This paper

Question:
- How does corruption affect economic development through firm dynamics?
- Focus on one type of corruption: bribery.

Our approach:
- Document the difference in firm growth volatility across countries in the data.
- Examine correlation between bribery and firm-level outcomes in the data.
- Model firm dynamics with bribery and financial frictions.

Firm Dynamics and Economic Development with Corruption and Financial Frictions
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Fact 1: higher firm growth volatility in poor countries

- Orbis database
- 40 countries (2011-2016)
- Public and private firms

Definition of volatility
- s.d. of firm growth over time
- Vol = \sqrt{\frac{1}{T} \sum_{t=1}^{T} (\Delta x_t)^2}

Result
- Firm growth in revenue, assets, employment and labor productivity more volatile in poorer countries.

Fact 2: bribery and firm-level outcomes

- Data on bribery:
  - Data from China Judgements Online.
  - Number of bribery cases during the anti-corruption campaign (2014-17).

Data on firm-level outcome

Findings
- Bribery associated with faster growth in output & inputs, slower growth in labor productivity.
- The correlation stronger in sectors with higher dependence on external financing (DEF).

Empirical finding
- (Orbis database) Firm growth is more volatile in poor countries.
- (Chinese Industrial Survey) High incidences of bribery are correlated with more volatile firm growth in poor countries.

A model of firm dynamics with bribery and financial frictions
- Idiosyncratic productivity shocks lead to entry & exit of entrepreneurs.
- Entrepreneurs need to save to grow out of financial frictions.
- Bribery protects incumbents by preventing entry of more productive entrepreneurs.
- Lower aggregate productivity due to less entry.
- Helps incumbent entrepreneurs grow out of financial constraint.
- The positive effect increases with firm growth volatility and financial frictions.

Results

Competition with and without corruption
- In each period, markets face an i.i.d. corruption shock:\n  - In non-corruptable markets (c = 0), the rule of game is Bertrand competition.
  - Entrants push out incumbents if they have lower unit cost.
- In corruptable markets (c > 0), it is a bribery competition to win an operating permit.
  - The bribery game gives more advantage to wealthier firms.

Quantitative analysis
- Compared with an economy w/o corruption, the one w/ corruption has 1) higher capital and output, 2) lower productivity and exit rate, and 3) higher concentration.

Model
- One final good, used for consumption and investment: \( Y = \left( 1 + \rho \right) x \).
- A measure of intermediate goods: \( x_t = \left( 1 + \rho \right) x_{t-1}^2 \), where \( x \) is firms' idiosyncratic productivity.
- Unit cost of production is \( k_t = \left( 1 + \phi \right) x_t \).
- Each period, incumbent firm competes with an entrant.
- Winner produces and loser goes back to an entrant pool.

Conclusion
- We study impact of corruption on the aggregate economy through firm dynamics.
- We emphasize the trade-off between
  1. productivity growth due to firm entry
  2. asset accumulation of assets to overcome financial frictions
- Positive effects of corruption might dominate in developing countries.