Ouverture de "New Perspectives in Global Competition" *

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Abstract

The decline of international competitiveness of European companies began in the early 1970s and since then there has been no reversal of the trend.

In recent years, also due to the growing concentration of investments caused by the 'Oversize Economy' (Brondoni, 2019), the degree of technological advancement of Europe, the United States and China has lost all relationship with the size of their respective Gross National Product.

In fact, investments in technology grow when the resources of a large developed or developing market are coordinated by a system of large corporations and finalized by a policy of applied research put at the service of a design capable of mobilizing the resources of an entire country.

Keywords: US; EU; China; Europe's Technological Stagnation; R&D Global Concentration; Global Competition

1. Overture

The decline of international competitiveness of European companies began in the early 1970s and since then there has been no reversal of the trend (Rizzi, et al., 2012). Furthermore, the targeted industrial development of the countries has been replaced by the relocation of production, by passive support for employment, and by the continuous demand for financial resources from the central European Community bodies, without focusing on concrete medium-term competitive development policies (Brondoni, 2020).

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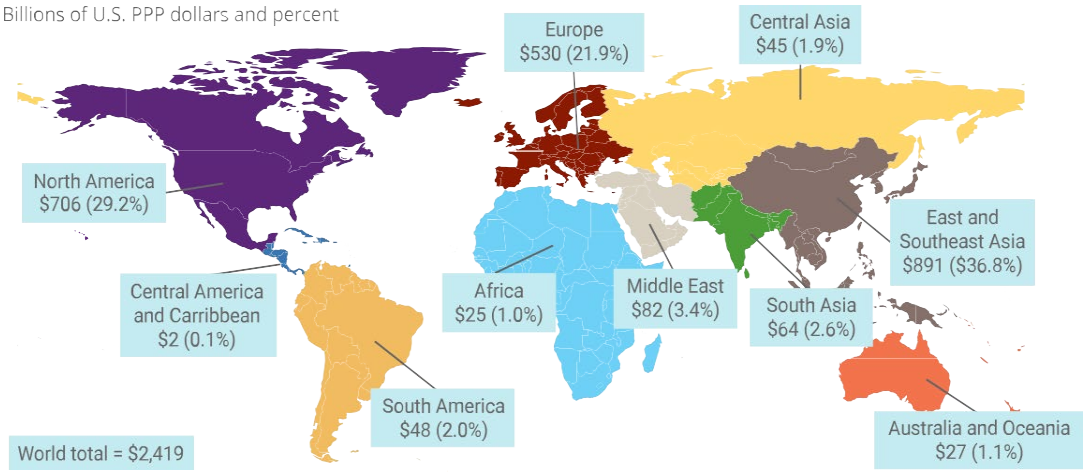
> □ *The 2020s had started so brightly: Europe had been catching up with other regions in terms of tech start-up activity and IPOs. But as the decade progressed, there was a gradual implosion in tech entrepreneurship. Emboldened by informal acclaim as the world's tech regulator in the area of privacy and data protection, officials doubled down and introduced additional, more restrictive regulation on the technology sector.*
>
> *Its ostensible intent was to protect the consumer; the outcome was a diminished tech sector. The companies most able to prepare and adhere to new regulations were the largest, global tech companies. By contrast, less capitalised European start-ups and tech companies struggled to deploy sufficient resources to comply with incoming regulations in a timely manner and had less funds to invest in growth. Greater regulation of technology became a barrier to entry, and a disincentive to entrepreneurs, who switched sector, or left the region. Consequently, the European consumer ended up with constrained choice and, occasionally, higher prices.*
>
> *And so, by 2030, Europe was what some termed a tech desert. Its home-grown technology sector had shrivelled, and foreign tech companies no longer regarded Europe a primary market to sell into the region. European companies from all industries spent less on technology than their global counterparts. European universities, which had been growing their technology research departments, reversed course (Deloitte, 2023).*

The growth of global competition, the saturation of numerous demands that have led many markets to a planned over-supply (with the disappearance of weaker competitors). More recently, the exasperated aim of oversized management in the biggest corporations (oblivious to social and economic macro-problems, such as climate change, social class squeezing, etc.) have generated rapid changes in the global competitive landscape (Brondoni et al., 2020), with a rapid consolidation also of R&D global expenditures (Figure 1).

Figure 1: *Global R&D Expenditures, by Region (2019)*



Notes:
Foreign currencies are converted to dollars through PPPs (purchasing power parity). Some country data are estimated. Estimates as of December 2021. Based on data from Organisation for Economic Co- operation and Development,

Source: National Center for Science and Engineering Statistics

The international decline of Europe, especially of the Southern Eurozone, relate to a high loss of competitiveness. This competitiveness problem results from the absence of a common industrial policy and diverging political leadership within the Europe, and, on the other side, from the growth of global firms from emerging markets that have strongly increased global competition for the products of the Southern economies (Brondoni et al., 2020). In the year 2004, the entry into the EU of the Viségrad Pact states (Hungary, Poland, Czech Republic and Slovakia) has led to a weakening of the relationship between the economies of the Mediterranean States and the continental and German manufacturing structure, while it has marked an integration of the Pact countries into the German manufacturing economy.

The lack of a strong global industrial policy, intended to develop European industries, is at the root of many unsolved problems. With the lack of planning and programming for large industrial enterprises, even small and medium-sized enterprises have in fact been abandoned (Brondoni & Risso, 2023; Brondoni et al., 2020).

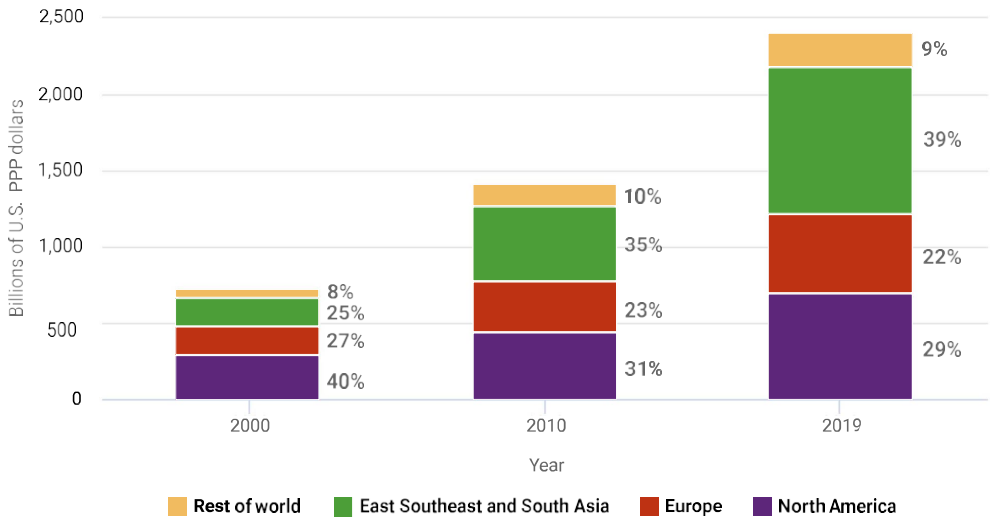
2. US, EU & China: Trends of Global Concentration of R&D

Europe's technological lag in relation to the United States has become exorbitant, particularly in the areas of computer networks, space exploration and biotechnology,

and is also looming large in relation to China, which has recently launched ambitious research programmes.

The Figure 2 compares R&D performance in the United States with other major R&D-performing nations globally, including China, European Union (EU-27) and East-Southeast and South Asia. Global R&D performance is concentrated in the following geographic regions: East-Southeast and South Asia, with a 39% share of global R&D), North America (29%), and Europe (22%). All other regions combined account for 10% of global R&D performance. R&D performance is even more concentrated when comparing individual countries. The United States and China lead R&D performance globally, jointly accounting for half of global R&D. The global concentration of R&D performance continues to shift from North America and Europe to the East-Southeast and South Asia regions (Figure 2). R&D performed in North America accounted for 40% of the global total R&D in 2000 but only 29% in 2019. Europe accounted for 27% of global R&D in 2000 but declined to 22% in 2019. In contrast, the East-Southeast and South Asia regions accounted for 25% of the global total R&D in 2000, and their global share rose to 39% in 2019.

Figure 2: *Global R&D Expenditures, by Region (2000, 2010, and 2019)*



Notes:
Foreign currencies are converted to dollars through PPPs (purchasing power parity). Some country data are estimated. Estimates as of December 2021. Based on data from Organisation for Economic Co- operation and Development,

Source: National Center for Science and Engineering Statistics

Since the '80s, European industries are declining for the following main reasons: impact of industry dynamics on profitability; excess of production capacity

(Brondoni, 2014; Brondoni, 2008); demand stagnation; demography, with a declining trend of population.

In recent years, also due to the growing concentration of investments caused by the 'Oversize Economy' (Brondoni, 2019), the degree of technological advancement of Europe, the United States and China has lost all relationship with the size of their respective Gross National Product.

In fact, investments in technology grow when the resources of a large developed or developing market are coordinated by a system of large corporations and finalized by a policy of applied research put at the service of a design capable of mobilizing the resources of an entire country. For example, as in the case of Silicon Valley or the successful worldwide development of the Japanese motorcycle industry in the 60s and 70s (Brondoni, 2020; Kato, 2008; Alexander, 2008; Yamamura, et al., 2005; Johnson, 1982).

On the other hand, technological development has slowed down in Europe due to the smaller size of corporations and above all because European countries develop distinct policies, which intersect and overlap, and with modest and completely inadequate investments.

The European Union has locked itself into a bureaucratic entity and its member states are weak and unable to mobilize the necessary energies to support major growth projects. This weak situation necessarily has repercussions on the basic research of enterprises, which is the necessary foundation for technological development.

Today's competitive environments highlight global scale economies that are associated to the 'intensity of sharing' of the key resources found in a networked system which maintains sophisticated competitive collaborative relationships (Henderson et al., 2002). Many European companies meet significant challenges in establishing themselves in global economies because large-scale companies dominate these dynamic environments (Brondoni, 2020). Global networking emphasizes the importance of highly competitive corporate policies with tight synergies that have a robust national development policy based on the industrial system's identity (Ohno, 2006; Ohno, 2003).

With the lack of planning and programming for large industrial enterprises, even small and medium-sized enterprises have in fact been abandoned. Furthermore, the targeted industrial development of the countries has been replaced by the relocation of production, by passive support for employment, and by the continuous demand for financial resources from the central European Community bodies, without focusing on concrete medium-term competitive development policies.

3. Twin and Just Transition toward a New European Development

The twin ecological and digital transitions are two irreversible trends toward a deep transformation of the global economy that seeks to combine economic growth with social and environmental sustainability. Since 2019, the European Union has played a pioneering role in defining a strategy and implementing policies to advance this

structural economic transformation. To do so, the European Union has designed a package of instruments, including the European Green Deal, the NextGenerationEU, the REPowerEU and Recovery and Resilience Facility (RRF) plans to pursue simultaneously economic competitiveness and sustainable goals.

Green and digital transitions are strongly correlated. On the one hand, digital technologies are set to play a key role in achieving climate neutrality, reducing pollution, and restoring biodiversity. For example, networks of micro sensors can assist with data collection and empower people to make informed choices through the use of smart devices by generating and enabling access to environmental data through networks of micro-sensors and smart devices will empower (Ardito et al., 2021; Ning et al., 2023; Varriale et al., 2024). On the other hand, the shift to more sustainable systems of production and consumption aims to enhance productivity through low emissions technologies, also transforming the digital industry (Bianchini et al., 2023).

However, the twin transition is fraught with challenges. First, there are areas where the two transitions could negatively affect each other. Energy consumption will increase if digital technologies do not become more energy efficient (Lange et al., 2020). The share of information and communication technology in the world's electricity consumption is currently between 5 and 9 percent and is set up increase with the growing use of Artificial Intelligence, blockchain, IoT, platforms, search engines and virtual reality concepts (Sujit & Mao, 2020). Wider use of digital technologies can increase the amount of e-waste and its environmental impact (e.g. the increase of water use to cool data centers) (Al Kez et al., 2022).

Moreover, if not addressed, global inequalities and political instability will lead to rising poverty rates, a worsening of labour conditions, and greater food and energy insecurity.

The biggest beneficiaries of the early steps implementation of the twin transition are also those most responsible for the excessive consumption of the planet's natural resources. They can afford innovative technological tools (i.e. heat pumps, electric cars and solar panels, etc.), while the laggards cannot, thus risking to deepen the decarbonisation divide between rich and poor countries. In addition, policies that are supposed to accelerate the twin transition in advanced economies can have unintended consequences on developing countries or within societies, creating new inequalities and/or exacerbating existing ones.

In particular, the widespread use of clean technologies will foster demand for workers with high levels of education and skills with technical competencies (IEA, 2023). There is a growing body of evidence that suggests that the digital transformation can exacerbate existing inequalities if not accompanied by improved upskilling and reskilling programs to build the workforce of the future (European Commission, 2020; Li, 2022). Workers with lower incomes and education levels may not only have a harder time benefiting from new digital services, but may also face increased costs associated with job automation or transport poverty (European Commission, 2022; Ayhan & Elal, 2023; Alonso-Elpede et al., 2023). Regional differences in economic development and digital and green production and consumption patterns can exacerbate this disparity (Diodato et al. 2022).

At present, the significant investments made to foster the green and digital transformation are not supported by distributional policies to caution against the socio-economic impact if the twin transition both within and across countries.

It is imperative to adopt new development paradigms; continuing with business as usual will not work. Different approaches are required in light of the current levels of inequality, environmental degradation, and the climate crisis, disproportionally affecting the poorest.

It is thus imperative to ensure that the ecological and digital transformation also leads to a just social transition (Barron et al., 2023), with adversely affected economic sectors and segments of the population supported through robust and credible transition plans.

The Just Transition Mechanism (JTM) is the EU main tool to ensure that the transition to a climate neutral economy happens in a fair way mitigating the socio-economic effects of the transition, focusing on the regions, industries and workers who will face the greatest challenges.

New forms of partnerships involving institutions, businesses and civil society at the international, regional and national level are also necessary to drive a credible and lasting global transformation of social and economic systems.

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