Schumpeter's Theory of Innovation Empowers the New Economy of the 21st Century.

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Introducing Schumpeter

The discipline of economics in the 20th century was dominated by the theoretical contributions of Joseph A. Schumpeter and John Maynard Keynes. Both had distinguished academic careers and a profound influence on the evolution of economic theory. It is worth noting that Schumpeter and Keynes were contemporaries in age but discordant in economic orientation.

Schumpeter was a microeconomist who examined how consumers and producers' interface to achieve their desired outcomes and create personal economic gains. Keynes, on the other hand, was a macroeconomist who opened the door for government intervention in the economy with the purpose of avoiding the Great Depression of the 1930s from ever happening again and creating a stable fiscal and monetary environment that was conducive to economic growth.

Schumpeter's theory of innovation examined how entrepreneurs integrate advances in science and technology for economic success and business profits. Furthermore, he spotlighted the contribution that microeconomics makes to macroeconomics by growing the national economy, creating employment opportunities, and contributing to the economic well-being of its citizens in a capitalist system.

While Keynes received strong recognition in the western industrialized countries, Schumpeter's theories were applied with much success in Japan's post World War II economic development. Schumpeter's economic analysis was a bottom-up micro economic interpretation of the business cycle, as opposed to the Keynesian top-down model, which accords transcendent importance to macroeconomic variables. Whereas

Keynes emphasized monetary and fiscal policies as the tools for influencing the course of economic events, Schumpeter concentrated on the economic contributions of innovation and entrepreneurship in industrial sectors such as textiles in the eighteenth century, railroads in the nineteenth century and electricity in the twentieth century.

Schumpeter emphasized the predominance of sectoral economic analysis and the paramount importance of the entrepreneur as a catalyst for innovation as well as the driver of economic growth. In this microeconomic scenario, innovation in the Schumpeterian model, consisted of new products, new processes, new qualities of products, new sources of supply and new forms of business and industry organization.

This paper explores the impact of Schumpeter's theory of innovation in the context of the new global economy of the 21st century. More specifically, it will analyze the modern efficacy of his theory in explaining the emergence of the IT sector and the digital economy. While Keynes dominated the economic discourse with his book **A General Theory of Employment, Interest and Money** (1936) during the 20th century, it is becoming increasingly clear that Schumpeter's theory of innovation will become a paramount theoretical construct for the discipline of economics in the 21st century.

Schumpeter's Publications

In 1912, Schumpeter published **The Theory of Economic Development: An Inquiry into Profits, Capital, Credit, Interest, and the Business Cycle,** that described the pivotal role of the entrepreneur in contributing to economic growth within the capitalist system. In this conceptual framework, entrepreneurial initiatives would disrupt the tendency toward routine equilibrium by thrusting the economy towards a new plateau of economic linkages that was conducive to economic growth.

McCraw in his article "Schumpeter Ascending " captures the essence of Schumpeter's theoretical model in this manner:

"In the hypothetical system he (Schumpeter) describes in this book, which begins with a 'circular flow' analogous to the static system of Walras and other neoclassicists, economic routine is periodically interrupted by bursts of entrepreneurial energy. These bursts come in clusters. Together they disrupt equilibrium, and this dynamic process, says Schumpeter, is the basis of economic development. More than that, it embodies the essence of capitalism. Here, as in his later work, Schumpeter is primarily concerned with the phenomenon of economic evolution. Most economists, then and to this day, have contented themselves with the study of static systems of exchange governed by 'laws' of supply and demand. Schumpeter, on the other hand, as he himself later put it in a rare autobiographical letter, 'began at an early age to look upon economic life essentially as a process of change, and I tried to make the main features of this change the center of my own type of theory.' This explains his preoccupation with entrepreneurship. Hence also his careful specification of broad categories of development: the opening of a new market, the conquest of a new source of supply, the reorganization of an industry, the introduction of a new good or new way of production." (McCraw, 1991, pp. 373-374).

In the Schumpeterian model the process of structural change is propelled by industrial activity. Hence the industrial structure evolves over time through organizational development in a series of long evolutionary steps from crafts to factories to modern digital startups. Essentially, it is a “process of industrial mutation .... that incessantly revolutionizes the economic structure from within, incessantly destroying the old one, incessantly creating a new one” (Schumpeter, 1942, p.79). In this context Schumpeter introduces his most famous phrase “creative destruction” by which he means the replacement of old products, old enterprises, and old organizational forms by new ones.

Economists regard **Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capital Process** (1939) as Schumpeter’s most seminal contribution to economic theory. In this book, Schumpeter analyses the role of innovation as the foundation of the capitalist process. Indeed, he defines capitalism as a system in which innovation is the catalyst that leads to structural change and economic growth. Schumpeter articulates this concept in this manner: “Without innovations, no entrepreneurs; without entrepreneurial achievement, no capitalist returns and no capitalist propulsion” (Schumpeter, 1939, p.104). This book also examined the fluctuations during the innovation cycle, the spread of innovation, its clustering in some industries and in some periods of time.

INNOVATION THEORY

Innovation takes the form of a new product, an improved product, a new combination of the production function, a new raw material, a more streamlined process, an improved distribution system, a new organizational structure, or a more cost-effective process for delivering a public service. In some cases, innovation is the by-product of advances in science and technology. In other cases, it is a more efficient realignment of an administrative function. In essence, innovation contributes to a more cost-effective and improved product, process, or system. Innovation can be either an abrupt or an evolutionary structural change that serves as a catalyst for the transformation of the economic landscape.

According to Schumpeter, the process of technological change in a free market consists of three parts: invention (conceiving a new product, idea, or process), innovation (organizing the economic requirements for implementing an invention), and diffusion (whereby entrepreneurs adopt the new discovery). Schumpeter underlined the economic synergies between innovation and entrepreneurship. In essence, innovation is the leading economic tool for successful entrepreneurship. Indeed, innovation and entrepreneurship are inseparable and complement one another. Innovation relies on entrepreneurship to impact the economic landscape and entrepreneurship feeds on innovation by creating business profits. Schumpeter considered innovation and entrepreneurship as pivotal forces that propel economic success at the microeconomic level. Together they provide the machinery and the fuel for empowering and sustaining the new global economy of the 21st century.

Schumpeter introduced the concept of creative destruction as the process that allows new innovations to replace existing ones that become obsolete over time. He emphasized that economic progress is not a gradual and seamless process, but rather disjointed, abrupt, and sometimes accompanied by disruptions. More precisely, Schumpeter described the process of creative destruction that contributes to structural change and promotes economic growth in this manner:

“innovations do not remain isolated events, and are not evenly distributed in time, but... on the contrary they tend to cluster, to come about in bunches simply because first some, and then most firms follow in the wake of successful innovations” (Schumpeter, 1939, p.100).

Schumpeter’s long-term innovation cycles are driven by different industry clusters. The pattern that each cycle unfolds starts with the adoption of a set of innovations that are introduced into general use and subsequently lose momentum as the technologies mature and their profitability to investors decline with the contraction of business opportunities. This decline in economic capacity associated with the loss of economic potency of innovation technologies is followed by a new wave and new clusters of innovations which repeat the process of contributing to the structural transformation of the economy. All of this leading to an upswing of economic opportunities and an upward trend in economic growth. This cyclical process of creative destruction was made possible according to Schumpeter by the proactive role of the entrepreneur.

In Schumpeter’s model the entrepreneur’s profit is temporary because by adopting innovative technology the entrepreneur enhances the cost-effectiveness of an existing product placing that firm at a competitive advantage over other firms in the industry. The entrepreneur initially makes an abnormal profit because he sells the product at the market price which reflects the higher cost structure of the old firm in the industry. This profit margin will gradually disappear as other firms adopt similar state-of-the art technologies.

The evidentiary support for Schumpeter’s long term innovation cycles commenced in the late 18th century with waterpower, textiles, and iron. It was followed by steam, rail, and steel in the mid 19th century. At the turn of the 20th century innovations in electricity, chemicals and the internal combustion engine took place. The third cycle peters off in the 1950's, with the ascendancy of electronics, aviation, and petrochemicals. The decade of the 1990's ushers in the information age of the new economy with transformational innovations in internetization, digitalization, electronic software, new media, genetics, and fibre optics.

It is worth noting that the duration of the innovation cycle appears to be contracting over time from an initial 50 to 60-year duration to a shorter 30 to 40-year period. In part, this contraction is a recognition of the Schumpeterian importance of innovation to the process of enhanced productivity, economic growth, and business profitability. This recognition has served to increase investment in research and development which is an essential prerequisite for facilitating innovation.

Economic history demonstrates the cyclical fluctuations of boom and bust that occur over time in the form of the business cycle. Schumpeter proposed a second form of cyclical fluctuations. More precisely, he demonstrated that a cyclical pattern occurs with each introduction of an innovation on the economic landscape.

CREATIVE DESTRUCTION

In the English language an oxymoron is a figure of speech containing words that seem to contradict each other and is referred to as a contradiction in terms. The term “creative destruction” qualifies as an oxymoron because the words used have opposite meanings. The concept of creative destruction is seminal to our understanding of the theory of innovation as the economic engine that drives the new global economy of the 21st century.

The ascent of the Age of Internetization is a good example of creative destruction. Internetization, which is global outreach combined with electronic connectivity, is a new word and concept that I introduced to describe the spectacular innovations in human communications, economic governance and empowering businesses. In effect, internetization has impacted the way we communicate, learn, travel, interact with the economic marketplace, do our banking, enjoy our leisure time, seek entertainment opportunities, and access government services. The advent of internetization has accelerated the operational aspects of innovation and the speed of structural change on the economic landscape (Passaris, 2021).

Creative destruction is a concept that was introduced by Schumpeter to the economics lexicon. It introduced a dynamic and evolving feature to structural change. It is driven by an entrepreneurial intervention to the process of renovating the economic landscape. In this journey, it is assisted by innovation and the advances in science and technology. In effect, creative destruction recognizes change as a constant feature in the human condition and economic enterprise. The guiding principle of creative destruction is to change with the times and take advantage of new opportunities.

Creative destruction was introduced by Schumpeter as part of a new paradigm that was triggered by a business strategy. Schumpeter introduced the operational aspect of a business strategy to the economic literature in the following context:

“Every piece of business strategy acquires its true significance only against the background of that process and within the situation created by it. It must be seen in its role in the perennial gale of creative destruction; it cannot be understood irrespective of it or, in fact, on the hypothesis that there is a perennial lull... In other words, the problem that is usually being visualized is how capitalism administers existing structures, whereas the relevant problem is how it creates and destroys them” (Schumpeter, 1942, pp. 83-84).

In Schumpeter’s theoretical model the entrepreneur is a disruptive innovator who envisions a different future. The entrepreneurial mindset becomes a catalyst for change

and innovation. While traditionally, entrepreneurial initiatives have been confined to the private sector, they also have a pivotal role in the public sector.

Creative destruction is an appropriate operational concept for the public sector as well as the private sector. Indeed, the concept of creative destruction in the public sector resonates with the mission of economic governance and the formulation of economic policy in the 21st century. It is an effective response to the contemporary economic governance challenges such as shrinking budgets and the necessity to do more with less. More precisely, contemporary economic governance must embrace an entrepreneurial mindset and a transformational agenda that leads to the adoption of innovative public policy initiatives.

NEW ECONOMY

The new global economy of the 21st century has transformed the economic landscape in a profound and indelible manner. Never in human history has the pace of structural change been more rapid, pervasive, and global in its character. Indeed, the 21st century has triggered transformational change to the economic, social, and environmental landscape.

The ascendance of the new global economy has become a catalyst for geopolitical symbiosis, economic integration, trade liberalization, technological change, financial interconnectedness, and a heightened awareness of the adverse economic consequences of climate change. Furthermore, the signature mark of the new global economy is new ideas, new technologies and new directions. The engine that is driving the new economy are spectacular innovations.

The new economy is composed of a trilogy of interactive forces that include globalization that has morphed into internetization, trade liberalization and the information technology and communications revolution. Internetization in the form of electronic empowerment and international outreach is an appropriate descriptor for the new global economy of the 21st century. Free trade has enhanced global economic integration and extended the economic architecture. The Information Technology (IT) Revolution has made geography and time irrelevant by diminishing distance and acceleratinf connectivity. All these pillars of the new economy are driven by a virtually borderless world with a tremendous capacity for electronic connectivity.

The economic profile of the new global economy has been driven by technology, fueled by innovation and entrepreneurial initiative, and is propelled by new ideas, new perspectives and new business strategies. It has opened the door to new investment opportunities and realigned the linkages between different sectors of the economy. In short, Schumpeter's legacy of transformational innovation and entrepreneurial initiative is alive and well in the new global economy of the 21st century.

The role of information and communications technology in the new economy has been pivotal. This is particularly true of the changing structure of international production and

global production networks. In this context, firms are integrating the production and marketing of goods and services across national borders. International economic transactions that formerly were conducted between independent entities are now being internalized within a single firm or multinational corporation. The new technological infrastructure has enabled services to be delinked from production and performed remotely. In this contemporary venue the market for a growing number of internationally integrated but geographically dispersed business enterprises is global, rather than national or regional. Indeed, the collapse of time and space through the medium of information and communications technologies has displaced the physical market with the virtual market of the internet for business to business and business to consumer transactions. Indeed, the process innovation that has taken place in the last few decades has empowered the new economy to reach greater heights of global outreach.

The production of goods and the provision of services in the new global economy is dictated by the economics of profitability. In other words, the high cost of the information technology infrastructure and highly skilled labour used in the production process require a marketing niche that caters to a large global market rather than a small national market. It has also necessitated the introduction of the concept of mass customization and sensitivity to cultural diversity. This in addition to the logistical benefits of integrating production globally and forming international economic liaisons. In short, economies of scale have transitioned to economies of scope as the driver of the new economy.

Innovation is the signature mark of the new global economy of the 21st century. This reflects the fact that the old economy of the 20th century was about the resources under our feet. In sharp contrast, the new economy of the 21st century is about the brain power between our ears. Furthermore, the engine that is driving economic success in the contemporary context is innovation. There is no denying that innovation has become an essential prerequisite and a core catalyst for economic success and collective prosperity in the modern economy of the 21st century.

At the present time, we are on the cusp of a new wave of innovations related to Artificial Intelligence (AI). It is anticipated that AI will trigger monumental structural changes on the economic landscape. It will also have impactful consequences on production, employment, public services, education, and workplace skills. In short, AI will impact in a profound and indelible manner on the national economy, businesses, the private sector, the public sector, and civil society. There is no denying that AI will create significant benefits but will also create new challenges, risks, and malfeasance on many fronts.

CATACLYSMIC SUPERFECTA

The first three decades of the 21st century have unleashed a cataclysmic superfecta. Starting with the global financial crisis of 2008 which adversely affected financial institutions worldwide. This was followed by the protracted Great Recession which triggered a sharp decline in economic growth accompanied by high levels of unemployment (Passaris, 2020). In the third decade, COVID-19 created a global tsunami

of economic devastation and an asymmetric economic impact within and between countries.

Throughout the new millennium, humanity has witnessed the progressive deterioration of the environment and the decline of biodiversity. The ensuing natural disasters have resulted in the loss of human lives and economic assets. The economic impact of climate change is both severe and global in consequence. There is no denying that climate change is causing significant environmental, economic, social, biological, and human harm nationally and internationally. It is manifest in increases in average global temperatures. Higher temperatures are precipitating longer droughts as well as increasing the frequency and severity of heat waves. They are also causing extreme weather events and natural disasters like destructive floods, residential area wildfires, forest fires, environmental storms, sea level rising, and have brought our ecosystem to the brink of collapse. The last two years have witnessed an unrelenting series of contemporary climate disasters such as devastating floods, extreme weather, droughts, wildfires, soil erosion, crop failures, as well as loss of life and property. All of this has triggered a new wave of innovations in the energy sector that has forced the transitioning from high polluting fossil fuels to renewable sources of energy.

Towards the latter part of this period, geopolitical tensions have accelerated on a global scale. This is evidenced by the current military conflict in the Ukraine and the Middle East. All of this has precipitated supply chain disruptions, product shortages, and global inflationary pressures. The global economic landscape is in dire need of renovation and streamlining. In effect, process or organizational innovation can serve to streamline the scope and substance of economic global linkages in the modern context. The major issues confronting humanity in the third and subsequent decades of the 21st century are global in character and context. In consequence, our contemporary challenges require a multilateral approach and global solutions.

The contemporary hot button economic issues facing humanity require a concerted effort to develop a new economic governance model and an improved economic policy mandate. There is an urgent need to develop a tripolar economic policy formula that integrates an economic, social, and environmental dimension. The days when economic policy, social policy, and environmental policy were developed on separate tracks and in isolation of each other are behind us. The future requires that economic governance recognizes the complementarity and synergies between these policies and addresses them within a holistic paradigm. In effect, the current economic governance architecture was designed for the old economy of the 20th century and has proved ineffective and inadequate for the new economy of the 21st century.

ECONOMIC HISTORIOGRAPHY

It has become increasingly clear that the discipline of economics at the present time lacks the benefit of historical hindsight. Contemporary economic policy suffers from a historical vacuum. It lacks an appreciation of our collective economic historiography. If there is one

glaring omission in the recent development of the discipline of economics it is the neglect and atrophy of all things historical. In consequence there is a compelling need to rediscover the value of economic history and the history of economic thought.

There are two foundational tenets that should define the historical context in economics. First, an appreciation of the history of economic thought and second, the historical context for economic events. It should be emphasized that the history of economic thought and economic history are very different and distinctive. The historical back drop has become an increasingly neglected dimension in the contemporary evolution of the discipline of economics and in informing and shaping economic policy.

There is an urgent need to rediscover the value of economic history. History and economics are in many respects complementary and interdependent with strong intellectual and structural linkages. Furthermore, the history of economic thought introduces a critical and contextual appreciation to modern economic theory. In effect, the history of economic thought provides us with the genetic topography and the DNA composition for the modern discipline of economics.

Schumpeter's theory of innovation is anchored in the powerful role of economic historiography. The discipline of economics has always been in a constant state of evolution, transformation, and technical refinement. Furthermore, the history of economic thought attests to the structural changes in philosophical orientation and theoretical direction that have taken place over the past centuries.

There is no denying that economic history has been undervalued as a tool of contemporary economic analysis. The intrinsic value of economic history should be rediscovered in order to enhance the potency of economics in the 21st century. Economic history is not simply about the past, it is important for the present and the future. History is a continuum from the past to the present and into the future. It preserves the past, explains the present and shapes the future. In many respects economic history illustrates the lessons of hindsight and prevents us from repeating the errors of the past. It also serves to shed light on the present and helps us chart an enlightened course for the future.

Economic history is the record of the collective memory for homo economicus. It is the context for contemporary economic issues and events. It is also a valuable tool for predicting the future evolution of economic events. Indeed, economic history can be a valuable analytical tool for a proactive approach that averts crises and identifies new opportunities. In effect, the more we know about the past, the better prepared we are for the future. In short, the 21st century must embrace the maxim that history is not simply about explaining the past, it is perhaps more important in analyzing the present and predicting the future. Furthermore, Schumpeter developed his theory of innovation by looking back in time at the monumental innovations that have changed the course of economic history and shaped future economic events.

Rediscovering the value of economic history and the history of economic ideas will correct a glaring contemporary omission in economics. Indeed, it will eradicate the diagnosis of historical amnesia in our arsenal of effective tools for economics. These historical

flashbacks provide a timeline and a historical narrative that enhances the analytical role of modern economic events and contributes a historical continuum that would otherwise be absent.

Economic history demonstrates the cyclical fluctuations of boom and bust that occur over time. Schumpeter proposed a second cyclical fluctuation. More precisely, he demonstrated that a cyclical pattern occurs with each introduction of an innovation on the economic landscape. Whenever an entrepreneur disrupts an existing industry, it is likely that entire sectors will be temporarily disrupted. According to Schumpeter, these cycles are tolerated because they allow resources to be freed up for other, more productive uses. In this regard, there is a cyclical fluctuation and a historical context with innovations that resonates with the process of the cyclical evolution of boom-and-bust periods.

Schumpeter lauded the scholarly benefits of economic history and peppered his theoretical publications with references to important historical milestones. His most penetrating observation regarding the value of economic history was offered by Schumpeter in his last book. In **History of Economic Analysis** (1954), he emphasized that the proper study of economics requires three elements: theory, statistics, and history. He concludes by placing history on a special pedestal by saying: “If, starting my work in economics afresh, I were told that I could study only one of the three but could have my choice, it would be economic history” (Schumpeter, 1954, p.12).

It has become increasingly clear that the discipline of economics at the present time lacks the benefit of historical hindsight. History and economics are in many respects complementary and interdependent with strong intellectual linkages. In consequence, we need to abide by Schumpeter’s dictum and embrace the important contextual dimension of all things historical for the efficacy of the discipline of economics.

CONCLUSION

The economic profile of the new global economy has been driven by technology, fueled by innovation and entrepreneurial initiative, and is propelled by new ideas, new perspectives, and new business strategies. In short, Schumpeter’s legacy of transformational innovation and entrepreneurial initiative is alive and well in the new global economy of the 21st century.

Innovation is the signature mark of the new global economy of the 21st century. Furthermore, innovation has served as an economic shield in confronting the challenges of the recent cataclysmic superfecta. Indeed, Schumpeter’s theory of innovation serves as a beacon and a road map for the economic landscape of the 21st century. In effect, Schumpeter’s theory of innovation, which combines pathbreaking innovations and entrepreneurial initiative, has emerged as the modern template for economic growth.

The new global economy of the 21st century is empowered by new technology and trailblazing innovations. In addition to the business cycle of boom and bust, Schumpeter demonstrated that a cyclical pattern occurs with each introduction of an innovation on

the economic landscape. The concept of creative destruction has become seminal to our understanding of the theory of innovation as the economic engine that drives the new global economy of the 21st century. The ascent of the Age of Internetization is a good example of creative destruction.

Schumpeter's theory of innovation is anchored in the powerful role of economic historiography. The role of economic history and the history of economic thought have emerged as intellectual assets in informing the discipline of economics. Schumpeter lauded the scholarly benefits of economic history and peppered his theoretical publications with references to important historical milestones.

At the end of the day, the old economy of the 20th century was about the resources under our feet. In sharp contrast, the new economy of the 21st century is about the brain power between our ears. There is no denying that innovation has become an essential prerequisite and a core catalyst for economic success and collective prosperity in the modern economy of the 21st century.

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