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To connect or not to connect? Responding to the Digital Silk Road in Central and Eastern Europe

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Abstract: As China has launched the Digital Silk Road (DSR) initiative, the focus of Chinese overseas activities has subsequently been complemented by the global expansion of Chinese technology companies. While the vast majority of Central and Eastern European (CEE) countries share the concerns as regards the economic, security and technology challenge China poses to Europe, a few countries seem to have different approaches to the question of whether and to what extent Chinese technology companies are to be involved in CEE's digital transformation. The paper offers a comprehensive mapping of responses to the DSR challenge China poses in the CEE region, with the aim of analysing how these responses differ and why. To explain the different responses, four hypotheses are formulated and evaluated, taking into account regional, global and national factors. Based on five illustrative examples, the paper concludes by confirming these hypotheses only for those countries opposing Chinese tech involvement.

Keywords: Digital Silk Road; Central and Eastern Europe; Chinese multinational companies; telecommunication companies; digitalisation; digital transformation.

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1 Setting the scene: introduction and research questions

Chinese economic presence in Europe – that has been growing unstopably in the past two decades – is contested, with China increasingly referred to as a systemic rival by the EU itself. This process has certainly been amplified by the ‘Belt and Road Initiative’ (BRI), a global strategy with Chinese characteristics, that expands Chinese geo-economic influence regionally as well as globally. As part of the BRI, China has launched the Digital Silk Road (DSR) in 2015 and the focus of China’s overseas activities has subsequently been complemented by the global expansion of Chinese technologies and technology companies. And, as China moves forward with digital technologies, there is a growing frustration as regards the possible effects on, and consequences for, Europe. European governmental actors often fear that China could control European digital infrastructure and thereby its data flows (Karásková, 2021). This challenge has at least three dimensions: economically, European states can fear of the loss of industrial competitiveness; politically, (over) dependence on China and their control over European digital infrastructure may generate anxiety, while in the security field, European countries are threatened by the possibility of espionage and the loss of control over data flows.

While the vast majority of Central and Eastern European (CEE) countries share the US and EU concerns as regards the economic, security and technology challenge China poses to Europe, a few CEE countries seem to have different approaches to the question of whether and to what extent Chinese technology companies are to be involved in CEE’s digital transformation. Countries such as Hungary and Serbia are more favourably disposed to China and more eager for Chinese investment and low-cost telecommunications equipment – potentially serving as a gateway into Europe for the participation of Chinese ICT companies in telecommunications-related build outs. Most CEE countries indeed appear to be distancing themselves from Chinese tech companies, yet to varying degrees. Countries such as Estonia, Czechia, Poland and Romania were among the first in Europe to support US initiative on 5G security and/or were more sceptical about cooperating with Chinese technology companies. However, the very roots of such scepticism/rejection were not necessarily the same in all cases.

To date, there is no synthesising, comparative, CEE-wide evidence about how CEE governments interact with Chinese technology companies. Hence, in this paper, we conduct a comprehensive mapping of responses to the DSR challenge China poses in the CEE region. More specifically, we address the following research question: how and why do CEE responses to the DSR challenge differ? Building on interviews with company officials, experts, available data and desk research, the paper intends to provide a better understanding how CEE countries respond to the DSR from a strategic point of view for the post-pandemic era.

The structure of the paper is as follows: drawing on a systematic review of the literature the next section presents the importance of digital transformation and the recent changes in CEE region’s economic development, as well as China’s growing economic footprint all over the region. Based on International Political Economy and Comparative Political Economy assumptions we build hypotheses, considering regional, global, and national level factors. The next section presents the methodology. To evaluate the hypotheses, the following part presents when and how Chinese technology companies gained foothold in the CEE region and whether this presence posed any challenges in the above-mentioned economic, political or security dimensions. Then, by focusing on four

illustrative examples of regional responses – those of Poland, Czechia, Hungary and Serbia – we evaluate the validity of the hypotheses and present the findings. Finally, conclusions, implications and areas for future research are discussed.

2 Changing trends, growing Chinese footprint in CEE: literature review and hypotheses development

Infrastructure commonly refers to capital intensive projects in transport, energy and communications and is of great interest among European governments, be it in the core of Europe or in its periphery. Whether it is the Internet, a railway, a bridge or a power plant, infrastructure improves the functioning of an economy as it has a significant impact on productivity and growth (e.g., Aschauer, 1989; Fernald, 1999; Roller and Waverman, 2001). Oxford English Dictionary defines digitalisation as the ‘adoption or increase in the use of digital or computer technology’. Brennen and Kreiss (2016), however, make a distinction between two conceptual terms ‘digitisation’ and ‘digitalisation’: they claim that the former can be defined as the material process of converting analogue streams of information into digital bits while the latter means the way many domains of social-life are restructured around digital communication and media infrastructures. Moreover, there is a growing literature stating that digitalisation itself creates economic growth (Bukht and Heeks, 2017) and the diffusion of digital technologies enables economic transformation (Lanzolla and Anderson, 2008; Brettel et al., 2014), while ‘digital divide’ is an already existing term to describe inequalities in access to – and use of – digital technologies and content (Unwin and Bastion, 2009).

The CEE region’s economic catching up has been largely driven by traditional sectors of the economy, dynamic exports, investments from abroad, the advantages of low labour cost and generous funding from the European Union (EU), that is, CEE countries perform predominantly labour-intensive activities in the international division of labour (Baldwin 2013). Although the level of CEE countries’ catching up process varies greatly – EU member states are more developed while countries in the Western Balkans are lagging behind – but a rather general phenomenon is that many of these engines are gradually depleting, economic growth has slowed down and the previously successful foreign direct investment-led development model is exhausting (Sass and Szalavetz, 2013; Szanyi, 2020; Szalavetz, 2020a). According to Pavičić (2019) and Szalavetz (2020b), CEE countries are bound to face adverse effects of digital transformation: with increasingly sophisticated labour-saving technologies, the inflow of new greenfield investments slows down, thus, the impetus of catching up driven by Global Value Chain (GVC) integration weakens. Hallward-Driemeier and Nayyar (2017) also highlighted that economies that followed manufacturing-led development model will be able to maintain their current position only if they fulfil higher requirements in terms of production capacity, functional capabilities, local supplier base and digital infrastructure.

When analysing some of those indices that try to measure CEE countries’ current level of digitalisation (see Table 1), one can see that majority of CEE countries are laggards when compared with Western European countries such as Germany. However, certain countries – such as Estonia, Czechia or Slovenia – perform above average, why the non-EU member Western Balkan countries’ digital divide is much more significant. This is partly explained by the fact that Western Balkan countries are among the poorest

in the CEE region and have converged more slowly with Western Europe than the EU-member CEE countries (Grieveson, 2021).

Table 1 Ranking of CEE countries – and Germany as a reference point – by the level of digitalisation development, selected indices

<i>Country</i>	<i>DESI (2021)</i>	<i>GII (2021)</i>	<i>GCI (2020)</i>
Germany	11	10	15
Estonia	7	21	24
Slovenia	13	32	29
Lithuania	14	39	27
Latvia	17	38	n.a.
Czechia	18	24	28
Croatia	19	42	38
Slovakia	22	37	32
Hungary	23	34	31
Poland	24	40	39
Serbia	n.a.	54	51
Bulgaria	26	35	36
Romania	27	48	41
Montenegro	n.a.	50	n.a.
North Macedonia	n.a.	59	n.a.
Bosnia and Herzegovina	n.a.	75	n.a.

Source: Own compilation, using the following indices' rankings: Digital economy and society index (DESI);¹ Global innovation index (GII),² Global connectivity index (GCI).³

As described above, access to – and use of – digital technologies seems to be vital for the CEE economies with regards their economic development, in other words, digital transformation can be the key to sustainable and dynamic catching-up path. The question is who can provide the CEE countries with such access? European companies have traditionally played a significant role in information and communication projects all over the CEE region since the 1990s. Similarly, CEE countries also used to rely heavily on funds from the EU to finance ongoing major infrastructure projects. However, bids from non-European (emerging) countries have also been gaining ground in the CEE region recently (Szunomár, 2020a). And China is one of the prominent players to be mentioned in this field (Rogers, 2020; Karásková et al., 2020).

In parallel with its increasing global engagements, hallmarked by the 'going global' (zouchuqu) policy and the BRI, China has become more active in the CEE region in the past two decades. Similarly, to China's relations with developing and emerging regions, in CEE Chinese presence is characterised by developing trade relations, growing inflow of Foreign Direct Investment (FDI) and recently also infrastructure projects carried out by Chinese companies, financed from Chinese loans. Although when compared with China's economic presence globally or in the developed world, its economic impact on CEE countries is still relatively small but has increased significantly over the past two decades (Garlick, 2019; Szunomár, 2020b; Turcsányi, 2020). Since relationship between

China and the CEE region was on a rather low profile in the previous decades, this was quite a new phenomenon but not an unexpected one: the transformation of the global economy and restructuring of China's economy are responsible for growing Chinese interest in CEE, while the region also represents new challenges and new opportunities for China (Jakóbowski, 2018; Szunomár, 2018, 2020b; Karásková et al., 2020). This process has been amplified by the BRI, and recently might also be boosted by the DSR that – at least on the global level – seems to be more than just Huawei's role in developing 5G networks. DSR is a Chinese development concept, promoting digital development with Chinese characteristics (Arcesati, 2020), with key areas of investment ranging from hard infrastructure to digital economic platforms, financial technology and security-related services (Nouwens, 2021). However, in CEE, engaging with China through the DSR so far has meant solely engagement with Chinese tech companies in developing 5G networks.

2.1 Hypotheses development

Although almost all CEE countries toyed with the idea of strengthening economic relations with China for some time, in order to enhance their economic development, this commitment was rather cautious and hasn't proved lasting in most of the cases. As the core question of the paper – how and why CEE responses to the DSR challenge differ – is situated at the interface of International Political Economy, Comparative Political Economy as well as CEE Studies, in order to explain differences in CEE responses, the following hypotheses can be created, considering regional, global as well as national level factors:

2.1.1 The local variety of capitalism (VoC) have an impact on CEE countries' foreign policy preferences

According to Nölke and Vliegenthart (2009), the majority of CEE countries represents a special variety of capitalism, a so-called Dependent Market Economy (DME) type. This means that these countries have comparative advantages in the assembly and production of relatively complex and durable consumer goods, based on institutional complementarities between skilled yet cheap labour, the transfer of technological innovations within transnational enterprises, and the provision of capital via FDI (ibid, p.672). However, when focusing on the selected four countries this variety of capitalism seems to be particularly characteristic of the Czech Republic, Poland and Hungary, but less fitting to Serbia. While those CEE countries that joined the EU in 2004 have been successful in attracting large-scale FDI and built a sophisticated, high-value manufacturing sector, the Western Balkans were mostly left out of the expansion of (Western) companies. Similarly, while EU member CEE countries had full access to EU budget, Western Balkan countries accessed only the Instrument for Pre-Accession Assistance (IPA) funding. As Grievson (2021) highlighted, later on, some of the Western Balkan countries have been successful in attracting modest amounts of FDI, but in per capita terms it still lags behind most of EU-member CEE countries and do not always result in positive spill-overs to the domestic economy in Western Balkan economies.

2.1.2 The global economic crisis (GEC) has led CEE governments to turn towards non-EU emerging-country players

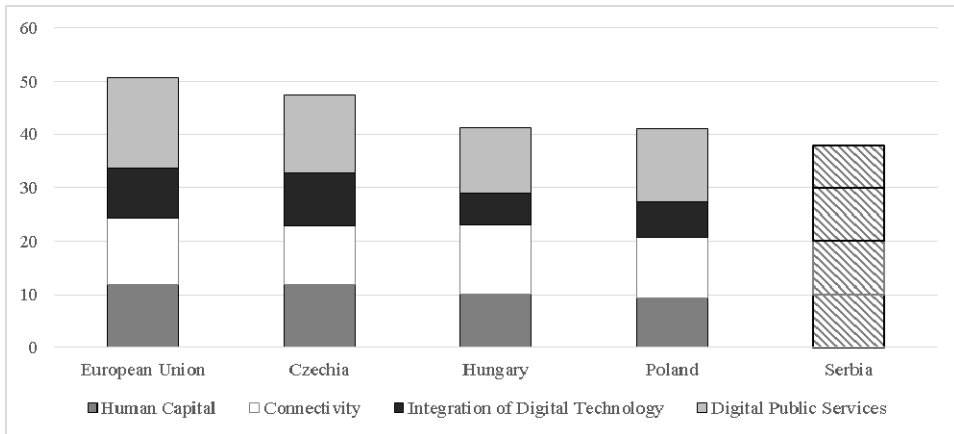
Based on Comparative Political Economy assumptions, the analysed CEE countries – partly as a consequence of the above-mentioned characteristics – are open, export-driven economies, heavily dependent on Western European partners, therefore global slowdowns, crises or faltering demand in main export markets have a negative impact on their economic growth (Bohle and Greskovits, 2007; Bohle, 2018; Szanyi, 2020). Consequently, the fall-out from the new core-periphery cleavage which has emerged in Europe in the wake of the GEC (Myant et al., 2013; Gambarotto and Solari, 2015; Bruszt and Vukov, 2017; Bohle, 2018) instilled a sense among several CEE leaderships that the West is vulnerable, hence the over-dependence on the West may be risky. This experience indeed made many CEE countries – although not all of them – more open towards non-European partners, such as Russia, Turkey or China.

2.1.3 Economic interdependence and security concerns have an effect on CEE countries' alignment with Chinese tech companies

In some of the countries the above-mentioned push to decrease dependency on the West was not strong enough to outweigh historical, political or security consideration (De Graaff et al., 2020; Ikenberry, 2018) such as Poland's and the Baltic countries' stronger alliance with the USA to counterbalance Russia. While security concerns indeed affected some CEE countries' decision, economic interdependence hasn't proved to be sufficient in affecting stances about China. CEE countries – although to a varying degree – are historically, geographically and politically bounded to Europe and highly dependent on both trade and investment relations with developed, mainly-EU member states.

2.1.4 Countries lagging behind in terms of infrastructural development are more inclined to invite China to fill infrastructure gaps

Countries with significant infrastructure backwardness are more inclined to invite China to fill infrastructure gaps than countries with less significant backlog (Soskice, 2020; Wegrich et al., 2017). Infrastructure is improving all over the CEE region, especially in the EU member states where the EU has played an unprecedented role via EU Structural Funds, the Connecting Europe Facility and the European Investment Bank (PWC-Atlantic Council, 2020). According to Eurostat and World Bank statistics, EU member CEE countries are almost on par with EU15 in terms of internet access, mobile broadband usage and secure internet servers. The above-mentioned Digital Economy and Society Index shows considerable development in the past years. EU member CEE countries are just slightly below the EU average (see Figure 1). Serbia – although from the Western Balkan region it is the closest to the EU averages – lags behind the EU-member CEE countries, including the Czech Republic, Hungary and Poland (European Commission, 2019).

Figure 1 Digital economy and society index (DESI) in selected CEE countries, (2021, 2019)

Source: Own compilation, using European Commission's Digital Scoreboard, broken down by dimensions such as connectivity, human capital, integration of digital technology and digital public services. For Serbia, only composite data was available, from the 2019 International DESI (I-DESI) data set.

The Global Innovation Index that comprises around 80 indicators, with a separate sub-dimension dedicated to infrastructure, including digital infrastructure, shows similar results (see Table 1): among the analysed five countries, Czechia ranks the closest to Germany, while Serbia ranks the furthest (behind Romania and Montenegro, and just slightly ahead of North Macedonia and Bosnia-Herzegovina). Consequently, infrastructural backwardness may explain Serbia's openness to Chinese tech companies but certainly not justifies Hungary's position.

3 Methodology of the research

To illustrate our theoretical arguments and to answer the research question mentioned in the introduction, this study relies on presenting illustrative examples based on qualitative data collection. We chose such methodology as it is often used by researchers to test existing theories, provide description and develop new theories (Eisenhardt and Graebner, 2007; Harris and Sutton, 1986). Since during this research we focused on many countries, the limits of this article did not allow us to use in-depth case study analysis, we chose zooming in on shorter country cases instead. Such illustrative cases can be used to highlight differences and similarities (Rowely, 2002) and by comparing them, hypotheses can be confirmed (Vannoni, 2015). Thus, multiple cases allow exploring research questions more broadly as well as contribute to theoretical evolution (Eisenhardt and Graebner, 2007). Besides, cases often have a dual function: they are both findings for their own unit and representative cases of a larger group of units (Gustafsson, 2017).

Our methodological approach comprises a mix of qualitative interpretative methods such as ethnographic fieldwork, interviews, qualitative document analysis, complemented with secondary literature and news sources. Data were collected over three years (2019–2021). Interviews were conducted three times at two of a Chinese IT

company's CEE affiliates as well as with business experts working for consultancy firms and former CEE diplomats. During the field visits we conducted face-to-face interviews with (senior) managers, local and Chinese staff members, as well as informal conversations, including during an official anniversary event. The interviews we conducted were semi-structured and analysed based on extensive note-taking during and after the interviews. We promised anonymity to those we interviewed. The number and length of interviews did not justify the use of qualitative data analysis software or to apply any coding techniques. Complementary analysis of the company, the institutional and societal domestic contexts of the host countries were based on qualitative document analysis of governmental (policy) reports, news reporting and corporate data bases (such as Orbis).

Regarding the methodological steps, first, the authors collected information regarding Chinese tech companies' activities all over the CEE region, with special focus on those aspects mentioned in the hypotheses, in order to map Chinese companies' activities, identify the challenges they pose and explore the patterns of responses of the CEE governments. Then, we narrowed down the focus to four countries – three EU member states and one EU candidate country – to illustrate the different CEE responses in more detail.

This type of methodology of relying on interview-based cases has its advantages and disadvantages as well. An advantage is that we have detailed information in the analysed area and on its development over time. At the same time, a potential drawback of our methodology is that company interviews were conducted at one company – however with more affiliates – making our sample relatively small. Consequently, our results do not necessarily allow us to generalise conclusions.

4 Allowing Chinese tech in CEE: analysing DSR patterns in the broader CEE region

Nouwens (2021) found that officially only 16 countries – including five CEE countries: Czechia, Estonia, Hungary, Poland and Serbia – had signed memorandums of understanding with China on various DSR projects globally, however, China had carried out DSR-related projects in 137 countries worldwide. Obviously, in comparison to countries in the developing world, CEE countries find themselves in a different geopolitical and economic position vis-à-vis China. China is relative newcomer to the CEE region, often building its relations with political and economic elites from scratch and therefore lacks understanding of the local environment (Rogers, 2020; Turcsányi, 2020). China entered the region more intensely only after the GEC in 2008, whereafter Beijing began to consider CEE as a geographical gateway to the rest of the EU market (Szunomár, 2018, 2020b). At the same time, CEE countries have also been affected by the GEC and thereby started reconsidering their predominantly West-bound orientation and explored possibilities of economic cooperation with, among others, China. In some countries (such as Hungary, Czechia, Poland and Serbia) the process was further accelerated by ascendance to power by politicians with sceptical views of EU (Karásková et al., 2020).

In general, Chinese companies targeting CEE countries seem to be interested in telecommunication/ITC, electronics, chemical industry and transportation. Key examples include Huawei, ZTE Corporation, Lenovo, BYD and Comlink. These companies

typically carry out manufacturing activities mainly assembly, while higher value-added activities are rare to find. The ownership structure of the investing Chinese companies is mixed: some are state-owned companies (such as Wanhua or ZTE) as well as nominally private firms (such as Huawei or BYD). However, most private companies are so-called 'national champions', which assumes state support even if the company is not directly state-owned (Nölke et al., 2015, Szunomár, 2020b). The majority of the relatively big Chinese tech investments took place before 2015, therefore most of them are not labelled under the DSR. DSR was often referred to when various Chinese delegations visited CEE countries, or when one of the already existing projects has been expanded, such as when Huawei established a new R&D centre in Hungary to focus on artificial intelligence, image processing, signalling technologies, and extremely large distribution systems (Szunomár et al., 2020; Karásková, 2021).

Active US diplomacy in CEE, visibly backed by increased frequency of visits by members of the US administration to the region, resulted in a more cautious position of the local governments on the involvement of Chinese telecom companies in 5G networks. While some (Hungary, Serbia) refuse to see Chinese companies as a security threat, others (such as Albania, Czechia, Poland, Estonia, Romania, Slovenia, Slovakia and Latvia) have either already signed a joint declaration with the US on 5G security or are ready to join. In other countries (e.g., Greece or Croatia), telecom companies announced they will solely use Ericsson, rather than Huawei, to develop their 5G infrastructure. Yet, other countries (such as Bulgaria, North Macedonia or Lithuania) have not yet reached a clear decision on Huawei (Karásková, 2021).

As mentioned above, although DSR as a global strategy is certainly beyond the 5G or the Huawei case, in CEE this issue seems to be the testing ground for DSR. And, the issue of security of 5G networks in CEE is mostly associated with Huawei as it has been the most visible Chinese ITC company in the region.⁴ Also, Huawei is one of the biggest investors among the Chinese companies in CEE – and certainly the only one that has branches and representative offices almost all over the region. Huawei started with only a few projects without officially establishing offices, which were set up only later when business in a given country matured (e.g., more projects, clients and cooperation partners). In addition, according to previous interviews conducted for another research project (Szunomár et al., 2020), industry antecedents (such as Nokia, Philips, Ericson, etc.), the existence of other successful Chinese investors in the region (e.g., Hisense in Hungary), and pre-existing key infrastructure played a role in the company's investment decisions. Huawei opened its first subsidiary in Poland in 2004, followed by the Czech Republic, Ukraine and Latvia (in 2005) and more others later on. Currently, the company has 25 offices in the region, which differentiates it from competitors such as Ericsson or Nokia.

When it comes to CEE countries' approaches to the development of telecommunication infrastructure, as mentioned above, these vary greatly. Initially, the Baltic states have been keen on building 5G infrastructure and allegedly willing to collaborate with Huawei on this matter. However, the recent pressure from the USA encouraged local decision-makers to reconsider. On 31 October 2019, Estonia signed a memorandum with the USA to strengthen cooperation on 5G security and development, restricting the use of the Chinese mobile technology company Huawei's products (Hankewicz, 2019), less than a year later, in September 2020, Lithuania also signed a similar joint declaration with the USA. In Latvia, however, Huawei's partner Bite Latvija decided to continue to work with Huawei, citing other companies in Europe such as

Deutsche Telekom and Vodafone that do so (The Baltic Times, 2019). Attitudes towards 5G and Huawei differ in Visegrad Countries, i.e., in Czechia, Hungary, Poland and Slovakia, too. Both Czechia and Poland backed the USA with political statements as well as by signing joint declarations on 5G security. Slovakia did not initially consider Huawei to be a security threat (in the absence of compelling evidence) (Reuters, 2019a), while Hungary went even further in the opposite direction when announced that Huawei would build its 5G wireless network (Reuters, 2019b). In the Balkans, Romania also signed a memorandum of understanding with the US to exclude Huawei from the 5G network development in August 2019. Other countries in the region are, however, less committed. Despite concerns raised in some EU countries, non-EU member CEE countries, especially Serbia has been cooperating with Huawei for quite a long-time.

The question of involvement of Chinese telecom companies in 5G networks in CEE is, however, far from decisively concluded. Even signing the joint declaration with the US on 5G security does not equal with a ban on Huawei in the respective CEE countries' networks. Many CEE countries' governments claimed that the decision on Huawei's engagement in the 5G future is yet to be reached and should take place at the EU level. In the meantime, mobile operators all over the CEE region have either announced their preference of non-Chinese companies such as Nokia or Ericsson or haven't yet ruled out using Huawei's technology in its 5G networks.

5 Illustrating differences in engaging with China through the DSR

As presented above, CEE approaches strongly leaning against the cooperation with Chinese tech companies in the past few years, since the DSR has been initiated, especially since the Huawei security scandal has broken out and the USA started to push many countries to take a stand. Nevertheless, a few CEE countries still do not consider the DSR as a potential challenge. When comparing and analysing the 'in favour of' (IFO – those few welcoming Chinese tech companies) and 'against' (AGT – those many opposing Chinese tech involvement) stances, we found that the group of AGT countries differ both in the level of refusal (fully or just partially) and as regards their motivations in opposing. IFO and AGT stances are, of course, not evenly divided among the CEE countries: Hungary and non-EU member Western Balkan countries – Serbia in particular – belong to the IFO group, whereas all the other countries are rather critical. Therefore, four country examples were chosen to illustrate the current variations: the Czech Republic and Poland represent the AGT group, while Serbia and Hungary – although being actually the sole members of the IFO group – were both chosen as they are structurally different.

5.1 The Czech Republic

The Czech Republic has a rather critical and administrative relationship towards China, criticised China over many issues, such as human rights or Tibet, throughout the past decades. Starting from this rather cold and critical stance, Czechia's relationship with China changed for a few years as the Chinese leadership had found common ground with Czech president Milos Zeman. As our expert interviews confirmed, '*after Czech political sympathy has emerged, inflows of Chinese FDI to Czechia started to increase*', too. As a case in point, the Czech President, Milos Zeman – who was the only

high-level European politician visiting Chinese celebrations of the end of World War II in 2015 – declared that he wants his country to be China’s ‘unsinkable aircraft-carrier’ in Europe (see *The Economist*, 2018). Zeman also had a Chinese adviser on China coming directly from a Chinese company with a controversial background. However, as soon as the biggest Chinese investor to Czechia, CEFC, came under investigation by Chinese authorities for ‘suspicion of violation of laws’ (see Lopatka and Aizhu, 2018), critical voices have intensified in the Czech Republic. As a result, Czech-Chinese relations have been cooling off again, new Chinese FDI flows have not arrived since then, moreover, disinvestment has taken place in 2017.

Regarding the European debate over the 5G development, the country was sceptical from the early beginning, already voicing concerns in 2018, when the Czech National Cyber and Information Security Agency issued an unprecedented warning against Huawei (Lopatka and Kahn, 2019). The US-Czech joint declaration on 5G Security has been signed in May 2020 to strengthen and promote a more rigorous evaluation process of suppliers. However, as Karásková (2021) highlights, the situation is far from decided, as the government balances warnings from the security community with other domestic political considerations.

5.2 *Poland*

Based on our interviews conducted with experts of the China-Polish relations, Poland used to be ‘*more enthusiastic about the potentials in its relation to China*’ but takes a more critical stance – or even cautious approach – recently. First, for Poland, high trade deficits represent one of the biggest problems with regard to the country’s bilateral ties with China: Polish imports from China is about 12 times higher than Poland’s exports to China, with the deficit reaching €20 billion according to Eurostat. Potential security risks of Chinese investments caused the Polish government to reconsider its rather positive approach toward China and to use firm rhetoric about trade deficits as a serious political problem. This reconsideration was signalled, e.g., by the cancellation of a tender as well as several political statements (Szcudlik, 2017). As a probable result of this, investment flows are rather stagnating in the past years.

Second, as confirmed by one of our interviewees, since Russia is one of the conceivable threats to Poland, ‘*the country has traditionally been the USA’s closest ally in CEE since the democratic transition*’. Consequently, in September 2019, Poland made a political statement showcasing its support for the US stance on 5G by signing a joint USA-Poland declaration on 5G (Colvin, 2019). Poland has drafted an amendment to the existing cyber security law which will enable exclusion of the vendors categorised as high-risk from the Polish market. According to Bachulska (2021), ICT providers will be assessed based on several categories, including non-technical risks. The current policy towards Huawei – and other Chinese tech companies – seems to be lasting since Poland gradually keeps distancing itself from the Chinese provider.

5.3 *Hungary*

Hungarian governments – regardless of political orientation – have been working on developing relations with China for over two decades. Hungary launched a new foreign economic policy in the spring of 2012, which aimed to diversify Hungary’s foreign economic relations: the ‘Eastern opening policy’. Although the Orbán government has

emphasised that it would like to maintain Hungary's strong and important economic relations with its traditional Western (European) partners, the main objective of this policy has been to reduce Hungary's economic dependence on trade and investment with the West by improving economic relations with the East, particularly China. Besides promoting economic relations with China, Hungarian governments have been rhetorically supporting China over many sensitive issues. Hungary was the first European country to sign a memorandum of understanding with China on promoting the Silk Road Economic Belt and the Maritime Silk Road during the visit of China's Foreign Minister Wang Yi to Budapest in June 2015. The Hungarian government was also very keen on promoting the Budapest-Belgrade railway, a long negotiated soon to be start construction project under the Belt and Road umbrella. When signing the construction agreement in 2014, Prime Minister Orbán called it the '*most important moment of the cooperation between the EU and China*' (Keszthelyi, 2014).

Supporting China's infrastructural endeavour is, however, not the only field where Hungary excelled. In 2016, Hungary (and Greece) prevented the EU from backing a court ruling against China's expansive territorial claims in the South China Sea (The Economist, 2018), while in 2018, Hungary's ambassador to the EU was alone in not signing a report criticising the BRI initiative for benefitting Chinese companies and Chinese interests, and for undermining principles of free trade through its lack of transparency in procurement (Sweet 2018). Although the background rational behind the strong Hungarian commitments towards China used to be rather economic in the early 2000s, recently Hungary often uses the 'China card' for political reasons (Turcsányi, 2020) to demand a better treatment from Western partners.

In line with the above-mentioned commitment, it was practically evident that Hungary would support DSR initiatives and refuse to treat Chinese telecom companies as security threat. As mentioned above, Hungary was the first – and to date the only – country in the EU that officially chose Huawei: the Hungarian minister of foreign affairs and trade announced in Beijing in November 2019 that Huawei would build its 5G network (Reuters, 2019b). As highlighted by a local business expert, '*the gesture has worked out well*' and a long-awaited wish of the Hungarian government has come true since Huawei have recently established an R&D Centre in Hungary (Horvath, 2020).

5.4 Serbia

After Hungary, Serbia is the second most important economic and political ally of China in CEE (based on interviews, Hungary's EU membership ranks the country a bit higher than the EU candidate Serbia). As Le Corre and Vuksanovic (2019) highlighted, Serbia's motivation to strengthen its relationship with China has been driven mainly by political motivations, for instance the Kosovo issue, but also by perceptions of a shift in the balance of power, while the Covid pandemic brought the countries even closer together as a result of China's effective mask- and vaccine diplomacy. Within the CEE region, Serbia hosts the majority of Chinese construction projects. And, as a Serbian business practitioner put it, '*Serbia is indeed an ideal host since infrastructure is relatively poor here, strict EU rules and regulations do not hamper negotiations and processes, and other financial resources (such as EU structural funds) are not available or are less accessible*'.

In the Serbian capital Belgrade 'Safe city' and 'Smart city' projects have been set, while the state-owned telecommunication company Telekom is already working on the

construction of telecommunication infrastructure that will enable 5G technology with Huawei being the key partner in the project. After the USA had banned Huawei from the construction of 5G infrastructure, the representatives of Serbia stated that there are no concerns regarding Huawei and they are satisfied with the cooperation that will be further developed (Vladisavljev, 2019).

6 Discussion

Although initially we assumed the CEE countries would share several similarities, in fact we found significant differences among them with just a few commonalities. At the beginning of the paper, based on International Political Economy, Comparative Political Economy as well as CEE Studies, four hypotheses were developed in order to explain how and why CEE responses to the DSR challenge differ. Table 2 provides a summary table for hypotheses evaluation.

Table 2 Summary table for hypotheses evaluation

	<i>Czechia</i>	<i>Hungary</i>	<i>Poland</i>	<i>Serbia</i>
<i>'against' (AGT) or 'in favour of' (IFO)</i>	AGT	IFO	AGT	IFO
<i>H1: dependent market economy type of VoC</i>	X	X	X	–
<i>H2: some degree of openness to non-European powers as a result of GEC</i>	X	X	X	–
<i>H3.1: security concerns</i>	X	–	X	–
<i>H3.2: economic interdependence with Europe</i>	X	X	X	X
<i>H4: significant infrastructural backlog</i>	–	–	–	X

Source: Own compilation.

First, to examine national level factors, we probed the assumption that the local Variety of Capitalism (VoC) might have an impact on CEE countries' preferences. Here, we found that even if Czechia, Poland and Hungary belong to the same DME type of VoC, the Hungarian position as regards China is completely different. Consequently, the local variety of capitalism doesn't seem to be a decisive factor when it comes to engaging with China, since only EU-member CEE countries can be considered as dependent market economies while the majority of them – including Poland and Czechia – belong to the AGT group of countries, Hungary is definitely considered as an IFO country. That is, (1) not all of the CEE countries can fit to the very same type of VoC but (2) even those countries that belong to the same DME type doesn't seem to follow the same logic. Thus, this hypothesis is just partially proved.

Second, we analysed the assumption that the fall-out from the new core–periphery cleavage which has emerged in Europe in the wake of the GEC has led governments to turn towards non-EU emerging-country players. Our analysis showed that this hypothesis is partially true since (1) although almost all CEE countries opened up to non-European countries and companies after the GEC, the majority of these steps was just attempts of hedging and countries remained cautious, with the exception of Hungary, while (2) Serbia's turn towards China is not necessarily related with the GEC. Serbia indeed stands out from the group as even if economic integration should drive the country towards the EU, historical as well as emotional factors (emotional association with

Russia, orthodox Christianity, the dispute over Kosovo, disappointment in the EU accession procedure, etc.) had shifted the vector of the country's foreign policy towards Eastern powers already before the GEC (Pavičić, 2019).

Third, we also examined whether economic interdependence and security concerns affected CEE countries' alignment with China. As presented above, CEE countries are in many ways bounded to and highly dependent on Europe. Based on Eurostat data, the share of European countries far exceeds that of China in terms of both trade (import and export) relations and foreign direct investment stocks. Yet, Hungary welcomed Chinese tech companies, while Czechia and Poland ceased to engage further. The European Union is by far the largest and most important trade partner of and significant investor in Serbia, however, for the very same historical and emotional factors as mentioned in the previous paragraph, Serbia's case stands out again. That is, this hypothesis proved also to be just partially true as while (1) security concerns indeed affected many CEE countries' decision in the AGT group, (2) economic interdependence hasn't proved to be sufficient in affecting stances about China in Hungary despite the fact that it is highly dependent on both trade and investment relations with developed, mainly-EU member states.

Fourth, we also analysed whether countries lagging behind in terms of infrastructural development are more inclined to invite China to fill infrastructure gaps. Here, we found that EU-member CEE countries showed considerable development in their digital infrastructure in the past years. Among the four analysed CEE countries, the Czech Republic scores the highest (the closest to the EU average), followed by Hungary and Poland, while Serbia lags behind. Thus, this hypothesis is, again, just partially proved, as (1) infrastructural backwardness can explain Serbia's openness to Chinese tech companies but (2) certainly doesn't justify Hungary's position.

We can conclude that the four hypotheses could only be confirmed in the case of the AGT group of countries. Moreover, since all the four hypotheses were related with political economic assumptions, the validity of the hypotheses may also mean that AGT countries' decisions were driven by political, rather than purely economic considerations. That is, even if CEE countries – where digitalisation can be the key to further development – could potentially benefit from the advancements of Chinese digitalisation economically, they choose not to engage further based mainly on security and political grounds.

At the same time, the four hypotheses failed to explain Serbian and Hungarian positions. In the case of Serbia, this is partly explained by the fact the Western Balkan country seems to stand out from the selected group as it differs from the EU-member CEE countries in many respects: besides that Serbian GDP per capita is about half of Poland's and only one third of Czechia's, Serbia has tended to integrate relatively more outside of the region (Grievson, 2019) as – unlike the other three CEE countries analysed – it is not a member of the EU, the NATO or the OECD, while its relation to non-European countries has traditionally been more significant. In fact, it is Hungary that seems to be the real atypical case – within the analysed group as well as in the broader CEE region – as it shares almost all attributes with the other EU-member CEE countries, yet it acts differently. Hungary is a country where liberal democracy appears to be in retreat in the past decade, that is, the genuine motivation behind such a strong commitment can be more related with political alliance-building. Future research should indeed focus on the very reasons of such engagements.

7 Conclusions, implications and areas for future research

Soon after – and closely connected to – the BRI China has initiated the Digital Silk Road, whereas the country ‘apace and leverages the strengths of Chinese public- and private-sector giants to further integrate Chinese technologies and standards into the digital ecosystems of the least-developed, emerging and developed economies alike’ (Nouwens, 2021, p.4). China would gladly involve CEE countries as potential hosts to this initiative for at least two reasons: (1) digital transformation is still in progress in the region, while (2) China could benefit a lot from the reputation arising from successfully implemented projects in Europe. At the same time, the majority of European countries consider Chinese tech companies as a threat, and many of them fear that countries such as Hungary or Serbia might become a Trojan Horse, allowing Chinese tech companies – and the potentially resulting influence and security risk – into Europe. As described above, CEE countries do not follow a unified line on whether to involve Chinese companies in their digital transformation: while the majority of the countries take a critical stance, a few are still open to cooperation with Chinese tech companies. As presented above, these differences are more complex than being just two stances of ‘in favour’ and ‘against’, respectively. While those welcoming Chinese tech companies generally follow political, rather than economic motives, in the case of those opposing Chinese tech involvement both the level of refusal and their motivation in opposing differ.

In summary, security concerns and a more active US diplomacy in the CEE region had significant impact on the region’s openness to China. CEE governments are already affected by the gradual change in perception of China undertaken by the EU institutions as well as some of the big member states. Hi-tech companies at the centre of these controversies, notably Huawei, have become ‘toxic’ in many countries, whereas the treatment of Huawei has increasingly become a measure of a country’s relations with China. CEE countries will keep watching European (and German) debates as well as USA position on Chinese tech companies. However, a few of them will not factor these positions into their decisions.

As regards further future research directions, it remains to be seen if DSR will be evolving along the same logic in the post-Covid world as before or shifting to new strategies. As hostility towards Chinese companies is growing worldwide, Chinese technology companies may try emphasising their multinational profile as well as the modernity of their values, operations and products, while hiding even more their perceived connection to the Chinese state. They may also try to use host country-specific practices or to imitate local firms to overcome these challenges and create competitive advantage in the host market. Nevertheless, these strategies may not be sufficient to overcome the ‘liability of Chineseness’, a specific form of liability of foreignness, characterised by fierce resistance from host country actors as a result of (putative) state interference in Chinese firms (Cooke et al., 2018) and security concerns.

From the CEE countries’ perspective, two possible factors could be considered in future research: the position of Germany and considerations of telecom companies. As CEE countries are closely interconnected with Germany economically, much depends on the German position in terms of allowing or banning Chinese tech companies in digital infrastructure build outs. And, as Karásková (2021) highlighted, local telecom companies

also play a decisive role in deciding over the level of prevalence of Chinese components in their networks, based on financial or technical grounds. Thus, CEE countries' involvement in DSR initiatives could also depend on the local telecom companies' decision on either choosing a more expensive, yet less problematic partner or a Chinese company for building 5G networks.

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Notes

- 1 European Commission's Digital Economy and Society Index (DESI) is a composite index that summarises relevant indicators on Europe's digital performance and tracks the evolution of EU member states across dimensions such as Connectivity, Human Capital, Integration of Digital Technology, Digital Public Services.
- 2 World Intellectual Property Organisation's (WIPO) Global Innovation Index (GII) ranks the innovation ecosystem performance of economies around the globe, highlighting innovation strengths and weaknesses and particular gaps in innovation metrics. GII comprises around 80 indicators, including measures on the political environment, education, infrastructure and knowledge creation of each economy.
- 3 Huawei's Global Connectivity Index tracks and benchmarks the progress of 79 nations toward the digital economy. Its core methodology analyses 40 indicators that identify progress made in the interplay of ICT investment, technology adoption, user experience and market development.

- 4 Unlike in, for example Southeast Asia, Chinese companies in CEE seem not to be interested in investing in domestic apps/services, at least such investments have not taken place so far. Very few mobile payment agreements exist between CEE banks (or other institutions) and, i.e., Alipay. Chinese data centre are not so widespread (or visible) in the region either. Yet in 2018, Alibaba Cloud announced a strategic partnership with ABC Data, a major IT hardware and consumer electronics distributor in CEE, to provide cloud computing products and technologies to eight CEE countries. When it comes to e-commerce, AliExpress has agreements with a number of local post companies in CEE, meaning that products bought via AliExpress are delivered by China Post and the respective local post. In 2018, there were rumors that AliExpress would open its logistics centre in Poland to serve the region and Germany but eventually this project did not go any further. However, efforts of Chinese e-shops in building or renting European warehouses are increasing.