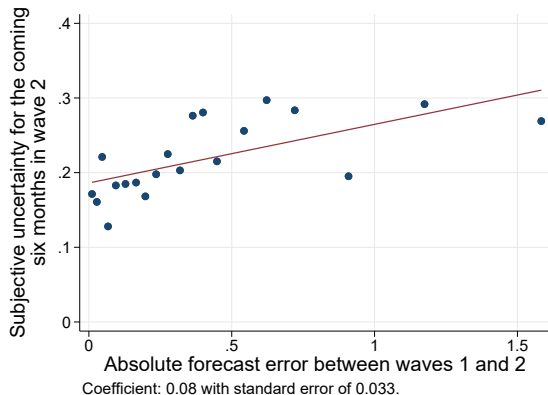


Coefficient: 0.08 with standard error of 0.033.

**Notes:** The figure shows a binned scatter plot of subjective uncertainty about six-months-ahead sales as expressed in wave 2 on the vertical axis against the absolute error (i.e. difference) between forecast six-months-ahead sales from wave 1 and realized sales in the 30 days prior to the wave 2 interview. The sample includes only the firm-level balanced panel for the first two waves of the survey. The reported statistics below the figure correspond to the least squares regression in the underlying micro data and the corresponding robust standard error. Both realized sales and future expected sales are expressed relative to the same periods of 2019.

# OUTLINE

Data & methodology

**Features of expectations & uncertainty**

▶ Firm level

▶ **Across countries**

Role of policy support

# FACTS ABOUT
# BUSINESS EXPECTATIONS & UNCERTAINTY

1. **Predictive power for future outcomes & absolute errors**
   (Barrero, 2021; Altig et al., 2020)

2. **Higher uncertainty in volatile and changing environments**
   (Altig et al. 2020; Bloom et al., 2021; Bachmann et al., 2021)

3. ***Uncertainty <u>decreases</u> with GDP/person***
   ***Forecast accuracy <u>increases</u> with GDP/person***
   **(NEW FACT)**

# BUSINESS UNCERTAINTY VS. GDP/PERSON

**Raw Cross-Country Relationship**
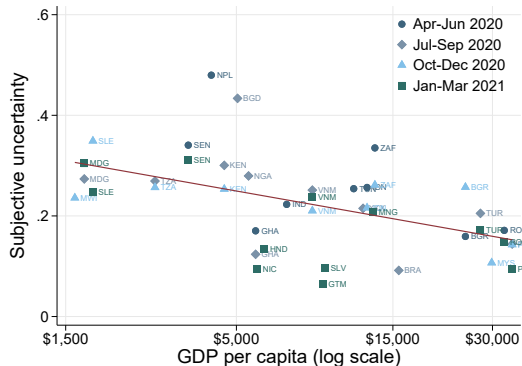


**Firm Size, Sector, Time Controls**
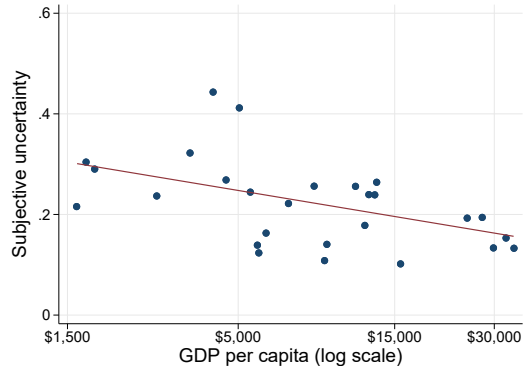


**Notes:** The left figure plots employment-weighted subjective uncertainty in each country-wave of the World Bank Business Pulse and Enterprise Surveys against the country's 2019 GDP per capita on the horizontal axis. The right figure shows the employment-weighted relationship across firms, controlling for firm size (log(employment)), sector fixed effects, and calendar quarter fixed effects.

# BUSINESS UNCERTAINTY VS. GDP/PERSON

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| | **Subjective Uncertianty** | | | |
| GDP per capita (log) | -0.068*** | | | -0.052*** |
| | (0.009) | | | (0.008) |
| Transit mobility | | -0.003*** | | -0.002*** |
| | | (0.001) | | (0.001) |
| Absolute change in sales | | | 0.108*** | 0.089*** |
| | | | (0.012) | (0.010) |
| Size | Yes | Yes | Yes | Yes |
| Sector dummies | Yes | Yes | Yes | Yes |
| Quarter dummies | Yes | Yes | Yes | Yes |
| Observations | 8958 | 8958 | 8548 | 8548 |
| Within $R^2$ | 0.105 | 0.073 | 0.138 | 0.195 |
| No. of clusters | 94 | 94 | 94 | 94 |

**Notes:** Linear regressions with subjective uncertainty about six-months-ahead sales (relative to the same period in 2019) as dependent variable. *Transit mobility* is the level of mobility around transit stations in the 30 days before the interview according to Google Mobility Trends. *Change in sales* is the arc change in sales in the 30 days before the interview. Heteroskedasticity-robust standard errors are clustered at the country-sector level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
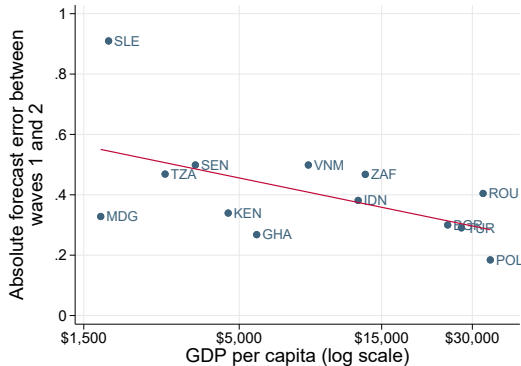
▶ Firm Size   ▶ Sector

# MAGNITUDE: 3−6× UK OR US UNCERTAINTY
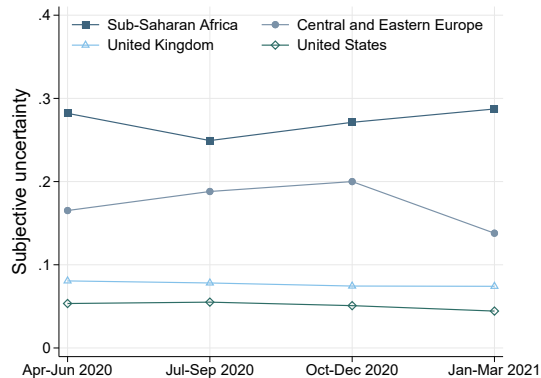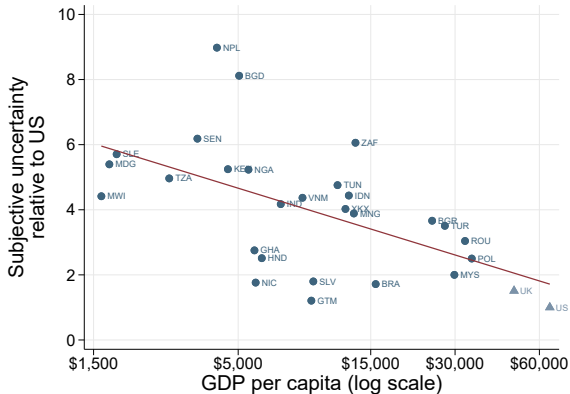


**Notes:** The left figure plots employment-weighted average uncertainty at the country level divided by US uncertainty against GDP per capita. In the right figure we compute employment-weighted average expectations and uncertainty across firms in each country-wave, and then take the simple average across countries in a region and quarter, focusing on the two regions where we have coverage for each quarter. Expected sales corresponds to the next 6 months relative to the same period of 2019. Data for the UK come from the UK Decision Maker Panel (see www.decisionmakerpanel.co.uk and Bloom(2018). Data for the US come from the US Survey of Business Uncertainty (see www.atlantafed.org/sbu and Altig et al., 2020).

# FORECAST ACCURACY VS. GDP/PERSON

### Raw Cross-Country Relationship



### Firm Size, Sector, Time Controls
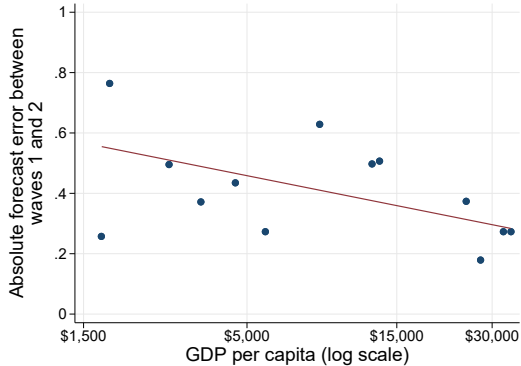


**Notes:** The left figure plots employment-weighted absolute forecast errors in each country-wave of the World Bank Business Pulse and Enterprise Surveys against the country's 2019 GDP per capita on the horizontal axis. The right figure shows the employment-weighted relationship across firms, controlling for firm size (log(employment)), sector fixed effects, and calendar quarter fixed effects.

# FORECAST ACCURACY VS. GDP/PERSON

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| | | | **Absolute Forecast Error** | | |
| Uncertainty in wave 1 | 0.466*** | 0.356*** | 0.372*** | 0.287** | 0.285** |
| | (0.121) | (0.126) | (0.116) | (0.122) | (0.116) |
| GDP per capita (log) | | -0.081** | | -0.072*** | -0.038* |
| | | (0.037) | | (0.025) | (0.020) |
| World Uncertainty Index | | | | | -1.059** |
| | | | | | (0.421) |
| World Pandemic Uncertainty Index | | | | | 0.760* |
| | | | | | (0.381) |
| Constant | 0.250*** | 0.983*** | | | |
| | (0.072) | (0.358) | | | |
| Size and sector | | | X | X | X |
| Quarter | | | X | X | X |
| Observations | 2563 | 2563 | 2563 | 2563 | 2563 |
| Within $R^2$ | 0.056 | 0.096 | 0.069 | 0.096 | 0.119 |

**Notes:** Linear regressions with absolute errors about six-months-ahead sales (relative to the same period in 2019) between waves 1 and 2 as dependent variable. Size is measured as log employment and all specifications are weighted by employment. Heteroskedasticity-robust standard errors are clustered at the country-sector level. All columns control for the the number of days between the wave 1 and wave 2 interviews. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
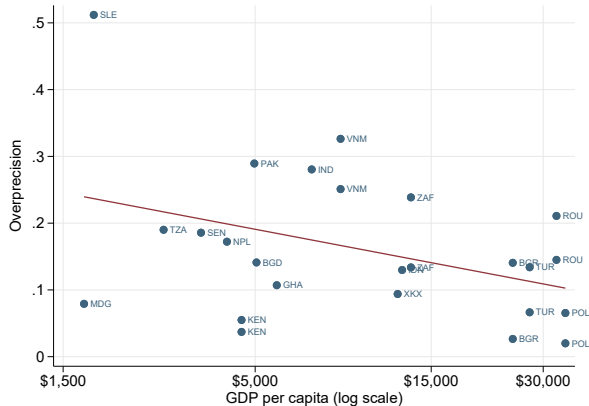
# NO CONSISTENT PATTERN FOR EXPECTATIONS VS. GDP/PERSON
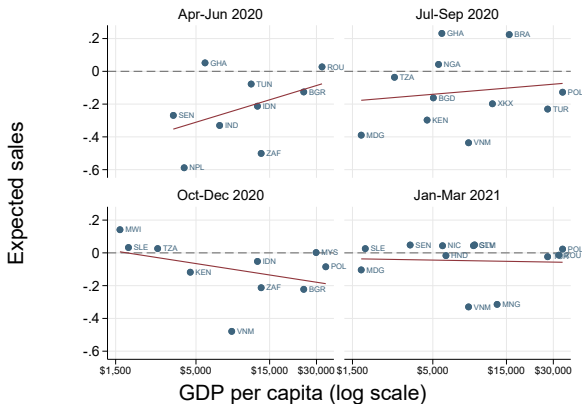


**Notes:** The figure shows employment-weighted binned scatter plots of expected six-months-ahead sales against 2019 GDP per capita (log scale). The sample includes all countries and survey waves. Six-months-ahead sales are expressed in relation to to the same period of 2019.

▶ Table + controls

# MANAGERS ARE *Overprecise:*
# UNCERTAINTY < ABS. FORECAST ERRORS



**Notes:** The figure shows employment-weighted binned scatter plots of overprecision (defined as the average gap between absolute forecast errors and subjective uncertainty about six-months-ahead sales at the country level) against 2019 GDP per capita (log scale). The sample includes all countries and survey waves. Six-months-ahead sales are expressed in relation to to the same period of 2019.

▸ Table + controls

# IMPLICATIONS

**Higher business uncertainty and lower forecast accuracy in developing/emerging economies could mean:**

▶ *Depressed investment*, *excessive entry*, and *too little exit*
(e.g. Hsieh & Klenow, 2014)

▶ More scope for *static misallocation*
(e.g. David & Venkateswaran, 2019; Ma, Ropele, Sraer, Thesmar, 2020)

▶ More *overprecision* (Barrero, 2021) in developing/emerging economies
⇒ *efficiency losses* at the firm and macro levels

*Overprecision* **cuts the other way: it lowers uncertainty relative to objective risk**

**Expectations & uncertainty vs. hiring & mitigation decisions** ▸ Detail

# OUTLINE

Data & methodology

Features of expectations & uncertainty

► Firm level

► Across countries

**Role of policy support**

# FACTS ABOUT
# BUSINESS EXPECTATIONS & UNCERTAINTY

1. **Predictive power for future outcomes & absolute errors**
   (Barrero, 2021; Altig et al., 2020)

2. **Higher uncertainty in volatile and changing environments**
   (Altig et al. 2020; Bloom et al., 2021; Bachmann et al., 2021)

3. **Uncertainty (& forecast accuracy) decrease with GDP/person**

4. *Policy support correlates with lower uncertainty, but less so with higher forecast accuracy*

# UNCERTAINTY VS. RECEIVING POLICY SUPPORT

| | $\log$(**Subjective Uncertainty**) (Mean $= -1.933$; SD $= 0.920$) | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Firm received support? | -0.428*** | -0.336*** | -0.330*** | -0.370*** | -0.149** | -0.112* |
| | (0.060) | (0.052) | (0.076) | (0.058) | (0.071) | (0.067) |
| Size and sector | | X | | | | X |
| Severity of the shock | | | X | | | X |
| Quarter | | | | X | | X |
| Country | | | | | X | X |
| Observations | 7,101 | 7,101 | 6,502 | 6,732 | 7,101 | 6,502 |
| $R^2$ | 0.031 | 0.078 | 0.121 | 0.051 | 0.196 | 0.261 |

**Notes:** Heteroskedasticity-robust standard errors in parentheses (128 clusters at the country-sector level). The dependent variable is subjective uncertainty in logs. The analysis only includes firms receiving support or firms that indicated that they applied for support, but not received it ("I have applied but not received it"). The dummy "Firm received support?" is 1 when the firm reports receiving support (regardless of the instrument) and 0 for those that applied but did not receive it. The controls for severity of the shock are the percentage change in sales the 30 days prior to the interview (relative to the same period of 2019) and average mobility the 30 days prior to the interview around transit stations. Our sample considers only the latest data point available in the case of the panel observations. Mean and standard deviation (SD) of the dependent variables are computed over the sample in specifications (1). The mean of subjective uncertainty (in levels) is 0.212 with a SD of 0.194. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

# FORECAST ACCURACY VS. GDP & POLICY

|  | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
|  | | | **Absolute Forecast Error** | | |
| Uncertainty in wave 1 | 0.287** | 0.292** | 0.287** | 0.265** | 0.292** |
|  | (0.122) | (0.120) | (0.123) | (0.123) | (0.124) |
| GDP per capita (log) | -0.072*** | -0.076*** | -0.074*** | -0.043* | -0.048 |
|  | (0.025) | (0.028) | (0.027) | (0.025) | (0.048) |
| Access to government support, wave 1 | | 0.051 | | | |
|  | | (0.058) | | | |
| Access to government support, wave 2 | | | 0.036 | | |
|  | | | (0.046) | | |
| Share of firms w/ access to support, | | | | -0.003*** | |
|  | | | | (0.001) | |
| Govt. expenditure on relief measures/GDP | | | | | -0.008 |
|  | | | | | (0.010) |
| Size and sector | X | X | X | X | X |
| Quarter | X | X | X | X | X |
| Observations | 2563 | 2562 | 2563 | 2563 | 2563 |
| $R^2$ | 0.136 | 0.140 | 0.138 | 0.150 | 0.138 |

**Notes:** All specifications control for the number of days between interviews. We obtain the share of firms with access to support based on wave 1 responses and measure it for each country-sector-size cell. Clustered standard errors country-sector. Size measured as log employment. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

# CONCLUSION & KEY TAKEAWAYS

**Measuring business expectations & uncertainty in developing & emerging economies is <u>feasible</u> and <u>informative</u>**

▶ **72%** of interviewed firms provide usable subjective distributions

▶ Timely, quantitative, bottom-up information for policymakers

▶ Becoming standard in advanced economies (US, UK, Germany, Japan,...)

**Business uncertainty decreases & forecast accuracy increases with GDP/person**

▶ Implications for investment, efficiency

▶ Macro & policy environment explain some of the relationship

**More to come:** survey efforts continue through end of 2021 & some of 2022

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# LARGER FIRMS ARE MORE LIKELY TO PROVIDE "WELL-FORMED" DISTRIBUTIONS
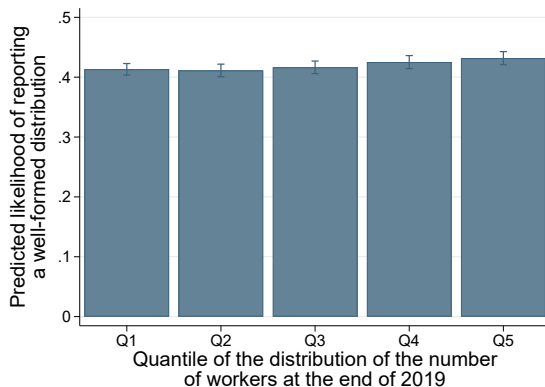


**Notes:** This figure plots the predicted likelihood of providing a distribution that is well-formed: it has 2 or 3 support points and the probabilities add to 100%. Each bar reports the average predicted probability across firms in a given quintile of the country-wave-sector size distribution. Our estimates come from a regression of an indicator variable for providing a "well-formed" distribution that includes country, size, and quarter fixed effects. Size is measured using the number of workers at the end of December 2019 (the pre-pandemic baseline).

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# UNCERTAINTY DECLINES WITH EXPECTED SALES
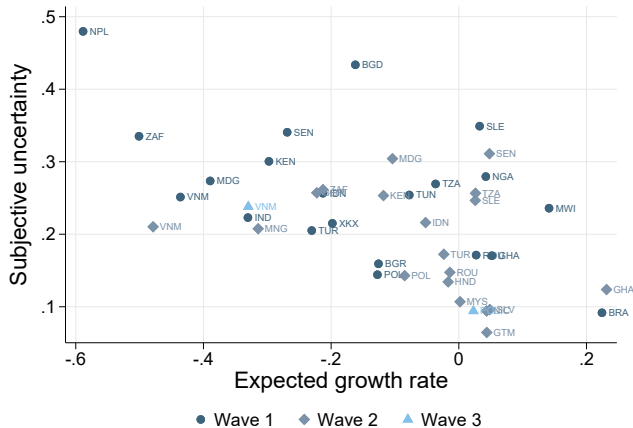


**Notes:** The figure plots country-wave employment-weighted average subjective uncertainty about six-months-ahead sales growth on the vertical axis against employment-weighted average expected sales growth on the horizontal axis. Sales expectations and uncertainty concern the next 6 months relative to the same period of 2019. The reported statistics below the figure in panel b correspond to the least squares regression in the underlying micro data and the corresponding robust standard error. The sample includes businesses from all countries and waves.
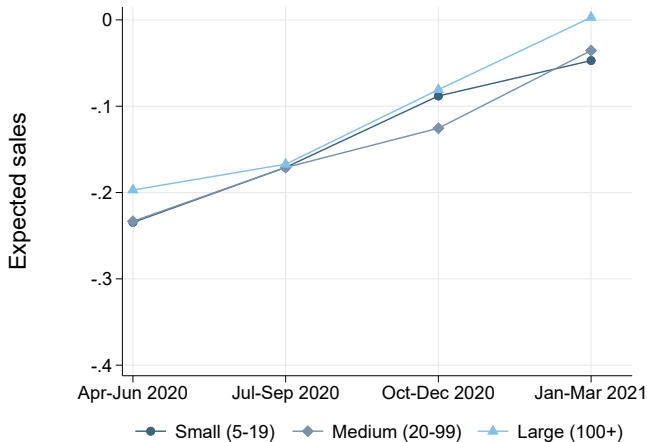
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# BUSINESS UNCERTAINTY VS. FIRM SIZE
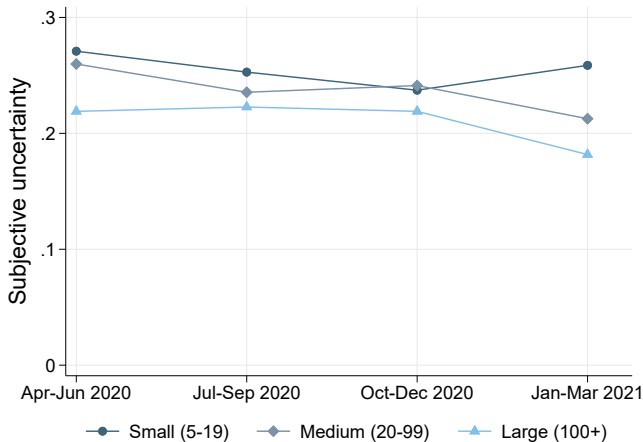


**Notes:** The figure shows average uncertainty about six-months-ahead sales growth by firm size category and quarter after adjusting for country and sector effects. In each case, these averages correspond to the average prediction from a linear regression on dummies for country, sector, and the interaction of size and quarter and sector and quarter. Computations weighted by employment. The future sales horizon corresponds to the next 6 months and future sales are expressed relative to the same period of 2019.

# BUSINESS UNCERTAINTY VS. SECTOR
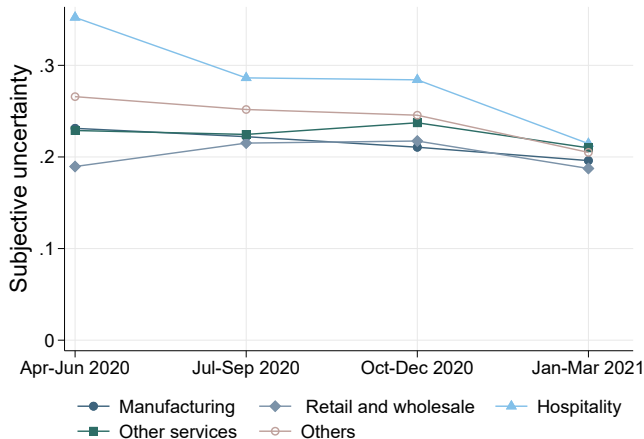


**Notes:** The figure on the right shows average uncertainty about six-months-ahead sales growth by sector and quarter after adjusting for country and size effects. In each case, these averages correspond to the average prediction from a linear regression on dummies for country, size, and the interaction of sector and quarter and quarter and size and quarter. Computations weighted by employment. The future sales horizon corresponds to the next 6 months and future sales are expressed relative to the same period of 2019.

# BUSINESS EXPECTATIONS ACROSS COUNTRIES

|  | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
|  | **Sales Expectations** | | | |
| GDP per capita (log) | 0.069*** | | | 0.036 |
|  | (0.025) | | | (0.024) |
| Transit mobility | | 0.004* | | 0.003 |
|  | | (0.002) | | (0.002) |
| Absolute change in sales | | | -0.196*** | -0.172*** |
|  | | | (0.034) | (0.030) |
| Size | Yes | Yes | Yes | Yes |
| Sector dummies | Yes | Yes | Yes | Yes |
| Quarter dummies | Yes | Yes | Yes | Yes |
| Observations | 8958 | 8958 | 8548 | 8548 |
| Within $R^2$ | 0.027 | 0.029 | 0.097 | 0.112 |
| No of clusters | 94 | 94 | 94 | 94 |

**Notes** Linear regressions with expectations about six-months-ahead sales (relative to the same period in 2019) as the dependent variable. *Transit mobility* is the level of mobility observed around transit stations in the 30 days before the interview according to Google Mobility Trends. *Change in sales* refers to the arc change in sales in the 30 days before the interview. Heteroskedasticity-robust standard errors are clustered at the country-sector level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$
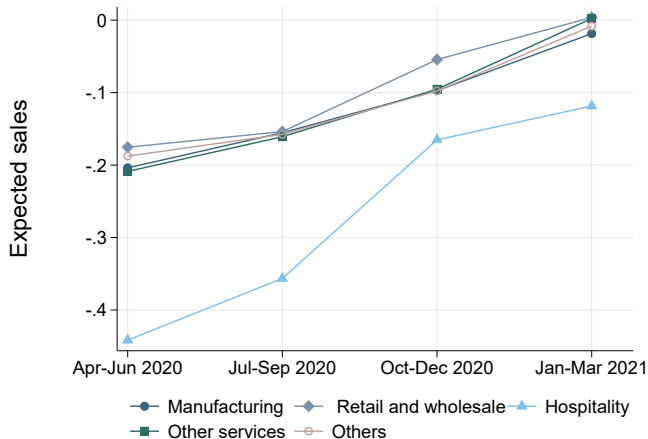
# BUSINESS EXPECTATIONS VS. FIRM SIZE



**Notes:** The figure shows the average expected six-months-ahead sales by firm sector and quarter after adjusting for country and size effects. In each case, these averages correspond to the average prediction from a linear regression on dummies for country, sector, and the interaction of size and quarter and sector and quarter. Computations weighted by employment. Expected sales corresponds to the next 6 months relative to the same period of 2019.
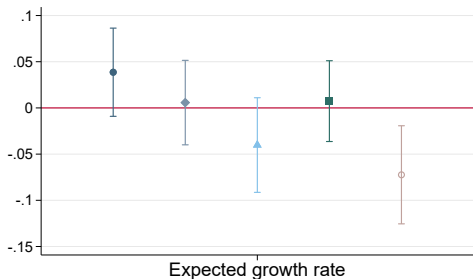
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# BUSINESS EXPECTATIONS VS. SECTOR



**Notes:** The figure shows average expected six-months-ahead sales by firm size category and quarter after adjusting for country and sector effects. In each case, these averages correspond to the average prediction from a linear regression on dummies for country, size, and the interaction of sector and quarter and size and quarter. Computations weighted by employment. Expected sales corresponds to the next 6 months relative to the same period of 2019.

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# EXPECTATIONS & UNCERTAINTY VS. HIRING
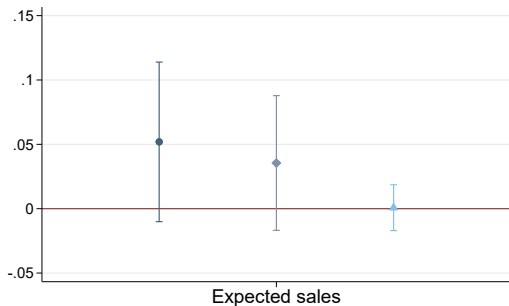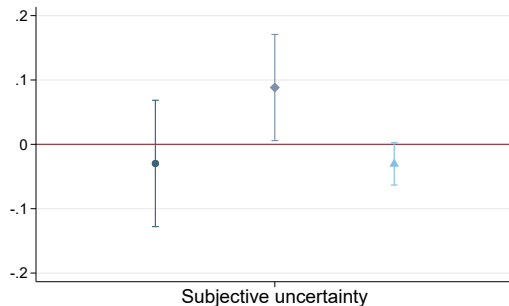


**Notes:** The figure reports the coefficient on expected sales (panel a) and subjective uncertainty (panel b) from three linear regressions for each of the dependent variables mentioned, which also include dummies for country, quarter, size, and sector; the percentage change in sales the 30 days prior to the interview relative to the same period of 2019; the average mobility around transit stations the 30 days prior to the interview; and both mean sales forecast and uncertainty. All specifications are weighted by employment. Expected sales corresponds to the next 6 months relative to the same period of 2019.

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# EXPECTATIONS & UNCERTAINTY VS. MITIGATION MEASURES
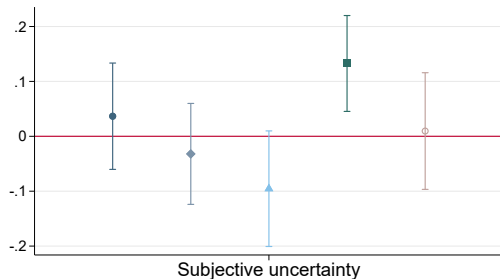


**Notes:** The figure reports the coefficient on expected sales (panel a) and subjective uncertainty (panel b) from linear regressions for the five dependent variables mentioned on dummies for country, quarter, size, and sector; percentage change in sales the 30 days prior to the interview relative to the same period of 2019; average mobility around transit stations the 30 days prior to the interview; and both mean sales forecast and uncertainty. Computations weighted by employment. Expected sales growth corresponds to the next 6 months relative to the same period of 2019.

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