



## ▶ IN PURSUIT OF KOREAN INTANGIBLES

Over the past decades, South Korea has transformed itself into a knowledge-based economy. It has displayed an increasing commitment to research and development (R&D), (see fig.1), education, and marketing and brand building. All are intangible investments intended to create strategic assets for sustainable long-term growth.

This major market composition change does not seem to have been fully recognised by investors, and this change is significant. Since the Global Financial Crisis, for example, Korea's technology stock market capitalisation has risen from 30.9% to 46.4%. The health care sector surged from 0.7% to 6.2%. Financial services remained stable at 13%<sup>1</sup>.

A major disparity remains, for example, between South Korea's equity performance and that of other equity markets, especially the US in the past 10 years. This disparity is arguably due to investors undervaluing Korea' hitherto intangibles. Over the past 10 years, South Korean equities – as a ratio of the country's growth in intangible assets<sup>2</sup> – have been trending down (see fig.2). This is a concrete though limited example that investors are overlooking the intangible value in South Korea.



**Paul Kim**

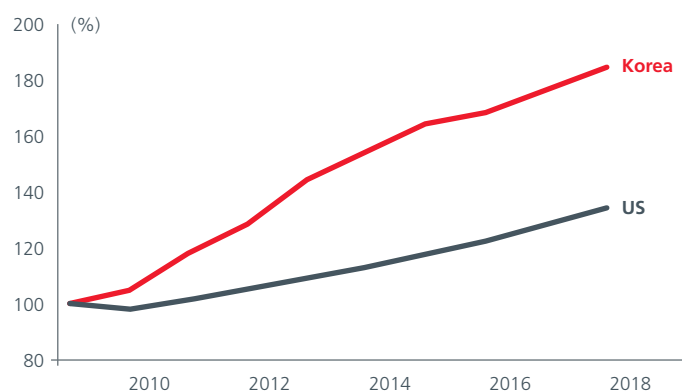
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**Fig.1: Growth of GFCF Intangibles as measured by the OECD (current price)<sup>2</sup>**



## A KNOWLEDGE-BASED, HIGH-INCOME ECONOMY

South Korea is considered the world's most innovative country today<sup>3</sup>. The country has been putting more resources into R&D and tertiary education. Over the past 20 years, its gross domestic product (GDP) spending on R&D has surged from 1.74% in 1991, to 4.23% in 2016, overtaking both the USA (2.74%) and China (2.12%)<sup>4</sup>. The country has also been proactively investing in human capital, with tertiary education expanding significantly.

In 2016, for example, nearly 70% of South Korea's 25-34-year olds attained tertiary education, the OECD's highest percentage<sup>5</sup>. This, coupled with their educational prowess in mathematics, reading and science<sup>6</sup>, presents a strong foundation for the country's talent development.

This empirical evidence shows that South Korea has a strong commitment to a knowledge-based economy.

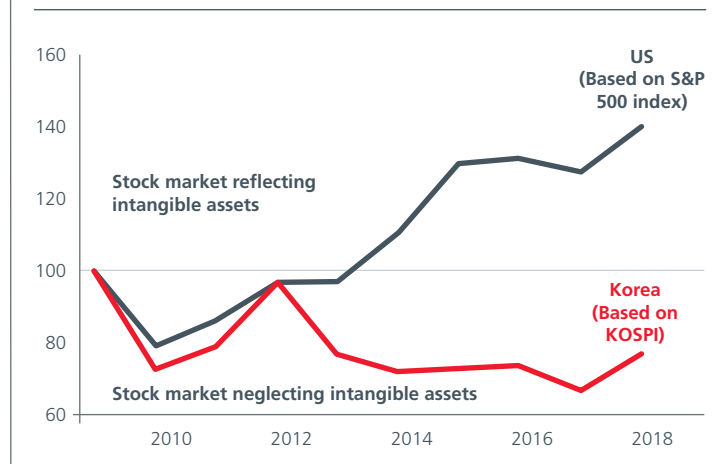
This commitment comes in tandem with economic prosperity. When the Korean War ended in 1953, South Korea was one of the world's poorest countries. In 1960, the country's GDP per capita was only USD158 – just a small fraction of the US's USD3,007. Since then, South Korea has emerged into a high-income country, earning a GDP per capita of USD27,539 in 2016 – nearly half of the US<sup>7</sup>.

## INTANGIBLE INVESTMENT ACCOUNTS FOR HIGHER VALUE IN THE MOBILE PHONE INDUSTRY

Now, let's move on to discuss some typical examples of companies making successful intangible investments. Mobile communication has evolved from basic phones used for voice communication, to smartphones that are capable of providing data-intensive content, such as video calls, gaming apps and online web streaming.

While growth in the mobile phone industry has been strong and steady, market leaders have

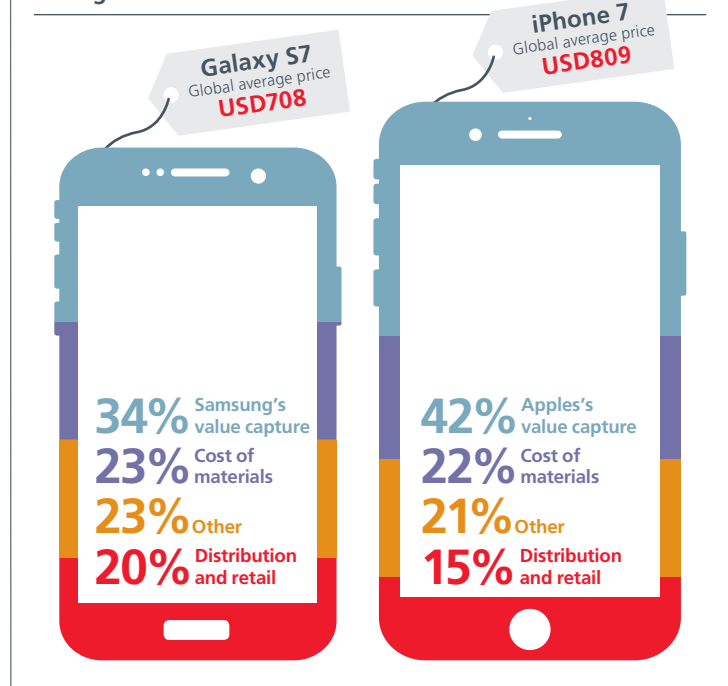
**Fig.2: Ratios of Market Index/Intangibles<sup>2</sup>**



changed. Since 2011, previous leaders Nokia (Finland) and BlackBerry (Canada) have been dethroned by Apple (USA) and Samsung (South Korea) – currently the two biggest smartphone brands in the world by market share<sup>8</sup>.

In the production of smartphones, Apple

**Fig.3: Success in the smartphone industry is based on intangibles<sup>9</sup>**



sources most of its components and technology from third parties, whereas Samsung makes most of them internally, including the processors and displays that Apple also needs for its iPhones. One thing they have in common though, both operate under a strong brand and are responsible for considerable R&D and product design – the intangible assets that underscore the value capture (34%-42%) from their smart phones (see fig.3).

Developing new technology is important, but brand-building is equally important. Samsung is a success case in pursuing a process of investing in new technologies for dynamic random-access memory (DRAM). In 2004, the South Korean tech giant developed the world’s first 8 GB NAND flash memory chip<sup>10</sup>.

In addition, Samsung also sponsored major sporting events to build brand awareness. Such events include the Seoul 1988 Olympic Games, and the later Nagano 1998 Olympic Winter Games in Japan. Samsung has emerged as a top global brand. In 2017, US-based brand consultancy Interbrand Group estimated that Samsung has a brand value of USD56,249 million, ranking number six in the world, just behind Apple, Google, Microsoft, Coca Cola and Amazon<sup>11</sup>.

Such intangible investments, together

with the company’s technological advancement, began bearing fruit in the late-2000s. Since then, Samsung Electronics’ shares skyrocketed 857%, outperforming the KOSPI, which only climbed 140%<sup>12</sup>.

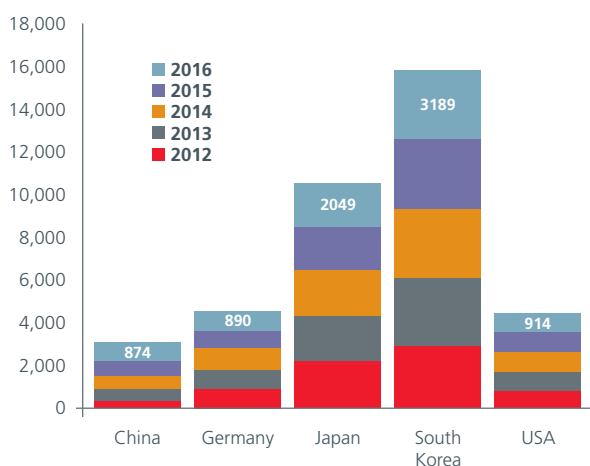
## BIOTECHNOLOGY AND HEALTH CARE SECTORS

Investors can also find tremendous potential for intangible value in Korea’s biotechnology and healthcare sectors, where significant investment has been made in R&D and human capital.

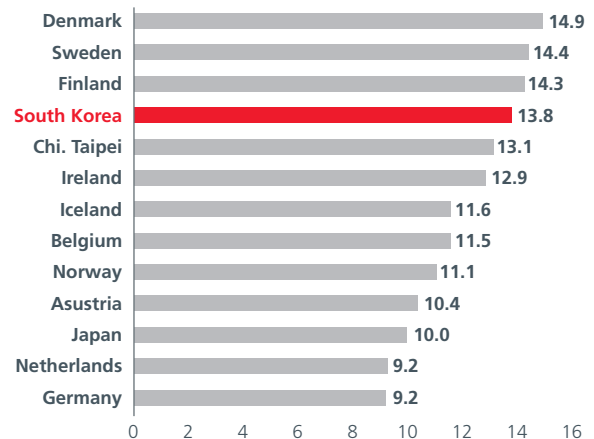
Research personnel in the South Korean pharmaceuticals industry have reportedly increased by 30% from 2011 to 2016. Furthermore, the South Korean Government has promised to invest USD9 billion to develop 20 new drugs, one of the very incentives aiming to take the country into the top seven pharmaceutical-producing countries by 2020<sup>13</sup>.

Many investors are unaware that South Korea is not only a world leader in patent applications per resident, (see fig.4), but also has one of the world’s highest numbers of researchers in employment (see fig.5). This is something that investors cannot afford to miss.

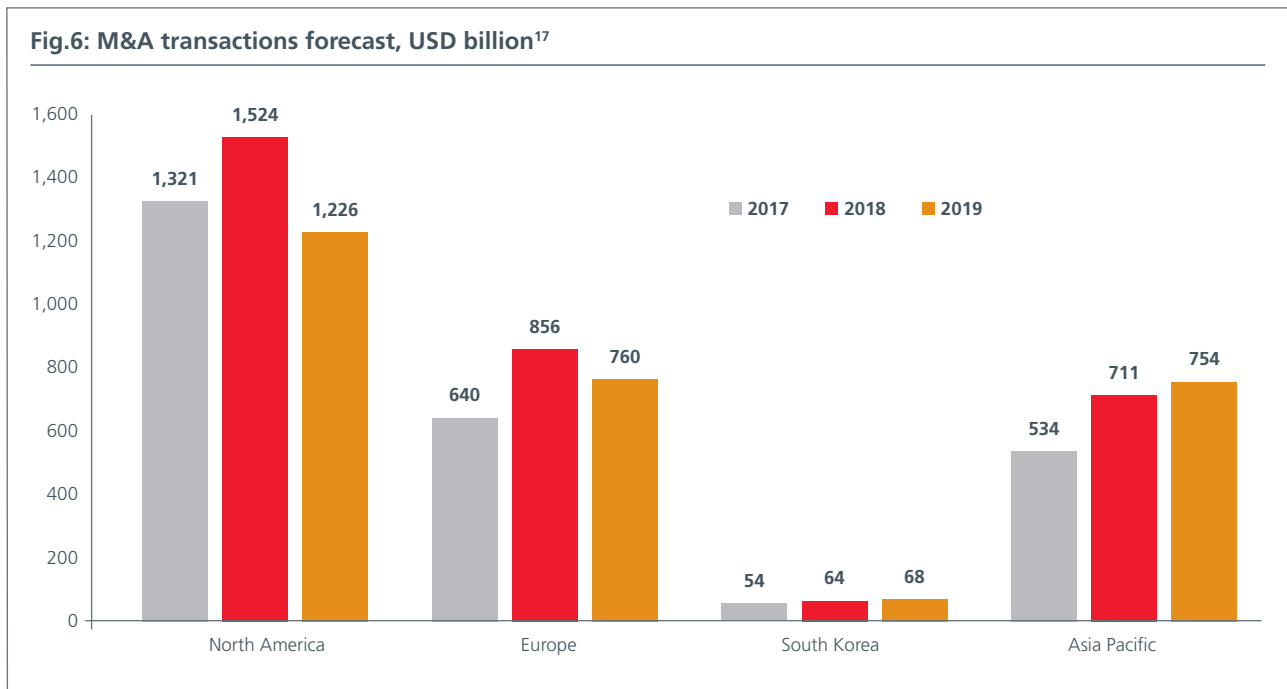
**Fig.4: Resident applications per million population (by origin)<sup>14</sup>**



**Fig.5: Researchers per 1,000 employed, 2016<sup>15</sup>**



**Fig.6: M&A transactions forecast, USD billion<sup>17</sup>**



## M&A IS A CATALYST TO UNLOCK THE “UNDISCOVERED” INTANGIBLE VALUE

From 2010 to 2017, the price-to-book (P/B) ratio for Korean equities (KOSPI) has remained stable at around 1x while that for US equities (S&P 500) has soared from about 2x to 3x<sup>16</sup>. The disparity could be the result of less prominent mergers and acquisitions (M&A) activity in Asia, including South Korea (see fig.6 & 7), leaving most of the intangible value “undiscovered”.

Heading into 2018 and 2019, it is not surprising to see South Korean M&A become more active as the country’s family-run conglomerates, known as “chaebols”, embark on a restructuring push to add transparency. This could be a catalyst to unlock the “undiscovered” intangible value of many Korean companies.

This is because as a global accounting practice, if a company acquires an intangible asset – such as a brand or patent – it is capitalised as an asset on the balance-sheet. However, if the intangible assets are developed internally, they will be expensed immediately, thus shaving earnings. In this way,

**Fig.7: M&A forecast (number of deals)<sup>17</sup>**

Number of deals	2017	2018	2019
<b>South Korea</b>	<b>877</b>	<b>855</b>	<b>941</b>
Asia Pacific	8,359	8,742	8,909
North America	12,213	11,999	10,017
Europe	10,990	13,581	13,105

“a company pursuing an innovation strategy based on acquisitions will appear more profitable and asset rich than a similar enterprise developing its innovations internally,” write Feng Gu and Baruch Lev in a recent issue of the Financial Analyst Journal<sup>18</sup>. In Korea, we are seeing cases of M&A that unleash the “undiscovered” intangible value.

For example in February 2018, Kolmar Korea – a key original equipment manufacturer of Korean cosmetics – announced its plan to acquire a 100% stake in CJ HealthCare (the health care operation of CJ Cheiljedang), for about KRW1.3 trillion (USD1.1 billion).

CJ Healthcare has long been undervalued. Some analysts have estimated its value of only KRW692.4 billion<sup>19</sup>. This acquisition is an example of unlocking the hidden intangible value of CJ Cheiljedang's healthcare business. The offer price implies a long-undiscovered intangible value of KRW607 billion, or an 88% premium over its estimated value. This reflects the R&D in CJ Healthcare, as well as the brand building efforts in its products such as 'Condition' - South Korea's most popular anti-hangover drink.

### **ACTIVE INVESTING KEY TO LOCATING THE INTANGIBLE VALUE IN SOUTH KOREA**

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Therefore, in South Korea where M&A activity is relatively low, active investing is pivotal in discovering the expensed intangibles. This is particularly important as Korean companies operate in a close-knit society, valuing seniority and communicating mainly in their mother tongue.

Having said that, it is an uphill task for analysts and investors to determine the intrinsic value of a Korean company by just crunching numbers in reported earnings, assets, and price-to-earnings, book-to-market ratios.

Analysts and investors should be more proactive in analysing information and materials that accompany earnings calls, investor days, letters to shareholders, not to mention investigating the company's business operations physically and interviewing their clients for feedback. Although most of the figures and information are unaudited, they could be used to derive strategic implications of the company's intangible investments and thus the intrinsic value.

This also helps investors to avoid companies that misallocate resources in R&D. Perhaps it takes time for major players in South Korea to adjust their valuation standards. Those with a head start in building their proprietary valuation model, coupled with local expertise, should be more likely to generate excess returns.

Sources: <sup>1</sup>©2018 Morningstar Direct, from 31 January 2007 to 28 February 2018. <sup>2</sup>Thomson Reuters Datastream, data from 1 January 2008 (rebased to 100) to 31 December 2017. Gross fixed capital formation (GFCF) by Assets: Intangible Fixed Income (United States), GFCF Intangible Fixed Assets Private (Current) South Korea. Market Index/Intangible Fixed Assets in local currencies. This is an economic based chart – while Korea is based on private sector intangibles, the US is broad economic. The Intangibles will thus include any intangibles of non-listed companies. For indicative purpose only. <sup>3</sup>Bloomberg, citing Bloomberg Innovative Index in 2016, 2017 and 2018. <sup>4</sup>OECD (2018), Gross domestic spending on R&D (indicator). doi: 10.1787/d8b068b4-en (Accessed on 23 March 2018), citing Main Science and Technology Indicators. <sup>5</sup>Organisation for Economic Cooperation and Development (OECD) (2018), Population with tertiary education (indicator). doi: 10.1787/0b8f90e9-en (Accessed on 31 March 2018). <sup>6</sup>OECD (2018), Reading, mathematics, and science performance (PISA) (indicator). doi: 10.1787/79913c69-en (Accessed on 31 March 2018). PISA refers to Programme for International Student Assessment (PISA) measuring 15-year-old school pupils' scholastic performance on mathematics, science, and reading. South Korea is ranked amongst world's top 10 in these three areas. <sup>7</sup>World Bank, GDP Per Capita (current, US\$), data retrieved on 2 April 2018. <sup>8</sup>World Intellectual Property Report: Intangible Capital in Global Value Chains, 2017. <sup>9</sup>World Intellectual Property Report: Intangible Capital in Global Value Chains, 2017, citing Dedrick and Kraemer (2017) based on IHS Markit teardown report. <sup>10</sup>"Samsung Introduces Industry's First 60-Nanometer 8-Gigabit NAND Flash Memory", Samsung News Release, 20 September 2004. <sup>11</sup>"Best Global Brands 2017 Rankings", Interbrand Group, published in September 2017. <sup>12</sup>Bloomberg, price returns in Korean won, from 31 December 1999 to 31 December 2017. <sup>13</sup>"Leading Innovators: South Korea becomes the Next Stop for Biotechnology", Euromonitor International, April 2017. <sup>14</sup>WIPO statistics database. Last updated: March 2018. <sup>15</sup>OECD (2018), Researchers (indicator). doi: 10.1787/20ddf0f0f-en (Accessed on 29 March 2018). <sup>16</sup>Bloomberg, from 31 December 2010 to 31 December 2017. <sup>17</sup>"Global Transactions Forecast 2018", a Baker McKenzie report, December 2017. <sup>18</sup>"Time to Change Your Investment Model", Financial Analysts Journal, Vol 73, number 4, 2017. <sup>19</sup>Yuanta Securities (Korea), as at 31 July 2017.

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