



Great power competition and social stability in the Netherlands

The risks of Russian gas, Chinese raw materials and Taiwanese chips to vital sectors

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Executive summary

Context: Great Power Competition

The war in Ukraine is an expression of an underlying trend: great powers, that is states with exceptional political, economic and military power, are embroiled in an intensifying geopolitical competition.¹ This development has the potential to disrupt the Netherlands, as it threatens the foundations of Dutch prosperity, well-being and security. After the Second World War, the foundations were laid for today's world order, including an efficient network of international supply chains. This system both deepened and widened due to China's reform-and-opening up after the death of Mao Zedong (beginning in the 1980s) and the end of the Cold War (early 1990s). Both China and several Central and Eastern European countries gained access to goods, raw materials, technologies, services and human capital from the West. Simultaneously, European and American industries gained access to sizable new labour- and export markets. The Netherlands, with its open and internationally-oriented economy, became even more deeply intertwined in this system.

More freely than ever before, raw materials, goods, technologies, services and people moved around the world. The outcome in 2023: the US and EU source the raw materials for medicine from China and India; China imports semiconductors from Taiwan, South Korea and the United States (US); and the EU and US import raw materials and components on a large-scale from China for the production of electric vehicles and drones. The EU also bought its natural gas in Russia until recently. This made Europe largely dependent on Russia for its old energy system (fossil), on China for its new energy system (renewable) and production capacity, and on East Asian democracies, especially Taiwan and South Korea, for its digitalisation.

International organisations such as the World Trade Organisation (WTO) were co-founded and spearheaded by the US to ensure that states complied with their obligations in the realm of trade. Countries relied on the global supply of vital resources that collectively enabled their prosperity, well-being and security, knowing that the balance of power – with the US as the absolute number one – guaranteed the world order and its rules.

A stable world order requires a stable balance of power. Given that power relations between states are fluid, a stable world order is always temporary.² Renewed great power competition, due to the rise of China and Russia's renewed assertiveness, has led to a gradual, structural degradation of this international system of trade relations over the past decade.

The foundations of globalisation are eroding rapidly. Since 2012, this erosion has accelerated, in particular as a result of increased subsidies, trade barriers and intellectual property

1 This study refers to China, the US, Russia and the EU as great powers, despite the fact that only China and the US meet all the conditions to be considered as being great powers. Namely, they possess "exceptional political, economic and military power". The EU, on the other hand, has exceptional political and economic power, but no military power. Russia, owner of the world's largest nuclear arsenal, partly has exceptional military power and political power – but no exceptional economic power.

2 Richard Haass, 'How a World Order Ends', Foreign Affairs, 2019, 1, <https://www.foreignaffairs.com/world/how-world-order-ends>.

The war in Ukraine is an expression of an underlying trend: great powers, that is states with exceptional political, economic and military power, are embroiled in an intensifying geopolitical competition.

theft despite the existence of the WTO.³ At times, geopolitical shocks such as the politicised Covid-19 pandemic and Russia's war against Ukraine greatly accelerated this prolonged decay. Exchanges of raw materials and goods, technology and services and people, which collectively make up the foundations of the international trading system, all came under strain from around 2012 onwards.

In that year, Xi Jinping took office as General Secretary of the Chinese Communist Party and Vladimir Putin again became President of Russia. In 2014, Russia annexed Crimea. From December 2013, China constructed artificial islands in the shipping lanes of the South China Sea. President Xi militarised those islands despite promises to US President Obama not to do so.⁴ In 2015, Xi definitively set his country on a more protectionist course.⁵ In 2016, Donald Trump was elected US president. He pursued an explicitly America First-policy, assigning top-priority not to the absolute gains of the international trading system but to the relative gains for the US economy vis-à-vis its rivals. From early 2020 to December 2022, Xi Jinping maintained a strict "zero-Covid" policy, barring most foreigners from entering China. Great powers began to again regard each other as rivals. As a result of these two developments – globalisation and the return of great power competition - the world's major power blocs currently depend on countries they deeply distrust for the supply of vital resources for their prosperity, well-being and security.

Geopolitical crises, particularly the war in Ukraine, accelerated the degradation of the international trading system. The war led to a breaking point in relations between Russia and Europe: military-strategic tensions rose to a level at which Moscow was no longer willing to supply the essential resources on which European economies depend.⁶ Whereas in January 2021 54% of Europe's total gas imports still came from Russia, by April 2022 this number was only 32% and by October 2022 it dropped to 12%.⁷

Partly caused by the war in Ukraine, reducing the amount of bottlenecks in the global economy controlled by China and Russia is now high on the political agenda in Washington and European capitals. In the coming decade, the following question will guide industrial policy: What critical raw materials, components, and end-products do states want to be able to produce themselves to ensure the functioning of their vital sectors?

A geopolitical crisis in East Asia is likely to have an even greater impact on Dutch prosperity and well-being. After all, this region is increasingly the epicentre of the global economy (see Figure 1). During the past four decades essential (and often polluting) production processes have increasingly been outsourced to the Indo-Pacific. European dependence on Asian economies has therefore increased tremendously. For example, the EU depends on imports from China for the supply of 103 product categories within electronics, chemicals, minerals/metals and pharmaceutical/medical products.⁸

3 Haass, 4.

4 Matthew Southerland, 'China's Island Building in the South China Sea: Damage to the Marine Environment, Implications, and International Law', 12 April 2016, https://www.uscc.gov/sites/default/files/Research/China%27s%20Island%20Building%20in%20the%20South%20China%20Sea_0.pdf.

5 Kevin Rudd, *The Avoidable War: The Dangers of a Catastrophic Conflict between the US and Xi Jinping's China* (New York: PublicAffairs, 2022), 103-139.

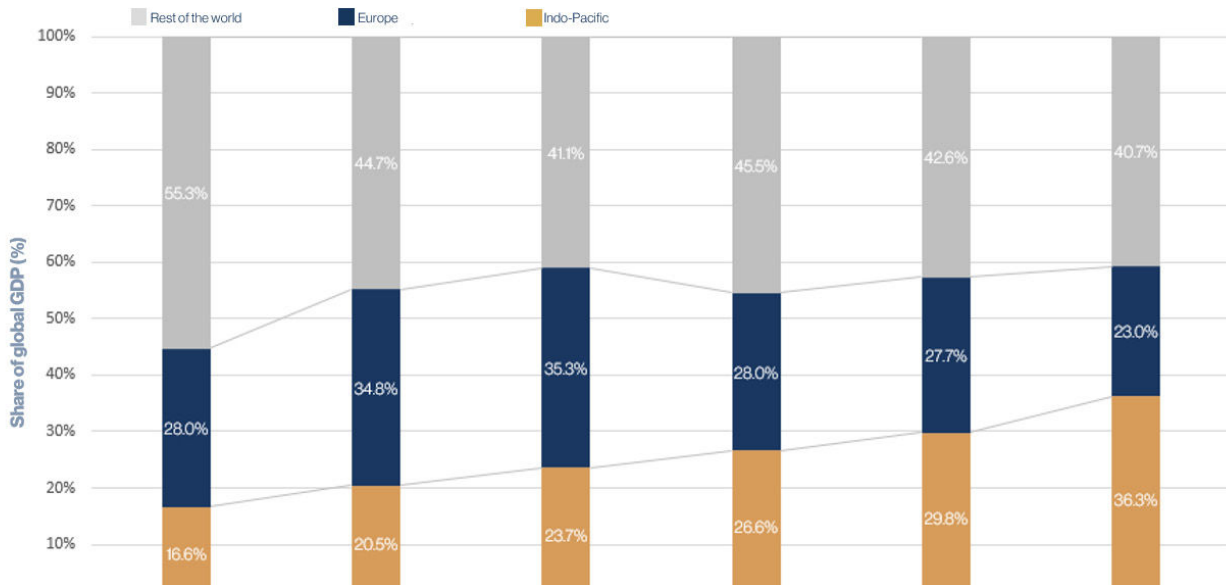
6 Joris Teer and Mattia Bertolini, 'Reaching Breaking Point: The Semiconductor and Critical Raw Material Ecosystem at a Time of Great Power Rivalry' (The Hague Centre for Strategic Studies, October 2022), II.

7 'Where Does the EU's Gas Come from?', 7 februari 2023, <https://www.consilium.europa.eu/en/infographics/eu-gas-supply/>.

8 Max J Zenglein, 'Mapping and Recalibrating Europe's Economic Interdependence with China', 18 November 2020, <https://merics.org/en/report/mapping-and-recalibrating-europes-economic-interdependence-china>.

As a result of globalisation and the return of great power competition the world's major power blocs depend on countries they deeply distrust for the supply of vital resources.

Figure 1. The Indo-Pacific region has acquired a leading position in the global economy during the past 50 years



Great Power Competition and social stability in the Netherlands

This rapidly intensifying great power competition threatens to put further pressure on social stability in the Netherlands, as well as in other European countries.⁹ This foresight-study maps possible effects of (a series of) geopolitical crises on social stability in the Netherlands.¹⁰ In particular, a crisis in East Asia could seriously disrupt the supply of raw materials from China and semiconductors from Taiwan. To illustrate these risks, we outline two geopolitical crisis scenarios occurring between 2028 and 2032: an embargo of critical raw materials by China imposed against the EU and a Chinese maritime blockade of Taiwan.¹¹ Both scenarios would have serious implications. Raw materials and semiconductors are not just essential building blocks for the energy transition and digitalisation: both raw materials and semiconductors enable the functioning of entire vital sectors, namely (1) the medical sector; (2) the defence

9 "Europe" consists of the countries of the European Union, the United Kingdom, Norway, Switzerland, Bosnia and Herzegovina, Kosovo, Moldova, Montenegro, Belarus, Albania and Ukraine. "Indo-Pacific" consists of India, Sri Lanka, Bangladesh, Myanmar, Indonesia, Thailand, Laos, Vietnam, Cambodia, Australia, China, Hong Kong, Macao, Japan, North Korea, South Korea, Pakistan, Iran, Kuwait, Iraq, Saudi Arabia, Bahrain, United Arab Emirates, Oman, Yemen, Egypt, Sudan, South Sudan, Djibouti, Ethiopia, Eritrea, Somalia, Kenya, Tanzania and Madagascar.

10 A foresight study is characterised by using "a range of methods, such as scanning the horizon for emerging changes, analysing megatrends and developing multiple scenarios, to reveal and discuss actionable ideas about the future." Organisation for Economic Co-operation and Development, "What Is Foresight?", accessed 23 February 2023, <https://www.oecd.org/strategic-foresight/whatisforesight/>.

11 In a foresight survey conducted by HCSS in June 2022, 49 experts judged that both a critical raw materials embargo from China against the EU and a maritime blockade of Taiwan have a probability of more than 50% during the next 10 years, i.e. by June 2032. On a scale of 0 to 10, a raw materials boycott by Beijing against the EU was assigned a probability of 4.6 in the next five years and 6.0 in the next ten years. A maritime blockade/invasion of Taiwan was assigned a probability of 4.3 in the next five years and 5.6 during the next ten years. Joris Teer and Mattia Bertolini, 'Survey outcome - Threats to the supply of critical raw materials for semiconductors', Reaching breaking point: The semiconductor and critical raw material ecosystem at a time of great power rivalry (The Hague Centre for Strategic Studies (HCSS), October 2022), 5, 11, <https://hcss.nl/wp-content/uploads/2022/10/Survey-outcome-Threats-to-the-supply-of-critical-raw-materials-for-semiconductors-HCSS-October-2022.pdf>.

and security domain; (3) the renewable energy system; (4) sustainable mobility; and (5) Information and Communications Technology (ICT).

This report adds a new perspective because it specifically identifies the potential consequences of disruptions in the supply of raw materials and semiconductors for these vital sectors in the Netherlands, and hence for social stability.¹² It outlines a crisis situation that could arise over the next five to ten years if the Netherlands and the EU do not take large-scale action in the short-term to become more geopolitically shock-resistant, by among other things reducing unwanted strategic dependencies. By providing insight into the effects of a geopolitical crisis in East Asia on the prosperity, well-being and security of Europe, the report seeks to stress the need for policy-makers and industry to take action. The report answers the question:

What are the consequences for Dutch and European prosperity, well-being and security of (a series of) geopolitical crises resulting from intensifying great power competition? What second-order effects might arise for public order in the Netherlands?

The globalised world, with cost-efficiency as its organising principle, has been substituted for a world in which security of supply is increasingly important.

1. The eroding foundations of globalisation: Growing protectionism, Covid-19 and loss of prosperity due to the war in Ukraine (2012-2022)

Since 2012, the foundations of globalisation have gradually, yet increasingly, been undermined by intensifying competition between great powers, namely China, Russia, the US and the EU. Russia's war in Ukraine in particular led to a loss of prosperity in the Netherlands and Europe. In the four decades prior to 2019, global prosperity and well-being have actually improved dramatically, in part due to globalisation. However, great power competition has undermined globalisation as it leads to restrictions in the global exchange of raw materials and goods, technology and services and people (see Table 1 and Figure 2). In the last decade, the globalised world, with cost-efficiency as its main organising principle, has been substituted for a world in which security of supply of essential raw materials, intermediate and finished goods is increasingly important. Achieving greater economic resilience has become a top priority for states.

Whereas Sino-American trade and technology competition led to restrictions in the exchange of technology and services between the US and EU on the one hand and China on the other, the geopolitics of Covid-19 and China's zero-Covid policy brought about far-going restrictions not only in the movement of people, but also in the exchange of goods, raw materials, services and technology.

¹² Previous studies did look broadly at the economic impact on the global economy of a blockade of Taiwan. 'The Global Economic Disruptions from a Taiwan Conflict', Rhodium Group (blog), accessed 14 December 2022, <https://rhg.com/research/taiwan-economic-disruptions/>. Another study did map dependencies on China for raw materials, but did not make a comprehensive assessment of the impact of a Chinese critical raw materials embargo against the EU. Irina Patrahau et al, 'Securing Critical Materials for Critical Sectors' (The Hague Centre for Strategic Studies (HCSS), 2020).

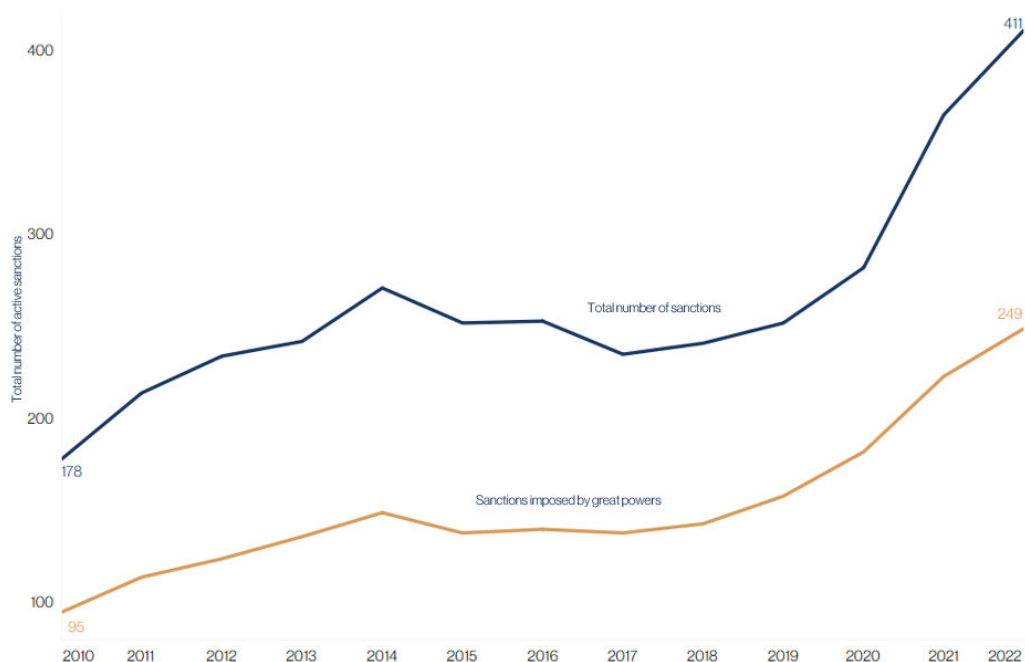
Table 1. The erosion of the foundations of globalisation



| Section | Free exchange of | | |
|--|--|--|---|
| | Raw materials and goods | Technology and services | Persons |
| The globalised world (2019) | Trade record after trade record; large-scale outsourcing to China; WTO resolves trade disputes Example: • European gas dependence on Russia (incl. Nordstream 1 & 2); just-in-time supply chains; exports of goods reaching record highs. | Technologies and services available world-wide. Example: • iPhone production chain: cobalt mined in DRC; refined in China; processed into a chip in Taiwan; processed in 500,000 iPhones per day in China; US and Taiwanese technology in products by China's Huawei/ZTE | Expansion of the number of students spending time abroad; broadly similar for work in the case of high-skilled labour population Example: • Large number of Chinese students in the US and EU and vice-versa; Large number of European expats in China; MNOs with board members from different continents: a European CEO; an Indian CFO; a Chinese CTO; a US COO |
| Fragmentation 2012-2022: Xi's first two terms; Putin's return as President of the Russian Federation | Use of end-products as pressure tool Examples: • 2018: US-China trade war • 2020-22: China economic coercive diplomacy: wide-ranging import boycott against Australia and Lithuania etc. • 2018-2023: WTO no longer able to settle disputes | Use of semi-finished products and maintenance services as a pressure tool Examples: • 2019-2022: US-China technology competition; • 2019 ASML-EUV export blockade; • 2020 US chip companies export restrictions; • 2022 Biden export control tightening and expanding export controls for a wide range of semiconductor companies | Growing number of travel restrictions Examples: • 2020-2022: Covid-19 entry restrictions of many countries; and Zero- Covid policies in China |
| Crisis case study (breaking point): Consequences for Dutch prosperity of Russia's invasion of Ukraine | <ul style="list-style-type: none"> • 50% of trade between the Netherlands-Russia disappeared; • gas prices through the roof (in 2022), likely again an energy affordability problem and potentially a security of supply problem (in 2023, 2024); • risks of "de-industrialisation" for heavy industry which are temporarily "turned off" in 2022-2023' • large-scale public spending to relieve energy costs citizens | <ul style="list-style-type: none"> • Comprehensive EU, US, Taiwan and South Korea boycott on semiconductor exports to Russia; • Partial withdrawal of European oil and gas companies from Russia | <ul style="list-style-type: none"> • Visa-restrictions for Russian citizens travelling into Europe |

Figure 2. States impose even more sanctions on each other

Total number of sanctions imposed by all states and major powers (2010-2022)*



*The Global Sanctions Database annually calculates the number of unique sanctions that were in force during the year in question. Major powers are defined as the US, Russia, China and the EU.

Source: GSDB

Russian's war in Ukraine led to the biggest setback: the exchange of goods and raw materials, services and technologies and people between Russia and the EU declined sharply (see Table 2). In addition, the war led to a loss of prosperity in the Netherlands and Europe, especially due to Russia decreasing its gas exports to Europe by 80%. The energy crisis itself has been averted, but in 2023, energy problems are far from resolved. In the year 2022, the war in Ukraine was already putting intense pressure on prosperity and well-being in the Netherlands and Europe. This happened despite the fact that European countries could still make ample use of Russian gas that had already been imported in 2021 and early 2022. In addition, some major industry players that depend on intensive use of natural gas closed their doors. Two pillars on which Dutch and German prosperity are based, gas production in Groningen and gas imports from Russia, have disappeared. Until 2025, there is a looming risk that the Netherlands will continue to struggle to make natural gas affordable to its population. This puts continued strain on industry, possibly resulting in forced factory closures and a continuation of job relocations from the EU to the US and China. This leads to the threat of further deindustrialisation, whilst the policies of Dutch and other European governments are designed to bring back (parts of) manufacturing processes to Europe and the Netherlands. The fallout of the war in Ukraine shows that a failure to prepare for the return of great power competition raises the costs of deglobalisation.

Table 2. The impact of great power competition on the foundations of globalisation (2012-2022)



| Case | Impact on | Goods and raw materials | Services and technology | Persons |
|--|--|-------------------------|-------------------------|---------|
| Case 1: Sino-American trade- and technology competition | American-European exchanges with China | Low | Medium | N/A. |
| Case 2: Covid-19 and China's zero-Covid policy | American-European exchanges with China | Medium | Low | High |
| Case: Russia's war against Ukraine | European-Russian exchanges | High | High | Groot |

2. Geopolitical crises in East Asia: A world without Chinese raw materials and Taiwanese chips

A geopolitical crisis in East Asia is likely to have an even greater impact on European prosperity than the war in Ukraine. After all, the centre of gravity of the global economy has shifted from the Atlantic to the Indo-Pacific region in general, and East Asia in particular. Moreover, European dependence on China is much deeper and more wide-ranging than European dependence on Russia ever was. Taiwan is home to the world's leading manufacturer of semi-conductors, TSMC.

Both the loss of critical raw material supplies from China due to an export boycott against the EU and the loss of semiconductor supplies from Taiwan due to a Chinese military invasion and/or blockade would have far-reaching consequences for European prosperity, well-being and security – and thus potentially for social stability in the Netherlands. As a consequence of global population growth, ageing populations, the emergence of new economies, digitalisation, the energy transition and rearmament the global demand for critical raw materials and semiconductors will increase during the next decade (see Table 3).

Table 3. Drivers and demand projections: the dominance of critical raw materials and semiconductors in vital sectors towards 2032



| Vital sector | Macro developments in sector | Demand projections (until 2032) | |
|------------------------------------|---|---------------------------------|-----------------|
| | | Critical raw materials | Semiconductors |
| Medical sector | (1) Global population growth; (2) Ageing population; (3) Digitalisation of healthcare; (4) Need for reshoring production and stockpiling to protect against potential geopolitical risks (e.g. US Chips and Science Act reserves funds for chips in medical sector) | Medium increase | Minor increase |
| Defence and security domain | (1) Intensifying competition among major powers and rising military and police spending; (2) End of just-in-time supply chains for defence and security, and growing calls for greater stockpiling (e.g. US Chips and Science Act; US investment for a domestic, comprehensive rare earth supply chain for defence, e.g. F35 production in US); (3) transformative warfare due to broad deployment of EDTs (e.g. AI, supercomputing, drones) by armed forces and police | Medium increase | Minor increase |
| Sustainable energy system | (1) Global population growth; (2) Transition from fossil energy system to metals, largely wind- and solar power | Very high increase | Minor increase |
| Mobiliteit | (1) Global population growth; (2) Movement from diesel and petrol cars to hybrid and electric cars, in which specific metals (e.g. cobalt) play a central role (3) Proliferation of car functions; and digitalisation of mobility, including autonomous vehicles; (4) Emergence of middle class in Asia (e.g. China and India) | Very high increase | Medium increase |
| ICT | (1) Global population growth; (2) Emergence of middle class in Asia (e.g. China and India); (3) Digitalisation of work and education (e.g. remote working after Covid-19) | Minor increase | High increase |

Even if a multitude of initiatives by like-minded states to reduce their dependence on China and Taiwan for raw materials and semiconductors succeed, large-scale dependence will persist over the next decade.¹³ TSMC, for example, only sets itself the goal of producing 600.000 wafers a year at plants in the US, less than 5% of TSMC's total production capacity.¹⁴ Also, the growing demand for raw materials and semiconductors over the next decade, caused in part by the energy transition and digitalisation, likely means that supplies from China and Taiwan, respectively, will remain essential. A disruption in the supply of these essential resources will negatively affect people's daily lives as these materials are needed in (1) the medical sector, (2) the defence and security domain, (3) the renewable energy system, (4) sustainable mobility and (5) ICT. MRI scanners, F-35 jet fighters, wind turbines, electric cars and iPhones all depend on critical raw materials and semiconductors (see Figure 3 and Figure 4).

In case of a crisis in East Asia, end-products in these sectors are likely to sell out quickly as governments, companies and individuals try to acquire the last available products. Scarcity of critical raw materials and semiconductors then leads to price increases along the entire value chain – similar to the energy price increases for natural gas and oil in the months after Russia's invasion of Ukraine in February 2022. The macro trend that makes these scenarios plausible, namely great power competition leading to protectionist measures that are behind today's signs of deglobalisation, has intensified in recent years.

Even if a multitude of initiatives by like-minded states to reduce their dependence on China and Taiwan for raw materials and semiconductors succeed, large-scale dependence will persist over the next decade.

13 An HCSS follow-up report extensively analyses developments in the raw materials and semiconductor supply chains over the next decade. It concludes that even if several Western dependency-reducing initiatives prove successful, a high dependency on China and Taiwan will still exist around 2028 and 2032.

14 Alice Su, "Taiwan Is a Vital Island That Is under Serious Threat," *The Economist*, March 2023, <https://www.economist.com/special-report/2023/03/06/taiwan-is-a-vital-island-that-is-under-serious-threat>.

Figure 3. Dutch vital sectors depend heavily on Critical Raw Materials from China

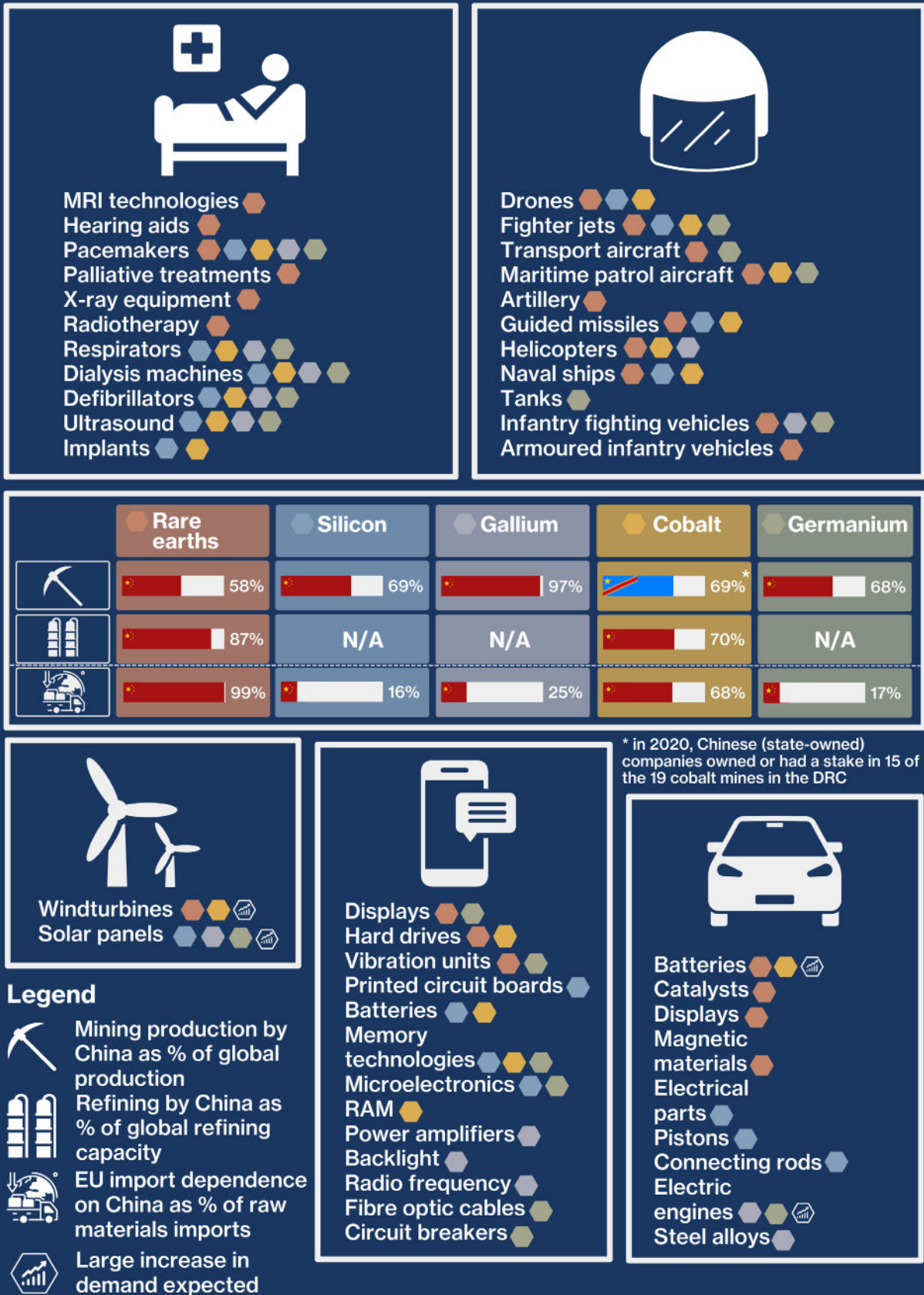
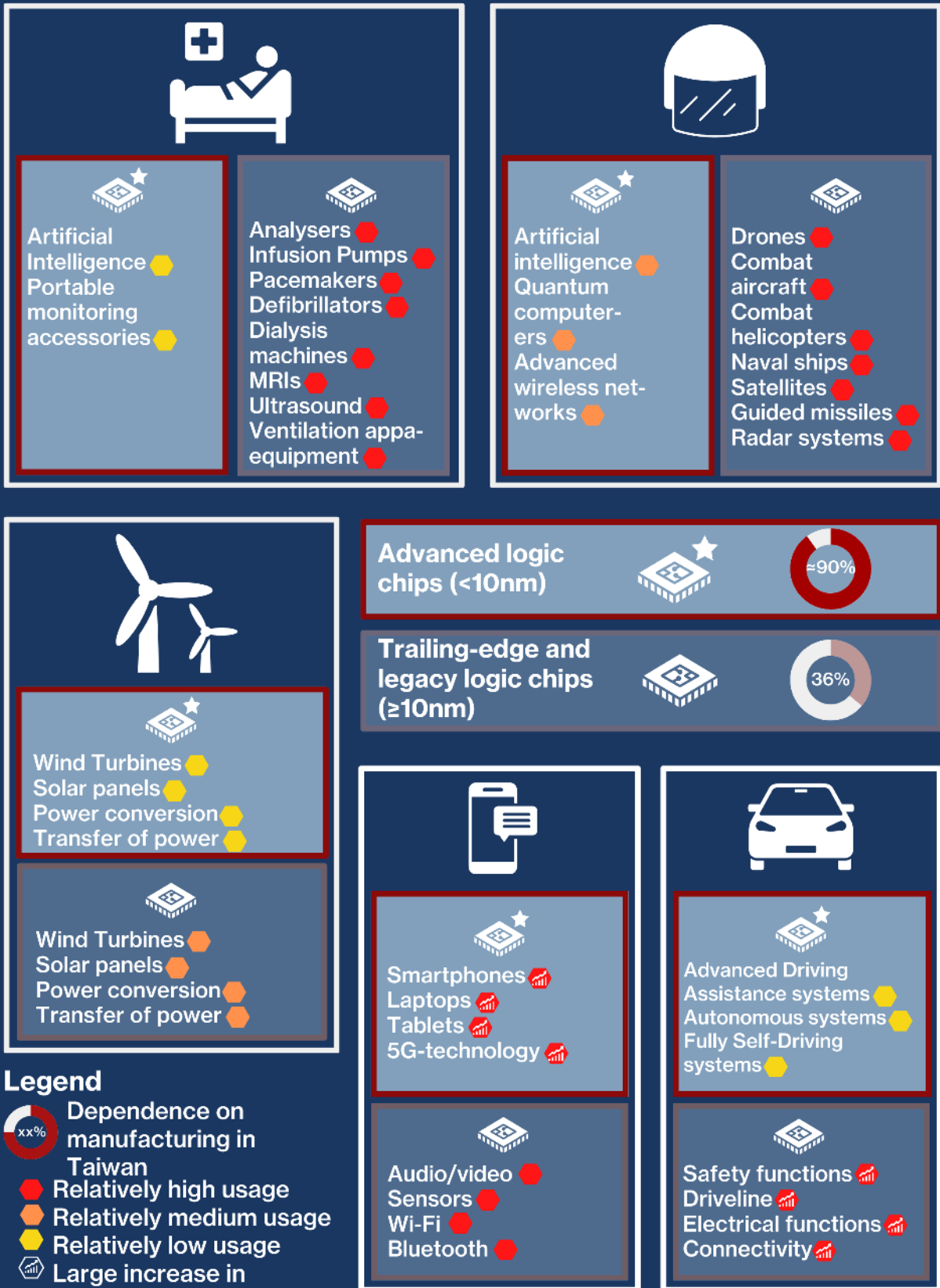


Figure 4. Dutch vital sectors heavily rely on semiconductors from Taiwan



3. Implications for social stability in the Netherlands

Loss of prosperity due to great power competition does not take place in a vacuum. A number of important negative trends in Western Europe, namely an ageing population, pressure on public finances due to geopolitical crises and polarisation, and declining trust in institutions make our societies more tense. In addition, the Netherlands is struggling with a number of country-specific problems that negatively affect the authority of the government, such as the housing-, nitrogen- and asylum crisis and the childcare benefits scandal. These problems are leading to a decline in trust in the government. They are far from resolved and may even worsen over the next decade.

A geopolitical crisis in East Asia, either a critical raw materials embargo imposed by China or a maritime blockade of Taiwan, would put intense pressure on an already tense society. Price increases and shortages of vital resources could go hand in hand with threats to social stability in the Netherlands. Scarcity due to a geopolitical crisis contributes to:

- ❖ A greater divide between rich and poor. This affects social stability in several ways: citizens tend to show less interpersonal trust, violence and specific crimes occur more often, and citizens' health is under greater pressure more often.¹⁵
- ❖ An increase in poverty, including more instances of people not being able to pay necessary bills.
- ❖ A shortage of vital resources, leading to discontent and possibly large-scale demonstrations. These kinds of shortages also force the government to make difficult choices in redistributing scarce resources, which in turn can lead to social discontent. Disruption in the supply of chips and raw materials may also affect the functioning of security agencies, as drones, security systems and CCTV cameras, among others, use these resources.

Intensifying great power competition is likely to continuously pose major challenges to Dutch society over the next decade.

A geopolitical crisis in East Asia would put intense pressure on an already tense society.

Table 4: Implications of a geopolitical crisis in East Asia for social stability in the Netherlands



| Implications of a geopolitical crisis in East Asia for Dutch society | Potential consequences for social stability in the Netherlands |
|--|--|
| A greater divide between rich and poor | Social tensions; increase in violence; decline in health; increase in burglaries; theft; vehicle crime; violent crime; and deliberate vandalism |
| Increase in poverty | Increase in petty crime; homelessness; troubled people |
| Shortages of vital resources, for instance in the security domain | Increase in large-scale demonstrations; increase in homelessness and troubled persons; greater dissatisfaction with the government having to make increasingly «tough choices» in distribution of scarce resources; equipment shortages within security forces |

¹⁵ Adam Whitworth, 'Inequality and Crime across England: A Multilevel Modelling Approach', *Social Policy and Society* 11, nr. 1 (januari 2012): 29, 36–37, <https://doi.org/10.1017/S1474746411000388>.

Appendix 1

Expert interviews

The authors would like to thank the following persons for providing an expert interview. This list is not exhaustive. Only the experts who have indicated that they want to be mentioned in the report have been included.

1. Daphne Dernison, Global Public Policy Director, Philips
2. Rogier Verberk, Director Semiconductors & Quantum, Medical Photonics, TNO
3. Jan-Peter Kleinhans, Project Director “Technology and Geopolitics”, Stiftung Neue Verantwortung (SNV)
4. Julia Hess, Project Manager “Technology and Geopolitics”, Stiftung Neue Verantwortung (SNV)
5. Linda Lengowski, Vice-President Corporate Strategy, NXP Semiconductors
6. Lucia van Geuns, Strategic Advisor Energy, HCSS
7. Jeff Amrish Ritoe, Strategic Advisor Energy & Raw Materials, HCSS
8. Michel Rademaker, Deputy Director of HCSS and Subject Matter Expert on Critical Raw Materials, HCSS
9. Bart van Hezewijk, Head of Asia, Government & External Affairs, ASML



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