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The European Union in the age of **slowbalisation**

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The global financial crisis of 2008/09 is generally regarded as the beginning of a slowdown in the process of economic globalization, what has been called slowbalisation. As a consequence of the changed geopolitical climate, the EU is now encouraging the reshoring (or the nearshoring) of certain activities and is pursuing an active industrial policy in critical sectors where it feels vulnerable. I argue that perceived geopolitical threats could act as a catalyst for a deeper degree of integration (as has always been the case at critical moments in the past), as the EU will only be able to muster the resources to succeed in its endeavor if it moves more decisively towards a political union. In turn, the resulting stronger EU, with its institutions, history and values, could play a stabilizing role in the global context, helping to keep the confrontation between countries and regions within physiological economic boundaries.

I. Introduction

The years coinciding approximately with the global financial crisis of 2008/09 marked the beginning of a slowdown in the globalization process, which is evident when looking at its indicators. This new phase of economic globalization has been termed *slowbalisation*. The reasons are to be found in the numerous problems that emerged during the previous phase, along with its undeniable merits, mainly related to the fact that it had caused many losers who did not find

an easy path to recovery and were left behind. As a result, populist movements have entered the scene and many Western democracies have felt the need to 'take back control' of their countries. Recent events, such as the COVID-19 pandemic and the war in Ukraine, further worsened the global scenario and geopolitical risks on the reliability of existing global value chains (GVCs) have been perceived with increasing pressure. Tensions between the US and China have been growing and many Western countries found themselves vulnerable because they had to rely on certain foreign countries, such as China, for some critical factors, intermediate products or final goods. Official documents began to refer to these countries with expressions such as 'strategic rivals' and even 'adversaries' against whose 'threats' the necessary protections had to be put in place. These geopolitical reasons are leading the EU to 'reshore' or 'nearshore' certain activities and pursue an assertive industrial policy in critical sectors. In this paper I argue that given the resulting need for a very high scale of investment, the currently perceived geopolitical threats could act as a catalyst for a deeper degree of EU integration, as has always been the case at critical moments in the past. While it would be possible to interpret the global restrictions emerging over the last few years as a threat to global stability, a positive aspect could emerge then, namely the possible move of the EU towards some form of political union. In turn, the resulting stronger EU could become an important factor to help maintaining the confrontation across countries within the physiological limits

of the economic sphere.

II. The age of *slowbalisation*

Economic globalization started slowing down approximately in correspondence with the 2008/09 global financial crisis. Figure 1, reporting two of the De facto FKO indexes of globalization built by Gygl et al. (2019), shows clearly how the overall De facto Globalization Index (the initially lowest curve) has been changing shape around the end of the first decade of the 2000s. If we compare it with the De facto Trade Index, we also observe that after the crisis the latter falls below the former, implying that international trade has been falling more than the international movements of labour and capital.¹



Figure 1: De facto Trade Index and De facto FKO Globalization Index.
Source: Gygli et al. (2019)

¹ Baldwin (2022a), however, argues that the turning point cannot be traced back to the global financial crisis and that, differently from trade in products, trade in services has been increasing (from 12% in 2008 to 14% in 2019). Moreover, 60% of the reduction in the rate of growth of trade would be easily explained by the lower prices of commodities from 2010 until the Ukraine war crisis (Baldwin, 2022b). Cernat (2022) also observes that the number of firms engaging in trade has actually increased, thereby arguing that the overall picture of the current state of globalization is much more nuanced, also because the share of 'embedded' services in goods (mode 5 services) has been increasing significantly over the latest years.

The resulting picture, then, corroborates the idea of a *slowbalisation*, as the Economist (2019) dubbed it, and as also recognized by Catão and Obstfeld (2019), Frieden (2019) and Hoeckman (2015), among many others.

Signs of a slowdown of globalization are also clearly visible when looking at global value chains (GVCs). The slowdown of the growth of GVCs, paralleling that of globalization, may be due both to expansion of offshoring of many intermediate products meeting some physiological limits and reaching ‘a new equilibrium’, and that supply chains have simplified their composition (Baldwin, 2002c). GVCs’ growth has slowed down, however, also as a result of a changed geopolitical climate, coinciding with the technological rise of China (as exemplified, for example, by the Chinese development of the 5G—fifth generation—communication standard, allowing wi-fi internet access at a much higher speed, that most developed countries have refused to adopt, fearing that doing so would undermine their national security).

It is not surprising, therefore, that this change of climate is also reflected in the EU's position vis-à-vis economic globalization, as I will discuss below.

III. European Union and its future globalization options

A. The current position of the EU towards globalization

The position the EU is taking towards globalization has changed dramatically

since the early 2000s (see European Commission, 2002, for example).²

One possible explanation is that the EU institutions have realized (also under pressure from the populist movements that have spread in many of its countries) that the policies followed until a few years ago, well within the rules prescribed by the orthodoxy of economic globalization, have left Europe behind in many areas, especially the most dynamic ones, such as ICT, artificial intelligence or robotics.³ The COVID-19 pandemic and the Russian invasion of Ukraine, of course, have provided further justifications to the policy change.

Lagarde (2022) synthesizes the new vision very clearly, identifying the three main shifts of the EU with respect to global trade: from dependence to diversification, from efficiency to security, and from globalization to regionalization.⁴

The technological evolution of production implies the use of raw materials that are only present in a few countries, therefore creating the risk of dependency

² It is interesting, however, to examine the benefits that different countries have received from globalization (Sacks et al., 2020). China's benefits have been substantial, but positive benefits have been enjoyed also by the US and many European countries, whereby a reduction in globalization will imply a reduction in these benefits. The lower benefits enjoyed by US and EU, however, may not be seen as sufficient to keep those countries open. I will return to this point when I discuss the implications of political realism theory. Della Posta (2018) provides a descriptive analysis of positions for and against globalization in the early 2000s.

³ It should be noted that in the heydays of economic globalization, the fact that the comparative advantage of the least developed countries was in agricultural products and of the developed countries in industrial products was not seen as a problem, despite the markedly different growth prospects that the specialization in one area or another would have. Similarly, the comparative advantage of the United States at the dawn of its development was in agriculture, but it did not hesitate to impose restrictions on industrial imports to develop its industry.

⁴ However, for several years the EU has started to act more decisively to defend its interests, for example by reviewing its policy against signing bilateral agreements, despite the official rhetoric in favor of the 'most favored nation' clause of the WTO. Furthermore, even an ostensibly supportive policy such as the recent Global Gateway conditions the granting of financial aid to developing and least developed countries only if they accept EU regulations, which has been interpreted as a form of soft protectionism (Youngs and Ülgen, 2022).

(in 2020, for example, China controlled about half of the global rare earths mining capacity, and 85% of rare earths refining).

An analysis of the EU's strategic dependencies on foreign sources was conducted, identifying 137 products distributed in the six strategic areas of raw materials, batteries, active pharmaceutical ingredients, hydrogen, semiconductors, cloud and edge technologies.⁵

A similar risk arises from GVCs, which can only be trusted if all links are expected to operate smoothly. Consequently, the importance of diversifying suppliers and building stocks of the most needed inputs to limit objective vulnerabilities is now perceived as a priority. The guiding principle of efficiency adopted in the past, therefore, is now replaced by the need for security. After all, the issue of national security has always been one of the accepted reasons in trade theory for giving up efficiency.⁶

The third significant shift, still according to Lagarde (2022), is from globalization to regionalization.⁷ It is, however, a process that has been underway for some time and therefore far from new,⁸ promising to leave

⁵ See: A Europe fit for the digital age (europa.eu). The commission has set up an Observatory of Critical Technologies to monitor and prompt progress toward the goal of EU technological sovereignty (Youngs and Ülgen 2022).

⁶ There are also signs that companies are, at least to some degree, spontaneously planning to reduce their dependency from abroad. This is the case for machinery, electrical and transportation equipment, and potentially also the electronic sector (EU Parliament, 2021).

⁷ This is echoed in the words of EU High Representative for Foreign Affairs and Security Policy Josep Borrell, for whom the EU needs to bring production “as close as possible to the place of consumption”, in an attempt to strike a “balance between the undeniable advantages of open markets and interdependence, and between the sovereignty and security of countries” (quotation from Youngs and Ülgen, 2022).

⁸ It is worth mentioning here the debate between the 'spaghetti bowl' of regional agreements denounced by Bhagwati (1995) and the more flexible position taken by Baldwin (1997), according to which regional integration could have been a reasonable, albeit temporary, substitute for world integration. Moreover, as

countries open only to those characterized by greater proximity and similarity.⁹

This new approach certainly applies to China,¹⁰ but it also applies to the United States, in order to meet the challenge posed by its digital monopoly giants¹¹ while more tightly controlling the availability of European data.¹²

The EU's long-term prospects towards globalization, however, remain uncertain, given the one-sided nature of the changes that have been undertaken so far and which seem far from the idea of global federalism suggested by Dani Rodrik in his famous 'trilemma'.¹³

B. The Critical aspects of re/friend/nearshoring

Reshoring.—While reshoring may appear as a necessary solution in the face

Lagarde (2022) also recalls, over 70% of the euro area's participation in GVCs was already regional in 2019. The intra-industry integration of the EU may well be interpreted as a way to manage globalization, at least in the relationships among European countries.

⁹ As will be further discussed below, one relevant difficulty of substituting globalization with regionalization (nearshoring) lies in the fact that the latter would imply standing much higher labor costs, something that, like reshoring, but differently from friendshoring, would make it problematic (see Antràs, 2020 and Della Posta, 2022).

¹⁰ While the US's point of view on China is more and more of an 'adversary' 'threatening' national security (The White House, 2020), so that there is a tendency to restrict contacts with China in research, science and technology, the European approach is not (yet) as seeing China as a potential enemy, thereby still favoring interdependence, although more and more cautiously (Harput, 2022). Gaspar and Amaglobeli (2022), and Della Posta (2022) warn against the risks of polarization and exhorts the EU, given the significant role it plays at the world level, to keep the dialogue open, especially to face global problems like pandemic preparedness, Sustainable Development Goals and climate change.

¹¹ The current European Commission has moved to tighten restrictive measures against these US tech giants. Both the commission and member-state governments have developed a more assertive combination of regulations, standard setting, competition policy, and taxation on them. The EU, for example, fined Google €4.3 billion (\$5 billion) in 2018 for antitrust transgressions (Youngs and Ülgen, 2022).

¹² The EU has increasingly pushed for rules to ensure that trade deals do not undermine digital privacy or safeguards on companies' use of data. In May 2018, the EU's General Data Protection Regulation (GDPR) placed a range of obligations on companies, including mandatory user consent, the anonymization of data, notifications for data breaches, and safe cross-border data transfers (Youngs and Ülgen, 2022).

¹³ Moreover, while it can be claimed that such a reinterpretation of globalization would be beneficial in terms of increasing the number of strongly competitive world players, thereby removing inefficient market monopolies, the protectionism introduced in the name of diversification and security may well have just a mercantilist nature (Youngs and Ülgen, 2022).

of the current changed geopolitical situation, Harput (2022) notes that this would mean reverting to the (severely criticized) import-substitution policies of the past. Moreover, Antràs (2020) doubts that reshoring may be a viable solution. His conclusion is based on the role played by the sunk costs that have been already injected in offshoring the production and that would have to be paid once more for reshoring to countries characterized, furthermore, by higher labor costs. It was also noted that GVC shocks have so far affected intensive rather than extensive margins of trade, the number of firms involved in such production having remained relatively stable. Only exogenous shocks recognized as permanent would allow for a more accurate calculation of the expected benefit from partial or complete relocation (Antràs, 2020). This suggests, then, that future GVCs may be more resilient than expected and that the production will continue to be offshored (see also Dadush, 2022 or Giglioli et al., 2021). Business surveys cited by Antràs (2020) also show that business leaders are still willing to assign a relevant role to GVCs.

Despite these arguments, it is certainly possible for politically motivated reshoring (as in the case, for example, of medical products, chemicals, pharmaceuticals, aerospace, communication, electronics, automotive and semiconductor) to be encouraged by government subsidies (EU Parliament, 2021)¹⁴. Grossman *et al.* (2021), however, argue that there would be no reason

¹⁴ This objection is dismissed by bringing as an argument the need to guarantee national security: speaking of chip production, Ms. Gina Raymondo, US Secretary of Commerce, argued that "You cannot put a price on American national security", implying that the production should be repatriated (Davos Annual Meeting 2022, quoted by Harput, 2022).

why governments would be better equipped than businesses to recognize their critical long-term needs.

Friendshoring.—Given the difficulties of reshoring, future globalization may be increasingly characterized by what has been called friendshoring, further suggesting a relative resilience of GVCs despite the bleak future of global trade relations. The term friendshoring originates from the USA-China trade war, in particular from a document of the White House (The White House, 2021) that encourages genuine reshoring or the relocation of U.S. firms' intermediate production to friendlier countries.¹⁵ Thus, it could be argued that friendshoring is a reasonable way to maintain a satisfactory balance between the benefits of globalization and national security needs.¹⁶

One possible objection to this conclusion relates to the difficulty of knowing with certainty which countries might be considered friends in the future as well. The risk is that some countries that are currently friends may cease to be friends in the future (an example can be made by considering that there may be strategic competition not only between the United States and 'unfriendly' China, but also between the United States and the European Union). In addition, the recent COVID-19 crisis has shown that when faced with need, all countries play against

¹⁵ This indication was relaunched at a high level, and in an even more explicit way, by the US Treasury Secretary, Janet Yellen (Atlantic Council, 2022). These proposals, however, have come under some criticism as to their long-term effectiveness and sustainability (Grossman et al., 2021; Harput, 2022), not to mention the more general negative effects on the prospects for peaceful relations globally.

¹⁶ Della Posta (2022), for example, argues that from a purely economic point of view, the fact that friendshoring would allow continuing to enjoy the same labor costs as in previously offshore countries, and that relocation would be encouraged by government subsidies, could be sufficient to determine the resilience of the GVCs (although differently composed).

each other to favor national interest.¹⁷ So, would friendshoring really be a reliable and long term strategy? This question leads to the point raised by Shih (2022) regarding the definition of a friendly country. Is it about the distinction between democracies and autocracies? Does being an autocracy provide sufficient reason to fear that it also poses a military threat?¹⁸ And will all countries enforce these discriminatory rules? Or, more simply, what should be done with those countries that maintain good relations with those autocracies but are not autocracies themselves?¹⁹

Shih (2022) also argues that the efficiency of the Chinese production model pioneered in Guangdong is difficult to replicate elsewhere, which means that subsidies to encourage production should be excessively high (and upfront, rather than provided as long-term conditional tax breaks, as is often the case).²⁰

A further critical issue in subsidizing the reshoring or friendshoring of previously offshored production is the source of the subsidies. Will taxpayers provide them explicitly or implicitly through an inflation tax (Harput, 2022)? Or will they come from direct price increases due to rising production costs? (Shih,

¹⁷ 'Fights' had been reported between the US and EU (but also among EU countries) over the provision of face masks from China (Reuters, 2020).

¹⁸ As for China, I think it should be considered that the slogan its representatives keep repeating in every official occasion is that 'the world is a community of shared destiny', to be opposed to the 'America First' motto launched by Trump, for example.

¹⁹ The former chairman of the world's largest contract chipmaker TSMC argued that the US CHIPS Act is a wasteful and expensive exercise in futility and that US-based semiconductor fabs "will be non-competitive in the world markets." (Quoted by Harput, 2022).

²⁰ Only one point, again according to Shih (2022), can shift convenience in favor of friendshoring, i.e. the degree of uncertainty about the future prospects of maintaining production in a country like China. He referred to the uncertainty surrounding the anti-COVID policy measures China had followed up to December 7, 2022, an argument that is no longer there. Uncertainty, however, could also be due to political issues, and risk-averse companies may need to consider the costs associated with the uncertain future prospects of maintaining their manufacturing offshored to China.

2022). Or, may I add, will it come at the expense of producers' profits? In other words, what will be the distributional impact of such measures (since it is hard to imagine productivity gains resulting from the relocation of previously offshored production)? These arguments had a clear answer in the past: domestic firms should not be given subsidies to resist market competition with foreign firms. Of course, it can be argued that the two cases are not comparable, since the security risked by accepting free competition in an open world was of a socially acceptable nature (which, although implying the disruption of many jobs, had to be accepted in the name of Schumpeter's creative destruction).

Instead, the security being talked about today is geopolitical in nature, thus implying the need to provide 'military' security to ensure the country's future freedom and democracy. This is certainly a valid argument, as long as the evoked 'military' confrontation is not a way to mask the fear of an 'economic' one, once the competitor appears to be able to win the competitive market contest. After all, protectionism has been used in the past depending on the convenience of the moment (Della Posta, 2018), and it cannot be ruled out that this is just one case in addition to previous ones. This is also alluded to by Youngs and Ülgen (2022), when they ask whether this new approach to international economic relations may stem from the need to 'tailor [policies] more closely to the immediate interests of the Union', rather than from genuine long-term security issues.

A more explicit opposition to 'global protectionism' (as Mariotti, 2023, calls phenomena such as reshoring or friendshoring) is given by Luo (2022). He sees these as forms of 'techno-nationalism', a concept that dates back to the mid-

1980s, when the U.S. government argued for the need to pursue its own technological sovereignty, to prevent U.S. technology from being exploited by foreigners (meaning, at the time, the Japanese) (Reich, 1987). Of course, as Lou (2022) argues, the current version of ‘techno-nationalism’ is more complex than its predecessor, as it includes elements of geopolitics, national security and ideology, in addition to economics.²¹

It should also be mentioned that the friendshoring solution may present problems related to, for example, the possible saturation of the labor market. If Japan, the United States, and the European Union plan to shift production from China to Vietnam or Thailand, for example, it is clear that there will be some ‘capacity constraints ranging from land prices and logistics to the availability of skilled workers’ (Small, 2020). In particular, still referring to the cases of Vietnam or Thailand, in 2020, in the former the unemployment rate was 2.4%, the labor force participation rate was 72.9% and the combined rate of unemployment and potential labour force was 3.2%, while in the latter they were respectively 1.2%, 66.9% and 2%.²² Thus, the nearshoring alternative may become more attractive.

²¹ Both the old and the new versions, however, share the idea that the world should not operate in a cooperative way or, better, in a co-opetitive way (meaning a virtuous form of competition combined with cooperation on more general and global issues) (Lou, 2022). It should be noted that the theoretical basis of this approach, the theory of political realism, differs from the old mercantilist view according to which international trade is a zero-sum game, with a winner getting a positive win and a loser a negative one. In the context of political realism theory, economic interactions may well be characterized as a positive-sum game, in which both players win. However, one should avoid engaging in those interactions if the competitor's earnings are higher than ours, thus giving our ‘adversary’ a competitive advantage over us, something that could ultimately endanger our existence.

²² It has to be acknowledged, though, that for other South and East Asian countries there is more room. The 2020 percentage values of the unemployment rate, the labor force participation rate and the combined

Nearshoring.— Many of the points raised in the discussion of friendshoring apply to nearshoring. However, some differences also emerge. Although there may be specific areas for which relocation of production facilities makes sense, it is not possible to think that European autarky is plausible or that countries in close geographic proximity to Europe can alone serve as substitutes for intermediate and final production scattered around the world (primarily in China).

In the case of nearshoring, labor costs would most likely be similar to those in the country of origin. As discussed earlier, the friendshoring solution (to a country presumably located in the same geographic area to which production had previously been offshored) would at least allow for the continued enjoyment of low production costs. The nearshoring solution, on the other hand, implying most likely labor costs of the same order of magnitude as in the country of origin, may not be sufficient to provide the right incentives to induce the abandonment of offshore production.²³

This makes the third of the critical changes in EU strategy outlined by Christine Lagarde, as reported above, namely the shift from globalization to regionalization, very unlikely.

rate of unemployment and potential labor force in the cases of the Philippines, Malaysia or Sri Lanka, for example, were 3.4, 56.5 and 8.6; 4.5, 68.4 and 5.8; and 5.4, 50.5 and 7.6 respectively (International Labour Organization, <https://ilostat.ilo.org/topics/labour-costs/>). Della Posta (2022) proposes a model, based on Antràs (2020), which shows the conditions in which friendshoring would be preferred to both offshoring and reshoring.

²³ A simple extension of the model proposed by Della Posta (2022), would formally demonstrate that while the friendshoring solution could be preferred to offshoring, nearshoring is not, given the high labor cost that regionalization would imply, unless the government is prepared to pay a much larger amount of subsidies than in the case of friendshoring. Both cases, therefore, suggest the resilience of GVCs (although

A further implication, often forgotten, is that economic globalization has enabled the development of otherwise less developed regions, which is hardly possible in the case of nearshoring.

IV. European Union and industrial policies

The EU's change of perspective toward economic globalization has been accompanied by a necessary corollary, namely the adoption of an active industrial policy. The EU has not explicitly disavowed the principles of free trade and the goal of maintaining a level playing field, avoiding inefficient subsidy races among EU countries. The implicit assumption made by the EU in the past, however, was that such rules would also be followed globally, thus preserving worldwide efficiency under WTO supervision. However, while within the EU public intervention in support of industrial sectors was carefully excluded, other geographical entities followed a different approach or simply took advantage of their different characteristics and institutional set-up. The United States, for example, has enjoyed not only the investment accrued through market mechanisms from around the world to Silicon Valley, making possible the financing of ICT startups, but also the large centralized federal budget, including the part devoted to defense (suffice it to say that the Internet, the mother of the ICT technological revolution, is the result of the public research effort financed with the federal budget for military purposes); the People's Republic of China,

composed differently, in the case of friendshoring).

although a member of the WTO, has followed its own industrial policy (as did all industrialized countries in the early days of their development), accompanied by the presence of many state-owned enterprises. As a result, while U.S. and Chinese companies have made significant technological advances in the areas of ICT and the digital economy in general, European companies based in their respective countries have lacked the resources to make the necessary investments to run a globally competitive R&D.

It should also be mentioned, however, that the EU had previously prepared plans to technologically advance its ICT industry, albeit without success. Suffice it to recall the Lisbon Strategy, launched by the European Council on March 23-24, 2000 and to be implemented by 2010, which promised that the EU would become: "the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion." Eventually, the program was replaced by the EU 2020 Strategy, which aimed to develop "a smarter, knowledge-based, greener economy that grows rapidly and sustainably, creating high levels of employment and social progress." A similar program was launched by China (Made in China, 2025), apparently with greater success.²⁴

The new step toward a European industrial strategy can be traced back to 2019,

²⁴ Made in China 2025 "aims at developing domestic champions and helping them to become global leaders in strategic high-tech sectors such as artificial intelligence, pharmaceuticals, and information technology". This is part of efforts to improve China's manufacturing capabilities across the board.

although some signs had emerged even before then.

2019: China as a 'Strategic Rival'.— As early as 2018, several EU member states called for a relaxation of Europe's existing competition laws to allow support for European champions to compete internationally (Youngs and Ülgen, 2022). But it was in March 2019 that the EU for the first time abandoned the soft tones it had used until then toward China and called it a 'strategic rival' (European Commission, 2019). This is also the result of some indications from the Federal Association of German Industrialists, which in a document published in January 2019 lamented the lack of reciprocity in trade relations with China, thus urging a change of strategy to make them more balanced and fair.

The first ('diplomatic') objective reported by the European Commission (2019) is to strengthen relations with China, immediately followed, however, by the need to pursue a system based on reciprocal conditions and—this is the main point of interest for us here—strengthen the EU's internal policies and industrial base (Frazer, 2019).

As a result of this changed climate, in March 2019 the European Council identifies the need to set up a comprehensive and long-term EU industrial policy strategy, not to be separated from the role to be played by a deeper and stronger single market, and asks the European Commission to prepare a report on this, which will see the light exactly one year later.

2020: A New Industrial Strategy for Europe.— Following up on the request made by the European Council the previous year, on March 10, 2020, just the day before WHO declared the global pandemic COVID-19, the European

Commission published a document with the unequivocal title, ‘A New Industrial Strategy for Europe’, based on the idea of pursuing a dual green and digital transition “to make EU industry more competitive globally, and enhance Europe’s open strategic autonomy”. Thus, for the first time, the (at least apparent) oxymoron represented by the juxtaposition of the adjective ‘open’ with the noun ‘autonomy’ appears. The adjective ‘open’ is supposed to mean that the new policy does not imply erecting barriers, providing for otherwise uncompetitive industries or adopting the protectionist and distorting measures introduced by other countries. The noun ‘autonomy’ suggests instead the EU’s clear change of pace, recognizing for the first time the need to join forces to actively address the many industrial challenges from other entities around the world (Overdiek and Coka, 2020), because of the role of innovation and source of economic and social growth that industry plays.

‘Strategic autonomy’ refers not only to industry, but also to the reduction of dependence from foreign countries on critical materials, technologies, food, infrastructure, security and all other relevant strategic sectors (European Commission, 2020).

The need to defend Europe’s sovereignty is also clearly expressed by the intention to bring manufacturing back to the EU in all technologically advanced sectors. Consistent with this goal, the EU will also “support the development of key enabling technologies that are strategically important for Europe’s industrial future” like 3D printing, robotics, microelectronics, high performance computing and data cloud infrastructure, blockchain, quantum technologies,

photonics, industrial biotechnology, biomedicine, nanotechnologies, pharmaceuticals, advanced materials and technologies. ‘Strategic autonomy’ also implies a stricter approach on foreign direct investment inflows to protect European strategic sectors. This focus also refers to those cases where reciprocity is not recognized, for example by aiming to weaken the Chinese requirement on joint ventures that certainly helped China in the early stages of its development. It is probably to this new and more assertive approach that we owe the signing of a Comprehensive Investment Agreement at the end of 2020, which stipulates that Chinese companies will only be able to invest in the EU on the condition that European companies receive similar treatment (Youngs and Ülgen, 2022).

The focus is also on the European defense industry, which should overcome the national fragmentation of the continental environment to become globally competitive.

One of the main points representing the new industrial policy is the realization that a long-term budget plan is needed to finance the new strategy and correct market failures that prevent the delivery of the public goods targeted by the industrial policy (while encouraging private sector intervention). There is explicit recognition, then, that only by joining forces would it be possible to raise the resources needed to invest in technologically advanced sectors on a large scale; there is implicit recognition, then, that ensuring a level playing field within the EU is not sufficient to ensure the competitiveness of European industry globally, and that EU competition rules need to be adapted to the needs of today's

world, for example, by reviewing antitrust policies.

The main financing instrument of the new industrial policy is the adoption of Major Projects of Common Interest. A large pool of funding would be created in all member states through a renewed sustainable finance strategy and a new digital finance strategy.

However, the role of the single market, one of the main strengths of the EU, is further emphasized, as a level playing field internally ensures virtuous competition, including for SMEs, which would lead to the desired double transition within the environmental and social sustainability values embraced by the EU.

An important role is also assigned to industrial alliances, which have already been successfully pioneered in areas such as batteries, plastics and microelectronics and which the 2020 'New Industrial Strategy' has suggested be applied to Clean Hydrogen, Low Carbon Industries, Industrial Clouds and Platforms and Raw Materials.

2021: The Revised Industrial Strategy for Europe.— The 2020 plan for a new European industrial strategy foresaw that some clarifications and refinements would be needed in the future, particularly with regard to state aid and antitrust rules and how national and EU instruments could be used to stimulate private sector investment.

The COVID-19 conflict (and the subsequent war in Ukraine) provided further evidence of the EU's vulnerability and dependence on GVCs, thus fueling the already planned review of industrial policy, which was published in May 2021

European Commission, 2021).

The strategy update reaffirmed the goal of a ‘dual transition’ to a green and digital, yet resilient economy.

The role of the single market as supporting the EU's open strategic autonomy was further emphasized, recognizing its deepening and monitoring as priorities. COVID-19, however, has eroded its reliability (due to the restrictive stance taken by some countries on the supply of critical medical equipment). For this reason, the European Commission has proposed the adoption of a Single Market Emergency Instrument, to be activated in case of need and such as to ensure its smooth operation even in times of crisis. Crucial attention is also explicitly paid to the fact that crises can lead to the disruption of global supply chains, thus threatening the availability of some critical intermediate products. It is here that the need for strategic (open) autonomy based on diversification and aimed at ensuring EU security finds strong motivation.

It is also reiterated that the development of Europe's strategic capabilities in key areas should be achieved through new industrial alliances in strategic areas. They are intended to provide broad platforms that should also aim at inclusiveness, thus also allowing start-ups and SMEs to play a role.

A number of alliances were planned to be launched, including those on Processors and Semiconductor Technologies; Industrial Data, Edge and Cloud; Space Launchers; and Zero Emission Aviation.

Some additional tools would have to be prepared by the European Commission, supporting interregional partnerships through Smart Specialisation

Platform aimed at boosting industrial competitiveness and innovation.²⁵

Sources for investment, in case of private-public gaps, could come from the Recovery and Resilience Facility. Multi-country projects will also be supported by the Commission to maximize investment under the Recovery and Resilience Facility Horizon Europe partnerships.

The actual steps taken so far by the EU— As a result of the plans contained in the documents discussed above, at present there are nine alliances aiming at granting a European technological independence. They are: the Alliance for Zero-Emission Aviation (preparing the passage to hydrogen-powered and electric aircraft); the European Raw Materials Alliance (aiming at the European resilience and strategic autonomy for rare earth and magnet value chains); the European Solar Photovoltaic Industry Alliance (aiming at the resilience and strategic autonomy of a fully European value chain); the European Clean Hydrogen Alliance (to facilitate investment aiming at its production, transmission and distribution and applications in several areas); the European Battery Alliance (to make Europe a global leader in sustainable battery production and use); the Circular Plastics Alliance (with the objective of boosting the EU market for recycled plastics to 10 million tonnes by 2025); the European Alliance for Industrial Data, Edge and Cloud (with the objective of strengthening the position of EU industry on cloud and edge technologies); the Industrial Alliance on Processors and Semiconductor Technologies (to boost

²⁵ An Industrial Forum aims to support the Commission in its systematic analysis of the different industrial ecosystems and in the assessment of the different risks and needs of the industry..

the EU competitiveness in this sector); the Renewable and Low-Carbon Fuels Value Chain Industrial Alliance (with the objective of boosting production and supply of renewable and low-carbon fuels in the aviation and waterborne sectors, flanking the previously established initiatives, FuelEU Maritime and RefuelEU Aviation).

The tendency to protect the European market in those that had been considered crucial sectors, has materialized with the proposal of a series of Acts. The EU's proposed Digital Services Act (DSA), obliging tech companies to increase the transparency of their algorithms and update content more frequently, with rather severe fines in case of breaking DSA rules. The Digital Markets Act, preventing the formation of monopolistic positions (thereby being the most significant tool against large tech companies) and separating the provision of a platform from the services that can be traded on it, once more, with severe and credible fines in case of breaking DMA rules.

The artificial intelligence Act (AIA) is a proposed European law on AI. It envisages the need for investment of over €20 billion per year, favored by a EU public-private partnership generated under the guidance of the European Investment Fund (see Youngs and Ülgen, 2022, for further details).

Recently, the EU announced also a European Chips Act with a budget of more than €43 billion to strengthen semiconductor value chains within the EU. While targeting 'excessive dependencies,' the European Chips Act included friend-shoring components by proposing "semiconductor international partnerships

with like-minded countries” (Harput, 2022).

These initiatives are complemented by others including the US-EU Trade and Technology Council (TTC), the Minerals Security Partnership (MSP), the Indo-Pacific Economic Framework for Prosperity (IPEF), and the Americas Partnership for Economic Prosperity, to “engage with trusted partners” and “reduce dependencies on unreliable sources of strategic supply.”

V. Concluding remarks and observations

It is self-evident that a change of pace has been characterizing the EU's industrial policy lately, due to security reasons but also to the desire to close the gap accumulated over the years by European industry in the sectors that most promise to be conducive to future economic growth. If we compare some current EU figures with those of the United States and China, however, we better understand the origins of this lag and can draw some conclusions about the steps that will have to be taken for the EU to catch up with its competitors. The US budget amounts to approximately US\$6.2 trillion (with a deficit projected to be approximately US\$1.4 trillion as of 15 February 2023).²⁶ The Chinese budget is approximately US\$4.2,²⁷ while the EU budget is approximately US\$2 trillion (including US\$ 800 billion of the Next Generation EU program) that, however, are covering the 7 years included between 2021 and 2027. The striking

²⁶ Budget | Congressional Budget Office (cbo.gov)

²⁷ 2022 budget: China increases public spending to stabilize economy - CGTN

difference between those figures is undisputable. If we look more specifically to the flow of 2020 investment in R&D undertaken by the three areas and the results in terms of ICT Patents, the overall picture becomes even clearer.²⁸

Table 1: Comparison of investment in R&D for China, EU and USA.

	Bus	Gov	High	Total	Res	ICT Pat
CHI	446,884	91,820	45,049	583,753	2,109,460	29,047
EU	288,574	51,400	97,934	437,908	1,853,060	8,352
US	542,948	68,156	81,111	692,215	1,586,496	17,730

Bus = Business enterprise expenditure on R&D at current PPP \$ (Million), 2020. Gov = Government intramural expenditure on R&D at current PPP \$ (Million), 2020. High = Higher education expenditure on R&D at current PPP \$ (Million), 2020. Total = Bus + Gov + High. Res = Total number of researchers (FTE), 2019. ICT Pat = Number of Patents in the ICT sector - applications filed under the PCT (priority year), 2019.

The figures reported in Table 1 show that the EU is lagging significantly behind China and the US both in the expenditure on R&D (those of business and government origin) and, as a result, in the number of ICT patents.²⁹ What is particularly striking is that in spite of a larger number of researchers, the number of ICT patents is less than half of those of the USA, while China, with a number of researchers which is only approximately larger by 1/6 than that of the EU, obtains a number of ICT patents which is 3-4 times larger than that of the EU (More precisely, the number of patents in biotechnology sector are as follows: China: 2,078, EU: 2,432, USA: 6, 574).

²⁸ Main Science and Technology Indicators (oecd.org)

²⁹ The index (2007=100) of the dynamics of the sources of R&D investment shows clearly the growing pace taken by China with respect to the USA and above all the EU (Main Science and Technology Indicators – OECD, 2021).

This means that the effort required to pursue effective catching up of European industry would not be possible within the current institutional set-up: either the EU moves to deeper forms of integration, thus providing the necessary subsidies not only for the relocation of GVCs but also for the creation of independent industrial know-how, or re-friend-/nearshoring will not be credible. Attracting a significant business counterpart may require substantial government funding for R&D investment, as in the case of the United States. But this will only be possible if EU countries realize not only the need to join forces and pool resources, but also their necessary pre-condition: the adoption of a truly effective European industrial policy can only be achieved by accelerating the process of European integration. This should come as no surprise, since this is what has characterized the history of the EU, which has always reacted to perceived external threats by deepening its level of integration. The creation of the European Community back in 1957 was driven precisely by the Soviet threat after its tanks invaded the Czech Republic the previous year. And it was the fall of the Bretton Woods system that motivated the creation of the European Monetary System, followed 20 years later by the adoption of the euro. It could therefore be the case that the recent invasion of Ukraine by the Russian army will bring about a similar structural leap in the process of European integration, pointing this time toward some form of political union. While this process can be interpreted as increasing the degree of global fragmentation, the institutions, history and founding values of the European Union, and the greater strength it would gain from strengthening its political dimension, could increase its

potential to play a stabilizing role in the global scenario, thus helping to keep the confrontation between countries and geographic areas limited to the economic context.

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