

May 2023

# Brands, patents and company performance study

Do intangible assets like brands and patents help companies outperform their peers?

*An analysis of the world's and Singapore's largest listed-companies*

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## Outline

- **Methodological overview and an introduction to interpreting our charts**
- **Findings**
  - Statistical key findings
  - Global perspective
  - Singapore perspective
- **Annex**

## Introduction

- This analysis drew a sample of the world's and Singapore's largest listed-companies, and identified those companies that were the owners of the most valuable brands and/or largest patent portfolios.
- The objective was to determine whether those companies with the most valuable brands and/or largest patent portfolios outperformed their peers in (i) revenue, (ii) net profit and (iii) market capitalisation.
- This analysis found that, on average, those companies had about double the revenue, net profit and market capitalisation than their peers. Those companies outperformed regardless of whether they were more “tangible asset light” or more “tangible asset heavy” companies.
- For Singapore's largest listed-companies, we also found that those with both the most valuable brands and the largest patent portfolios outperformed the rest of the cohort, including those that owned the most valuable brands but not the largest patent portfolios.
- Our findings suggest that intangible assets like brands and patents support companies in securing a competitive advantage, contributing to higher revenues, profits and market capitalisation.

# Literature overview

## *Studies by Intellectual Property (IP) Offices on the intersection between IP rights and economic outcomes*

### A. IP-intensive industries

- IP-intensive industries are defined as industry sectors that have above-average ownership of IP rights per employee.
- In the US, IP-intensive industries accounted for 41% share of GDP and 33% share of employment in 2019. This was up from 35% share of GDP and 19% share of employment in 2010. A recent study also found that IP-intensive industries in the US were more resilient during the COVID-19 pandemic, with fewer job losses as compared to non-IP-intensive industries.
- In Europe, IP-intensive industries accounted for 47% share of GDP and 30% share of employment in the period 2017-2019. This was up from 46% share of GDP and 29% share of employment in the period 2008-2010.
- In the UK, IP-intensive industries accounted for 27% share of GDP and 16% share of employment in the period 2014-2016.
- In Singapore, IP-intensive industries accounted for 49% share of GDP and 38% share of employment in the period 2011-2013.

### B. IP rights and firm performance

- Studies by the (a) EUIPO & EPO and (b) IP Australia compared the economic performance of companies that own IP with those that did not:
  - a) In Europe, companies that owned IP had 20% higher revenue per employee and paid 19% higher wages.
  - b) In Australia, companies that owned IP had double the profit per employee.

*Source: (A) USPTO – Intellectual Property and the U.S. Economy: 2022, 2016, and 2012; EUIPO & EPO – IPR-intensive industries and economic performance in the European Union, 2022, 2019, 2016, and 2013; UKIPO – Use of Intellectual Property rights across UK industries, 2020; IPOS – Intellectual Property Rights (IPR) Intensive Industries study, 2015; (B) EUIPO & EPO - Intellectual property rights and firm performance in Europe: an economic analysis, 2021; IP Australia – Intellectual property rights, business profitability and competition in the Australian economy, 2020.*

# Methodological overview

*Our approach to further explore the intersection between IP, intangible assets (IA), and firm performance*

**We wanted to explore, among the largest listed-companies, whether those with the most valuable brands and/or largest patent portfolios achieved better financial outcomes, in terms of revenue, profit and market capitalisation.**

- Our approach focused on the world's and Singapore's largest listed-companies where:
  - Financial information were readily available,
  - Equity listings allowed for comparison in market capitalisation,
  - External rankings were available as inputs. These included:
    - Forbes Global 2000, and its methodology, to identify the 100 largest companies globally and in Singapore,
    - Brand Finance Global 500 and Singapore 100 brand value rankings to identify the most valuable brands globally and in Singapore,
      - The use of Brand Finance rankings allowed for the opportunity to explore brand value (in place of trademark filings) with firm performance. This was on the notion that brand value may be a conceptually closer measure of a trademark's value to a firm.
      - Data and metrics from Brand Finance were also used by World Intellectual Property Organisation (WIPO) as inputs for their Global Innovation Index.
    - IFI Claims Patents Services Global 250 rankings, and its methodology, to identify the top 100 organisations with the largest patent portfolios (by active patent families owned by the company and its subsidiaries) globally and in Singapore.
- Overall, the analyses were descriptive. Median was used to measure central tendency and to compare the financial metrics between cohorts. The approach allowed for more visual presentation and interpretation, which we hope would also allow for greater transparency, and for the reader to interpret and draw conclusions.

# Methodological overview

## *To draw the global perspective*

**Our approach to identify the world's largest listed-companies that owned the most valuable brands and/or held the largest patent portfolios.**

- Forbes Global 2000 listed and ranked 2,000 public-listed companies across the world by size. Size was derived based on four financial metrics – revenue, net profit, total assets and market capitalisation – with each metric assigned equal weight.
- Rankings in the two most recent editions (2021 and 2022) of Forbes Global 2000 were averaged and re-ranked. The top 100 companies based on the averaged rank were shortlisted. These companies were termed the “world’s top 100 largest listed-companies” for this study.
- Five financial metrics – revenue, net profit, total assets, net assets and market capitalisation – were sourced. Two-year averages of the financial metrics were used for this study. Revenue, net profit, total assets and net assets were for the two most recent annual financial statements available as at April 2022. Market capitalisation was as at April 2021 and 2022. Depending on the financial year, the metrics could reflect economic conditions between 2Q 2019 and 1Q 2022.
- Global brands that were ranked top 100 most valuable in both the 2021 and 2022 editions of Brand Finance Global 500 Brands were mapped to the world’s top 100 largest listed-companies (as parent owners; for example, Google would be mapped to Alphabet). 48 out of the 100 companies were parent owners of brands ranked top 100 in both the 2021 and 2022 editions of Brand Finance Global 500 Brands. We defined these companies as those that owned the most valuable brands.
- Organisations that were ranked top 100 in both the 2021 and 2022 editions of IFI Claims Patent Services Global 250 rankings were mapped to the world’s top 100 largest listed-companies. The Global 250 ranked organisations based on the number of active patent families held by the organisation and its subsidiaries (majority owned) as at Jan 2022 and 2023. 20 out of the 100 companies met the criteria. We defined these companies as those that held the largest patent portfolios.
- The combined dataset was used for analysis, with median adopted as measure of central tendency.

*Source: Forbes Global 2000, 2021 and 2022 editions; Brand Finance Global 500 Brands, 2022 and 2023 editions; IFI Claims Patent Services Global 250, 2021 and 2022 editions.*

# Methodological overview

## *To draw the Singapore perspective*

### **Our approach to identify Singapore's largest SGX-listed companies that owned the most valuable brands and/or held patents**

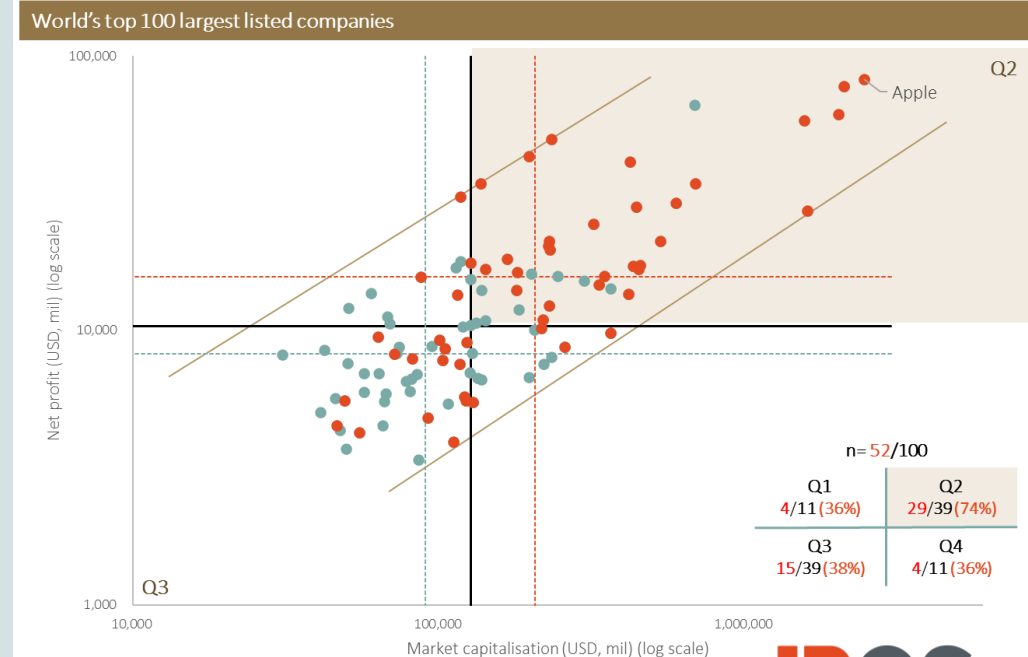
- The initial sample comprised of 310 Singapore Exchange (SGX) Mainboard-listed companies, including Real Estate Investment Trusts (REITs), that met the following requirements: Singapore-incorporated; primary-listing; not suspended as at end-November 2022; counter listed since November 2020 with at least 2 years of audited financials.
- The following financial metrics were sourced – revenue, net profit, total assets, net assets and market capitalisation. Revenue, net profit, total assets and net assets were for the two most recent annual financial statements available as at end November 2022, with market capitalisation as at the two financial year-end dates. Two-year averages of the financial metrics were used. Depending on the financial year, the metrics could reflect economic conditions between 4Q 2019 and 3Q 2022.
- A composite index to approximate company size was derived based on the Forbes Global 2000 methodology. From the derived index, the top 100 ranked were shortlisted. These companies were termed “Singapore’s top 100 largest SGX-listed companies” for this study.
- Singapore brands that were identified as top 100 most valuable Singapore brands in both the 2021 and 2022 editions of Brand Finance Singapore 100 were mapped to Singapore’s top 100 largest SGX-listed companies (as parent owners; for example, Scoot would be mapped to Singapore Airlines). 49 out of the 100 companies were parent owners of brands ranked in both the 2021 and 2022 editions of Brand Finance Singapore 100. We defined these companies as those that owned the most valuable brands.
- The number of active simple patent families held by Singapore’s top 100 largest SGX-listed companies and their subsidiaries (majority owned) were sourced using the PatSnap database. The approach replicated that used by IFI Claims Patents Services Global 250. 30 out of the 100 companies were parent owners of at least one active simple patent family (as at early 2023). We defined these companies as those that held the largest patent portfolios.
- The combined dataset was used for analysis, with median adopted as measure of central tendency.

Source: SGX StockFacts; Company annual reports; Brand Finance Singapore 100, 2021 and 2022 editions; PatSnap.

# Before we start

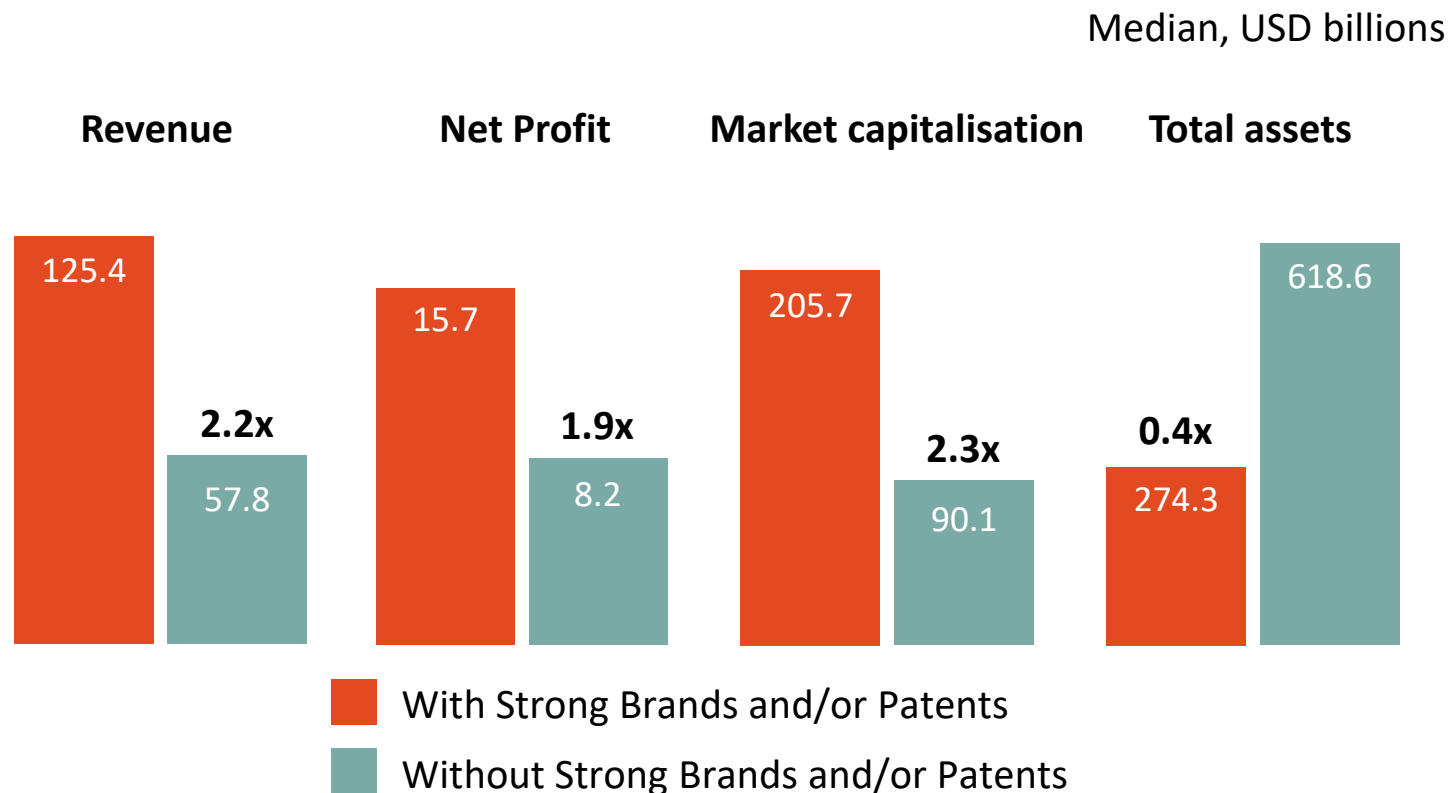
## How to interpretate our charts

- Each data-point represents a company. A total of 100 data-points, representing the top 100 largest companies, were plotted. In this plot, Apple would be found on the top right corner. Data-points in **orange** represented companies that had the most valuable brands and/or held the largest patent portfolios.
- The bold-line in **black** represented the median-values for the x and y-axis for all 100 companies. In this plot, the x-axis is market capitalisation and the y-axis is net profit. The dotted-line in **orange** represented the median-values for companies that had top brands and/or held the largest patent portfolios. The dotted-line in **teal** represented the median-values for companies that did not have the most valuable brands and/or held the largest patent portfolios.
- The scatterplot was split into four quadrants segregated by the median x and y-axis values for all 100 companies (bold-line in **black**). For example, quadrant 2 ("Q2"), on top right, represented all companies with x-axis value above median and y-axis value above median.
- Counts were provided in the box on the bottom right. The number of top 100 largest companies in each quadrant is presented in **black**, with the number of companies that had the most valuable brands and/or held the largest patent portfolios in **orange**. The share of companies in each quadrant that had the most valuable brands and/or held the largest patent portfolios was presented in brackets. In the plot shown, 52 out of the 100 largest companies had the most valuable brands and/or held the largest patent portfolios. In the "Q2" quadrant, 29 (or 74%) of the 39 companies in the quadrant had the most valuable brands and/or held the largest patent portfolios.



## Global companies with strong brands and/or patent portfolios had about double the revenue, net profit and market capitalisation

- Among the world's top 100 largest listed-companies, those with the most valuable brands or held the largest patent portfolios outperformed their peers.
- On average, those companies generated 2.2x more revenue, 1.9x more profit and had 2.3x higher market capitalisation.
- However, those companies generated these gains with 0.4x lower total assets.
- There is a clear disconnect between performance and the assets (predominantly tangible assets) used to drive it – a disconnect that suggests it is intangible assets that drive performance of today's corporate giants.



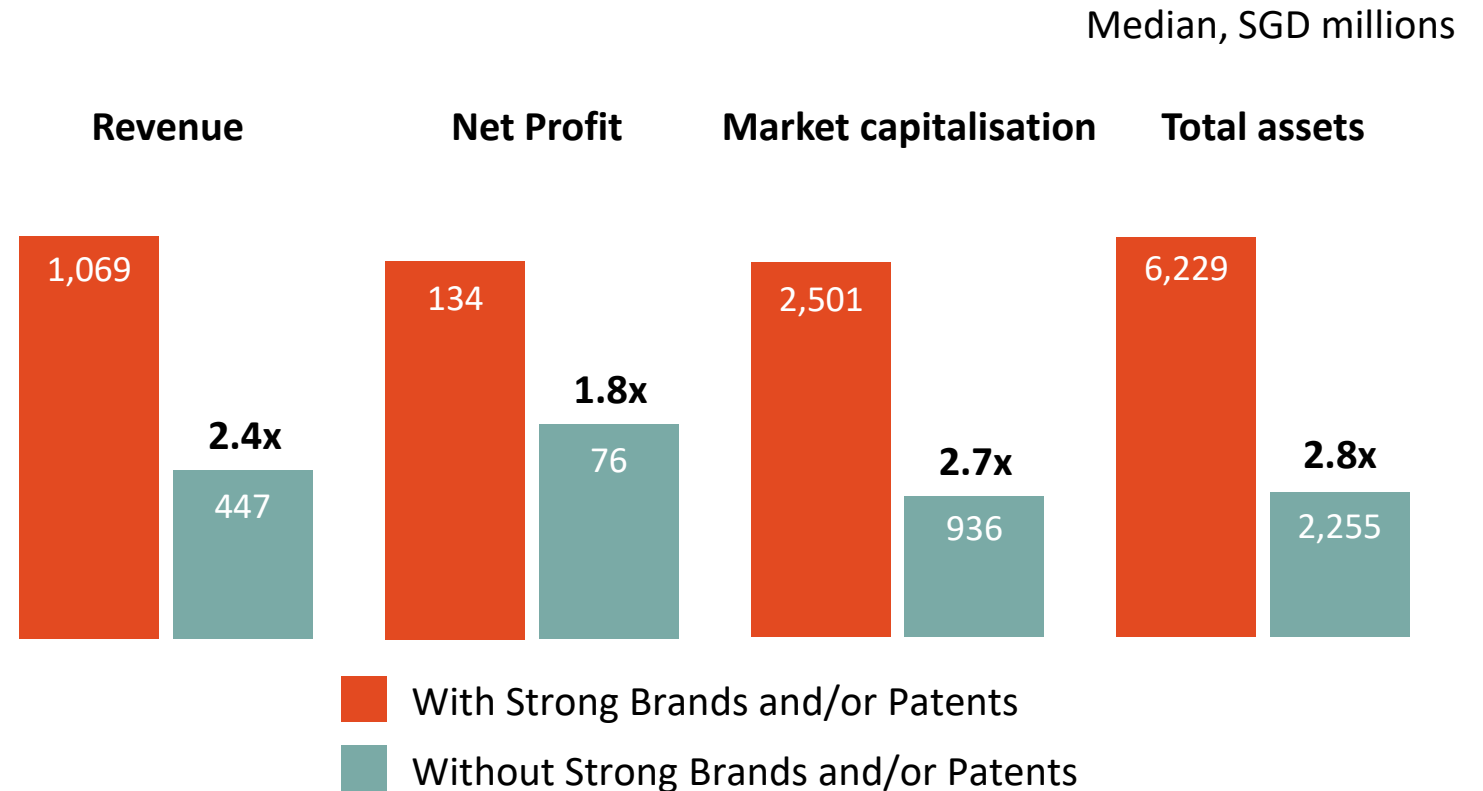
*“With strong brands and/or patents”*: Companies that were the owners of the most valuable brands and/or largest patent portfolios. Financial metrics were two-year averages. *“With Strong Brands and/or Patents”*, n-size: 52; *“Without strong brands and/or patents”*, n-size: 48. Source: Forbes Global 2000, 2021 and 2022 editions; Brand Finance Global 500 Brands, 2022 and 2023 editions; IFI Claims Patent Services Global 250, 2021 and 2022 editions.



## Singapore companies with strong brands and/or patent portfolios had about double the revenue, net profit and market capitalisation

- Among Singapore's top 100 largest SGX-listed companies, those with the most valuable brands or own patented technologies outperformed their peers.
- On average, those companies generated 2.4x more revenue, 1.8x more profit and had 2.7x higher market capitalisation.
- However, unlike the global cohort, those companies have more assets (by 2.8x).\*
- Those top Singapore companies, while pre-dominantly in "tangible asset heavy" sectors like financial services or real estate, recognised the importance of building brands and using technology to secure a competitive advantage, contributing to higher revenues, profits and market capitalisation.

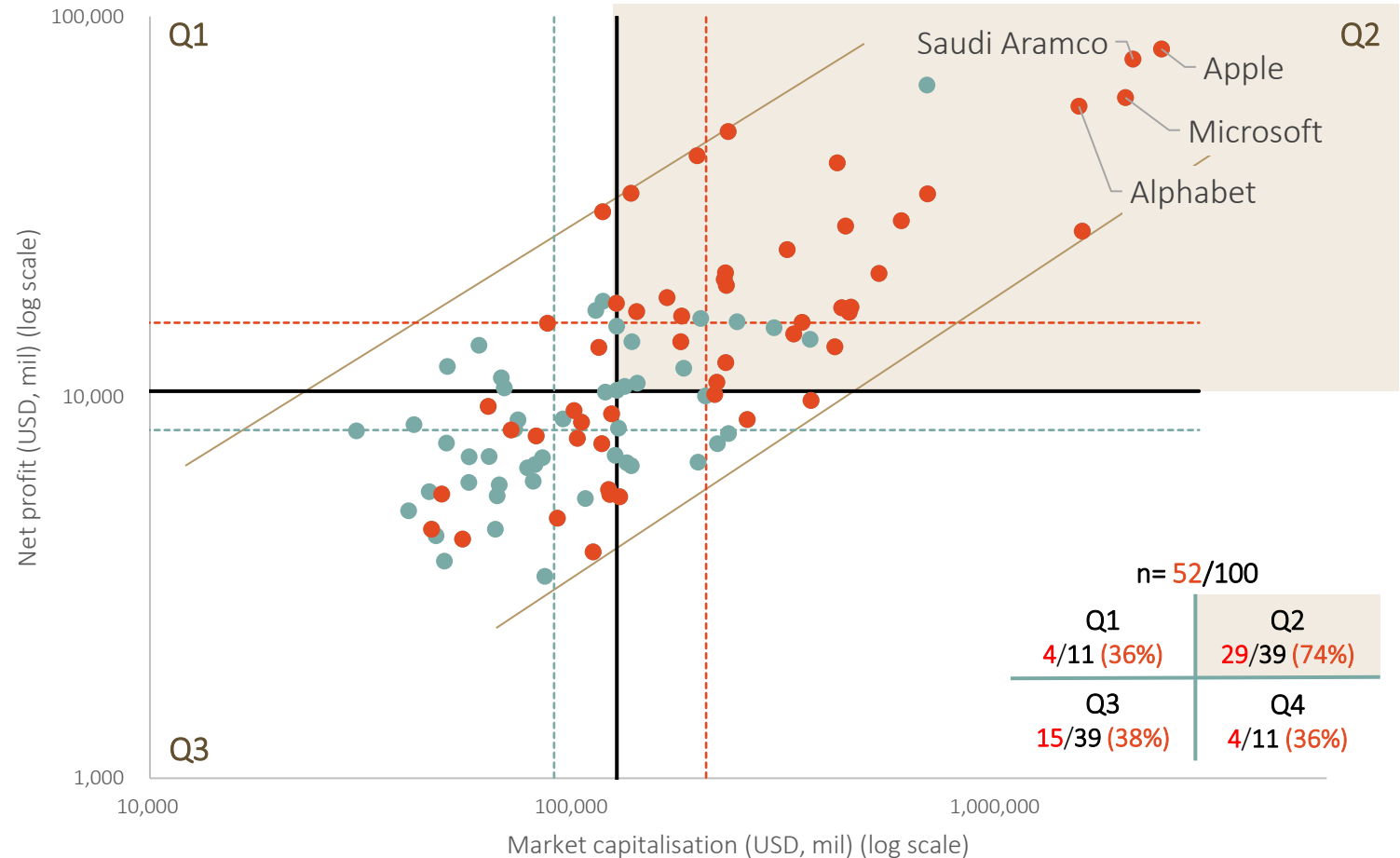
\* Refer to slide 14.



*"With strong brands and/or patents": Companies that were the owners of the most valuable brands and/or largest patent portfolios. Financial metrics were two-year averages. "With Strong Brands and/or Patents", n-size: 58; "Without strong brands and/or patents", n-size: 42. Source: SGX StockFacts; Company annual reports; Brand Finance Singapore 100, 2021 and 2022 editions; PatSnap.*

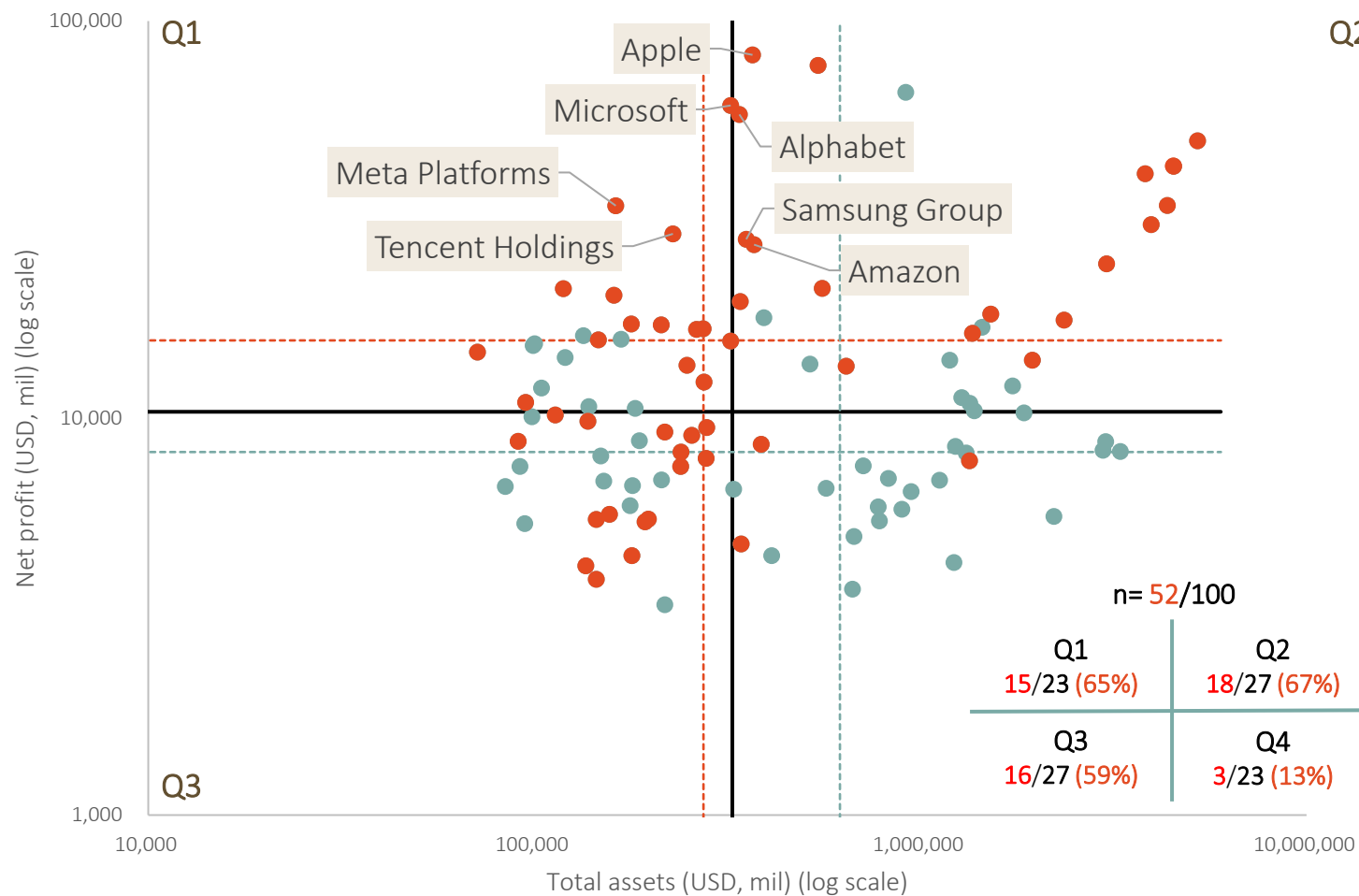
## Company performance is no longer driven solely by tangible assets

- While company performance in terms of profitability in the recent past is only one of many potential factors that influences how investors may value a company, we would expect to find correlation between the two (although, companies could continue to be highly valued despite recent losses if investors expect strong future performance).
- A positive correlation could indeed be observed between net profit and market capitalisation among our list of the world's top 100 largest companies.
- Companies that had the most valuable brands or held strong patent portfolios were on the higher-end of the spectrum – with 74% representation in the “Q2” quadrant (i.e., with above average net profit and market capitalisation).



# The disconnect suggests another asset class in play

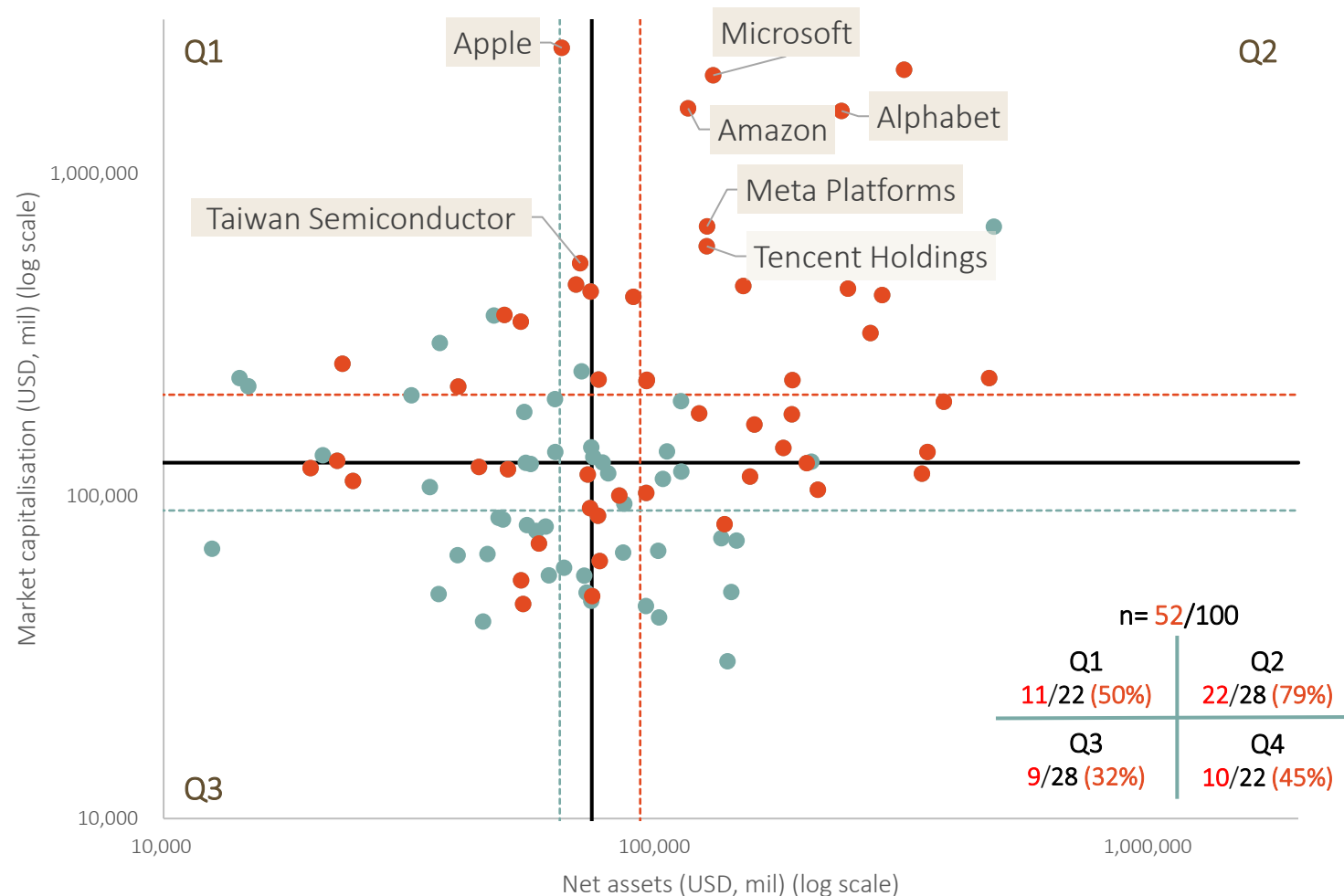
- However, the correlation was less evident when net profits was plotted against total assets.
- Traditionally, tangible assets (factories, machinery, etc.) were required to create more products, bring in more sales and grow profits, and therefore correlation between total assets (which captured mostly tangible assets) and performance indicators like revenue or profit could be expected.
- But among the global giants of today, the relationship between tangible assets and performance has weakened.
- The disconnect suggests an alternative source of assets was used to generate value and achieve competitive advantage.



# Our findings suggest that intangible assets like brands and patents help companies outperform

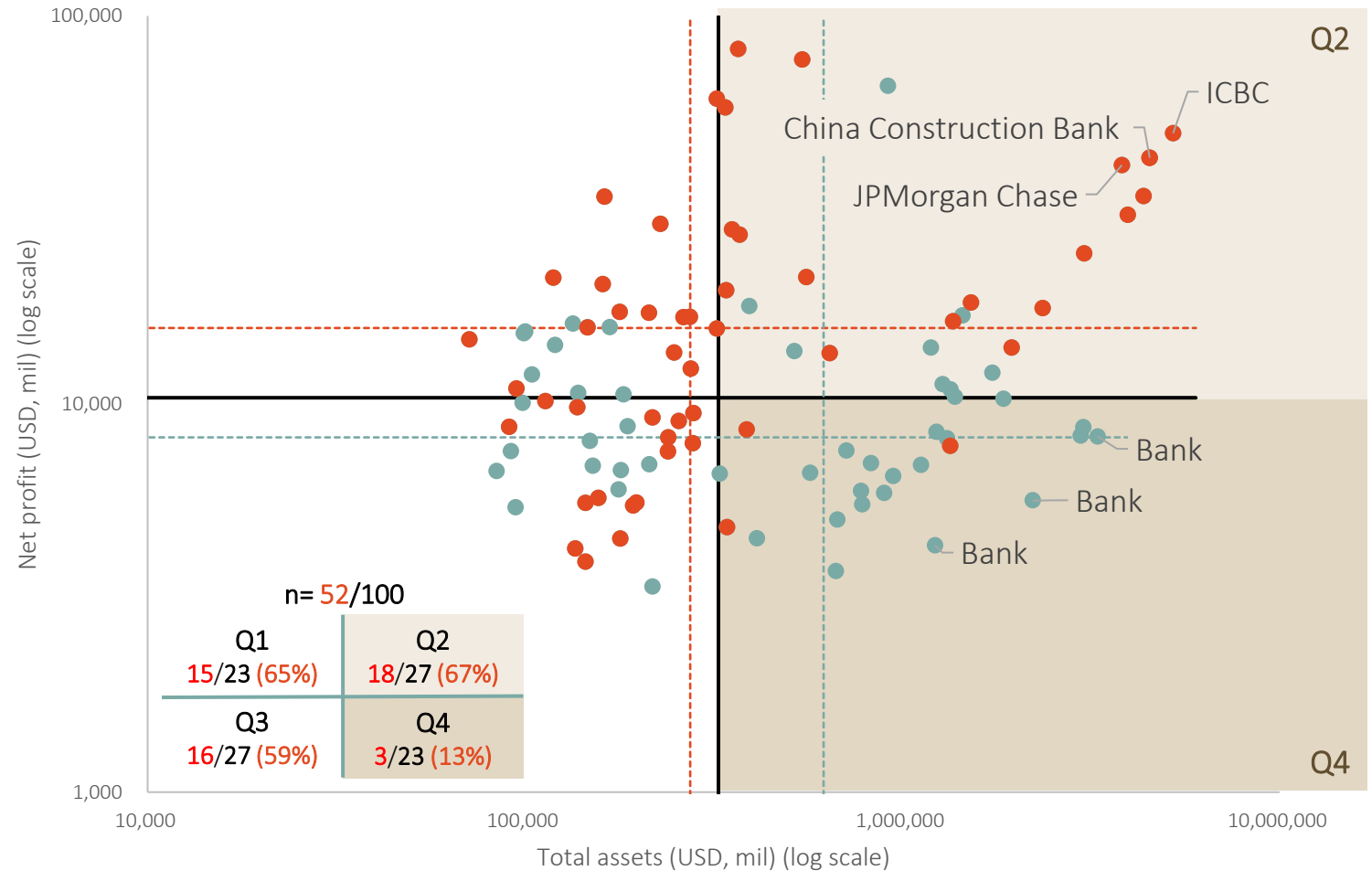
- Similarly, correlation was also less evident when market capitalisation (i.e., a firm's market value) was plotted against net assets (i.e., a firm's book value).
- Brand Finance, based on the difference between enterprise value and tangible asset value, estimated global intangible asset value to be at US\$57 trillion in 2022.<sup>1</sup>
- Ocean Tomo, based on the difference between market capitalisation and net tangible asset value, estimated that in 2020, 90% of S&P 500 market value were in intangible assets.<sup>2</sup>
- Among the global giants of today, companies appear to be driven by their intangible assets.

<sup>1</sup> GIFT 2022, Brand Finance. <sup>2</sup> Ocean Tomo IAMV Study.



## Regardless of asset size, strong brands and patents help global companies deliver stronger profits

- We believe that intangible assets help companies in “tangible asset heavy” sectors as well.
- Compare the “Q2” and “Q4” quadrants. Both quadrants comprised of companies that were asset heavy – but of those that achieved higher profits (i.e., “Q2” quadrant), a larger proportion of companies had the most valuable brands and/or the largest patent portfolios (67%, as compared to 13% in the “Q4” quadrant).
- For example, banks with top brands like ICBC, China Construction Bank and JP Morgan Chase outperformed other banks of similar asset-size but with less recognised brands.
- Intangible assets benefit all companies, regardless of asset size.

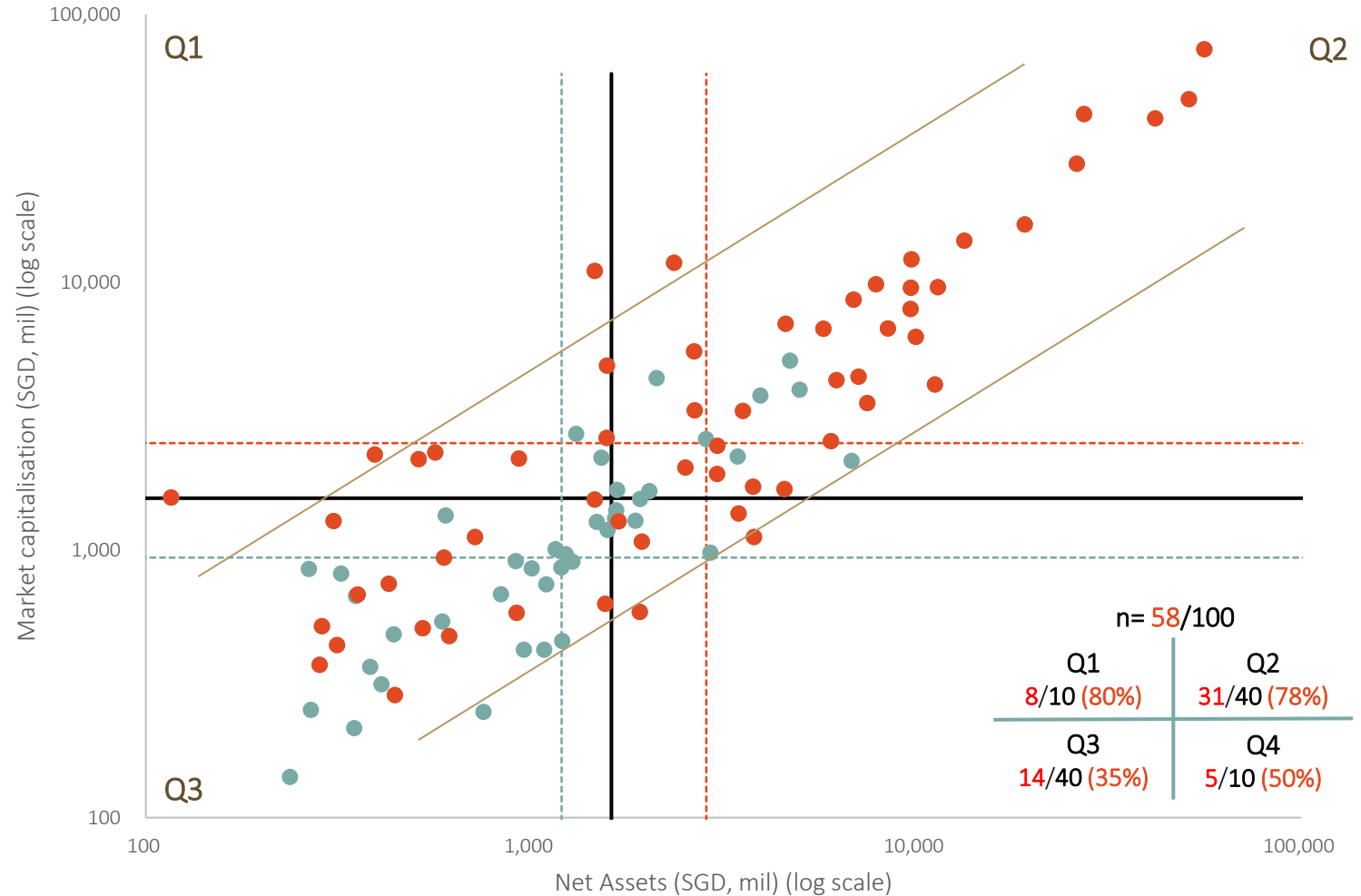


# Singapore's largest companies are mostly in "tangible asset heavy" sectors

- The disconnect between market capitalisation and net assets among global leaders was not as evident among Singapore's largest SGX-listed companies.
- This may be due to the sectoral profile of the companies in our sample.

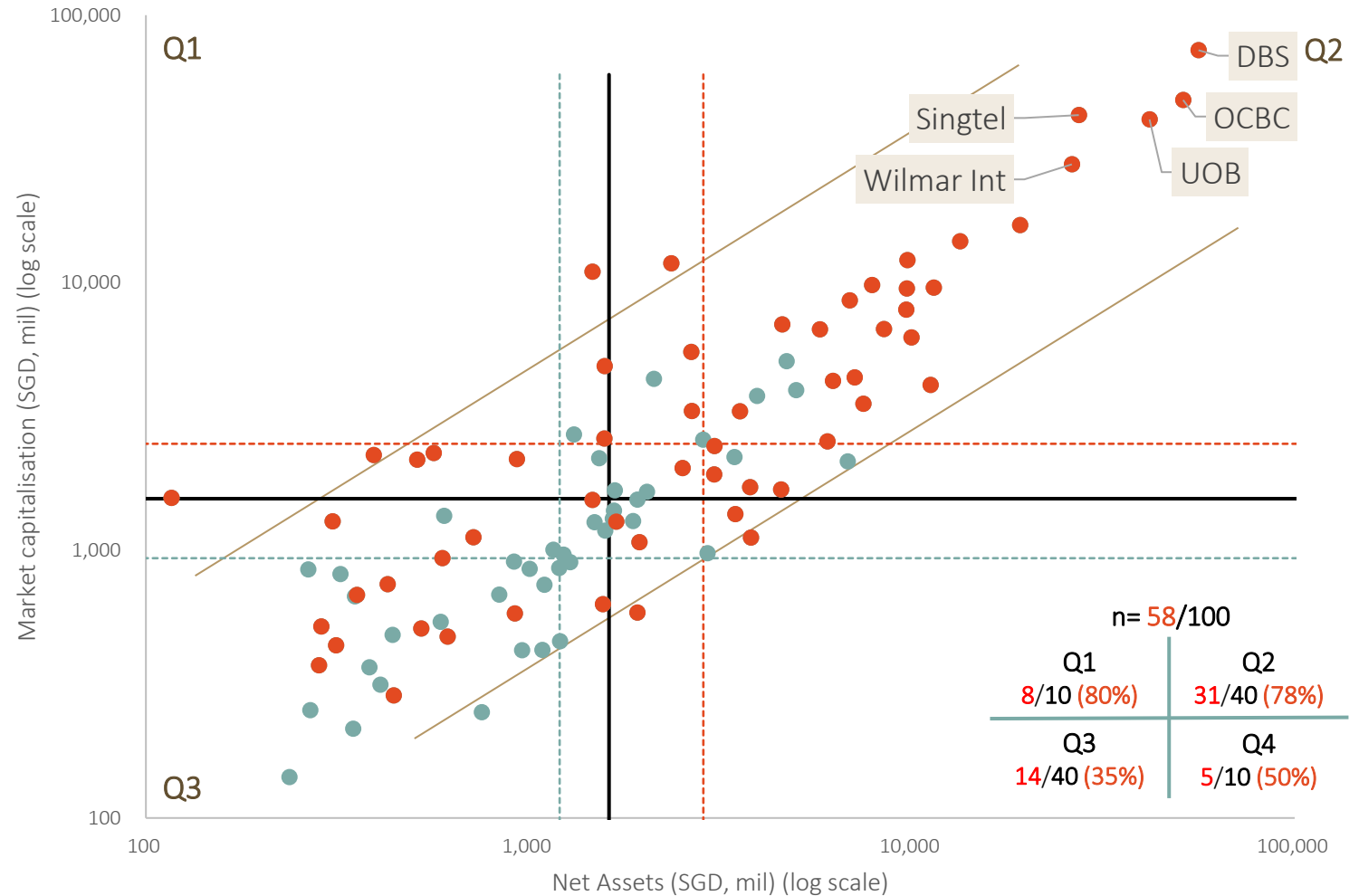
For instance:

- 36% by count and 24% by market capitalisation were companies in real estate, including REITs. None of the 100 companies in the global sample were dedicated real estate companies.
- Banks, though fewer in numbers, were dominant in terms of market capitalisation with 35% share.
- This suggests that a larger proportion of Singapore's largest companies were in "tangible asset heavy" sectors.



## Even so, intangible assets have benefited them too

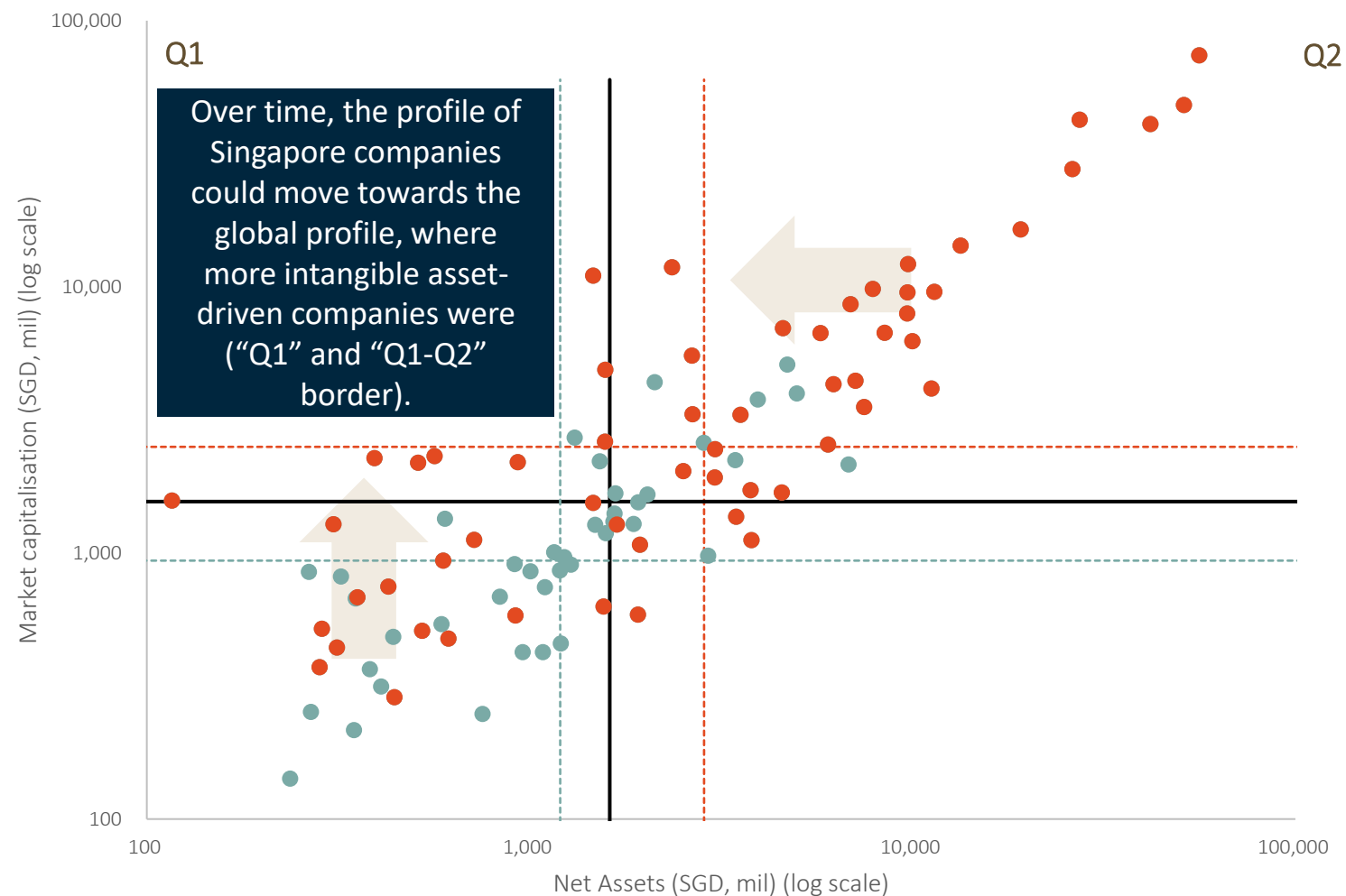
- Nonetheless, and similar to the global profile, companies that owned top brands and held patents tend to out-perform.
- Compare the “Q1” and “Q2” quadrants (which had above average market capitalisation) with the rest – both quadrants had close to 80% representation of companies that owned top brands and held patents.
- DBS, OCBC and UOB were ranked top 3 most valuable Singapore brands by Brand Finance in the last two years.
- Singtel and Wilmar International, apart from being recognised for their brands, were also among the largest active patent family holders among the 100 companies.



## In future, more intangible asset-driven companies could emerge

- The contrast with the global profile\* suggests a possibility that more intangible asset-driven companies could grow in size and emerge into the top 100.
- If so, over time, we could observe a movement of companies towards the "Q1" quadrant (similar to Apple) or close to the border between "Q1" and "Q2" quadrants (similar to where we see Microsoft or Amazon).

\* In reference to slide 12.

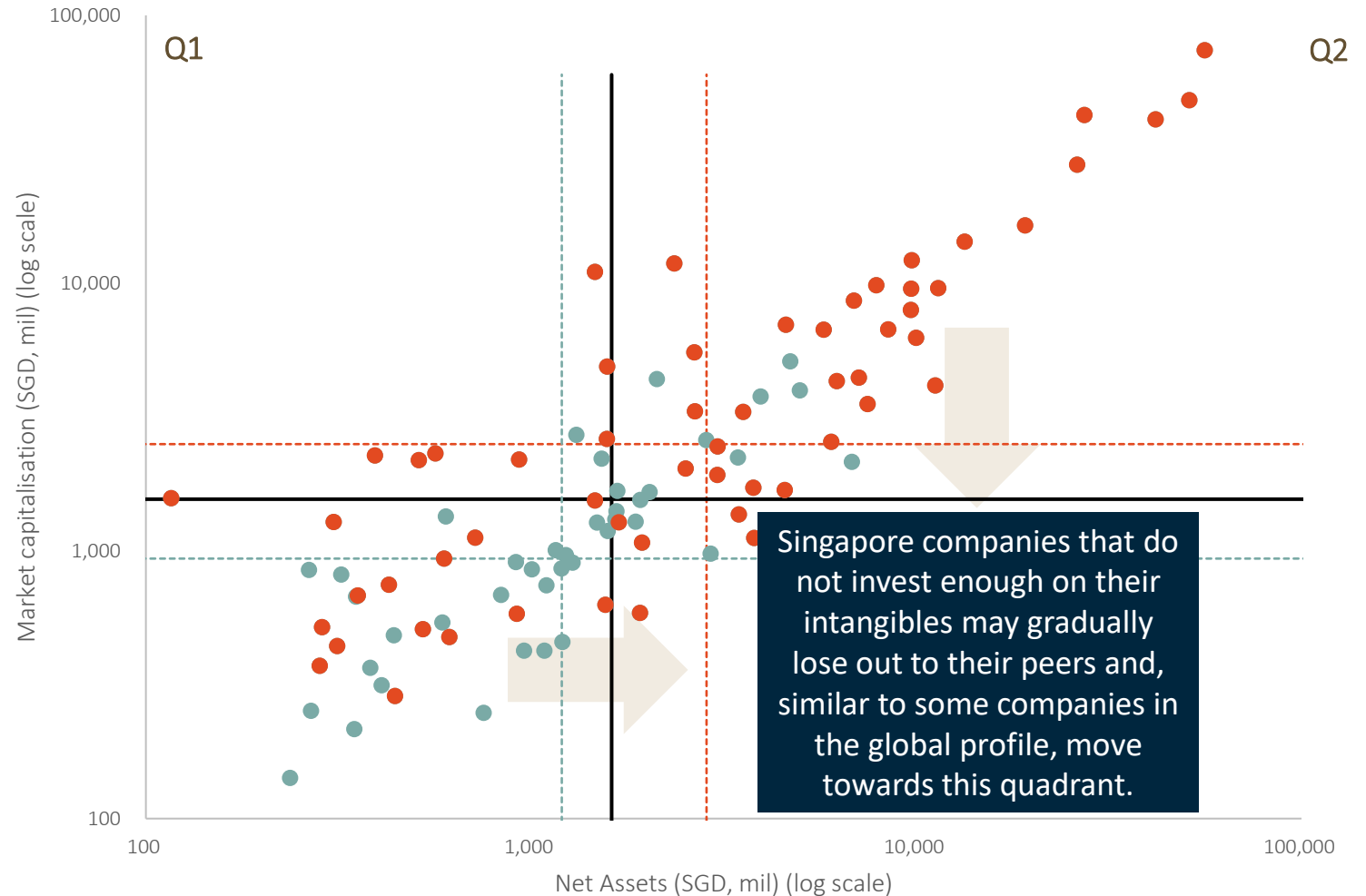




## In addition, tangible asset heavy companies will recognise intangibles as a differentiator

- As observed in the global profile\*, “tangible asset heavy” companies stand to gain from building their intangibles as well.
- Over time, “tangible asset heavy” Singapore companies that did not invest enough in their intangibles for competitive advantage and productivity gains may slowly lag behind their peers, and miss the potential for greater value creation.
- The giants of today should look into building their intangibles – both institutional capabilities and assets – that can generate value for the future.

\* In reference to slide 13.



## Limitations and considerations

- We would highlight the followings limitations of our analysis:
  - As the approach utilised was descriptive, the approach did not incorporate empirical controls (i.e., to remove effects from external factors like differences in industries, economic conditions, etc.).
  - A longer data period (beyond 2 years used) would add more rigour, especially in consideration of the state of flux in global economic conditions over the analysis period used.
  - The analysis was restricted to the top 100 largest companies, thus it was a small sample. Part of the reason for this:
    - Control for firm-size. Typically, financial metrics were adjusted to control for firm-size (for example, by dividing the financial metrics by the number of employees). As we did not have employment data, we did not do so. Instead, by restricting to the top 100 largest, we worked on the assumption that the companies within were comparable in size.
    - As we relied on external rankings, we were limited by the number of companies/brands included in the external rankings referenced. Thus, we decided to perform the analysis on a common “top 100” pool – i.e., the top 100 largest companies, the top 100 most valuable brands and the top 100 organisations with the largest active patent families. We have also used two years of rankings to make the “top 100” selection more robust.
  - We would note that the use of external rankings resulted in binary outcomes (i.e., a company was either in the top 100 rankings or not) but that the underlying metrics (i.e., brand-value and size of patent portfolio) were flow values. In future, an analysis using the underlying metrics could be attempted.
  - We would also note that a company’s market value depended on many factors; and that from our analysis it was not possible to conclude causality.

# ANNEX

## Additional findings – global perspective

*Comparison of financial metrics between those that held “brands” and/or “patents” and those that did not*

Median; in USD, billions:	Revenue	Net Profit	Market Capitalisation	Total Assets
<b>Top 100 largest (n=100)</b>	79.9	10.4	126.7	325.4
Recognised for their:				
<b>Brands (n=48)</b>	128.2 (2.2x)	16 (2x)	216.8 (2.4x)	279.1 (0.5x)
<b>Patents (n=20)</b>	123.1 (2.1x)	15.2 (1.8x)	216.8 (2.4x)	234.2 (0.4x)
<b>Brands and/or Patents (n=52)</b>	125.4 (2.2x)	15.7 (1.9x)	205.7 (2.3x)	274.3 (0.4x)
<b>Brands and Patents (n=16)</b>	123.7 (2.1x)	18.6 (2.3x)	222.6 (2.5x)	251.1 (0.4x)
<b>Brands only (n=32)</b>	130.8 (2.3x)	15.7 (1.9x)	188 (2.1x)	332 (0.5x)
<b>Patents only (n=4)</b>	106.7 (1.8x)	8.6 (1.1x)	97.2 (1.1x)	209.2 (0.3x)
<b>Neither Brands nor Patents (n=48)</b>	57.8	8.2	90.1	618.6

*In brackets: as multiples of 'Neither Brands nor Patents'. Financial metrics are two-year averages (see methodological overview) and in USD, billions.*

- The financial metrics were two-year averages. Revenue, net profit, and total assets were for the two most recent annual financial statements available as at April 2022. Market capitalisation was as at April 2021 and 2022.
- “Brands” referred to companies that were parent owners of the most valuable brands (i.e., brands that were ranked top 100 most valuable in both the 2021 and 2022 editions of Brand Finance Global 500 Brands).
- “Patents” referred to companies that held that largest patent portfolios (i.e., companies that were ranked top 100 in both the 2021 and 2022 editions of IFI Claims Patent Services Global 250 rankings (based on the number of active patent families held by the organisation and its subsidiaries)).

*Source: Forbes Global 2000, 2021 and 2022 editions; Brand Finance Global 500 Brands, 2022 and 2023 editions; IFI Claims Patent Services Global 250, 2021 and 2022 editions.*

## Additional findings – Singapore perspective

*Comparison of financial metrics between those that held “brands” and/or “patents” and those that did not*

Median; in SGD, millions:	Revenue	Net Profit	Market Capitalisation	Total Assets
<b>Top 100 largest (n=100)</b>	655	95	3,225	1,560
Recognised for their:				
<b>Brands (n=49)</b>	1,077 (2.4x)	136 (1.8x)	3,307 (3.5x)	6,533 (2.9x)
<b>Patents (n=30)</b>	2,201 (4.9x)	133 (1.7x)	3,314 (3.5x)	6,229 (2.8x)
<b>Brands and/or Patents (n=58)</b>	1,069 (2.4x)	134 (1.8x)	2,501 (2.7x)	6,229 (2.8x)
<b>Brands and Patents (n=21)</b>	3,390 (7.6x)	154 (2x)	5,510 (5.9x)	6,533 (2.9x)
<b>Brands only (n=28)</b>	629 (1.4x)	134 (1.8x)	2,232 (2.4x)	6,193 (2.7x)
<b>Patents only (n=9)</b>	891 (2x)	126 (1.7x)	681 (0.7x)	873 (0.4x)
<b>Neither Brands nor Patents (n=42)</b>	447.0	76.0	936.0	2,255

*In brackets: as multiples of 'Neither Brands nor Patents'. Financial metrics are two-year averages (see methodological overview) and in SGD, millions.*

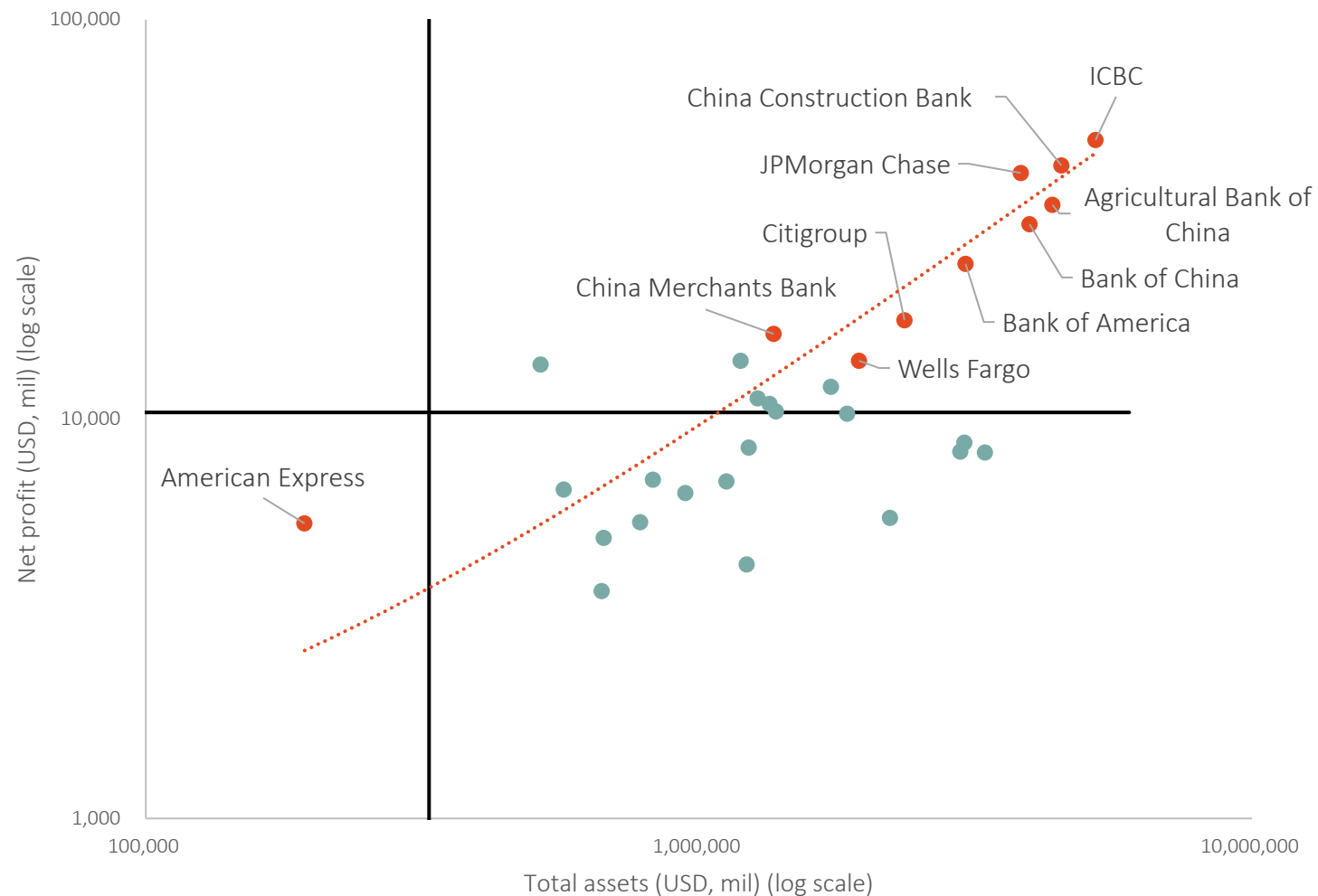
- The financial metrics were two-year averages. Revenue, net profit, and total assets were of the two most recent annual financial statements available as at end November 2022, with market capitalisation as at the two financial year-end dates.
- “Brands” referred to companies that were parent owners of the most valuable brands (i.e., brands that were ranked top 100 most valuable Singapore brands in both the 2021 and 2022 editions of Brand Finance Singapore 100).
- “Patents” referred to companies that were parent owners of at least one active simple patent family.

*Source: SGX StockFacts; Company annual reports; Brand Finance Singapore 100, 2021 and 2022 editions; PatSnap.*

# Looking at the world's largest global banks

*Banks with the most valuable brands out-performed other banks of similar asset-size*

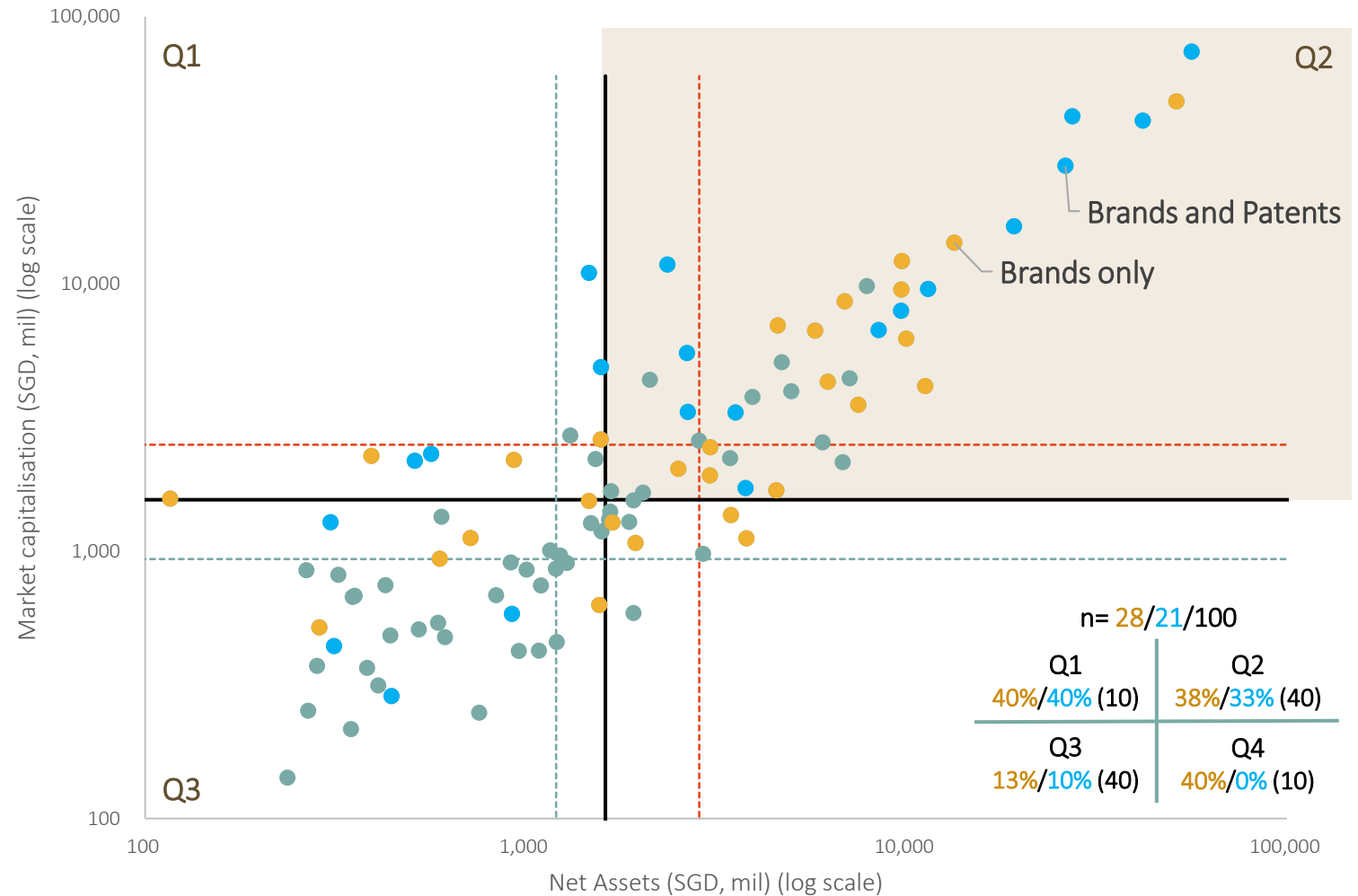
- This analysis zoomed in on an “asset heavy” sector – banking – to examine if there was a difference in profit performance between banks which had strong brands and/or patent portfolios compared to their peers.
- 30 among our sample of the world's top 100 largest listed-companies were in banking and financial services. Of these, 10 had top brands or held strong patent portfolios. We fit a regression line to these 10 banks. The line suggested the average profit expected for a given level of total assets.
- Most of the 20 banks that were not in our list of companies with strong brands and/or patent portfolios achieved lower profit for their given level of assets as compared to the 10 banks that owned top brands or held strong patent portfolios.



# Differentiating “Brands and Patents” and “Brands only” companies

*Companies that have both brands and patents mostly in the “Q2” quadrant*

- We isolated the top 100 largest Singapore SGX-listed companies into:
  - Those that had both top brands and held strong patent portfolios (“brands and patents”),
  - Those that had top brands but did not hold strong patent portfolios (“brands only”).
- While companies that had both top brands and held strong patent portfolios (“brands and patents”) were present in most quadrants, they were predominantly in the “Q2” quadrant (about 2/3 of the 21 companies) where companies with above median market capitalisation and net assets reside.



# Adding to the pool of largest Singapore SGX-listed companies

*Taking a look at where SEA, Grab and Razer would place*

- Due to our research design, we had only shortlisted Singapore companies that were listed on SGX.
- SEA (Garena), Grab and Razer – companies with strong roots in Singapore and South East Asia – were not in our base sample as they were listed on other exchanges.
- We plot out where these companies would be<sup>^</sup> among the Singapore top 100 largest SGX-listed companies included in our study.
- These companies, which are known for their strong intangible assets, placed in the “Q1” quadrant (Razer) or close to the border between the “Q1” and “Q2” quadrants (SEA and Grab). This is similar to the positions of Apple, Microsoft, Alphabet and Meta Platforms on the plot of global companies.



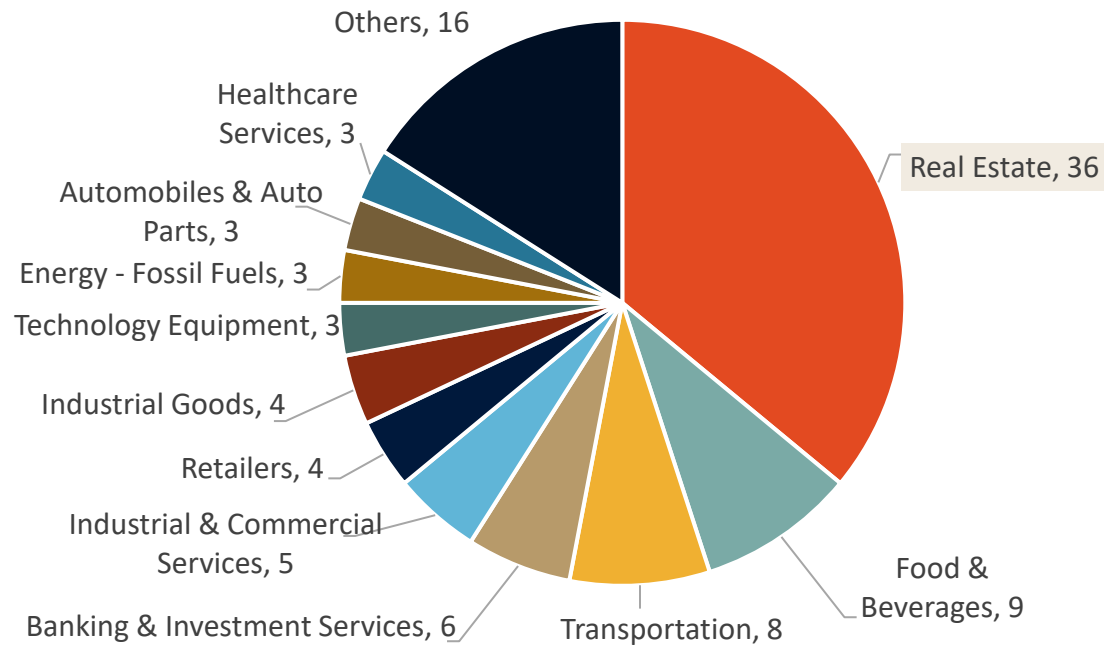
<sup>^</sup>Based on latest available annual financials (2022 for SEA and Grab; 2021 for Razer) and market capitalisation as at March 2023.



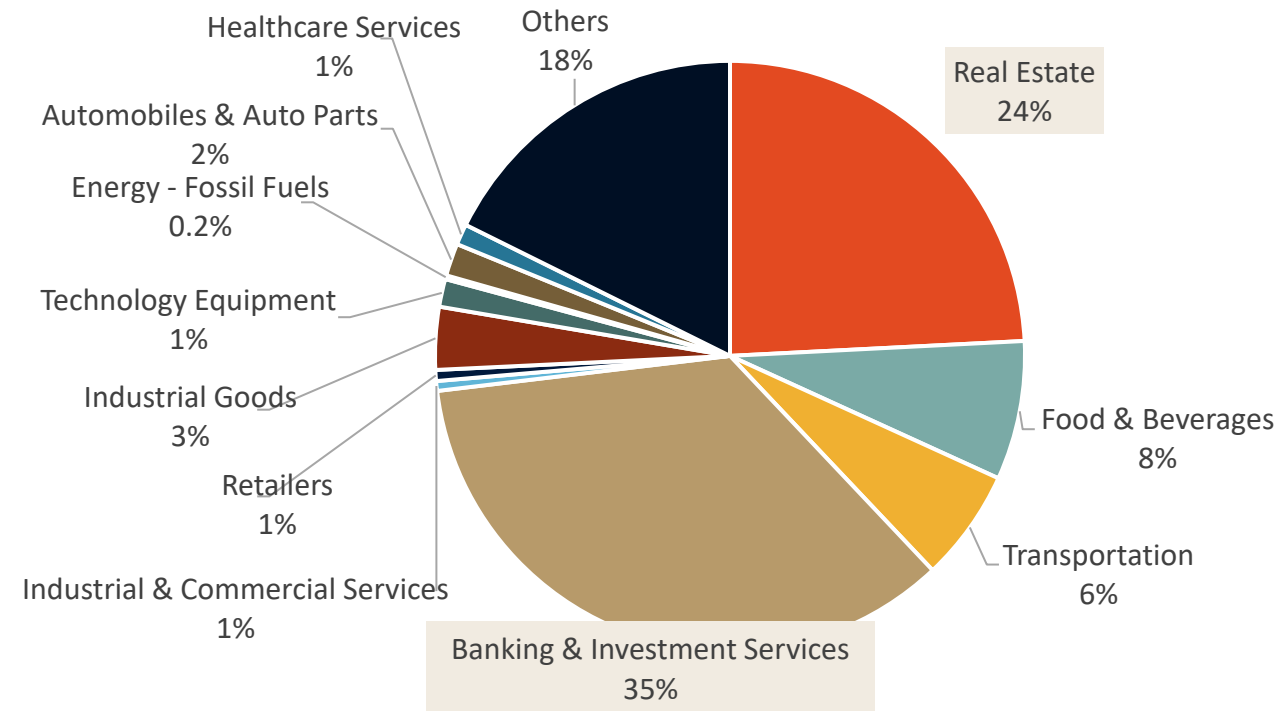
# Number of companies and market capitalisation by sector

Learning more about the Singapore companies used in our analysis

Number of companies by sector



Market capitalisation by sector (% of total)



▪ In our sample, real estate (36%) was the largest sector by count. This was partly due to the inclusion of REITs.

▪ In our sample, banking and investment services (35%) and real estate (24%) were the largest sectors by market capitalisation.

Source: SGX StockFacts.

# Companies in the "Q1" and near the "Q1-Q2" border

Learning more about the Singapore companies used in our analysis

