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For scientists, scientists, students, graduate students, representatives of business and public organizations and higher education institutions and a wide range of readers.

WHAT INDICATES ABOUT THE EFFICIENT FINANCIAL PERFORMANCE OF THE STARTUPS?

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The increasing interest in startups is observed in the literature and business environment. Startups are related to the fast growth, high risk (Santisteban & Mauricio, 2017), high failure rate (Slavik, 2019), the high expected rate of returns (Aydm, 2015) and uncertainty (Tripathi et al., 2019). Many research are trying to fill the existing gap in knowledge of what indicates about the financial efficiency of startups. The reasons behind this are the great success stories of startups and at the same time the high uncertainty and the lack of financial resources necessary to grow the business. For this reason, researchers and investors are searching for the signs which would indicate their financial efficiency. We are trying to fill the existing gap in the literature by summarizing the factors (Figure 1) which would provide the insights of the financial efficiency of such companies.

Low level of inventory	Rapid inventory turnover	Capital resources	Investments attracted
The growth of total assets	The growth of ROA	Revenues generation	Constant cash flow
International sales	Profit	Higher level of retained earnings	High market value

Figure 1. The signs of the financial efficiency of startups (made by authors)

Different sources in the literature show that efficient startups manage to maintain the low level of inventory, have fast inventory turnover (Baek & Neymotin, 2016a; Lan et al., 2019), low level of accounts receivable, constant cash flows (Lan et al., 2019) and have sufficient amount of capital for business development (Chung et al., 2021; Matricano, 2020). The ability of startups to maintain the sufficient level of capital highly depends on their ability to attract external investments (Cumming et al., 2017; Knockaert et al., 2010) and higher efficiency was noticed among startups which managed to receive the funding (Hernández-Trillo et al., 2005). The growth in total assets (Alperovych et al., 2020) and ROA (Kaiser & Kuhn, 2020) are used for the growth in size to estimate, as it is noticed that startups greater in size manage to attract more attention from investors. The ability of startups to generate revenues and international sales decrease the riskiness of failure as more assured sales are

gained from the different markets (Baek & Neymotin, 2016b, 2016a). The level of retained earnings is also important for efficiency as this variable might indicate either the possible bankruptcy of the business (Fuertes-Callén et al., 2020) or the higher profitability in the future. The importance of profit for these companies is noticed as profit generation is the most important aim for any investor (Omri et al., 2015) or the business owners. However, the highly negative ratios of profitability either before or after the initial public offerings (IPO) are noticed for these companies (Gao et al., 2013; Kartanaitė & Krušinskas, 2022). But the high market value is considered as the sign of investors' trust in startups business development. Considering the high uncertainty of the financial performance of startups observed in the literature, the values of the ratios of startups financial efficiency are analyzed.

Table 1. The financial efficiency ratios of the unicorn startups (made by the authors)

The ratio (unit of measurement)	AVG	MIN	MAX
Accounts receivables turnover (times a year)	19,42	0,00	1834,15
Asset turnover (coefficient)	0,77	0,00	4,67
Cash flow ratio (coefficient)	0,09	-2,33	0,95
Inventory turnover (coefficient)	0,08	0,00	2,92
Return on Assets (coefficient)	-0,16	-4,67	0,70
Return on Equity (coefficient)	-15,98	-7118,50	18,27
Return on Investments (coefficient)	-5,67	-373,81	191,63
Return on Sales (coefficient)	-2,90	-1069,83	0,69
Working Capital ratio (coefficient)	0,36	-1,31	0,95
Working Capital turnover (times a year)	4,02	-129,37	440,22

We used the five years financial data of 97 unicorn startups with IPOs to observe if these companies have the signs of efficiency identified in the literature. The choice of these companies was firstly based on the high company market value (more than 1 billion USD (Kenney & Zysman, 2019)) and data availability because startups are private companies which become public after the IPO (Kim & Heshmati, 2010). The idea of this research is to observe the actual picture of the financial results of the unicorn startups so we did not transform the data. We firstly observed the highly negative average ratios of profitability for these companies. The initial data analysis revealed that the most of companies in our dataset have the negative net income. There are also several unicorns with negative equity as well which might have affected the results of ROE. The majority of companies operates in technology sector and do not have inventories, which might be the reason of the low level of inventory turnover. However, unicorn startups fail to manage their assets properly, as the value of asset turnover ratio is low. Working capital is used several times a year. On average, unicorn startups manage to collect the receivables fast, but the

minimum and maximum values of accounts receivable turnover indicate about the existing problems for some companies.

Our findings show that although unicorns suffer from the negative profitability and fail to use the assets efficiently, they still grow and manage to expand the business. The continuous startups growth even with the unusual values of the financial measures promotes analyzing these companies more detailed.

References

- Alperovych, Y., Groh, A., & Quas, A. (2020). Bridging the equity gap for young innovative companies: The design of effective government venture capital fund programs. *Research Policy*, 49(10), 104051. <https://doi.org/10.1016/j.respol.2020.104051>
- Aydın, N. (2015). A Review of Models for Valuing Young and Innovative Firms. *International Journal of Liberal Arts and Social Science*, 3(9), 1–8. https://www.ijlass.org/data/frontImages/gallery/Vol._3_No._9/1._1-8.pdf
- Baek, H. Y., & Neymotin, F. (2016a). International Involvement and Production Efficiency among Startup Firms. *Global Economic Review*, 45(1), 42–62. <https://doi.org/10.1080/1226508X.2015.1084240>
- Baek, H. Y., & Neymotin, F. (2016b). Young startup firm exports and productive efficiency. *Applied Economic Letters*, 23(15), 1088–1092. <https://doi.org/10.1080/13504851.2015.1136389>
- Chung, W. Y., Jo, Y., & Lee, D. (2021). Where should ICT startup companies be established? Efficiency comparison between cluster types. *Telematics and Informatics*, 56, 101482. <https://doi.org/10.1016/j.tele.2020.101482>
- Cumming, D. J., Grilli, L., & Murtinu, S. (2017). Governmental and independent venture capital investments in Europe: A firm-level performance analysis. *Journal of Corporate Finance*, 42, 439–459. <https://doi.org/10.1016/j.jcorpfin.2014.10.016>
- Fuertes-Callén, Y., Cuellar-Fernández, B., & Serrano-Cinca, C. (2020). Predicting startup survival using first years financial statements. *Journal of Small Business Management*, 1–37. <https://doi.org/10.1080/00472778.2020.1750302>
- Gao, X., Ritter, J. R., & Zhu, Z. (2013). Where have all the IPOs gone? *Journal of Financial and Quantitative Analysis*, 48(6), 1663–1692. <https://doi.org/10.1017/S0022109014000015>
- Hernández-Trillo, F., Pagán, J. A., & Paxton, J. (2005). Start-up capital, microenterprises and technical efficiency in Mexico. *Review of Development Economics*, 9(3), 434–447. <https://doi.org/10.1111/j.1467-9361.2005.00286.x>
- Kaiser, U., & Kuhn, J. M. (2020). The value of publicly available, textual and non-textual information for startup performance prediction. *Journal of Business Venturing Insights*, 14(e00179), 1–21. <https://doi.org/10.1016/j.jbvi.2020.e00179>
- Kartanaitė, I., & Krušinskas, R. (2022). Financial Efficiency of Unicorns:

Regional and Sector Related Aspects. *Engineering Economics*, 33(2), 200–214. <https://doi.org/10.5755/J01.EE.33.2.30798>

Kenney, M., & Zysman, J. (2019). Unicorns, Cheshire cats, and the new dilemmas of entrepreneurial finance. *Venture Capital*, 21(1), 35–50. <https://doi.org/10.1080/13691066.2018.1517430>

Kim, Y., & Heshmati, A. (2010). Analysis of Korean IT startups' initial public offering and their post-IPO performance. *Journal of Productivity Analysis*, 34(2), 133–149. <https://doi.org/10.1007/s11123-010-0176-0>

Knockaert, M., Clarysse, B., & Wright, M. (2010). The extent and nature of heterogeneity of venture capital selection behaviour in new technology-based firms. *R & D Management*, 40(4), 357–371. <https://doi.org/10.1111/j.1467-9310.2010.00607.x>

Lan, S., Yang, C., & Tseng, M. L. (2019). Corporate sustainability on causal financial efficiency model in a hierarchical structure under uncertainties. *Journal of Cleaner Production*, 237, 117769. <https://doi.org/10.1016/j.jclepro.2019.117769>

Matricano, D. (2020). The effect of R&D investments, highly skilled employees, and patents on the performance of Italian innovative startups. *Technology Analysis & Strategic Management*, 32(10), 1195–1208. <https://doi.org/10.1080/09537325.2020.1757057>

Omri, A., Frikha, M. A., & Bouraoui, M. A. (2015). An empirical investigation of factors affecting small business success. *Journal of Management Development*, 34(9), 1073–1093. <https://doi.org/10.1108/JMD-07-2013-0088>

Santisteban, J., & Mauricio, D. (2017). Systematic literature review of critical success factors of information technology startups. *Academy of Entrepreneurship Journal*, 23(2), 1–23. <https://www.proquest.com/openview/98a6e3daafe35edd5cad397b46b02c1b/1?pq-origsite=gscholar&cbl=29726>

Slavik, Š. (2019). The Business Model of Start-Up-Structure and Consequences. *Administrative Sciences*, 9(3), 69. <https://doi.org/10.3390/admsci9030069>

Tripathi, N., Seppänen, P., Boominathan, G., Oivo, M., & Liukkunen, K. (2019). Insights into startup ecosystems through exploration of multi-vocal literature. *Information and Software Technology*, 105, 56–77. <https://doi.org/10.1016/j.infsof.2018.08.005>