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Issues in Intangible Assets and Their Implications on Policy in Developing Economies

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Issues in Intangible Assets and Their Implications on Policy in Developing Economies

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Abstract

This paper discusses the importance of intangible assets and their implications on policy in developing countries. Intangible assets refer to assets that lack physical form but hold value for companies and nations, such as patents, brand value, know-how, and software. In advanced economies, where information and knowledge are becoming increasingly important factors in economic activity, intangible assets are considered growth drivers, equal to or even more significant than physical assets. Intangible assets are expected to become essential for the development of lower-income countries as well, though this discussion remains in its early stages. This study explains the fundamental nature of intangible assets and their role in the economy, providing a brief review of the assets recorded in the firms of developing countries. Expecting that intangible assets will play a more prominent role in driving the economies of developing countries, a shift in development policies will be necessary across a wide range of areas including trade and macro-financial policies, corporate human capital investment strategies, intellectual property rights protection, social policies, and institutional governance. The role of international coordination and cooperation as well as the areas for further research should also be addressed.

Keywords: Intangible assets, Productivity growth, Innovation.

JEL Codes: O14, O30

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1. Introduction

Intangible assets refer to assets that lack physical substance but hold value for companies, organizations, and even nations, and investment in them is becoming increasingly important in modern economies. Their counterparts, tangible assets, typically include things like the factory equipment and machinery owned by companies, vehicles, and public infrastructure. Historically, tangible assets have been seen as the primary drivers of growth, both in national development and in corporate management. However, in today's economy, where information and knowledge are increasingly crucial factors in economic activities, intangible assets have become a more important source of growth.

As indicated by the title of Haskel and Westlake's renowned book, "*Capitalism without Capital*," intangible investment has already become the norm in advanced countries (Haskell and Westlake 2018a). In sectors like tech and retailing, intangibles account for the majority of value – for example about 90% of the value of firms listed on the S&P 500 is an intangible. These assets are also growing in importance in developing countries, though their extent and policy implications might differ from advanced economies.

This paper outlines the scope of policy discussions regarding intangible assets and the key issues for developing a policy-oriented research agenda based on them in the context of developing countries. Section 2 describes the function and nature of intangible assets. Section 3 presents preliminary analysis to capture the intangibles-driven economy in developing countries, while section 4 raises the main policy implications of this emerging phenomenon in six dimensions – macroeconomic issues, microeconomic issues, social policy, safeguarding Intellectual Property (IP), institutions and governance, and broader questions of global cooperation. Section 5 concludes by suggesting way(s) forward for a policy-oriented research agenda.

2. Basics

2.1 What are intangible assets?

Intangible assets stand in contrast to tangible fixed assets. Representative examples of tangible fixed assets include buildings, machinery, and vehicles owned by companies, as well as infrastructure such as roads developed by the government as public goods. These assets have been invested in by nations and companies as "capital" to enhance their production capacity and productivity. In contrast, intangible assets do not have a physical form like tangible fixed assets, but they nevertheless hold value for companies, organizations, or countries. They can take various forms, such as patents, brand value, know-how, and the software owned by a company.

In the recent literature on intangible assets, the broad categories organized by Corrado et al. (2005) — (1) Computerized Information, (2) Innovative Property, and (3) Economic Competencies — are most commonly used. Table 1 shows a typology of intangible assets. The scant data that exist for intangible assets suggests an asset class that [a] is rising in importance and [b] cuts across all sectors of the economy.

Table 1: Intangibles

Broad category	Type of investment	Type of legal property that might be created
Computerized information	Software development Database development	Patent, copyright, design IPR, trademark, other Copyright, other
Innovative Property	R&D Mineral exploration Creating entertainment and artistic originals Design and other product development costs	Patents, design IPR Patents, other Copyright, design IPR Copyright, design IPR, trademark
Economic Competencies	Training Market research and branding Business process re- engineering	Other Copyright, trademark Patent, copyright, other

Source: Haskel and Westlake (2018a), citing Corrado et al. (2005) and Corrado (2010).

In 1975 intangible assets represented just one-sixth of the market value of companies in the S&P 500 Index, with tangible assets comprising the other five-sixths. By 2020, the ratios were more than reversed (Figure 1) with tangibles accounting for just 10% of enterprise value.

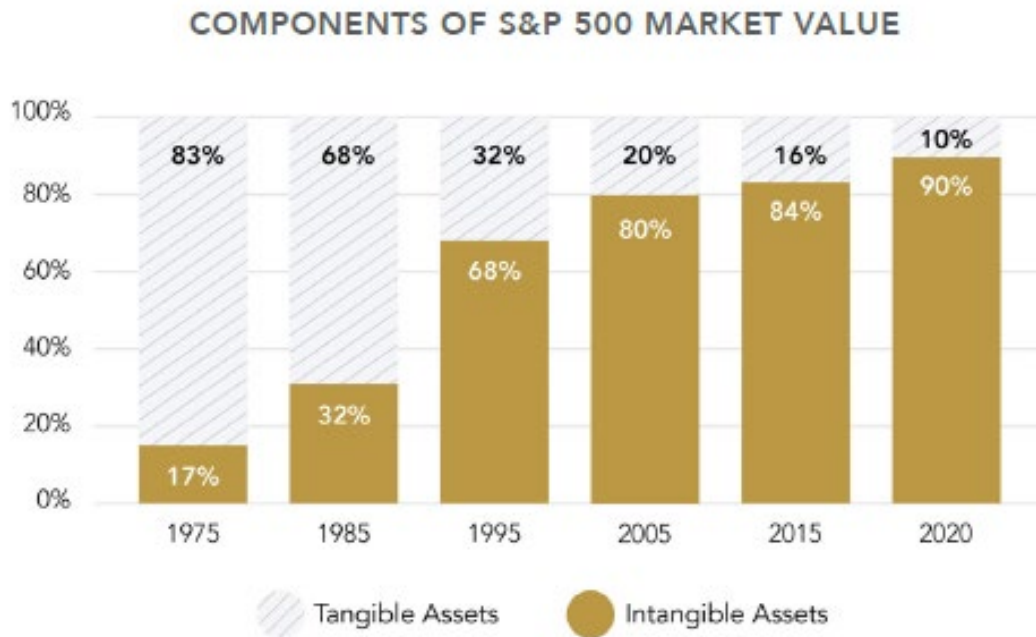


Figure 1: Shifting Tangible and Intangible Asset Ratios of S&P 500 Market Value, 1975-2020

Source: Ocean Tomo (2022)

To put this in context, the World Intellectual Property Organization (WIPO) estimates that in the average smartphone, the traditional embodiments of value such as materials and labor account for less than a third of the total value. Intellectual Property and other elements of intangibles account for 58% of value, with retail and distribution accounting for 15% (Figure 2).

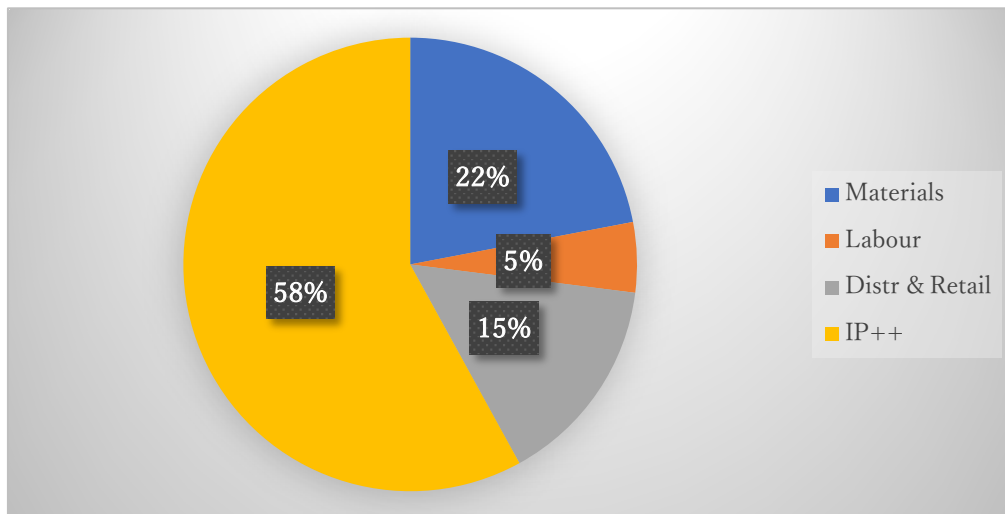
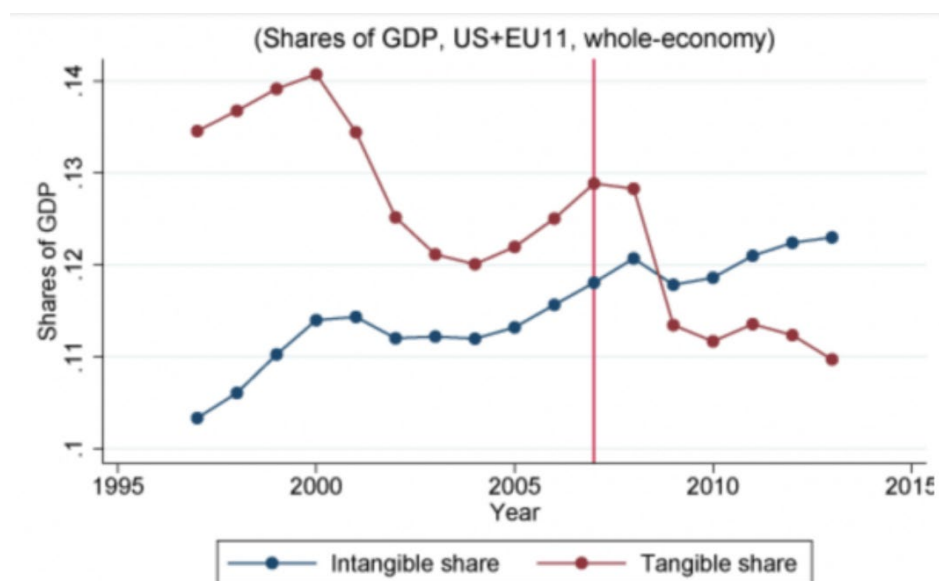


Figure 2: Value Composition of a Smartphone

Source: WIPO, World Intellectual Property Report, 2017.



Note: GDP adjusted to include intangibles.

Figure 3: Tangible and Intangible Investment (% GDP, average 2000-2013)

Source: Haskel and Westlake 2018a

Intangibles are still imperfectly accounted for in national income accounts. According to the European Investment Bank (EIB) from whose report Figures 4-6 are taken, R&D, mineral exploration, computer software and databases, and entertainment, literary and artistic originals are currently accounted for. Expenditures for design, branding, new financial products, organizational capital and firm-provided training are instead currently treated as intermediate costs while more properly the EIB considers them “new intangibles” that should be counted as part of the total intangibles in an economy.

Bearing this in mind, data for the EU11 and the US show that investment in intangibles overtook investment in tangibles in the mid-2000s (Figure 3). Using the US and EU14 as a proxy for high income economies, and the Czech Republic, Hungary, Slovakia and Slovenia as representative of middle-income economies, Figure 4, 5 and Figure 6 show that:

- Although the share of investment in intangibles in middle-income countries of the EU compares with that of the richer EU and the US, it is still the case that investment in tangibles is higher in middle-income countries than in high-income countries (Figure 4);
- Software is quantitatively less important than the other two categories of intangible assets across all three country groups (Figure 5); and
- Although investment in intangibles straddles all three sectors in all three country groups it is higher in manufacturing and services than it is in agriculture (Figure 6).

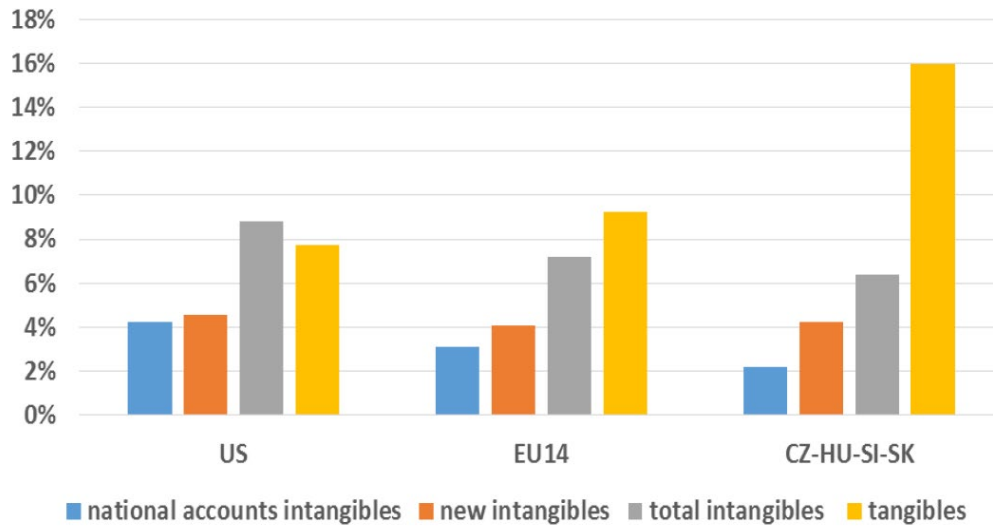


Figure 4: Intangible and Tangible Investment (% GDP, average 2000-2013)

Source: EIB (2016).

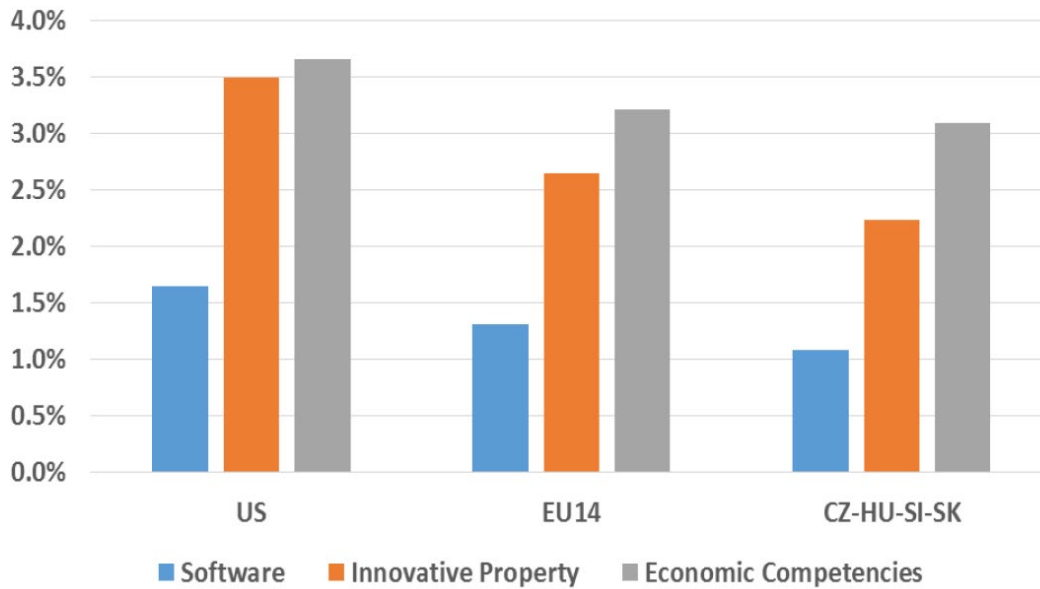


Figure 5: Asset composition of intangible investment (% GDP, average 2000-2013)

Source: EIB (2016).

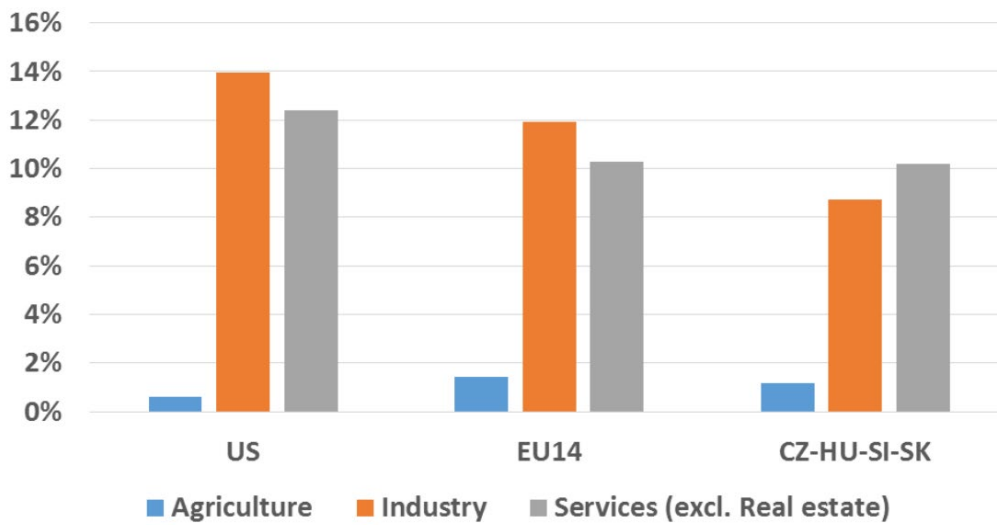


Figure 6: Intangible investment by industry (% officially measured industry value added, average 2000-2013)

Source: EIB(2016).

In terms of its importance in relation to GDP, intangible asset investment in the U.S. has surpassed investment in tangible assets. Europe is following this trend. However, Japan lags behind both in intangible asset investment, a situation that is believed to be related to its prolonged economic stagnation, often referred to as the "Lost 30 Years" (Box: Japan's Intangible Investment and the Lost 30 Years).

Box: Japanese intangible investment and Lost 30 years

Japan's economy entered a prolonged period of economic stagnation in the early 1990s following the collapse of the bubble economy, where asset prices, such as real estate and stocks, which had been rapidly inflating, suddenly plummeted. After the bubble burst, many companies were preoccupied with addressing the "three excesses" — excess employment, excess facilities, and excess debt. As a result, they restrained investment, including capital investment, from the 1990s through the 2000s. The corporate behavior established during this time has persisted, with Japanese companies continuing to adopt a cautious stance toward investment. Within this environment, Japan has especially lagged behind the U.S. and Europe in terms of investment in intangible assets (Fukao 2021).

To understand the position of investment in intangible assets in the Japanese economy three distinct characteristics of this market have to be recognized. First, while companies in other developed countries have been increasing the proportion of intangible asset investments relative to tangible fixed asset investments, the latter still account for nearly 70% of investment (at market-value) in Japan (METI 2022). Second, while other developed countries have increased intangible asset investments as a percentage of GDP since the 2000s, Japan's ratio has declined. For example, in the U.S., intangible asset investments have surpassed tangible asset investments and continue to increase, in stark contrast to Japan. Third, the composition of Japan's intangible assets is primarily focused on R&D and software investment, with a decline in the areas classified as economic competencies, such as human capital development and organizational reforms within companies (Miyagawa and Takizawa 2022; Morikawa 2022).

In addition to the overall sluggishness of investment, the relative underinvestment in intangible assets in the Japanese economy is likely due to a combination of factors. Many Japanese companies, during the "lost 30 years," adopted corporate strategies characterized by low pricing, marked by the lowest markup rates (how much profit is added to costs) among advanced economies. This strategy also led to deflation across the economy, creating a negative cycle where price increases became even more difficult. As a result, corporate policies have focused on cost-cutting, including increased reliance on non-regular employees. While this approach may generate short-term profits, it tends to delay investments aimed at long-term growth, particularly in intangible assets. In addition, compared to the U.S., Japanese companies are more reliant on indirect financing, such as bank loans, and financial institutions continue to place more emphasis on physical collateral and guarantees than on future cash flow evaluation. This is another factor that has made it difficult to expand intangible asset investments in Japan (Cabinet Office 2024).

Recognizing the importance of intangible investment, the Japanese government has introduced various measures. For example, the Cabinet Secretariat issued "Human capital visualization guidelines" in August 2022. This clearly positions intangible assets as a source of competitive advantage and provides discussion and guidance on how information on human capital, a core part of intangible assets, should be disclosed to the capital markets. In parallel, the Amendment to the Cabinet Office Order on Disclosure of Corporate Affairs issued in January 2023 required a new section on the state of human resources in business disclosure statements for the fiscal years ending on or after March 31, 2023.

2.2 Characteristics of intangible assets

Intangible assets exhibit several characteristics that distinguish them from tangible assets. Haskel and Westlake (2018a, b) sum up these as the four S's. Table 2 shows these characteristics and gives specific examples of them. The most notable feature is the scalable nature of certain intangible assets. In tangible assets physical assets like machinery experience wear and tear with use, necessitating reinvestment over time. In contrast, some intangible assets, such as copyrights, can be used repeatedly in production activities at zero or minimal cost, setting aside concerns like obsolescence. However, this characteristic can lead to the emergence of a relatively small number of dominant companies that possess advantageous intangible assets. Furthermore, since intangible assets often consist of ideas, know-how, and business models, there is a high potential for creating new synergies when they are combined with other intangible assets or tangible assets. Companies engaging in open innovation, such as collaborating with other firms or research institutions on joint development projects, are actively leveraging the nature of intangible assets.

Table 2: Four Characteristics of Intangible Assets

Scalability	Once created, intangible assets can be used over and over with little/no costs. <i>e.g., With those copyrights, it would be possible to sell hit songs digitally for low cost.</i>
Synergy	Intangible assets can be more valuable when combined with other ideas/tangible and intangible assets. <i>e.g., Retail supermarkets investment in processes and supply chain development and scale up the scale of their application with computers and IT technology.</i>
Spillover	Intangible assets can be easily imitated and used by others if not protected as patents. <i>e.g., Ideas created by R&D can be copied and used by other companies with little cost if not well protected by intellectually property rights and other means.</i>
Sunk	Intangible assets are often hard to sell and recover the original investment. <i>e.g., Starbucks' customer service manuals are not necessarily an easy asset to sell, even though they can be very valuable when used within Starbucks' operations.</i>

Source: Created by the authors based on Haskel and Westlake (2018a, b).

Two characteristics of intangible assets, scalability and synergy, encourage firms to invest in them (i.e., intangible investment). In contrast, the remaining characteristics, spillover and sunk costs, can be seen as risk factors for intangible investment. Spillover is a characteristic particularly associated with intangible assets, where ideas generated by a company's business model or research and development can be relatively easily imitated. Although mechanisms like patents and intellectual property rights exist to protect these assets, safeguarding the benefits of intangible assets is significantly more challenging compared to tangible assets. Finally, sunk costs refers to the fact that evaluating intangible assets is not always easy, and they may only be effective in specific contexts, meaning that their sale is not always possible. Unlike the first two characteristics, scalability and synergy, spillover and sunk costs can be factors that make companies more cautious about investing in intangible assets.

2.3 The measurement of intangible assets

While the importance of intangible assets is increasingly being recognized, discussion is also going on regarding how to record intangible assets in national economic accounts and corporate accounting. The issues include how broadly different types of intangible assets should be recognized and how these intangible assets should be measured.

For example, current accounting practices in Japan normally capture intangible assets using a much narrower definition than the impact businesses and economists have argued is a source of productivity growth of companies and nations. In corporate accounting, items such as patents, copyrights, trademarks, and licenses can be recognized as intangible assets when they are deemed to have the potential to generate economic benefits. Another typical intangible asset in corporate accounting is goodwill, which is the difference between the purchased price and net assets of a company at the time of corporate acquisition and is recorded in the financial statement of the buying companies. On the other hand, investment in human resource such as in-house training is typically recorded as an expense item, and it may not always be easy to capture these as productive assets.

To the earlier point the recognition of intangible assets in national economic accounting is generally more constrained. In the classification of intangible assets such as: (1) digitized information; (2) innovative properties; and (3) economic competencies (Corrado et al. 2005), the Japanese System of National Accounts (SNAs), for example, does not account for employer-provided training, market research and branding, and organizational transformation. These fall under (3) economic competencies. It also excludes parts of (1) and (2), such as self-acquired databases and design. It should be noted though that the SNAs of Europe and the United States are at an almost similar stage, as international standards are still being considered. As the weight of data assets in the economy has increased significantly with the progress of digitization, there

are ongoing efforts in advanced countries to develop more accurate methods for measuring intangible assets, especially data assets (Corrado et al. 2023; Eberly 2022; Iwata 2019, 2020).

How to measure the identified intangibles is another challenge. Several methods of valuing intangible assets have been proposed in recent years. The method chosen depends on the purpose of the valuation. There are three popular approaches: (1) cost approach, (2) income approach, and (3) market approach. In terms of national-level estimates, (1) is the most widely used for SNA measurement. The following is a brief overview of these approaches.

(1) Cost Approach

This is a standard method in which an investor values the target intangible assets based on the cost of repurchasing or reproducing it with an equivalent utility or function. For example, in Japan's SNA, the measurement of databases, software, and research and development, which are captured as intangible fixed assets, adopts the cost approach in accordance with United Nations recommendations. However, although this method retains relative objectivity, it requires an appropriate recalculation of depreciation based on deflators, the number of years elapsed since acquisition, and the remaining depreciable life of the assets. Therefore, it can be difficult to obtain the necessary data to accurately measure the targeted intangible assets. Most importantly, there is a significant caveat in that the calculation does not take into account the expected revenues that the targeted assets will generate.

(2) Income Approach

As corporate M&A activity rapidly increases, this method is being used relatively frequently to determine the allocation of the portion of the purchase price of an acquired firm that is attributable to intangible assets. The valuation is calculated by summing the discounted present value of a series of future economic benefits to be generated by the target intangible assets. However, the problem here is that the calculation is likely to lack objectivity because the valuation amount varies greatly depending on the expected profit (often calculated on the basis of accounting profit and cash flows), the forecast period and the discount rate.

(3) Market Approach

This approach infers the value of an intangible asset by using the transaction prices of similar intangible assets. While it ensures a relatively higher level of objectivity, this presupposes the existence of a market where such intangible assets can be actively traded. However, since intangible fixed assets are rarely sold separately from other assets, it becomes necessary to allocate the purchase price among the various assets, including the targeted intangible asset, based on certain assumptions. In addition, it is often difficult to apply the market price approach in

practice because data on transactions involving intangible fixed assets are generally not publicly available, and only a limited number of intangible assets have a well-established trading market.

3. The state of intangible assets in developing countries

3.1 Overview

While awareness of the shift towards intangible assets, and what its implications might be, is imperfect everywhere, it appears to be more advanced in some developed countries than it is in most developing countries. There may be several reasons for this, starting with a lack of data to map the size and scope of this new phenomenon in developing countries. But also, as with any structural shift as subtle as intangibles, policy makers and others are still grappling with putting in place an appropriate analytical framework to assess and deal with this trend.

The classification portrayed in Table 1 is appealing and increasingly being accepted. However, it is not universally used in, for example, data collection. A global public good in the tradition of the United Nations System of National Accounts pioneered in the 1950s would be created if a multilateral organization were to systematize and universalize the classification of intangible assets, and if national statistical agencies incorporated this dimension in their regular data-gathering work. As a result, detailed – indeed any – data for this sector that are comparable across countries, and that includes developing countries, do not exist.

Although these are strictly speaking inputs into creating intangible assets rather than an indication of the size of the intangibles sector as a whole, consider Figure 7 and Figure 8. Figure 7 portrays global patenting activity by country. Since these are the absolute numbers of patents registered, large developing countries with appreciable science sectors – Brazil, India, Indonesia, Iran, South Africa, Turkey - feature in the upper middle (but not top) ranks. From developing countries, on a per capita basis (Figure 8) only Iran features in a Top 20 global list of patenting activity. Of course, raw figures such as these do not indicate the quality and commercial and social usefulness of the patents. For this we have to dig deeper into the characteristics of intangibles and reach a finer understanding of the different types of innovation – and also understand differences between different groups of developing countries, particularly middle-income countries and low-income countries.

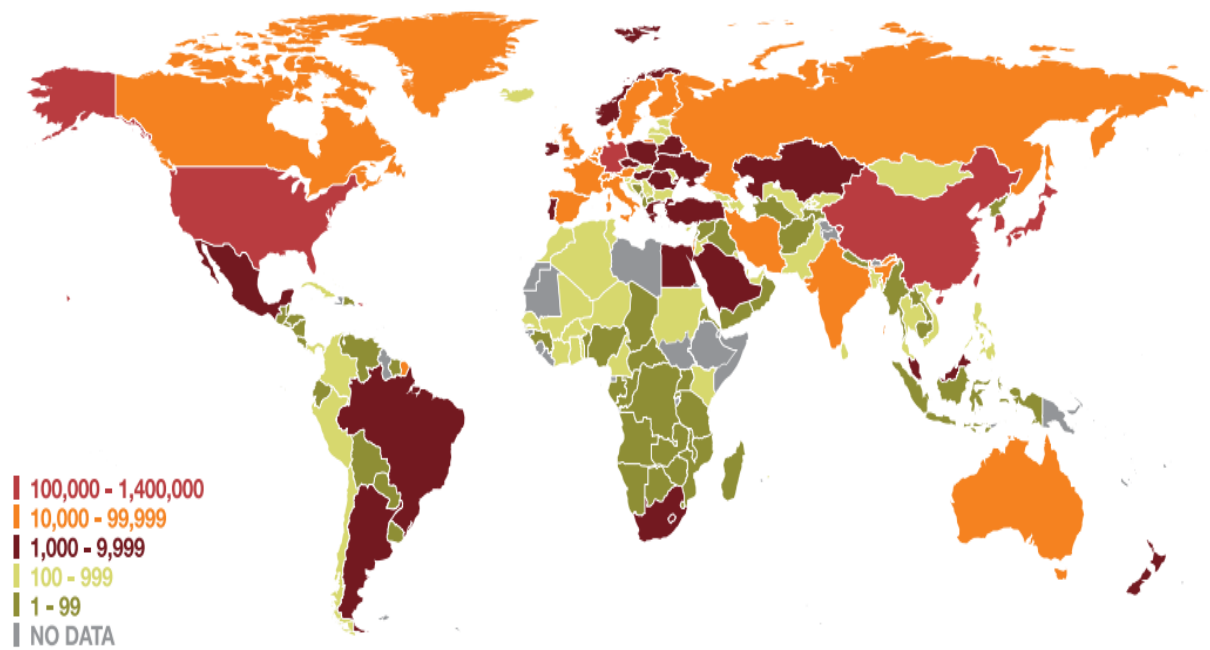


Figure 7: Patent Applications by Origin, 2016

Source: WIPO (2017), Figure A17.

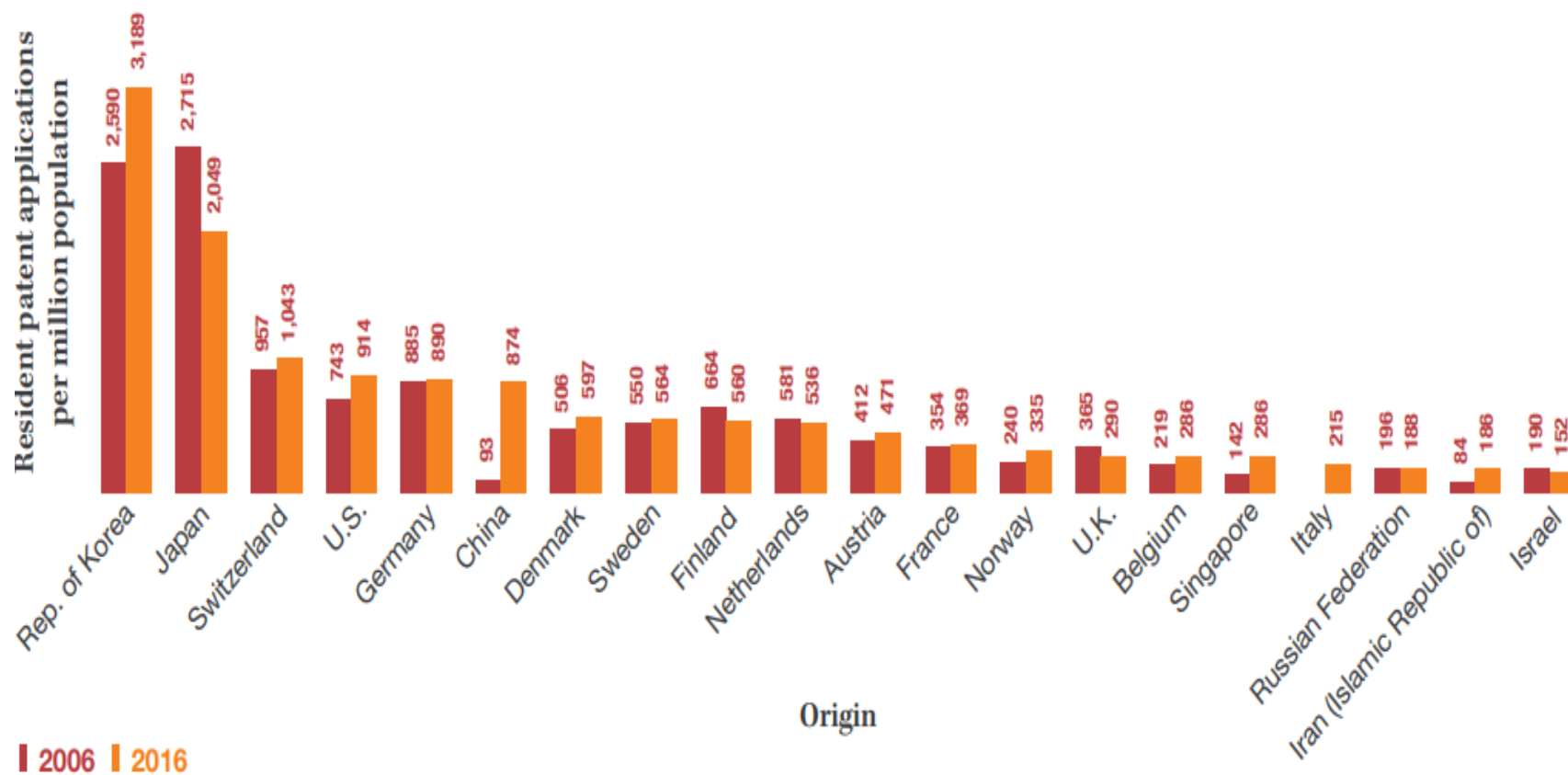


Figure 8: Resident patent applications per million population for the top 20 origins
 Source: WIPO Statistics Database and World Bank, September 2017.

3.2 A quick glance at the firm data

We conducted a brief analysis of the financial statements of firms in developing countries using corporate financial data from S&P's EMIS (Emerging Markets Information Services). The data used in our analysis are from the financial statements of publicly listed companies obtained from the EMIS dataset, and therefore, the primary focus of our analysis is on formal and relatively well-established companies.¹ The purpose of our analysis is to gain a general understanding of the status and trends of intangible assets reported by companies in developing countries, and it is not necessarily conducted under a rigorous setting.

Figure 9 shows the ratio of intangible assets to total fixed assets² in upper and lower- middle income countries, respectively. This is a simple and rough estimate, but the upper-middle income countries generally have a higher share of intangible fixed assets to total fixed assets than the lower-middle income countries. The non-manufacturing firms have higher share of intangible assets in relation to the fixed assets than manufacturing firms in both upper and lower-middle income countries. This result is intuitive and similar to the situation in major advanced countries where the growth of investment in intangible fixed assets has generally been higher in the non-manufacturing sector.

Figure 10 presents an industry-specific analysis. In the manufacturing sector, the difference between upper-middle income countries and lower-middle income countries is particularly pronounced in high value-added industries such as healthcare and industrial manufacturing. In these industries, the proportion of intangible assets in fixed assets among companies in upper-middle income countries shows a wider range of variability, as indicated by the whisker length and the size of the box in the box plot. In contrast, variability is less pronounced in lower-middle income countries. This suggests that upper-middle income countries are seeing greater diversification in the ownership and utilization of intangible assets. On the other hand, in industries such as agribusiness, there is little difference in the proportion of intangible assets between upper-middle and lower-middle income countries.

In the non-manufacturing sector, both upper-middle and lower-middle income countries show greater variability in the proportion of intangible assets held by companies compared to the manufacturing sector, regardless of the industry. However, in all industries, the range of variability is generally wider in upper-middle income countries. Industries such as banking and insurance and telecommunications are characterized by a high proportion of intangible assets in both upper-middle and lower-middle income countries.

¹ Data set accessed on January 15, 2024. The analyzed financial statements are the most updated ones for each firm. This means that the majority of the data are from the year 2022, but it also includes some data from years before or from the year 2023.

² Defined as the sum of tangible fixed assets and intangible fixed assets.

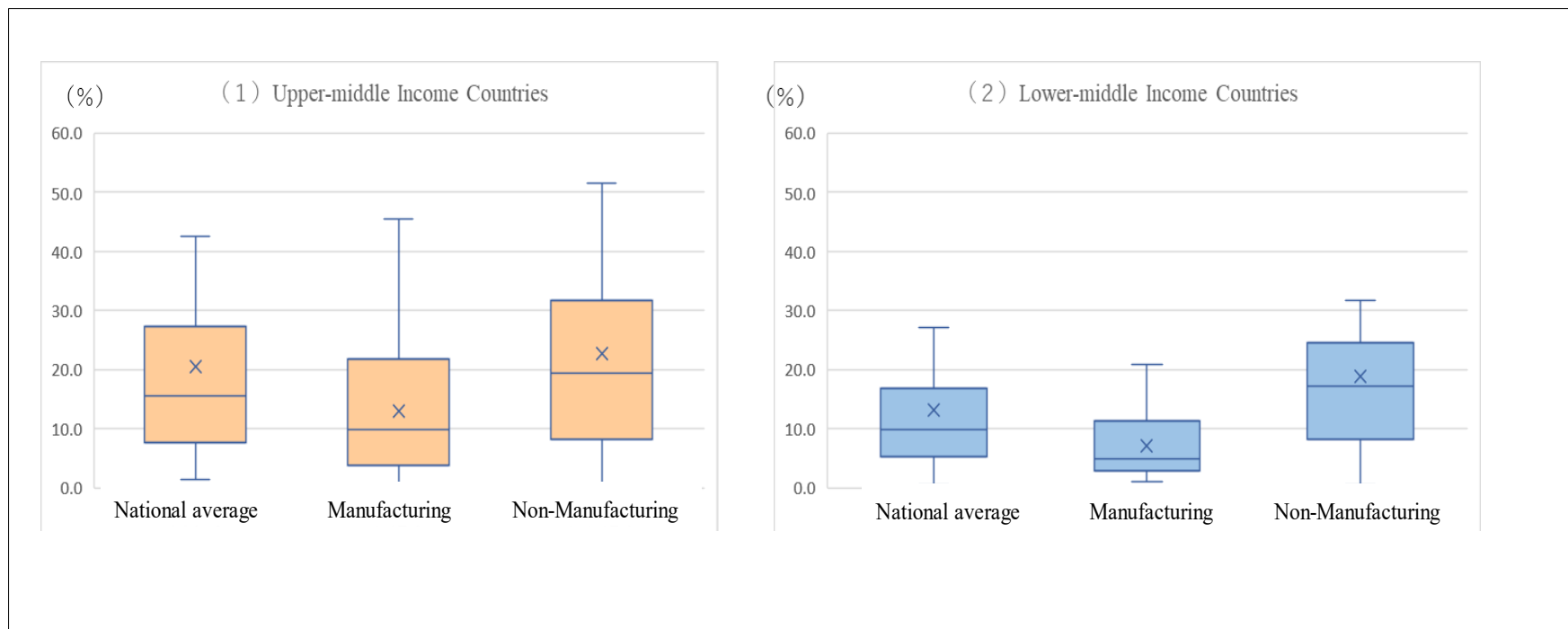


Figure 9: Ratio of intangible fixed assets to total fixed assets by income group (Middle-income countries only)

Notes: “UM” consists of 31 countries and 8,223 companies (Manufacturing: 4,563 companies and Non-manufacturing: 3,660 companies). “LM” consists of 26 countries and 4,694 companies (Manufacturing: 2,337 companies and non-manufacturing companies: 2,357 companies). The box plot above shows the data range (excluding outliers) with the whiskers, while the box represents the middle 50% of the data. The horizontal line inside the box represents the median, and the cross mark indicates the mean.

Source: Author’s calculation based on data from EMIS (Emerging Markets Information System).

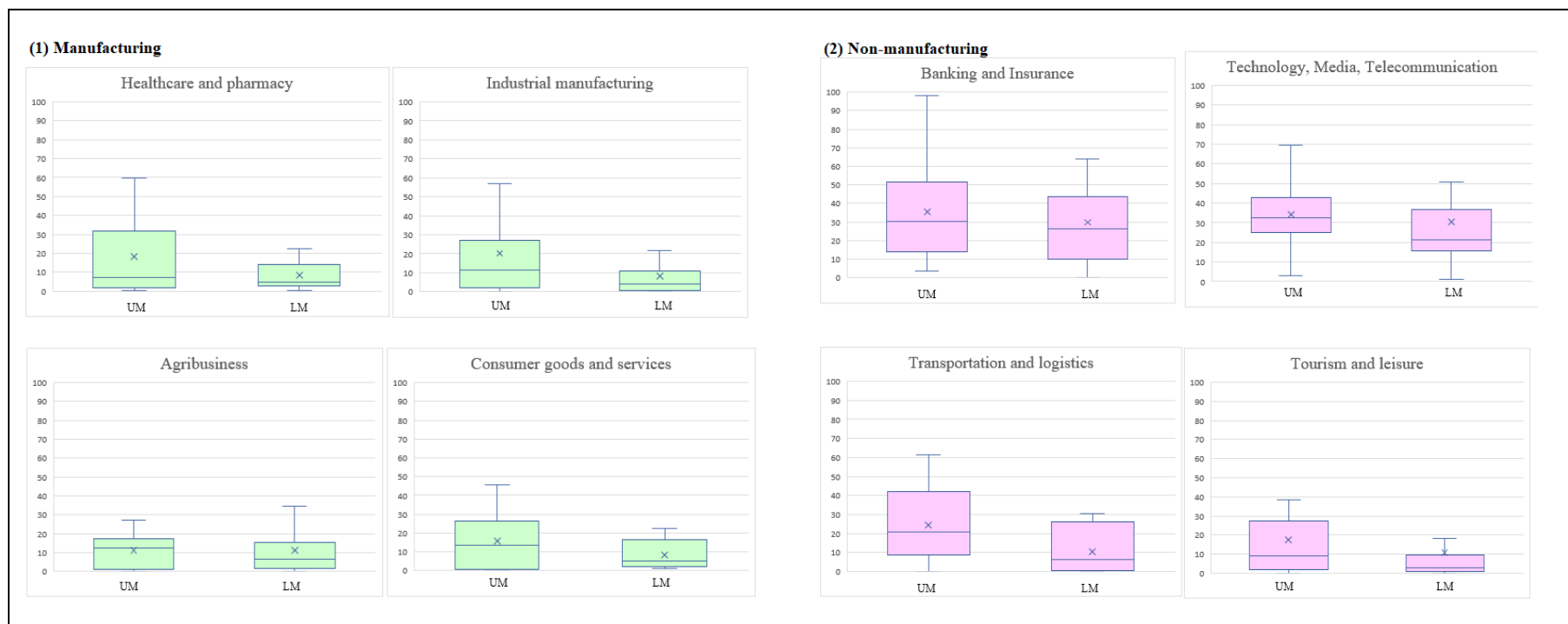


Figure 10: Intangible assets/total fixed assets-ratio by income group by industry

Notes: Healthcare and pharmacy (UM 414 companies, LM 230 companies), Industrial manufacturing (UM 456 companies, LM 302 companies), Agribusiness (UM 315 companies, LM 198 companies), Consumer goods and services (UM 780companies, LM 405companies, *companies that produce consumer goods and services, including those engaged in retailing), Banking and insurance (UM 218 companies, LM 480 companies) Technology, Media, Telecommunication (UM 690 companies, LM 296companies), Transportation and logistics (UM 238 companies, LM 169 companies), Tourism and leisure (UM 126 companies, LM 102 companies).The box plot above shows the middle 50% of the data. The horizontal line inside the box represents the median, and the cross mark indicates the mean.

Source: Author's calculation based on data from EMIS.

4. Implication for policies in developing countries

Firms driven by intangible assets (and by extension, industries and countries dominated by intangible assets) have characteristics that have implications for a range of economic policies. In the intangibles area, participants face high upfront costs and associated with this, a high risk of failure. But once success is achieved, marginal costs of reproduction are zero or near-zero, and when protected by any form of intellectual property, profits are economic rent. Success is underwritten by economies of agglomeration and geopolitical strategy. In the high-tech sector “clustering”, be it of firms, talent, finance or support services, coupled with an active national strategy to nurture and build out the sector, is the key to understanding the winners and “the ‘collective’ character of innovation”.³ With the fast pace of technological change, first movers have an advantage, often cemented by the setting of technological standards.

A rich policy agenda emerges from the trends outlined above.⁴ This spans the range of economic policies that governments pursue, as outlined in the next six sections of the paper.

4.1 Macro perspectives

The distinct characteristics of the digital economy have implications for macroeconomic policy. Once it is recognized that intangibles constitute the new capital stock and that they produce outputs at near zero marginal cost, consider for example the implication for the exchange rate, the standard equilibrating tool to maintain external payments balance. In a conventional economy dominated by trade in goods and services with a positive and often upward sloping marginal cost curve, a depreciation/devaluation raises the domestic currency cost of imports and lowers the foreign currency cost of exports. With the usual caveat about the J-curve and Marshall-Lerner condition⁵, the deficit (surplus) in the balance of trade is thus lowered (raised). In an economy where IP stocks constitute an appreciable part of the economy, a depreciation/devaluation, by lowering the foreign currency cost of IP, makes its acquisition more attractive to potential foreign buyers.

³ For an account of the combination of clustering and national purpose in Ireland, Israel and Taiwan see Breznitz (2007). For an account of the role of the State in innovation see Mazzucato (2014) from where this quote is drawn (p. 193).

⁴ For fuller accounts of policy-making in a digital or intangibles-driven economy see Ciuriak (2018), Haskel and Westlake (2018a) Chapter 10, and Medhora (2018).

⁵ The Marshall-Lerner condition is a mathematical statement that an exchange rate depreciation/devaluation will only improve the balance of trade if the absolute value of the sum of the elasticities of demand for imports and exports exceeds one. The J-curve is a special case of this verity. It refers to the phenomenon wherein under fixed-price contracts (which is how much trade occurs), the initial effect of a depreciation/devaluation on the balance of trade will be perverse, only improving in the medium to long term as these contracts come to an end and their successors reflect the new price structure of imports and exports caused by the exchange rate change.

In this as in other effects, the modern IP-based economy exhibits characteristics associated with land- and natural resource-based rentier economies. The policy dilemma is a familiar one, for in these cases changes in the value of the currency pits the interests of “holders of stocks” (like land and IP) against those whose revenue depends on “flows” (like manufactures). This does not diminish the importance of the exchange rate as a policy tool; rather, it highlights the importance of understanding the disaggregated and often long-term implications of such moves. In the digital economy, it places a renewed focus on foreign acquisitions policy to avoid predatory behavior (where emerging threats to an existing monopoly are taken out before they reach their full potential) or to retain control of firms that have long-term economic and strategic value for the country. The stock-flow dilemma means foreign investment reviews and the structure of revenue-sharing agreements for high tech firm acquisitions are a key consideration in policy design in the digital era.

There are also implications for the conduct of monetary policy in the digital era, for three reasons.⁶ First, as national statistics currently under-report the new forms of investment in intangibles, policy makers do not have good information on the actual size and performance of the economy. Second, intangibles are less attractive as collateral to lenders than are physical assets that can be parceled and sold off more easily. As a result, IP-based firms rely more on forms of finance such as equity and venture capital that are less sensitive to the short-term interest rate, the policy tool of choice for central bankers. Third, in a near zero-marginal cost economy, prices do not start increasing faster as the economy reaches capacity. Instead, the economy might be characterized by more firms each producing slightly differentiated products. The measured rate of inflation thus conveys different information than it does conventionally.

The uncertainty around the signals the economic statistics send and the transmission mechanism for monetary policy raises another issue. It is likely that in the face of radical technological change particularly in the areas of machine learning and AI, we might enter a period of prolonged secular decline in prices. In such an environment, maintaining aggregate demand becomes important if a deflationary spiral is to be avoided. Initiatives that are currently seen as experimental or exceptional, such as a universal basic income scheme and “helicopter money”⁷ are likely to enter the mainstream of the policy arsenal.

The rise of natural monopolies in the digital era also has implications for tax policy as the rent-driven profits of IP-centric firms must be monitored and taxed effectively. Although the trend in recent years has been towards consumption-based taxation and away from corporate taxation the digital economy heralds an era that reverses this trend, with good reason. An interesting variant

⁶ Haskel and Westlake (2018b).

⁷ The digital era equivalent of which is a “cash blast” to every individual’s bank account or e-payer.

of this idea is Bill Gates' proposal to tax the owners of robots.⁸ This is not a radical proposal, it is grounded in the notion that in a rentier economy the source of rent (be it land or soft capital like IP) provides a rich, efficient and economically and socially justifiable basis to levy taxes. The focus on appropriate taxation of rents of what are large, powerful and agile multinational firms puts tax base erosion and profit shifting in focus and places a greater onus on cross-border tax cooperation.⁹

4.2 Micro perspective

The increased attention to the importance of intangible investment has implications for industrial development in developing countries. The share of intangible assets may not be so significant yet in the financial data, particularly for firms in lower income countries. Firms in these countries face traditional challenges such as shortages in their tangible assets and public infrastructure and there is significant room for them to improve their productivity by reducing these traditional shortcomings. However, the issues identified in recent discussions on intangible assets also offer several key insights for the development of businesses in lower income countries.

First, there is a new perspective on human resource development. Labor has often been viewed as an expense which should be reduced in order to attain profit maximization (or put another way, its marginal product is undervalued). Discussion on intangible assets, on the other hand, suggests that it is important to view spending on human resource development as an investment to increase corporate value. In this regard, employee training, upgrading and reskilling programs should be provided as a series of skill development opportunities which are consistent with long-term corporate strategy, not as a one-time, adhoc endeavor. Governments also have a role in supporting such initiatives. The policy of visualizing human capital investment in Japan in corporate financial statements, as described in the Box, serves as a useful reference.

Second, the debate on intangible assets highlights the importance of management in improving corporate productivity. Differences in management practices have been already pointed out as a major factor behind the significant productivity disparities between companies and countries (Bloom et al. 2010; Bloom and Van Reenen 2010). By recognizing managerial capabilities as intangible assets and focusing on their development, companies in developing countries have the potential to grow into more competitive players.

Third, intangible investment is likely to become important agenda in the near future in developing countries. It has been pointed out that growth through traditional development patterns may no longer be effective for companies in developing countries within the global economy. For example, there are claims that the manufacturing-led growth model, which was successful in East Asia, is

⁸ Delaney (2017).

⁹ OECD (2019).

becoming more difficult (Rodrik 2016; Stiglitz 2021). Relying solely on tangible assets such as cheap labor and natural resources may soon make it harder to maintain a competitive advantage amongst the latecomers of development. As in the case of advanced economies, investment in intangible assets and the innovation driven by them are becoming essential for the growth of companies in developing countries.

Regarding the direction of innovation expected from promoting intangible investment, Clayton Christensen's discussion on innovation (Christensen et al. 2019) is insightful. Christensen classifies innovation into "sustaining innovation," "efficiency innovation," and "market-creating innovation." Sustaining innovation refers to improvements in products or services within existing markets, catering to existing customers seeking higher performance. Examples include enhancing device memory or introducing a new car model. Efficiency innovation, on the other hand, involves innovations that enable more production with fewer resources, such as workflow automation and process optimization.

However, Christensen argues that "market-creating innovation" is the most important for developing countries. This type of innovation creates new markets for previously untapped customer segments. A prime example is the mobile banking service "M-Pesa," which enables money storage and transfers via mobile phones. This type of innovation not only meets the needs of a broader population but also creates new employment opportunities, as companies need more personnel to provide services in these new markets. In industry development driven by intangible assets, it is important to pay attention to the types of innovation available as well.

The promotion of intangible asset-driven industrial development can also provide insights for international donors involved in private sector development. For example, Japan has actively supported industrial development in developing countries. One of the tools Japan has sought to promote through technical cooperation is Kaizen. Kaizen, originally a Japanese word meaning improvement, refers to "the management philosophy and know-how that brings about continuous, participatory, incremental, and low-budget improvements in quality, productivity, cost, delivery, safety, morale, and environment"¹⁰. It is rooted in the practices of Japanese manufacturing industries. Kaizen's focus is not on the productivity of the machinery itself but rather on various improvements to the production line and the creative efforts of the staff involved. These aspects are intangible assets in their essence, and it is possible to reinterpret Japan's industrial development efforts in lower-income countries as an approach emphasizing intangible assets.

Alongside reaffirming the significance of past support efforts in this way, it is expected that, in the context of the growing prominence of intangible asset-driven economies, support for the

¹⁰ T. Sonobe, "How Kaizen Brightens Africa's Future," in Otsuka, K., J. Kimiaki, T. Sonobe. 2018. *Applying the Kaizen in Africa A New Avenue for Industrial Development*. New York: Palgrave-Macmillan.

development of the private sector in lower-income countries will increasingly require strengthening management capabilities, enhancing marketing strategies, and promoting what Christensen refers to as market-creating innovation.

4.3 Intellectual property rights

Intellectual property rights (IPR) are crucial for encouraging investment in intangible assets. When innovations from firms are inadequately protected within the IPR framework or are easily imitated by competitors, there may be insufficient investment in intangible assets relative to socially optimal levels.

It has long been known that IPR protection in developing countries involves conflicting interests. High levels of IPR protection may limit growth opportunities for firms in developing countries that rely on learning from foreign technologies. However, if overseas firms perceive IPR protection as weak in a developing nation they may lose the incentive to innovate in technologies that would benefit these nations. Insufficient IPR protection could also hinder local firms' innovation and investment in research and development. As intangible assets are expected to play an increasingly significant role in developing economies, as in advanced ones, recognizing the importance of IPR and adjusting policies for its protection accordingly is critical.

IPR policies to stimulate investment in intangible assets will likely become an important agenda item in future discussions of industrial policy in developing countries.

4.4 Social Policy

A third set of domestic policy considerations relates specifically to the impact robotics and AI are likely to have on jobs and labor markets. This has implications for a series of social policies. It is difficult to disentangle the impact of digital technologies from broader shifts in labor markets, including phenomena like increased work-from-home in the post-COVID era. But three features stand out. First, “gig work,” basically piece-work for one or more employers, driven by an app or similar digital technology, has increased. Second, the rapid pace of technological change means that re-training, re-skilling and multiple shifts in employer or even career has become the norm not the exception during the arc of employment for most people. Third, as noted previously (section 4.1), taxes may be oriented to taxing profits and rents, where the bulk of wealth lies. These features have implications for social policy.

To facilitate constant labor mobility, support – in areas like transport, childcare, education and pensions – should move from “job centered” to “person centered.” Student loan programs, tax deductions for fees and learning that are currently often related to the age of income level of the individual, might have to become universal. To support frequent skills upgrading, barriers to

reskilling and public-private partnerships in learning will have to be removed. Recognizing as a result that incomes may become “lumpy” and not be a smooth weekly or monthly wage flow, limits on tax-free savings might give way altogether, and pension plans might go either entirely public or have total portability as a central feature. Indeed, with higher wealth in profits and rent and less in income to labor, a universal basic income scheme may be the dominant form of social safety net, with public goods like education and perhaps transport paid for by taxes on economic rents and wealth.

4.5 Institutions and Governance

Big Data holds great promise in improving human development outcomes. But it requires norms and standards to govern collection, storage and use for which there is no national or global consensus.

The world is broadly divided into four data zones: China, the US, the countries of the European Union, and the rest - each with different drawbacks and together presenting a mix of aspirations with limited reach and scant enforcement. The state-centric China zone, where individuals have no control over their personal data, is often portrayed as the poster child of the long-threatened Orwellian society. But the corporation-centric US zone is equally disempowering for the average citizen. The “consent” users provide to companies is meaningless. Most do not read the endless pages of fine print before “agreeing”; and not agreeing, which means opting out of the digital world is seldom useful.

The European Union’s General Data Protection Regulation and recent (December 2023) Artificial Intelligence (AI) Act goes furthest in entrenching the rights of EU citizens to safeguard their privacy and provides a measure of control over personal data and the impact of transformational technologies like AI. But the GDPR is not without drawbacks. Costs of compliance are high, with small and medium sized firms facing a disproportionately large bill, which actually strengthens the large companies the regulation was designed to rein in. There is also a multiplicity of interpretations of the rules by different national data protection authorities.

The rest of the world - the majority of countries - does not have the capacity to create meaningful data governance. Their governments are either de facto observers of others’ rules or stumble along with a non-supportive data governance regime. UNCTAD figures show that one-fifth of countries have no data protection and privacy legislation. Thus, the prerequisites for a sound data management strategy are at least as important as the economic dimensions of the direct policy itself.

4.6 Broader global and institutional issues

How developing countries manage digitization and the new technologies will determine development outcomes for generations to come. Nationally, choices have to be made to develop a suite of policies that will stimulate innovation and associated wealth creation while incorporating distribution and other public welfare goals. This includes appropriate regulation of new technologies but also for Big Data, IP and participation in international negotiations in these areas. This must be done while access to the web and the “digital divide” remain real barriers to inclusive growth in many parts of the world.

Global governance for the intangible era driven by data and new technologies is at a formative stage. The existing ecosystem of regional and multilateral institutions is inadequate either because it is always a step or two behind the frontier of technological capabilities or because it leaves gaps in coverage that are both thematic and geographic.

The Osaka Declaration about “data free flow with trust” issued after the G20 Leaders’ summit in Osaka in 2019 has created a multilateral track to improve global governance in data and many related areas, but it remains a work in progress. Meanwhile, countries continue to improvise and sometimes advance. The Indian stack¹¹ – digital ID, e-payments, financial inclusion and health ID – is an example of a country outside the three data blocs applying sound citizen-oriented principles to digital policy. It also demonstrates that developing countries *can* participate in the digital economy by combining values with developmental aspirations.

Many countries, and in particular developing ones, are essentially left out of any substantive discussion on global digital governance and have little choice but to pick and follow a data realm or to follow a myriad of rules that may conflict across those realms (in either case, rules with which they had no input). There are many interrelated factors that underlie the lack of representation of developing countries in global digital governance discussions.¹² These include:

- Lack of technical expertise on digital issues;
- Lack of domestic legislation related to data governance and privacy which essentially implies that the countries are subject to the rules of digital platforms and the data realms;
- Lack of inclusivity in work that is underway by technical and standard-setting bodies;

¹¹ Matthan and Ramann (2022), India’s Approach to Data Governance.

<https://carnegieendowment.org/2022/08/31/india-s-approach-to-data-governance-pub-87767>

¹² Fay (2021), UNCTAD (2021), and UN (2019).

- The complicated nature of policy making for the digital economy, because digital technologies create horizontal policy issues and require a whole of government approach;
- Most importantly, the low priority assigned to digital technology cooperation nationally, regionally and globally, particularly since major tech firms are located in either China or the USA.

Governments themselves have taken insufficient actions and developing countries have borne the brunt of some of the pernicious harm emanating from the lack of suitable digital governance. These governance gaps and lack of inclusivity in current governance arrangements have created a number of risks that have become even more apparent during the COVID pandemic as they transcend borders. These risks include hyper surveillance and invasion of personal privacy; cyber security and the use of ransomware; disinformation and public health and safety; competition and abuses of monopoly power; the distribution of economic gains and even to democracy (Fay 2021).

The Bretton Woods conference was the Allies' answer to the financial and social shock of the emerging post-war period. A new Bretton Woods-style agreement might now be necessary to enable the world to meet the promise of the new connected age, to manage the far-reaching implications of digital technology and the associated rise of intangibles, and to provide an opportunity to create a similar institutional framework for the world's hard and soft digital infrastructure.¹³

In an earlier bold move in the aftermath of the 2008/9 financial crisis, the G20 created the Financial Stability Board (FSB). The FSB is a multi-stakeholder driven international institution that was set up by G20 Leaders to reign in and regulate global banks and insurers in the face of the light touch regulatory framework that had existed previously. The FSB is not treaty based but its success derives from both its institutional structure and from its transparent multi-stakeholder participatory international forums that include policy makers, regulators, standard setting bodies and civil society. Its overall objectives are set by the G20 Leaders, and it must report back to the G20 on progress against those objectives. The intangibles era might well require a similar institutional innovation; perhaps we could call it the Digital Stability Board (DSB). The DSB would also be a multi stakeholder representative forum with a remit to create global governance for big data, artificial intelligence (AI) and the digital platforms, while allowing national variations to reflect different values and cultures. At least in its early forms, the DSB would not impose specific policies on the global community (assuming this were even possible). Rather, it would rely on sharing of best practices, creating a "go to" database on various aspects of the digital economy and society, and production of an authoritative annual report on, say, threats to the cybersphere, to create, over time, a governance structure that countries and other stakeholders

¹³ Medhora and Owen (2020).

are willing and able to adopt.

While we live in an era where there is little appetite to create new global institutions, it is hard to see how the issues raised by global digital governance can be tackled without one.

5. Summary, Conclusions and the Way Ahead

This paper has discussed the critical role intangible assets play in driving economic growth in the modern global economy. In developed countries, the value and importance of investment in intangible assets are widely recognized, and both governments and firms have made significant efforts to capitalize on this resource. In developing countries, on the other hand, investment in intangible assets remains limited, and its significance is not yet fully acknowledged. Understanding how this situation will evolve and how intangible assets can become a key driver of economic growth in developing economies is a crucial theme for future research and policy.

The discussion has revealed key points in relation to how investment in intangible assets can contribute to economic development in developing countries. It highlights the aspects such as digital infrastructure, intellectual property protection, and workforce skills enhancement are vital for improving competitiveness and driving sustainable growth. The importance of these factors is set to increase as intangible assets become more central to the economic landscape of developing nations.

In light of this there are clear implications for donor policies. International assistance programs, particularly those focused on technology transfer and workforce development, should increasingly prioritize intangible asset-based support. For instance, donor countries and international institutions should focus on helping developing countries establish robust frameworks for intellectual property protection and digital economy readiness. Additionally, promoting business development and innovation through intangible asset utilization should be a key priority in future donor programs.

The research-for-policy agenda is a rich one, as each of the sub-sections in section 4 indicates. There are implications for every aspect of contemporary economic policy, in creating the prerequisites for a successful innovation economy to preserving it and advancing it given the rapid pace of technological change. Balances have to be struck between wealth creation and distribution, and protection of the public interest in crucial non-economic areas like privacy and human rights. These will vary by country and region, and over time, so the dynamic element on governance cannot be overlooked.

What would be immediately beneficial for developing countries is the establishment of rules and systems for evaluating intangible assets, taking into account the difficulty in assessing their actual value in developing economies. Additionally, further empirical research is needed to understand how investment in intangible assets impacts economic growth in specific industries and regions, particularly in less developed countries. Finally, identifying and addressing the legal and institutional barriers to protecting intellectual property and building digital infrastructure should also be prioritized in future policy-oriented research.

A common theme underlying success in this arena is the fostering of a culture where, in Michael Spence's words "creativity is fully unleashed and innovation is deeply embedded".¹⁴ There is ample room to forge a way forward, building analytical capacities and promoting evidence-based decision-making.

¹⁴ Spence (2017), p. x.

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Abstract (in Japanese)

要 約

本稿では、無形資産の重要性と発展途上国にとっての政策的な示唆について論じる。無形資産とは、特許、ブランド価値、ノウハウ、ソフトウェアなど、物理的な形を持たないが企業や国家にとって価値を持つ資産を指す。情報や知識が経済活動においてますます重要な要素となっている先進国では、無形資産は物理的資産と同等か、それ以上に重要な成長ドライバーと考えられている。無形資産の役割は、低所得国の発展にも不可欠になると期待されているが、この議論はまだ初期段階にある。本研究では、発展途上国の企業データにも触れつつ、無形資産の基本的な性質と経済におけるその役割について、議論する。無形資産が途上国経済の牽引役としてより重要な役割を果たすことが期待される中、貿易政策やマクロ金融政策、企業の人的資本投資戦略、知的財産権保護、社会政策、制度的ガバナンスなど、幅広い分野にわたって開発政策の転換が必要となる。また、国際協調・協力の役割や今後のさらなる研究への取り組みも重要である。

キーワード：無形資産、生産性、成長、イノベーション

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