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CREATIVITY AND ECONOMIC GROWTH:  
THEORY, MEASURES, AND  
POTENTIALS FOR MOROCCO**

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**ABSTRACT**

The current era of globalization is dominated by the rise of investments in intangible capital rather than tangible capital — the ascendance of creativity over plant and equipment. This brief paper is motivated by the possibility that emerging market economies such as Morocco might take greater advantage of new tools and policies designed for this new era. To begin, I discuss the transformation of the global economy and the consequences of the transformed global economy for economic thinking and measurement. I refer to both old and new literature on the measurement of intangible investment and capital. Then, I discuss the rising role of creativity and cultural difference in the development of these new economic forces, using the example of the Harry Potter book series. I then consider how cultural enhancement serves multiple purposes for a nation. Finally, I turn to some of the possible implications of these economic forces for Morocco, stressing that these implications are speculative.

*JEL Codes:* C8, O2, O32, Z11

*Keywords:* Intangibles, emerging market economies, measurement, economic development

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## **Creativity and Economic Growth: Theory, Measures, and Potentials for Morocco**

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The current era of globalization is dominated by the rise of investments in intangible capital rather than tangible capital — the ascendance of creativity over plant and equipment. This brief paper is motivated by the possibility that emerging market economies such as Morocco might take greater advantage of new tools and policies designed for this new era.

To begin, I discuss the transformation of the global economy and the consequences of the transformed global economy for economic thinking and measurement. I refer to both old and new literature on the measurement of intangible investment and capital. Then, I discuss the rising role of creativity and cultural difference in the development of these new economic forces using the example of the Harry Potter book series. I then consider how cultural enhancement serves multiple purposes for a nation. Finally, I turn to some of the possible implications of these economic forces for Morocco, stressing that these implications are speculative.

### **Section One: The Rise of Creativity**

*The Development of the Global Internet Economy:* Beginning in the 1970s, the microprocessor revolutionized the nature of economies around the world. The microprocessor made the decentralization of data and communication possible. In particular, the wide distribution of economic products became possible without a large corporate bureaucracy and a huge-economy-of-scale production facility. Instead, small firms became capable of earning billions of dollars a year (Nakamura, 2000, 2003a).

It had always been the case that large corporations were not as good at creating revolutionary innovations as smaller ones were. However, throughout the 20th century, large firms conducted most of the research and development because only they had the resources to distribute new products rapidly in quantity: Armies of secretaries, salespeople, and executives were required to sell large quantities of razor blades, computers, or sewing machines (Nakamura, 2004).

Now, with a global market of more than 2 billion Internet users who can be reached with a click, new billion-dollar Internet startups are launched by the dozen. If a startup can create a dollar's worth of value for the average Internet user, the startup is worth \$2 billion. The sizes of these payoffs inspire thousands of firms to enter the market, although only a few will succeed. Nevertheless, those who do succeed can revolutionize industries. The giant multinational

corporation, once able to dominate an industry for decades, is now under siege from a swarm of small competitors who came in under the radar.

The consequence has been that, in the leading economies, creativity became far more important than physical capital in launching and maintaining a great corporation. In the U.S., investments in creativity — in intangible assets such as copyrights, patents, and brands — exceeded investments in tangible assets. Figure 1 depicts U.S. relative investments in tangible and intangible capital in nominal terms. In the early 1970s, investments in R&D, software, and other intangibles made up roughly 5 percent of the U.S. GDP, while investments in tangible capital (equipment and structures) made up about 10 percent of the U.S. GDP. In recent years, investments in intangibles were about 9 percent of the U.S. GDP, with tangible investments at approximately 7 percent. This investment has paid off handsomely for many firms; indeed, many of the most valuable firms in the world, such as Apple, Google, Microsoft, and Johnson & Johnson, owe their value to intangibles.

The result has been an ever-faster pace of innovation and creativity. Advanced economies have spent more, and the spending has been more effective. Small firms that are allowed to compete and grow into large ones are better at being creative: They take bigger risks, and they capitalize on more fundamental ideas and visions (Nakamura, 2004). Larger firms, however, carry the burden of their past successes, which can often undermine their creativity (Christensen, 2011).

## **Section Two: Measurement Principles**

*Private Intangible Measurement Principles:* In the mid-1990s, economists began seeking ways to measure private investment in intangibles. Nakamura (2003a) and Corrado et al. (2005) were pioneers in this measurement. The basic principles used to establish the value of private intangibles are similar to those used to value other investments in national income accounts.

The accounting identities of national income accounts require that an output be identified quantitatively in terms of the money spent to produce it, the factors that earned the income, and the outcome (the value of the product).<sup>1</sup> The production costs can be identified by, for example, streams of expenditures on R&D and software. These in turn wind up as streams of returns to labor and capital, including intangible capital. The output of intangibles is harder to identify than in the case of tangibles because tangibles are typically produced at an arm's length from the investor. For example, a truck is sold by the truck manufacturer to the firm that will use the truck as part of its capital, and the sales price of the truck measures the investment expenditure. Similarly, a building that is built by a construction firm for a real estate firm has a contractual cost. The cost of these investments is revealed sharply by these arm's length transactions.

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<sup>1</sup> See Nakamura (2007, 2010) for a more detailed discussion of national income accounting principles and how intangible investment affects their measurement.

But intangibles are typically in-house: Apple develops a new iPhone for the most part using its own designers and engineers, and there is often no easy way to separate the expenditures that went into the design from other costs that are not creative, such as costs involved in managing product inventory. For example, how much of the CEO's time was spent on developing new products versus routine management? Apple's intangible investment is thus measured two ways: in the narrow expenditures that can be directly attributed to the iPhone design and in the broad addition to the market value of the firm that creates the investment. Unfortunately, the intangible expenditures made by a firm are a risky investment and may not result in increases in the market value of the firm. Or, as in Apple's case, the intangible investment may result in a huge increase in the market value of the firm. In practice, we use the streams of expenditures to measure intangible investment. The fundamental principle is that the intention of the private investment in intangibles is to produce a new product that will create a valuable stream of profits. We then validate this by examining the increase in market value. Because of the overall riskiness of the investment, this validation is undertaken on an industrywide basis (Hulten and Hao, 2008).

One interesting aspect of the economic theory that underlies intangibles is that they are fundamentally nonrival. The distinction between rival and nonrival products comes to the fore in discussions of intangibles and public goods. A product is rival if its use excludes alternative uses. For example, if you are sitting in a chair, no one else can sit in that chair without hindering your use of the chair. But for an idea or an expression, my use of the idea does not interfere with your use of it. Thus, possession — the natural property right — does not alone guarantee exclusive use. Instead, legal rights of intellectual property must be granted by sovereigns that deny unauthorized uses. Unlicensed use of a patented, copyrighted, or branded item is piracy. This property right, however, is generally temporary. In particular, patents and copyrights have terms limited in years. After a certain period of time, the private exclusive right to the idea or expression is socialized, and the idea or expression becomes public property (Nakamura, 2000).

Advertising, marketing, and brands become more important in the rapidly evolving world of the Internet. A firm can reach 2 billion Internet users if the users know how to look for it. Traditional economic measurement has paid little attention to the development of brands despite the crucial role that advertising plays in the development of the Internet. And the information available on the Internet, in turn, enhances our consumption of it in ways that are very difficult to capture in our data. But techniques are being discussed for adding these factors to our measures of private intangibles (Nakamura, 2015, Corrado and Hao, 2013).

*Public Intangible Measurement:* The measurement of public investment in intangibles is less well developed. These are expenditures that broadly increase individual and national capabilities. For example, pure mathematics cannot be patented, and thus, it is a natural candidate for public funding. Of course, government funding for scientific research may result in private intellectual property; for example, in the U.S., a university can patent research that is derived from public expenditures. However, the rationale for public expenditure on scientific

research is precisely that private incentives are unlikely to be sufficient incentive to induce the scientific research to be undertaken.

Public intangibles include government expenditures on R&D and government investments in the arts and design and in cultural and heritage products. Public intangibles also may include public, nonprofit, and private expenditures to create open data, open source software, and training resources such as massive open online courses (MOOCs) (Corrado et al., 2015). More controversially, these intangibles may include educational expenditures on noncognitive competencies of individuals and societal and communal organization.

On the other hand, public funding of scientific research may be subject to a version of regulatory capture; for example, funding may go to senior academicians without regard to the scientific merit of their projects. One of the short-term aims of the SPINTAN project of Corrado et al. (2015) is to examine how stocks of measured public intangibles may have assisted nations in weathering the recent global economic crisis. To the extent that we can find economic impacts from differential stocks of public intangibles, we may be able to better define public intangibles.

A wide definition of public capital could include formerly private intangible capital that has aged out of its intellectual property protection and has been socialized. The global economy is additionally propelled by the currents of the ever-deepening ocean of knowledge that is unencumbered by property rights. Obtaining access to parts of this ocean of knowledge is one reason why education has become more valuable over time (Freeman, 2014; Nakamura, 2003b).

The measurement of public intellectual capital is in a state of ferment and calls for creative responses. For example, marketing and advertising techniques for measuring and enhancing brand capital have become increasingly useful for nations (Corrado and Hao, 2013).

### **Section Three: Creativity Isn't Just About Technology**

Success in the new global economy does not necessarily require cutting-edge technological wizardry. Let's consider the billions of dollars in revenues that arose from the imagination of J. K. Rowling, author of the Harry Potter book series. In the mid-1990s, Rowling was a single mother on welfare in Scotland. Within a dozen years, she netted hundreds of millions of pounds. Her Harry Potter series sold about 400 million books worldwide, and the film series based on the books had worldwide box office earnings of nearly \$8 billion. Tens of millions of children and adolescents around the world learned they could read a book series with more than a million words.

When Rowling was first trying to publish Harry Potter, a reputable London literary agency pushed her work. Nevertheless, the 12 leading London publishers rejected the manuscript (McGinty, 2003). Bloomsbury Press paid £10,000 for the rights to publish Harry Potter in the U.K. Scholastic then bid \$100,000 (considered an extraordinary amount) for the rights to publish the series in the U.S. This sum enabled Rowling to work full-time on the book series.

Bloomsbury Press reaped its payoff: It earned hundreds of millions of pounds — more than a 10,000-to-1 return on its initial investment — enabling it to become one of Britain's leading publishers. Scholastic also made hundreds of millions of dollars — more than a 5,000-to-1 return on its initial investment — allowing the publisher to become a dominant player in books for children and young adults in the U.S.

Cultural success because of the global economy can emerge on a scale that was previously unimaginable. For the luckiest and most talented, the rewards are enormous; for others, failures are myriad. The dozen London editors who passed on Harry Potter lost more money for their firms than they could ever hope to earn in their lifetimes. Creativity is intimately tied up with large gambles and unequal returns — the so-called winner-takes-all economy (Frank and Cook, 1996).

But culture, design, and entertainment are key intangibles (Nakamura, 2015). Although technology is clearly important to a company like Apple, much of what differentiated Steve Jobs from other tech leaders was his design sense and his understanding of users. Artistic originals are also an important part of hard intangibles. The U.S. national income accounts include \$40 billion annually invested in artistic originals, and the true number is undoubtedly much larger.

A notable feature of the Harry Potter series is that the central action takes place at an English boarding school, Hogwarts. The depiction of Hogwarts builds upon the rich English heritage of private education at what are called public schools. And the details of English government, the media, and village life add to the rich satiric portrait that carries the twists and turns of the plots in the series. In a similar spirit, the *Seinfeld* television series depended greatly on the details of life in Manhattan.

One implication is that a culture's richness and specificity are national resources in global competition and a potential source of wealth. Individuals and small groups within the culture can create products and wealth by tapping into regional and global resources and markets. Of course, most such efforts fail, so it is critical that any nation that hopes to benefit from globalization must allow many individuals and firms within its borders to try new ideas and to reap the rewards from their efforts. The rule of law and of just rewards are crucial.

#### **Section Four: Cultural Enhancement**

As culture rises in economic importance, cultural enhancement has multiple benefits, not only to national economics but also to national pride. The animations of Hayao Miyazaki and Studio Ghibli, which celebrate Japanese traditions and cultural traits, have been successful around the world and have increased interest in and respect for Japan. The restaurant elBulli not only brought culinary innovation to the world in a variety of forms, but it also elevated Catalan cuisine and an increased interest in Spanish foods. British bands and singers such as the Beatles and Adele not only have earned huge sums through record sales and performances, but they have

continued to shine a light on British music traditions. Similarly, Cirque du Soleil blended Montreal street performance with storytelling and created a whole new variety of entertainment.

Cultural attractiveness also makes a country more appealing to its diaspora. In the global economy, every country sends some of its citizens to foreign nations where they can learn the latest design and production techniques. Will some of these citizens return and possibly use their knowledge to launch new firms based in their home countries?

The modern city is increasingly centered on amenities. Creators want to live in stimulating, inspiring, and delicious neighborhoods (Carlino, 2009; Florida, 2002), and in turn, cities that are laden with amenities are positioned to become innovative centers. Discerning critics and bloggers, who are crucial to honing and spotlighting creativity, are far more likely to congregate around cultural amenities. Can the government support creativity by allowing amenities and creators to flourish? This could require a delicate balance of allowing innovation while preserving cultural richness.

Furthermore, this innovation takes place amid a rising tide of knowledge and technology. The collective global consciousness encompasses a tremendous amount of learning. This knowledge is all stored digitally somewhere, but an individual or a community may have extreme difficulty accessing this knowledge. As individuals, we are islands of ignorance in this rising sea of knowledge. One way to counter this rising sea is by becoming more educated. Members of a community who are educated are potentially extremely important in helping their community to navigate the rising waters: Unfortunately, it is not always easy to trust the experts. Experts may use their proficiency for their own benefit, rather than for that of the community as a whole (Easterly, 2014).

Moreover, education and educational certification should not be seen as ends in themselves. Any given degree of knowledge is subject to obsolescence. What truly matters in education is that we learn how to continue to learn. Here, the online learning portals, MOOCs, can play a variety of important roles (Freeman, 2013). First, they are a means of continuing education and one that can take students to the frontiers of knowledge. Second, MOOCs enable students to test whether they are prepared for these frontiers by competing in homework and in tests with the best around the world. Third, MOOCs provide a high-stakes means of determining whether our educational institutions are producing graduates capable of studying and competing at a world-class level. As such, rewarding those educational institutions that have students who are able to perform well in MOOCs may be a useful supplement to educational quality initiatives.

Words such as “transparency” and “accountability” are bandied about a great deal these days. But part of the rationale for transparency and accountability is the importance of knowledge: By providing transparency and accountability, public and private institutions reduce the barriers to information. In a world in which we wish to encourage many entrepreneurs and

workers to step forth creatively into the global economy, the transparency and accountability of our institutions are important platforms for growth.

### **Section Five: Opportunities for Morocco**

Morocco already possesses a strong international brand. Blessed by its climate, a crossroads location, and a unique history, Morocco has a culture that is internationally attractive, as can be seen from its tourist appeal. Increasingly, tourism can be seen not only as a source of revenue but as a marker of amenities. And amenities form the basis for creative economies — they feed creators.

Of course, an intrinsic attractiveness — however great an asset — is not sufficient for economic growth. Morocco also possesses political and economic stability and is in the process of building upon that stability through capital investments and legal development. In particular, entrepreneurship coupled with the importance of transparency and perceived economic justice is now widely accepted as the keystone to the development of decentralized creativity.

Morocco has a large diaspora, the members of which could bring frontier knowledge back to the country if given sufficient incentives to do so. One such incentive may be to allow expatriates to build firms easily. This would require legal protections and a reasonable freedom from bureaucracy. The creation of entrepreneurial zones may be useful in providing this protection without undoing valuable regulations in historic areas. Morocco may also be attractive to people from other Arab countries rife with political turmoil.

The development and continuous improvement of national income accounts and national statistics are also important. These data help to inform policymakers whether policy initiatives are succeeding. They also provide assurance to private decision-makers, lowering uncertainties as they peer into the future. National statistics in the age of intangibles are undergoing continuous refinement; it is important that nations such as Morocco be aware of frontier developments. The refinement of statistics is an important element in a larger program of developing a working knowledge of intangibles. And spreading this information throughout the educational system and the business sector will take a sustained effort.

Among the most important elements is assuring entrepreneurs and workers in Morocco that they will receive a fair return on their efforts in a safe and pleasant environment. Morocco is well positioned to do so. A program that spreads awareness of the value of intangible assets and the economic opportunities that they bring may well help provide a foundation for economic progress.

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Figure 1.

Private Investment in the United States as a Proportion of Output

