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Strategic Foresight Program

DE-WORLD

Declining Global Mega-Trends, and What to Do About Them

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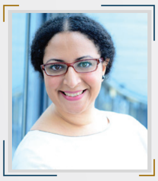

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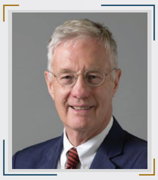

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Forward

Megatrends are defined as broad, impactful movements that bring about deep-seated changes on a global scale. These trends, associated with globalization, demographic shifts, technological innovation, urbanization, and climate change, are shaping the scenarios of the present and future world.

Throughout history, megatrends have been tracked from past centuries to the onset of modernity and the industrial revolution in the West. They have often been portrayed as escalating and growing. While there is historical, empirical, and sensory evidence to support this view, it has been closely linked to the ideology of modernist progress, envisioning a world that is constantly advancing and moving forward.

However, as the world undergoes significant yet undefined transformations, we can now observe megatrends veering towards decline, slowdown, and recession.

The current phase of globalization is marked by imbalances; which casts doubts about the idea of a converging world. This is particularly evident amidst escalating geopolitical rivalries among major powers and competition within the multipolar international system. As a result, the concept of establishing parallel international systems has emerged. These developments have also led to skepticism regarding the effectiveness of economic globalization and interdependence.

Furthermore, due to various forms of Deglobalization, the phenomenon of global de-growth has gained prominence. It is perceived both as a cyclical capitalist economic trend and as a conscious movement that views absolute growth as unsustainable and even perilous to the planet and societies.

Among the prominent megatrends is de-population, which affects advanced and post-industrial societies, while other communities may face potential declines in population growth rates. This trend will have consequences for China's rise and necessitate other powers to reconsider their immigration policies to compensate for population decline. Finally, despite the rapid pace of technological innovations and the dominance of new technologies such as artificial intelligence, there are indications of de-innovation. Due to market dynamics dominated by technology companies, improving existing products is prioritized over investing in new knowledge that enhances human life and addresses pressing societal issues.

In this issue, we examine various trends that we label as "De-world." However, it is important to note that this does not necessarily mean that the world will move in the opposite direction. Globalization continues to persist, primarily due to advancements in communication and the occurrence of crises that transcend borders and continents.

Furthermore, it is crucial to recognize that humanity will not disappear from the planet solely due to a population slowdown. In fact, demographic giants in the Global South, such as Africa and India, are poised to reclaim their status as the most populous regions.

While human civilization has a rich history of innovation and creativity, it is essential to address emerging issues as proactive measures before they transform into challenges or threats. These downward trends serve as strong indicators of a new world that is yet to be born, and they require careful attention and management.

Muhammad Alaraby
Head of Startegic Foresight Program


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A World Deglobalized

Are We Coming together or Parting further?

Soha Rashed

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Introduction

Throughout history, humanity's progress has been driven by a global exchange of products, services, and knowledge. Even conflict can be seen as a form of global exchange. This interconnectedness and interdependence, often referred to as globalization, continued to grow until we embraced the idea that "the globe is a village." However, there is now a debate about whether we are witnessing a reversal of this trend, leading to increasing global fragmentation and de-globalization.

A cornerstone of all debates around globalization and its possible decline or change in direction is the lack of a common definition to describe it(1). As defined by the International Monetary Fund (IMF), globalization is "the process through which an increasingly free flow of ideas, people, goods, services, and capital leads to the integration of economies and societies"(2). However, Professor Manfred Steger believed that globalization is a complex phenomenon with economic, political, cultural, social, ideological, and environmental dimensions. Therefore, he argued for a more encompassing definition: "a multidimensional set of social processes that create, multiply, stretch, and intensify worldwide social interdependencies and exchanges while at the same time fostering in people a growing awareness of deepening connections between the local and the distant"(3).

Today, this debate has even further expanded to consider whether globalization is in decline or what has become known as "Deglobalization".

History of Globalization

The term "globalization" appeared in the 1960s, yet as a phenomenon, Steger traced its beginning back to 12000 years ago when a group of hunters reached the southern tip of South America, and by that, marking the first point in history when humans had settled across all continents(4). Following that, there have been many different phases in the evolution of globalization. But when debating globalization today, the discussion is referring to the wave of economic and political global integration that started post

World War II and was further accelerated following the 1989 fall of the Iron Curtain, and supported by the evolution of transport technologies and the internet.

In 1945, the world witnessed the end of World War II and the rise of the international liberal order. This was marked by the establishment of multiple institutions such as the United Nations (UN) and declarations and agreements like the Universal Declaration of Human Rights. The end of the Cold War also brought about the creation of further multilateral institutions and declarations, including the World Bank (WB), the International Monetary Fund (IMF), and the General Agreement for Trade and Tariffs (GATT)[5]. It is important to mention the foundation of the EU and NATO as well[6]. The period between the 1990s and the global financial crisis in 2007 saw the flourishing and expansion of globalization. This era, known as hyperglobalization, was characterized by US-led market globalism, economic neoliberalism, and consumerist individualism[7].

The nature of the relationship between the liberal order and globalization is a matter of dispute[8]. Some opinions suggest that globalization is a consequence of the liberal order, while others argue that the liberal order is a result of globalization. Still, there are those who believe that they are interconnected[9]. However, it is widely acknowledged that they are related, and as a new world order emerges, globalization, as we currently understand it, is undergoing change. Various terms such as deglobalization, slowbalization, localization, regionalization, reformed globalization, and glocalization are used to explain or describe this emerging phenomenon or declining trend. One can argue that a shift from globalization is an inherent function of globalization itself, or one can argue that it is simply taking on a new form. Nevertheless, there are other explanations as well.

Measuring Globalization

The metrics used to measure globalization play a crucial role in the ongoing debate about its decline. Typically, these measures rely on statistics related to international trade and foreign direct investment, expressed in dollar value. These statistics have been indicating a decline or a slowdown, as seen in the peak of trade as a percentage of global output in 2008[10]. According to the World Bank's 2024 Global Economic Prospects Report, global trade expansion in 2023 was only 0.2%, the lowest in the past 50 years, excluding periods of recession[11]. However, it is argued that the decrease is solely in the dollar value of trade. If trade were to be measured by the ton-kilometer of goods traded, a different story emerges—one of significant growth. While the trade share as a percentage of global output reached its peak in 2008, ton-kilometers increased from 55 trillion in 2008 to 82 trillion in 2020, representing a 49% increase. This argument highlights the need to reconsider the metrics used to measure globalization[12].

Signs of Deglobalization and its Implications:

The reverse or shift in globalization could be attributed to several driving forces. While on their own, each of these drivers is sufficient to cause a slow down or shift, but it is their totality that impacts the force of the shift. Below we explore some of the main drivers of Deglobalization:

1. Risks of interdependence: Globalization presents numerous risks, one of which is the fragility of the global supply chain market. This vulnerability has been exposed through various events in recent years. For instance, in March 2021, a ship stuck in the Suez Canal for six days blocked an estimated $10 billion of global trade daily(13). This incident occurred in the wake of the global coronavirus pandemic, which had already disrupted the global supply chain and caused shortages in various supplies internationally. More recently, geopolitical tensions have further compounded these risks. Attacks on ships in the Red Sea, in response to the conflict between Israel and Gaza, have forced shipping companies to reroute through the longer and costlier Cape of Good Hope. Additionally, shipping insurance costs have been on the rise(14). Furthermore, the increasing frequency of climate events poses a constant threat of disruptions.

Hence, as a risk management practice, organizations are implementing various measures to make their supply chains more sustainable, resilient, and cost-efficient. These measures include reshoring, which involves repatriating supply chains to the home country, as well as nearshoring or friendshoring, which involve establishing supply chains with neighboring countries or geopolitical allies. For instance, some USA companies have created production facilities in Latin America, either as replacements for or in addition to their facilities in Asia. Apple has also moved parts of its production facilities to India and Vietnam(15). The terminology used to describe these measures depends on the location of the supply chain. Reshoring is often referred to as localization in the context of deglobalization, while friendshoring or nearshoring is labeled as regionalization.

According to a survey conducted at the end of 2022, over 60% of European and American manufacturers have plans to partially reshore within the next three years. Additionally, another survey found that in 2022, the US transport and manufacturing sector reshored 350,000 jobs, representing a 25% increase from 2021(16).

2. Economic Uncertainty: The world economy is struggling due to the impact of interconnected complex crises or the polycrisis as named by the World Economic Forum(17). A slowed growth, high inflation rates, an emerging trade war between the US and China, a surge in energy costs due to the Russian war on Ukraine, and the pandemic, to name a few examples, have all contributed to a struggling economy. Economic nationalism is also on the rise and is manifested through the tightening of labour migration, trade restrictions, increased protectionism, and non-compliance with international trade agreements(18).

In August of 2022, the US signed the Inflation Reduction Act (IRA), which serves as an example of the observed changes. While the act aims to curb US emissions, it does so by violating global trade rules. The IRA promises a trillion dollars of public funding and trillions more from the private sector to combat climate change. However, it also provides subsidies based on the use of domestic products, which is prohibited by some WTO rules. Critics argue that this legislation opens the door for other countries to implement similar protectionist policies, such as India's "Make in India" initiative and China's "dual circulation" policy(19). Instead of taking this opportunity to propose a revision of international trade regulations to better address the climate crisis(20), the US opted for a different approach.

3. The rise of nationalism: Politically, the world is currently experiencing a rise in nationalism and populism, with significant implications for globalization. This trend was evident in the United States when Donald Trump won the elections with his promise to "Make America Great Again." During his tenure, the US withdrew from several international agreements, including the Paris Agreement on climate change. Although the US initially exited the agreement in November 2020, it re-entered on January 20, 2021, the first day of President Biden's term(21). Similarly, the United Kingdom underwent a process known as Brexit, resulting in its withdrawal from the European Union in 2020. This decision had a profound impact on trade relations between the UK and the EU, as well as on employment for EU citizens in the UK and UK citizens in the EU, who now required new arrangements. Additionally, immigration policies have been tightening, which will affect the movement of people. In parallel, multilateralism has proven ineffective in addressing global challenges such as climate change. The coronavirus pandemic further highlighted this issue, particularly through the concept of vaccine nationalism. Wealthier countries hoarded vaccines at the expense of poorer nations[22].

4. The rise of interstate armed conflicts: In today's interconnected world, peace and globalization are deeply intertwined. The presence of peace creates an environment where globalization can thrive, while the forces of globalization, in turn, foster a stronger motivation to maintain peace. However, recent trends indicate a concerning shift towards conflict. The years 2022 and 2023 have witnessed a surge in global conflicts, marking the highest levels of turmoil since the Cold War[23]. The possibility of a third world war is currently being discussed, adding to the growing sense of unease. In 2023 alone, the International Institute for Strategic Studies in London documented a staggering 183 armed conflicts worldwide[24]. The disruptive impact of war on globalization is evident in various instances. For instance, the Russian invasion of Ukraine caused significant disruptions in energy and food supplies, while the war on Gaza led to disturbances in shipping routes. As conflict persists and potentially escalates, the world is likely to experience further deglobalization.

5. A new world order: There are several signs indicating the establishment of a new world order. One such sign is the rise or expansion of alliances. This year, the BRICS added five new countries, collectively representing 28% of the global GDP and 3.5 billion people[25]. China and Russia have been challenging US hegemony through trade and proxy wars. Another indicator is the rise of de-dollarization. The United States Dollar (USD) has been the dominant reserve currency for decades. However, more and more countries are now switching to other currencies for trade. For example, Brazil and Bolivia now use the Chinese Renminbi in their import and export transactions. Additionally, many countries no longer use the USD when trading oil, further challenging its dominance[26].

Drivers of Continued Globalization:

While there are many signs that globalization is shifting, there are also indicators to show that globalization is here to stay. Some of these indicators are described below:

1. The digital/cloud economy: In today's digital age, the economy is increasingly reliant on technology. With many jobs now able to be performed remotely, the workforce has the potential to become truly globalized. While stricter migration policies may hinder physical relocation for some employees, it does not prevent them from working for companies in other countries.

2. Global challenges: The world is currently facing numerous global challenges, including climate change and the coronavirus pandemic. These challenges require collective solutions and necessitate global unity. Despite the failure to effectively address these challenges, they serve as a reminder of the shortcomings of multilateral systems in bringing about meaningful change. However, there are occasional instances of global

solidarity, such as the international support witnessed during the earthquakes in Turkey and Syria.

3. The need for raw materials: The global trade of goods is driven by the need for raw materials. Although countries can relocate their production facilities, they still rely on specific countries for sourcing certain materials. Unless measures are implemented to restrict the export of these raw materials, the demand for them will continue to drive global trade.

Looking Forward

The question of whether there is a shift from globalization to deglobalization or if globalization is taking on a new form is challenging. One thing we know for sure is that global supply chains of physical products will change. Additionally, we can anticipate that with the change in the global political scene and the shifting world order, there will be more limitations regarding the movement of people. This comes at a time when more people will need to move for involuntary reasons, such as climate migration. However, it's important to note that while physical movement may face restrictions, the movement of data, ideas, and even remote work possibilities will only continue to rise. The debate on the future of globalization and its various forms continues.

What to watch:

- **The ongoing and upcoming conflicts:** The ongoing and upcoming conflicts have a direct correlation with deglobalization. This is primarily due to political tensions between countries, which can have a significant impact on their trade relations. Additionally, conflicts can also lead to disruptions in the global supply chain.

- **De-dollarization:** The process of de-dollarization is still in its early stages worldwide, but it is steadily gaining momentum. The increasing number of countries opting to de-dollarize is not only a significant development within the global financial market but also an indication of further deglobalization.

- **Impact on developing economies and emerging markets:** If deglobalization continues, emerging markets will face significant challenges. Firstly, they will lose their international markets, which provide them with foreign currency to support their imports. Additionally, they will have reduced access to foreign direct investment (FDI), as foreign investments will decrease. This will leave them more reliant on debt to balance their financial flows. Lastly, they will lose access to the technological advancements they were exposed to through their trade relations with advanced economies. These effects will impact the different dimensions of globalization, including goods, capital, and ideas[27].

- **Climate change events:** Extreme weather events, which are becoming more frequent due to climate change, can cause significant disruptions in supply chains. These disruptions have the potential to greatly impact global trade. Additionally, as global awareness of climate change increases, consumption patterns are changing. This shift in consumer behavior will also have an impact on how companies conduct business and, consequently, on trade.

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The Impact of Geo-Economics

Deglobalization and End of World Developmental Initiatives

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Amidst the growing uncertainty plaguing the global economy, former German Chancellor Angela Merkel warns that globalization —and the borderless world it created— has made us more fragile in the face of long-term repercussions. This logic, however, does not align entirely with the views of the founding father of political economy, Adam Smith. In his book, "An Inquiry into the Nature and Causes of the Wealth of Nations", Smith argues that a nation's wealth is not measured merely by the gold and silver it hoards in its coffers, but by its production of goods and services. The backbone of this wealth, Smith adds, rests fundamentally on the liberation of a nation's productive capacity within an economic system that operates autonomously, elevating the environment of competition and free trade.(1)

One could argue that Merkel's vision aligns with a realistic perspective of promoting the free flow of trade, investment, and individuals. This view places economics, often described as a junior partner(2), in a secondary position to politics. Consequently, "multinational economic development arrangements" become instrumental in defining the strength, legitimacy, and regional and international influence of nations. As a result, the pursuit of further economic gains by various countries at the regional and international level inevitably leads to escalating conflicts among multiple parties.

This logic supports the emergence of the term geo-economics, which combines geography and economics. It also includes expressions such as the "weaponization of economics"(3), which refers to the strategic use of economic tools and mechanisms to achieve political or geopolitical objectives. Other terms in this context include the "cold economic war,(4)" "coercive economic measures," and "economic sanctions(5)."

In other words, these developmental arrangements, particularly regional and international initiatives, have become a key tool for geopolitical competition while also striving to achieve mutual benefits and promote prosperity for humanity. These mechanisms focus on strengthening the economy and asserting regional and international dominance. Therefore, it is essential to comprehend these initiatives, their interaction within the global framework, and their future prospects. This analysis addresses these main issues.

Key International Development Initiatives

Typically, multinational economic development arrangements take various patterns, each with their characteristics and levels of achieved integration. These patterns include free trade agreements (FTAs), bilateral investment treaties (BITs), strategic alliances and partnerships, common markets agreements, and regional development initiatives. Additionally, economic and monetary unions (EMU) entail a higher degree of economic integration among member countries. International development initiatives refer to cooperative efforts and programs involving multiple countries, aimed at enhancing economic development through a cross-border cooperative approach. These initiatives are characterized by several distinctive features, including the following:

- Adopting a comprehensive developmental approach to address intertwined economic, social, and environmental dimensions, thereby enhancing sustainable development pathways.
- Pursuing diverse goals, such as poverty reduction, infrastructure development, facilitating trade and technology transfer, and promoting environmental sustainability.
- Forming alliances or strategic partnerships among member countries to benefit from cooperation and address common challenges on multiple economic, political, and diplomatic levels.
- Providing a range of financial, human, technological, and experiential resources according to a participatory approach to maximize developmental impact.
- The possibility of involving multi-party regional organizations to provide further financial and technical support necessary to achieve declared goals(6).

To understand the most significant current international development initiatives, let's start by examining the Chinese experience. China's journey began in the early 21st century, marked by vigorous efforts to enhance its economic role on the international stage.

The culmination of these efforts is embodied in the "Road and Belt Initiative" (RBI) in 2013. The RBI aims to develop infrastructure and investments in 152 countries and international organizations across Europe, Asia, the Middle East, Africa, and Latin America, with investments totaling trillions of US dollars(7). It's worth noting that the RBI is based on five priorities which are: Policy coordination, facilities connectivity, unimpeded trade, financial integration and people-to-people bond.

The initiative includes the development of a network of ports, highways, border crossings, special economic zones, and railways, among other strategic cross-border investments in countries with strong trade ties with China, as illustrated in Figure 1[8].

Notably, the China-Pakistan Economic Corridor (CPEC), launched in 2015 with investments worth $60 billion[9], is one of the largest and most prominent projects under the initiative to date. The CPEC serves as a trade route linking the Pakistani port of Gwadar on the Arabian Sea with Kashgar City in China's Xinjiang Uygur Region.

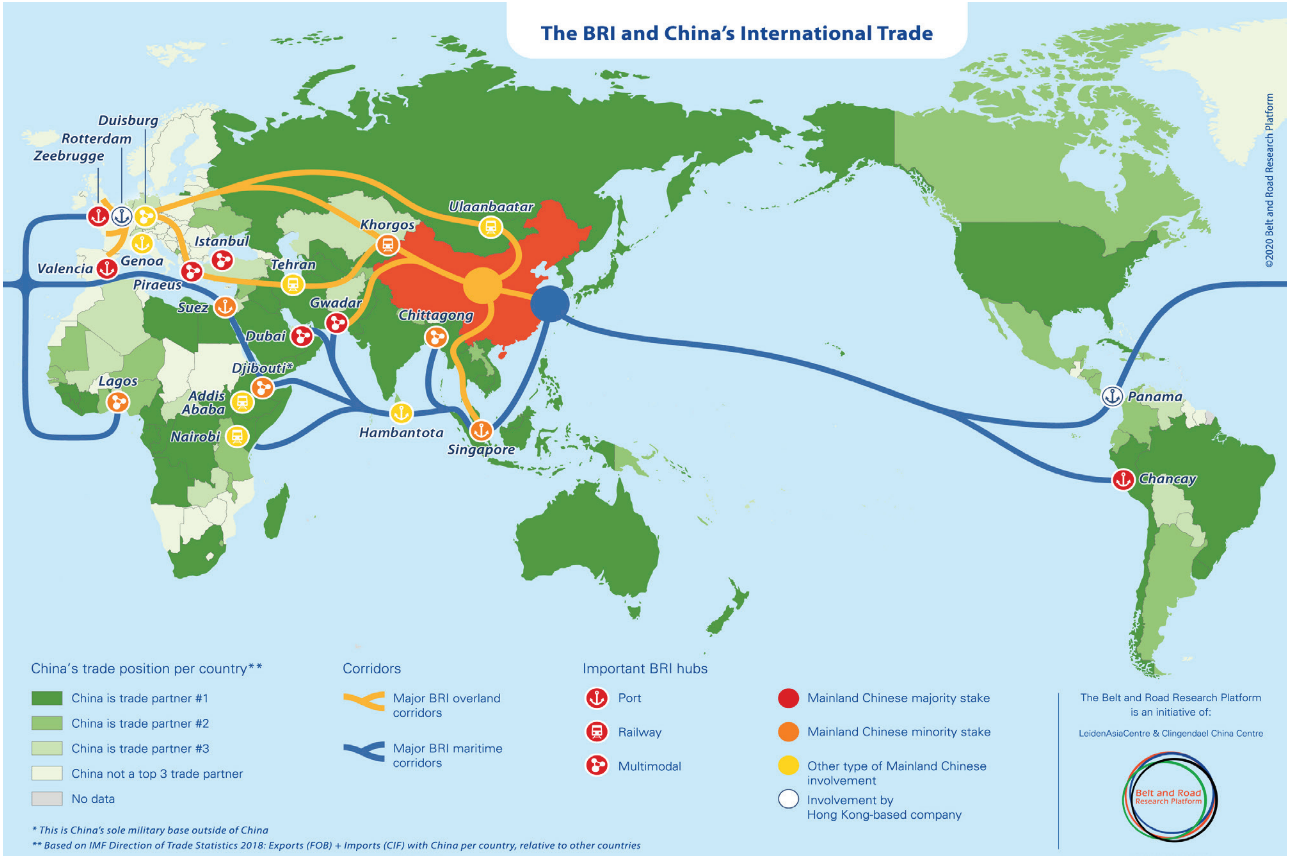

Figure 1: The Belt and Road Initiative and Chinese international trade routes

Source: Xiaoxue Martin and Jonas Lammertink, New Map of the Belt and Road Initiative, **Clingedeal**, March 5, 2021, accessible at: http://tinyurl.com/s3zh7ee7

The United States, in collaboration with its partners, has launched several regional development initiatives to engage in a geo-economic Cold War, specifically targeting the Belt and Road Initiative and the Chinese economy as a whole. These initiatives include:

1. The Global Gateway initiative: launched by the European Commission in late 2021, aims to accelerate digital, energy, and environmental transformations in emerging markets and developing countries. The European Union seeks to provide €300 billion (equivalent to $322.6 billion) by 2027 to support sustainable and high-quality infrastructure financing that aligns with social and environmental standards[10].

2. The Build Back Better World (B3W) initiative [11]: launched on the sidelines of the annual meetings of the G7 industrialized nations (Canada, France, Germany, Italy, Japan, the United Kingdom and the United States) in 2021, aims to establish sustainable mechanisms by major democracies to fund infrastructure projects in developing countries. It does so while adhering to values of justice, transparency, and the highest environmental and social standards. The initiative aims to cover the massive financing gap existing in global infrastructure, estimated at around $40 trillion[12].

It is noteworthy that the G7, however, has not fulfilled its commitments to bridge the aforementioned gap in developing countries. This comes at a time when the world is experiencing an economic slowdown, rising inflation rates, and growing government debt. Statistics indicate that the total government funds allocated by the group to finance infrastructure projects in developing countries did not exceed $113 billion during the period between 2015 and 2019. Perhaps this justifies the group's launching of a new initiative the following year, which analysts consider to be an enhanced version of the Build Back Better World initiative[13].

3. The Partnership for Global Infrastructure and Investment (PGI): launched on the margins of the G7 annual meetings in 2022, aims to provide energy, physical, digital, and health infrastructure capable of adapting to climate change. The total investment target for the initiative by G7 countries and their private sectors is around $600 billion to be disbursed over five years from its launch date[14].

In October 2023, the third session of the Chinese Belt and Road Initiative[15] Forum was held, a decade after its launch. The forum aimed to inject more momentum into its developmental efforts and legitimacy, as well as address emerging international challenges in response to American competition. The forum confirmed the continued construction of the Green Silk Road, which aims to harmonize with nature and confront climate challenges through a collaborative approach. Additionally, it sought to enhance cooperation in biodiversity protection and enable green development.

Following this, the PGI initiative and the Indo-Pacific Economic Framework for Prosperity (IPEF) announced that it will host the Clean Economy Investors Forum in early 2024, aiming to stimulate investments in sustainable infrastructure and climate technology.

4. The India-Middle East-Europe Economic Corridor (IMEC) initiative was announced on the sidelines of the G-20 Summit in September 2023. It brings together the leaders of the United States, India, France, Germany, Italy, the European Union, the United Arab Emirates, and Saudi Arabia who signed a memorandum of understanding on the new initiative.

The IMEC aims to create a northern trade corridor linking Asia, India, and Europe through the Arabian Gulf. When completed, the initiative will contribute to shortening the trade route between India and Europe by 40%, while also providing an alternative to the Chinese Belt and Road Initiative[16].

There are other initiatives taken by regional actors to counter the Chinese initiative. Foremost among them is the Asia-Africa Growth Corridor (AAGC) initiative led by India and Japan in 2017[17]. The new corridor aims to link Japan with India and Africa through Southeast Asia and compete with the maritime route of the BRI. Additionally, the Japan-ASEAN Comprehensive Connectivity Initiative, announced during the ASEAN-India and Pacific Forum in September 2023, aims to develop infrastructure connecting the region with the rest of Asia. It includes six main axes, focusing on developing transportation and digital communication infrastructure using modern technologies, supporting maritime capabilities, and electricity supply[18].

Global Leadership Fragmentation

The majority of these ambitious regional and international development initiatives are concentrated in Asia. The expected outcome is to stimulate economic growth by enhancing trade and investment flows, facilitating market access, and supporting economic structural diversification. They are also aiming to provide jobs, facilitate labor mobility, transfer technology whilst driving innovation, sharing resources and developing infrastructure. These benefits help achieve higher levels of economic and social development, improve quality of life, refine diplomatic relations, and international competitiveness. They have also become crucial tools in shaping and reshaping the global geo-economic landscape.

Developmental initiatives have ushered in a highly competitive world, marked by the diminishing centrality of global leadership. Consequently, the roles of major powers in leading the global economic system are waning, as are the influence of international organizations. This shift is further compounded by significant events like the COVID-19 pandemic, the Russo-Ukrainian war, and conflicts in the Middle East.

It is important to note that the situation, which prompted these competing initiatives, can be traced back to the 1990s when the Cold War ended. During the tense geopolitical landscape from 1947 to 1991, the world was divided into two camps: the liberal camp led by the United States and the communist camp led by the former Soviet Union.

In the midst of this, American strategist Edward Luttwak introduced the term “geo-economics” as a replacement for “geo-politics,” in 1990, which was commonly used during the Cold War era. This new term marked a significant change in Cold War tactics and paved the way for a new international strategy centered around economic tools. Examples of these tools include regional development arrangements, investment policies, and economic sanctions. They have been employed to achieve external political and strategic objectives, as well as to safeguard the national interests and security of the countries involved[19].

The world has entered a new era of cold wars, known as geo-economic wars. These wars are focused on gaining influence over global trade hubs, investment flows, and achieving geo-economic gains. They also aim to enhance international legitimacy in a highly competitive and rapidly changing world. Unlike the past Cold War, which involved two opposing camps, the new wars involve multiple parties with both shared and conflicting interests. This reflects the current reality of a global system that lacks coordination. It also signifies the world's transformation into what is known as Group Zero (G-Zero), a world without power poles[20].

To clarify the matter at hand, it is important to revisit an article titled "Kissinger Sees a Global Leadership Vacuum: A dearth of statesmen has left the world misruled by populists and technocrats," written by American political writer Walter Russell Mead and published in The Wall Street Journal in 2022.

The headline highlights the worries of Henry Kissinger, a former U.S. secretary of state and national security advisor, regarding the state of global leadership. This issue has experienced a significant decline just when the world requires exceptional and wise leadership more than ever.[21] Kissinger's perspective is shaped by his long-held beliefs, which originated from his first book, A World Restored, published in 1964[22].

This may indicate the unique temporal circumstances facing the world currently. The current situation can be attributed to several factors, with the most significant being the fundamental transformation in the global system. American political scientist Ian Bremmer and Nouriel Roubini, referred to this transformation in their 2011 analysis published in Foreign Affairs. The article, titled "A G-Zero World: The New Economic Club Will Produce Conflict, Not Cooperation," introduced the term G-Zero World. The authors argue that the United States lost its position as the leader of the global economy after the 2007 U.S-originated global financial crisis, which was the most severe economic event since the Great Depression of 1929. This crisis created a vacuum that no other group has been able to fill[23].

It is noteworthy that Henry Kissinger reached this conclusion as early as 2009 in his article "The Chance for a New World Order" in the International Herald Tribune. Kissinger explained that the magnitude of the 2008 debacle has made it impossible for the rest of the world to rely on American predominance or American failings. As a result, every country will need to reassess its own contribution to the prevailing crisis and strive for greater independence from the conditions that led to the collapse. Kissinger concludes that the current international economic policy is based on the illusion that the old globalized system can be restored once the current crisis subsides.[24]

In this context, Bremmer concluded that the G-20—or the expanded group of leading economies—has transitioned from a potential concert of nations to a cacophony of competing voices. As the urgency of the financial crisis has diminished, the diversity of political and economic values within the group has become more prominent. Hence:

1- The United States and China have failed to establish a G-2 as effective leaders of the global economy. There is no U.S.-Chinese solution for pressing transnational problems.

2- The United States, Europe, and Japan have failed to create a G-3 alternative to lead the global economy.

3- The G-0 World has emerged in a fragmented global economy lacking leadership(25), where each country pursues its own interests by launching its own initiatives and projects.

The concept of a G-Zero World has gained momentum since then. It is not surprising that in such a world, where "no single country or bloc of countries has the political and economic leverage — or the will — to drive a truly international agenda," there are increased risks of wars, economic crises, and undermining global economic cooperation. This is largely due to competing conflicts"(26).

In his book ***The End of American World Order***, Professor Amitav Acharya, UNESCO Chair in Transnational Challenges and Governance, introduced the term "multiplexity" in 2014 as an alternative to the concept of "multipolar". The term "multiplexity" refers to the increasing number and diversity of actors involved in shaping the global order. These actors include not only states, but also international institutions, multinational corporations, NGOs, transnational movements, individuals, and other non-state entities(27).

Future Prospects

In the past, American economist Richard Baldwin(28) coined the term "Great Convergence" to describe the global economic system, which was characterized by rapid technological innovation in information and communications and market globalization. However, the trajectory of economic globalization has shifted towards "slowbalization" (29). Specifically, the global flows of foreign direct investment as a percentage of global GDP declined from 5.3% in 2007 to 1.7% in 2022, accompanied by a slowdown in trade flows (figure 2). This decline can be attributed to various factors, including the fragmentation of capital flows across geoeconomic conflict zones, which has had a significant impact on the global economy. Each of these zones has experienced an increase in value since 2020(30).

Moreover, the International Monetary Fund conducted a text-mining analysis of earnings call reports from a wide range of multinational corporations [31]. The analysis revealed a significant increase in firms' focus on reshoring and friend-shoring.

While regional development initiatives driven by the need to address supply chain disruptions, have significant potential, they may also contribute to reducing economic efficiency and consequently increasing costs[32].

It can be concluded that as the number of regional and international development initiatives increases, so does the intensity of successive processes of weaponization of economies and global economic fragmentation in the G-Zero World. Consequently, its ability to withstand the complex and interconnected global development challenges is weakened. What exacerbates the situation is that this current vicious cycle is already deepening. As economies arm themselves with competing regional initiatives, fueling further global economic fragmentation, there is a growing trend towards launching more initiatives, and escalating geo-economic conflicts.

This pattern undermines the developmental impact of economic multilateral initiatives and threatens the integrity of the global economy. To address this issue, corrective action is necessary to realign these initiatives with their proclaimed purpose. The following steps may be advantageous:

- **Rebuilding trust and enhancing global economic security** without conflicting with the legitimacy of national economic security. This approach will contribute to confronting increasing geoeconomic divisions and economic militarization, while deepening global cooperation to face major challenges.
- **Establishing a permanent interactive platform** involving key stakeholders, experts, and practitioners from around the world. This platform will facilitate discussions about regional development initiatives and allow for the proposal of policies and mechanisms through a cooperative approach. This approach will enable each initiative to uphold its ultimate goals.
- **Founding "compatible priorities**" and formulating a common vision to address global challenges. This will help confront "competitive priorities" that exacerbate the fragmentation of the global economy.

According to Kissinger's words in 2009, it can be concluded that the emergence of a new international order, whether political or economic, is contingent upon the establishment of general rules for countries to align with[33]. Without this, the world may descend into fragmentation amidst conflicting priorities. In 2018, Kissinger highlighted the necessity of a balance of power in a world marked by admitted rivalry and competition. However, he also raised the crucial question of whether the renewed rivalry between major powers can be prevented from escalating into conflict. This hinges on the presence of an agreed concept of legitimacy or, at the very least, a pursuit of it[34]. Realistically, until this is accomplished, competing regional development initiatives are likely to continue struggling, resulting in limited impact on human welfare.

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Aging Advanced World

Depopulation and Futures of Global Demographics

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The world's population overall is not yet decreasing, though it has begun to decline in several significantly important countries, including China, Russia, Japan, and parts of Europe. Nevertheless, it is projected to continue to increase, with the most rapid growth occurring in Africa, the Indian sub-continent, and, for a time, certain areas of the Middle East.

These shifts will have profound economic implications, as the change in a country's working-age population is a key driver of economic growth. Indeed, it is arguably the most critical factor in determining the future relative sizes of countries' economies. However, population growth is only positive if young people receive education and training, and if the economy can accommodate the expanding workforce. A declining population presents a huge economic challenge, but so too does a rapidly expanding one.

This essay initially explores what we can logically understand about population trends. It then delves into the economic implications of these demographic changes. Lastly, it outlines some of the potential uncertainties that we may encounter in the future.

The main Trends in Global Population

The discourse on global population trends has been significantly shaped by authoritative sources, providing valuable insights into future demographic patterns. A pivotal source in this context is the work undertaken by the United Nations. According to their latest estimates, the global population, which stands at approximately 8.4 billion, is projected to reach its zenith in the 2090s, with figures around 10.4 billion, before experiencing a decline(1).

However, this projection is not without its counterpoints. A notable challenge to the United Nations' projections comes from a study published in 2020 by the reputable medical journal, The Lancet. Their findings suggest a different trajectory, positing that the global population might peak earlier, around 2064, at approximately 9.7 billion, and decrease to about 8.8 billion by the turn of the century. The Lancet's study also entertains several scenarios, one of which suggests that the world's population could fall below 7 billion by the century's end[2].

While population estimates focus on overall numbers, they struggle to accurately predict migration patterns. Thus, unexpected movements of people between countries could distort national statistics without impacting the regional or global figures.

Given these significant uncertainties, a prudent approach involves using the UN's central projections as a baseline yet keeping two important considerations in mind. Firstly, it's more logical to look one generation ahead to 2050, rather than attempting to predict beyond that — though I mention some figures here because, if broadly accurate, their implications would be substantial. Secondly, it's probable that the actual numbers will be lower rather than higher.

Regardless of what the latter half of this century brings, it is evident that there will be monumental shifts in the global population balance. Below are some of the critical aspects:

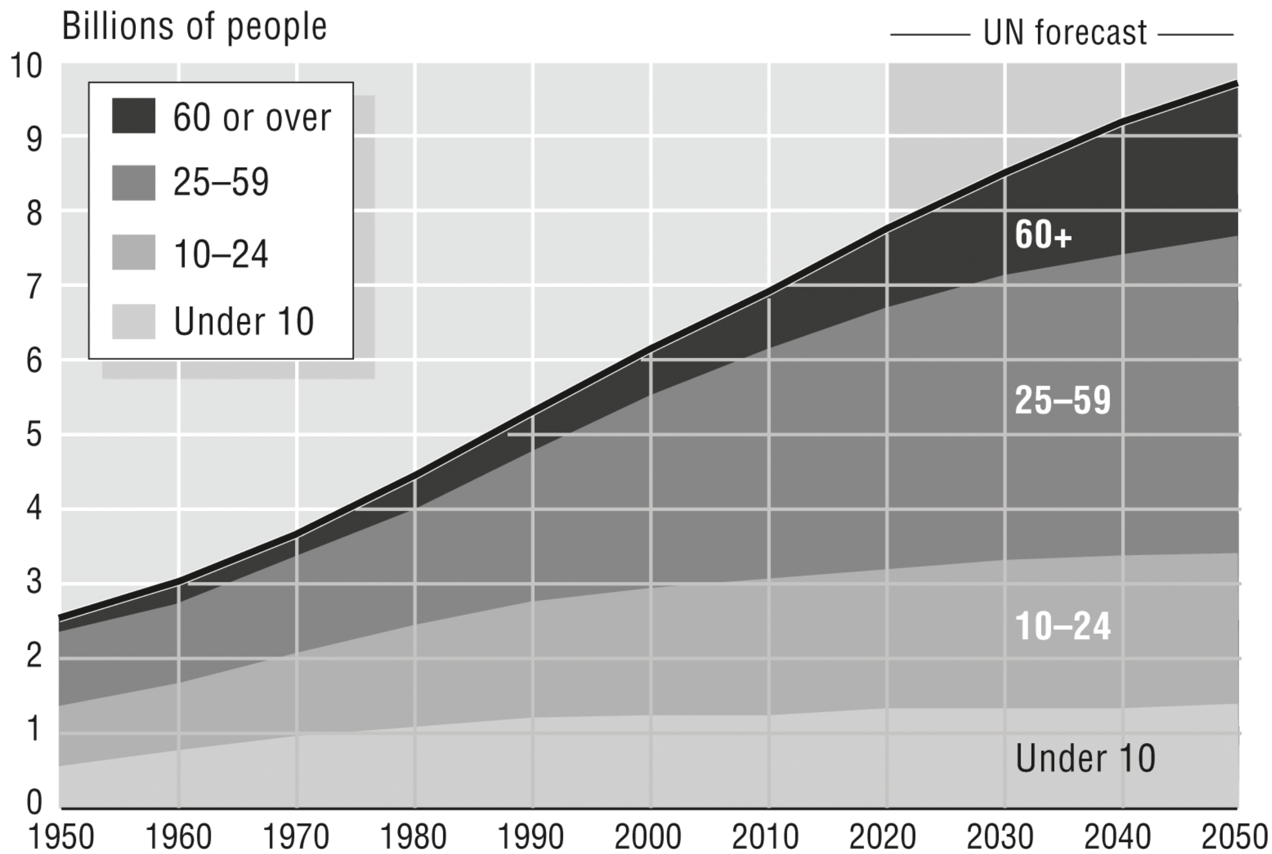
There is an anticipated surge in population numbers across Africa, particularly within sub-Saharan Africa. Specifically, Nigeria is expected to expand from its current population of 220 million to 380 million by 2050, positioning it as the third most populous country globally by 2100 with an estimated 546 million inhabitants. Egypt's population is projected to reach 160 million by 2050, increasing to 200 million by 2100, while Sudan's population could rise to 84 million by 2050 and further to 142 million by 2100. The accuracy of these projections could be debated, yet if they hold true, Africa's population will escalate from approximately 1.5 billion todays to 2.5 billion by 2050, and close to 4 billion by the century's end in 2100.

In the Middle East, the demographic shifts might not be as dramatic as elsewhere, yet significant rebalancing is anticipated. Take Saudi Arabia, for instance, which boasts a current population of approximately 37 million and is expected to grow to 48 million by 2050. However, post-2050, the growth rate is predicted to slow considerably, stabilizing at around 50 million by century's end. In contrast, Yemen's population, currently sitting at about 35 million, is on a steep upward trajectory, projected to surge to 55 million by 2050 and further ballooning to over 74 million by 2100. A notable change is also expected between the relative demographic standings of Iraq and Iran. Presently, Iraq's population counts 45 million, but it is on track to reach 75 million by 2050 and an impressive 112 million by 2100. Iran, on the other hand, starts with a higher base of 89 million, projected to incrementally increase to 99 million by 2050, only to experience a decline to 80 million by the century's conclusion. For completeness, it's worth mentioning the United Arab Emirates (UAE), which is expected to see its population rise from the current 9.5 million to 11.5 million in 2050, and further to 14 million by 2100.

In Asia, the great rebalancing is between China and India. The United Nations predicts a significant population shift in Asia, primarily between China and India. By 2050, China's population is expected to decline from its current 1.4 billion to 1.3 billion, and further drop to 770 million by 2100. This major shift will occur in the second half of the century. However, even within the next 25 years, there will be noticeable changes in the age structure: a decrease in the number of children and young workers, and a significant increase in the elderly and retired population. On the other hand, India, which has recently surpassed China in population, is projected to reach 1.7 billion by 2050 and is expected to maintain a population of over 1.5 billion by the end of the century. This means that India's population will double in just 75 years, going from being roughly equal to China's population to having twice as many people.

In much of the developed world, populations are already starting to decline. Japan is an extreme example, with its current population of 123 million projected to fall below

Global population by broad age group, 1950—2050



Source: United Nations

100 million in the mid-2050s and to 74 million in 2100. This would bring it back to the level it was at in 1945, at the end of the Second World War(3). In Western Europe, both Italy and Spain are also experiencing population decline. Germany, Europe's largest economy, is projected to fall from 83 million to 68 million by 2100. However, there are examples of stable or increasing populations, including the Netherlands, Sweden, and Switzerland, largely due to inward migration.

In advanced countries, the English-speaking world provides the greatest example of rising populations. Among these countries, the United States stands out not only as the most populous developed country but also as one with a fast-growing population. It is projected to increase from 340 million now to 375 million in 2050 and 390 million by 2100. Over the same period, other Anglophone populations will also experience growth. Canada's population is expected to move from 39 million to 46 million, and then to 54 million. Australia's population will increase from 27 million to 32 million, and then to 38 million. Interestingly, the United Kingdom is set to become Europe's most populous nation, surpassing Germany in the 2070s. Currently at 68 million, the UK's population is projected to reach 72 million in 2050 and then stabilize at around 71 million by the end of the century.

In contrast, Russia faces a steady decline in population, where it is expected to decrease from 144 million to 133 million, and then to 112 million by 2100.

There are many other notable features, including some extreme ones. South Korea, despite its successful economy, is expected to see its population decrease by over half in the next 75 years due to a remarkably low fertility rate of 0.8 babies per mother. This is a stark contrast to North Korea, where the average is 1.8 babies per mother. According to World Bank data[(4)], Pakistan's population is projected to grow even more rapidly than India's, potentially doubling from its current 235 million to 487 million by 2100. In Africa, Tanzania's population, currently at 67 million, is projected to reach 245 million in 75 years. Given these projections, it's worth questioning their likelihood and the reasons if they don't materialize.

The Economic Implications of Demographic Shifts

However, if you accept the overall findings of the UN data, there are several significant economic implications. Here are the key ones:

The US will continue to be the leading global economy in the 21st century. It will play an even more significant role in driving the developed world as the populations of Japan and Continental Europe age. In fact, the US may maintain its position as the world's largest economy throughout the century, despite the competition from China.

The pace of China's population decline is expected to accelerate, leading to significant changes in the country's dynamics. As a result, China will shift its focus from being an expansionist power to managing its domestic pressures. This means that instead of striving to outperform the West in the economic game, China will prioritize internal affairs.

The population growth in India is projected to propel the country's economy for at least one more generation, possibly extending even further. According to a report by the London-based economic consultancy, the Centre for Economic and Business Research, India is anticipated to surpass both the US and China to become the world's largest economy by 2100.

Africa is poised to become increasingly significant on the global stage. I am optimistic that this significance will be positive, given that Africa is the "youngest" continent and boasts a vast labor force. However, if Africa fails to create sufficient employment opportunities for its youth, it will face immense social pressures that will be challenging to manage.

It is difficult to envision how Russia, with its shrinking workforce, will manage to govern a country that boasts the largest land area in the world, especially if it persists in seeking conflict with Western nations.

On a long-term perspective, the levelling-out of the world's population will have a positive impact on the environment. In fact, the sooner population growth slows down, the more manageable it will be to maintain higher living standards without excessively straining global resources. However, it is important to acknowledge that there will still be one or possibly two more generations of growth before we reach this peak.ne more generation of growth, maybe two, before we reach that peak.

There are, of course, several factors that contribute to economic performance, aside from changes in population and the labor supply. These factors include technological innovation, the willingness to adopt technologies developed elsewhere, and, for resource-rich countries, the ability to effectively utilize those resources. Economic performance is also enhanced by openness to international trade and investment. This raises significant questions about whether globalization is truly declining or if it is simply taking a different path. However, one specific aspect of globalization, the movement of people between different jurisdictions, is heavily influenced by demographics, and this is one of the major uncertainties that lie ahead.

Main Uncertainties

There is one thing we can be certain about: the maximum number of adults in the world in 2050. This is because one cannot be an adult in 2050 unless they have already been born or will be born in the next few years. However, while we can make a reasonable estimate of the overall number of people of working age, it is much more difficult to predict where they will be. The future of migration remains uncertain.

People often move in search of economic opportunities. This can involve relocating for a job, such as accepting an overseas contract for a specific period of time, earning money to support their families, and eventually returning home. This pattern is common in many parts of the Middle East and plays a significant role in driving global prosperity. According to the latest World Bank report on the subject, emigrants' remittances have been steadily increasing throughout this century. In fact, they have become the world's largest single source of development capital, surpassing foreign direct investment and official aid by a significant margin. This trend is unlikely to reverse in the near future. As a result, fast-growing economies can continue to thrive without facing significant labour constraints.

Migration takes on different forms, with some individuals seeking employment opportunities and a fresh start for their families. However, this type of migration has become increasingly contentious. While certain developed countries, like Japan, have closed their doors to immigrants, others, such as mainland China, are not particularly attractive for various reasons. On the other hand, many developed nations, including the US, UK, Canada, Australia, and certain Western European countries, have a strong appeal for potential migrants. Despite the mounting pressure on politicians to tighten border control, inward migration into the US, UK, and Europe continues to rise. The future of migration remains uncertain, but I anticipate that countries will enhance their controls and become more adept at selecting migrants who can make significant contributions to their economies.

The uncertainty surrounding fertility rates is a significant area of concern. While we have observed a decline in family size in much of the emerging world, driven by factors such as increasing women's educational levels, urbanization, and improving living standards, the situation in the developed world remains largely unknown. According to the World Bank estimates, the total fertility rate in India has dropped below the replacement level of 2.1 babies per mother. Conversely, in advanced countries, population growth is generally far below the replacement rate, with any increases often attributed to inward migration rather than natural births. Despite an apparent preference for larger families, as indicated by a recent Gallup poll in the US, the actual trend in family size is yet to align with these preferences. While there is a perceived inclination towards higher birth rates, it remains to be seen whether this is reflected in actual demographic data.

What should we make of all this? Three thoughts:

One is that demography may help avert the danger of China and the US falling into the Thucydides Trap[(5)]. The Ancient Greek historian held that a rising power would inevitably clash with the established power and the result would probably be war. However, the declining population of China is one reason why it may soon no longer be a rising power. It is even possible, though perhaps unlikely, that the US may remain a larger economy than China. Several forecasters, including the Centre for Economic and Business Research in London, have pushed forward the date at which China is expected to pass the US in economic size as the former's growth fades. Therefore, I judge that a stable and prosperous partnership is more likely than open conflict.

Next, the phrase "demography is destiny," attributed to the French philosopher Auguste Comte, oversimplifies the matter. In a recent IMF podcast, Harvard demographer David Bloom highlighted that public policy has played a significant role in shaping and responding to demographic change. Therefore, demography should not necessarily determine destiny; it can and should be managed sensibly and thoughtfully.

This brings us to the third point: the world's population is projected to decline within 50-75 years, encompassing the lifetime of today's children. This demographic shift will result in a significantly larger elderly population and a smaller younger population, leading to a perceptible change in societal dynamics. The pertinent question arises: will this aging world be a wiser and calmer one? I am optimistic and believe that it can be.

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Degrowth and Slowdown

Is it Possible to Reinvent the Wheel of Global Economy?

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"When GDP is growing, especially if inflation is not a problem, workers and businesses are generally better off than when it is not."

The above statement is considered an unquestionable fact by international financial institutions worldwide. Central banks around the world target inflation rates that support growth and maintain market stability. However, global GDP performance data shows a concerning trend of increasing deflation and sustainable economic slowdown. This trend is not promising and does not indicate progress, as growth is the foundation of capitalism, and it is difficult to imagine a global or national economic system without growth.

On the other hand, there is a growing movement that believes "Degrowth" could be a promising solution to the chronic problems inherent in the globalized capital system. These problems stem from the dilemma that a surplus or insufficiency of resources cannot meet the increasing demand for goods and services. Additionally, there is an emerging trend that advocates for the benefits of "degrowth" on human labor, the environment, and the planet.

Recurring Economy Contractions and Long-term Slowdown

According to the International Monetary Fund (IMF) report issued in October 2023, the global economy is "still limping along." Despite signs of recovery after the recession caused by the COVID-19 pandemic and the immediate devastating impacts of the Russian-Ukrainian War, expectations for global economic growth are heading towards a slowdown. The report forecasts a decline in international economic growth from 3.5% in 2022 to 3% in 2023, and further to 2.9% in the current year (2024). This decline is projected to continue steadily until the end of the year.

The IMF report highlights significant "imbalances" in growth outlooks across different regions worldwide, with global growth remaining unequal and uneven. Developed economies, such as the US and the euro area, are experiencing a more pronounced slowdown compared to their counterparts in emerging markets and developing economies (EMDEs). However, there are signs of a potential upward revision in the US market's growth among advanced economies. On the other hand, many EMDEs have the opportunity to achieve better performance, except for China, which is expected to continue suffering from the real estate crisis and weak confidence in its performance. Overall, a slowdown in growth is expected to impact the global economy.

As a matter of fact, the current global economic system aims to sustain economic growth and advance the Global Development Goals through several measures, such as:

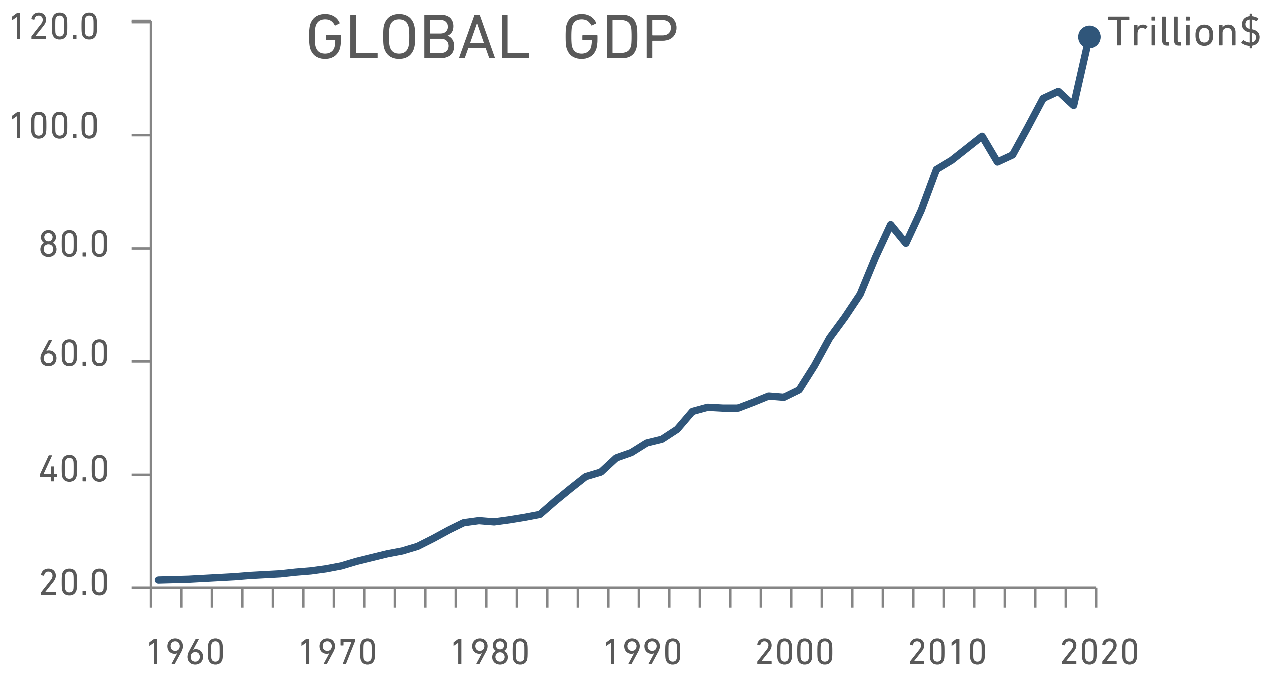
- Diversifying sources of international economic growth geographically and in terms of commodities.
- Providing business and investment opportunities for the majority of the world's institutions and population, including the most vulnerable groups.
- Encouraging governments to foster the establishment of economically efficient institutions.
- Establishing strong financial markets that can leverage robust growth opportunities worldwide and fund growth and development[(1)].

As a result of these measures and other steps, achieving global output growth was a common occurrence. However, there have been recent changes due to the failure of these measures and the emergence of new challenges.

During the second decade of the twenty-first century, the global economy experienced its lowest growth rate since the end of World War II. Over a period of ten years, the accumulated growth rate was 28%. However, the World Bank predicts that the growth rates during the first half of the current decade (2021-2025) will be the lowest in 30 years, since the Asian financial crisis[(2)].

The data also shows that the global GDP has shrunk five times in the past 30 years (1990-2020), compared to only one shrinkage during the period from 1960 to 1990[(3)]. Since 1960, the world economy has experienced six instances of shrinkage, with five of them being related to the "correction" and control of overinflated growth. The first instance occurred during the South America debt crisis of 1982, followed by the Asian financial crisis from 1997 to 1998, the American Recession of 2001 (also known as the "Dot-com crisis"), the Global Financial Crisis of 2009, and finally, China's Economic Slowdown of 2015. The only time the economy shrank without being a direct result of over-growth was following the COVID-19 pandemic crisis in 2020.

The expansion of a country or group of countries' economy without a solid foundation can lead to a need for readjustment and correctional resets to bring growth back to more reasonable rates. This susceptibility to degrowth or slowdown in growth is particularly evident in the current global context. Despite a year of recovery from the COVID-19 pandemic, global growth is expected to decline due to various global crises.



Tight monetary policies and increased interest rates have had negative impacts, leading to higher credit and debt costs and disruptions in consumption and investment. Additionally, the world's trade and investment momentum is being weighed down by the expenses incurred from the pandemic, as well as conflicts in the Middle East and East Europe, which have adversely affected essential commodities markets.

Furthermore, there are other significant risks to the global economy, including the feeble economic performance of the Chinese economy compared to expectations and the more pronounced threat of climate change and climate-related disasters.

Leaderless Growth

Contrary to previous growth phases, the global economy has historically relied on a single geographic factor or commodity to drive growth and withstand conflicts or disasters faced by other sectors and regions. Oil, real estate, and technology booms have been the driving forces behind global growth for decades. Geographically, China, East-Asian countries, and Latin America have achieved double-digit growth rates for extended periods, helping the world overcome crises in other regions. However, the current reality does not present a new power that has the potential to lead the world economy. This is particularly disheartening considering that African countries have been unable to leverage the global economy to achieve high growth rates thus far, and India's growth and modernization rates are only moderate, not qualifying it to lead global growth.

As for commodities, the list of industries that have conglomerated the wealth of the richest people in the world, such as tech, the fashion industry, real estate, the stock market, and retail, has remained unchanged for over three decade[(4)]. However, there is a growing trend towards limiting the exploitation of natural and non-renewable resources, which hinders the growth of developing countries.

Currently, "Artificial Intelligence" is being considered as the long-awaited leader of global economic growth for the coming decades. Projections are based on the premise that innovations in the field of artificial intelligence, which is still undergoing major developments, will shape the future of approximately 40% of current jobs. This is expected to drive revolutionary changes in operations and productivity, potentially leading to the discovery of new entities and the emergence of new priorities that would propel the global economy forward.[(5)]

However, these overly optimistic forecasts are being criticized for disregarding the impacts of AI progress on the human race, as well as the social, political, and sectorial implications it may create. Instead of offering solutions to existing issues, AI may present more potential problems to the scene.

Degrowth as a Sustainable Solution

Since the 18th century, when Thomas Robert Malthus proposed his theory on the imbalance between food supply growth rates and population growth rates, known as the Malthusian Theory of Population, there has been an increasing focus on the moderate management of resources. Economic theorists argue that the issue of finite resources on our planet is a significant obstacle to economic growth. However, in 1972, the concept of "degrowth" was introduced in the report titled "Limits to Growth."

The report highlights a concerning prediction: by 2100, the earth's resources will not be enough to support the demands of a growing economy and population, despite technological advancements. This prediction is based on a statistical analysis of five key factors that either drive or hinder economic growth: population growth, agricultural production, depletion of nonrenewable resources, industrial production, and pollution rates. On the other hand, the authors of this report also mention the potential for creating a society in which humans could live indefinitely on Earth. This would require imposing restrictions on themselves and on the production of material goods, in order to achieve a global balance between population size and the production of carefully chosen goods and services[6].

If countries were able to gradually transition to a "degrowth" society, they could then adopt "degrowth" and use the already limited resources more effectively to improve human development indicators in areas such as education, health, and equality, regardless of GDP growth rates.

Sectorial Not Comprehensive Policies

At the onset of the new millennium, the literature on "degrowth" has become an extensive movement worldwide. In the following years, many recommendations for degrowth, aimed at preserving resources, have been developed. Advocates of degrowth argue that the global development model, which assumes the inevitability of growth, is unsustainable. They believe that focusing on economic growth rather than human welfare and environmental protection has led to natural disasters and social crises that are beyond the current system's ability to remedy without causing further damage. The term "degrowth" was first coined by Andre Gorz, an Austrian-French social philosopher, in the early 1970s. Now, this intellectual movement is presenting itself as a serious alternative solution to global capitalism, particularly in relation to climate and environmental crises[7].

In 2022, researchers Nick Fitzpatrick, Timothee Parrique, and Inés Cosme conducted a comprehensive review of published recommendations on degrowth applications from 2000 to 2005. They identified 380 executive tools that specifically addressed degrowth in 13 different sectors[8]: culture and education, energy and environment, food, governance and geopolitics, indicators methodology, inequality, finance, production and consumption, science and technology, tourism, trade, urban planning, and the labor market.

For example, recommendations for degrowth in the theme of "production and consumption" have been divided into six areas:

(1) Reducing Overproduction: We can reduce the overproduction of goods and services that are resource-intensive but contribute little to global well-being. Some commonly cited examples include pesticides, advertising, arms, beef, private jets, and SUVs.

(2) Transition to Democratic, Non-Profit Business Models: A transition to democratic, non-profit business models such as cooperatives, self-employment, and SMEs can be beneficial.

(3) **Re-localizing Activities**: Re-localizing activities in appropriate environments can help cut greenhouse gas emissions while fostering local resilience.

(4) **Limiting Advertising**: Limiting advertising in public spaces and banning ads of products with high environmental negative impacts can be effective.

(5) **Discouraging Luxury Consumption**: Discouraging luxury consumption can be achieved through progressive taxes on consumption and encouraging voluntary simplicity. For example, enhancing bike infrastructures can promote a shift towards more sustainable modes of transportation.

(6) **Reducing Waste**: Reducing waste can be accomplished by criminalizing planned obsolescence, such as launching newer version releases annually for mobile phones and cars. Additionally, mandating environmental impact assessments from companies can help minimize waste.

Limitations on Degrowth

The quality, accuracy, and applicability of policies' recommendations can vary significantly. It is also important to consider the effectiveness of motivation policies and their impact on the economy, not just on resources. The purpose of these measures should be to slow growth, rather than to "shrink" the economy.

A noteworthy study conducted by John-Oliver Engler from the University of Vechta in Germany focused on the topic of "degrowth." Engler conducted a systematic review of studies related to this topic and identified a significant gap between suggestions and recommendations regarding distribution policies and monetary policy. These recommendations would guide countries worldwide if they choose to implement degrowth measures(9).

Modern studies on degrowth often neglect the discussion of equitable geographical distribution between countries that have already utilized their resources and those that have not. For instance, Africa contributes approximately 3.8% of the total global greenhouse gas emissions (GHG), while China contributes 23%, the USA contributes 19%, and the EU contributes a total of 13%(10). In terms of current social justice between income classes, it is challenging to expect that a degrowing economy could fully satisfy the needs and desires of humans in a fair and equitable manner.

In the same context, monetary theories and policies do not align with the goal of "degrowth". Instead, the objective of most monetary policies for central banks worldwide is to maintain acceptable inflation rates that ensure market stability and promote consumption and investment, in other words, "growth". Currently, there is no monetary theory specifically aimed at achieving degrowth. Many economists argue that monetary growth, and consequently commodity growth at the same rate, are necessary to prevent market failure caused by inflation. Therefore, the aim of tightening monetary policies is not to slow down growth or reduce GDP, but rather to control inflation and ensure market stability, thus making growth sustainable.

Most studies on degrowth overlook the significance of economic growth in meeting the increasing needs of a growing global population. According to estimates from the "World Bank," the world population is projected to surpass 10 billion people by 2100, compared to the current 8 billion. How can the needs of such a vast population be met without economic growth, even with efficient resource management?

The degrowth school rejects the idea that a technical solution can be found to address the problem of limited resources in feeding a growing population. This perspective is similar to how the production of synthetic nitrogen fertilizers, pioneered by industrial chemist Fritz Haber, enabled the production of food to surpass the rate of population growth. As a result, this development challenged the Malthusian Theory of Population.

Scholars and scientists of the degrowth school argue that it is possible to achieve better human development without relying on high growth rates. However, they overlook the global human development indicator, which clearly demonstrates a strong correlation between high GDP levels and human development in most countries worldwide. For instance, it is worth noting that not a single African country appears on the list of the top 60 countries in the Global Human Development Index. Conversely, only three non-African countries are included in the list of the worst-performing countries according to the development index, with the remaining 27 countries all hailing from the sub-Saharan Africa region(11).

It leaves no room for doubt that the current global economic system, based on exponential growth, is unsustainable. This model requires more than one Earth to achieve its main purpose of growth and accumulating capital profits. While the idea of achieving this through space sciences may seem like science fiction, the "degrowth" movement has not yet provided applicable policies. Therefore, the only way to address the inherent crises in the current system is to reinvent a new model for development. This model should prioritize gradual growth that can be customized to the needs and capabilities of each region and country, avoiding the trap of a standardized "one-size-fits-all" solution

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Improvements, not Breakthroughs

De-innovation and Global Declining of Creativity

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Behind the façade of technological wonders and dazzling scientific achievements lies a stagnation in human creativity, which coincides with the disintegration of globalization and other contradictory global trends. There is no doubt that, for over a decade, there has been a huge rise in patents and solutions from which humanity has greatly benefited. The artificial intelligence revolution now has had a direct impact on daily human activity. However, global creativity is still under great threat due to a number of factors. The drying up of the sources of creativity is becoming clearer: a slowdown in entrepreneurial growth, a lack of revolutionary innovations, and the deterioration of the environment conducive to innovation are some of the main symptoms. Thus, what we see as "revolutionary" technical innovations are merely improvements on previous inventions—not breakthroughs that would improve human lives, which still suffer from environmental, economic, and moral risks. This is reminiscent of Henry David Thoreau's prediction whereby inventions will become improved means to unimproved ends."

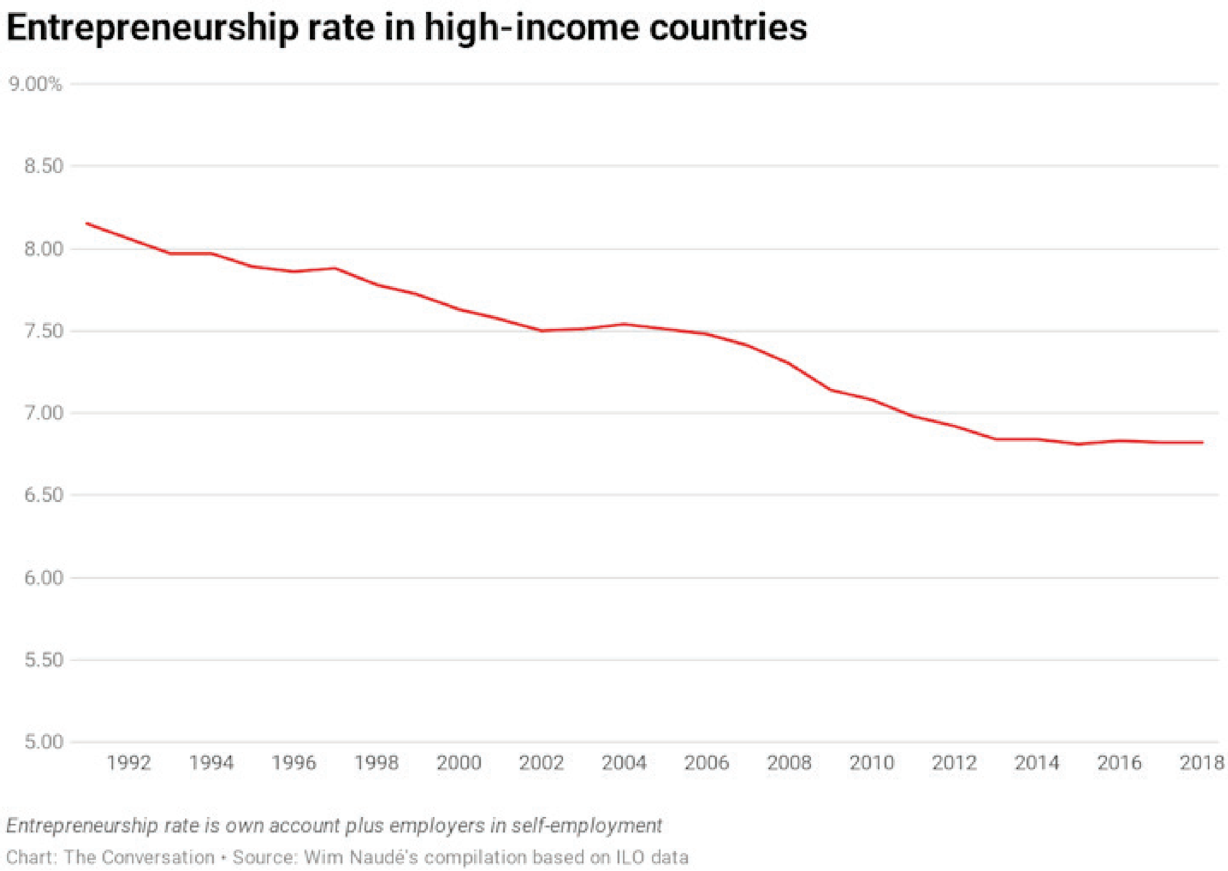
Understanding the path of global creativity

The twentieth century witnessed the emergence of integrated technological systems. The efforts of research laboratories, universities, the private sector, and in some instances civil society have come together to uncover scientific and technological secrets and accelerate progress. This collaboration also demonstrated the existence of a direct correlation between the technology ecosystem's development and globalization. However, some signs point towards the possibility of a decline or slowdown in the global innovation trend, which was assumed to have been on a constant rise since the dawn of the modern era.

Perhaps the most obvious indicator is the number of patents granted globally: From 2012 to 2022, there was a significant gap between the number of patent applications and the number of patents granted in information technology, particularly in the fields of AI and healthcare. In some cases, the decline in creativity is manifested through the dwindling number of patents submitted. Also, while scientific entrepreneurship continues to grow in major industrialized countries, it has been doing so at a noticeably slower rate: 1.2% in the last decade compared to 2.5% in the decades following World

War II[1].

If we take the case of the United States, for example, we notice that the "innovation crisis" threatens to end the country's competitive advantage, in addition to crippling the economy. The index of the number of new innovation-based entrepreneurial companies shows that the latter's number has declined by 50% in the period between 1978 and 2011. Similarly, according to the index of the share of small U.S. entrepreneurial companies, entrepreneurship declined from 47% in the late 1980s to 39% in 2006[2]. The same pattern can be observed in other developed countries such as: The United Kingdom, Germany, and Belgium as the chart below indicates.



Source: World Intellectual Property Organization Indicators, 2023

On another hand, if we extend our examination to centuries rather than decades, it appears that the world reached the peak of its innovative capacity in the 1870s. Many innovations appeared in the 19th century that had the power to revolutionize people's lives. Most notably: The electric light bulb and modern lighting, and steam power. In his 2005 study on the possible deterioration in global innovation trends, Jonathan Hubner argued that there are economic limits to innovation, and that the world has reached 85% of these limits in the first decade of the twenty-first century, and will reach 95% of its limits by 2038[3].

The issue at hand does not pertain only to the volume of patents, or the growth of entrepreneurship, but also to how revolutionary the ideas presented are. A study published in the Nature Journal in January 2023 observed a decline in the ability of scientific research and patents to advance science to new heights. The survey, which was conducted on 45 million research papers and 3.9 million patents over six decades, found diminishing likelihood that all this data could present a departure from past scientific knowledge and technology. Researchers attributed the decrease in potential breakthroughs to a lack of comprehensive knowledge accumulation linking scientific details in research papers to major patterns explaining significant scientific transformations. This means that the quantitative accumulation of papers, research, and patents did not turn into a “qualitative breakthrough” that paves the way for scientific achievement[(4)]—or by standing on the “shoulders of giants,” as Newton once imagined.

Improvements not breakthroughs

Let us now consider an indicator that is more closely related to daily life, which is dominated by technical innovations, in order to account for the decline in creativity. Apple’s success is attributed to its innovative products, particularly the iPhone, which revolutionized the mobile phone industry. When it was released in 2007[5], the iPhone—which combines features of a mobile phone, iPod, and internet connection device—significantly increased Apple’s share price, which had a direct impact on the company’s growth. Apple’s creativity was no doubt crucial to its success, making it a market leader.

The data below indicates, however, a potential slowdown in innovation across iPhone generations. The differences between each generation and the next are very slight, especially in the last models. As each new generation introduces new features and capabilities, improvements in specifications become more incremental over time compared to the big leap from the iPhone X to the iPhone 11[(5)], for example. It also became clear that changes in design were minimal when comparing the iPhone 13 and iPhone 14. While innovation patterns in technology and healthcare are evolving, that some companies are adapting better than others to the slowdown in innovation. The example of Apple shows that the decline in innovation is evident even in a rapidly growing and innovative industry such as tech[(6)].

In general, creativity tends to focus on camera technology, chip performance, and new screen features. Design changes and software updates seem to be less frequent. For example, the iPhone 14 introduces incremental design changes and camera improvements exclusive to the Pro models. It seems that the intervals between iPhone generations have become longer and feature tweaks and minor improvements only.

This trend indicates the concentration of creativity in specific areas such as camera technology, processor performance, and screen features perhaps at the expense of other areas like design and software.

Generation	Areas of high creativity	Indicators of a potential slowdown
iPhone 14	Improved professional camera system with lidar scanner and cinema mode - A16 Bionic processor delivers powerful performance - Emergency SOS feature via satellite	Minor design changes compared to iPhone 13 - Mainly camera improvements in Pro models - Battery life remains an improvement point
iPhone 13	Cinema Mode video recording with deep field effect - ProRes high-quality video recording for power users - Super Retina XDR (display with 120Hz refresh rate (Pro models	The A15 Bionic processor provided additional performance improvements - Reduced the size of front camera protrusion compared to previous generations - Limited innovation aside from camera and screen
iPhone 12	A14 Bionic processor represents a major breakthrough in performance - 5G connectivity - MagSafe wireless charging technology and accessories	Overall design change but similar dimensions - Camera improvements focus on computational photography - No major software/feature breakthroughs other than 5G
iPhone 11	Addition of an ultra-wide-angle lens to the rear camera system - Night mode for low-light photography - A13 Bionic processor delivers improved performance and efficiency	Liquid Retina HD LCD display instead of OLED (except Pro models) - no major design changes - no revolutionary new features or (functions
iPhone XS/ iPhoneXR	Dual-lens rear camera system with telephoto lens - OLED screen delivers superior contrast and color - Replaces facial recognition with fingerprint for secure authentication	General design similar to the iPhone X - Criticism of the size of the front camera protrusion for taking up a large area of the screen – limited improvements compared to the big leap from the iPhone X

Table (5.1): Levels of Creativity in the Recent iPhone Models

Why Might Creativity Decline?

The slowdown in creativity globally may be due to several factors. These include the high cost of research, the complexity of the development process, and the saturation of some industries with current technologies, which limits opportunities for revolutionary innovations. There is also the increasing complexity of the patent application process, the rising cost of patent litigation, or changes in patent laws and regulations. Of course, this phenomenon varies according to the developmental stages that different countries are going through. The structural economic and political backwardness of some countries, characterized by corruption and governance decline, hinders the

development of the “creative economy” and innovation, particularly in science, technology, and entrepreneurship. Moreover, low investment in research and development, are further obstacles to the progress of innovation. These challenges not only hinder economic progress, but also affect the overall well-being of society.

Interestingly, the same phenomenon also occurs in more advanced economies: In the developed world, most discussions revolve around new technologies: Automation, robotics, the enhancement of human capabilities, hyper-connectivity, cyber power, digital transformation, and data mining. While this may seem like a sign of increased creativity, it appears that the main cause behind the latter’s decline is the dominance of technological giants over the industry. Major companies are trying to invest in guaranteed innovations that enhance their dominance in the capitalist market. They do so by focusing on rapidly-cycling consumer products, without necessarily being concerned with “subordinating science to the service of society” to solve the real crises that cause human societies to suffer. These companies are currently presenting artificial intelligence and automation as magical solutions to issues that do not exist. They also fail to explain how these or other technologies can address crises such as environmental degradation, poverty, isolation, or the economic fragility that most societies that are more involved in the capitalist market suffer from.

Ironically, the widespread proliferation of digital means of communication, and the fast and busy lifestyle it imposes, has in turn contributed to the decline of creativity at the individual level. Over the past decades, the average general intelligence of individuals, as measured by the famous "IQ" test, which includes measurements of memory and the ability to analyze and relate variables, has declined. Similarly, a researcher at the British University of William and Mary observed, through the analysis of 300,000 Torrens scale tests used to measure creativity, that there has been a decline in inventiveness rates at the individual level since the 1990s(7). The study concludes that dependence on constant external stimulation and entertainment has greatly reduced the human ability to stimulate the curiosity necessary for innovation.

Is the Creative Economy Shrinking?

Declining trends in creativity and innovation have multifaceted ramifications with economic, social and technological implications. It is clear that this decline has had a significant impact on GDP and economic growth, which are major universal concerns. In this context, it is worth noting that the creative economy contributes slightly more than 6.1% of the world's gross domestic product, with an average contribution ranging between 2 to 7% of global GDP values(8).

In the United States alone, the workforce involved in creative industries has contributed approximately $446 billion in wages for more than 4.6 million Americans. Furthermore, the output of creative economy sectors reached $887 billion.

The economic output of China's various creative sectors is $534.8 billion. With 18.3 million people working in that sector, China boasts a workforce nearly four times larger than that of the United States. Total wages in the field of creativity amount to about $211.8 billion: This underscores the broad scope and immense potential of the creative talent pool. It also reflects a significant decline in per capita wages compared to the United States(9).

In India, over 8% of the workforce, nearly 40 million people, find employment in the creative economy. This is a much larger number compared to the 4.6 million people in the U.S.(10), with a wage contribution of about $36.2 billion. This also indicates the growth of compensation per capita, and the total output amounts to $121 billion, which represents around 3% of India's GDP.

In the Arab world, estimates by the United Nations Conference on Trade and Development (UNCTAD) indicate that more than 830,000 Egyptians work in their country's cultural and creative industries in 2020. The number of workers in creative fields in the UAE is about 350,000 people, with wages amounting to $21.4 billion, which reflects a much higher contribution per capita than in the United States. This number is expected to increase significantly as the field expands. In Saudi Arabia, an increase in talent is expected to lead future endeavors within the Kingdom's development plan[11]. Creative jobs contribute $13.3 billion to wages, with potential for significant growth. This is consistent with Vision 2030 which prioritizes the development of the creative economy with the aim of contributing at least 3% of the country's GDP[12].

The size of creative sectors, however, is subject to considerable pressure as a result of the decline in investments resulting from a number of crises. The last of these was the Covid19 pandemic. Data issued by the United Nations estimate that between 2019 and 2020 there was a contraction of $750 billion in the gross value added achieved by the global creative economy due to the pandemic. This equates to the loss of approximately 10 million jobs around the world. Therefore, a decline in the global innovation and creativity curve would push many professionals and creators out of the economy, especially if their talents or abilities are not compatible with the programs of profit-seeking companies and governments. Additionally, the decline of creative industries in developing economies and emerging markets will hinder the ability of these markets to compete and devise more effective policies to advance development plans.

Understanding the global innovation slowdown and its mechanisms requires consideration of a variety of human factors that are also characterized by change, much like a symphony where each instruments plays its own unique melody to create a complex harmony. In order to understand these melodies, we must follow a systematic approach in dealing with each instrument. From social changes and economic trends to major technological breakthroughs, as well as the changing nature of creativity itself, this method contributes to untangling the threats woven into the complex fabric of creativity which constantly increases and decreases.

While undeniable developments continue to occur in isolation (like advancements in AI and healthcare), the fabric of creativity seems to be woven with finer threads suggesting a pattern of gradual progress rather than revolutionary breakthroughs. To truly understand the scale of this challenge, all stakeholders with different perspectives must not only acknowledge the slowdown, but understand it from all angles and act accordingly. This thinking is just the first line in drawing a comprehensive picture. It is also necessary to delve deeper into specific influencing mechanisms, and exploring the direct and indirect forces that cause the slowdown and its complex effects on the future of humanity. To inaugurate a new era of creativity, priorities must be identified along with a call to action based on some key recommendations. The most relevant can be summarized as follows:

- **Investing in revolutionary technologies:** Focusing on areas such as: artificial intelligence, renewable energy, and biotechnology with the potential for transformative impact. This must be done while taking into account human-centered creativity in relation to how technology is reshaping the landscape of creativity, and prioritizing ethical considerations and human-centered approaches.

- **Embracing human-centered creativity:** Ensuring that technological developments meet societal needs and address pressing challenges while encouraging ethical considerations.
- **Giving priority to research, development and intellectual property protection:** Encouraging research, development, and patenting, especially with regard to creative innovations.
- **Bridging the innovation gap**: Providing support and resources to developing countries to accelerate their progress in innovation.
- **Promoting cooperation and knowledge exchange:** Promoting open technological ecosystems and international partnerships to stimulate creativity and the exchange of ideas.
- **Nurturing technological ecosystems for creativity:** Fostering environments in which diverse minds collide, leading to the cross-fertilization of ideas and the creation of revolutionary solutions. Encouraging open-source platforms, international cooperation and cross-sector partnerships.

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