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Ocean Tomo  
Intangible Asset  
Market Value Study



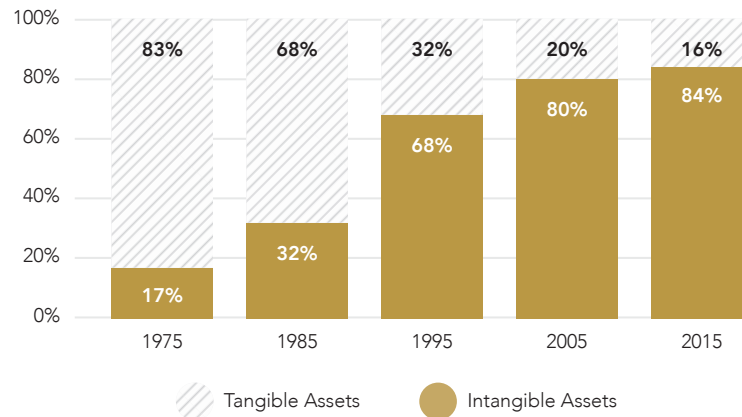
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INTANGIBLE ASSET MARKET VALUE STUDY

## INTANGIBLE ASSET MARKET VALUE STUDY

Ocean Tomo has released an update to the Annual Study of Intangible Asset Market Value (IAMV). The study examines the components of market value, specifically the role of intangible assets across a range of global indexes. In this update, IAMV is calculated by subtracting net tangible asset value from market capitalization.

### COMPONENTS OF S&P 500 MARKET VALUE



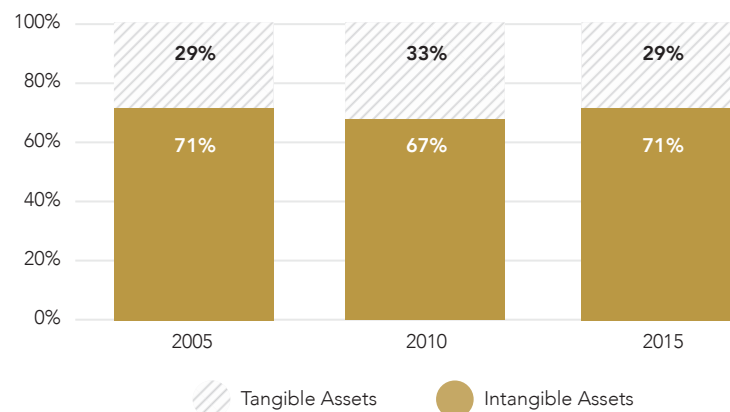
While emphasis is often on technology-driven intangible assets such as patents and trade secrets, brand value is also an important component of IAMV. This year for the first time we compare IAMV calculations to Interbrand's Best Global Brands 2016 calculation of brand value. Comparing the 39 companies appearing on both the S&P 500 and the Interbrand list suggests brand value may represent roughly one quarter or more of average IAMV.

Also for the first time, we have expanded our IAMV study beyond the S&P 500 to explore the components of value in several key international markets. Stock market indexes from Europe, China, Japan and South Korea were selected and analyzed to determine the comparable role of intangible assets.

### S&P EUROPE 350

The S&P Europe 350 index comprises 350 leading blue-chip companies from 16 developed European markets. The authors analyzed the index from 2005 to 2015 to determine how IAMV has changed over time.

### COMPONENTS of S&P EUROPE 350 MARKET VALUE

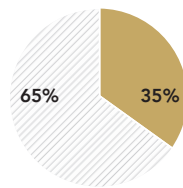


As depicted in the bar graph above, IAMV was comparable at the beginning and end of the ten-year period, with a dip in between that may have been due to the global financial crisis that began in late 2007. Compared to other developed regions, Europe's overall economy has been slower to recover, as euro-zone GDP in the final quarter of 2015 was still below pre-2008 levels. The financial crisis appears to have had a specific impact on Europe's innovation economy. According to a publication from the European Commission, Europe has recently lagged behind countries like Japan and South Korea in terms of innovation, but plans to focus on this more heavily in the future to help boost the overall economy. Current innovation activity levels notwithstanding, Europe remains second only to the U.S. in the relative contribution of intangible assets to market capitalization as measured by this study and is still well ahead of the major Asian markets.

## ASIAN MARKETS

The authors also analyzed IAMV for major Asian equity markets. Due to lack of comparable data, we limited our analysis to 2015. Based on the data, IAMV appears to be a much smaller component of overall market cap in Asia than in Western economies.

### 2015 INTANGIBLE ASSET MARKET VALUE SHANGHAI SHENZHEN CSI 300



2014-2015 GROWTH RATE: -14%



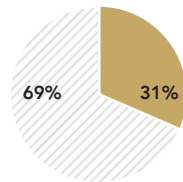
Tangible Assets



Intangible Assets

China's Shanghai Shenzhen CSI 300 Index is a free-float weighted index comprising 300 A-share stocks listed on the Shanghai or Shenzhen Stock Exchanges. IAMV for this index is approximately half of that for the S&P Europe 350 and analysis shows IAMV fell 14% from 2014 to 2015. Although care must be exercised when examining limited data points, this downward movement may be linked to China's slowing economy.

### 2015 INTANGIBLE ASSET MARKET VALUE NIKKEI 225



2014-2015 GROWTH RATE: +14%



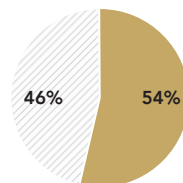
Tangible Assets



Intangible Assets

Japan's Nikkei-225 Stock Average is a price-weighted average of 225 top-rated Japanese companies listed in the First Section of the Tokyo Stock Exchange. IAMV grew 14% in Japan from 2014 to 2015, indicating Japan's continued recovery from the global financial crisis. However, IAMV seems to be a somewhat surprisingly small portion of the Japanese economy as measured by this study. We believe this could be in part due to Japan's loss of tech share to countries such as China and South Korea, which have become innovation powerhouses in the past several years with the rise of companies such as Huawei, ZTE and Samsung.

### 2015 INTANGIBLE ASSET MARKET VALUE KOSDAQ COMPOSITE INDEX



2014-2015 GROWTH RATE: +26%



Tangible Assets



Intangible Assets

Korea's KOSDAQ Index is a capitalization-weighted index that measures the performance of the KOSDAQ market, a collection of South Korean equities. The data shows an increase in IAMV over the past two years.

## IN CONCLUSION

Data spanning more than a quarter century for the U.S. make it clear the economy is inverting from one where value was measured by "touch" to one where value is driven by thought. This change has been no less significant than the industrial revolution more than a century ago. Although a similar time series of data is not available for European and Asian markets, simple observation of the nature of companies that increasingly dominate these economies suggest something of the same nature has occurred and is likely continuing to occur there. Further data and analysis will be available as time progresses, and are required to more fully understand and predict innovation trends.



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# About Ocean Tomo

Ocean Tomo, **the Intellectual Capital Merchant Bank® firm**, provides financial services related to intellectual property and intangible assets including financial expert testimony, valuation, strategy consulting, patent analytics, investment advisory, innovation management consulting and transaction brokerage.

Our Opinion, Management, and Advisory Services are built upon more than three decades of experience valuing intellectual property in the most rigorous of venues – State, Federal and international courts. Our financial, market and technical experts provide a unique understanding of the contributory value of proprietary innovation. This is the cornerstone of our business. This insight permeates every practice and client engagement.

Collectively, Ocean Tomo professionals have:

- Completed over 1000 engagements involving IP worth in excess of \$10 billion including over 300 valuation and 500 financial damages expert testimony engagements;
- Successfully closed hundreds of IP sale transactions with a cumulative transaction value well in excess of \$750 million;
- Served as a trusted advisor involving the biggest IP transactions in history;
- Originated more successful IP monetization solutions than any other firm, including creation of the world's oldest and most successful live patent auction.

Our track record of results spans more than 100 different industry segments. Because our past success provides the best indication of our capabilities, we are proud to feature a few representative engagements and encourage potential clients to seek references from past clients.

Subsidiaries of Ocean Tomo include: Ocean Tomo Investment Group, LLC, a licensed broker-dealer under Federal and State securities law (brokercheck.finra.org Broker Check CRD #: 172912); OTI Data Networks, LLC and Patent Marking, LLC.

Ocean Tomo assists clients – corporations, law firms, governments and institutional investors – in realizing Intellectual Capital Equity® value broadly defined.

## A HISTORY OF LEADERSHIP

For more than 30 years, Ocean Tomo professionals have led the field with respect to intellectual capital thought leadership. Select milestones of achievement include:

**Organized** the first national practice to offer IP valuation opinions.

**Created** the first scaled investment banking practice, in partnership with leading Wall Street firm, dedicated exclusively to patent based structured finance.

**Established** a Live Public Auction Marketplace for IP rights.

**Created** the Ocean Tomo 300® Patent Index – the nation's first index based on the value of intellectual property.

**Introduced** the first rating of Chinese patent quality, the OTR™ Score for Chinese patents.



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