

Real effects of Special Purpose Acquisition Companies (SPACs) intervention

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Summary of the paper

Research Question:

- Impact of SPACs on the productivity and labor welfare of the SPAC-acquired firms

Primer on SPACs:

- Def: SPACs are blank check companies - no specific business plan or commercial operations, & intend to engage in a merger or acquisition of an unidentified target firm.
- Purpose: raise capital through an initial public offering (IPO)

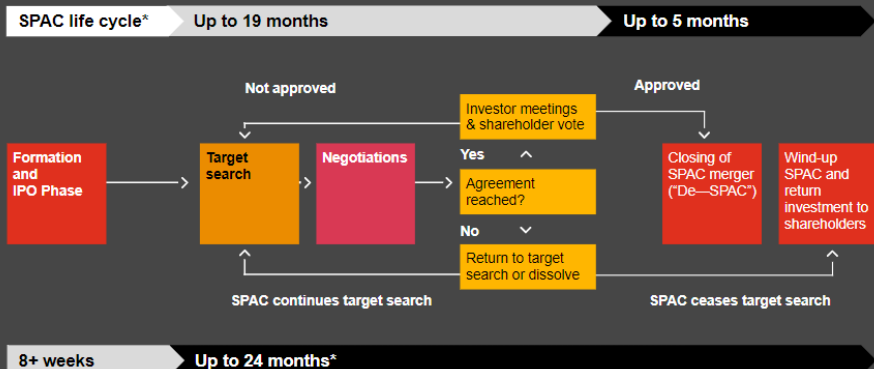
Motivation

Year	IPO Count	Gross Proceeds (mms)	Average IPO Size (mms)
2020	182	\$65,718.5	\$361.1
2019	59	\$13,600.3	\$230.5
2018	46	\$10,751.9	\$233.7
2017	34	\$10,048.5	\$295.5
2016	13	\$3,499.2	\$269.2
2015	20	\$3,902.9	\$195.1
2014	12	\$1,739.2	\$144.9
2013	10	\$1,447.4	\$144.7
2012	9	\$490.5	\$54.5
2011	15	\$1,081.5	\$72.1
2010	7	\$496.5	\$70.9
2009	1	\$36.0	\$36.0
TOTAL	408	\$112,812.4	

Figure: SPAC IPO Transactions - Summary by Year

SPAC life-cycle

Typical SPAC timeline



* For illustrative purposes, the SPAC life cycle presented is based on a 24 month timeline to complete a merger.

Data

- SPAC ownership, target, date of acquisition etc. from Standard and Poor's (S&P) Capital IQ database & SEC EDGAR's S-1 filings
- Longitudinal Business Database (LBD) contains identifiers for manufacturing/non-manufacturing units, information on ownership changes, # employees, annual payroll, industry classifications, geographical location etc.
- The manufacturing/non-manufacturing unit-level productivity data obtained from the U.S. Census Bureau.

Empirical Strategy

Dynamic Diff-in-Diff method:

$$y_{ijt} = \sum_{k=-5}^5 \gamma_k d_{it}[t+k] + \lambda \text{ Control}_{it} + \alpha_i + \alpha_{jt} + \alpha_g + \varepsilon_{ijt} \quad (1)$$

where, i=unit (manufacturing/non-manufacturing), j=industry, t=year, g=county. Control = {size, age, local economic conditions} (as per Schoar (2002)),

α_i =manufacturing/non-manufacturing unit fixed effect,

α_{jt} =industry \times year fixed effect, α_g =geography fixed effect

Standard errors are clustered at firm-unit level

Each unit of treated firm is matched with units of non-treated firms with similar characteristics in the year (t-1) prior to being acquired by SPACs.

Empirical Strategy

The covariates used in this analysis are lagged K, L, M for productivity regressions, and lagged wage levels, pension coverage, insurance coverage, severance benefits and average tenure etc. for labor welfare regressions

Survivorship bias (as per Brav et al. (2015))

$$y_{ijt} = \sum_{k=-5}^5 \gamma_k d_{it}[t+k] * \text{attrition}[t+k] + \sum_{k=-5}^5 \gamma_k d_{it}[t+k] * \text{non-attrition}[t+k] + \lambda \text{Control}_{it} + \alpha_i + \alpha_{jt} + \alpha_g + \varepsilon_{ijt} \quad (2)$$

Attrition (Non-Attrition) dummy takes the value 1 if the targeted firm is delisted (remains alive) in the year (t+k) and 0 otherwise.

Empirical Strategy

(1) Firm Productivity:

TFP=actual minus predicted output given the inputs (Bertrand and Mullainathan (2003); Brav et al. (2015)).

$$\ln(Y_{ijt}) = \alpha_{ijt} + \beta_{jt}^K \ln(K_{ijt}) + \beta_{jt}^L \ln(L_{ijt}) + \beta_{jt}^M \ln(M_{ijt}) + \varepsilon_{ijt} \quad (3)$$

where, α_{ijt} is the intercept; Y_{ijt} is output; K_{ijt} is capital; L_{ijt} is labor input; M_{ijt} represents material costs; and ε_{ijt} is the residual and the estimate of TFP.

(2) Labor Welfare: Dependent variables used are wage levels, pension coverage, insurance coverage, severance benefits and average tenure (as per Ninghua (2012)).

Placebo

Check for the effects in regressions (1) & (2) two years before the SPAC acquisition (i.e. before the inception of SPAC).

References

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