**Appendix**

**A1. Mechanisms Based on Capital Productivity**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| VARIABLES | Capital prod. | Data | Capital prod. | Capital prod. | Capital prod. | Testbed. | Capital prod.. | Capital prod.. |
|  |  |  |  |  |  |  |  |  |
| VC Type | 0.0637\*\*\* | 0.240\*\*\* |  | 0.0568\*\*\* | 0.0637\*\*\* | 0.107\*\*\* |  | 0.0564\*\*\* |
|  | (0.0077) | (0.0187) |  | (0.0079) | (0.0077) | (0.0172) |  | (0.0076) |
| Proprietary data |  |  | 0.0406\*\*\* | 0.0287\*\*\* |  |  |  |  |
|  |  |  | (0.0072) | (0.0074) |  |  |  |  |
| Testbed Participation |  |  |  |  |  |  | 0.0753\*\*\* | 0.0688\*\*\* |
|  |  |  |  |  |  |  | (0.0079) | (0.0079) |
| Firm age | 0.0058\*\*\* | 0.0099\*\*\* | 0.0045\*\*\* | 0.0055\*\*\* | 0.0058\*\*\* | 0.0264\*\*\* | 0.0029\*\*\* | 0.0040\*\*\* |
|  | (0.0008) | (0.0020) | (0.0008) | (0.0008) | (0.0008) | (0.0019) | (0.0008) | (0.0008) |
| Log(asset) | -0.0201\*\*\* | 0.0063 | -0.0201\*\*\* | -0.0203\*\*\* | -0.0201\*\*\* | 0.0130 | -0.0208\*\*\* | -0.0210\*\*\* |
|  | (0.0039) | (0.0094) | (0.0039) | (0.0039) | (0.0039) | (0.0087) | (0.0039) | (0.0038) |
| Log(employees) | 0.0577\*\*\* | -0.0391\*\*\* | 0.0622\*\*\* | 0.0588\*\*\* | 0.0577\*\*\* | -0.0057 | 0.0611\*\*\* | 0.0581\*\*\* |
|  | (0.0061) | (0.0150) | (0.0062) | (0.0061) | (0.0061) | (0.0138) | (0.0061) | (0.0061) |
| Log(funding) | -0.0222\*\*\* | -0.0168\*\* | -0.0212\*\*\* | -0.0217\*\*\* | -0.0222\*\*\* | -0.0019 | -0.0217\*\*\* | -0.0221\*\*\* |
|  | (0.0029) | (0.0071) | (0.0029) | (0.0029) | (0.0029) | (0.0065) | (0.0029) | (0.0029) |
| Past revenue growth | -0.0103 | -0.0652\*\* | -0.0098 | -0.0084 | -0.0103 | -0.0940\*\*\* | -0.0054 | -0.0038 |
|  | (0.0131) | (0.0315) | (0.0131) | (0.0130) | (0.0131) | (0.0290) | (0.0130) | (0.0129) |
| Gender | 0.0001\*\* | -0.0001\* | 0.0001\*\* | 0.0001\*\* | 0.0001\*\* | -0.0001\* | 0.0001\*\* | 0.0005\*\* |
|  | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) | (0.0000) |
| VC age | 0.0025 | -0.0089\* | 0.0033 | 0.0027 | 0.0025 | 0.0013 | 0.0029 | 0.0024 |
|  | (0.0021) | (0.0051) | (0.0021) | (0.0021) | (0.0021) | (0.0047) | (0.0021) | (0.0020) |
| Constant | 1.258\*\*\* | 0.241 | 1.238\*\*\* | 1.251\*\*\* | 1.258\*\*\* | -0.238 | 1.266\*\*\* | 1.274\*\*\* |
|  | (0.208) | (0.502) | (0.209) | (0.207) | (0.208) | (0.462) | (0.207) | (0.205) |
|  |  |  |  |  |  |  |  |  |
| Region FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| AI tech FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |
| Observations | 2,734 | 2,734 | 2,734 | 2,734 | 2,734 | 2,734 | 2,734 | 2,734 |
| R-squared | 0.151 | 0.081 | 0.141 | 0.155 | 0.151 | 0.193 | 0.156 | 0.171 |

**A2. Robustness check – Prior Screening Activities by VCs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | (1) | (2) | (3) | (4) |
| VARIABLES | Labor prod. | Capital prod. | Labor prod. | Capital prod. |
|  |  |  |  |  |
| PVC-backed startups | - | - | - | - |
|  |  |  |  |  |
| SYND-backed startups | 0.422\*\*\* | 0.090\*\*\* | 0.579\*\*\* | 0.111\*\*\* |
|  | (0.097) | (0.014) | (0.086) | (0.013) |
| GVC-backed startups | 0.334\*\*\* | 0.059\*\*\* | 0.382\*\*\* | 0.062\*\*\* |
|  | (0.066) | (0.009) | (0.058) | (0.009) |
| Firm age | 0.046\*\*\* | 0.006\*\*\* | 0.046\*\*\* | 0.006\*\*\* |
|  | (0.006) | (0.001) | (0.006) | (0.001) |
| Log(asset) | 0.360\*\*\* | 0.004 | 0.359\*\*\* | 0.004 |
|  | (0.025) | (0.004) | (0.025) | (0.004) |
| Log(employees) | -1.437\*\*\* | 0.040\*\*\* | -1.440\*\*\* | 0.034\*\*\* |
|  | (0.043) | (0.006) | (0.044) | (0.006) |
| Log(funding) | -0.174\*\*\* | -0.026\*\*\* | -0.175\*\*\* | -0.027\*\*\* |
|  | (0.022) | (0.003) | (0.022) | (0.003) |
| Past revenue growth | 0.001\*\* | 0.000\*\* | 0.000\*\* | 0.000\*\* |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Gender | 0.009 | -0.005 | 0.008 | -0.005 |
|  | (0.094) | (0.014) | (0.094) | (0.014) |
| VC age | 0.024\* | 0.002 | 0.021\* | 0.001 |
|  | (0.014) | (0.002) | (0.013) | (0.001) |
| PVC\_pre | -1.596 | -0.277 |  |  |
|  | (1.105) | (0.205) |  |  |
| GVC\_pre | -1.487 | -0.262 |  |  |
|  | (0.923) | (0.186) |  |  |
| SYN\_pre | -1.007 | -0.186 |  |  |
|  | (0.988) | (0.285) |  |  |
| VC\_pre |  |  | -1.494 | -0.257 |
|  |  |  | (0.956) | (0.161) |
| Constant | 6.916\*\*\* | 1.410\*\*\* | 6.735\*\*\* | 1.393\*\*\* |
|  | (1.696) | (0.257) | (1.697) | (0.257) |
|  |  |  |  |  |
| Region FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| AI tech FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Observations | 4,074 | 4,074 | 4,074 | 4,074 |
| R-squared | 0.314 | 0.212 | 0.312 | 0.210 |

Note: This table estimates the effects of VC types on startup's productivity. In Model 1-3, we inserted three dummy variables (PVC\_pre, GVC\_pre, and SYN\_pre) that equal 1 for the year prior to the first investment by PVCs, GVCs, and SYNDs, respectively. In Model 4-6, we inserted one dummy variable that equals 1 for any of VC funding prior to the first investment. Dependent variables are labor productivity and capital productivity. Syndication VC and Government VC are dummy variables that equal one for the first investment. The reference group for the regressions is PVC. All the regressions include control variables such as firm age, total asset, the number of employees, and the amount of funding, past revenue growth, CEO gender, and VC age. We also include fixed effects for region, industry, AI technology, and year. Standard errors are in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

**A3. Robustness check – Other Performance Measures**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | OLS | | | Negative Binomial |
|  | (1) | (2) | (3) | (4) |
| VARIABLES | Labor Prod. | ROA | Total Funding | # of Funding Count |
|  |  |  |  |  |
| PVC-backed startups | - | - | - | - |
|  |  |  |  |  |
| SYND-backed startups | 0.411\*\*\* | 0.322\*\*\* | 0.343\*\*\* | 0.432\*\*\* |
|  | (0.079) | (0.078) | (0.044) | (0.067) |
| GVC-backed startups | 0.330\*\*\* | 0.241\*\*\* | 0.294\*\*\* | 0.363\*\*\* |
|  | (0.053) | (0.053) | (0.030) | (0.050) |
| Firm age | 0.046\*\*\* | -0.001 | -0.010\*\*\* | 0.003 |
|  | (0.005) | (0.005) | (0.003) | (0.005) |
| Log(asset) | 0.254\*\*\* | 0.468\*\*\* | 0.074\*\*\* | -0.067\*\*\* |
|  | (0.026) | (0.026) | (0.014) | (0.023) |
| Log(employees) | -1.377\*\*\* | -0.458\*\*\* | 0.116\*\*\* | -0.021 |
|  | (0.041) | (0.041) | (0.023) | (0.037) |
| Log(funding) | -0.149\*\*\* | -0.086\*\*\* | 0.803\*\*\* | 0.361\*\*\* |
|  | (0.020) | (0.020) | (0.011) | (0.016) |
| Past revenue growth | 0.000\*\* | 0.000 | 0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) | (0.000) |
| Gender | -0.016 | 0.102 | -0.015 | -0.074 |
|  | (0.087) | (0.086) | (0.048) | (0.080) |
| VC age | 0.024\* | -0.036\*\* | 0.063\*\*\* | 0.009 |
|  | (0.014) | (0.014) | (0.008) | (0.013) |
| Constant | 5.901\*\*\* | 5.983\*\*\* | 1.339\* | 1.497\* |
|  | (1.386) | (1.376) | (0.770) | (0.842) |
|  |  |  |  |  |
| Region FE | Yes | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes | Yes |
| AI tech FE | Yes | Yes | Yes | Yes |
| Year FE | Yes | Yes | Yes | Yes |
| Observations | 3,156 | 3,156 | 3,156 | 3,156 |
| R-squared | 0.397 | 0.125 | 0.337 |  |
| Pseudo R-squared | |  |  | 0.033 |

**A4 Robustness check – First Differenced Regressions**

|  |  |  |
| --- | --- | --- |
|  | (1) | (2) |
| VARIABLES | Δ Labor prod. | Δ Capital prod. |
|  |  |  |
| PVC-backed startups | - | - |
|  |  |  |
| SYND-backed startups | 0.217\* | 0.030\* |
|  | (0.121) | (0.017) |
| GVC-backed startups | 0.180\*\* | 0.020\* |
|  | (0.082) | (0.011) |
| Firm age | 0.003 | 0.022\*\*\* |
|  | (0.052) | (0.008) |
| Log(asset) | -0.145\*\*\* | 0.011\* |
|  | (0.043) | (0.006) |
| Log(employees) | 0.922\*\*\* | -0.017 |
|  | (0.090) | (0.013) |
| Log(funding) | 0.020 | 0.003 |
|  | (0.034) | (0.005) |
| Revenue growth | 0.008\*\*\* | 0.001\*\*\* |
|  | (0.002) | (0.000) |
| Gender | -0.088 | -0.009 |
|  | (0.125) | (0.018) |
| VC age | 0.022 | 0.001 |
|  | (0.026) | (0.004) |
| Constant | 0.635 | 0.170\*\* |
|  | (0.590) | (0.085) |
|  |  |  |
| Region FE | Yes | Yes |
| Industry FE | Yes | Yes |
| AI tech FE | Yes | Yes |
| Observations | 913 | 913 |
| R-squared | 0.197 | 0.104 |

Note: This table estimates the effects of VC types on startup's productivity. Dependent variables are changes in labor productivity, capital productivity, and total factor productivity, respectively. Syndication VC and Government VC are dummy variables that equal one for the first investment. The reference group for the regressions is PVC. All the regressions include control variables such as firm age, total asset, the number of employees, and the amount of funding, past revenue growth, CEO gender, and VC age at the initial year. We also include fixed effects for region, industry, AI technology, and year. Standard errors are in parentheses \*\*\* p<0.01, \*\* p<0.05, \* p<0.1