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Review of European Economic Policy

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Abstracted/Indexed in: SCOPUS, EconLit, Google Scholar, EBSCO, CSA, ProQuest, CAB International, ABS Academic Journal Quality Guide, Academic OneFile, Bibliography of Asian Studies, CAB Abstracts, CSA Environmental Sciences, ECONIS, European Sources Online (ESO), Gale, GeoRef, International Bibliography of Book Reviews (IBR), International Bibliography of Periodical Literature (IBZ), OCLC, Research Papers in Economics (RePEc), SCImago, Summon by ProQuest, World Affairs Online

Restoring Public Trust After Trump and COVID-19

This was a long time coming. The end of the Trump presidency was shocking but should have come as no surprise. The attack on the US Capitol on 6 January was a fitting, some would even say foreseeable conclusion, to Trump's first and only term in office. After railing for years against the corrupt electoral process that was rigged against him, a majority of the 74 million Americans who voted for Trump believe that the election was "stolen" – despite a lack of evidence, failed legal challenges and refuted claims from election officials in his own party. So when the outgoing president instructed his supporters to converge on Washington DC on 6 January to protest the congressional certification of the Electoral College results that would confirm Joe Biden the next president of the United States, they showed up in droves.

"We will never give up. We will never concede. It doesn't happen", Trump told supporters at his "Save America" rally prior to the attack. "If you don't fight like hell, you're not going to have a country anymore." With this battle cry, he implored them to stream up Pennsylvania Avenue to the Capitol. "I'll be there with you", he assured them.

Over the last four years that Trump has been there with them, his rhetoric and his example have exacerbated already deep divisions, emboldened extremists and encouraged violence. In addition to calling into question the integrity of the US electoral system and refusing to accept the results, Trump has actively tried to disrupt the electoral process by attempting to hobble the US Postal Service; refused on multiple occasions to condemn white supremacists and other hate groups; targeted and banned Muslims from entering the US; separated migrant children from their parents at the southern US border; intimidated, delegitimised and harassed the press – labelling them the enemy of the people; openly called COVID-19 the "China virus" and the "Kung-flu", which in turn resulted in racists attacks against Chinese Americans; politicised a global pandemic by refusing to wear a mask, refuting claims of medical professionals and fomenting discord in cities and states with Democratic leaders who criticised his lack of leadership; used social media to widely disseminate misinformation and conspiracy theories; revelled in lawlessness while insisting upon being the only candidate who would bring law and order during the civil unrest against racial injustice following the death of George Floyd; and – his closing act – incited an insurrection and attack on the very seat of the US government.

The visible symbol of this long but incomprehensive litany of offenses could be seen sleeping on the floor of the US Capitol the week before the inauguration: the National Guard, mobilised to protect the US government from a potential domestic terror attack. Let that sink in.

Since World War II, and perhaps until now, the US has seen its role as one of global leadership: of the defence and promotion of the liberal international order including of democracy, respect for the rule of law and human rights. But during the four years of the Trump administration, the world has witnessed the deterioration of traditional alliances, the withdrawal from international climate and security treaties, the implementation of tariffs and instigation of trade wars and the celebration of authoritarian regimes. The US' standing and reputation has taken a beating internationally. What leg does the US have to stand on in the promotion of its ideals if it cannot rightfully claim to promote and espouse them domestically?

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If the US is to continue to play a leadership role on the world stage, President Biden must first exert his leadership on the national stage. The challenges he faces at home are unprecedented in the last half century: reeling in a surging death toll and exploding infection rates during a global pandemic, unemployment and economic stagnation reminiscent of the 1930s, and perhaps the toughest of all, the extreme polarisation of America not seen since the Civil War.

Deep divisions in American society are not new but have as of late been exploited and aggravated by a war on the truth. Without agreement about basic facts, people are disoriented and easily led astray. The evaporation of local news, the rise of infotainment masquerading as news and the prominence of social media have helped to facilitate a parallel universe of alternative facts.

Oxford Dictionaries' word of the year for 2016 was "post-truth", defined as "relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief". Having existed for over a decade, the concept entered the political lexicon and even the mainstream only during the 2016 election campaign of Donald Trump, who does not so much as pretend that objective facts are of any importance and is thus perhaps the best example of a post-truth politician. Across the pond, Brexit was challenging the standards of political communication with its Eurosceptic post-truth rhetoric, along with Grillo's Five Star Movement, Poland's right-wing Law and Justice (PiS) party and Orbán's Fidesz, to name but a few.

Public opinion shaped by emotion rather than evidence and personal beliefs over facts sets identity above policy, creating social conflicts instead of solving them. The erosion of truth goes hand in hand with the erosion of trust, affecting democracies and their institutions. Whether one supports populists or not, they are favoured by voters who perceive the existing political system to be flawed. Post-truth politicians come to power as a response to the failures of democratic governments, governmental institutions and intergovernmental organisations, as low trust in government weakens their authority.

Only a minority of Americans trust the federal government. Around 73% of Americans said they could trust the government always or most of the time when the US National Election Study first asked this question in 1958; since 2014, less than 20% of those surveyed share the same sentiment. The level of public trust is similarly worrying in Europe: trust in the EU's institutions has remained low since it plunged during the financial crisis of 2007-08. According to the most recent Standard Eurobarometer survey, 43% of respondents tend to trust the EU. Trust in national government, however, is gaining ground, albeit on a lower scale, moving up from 36% to 40% since 2019 and ranging from 19% in Bulgaria and 25% in Spain, France and Slovenia to over 70% in Denmark, Luxembourg and the Netherlands.

The COVID-19 crisis is putting people's trust in government to the test yet again. Eurofound's *Living, working and COVID-19* survey published in September 2020 finds that the gap in the level of trust between those who received support during the coronavirus pandemic and those whose requests for support were rejected was approximately 27% for the EU and 43% for the national government. This signals that the coronavirus crisis is exacerbating existing inequalities and has potential impact on social unrest, political disengagement and further polarisation.

Recovery measures and policies and the way these are communicated and implemented will have lasting consequences for public trust. Governments' responses to the economic fallout from the pandemic should be efficient, swift and decisive in order to prevent the coming recession's impact on trust. Rebuilding public trust in a post-truth environment is a challenge not only in Europe, but should be a key priority for the Biden administration in the post-COVID-19 age.

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The New Transatlantic Partnership

In February 2019, speaking at the annual Munich Security Conference, former Vice President Joe Biden promised that “America will be back” when Donald Trump’s term comes to an end. His speech was met with a standing ovation, exposing an open secret: The state of the transatlantic alliance is in disarray. This month, Biden once again took the world stage, this time as the newly elected US President. But the return of a familiar face and respected ally does not mean a return to the old status quo. In the last four years, the Trump administration has altered the course of the liberal international order with its promise of “America First”. Trump’s counterstance to the previous administration’s policies on the environment, defence, trade, freedom of the press and foreign affairs has weakened the state of Western diplomacy. President Biden is expected to mend many of the divisions that have formed as of late. But Europe would be wise to acknowledge that the world looks very different now than it did four years ago and to navigate a new transatlantic partnership accordingly.

EU-US Relations: Reinventing the Transatlantic Agenda

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Taming the Chinese Dragon: A Promising Cornerstone for Transatlantic Trade Cooperation?

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Biden’s Security Policy: Democratic Security or Democratic Exceptionalism?

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A Real Chance for the Transatlantic Partnership on Climate Policy

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Transatlantic Trade Dispute: Solution for Airbus-Boeing Under Biden?

Stephan Wittig, University of Hamburg, Germany.

Steven Blockmans

EU-US Relations: Reinventing the Transatlantic Agenda

Damaged...

President Donald Trump's unabashed unilateralism has hurt EU-US relations. He has called the European Union a "foe" and "worse than China, just smaller" (Kwong, 2018). He celebrated Brexit and has encouraged other member states to leave the bloc. He has bullied democratic leaders such as Angela Merkel and embraced autocrats like Viktor Orbán. The latter has not helped the EU institutions in their search for supranational mechanisms to enforce compliance with rule of law conditions for membership.

Not only did the 45th President of the United States refuse to re-engage with the transatlantic trade and investment partnership (TTIP) agenda, which Barack Obama abandoned, but he also imposed "national security" tariffs on steel and aluminium imports from European allies and threatened that more might follow.¹ He also subjected European businesses to American extra-territorial jurisdiction more enthusiastically than any of his predecessors, in particular over his withdrawal of the US from the Iran nuclear deal (see Stoll et al., 2020).

Trump's retreat from the Paris climate deal, the Intermediate-Range Nuclear Forces treaty, the Open Skies agreement, and the World Health Organization (WHO) as well as his attacks against the WTO appellate body have rocked many Europeans' belief that they share

common ground with their most important ally. In fact, Trump has been disdainful of European priorities, from climate change and efforts to improve global health, to human rights and development assistance.

As a result, US relations with the EU have become largely dysfunctional, and this comes at a time when unprecedented global health, economic and security challenges demand robust transatlantic leadership.

To be sure, transatlantic disarray is not solely due to Trump. After more than a decade of crisis management, the EU has seemed as likely to fall apart as to come together over the COVID-19 pandemic. The coronavirus crisis has ravaged societies and economies. Whereas EU member states reached a political agreement on a historic recovery package and a seven-year financial framework, those debates have also revealed ongoing differences on rule of law conditionality in the disbursement of funding that could widen once the worst of the pandemic is over.

...but not beyond repair

A second term for Trump would have almost certainly meant a further erosion of US democracy and the post-war liberal order. The EU would no longer have been able to put off facing the consequences of having an illiberal, anti-trade partner across the pond.

With Joe Biden's victory, there is at least a four-year window to revive 'an alliance of democracies', face up to authoritarian powers and closed economies that exploit the openness on which American and European societies are built, and shape those parts of multilateralism that serve transatlantic interests.

During the campaign, candidate Biden emphasised his long-standing belief that "Europe is the cornerstone of our engagement with the rest of the world and is the catalyst for our global cooperation".² As a passionate transatlanticist and multilateralist, Biden will instinctively turn to the EU as America's indispensable partner of first resort when it comes to addressing internation-

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¹ Clarification can be expected from the various WTO panel reports on complaints against the US tariff measures on steel and aluminium, which are due to be circulated soon. This includes complaints by China – DS 544; India – DS 547; the EU – DS 548; Canada – DS 550; Mexico – DS 551; Norway – DS 552; the Russian Federation – DS 554; Switzerland – DS 556 and Turkey – DS 564.

² This resonated with the Remarks by Vice President Joe Biden to the Munich Security Conference (see United States Office of the Vice President, 2013).

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al challenges, even if that partner has already made it clear to the incoming administration that it will not be dictated by the United States:

The EU and the US should pursue common interests and leverage our collective strength to deliver results on our strategic priorities. We should always look for solutions that respect our common values of fairness, openness and competition – including where there are bilateral differences. (European Commission, 2020, 2)

America, heal thyself before you attend to others

The 46th President's most immediate challenge will most likely not be abroad but an unenviable confluence of crises at home: COVID-19 vaccination management, post-pandemic economic recovery and deep social tensions. As the 6 January storming of the Capitol building by a mob of Trump supporters so brutally illustrated, Joe Biden will also have to contend with a much stronger radical conservative opposition than Barack Obama ever did.

Despite the many doubts sown about the American election process by Donald Trump and the legal challenges that remain, US democracy has survived its experiment with proto-fascism and will be strengthened in the next four years. This will be a boon for democratic forces around the world, especially in Europe. Recent developments in certain EU member states have shown that democratically elected leaders will try to use majoritarian rule to curb freedoms, overstep the constitutional limits of their powers, protect the interests of their cronies, and recycle themselves through seemingly free and fair elections. A Biden presidency is expected to strike up alliances that will solidify America's international role and put pressure on the illiberal and undemocratic leadership of third countries. This is good news for the EU and its drive to stop the corrosive effect of authoritarian tendencies within the bloc and strengthen rule of law mechanisms at the supranational level.

America's partners should therefore not be surprised, and should in fact welcome the likelihood that Biden's initial focus will necessarily be on domestic challenges. After all, the US is unlikely to be the type of consistent, outward-looking partner that Europeans need and want if it does not beat COVID-19, generate economic growth and work to heal its deep domestic divisions. And even if the Democratic Party holds a majority in both houses of Congress, the domestic forces that the Biden administration will have to contend with are likely to slow

down the implementation of his ambitious foreign policy agenda.

Reinvent transatlantic relations

While the era of American exceptionalism may be over,³ a Biden Presidency will help to restore a balance of power and could help to reboot multilateralism. But even if the US rejoins the WHO, the Paris climate accords and the Iran nuclear deal, and works to strengthen the WTO, Biden's foreign policy will be more assertive and transactional in response to popular domestic demand. Europeans should not kid themselves into believing that transatlantic relations will return to the status quo ante. In all but name, the rallying cry of "America First" is here to stay. As a presidential candidate, Biden has vowed to prioritise investment in US green energy, childcare, education and infrastructure over any new trade deals. He has also called for expanded "Buy American" provisions in federal procurement, which has long been an irritant in trade relations with the EU. The EU will likely be forced to muster all the political will and resources at its disposal to carve a third way between the US and China, an issue which enjoys strong bipartisan support in Washington.

A new transatlantic agenda will demand more, not less, of Europe. The European Commission and the EU's High Representative for foreign affairs and security policy have understood this. In a call on the US to seize a "once-in-a-generation" opportunity to forge a new global alliance, they have made a detailed pitch to bury the hatchet on the sources of tension from the Trump era and meet the "strategic challenge" posed by China (European Commission, 2020, 1, 8). The idea is to revitalise the transatlantic partnership by cooperating on everything, from fighting cybercrime and shaping the digital regulatory environment, to screening sensitive foreign investments and fighting deforestation. An EU-US Summit in the first half of 2021 could be the moment to launch the new transatlantic agenda.

Dealing with China

The new EU-US Dialogue on China is expected to provide a key mechanism for advancing shared transatlantic interests and managing differences on the best way forward. Topics include biomedical research, a green trade agenda, and – more acutely related to the system-

³ Richard Haass, former Director of Policy Planning for the United States Department of State and a close advisor to Secretary of State Colin Powell in the administration of Republican President Bush Jr., tweeted that "If the post-American era has a start date, it is almost certainly today", i.e. 6 January 2021.

ic rivalry with China – securing 5G infrastructure across the globe, opening a dialogue on 6G, widening cooperation on digital supply chain security through objective risk-based assessments, cybersecurity, free data flow on the basis of high standards and safeguards, cooperation on artificial intelligence, and fair taxation in the digital economy.

There is a genuine willingness in Europe to work with the US on the strategic challenges posed by China, but not at all costs. The provisional conclusion of talks on the Comprehensive Agreement on Investment (CAI) ahead of Biden's inauguration shows that the EU, led by Germany and France, is bent on protecting its commercial interests and will not slavishly follow a hegemonic US in decoupling from China. But by going soft on fundamental rights and enforcement mechanisms in the draft CAI,⁴ in particular ILO standards on forced labour (cf. camps for Uighurs in Xinjiang province) and UN protected freedom of speech and assembly (in Hong Kong and elsewhere), the European collective has handed a victory to Beijing by splitting the aspired value-based transatlantic partnership. As a self-proclaimed "geopolitical" actor, the EU may have been shrewd in applying the realist approach of "principled pragmatism" before a Biden administration could affect some of its commercial interests,⁵ but it still suffers from strategic myopia in defining relations in an increasingly bipolar world based on ideological lines (democracies vs authoritarian regimes). This episode places the new EU-US Dialogue on China on the back foot before it has even begun.

The news that, from the get-go, the Biden administration wants to sit down with its European allies to end the tug-of-war on trade is very welcome.⁶ Resolving these and other issues with a commitment to improve the transatlantic level playing field is key to setting high standards, making critical supply chains more resilient and addressing China's unfair trade practices. And while the CAI is a meritorious attempt at getting Beijing to play by the rules, the EU would have stood stronger after consultation and in concert with the Biden administration.

In conclusion

The greatest danger to a vital transatlantic bond will be Europe's temptation to believe that the relationship can go back to "business as usual". That would be a mistake. The EU-US alliance as we have known it is dead. A Biden administration will not want to "restore" the transatlantic partnership; it will want to reinvent it for a world full of economic, climate and health challenges, more diffuse power, rapid technological changes, greater insecurities and intensified global competition. Fortunately, this is well understood at EU headquarters and most of the member states capitals. But coming up with a common approach will hinge significantly on the two economies' ability to bridge existing divides over trade and technology policy. Using their combined influence, a transatlantic technology space could well form the backbone of a wider coalition of like-minded democracies.

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4 An official version of the draft text of the agreement and the declarations attached to it were not available at the time of writing. The assessment here is based on key provisions leaked to the press. See e.g. Brunsdon et al. (2020).

5 The concept is enshrined in the High Representative's Shared Vision, Common Action: A Stronger Europe (European Union, 2016).

6 See the interview CNN's Fareed Zakaria (2021) conducted with Jake Sullivan, Biden's national security advisor.

Simon J. Evenett

Taming the Chinese Dragon: A Promising Cornerstone for Transatlantic Trade Cooperation?

Even by the standards of politicians, President Trump pursued his international policy goals in a transactional, self-centred and unilateralist manner. His administration represented a clear break with the past: no longer would the United States support multilateralism, nor would it necessarily honour security guarantees, nor would it respect global and regional trade rules. Even if previous administrations had, from time to time, been selective in their support of the liberal world economic order and for democracy, there has never been an American administration that has conducted itself in the manner witnessed over the past four years.

European nations, both inside and out of the European Union, have not escaped President Trump's wrath. European steel producing nations were among those slapped with import tariffs on the unsubstantiated grounds that their exports constituted a threat to the national security of the US. Car exporters were threatened with similar treatment but for some reason were ultimately spared. Beyond the trade policy sphere, the Trump administration's contempt for the European Union and NATO was palpable.

Only in the second half of President Trump's four-year term did US officials begin seriously exploring joint approaches with European counterparts to so-called level playing field concerns in the world trading system. Largely, these concerns were taken to involve various forms of subsidies received by Chinese firms. In parallel, there was an essentially unsuccessful unilateral attempt by the US to force China to reform its economy.

Not surprisingly, then, the failure of President Trump to win re-election induced sighs of relief in the European halls of

power. During the past two months, many proposals have been advanced to revitalise transatlantic cooperation on a host of climate change, economic, geopolitical and trade-related matters. Even before the Biden administration took office, the European Commission (2020) laid out its wares in a formal Communication on potential future transatlantic cooperation. In addition, President Trump's defeat has been accompanied by a volley of commentary on the prospects for greater cooperation across the Atlantic (the more insightful of which in the opinion of this author are Demertzis, 2020; Freudlsperger et al., 2020; Odgaard, 2020; Köhler-Suzuki, 2020; van Daniels et al., 2020; and Williams, 2020).

In such commentary, mention is often made of the political constraints and imperatives in the United States and in European nations (including the growing desire of "strategic autonomy" on the part of the latter), of the continuing fallout from the coronavirus pandemic and the near-term challenges created for policymakers, of the relative success of state-driven forms of capitalism as compared to liberal democratic alternatives, of the longer term global challenges such as climate change, of the malaise at certain international organisations (such as the World Trade Organization) and of the growing economic, military and technological rivalry between the world's leading powers.¹ The context, then, of future transatlantic cooperation is multi-faceted to say the least.

The focus of this paper is on one recurring and prominent feature of recent proposals for strengthened transatlantic cooperation – namely to counter state-driven forms of capitalism. This is taken here to refer principally to the Chinese economic model but arguably includes Russian, South African and other emerging market variants. Claims made in such proposals that transatlantic cooperation should tackle the Chinese Dragon and has the means to do so are scrutinised and found wanting. This is not the end of the matter – after all, the Biden administration has

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¹ Interestingly, very few commentators discuss the implications of China's new economic policy of "dual circulation" for transatlantic cooperation. This is surprising given the apparent desire of Chinese policymakers to rebalance economic growth towards domestic demand and to reduce sourcing from ("dependence" upon) suppliers abroad. Both would have potential implications for how much Western firms can sell to China and their market entry strategies as well as for Chinese support to its own exporters and the adverse cross-border spillovers that such support may engender.

yet to take office. But the following discussion highlights the prerequisites for translating stated intentions into a coherent international economic strategy.

Specifically, in this respect, it is worth asking whether any transatlantic counter to state-driven capitalism can convincingly answer the following questions:²

- What is the *purpose* of the strategic counter? What evidence is there that the proposed strategy has identified tangible, first-order³ problems faced by European and North American nations? First-order for whom? Is the objective to induce the reform of state-driven capitalism, to protect against the adverse effects of such capitalism, or both?
- What *guiding policy* has been developed as to how to attain this purpose? What capabilities are required? Critically, what is the Theory of Change that relates those capabilities and the coherent policy to the desired outcomes? Is that Theory cogent? Does the future application of that Theory have convincing, relevant precedents?
- What *coherent actions* would follow from the adoption of the guiding policy? By whom and with whom? Over what time frame? Will the actions that follow from the guiding policy compromise other cherished policy objectives? If cooperation between states is to be codified, what instruments will be deployed and how will compliance be induced and verified?

Asking these questions is essential if policymakers are to avoid going down blind alleys, influenced perhaps by certain corporate interest groups to pursue initiatives that are lucrative for them but ultimately of second or third order. It is also necessary to avoid the pursuit of initiatives that have little or no chance of influencing policymaking in Beijing or indeed any other government whose current policies are deemed objectionable.⁴

2 Those with a business school training will recognise that the three following questions are adaptations of Richard Rumelt's (2011) persuasive approach to the formulation and evaluation of corporate strategy. An important adaptation here is the additional requirement that there be a compelling Theory of Change; in this case, for example, a theory of which factors increase the likelihood that the government in Beijing modifies or reforms its economic model.

3 Here it is useful to ask if the problem or problems can be scaled? This shifts deliberation from specific examples (which can be hammed up into war stories) to specific, ideally quantitative, evidence.

4 Although framed in this paragraph in terms of influential corporate interests, similar concerns can arise in conjunction with the proposals of non-government organisations, including civil society groups and trade unions.

It is also worth noting that the first terms of the von der Leyen Commission and the Biden administration both conclude within two months of one another. Given the time it takes for a US Administration's senior officials to get confirmed and master their briefs, essentially officials on both sides of the Atlantic have approximately three years to design and execute a new approach to transatlantic cooperation before the next US presidential election is in full swing. This is not a long period of time and it ought to induce harder thinking than has been witnessed to date. Officials on both sides of the Atlantic need to choose their battles wisely. Consequently, the evidentiary bar that a proposed initiative must meet should be set high.

To provide grist for the mill, the next section provides summaries of two high-profile, very recent proposals for enhanced transatlantic cooperation. Both proposals give pride of place to countering authoritarian regimes and their state-driven economic models. Those proposals are then assessed in terms of the answers implicitly provided to the three questions listed above and implications are drawn concerning the prospects of transatlantic trade cooperation taming the Chinese Dragon.

Hot to trot: Two high-profile proposals to revitalise transatlantic cooperation

More ink has likely been spilt on transatlantic relations during the two months since the US presidential election than over the previous five years. To provide a sense of the substance and apparent logic being advanced, two high-profile recent initiatives are summarised here. Readers are encouraged to bear in mind the three questions raised in the section above when reflecting on the excerpts that follow.

A new EU-US agenda for global change

On 2 December 2020, the European Commission published a Communication titled *A new EU-US agenda for global change*. While recognising the importance of transatlantic cooperation in the past, not least in rebuilding Europe after World War II, the Communication contends that the future cooperation must be grounded in today's circumstances: "The US and the EU have changed, as have power dynamics and geopolitical and technological realities" (European Commission, 2020, 1). In terms of the status quo, the European Commission (2020,1) contends: "Today, our combined global power and influence remains unrivalled".

Moving closer to a general statement of intent, the European Commission (2020) puts the need for greater coop-

eration in key areas of policy in the context of the rise of non-democratic powers:

This combined power and influence is indispensable to anchor global cooperation in the 21st century – whether it be on health, security, climate, trade and technology, or on the multilateral rules-based order. Our joint commitment is essential in a world where authoritarian powers seek to subvert democracies, aggressive actors try to destabilise regions and institutions, and closed economies exploit the openness our own societies depend on. (1)

The Communication then turns to the specifics of cooperation on health, climate change, technology and the digital economy, trade, democracy and foreign and security policy. Interestingly, the discussion on health policy focuses exclusively on what the EU and US can do together or on unilateral initiatives the US could take. No mention is made of inducing changes in policy by non-democratic nations. The same is true for climate change (and the related discussion on biodiversity).

On technology and trade matters, the European Commission (2020) acknowledges: “While we are still the most influential regulators, both the EU and the US face increasing standard competition from third country actors. Where both sides agree, the world usually follows” (7). This statement is a fragment of a Theory of Change. This followed a discussion of the threats posed by non-democratic nations to digital supply chain security, cybersecurity and the regulation of advanced digital technologies more generally. Little is said about how to tackle those threats in practice.

While reference is made to unilateralism in trade policy and the desire to promote transatlantic trade and investment flows, the attention given to resolving long-standing trade frictions is cursory.

With respect to promoting democracy, human rights, and labour rights, the European Commission sees potential for greater transatlantic cooperation. The Commission is willing to participate in a Summit for Democracy (thought to be a priority of the Biden administration) and to join others in making “further commitments on fighting corruption, authoritarianism and human rights abuses around the world” (European Commission, 2020, 8). Notice there is no claim that those commitments would be taken on by other nations.

In the ensuing discussion on making the world safe, prosperous and more democratic, the Communication singles out China:

For the EU, China is a negotiating partner for cooperation, an economic competitor, and a systemic rival... As open democratic societies and market economies, the EU and the US agree on the strategic challenge presented by China’s growing international assertiveness, even if we do not always agree on the best way to address this. (European Commission, 2020, 8)

This vague statement of objectives is a good example of those that pervade the Communication. Is the goal to protect EU and US interests from Chinese “assertiveness”? To protect the rest of the world from such assertiveness as well? To change Chinese behaviour, perhaps moderating Beijing’s apparent assertiveness? Or all of the above? These goals are not the same. Nor necessarily are the guiding policies and coherent actions that would follow from a strategy to pursue each of them.

Overall, when compared to the documents issued by the European Commission at the time the Transatlantic Trade and Investment Partnership was launched in 2013, the European Commission’s position has shifted markedly. Geopolitical, climate change and digital technology initiatives take centre stage now, essentially pushing the resolution of long-standing transatlantic trade and investment disputes to the side. As will become evident, another recent high-profile set of proposals for transatlantic cooperation was not prepared to go that far.

Stronger Together: A Strategy to Revitalize Transatlantic Power

Harvard University’s Belfer Center joined forces with the German Council on Foreign Relations (DGAP) to form a Transatlantic Strategy Group comprising of 16 established experts and former diplomats. In December 2020 this group published a report titled *Stronger Together: A Strategy to Revitalize Transatlantic Power*. Their headline recommendation is that “[t]he United States, Europe and Canada must work together toward one ambition in 2021—to renew, revitalise, and retool for the decade ahead the most powerful democratic community in modern history” (Harvard-DGAP, 2020, 2).

Looking beyond “years of mistrust, recrimination, and division,” nations on both sides of the (north) Atlantic must cooperate because “the world needs a more powerful and purposeful transatlantic alliance to drive a new global agenda” (Harvard-DGAP, 2020, 2). In addition to tackling climate change, the following end is given prominence:

We must also harness our joint power to deter a more confident and aggressive China and a cynical and disruptive Russia. They have exploited transatlantic ten-

sions for too long. Together we must oppose their illiberal agendas in Europe, Africa, the Indo-Pacific, and around the world. (Harvard-DGAP, 2020, 3)

A wide range of objectives is then laid out: rebuilding trust, revitalising democracies at home, a joint strategy to tackle global challenges and to “defend liberalism”, and transformation of “our political, military, technological and economic capacity to be the most effective force for freedom and rules-based order in a challenging world” (Harvard-DGAP, 2020, 9).

Action plans for eight areas of policy were then advanced, of particular interest here are those relating to Economics and Trade and to China. With respect to the former, although the action plan is motivated by various ‘challenges’ posed by China’s rise, the preponderance of the Action Plan relates to steps the EU and the United States can take to reduce trade frictions between themselves. Of the 17 specific trade-related steps articulated on pages 19 and 20 of this report, only two specifically refer to China and another two items (subsidies and supply chain resilience) relate to matters said to arise from Chinese policy. Moreover, earlier in the Action Plan it was recognised that to date the EU and the US have had different interests and approaches to key trade policy matters, including dealing with China’s growing clout.

The latter point is reinforced in the Action Plan on China where it is argued that European Union member states often see Chinese relations in terms of economic or trade ties, whereas the US regards China as a threat to its primacy. It is argued that these differences must be overcome now that China’s assertiveness materially affects the European Union and the United States, in the following ways:

The transatlantic community is not immune to Beijing’s assertiveness. The U.S. and Europe share concerns over Chinese forced technology transfers; trade subsidies; issues over reciprocity and market access for U.S. and European companies; surveillance technologies; and political influence associated with its economic investments. There is also increasing support in the U.S. and across Europe for pushing back against Chinese human rights abuses and developing global standards in emerging technologies as China advances its own digital authoritarian model. (Harvard-DGAP, 2020, 36)

Having described the evolving hardening of positions within Europe and the United States, the Harvard-DGAP report articulates the following Theory of Change:

Only together can the U.S. and Europe build the leverage necessary in trade, technology and multilateral

engagement to hold China to a set of standards that protects democratic societies and contributes to global stability. United they can rally other nations around these objectives. (Harvard-DGAP, 2020, 39)

The following trade and investment-related recommendations are advanced in the Action Plan for China:

- Bring joint cases to the WTO that “prioritize Chinese intellectual property theft, uncompetitive trade practices and cybertheft” (Harvard-DGAP, 2020, 39).
- Forming “a U.S.–EU working group on WTO reform could serve as an initial step in assessing how best to address Chinese uncompetitive trade practices” (Harvard-DGAP, 2020, 39).
- Strengthen and align policies that screen foreign direct investments, in particular those relating to critical infrastructures.
- Increased intelligence sharing “on cyber espionage, forced technology transfers and IP theft” (Harvard-DGAP, 2020, 40).
- “Technology transfers to China through collaboration in research institutions and universities must be more closely scrutinized” (Harvard-DGAP, 2020, 40), with particular emphasis on collaboration with European universities.
- Develop an alternative to China’s Belt and Road Initiative by providing “transparent finance and infrastructure to developing countries that are growing increasingly indebted to Chinese loans and infrastructure projects” (Harvard-DGAP, 2020, 41).
- Greater collaboration to “prevent sensitive technology transfers to Chinese companies and military actors involved in surveillance. Collaboration should also focus on developing joint standards to evaluate relevant transactions” (Harvard-DGAP, 2020, 41–42).

Where their paths cross

There are clear parallels to some of the framing of both proposals: confronting authoritarian regimes and state capitalism being perhaps the most important examples.⁵ Not surprisingly, then, China has pride of place in

⁵ However, the two initiatives are not completely aligned (and there is no reason why they must be). The Harvard-DGAP report puts greater store on resolving existing transatlantic trade frictions. It is as if the European Commission’s Communication has been drafted to signal “let’s not let old sores get in the way of future cooperation.”

both proposals. The scope of both – encompassing climate change, geopolitical matters, human rights, etc. – are similar and far broader than that envisaged when the Transatlantic Trade and Investment Partnership was being negotiated. This raises the important question as to whether traditional trade policy initiatives will be subordinate to other policy imperatives, possibly being demoted, bargained away, taken up later or even dropped? Or whether geopolitical and other considerations are used to overcome some of the longstanding impediments to classic forms of transatlantic trade cooperation?

Having laid out these two proposals, that are representative of many of those which have called for closer transatlantic cooperation in recent months, the discussion now turns to whether they constitute fully fledged strategies in the sense articulated in the last section.

Critical assessment: Falling short as strategy

To what extent do the European Commission's Communication and the Harvard-DGAP study proposals constitute well-formulated strategies? Some may object that it is too much to expect that these documents lay out in full detail the purpose, guiding policy and cogent actions associated with their proposals for future transatlantic cooperation. Even if this were a fair comment, then should these proposals be taken forward, those details need to be worked through and the following discussion may be useful at that stage.

To sharpen ideas, the following discussion focuses on the multiple references in these two documents that amount to, at a minimum, countering Chinese influence and possibly seeking to change Chinese government behaviour. Although taming China is in vogue, many of the following remarks apply with equal force to attempts to influence government decision-making in, for example, Ankara, Moscow and New Delhi.

With respect to the purpose of taming the Chinese Dragon, while Chinese actions are alluded to, the lack of specificity concerning Chinese ends, means and consequences for other nations is alarming. Prioritisation of Chinese threats (if that is what they are) is going to be very difficult under these circumstances.

For example, if excess capacity in Chinese manufacturing industry is a problem, how big a problem is it? Are the problems bigger in some manufacturing sectors than others? In assessing how big a problem there is in any one sector, what evidence is there that increased excess capacity results in increased Chinese exports, in increased imports into Europe and into the United States, and into

greater tangible harm to import-competing firms and their employees? (Bear in mind that imports may rise because demand in the importing nations for the products in question has risen – so higher imports from China do not automatically signify larger excess capacity in Chinese manufacturing).

In short, a lot of work needs to be done to determine which threats, if any, from China are really first order. In the absence of this groundwork, there is a risk that national policymaking and transatlantic cooperation will be hijacked by influential corporate interests that exaggerate the importance of well-chosen examples.⁶ Evidence, not war stories and the fear they engender, should underpin any new phase in transatlantic cooperation.

With respect to guiding policy, it is difficult to discern any from either document advocating enhanced transatlantic cooperation. To draw a historical parallel, if taming the Chinese Dragon is really the goal, then what is needed is the contemporary equivalent of George Kennan's 1946 telegram to the US State Department that outlined a strategy to "contain" the Soviet Union. In places, there are statements that might be part of a plausible candidate Theory of Change – an example being the quote from page 39 in the Harvard-DGAP study reproduced above. Such examples should be scrutinised carefully.

For instance, suppose the EU and US agree on a common approach to a particular regulatory problem. What incentives are there (or could be created) to induce other nations to "rally round" and sign up to such an initiative? How many nations can plausibly be expected to do so and how much economic activity would they cover? Which nations are likely to refuse to join – and do they constitute a critical mass of their own? Particular focus should be given as to whether China would see it in its interests to sign up.

More generally, it is worth differentiating between the Theories of Change purporting to induce Beijing to reform elements of its foreign economic policy and to reform its domestic economic, social and political policies. Depending on the terms, a multi-party deal to reform certain aspects of international development finance might be more acceptable to Beijing than agreeing to reforms to establish independent trade unions.

⁶ The author's suspicions on this score arose after conducting a detailed examination of claims made about the adverse consequences of Chinese excess capacity in the steel sector (Evenett and Fritz, 2018).

Evidently, taking account of the factors that drive Chinese policymaking is critical. Yet in the preparation for this paper, which involved reading hundreds of pages of text on proposals and commentary on the future of transatlantic relations published over the past two months, only *one* document made reference to *one* of the well-known books on Chinese economic statecraft.⁷ If taming the Chinese Dragon is the goal, then surely this requires some understanding of policymaking in Beijing? In the absence of such understanding, there is little in current proposals to keep defenders of the status quo in Beijing awake at night.

There is another troubling feature of the two proposals described here and it relates to the “leverage” of the European Union and the United States. Repeatedly, readers are informed that together the transatlantic nations’ “global power and influence remains unrivalled”, “indispensable” (European Commission, 2020, 1), etc. Here it is worth differentiating between positive and negative liberty, along the lines advanced by Isaiah Berlin (1958), but reinterpreted here for governments rather than individuals.

Together, the EU and the United States may be able to block more initiatives that are not to their liking. However, such negative liberty does not imply that the transatlantic economic powers have positive liberty – that is, the capacity to persuade other governments to sign up to their initiatives. Clearly, there is a link between the capability and likelihood of gaining acceptance of one’s own proposals for global norms (positive liberty in this sense) and the adopted Theory of Change, as the latter relates to the willingness of other governments to accept and comply with those norms.

Indeed, although both documents reviewed here were thin on specifics, they tended to be thinner on precisely what the European Union and the United States could plausibly accomplish when persuading third parties to follow their lead and how that might come to pass. If this relative lack of detail reflects doubts after decades of limited multilateral trade cooperation about the true degree of leverage that these two economic “powers” can muster in commercial policy matters in the 21st century, then greater emphasis might be put on accommodating different forms of capitalism in the world economy and on building defences against the negative spillovers created by rival capitalisms.

⁷ It is noteworthy that for a report that put so much weight on countering China, the Harvard-DGAP group did not include a single recognised expert on Chinese policymaking.

Finally, important questions arise concerning the coherence of the transatlantic and other international initiatives that might be undertaken in the years ahead.⁸ If, as both EU and Biden administration officials have stated, China’s cooperation is needed to tackle climate change, then how much can transatlantic cooperation hope to accomplish in inducing China to change policies in areas where it is reluctant to do so? To what degree can initiatives with Beijing and those targeting Beijing be compartmentalised? If issue-linkage develops and progress on climate change, say, requires going slow on tackling subsidies, intellectual property theft or cybersecurity, then is such a trade-off acceptable in European capitals and Washington, DC? And can the latter two remain aligned when such trade-offs arise?

For all of these reasons, the leading proposals for enhanced transatlantic cooperation fall short. In the form published, they do not rise to the standard of a well-thought through strategy. That is not to imply that no compelling strategy is possible, rather, that readers should curb their enthusiasm until such a blueprint is presented by officials. “The level of ambition on both sides of the Atlantic is currently sky high”, as Williams (2020) put recently, but such ambition has yet to translate into a serious strategy – let alone one that could tame the Chinese Dragon.

Concluding remarks: Girding their loins but then what?

After four of the worst years for transatlantic relations since the World War II, it is only natural that many policymakers and analysts want to turn the page. Moreover, that the world has moved on implies that the next chapter of transatlantic cooperation, if there is to be one, will probably look different from the past. This is just as well for, at least as far as trade policy cooperation is concerned, arguably little of first-order importance has been accomplished since European nations and the United States joined forces to create the World Trade Organization a generation ago.

Still, being keen to cooperate and establishing a sound basis upon which to cooperate are two very different matters. As the past two months have demonstrated, the appetite is there but evidence of hard thinking is scarce.

⁸ Although the observations made here relate to the coherence among international initiatives that the European Union and the United States might undertake together, of course, the coherence of each party’s international initiatives with its domestic policy imperatives is another pertinent consideration. For example, Mr. Biden is on record stating that no new trade agreements will be negotiated while the United States takes steps to restore its domestic competitiveness.

Perhaps, officials at the European Commission and in the Biden Transition Team have done their homework and are keeping it to themselves; however, given the ways in which they are framing their arguments, this is doubtful.

The desire of many policymakers to tame the Chinese Dragon is apparent. But what is particularly disappointing is the little, if any, reflection on how to induce the government in Beijing to change course, whether with respect to domestic policy or foreign economic policy. If this is a consequence of doubts about the leverage of European and American policy then, whether intended or not, attention is likely to shift to how tensions can be better managed with Beijing or, worse, to whether further decoupling of economic and governance processes is necessary. Hardliners, who have had the upper hand in the past decade, are likely to favour the latter outcome.

This is not an argument in favour of decoupling. Rather it is an argument that, unless a cogent strategy is formulated with some sense of a plausible alternative endgame, then there is a risk of sleepwalking into a scenario of extensive decoupling. Such decoupling is a recipe for the fragmentation of the global economic and governance processes, with its attendant losses in terms of specialisation and productivity, collaboration on innovation, and

opportunities for dialogue and engagement. If fragmentation is the ultimate, unintended by-product from attempts to revitalise transatlantic cooperation over the next four years, then historians may look back at this era and wonder if the outcome of the November 2020 US presidential election really mattered.

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Biden's Security Policy: Democratic Security or Democratic Exceptionalism?

Can the Biden administration chart a new course for American security policy given the unprecedented level of polarisation and social unrest in the United States? Can the US lead internationally and build a new transatlantic

partnership while tackling the layered political, economic and health crises it faces at home? This article examines the Biden administration's security priorities, tracing elements of change and continuity in US foreign and security policy, and the challenges it faces as it tries to reassert US power and leadership, reassure allies and rebuild partnerships.

This paper argues that President Biden's foreign and security policy should build on democratic security by offering the prospect and promise of a fresh democratic future, not merely a fixed version of the past, while avoiding the pitfalls of democratic exceptionalism. This is a daunting task, though there is no incompatibility between international leadership and rebuilding democracy, the economy and resilience internally. By emphasising the internal-external security nexus inherent in democratic security, the

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Open Access funding provided by ZBW – Leibniz Information Centre for Economics.

* The author writes in a personal capacity. The ideas reflected in this article do not reflect the views or policies of the EUISS or the EU more broadly.

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US could aspire again to lead through the example of its democracy's resilience and ability to self-correct. This involves rethinking how the US exercises power and leadership in the context of an unprecedented level of fragility in the American political system and significant economic challenges in the aftermath of the COVID-19 pandemic.

The article proceeds in three sections. First, it outlines the Biden administration's short- and long-term security priorities and highlights the elements of change and continuity compared to the administrations of his two predecessors, Donald Trump and Barack Obama. The second part examines the changing US view of strategic partnerships and reflects on the pivotal role of the transatlantic partnership, including the strategic US-EU relationship, in US foreign and security policy. The final part of the paper highlights the domestic and international challenges the US will face in implementing President Biden's democracy agenda in foreign and security policy.

Biden's security priorities and democratic security

The task before the Biden administration is monumental. The credibility, reliability and legitimacy of the US as a world leader, as well as its ties to Europe, its closest ally and partner, have been eroded by a toxic Trump presidency. Meanwhile, President Biden and his team inherit both a world and a country that are decidedly more polarised, unsettled, rapidly changing and fraught with uncertainty and complex security problems competing for their attention, and they will have less resources and less time to address them.

Joe Biden first outlined his foreign and security policy vision in a 2020 Foreign Affairs article: rebuild the foundations of American power (economy, socio-economic equality, innovation, democracy), restore American democracy and revitalise international partnerships (Biden, 2020a) through a combination of democratic security, reformed multilateralism, new liberal institutionalism and multi-stakeholder engagement on issues that cut across the internal-external security nexus. This vision, which Biden called "a foreign policy for the middle class", acknowledges the connections between economic displacement and pressures at home and the US role in the world. It articulates a multilateralist approach to managing the shifting global balance of power, emerging technologies and globalisation – or a new liberal internationalism (Blinken, 2016). And it attempts to reconcile domestic democratic, economic and societal security with due considerations to security at the individual, national and international levels – which international relations literature calls democratic security (Steuer, 2019). In short, to rebuild democracy at home, the US has to strengthen democracy abroad (Wright, 2021).

President Biden's vision, though, goes further and touts a return of American democratic exceptionalism and a self-perception of the US as the "beacon" of democracy and the indispensable leader of the international system. In President Biden's words: "It falls to the United States to lead the way. No other nation has that capacity. No other nation is built on that [democratic] idea" (Biden, 2020a). Opinion polls (see Figure 1) and experts challenge this reaffirmation of American exceptionalism: "the question for the incoming Biden administration is whether the rhetoric of American exceptionalism has purchase in a world where (...) the 'city on a hill' story does not shine as it once did" for domestic and international audiences (van Engen, 2021). Others argue Biden's international security agenda is disconnected from American domestic realities of unprecedented political unrest and disregard for the rule of law, and they question whether the US has the legitimacy, resources and strategic attention necessary to lead internationally while confronting domestic challenges (Ashford, 2021). Following four years of Trump's disengagement from the multilateral international system and assault on rule of law (Hill, 2021), Biden's vision for America's "foreign policy for the middle class" (Biden, 2020a) approximates democratic security, but for domestic reasons risks coming too close to an exercise in democratic exceptionalism.

Biden's approach to geopolitics and globalisation

The challenges to US national security posed by China, Russia, Iran and North Korea as well as international terrorism will remain top concerns under the Biden administration. This is a strong element of continuity with the Trump administration's 2017 shift to great power competition. However, the Biden administration is expected to adopt a less unilaterally confrontational tone in relations with China, while being more hawkish in its relations with Russia. In 2020, answering *New York Times*' questions about his foreign policy priorities, candidate Biden pledged to re-emphasise a two-state solution in the Israeli-Palestinian conflict but considered the return of the US embassy to Tel Aviv unnecessary (Goldberg, 2020). Much like the Obama-Biden administration, the Biden-Harris administration is expected to champion multilateral efforts at nuclear non-proliferation. Iran and North Korea will take priority, albeit under a different approach: candidate Biden confirmed that he intends to rejoin the Joint Comprehensive Plan of Action (JCPOA) should Tehran remain in compliance (Biden, 2020b), and despite Iranian provocations (Rasmussen and Norman, 2021), his administration might still pursue this goal. Summit diplomacy with North Korea will likely be replaced by a return to a multilateral diplomatic effort at denuclearisation. Like his two predecessors, the Biden-Harris administration has committed to ending the "forever wars" of the Middle

East and replacing them with a small military footprint for counterterrorism purposes (Biden, 2020a).

In addition to these elements of geopolitical continuity, the administration will also emphasise a set of transnational, globalised security challenges, including tackling the global health crisis and the COVID-19 pandemic, climate change, socio-economic inequality, reforming the international trade system, the governance of emerging technologies consistent with liberal values and curbing irregular migration. In addition to the challenges of negotiating common positions with allies and partners, the historical American partisan divide (Figure 1) on these foreign policy priorities is already a significant challenge to the success of Biden’s security policy (Walt, 2019).

A flagship initiative for the Biden administration in its first year in office will be the Summit for Democracy, an initiative meant “to put strengthening democracy back on the global agenda” (Biden, 2020a) and build resilience against the relentless assault from authoritarianism, nationalism, populism and corruption. It is less clear how the new administration will bring this new platform to bear in relation to other strategic priorities, particularly trade, technology and defence, but the effort to integrate these four dimensions into a new strategic approach to multilateral and bilateral partnerships is evident in Washington.

More broadly, Biden’s team will emphasise human rights and democratic principles and shift from a transactional to a more traditionally conditional US pressure on partners. This could take the form of leveraging US strategic relations with challenging allies like Poland, Hungary and Turkey to achieve concessions on respect for the rule of law and human rights (Harvard-DGAP, 2020, 4). However, following the 6 January 2021 storming of the US Capitol by pro-Trump rioters, experts argue: “The power of America’s example will be dimmer than it once was; American arguments will be harder to hear” (Applebaum, 2021). Some have called on President Biden to abandon the idea of an international Summit for Democracy and instead focus inwards on American democratic renewal e.g. (Goldgeier and Jentlesen, 2021).

The first short-term step for the Biden administration is to re-engage the US in the international system and to reaffirm the strength of enduring US alliances and partnerships eroded or undermined by President Trump’s foreign policy through symbolic diplomatic gestures. These will be a priority for the administration in the first three to six months in office, depending on the evolution of the COVID-19 epidemic in the US. American officials recognise this should include high-level visits to major European capitals, to the EU and NATO, rejoining the Paris climate accord, the

Figure 1
Americans divided on US foreign and security challenges (2018-2020)

% who say it should be a top foreign policy priority



Sources: PEW Research Center, 2018-2020; Chicago Council on Global Affairs.

JCPOA and the World Health Organization, joining the COVAX initiative and extending the New START agreement with Russia. Other Biden security priorities will take longer and will be far more challenging to realise. Building an international democratic agreement on a coordinated policy towards China, negotiating a plan to reform the World Trade Organization to reflect a fair and level playing field, agreeing on a common democratic approach to global governance and regulatory and standardisation issues in emerging technologies will take time and require a significant multilateral effort.

Biden’s layered approach: What role does the transatlantic partnership play?

President Biden and his team are strong supporters of the transatlantic partnership, but the new administration will espouse a new and more strategic approach to partnerships and alliances, including in relation to NATO and the EU. Three pillars will structure American efforts in the next four years.

Pillar I: NATO adaptation

The first pillar is to regain trust and reaffirm the unbreakable security and defence ties within NATO. The reason behind this is strategic – the Biden administration correctly regards the North Atlantic alliance as a key tool in confronting and containing aggressive Russian behaviour and Chinese influence. The Alliance is already undergoing a detailed self-reflection process, i.e. NATO 2030, after which Secretary General Stoltenberg will propose that allies develop a new NATO Strategic Concept in early 2021. This represents an opportunity for the US to exercise more prominent NATO leadership right from the start of the new administration. The upcoming 2021 NATO Summit will open diplomatic doors to allow for symbolic gestures of reaffirmation of the American commitment to European security. It will equally be a useful framework for substantive discussions about the future direction of the Alliance on emerging technologies, climate change, China, critical infrastructure protection as well as how to deal with difficult allies that transgress on democratic principles. In this context, the Biden administration could drive a new stage of NATO adaptation beginning in 2021: “As president, I will do more than just restore our historic partnerships; I will lead the effort to reimagine them for the world we face today” (Biden, 2020a).

The NATO 2021 Summit will also offer an excellent opportunity for the Biden administration to lay out a new approach to transatlantic burden-sharing. The Biden administration’s qualitative and quantitative understanding of European contributions to transatlantic burden-sharing is expected to be more flexible and more encompassing than that of the Trump administration but continued American pressure on European investment in defense will remain a US policy staple. According to NATO, since 2014 Europeans have added over €100 billion to defence spending, though experts warn the COVID-19 economic recession could lead to defence budget cuts. While this administration will likely reverse some announced US troop withdrawals from Europe (Deni, 2020, 38), the overall shift in American forward military presence on the continent and towards the Eastern flank (especially the Baltic and Black Seas) is expected to continue. In addition, the US drive towards the accelerated adoption of emerging technologies in defence applications could mean American pressure on European allies to invest in defence innovation efforts unilaterally or collectively and to progress rapidly on military information and data sharing (Soare, 2020a).

Pillar II: Enhanced US-EU cooperation

The Biden administration’s understanding of transatlantic burden-sharing could feature a re-evaluation of the role of

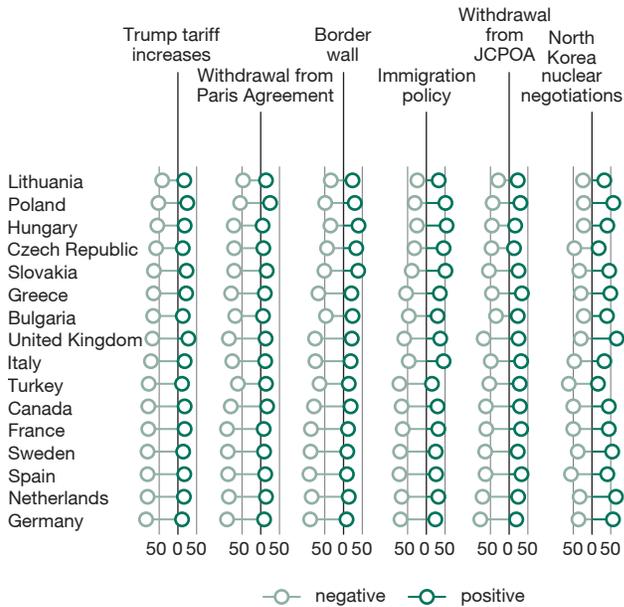
and relations with the EU. Not all members of the Biden administration are uniform in their view of European strategic autonomy and there is still a healthy dose of scepticism about European relations with China, EU defence initiatives, digital taxation and more. The Biden administration will be less confrontational and will cautiously encourage European security efforts, while maintaining the strict conditionality policy around NATO-EU cooperation (Soare, 2020b, 51). Challenging transatlantic differences, like taxation, trade and digital content regulation will entail hard conversations between Washington, Brussels and European capitals before American concerns for fair trade and taxation practices and European aspirations for technological sovereignty and strategic autonomy can be accommodated. Nevertheless, it is noteworthy that members of the administration contend that the US needs to change course and engage with the EU in light of its regulatory powers on priority files like trade, technology, industrial policy, security and climate (Soare, 2020b, 53; Bergmann, 2021).

Remarkably, the European Commission and the EU’s High Representative Josep Borrell have been proactive in shaping a New Transatlantic Agenda that underlines the interest in working closer on trade, labour, climate, science and technology, regulatory matters (digital and carbon taxes, digital services and platforms) and more. Several cooperation mechanisms are under discussion, including the creation of an EU-US Trade and Technology Council, a high-level dialogue on China, a Dedicated Dialogue on Security and Defence, a transatlantic artificial intelligence agreement (European Commission, 2020). While further clarifications are needed, there is great commonality between Biden’s “foreign policy for the middle class” and similar EU interests, potentially providing a basis for a much broader cooperation on security-relevant, albeit not defence specific, areas (CSIS, 2021). Democracy is a common concern and the European Commission endorsed Biden’s Summit of Democracies proposal, but Europeans are still apprehensive about entering a full-fledged ideological competition with China and Russia.

Overlapping security concerns and Biden’s change of course away from unpopular Trump policies (Figure 2) create the prospects of closer EU-US cooperation. A proposed EU-US Summit in the first half of 2021, along with a number of expected high-level US visits to main European capitals will provide ample opportunities for the new US administration to lay out its vision of relations with the EU and articulate differences of opinion on key issues such as China, digital policies, taxation and trade. European capitals will expect the Biden White House to accommodate a sense of shared US-EU leadership in managing global issues like climate, trade, taxation and

Figure 2
European disapproval

rate of approval/disapproval, 2017-2019, %



Notes: Europeans strongly disapprove of the way the US has handled the COVID-19 crisis (85%), of American withdrawal from the Paris Agreement on climate change (75%) and of the imposition of US tariffs on Europe (69%). European majorities also disagree with American policies on immigration and the border wall as well as with the US withdrawal from the Iran nuclear deal.

Sources: PEW Research Center, 2019, 2020; Dalia Research, 2020.

technologies. Early American commitment to embedding the transatlantic partnership at the core of this global effort to manage the forces of international change (Soare, 2020, 5) would be most welcome in Europe.

Pillar III: European and Asian partnerships in US security policy

A third aspect of President Biden’s view of international partnerships is the effort to bring together European and Indo-Pacific partners, like-minded democratic countries that share a concern for the rise of authoritarianism. This effort goes beyond the Summit for Democracy or the US effort to steer NATO towards confronting the Chinese challenge – in Europe – and developing closer cooperation with global partners, including in the Indo-Pacific (Burton, 2020).

The US has encouraged the EU and European states to increase engagement with Asian partners such as Japan, South Korea and Australia, and Europeans are currently developing their common approach to the Indo-Pacific. Given that Washington has long preferred a lim-

ited European role in Indo-Pacific strategic affairs (Bacon, 2020, 94-95), it remains unclear whether the Biden administration will change course and, if so, to what degree European involvement in Indo-Pacific security is possible.

Other differences among the European and American views on how to embed transatlantic relations at the centre of broader multilateral efforts focus on challenging interdependencies closer to home. One such difference is the European view that the EU-US relationship should be a second transatlantic pillar, in addition to NATO (Biscope, 2020), whereas US experts have expressed an interest in a broader format that brings together the US, the EU, Canada, the UK (Harvard-DGAP, 2020) and, possibly, Indo-Pacific partners. The details of such cooperative frameworks are still unclear, though the new US administration will be keen to encourage closer UK cooperation with the EU and European partners in the aftermath of Brexit. At the same time, there are worries that Washington could leverage the common views among Ottawa, London and Washington regarding EU defence, strategic autonomy and technological sovereignty in future negotiations.

Biden’s challenges

It is too early to determine President Biden’s chances of success as many security issues will require far more than a four-year presidential term to solve. In many ways, and perhaps unfairly, this administration’s success will be defined not just by the policies it adopts, but by how it is able to sustainably restore American credibility, decisively re-engage the US in the multilateral rules-based international order and firmly set US foreign and security policy on a new course for the foreseeable future.

This is easier said than done under the current domestic and international circumstances. The president and his team have the advantage of Democratic control of the White House and Congress for at least the next two years. This widens the president’s freedom of manoeuvre – at least temporarily. On the other hand, both the Biden administration and the Democratic Party will be hard pressed to take effective measures to ensure Trumpism does not return in the next two to four years – a significant concern of European and Asian partners.

President Biden has called on Congress to focus on social and economic recovery measures rather than the historical second impeachment of President Trump. The challenges of managing the COVID-19 epidemic in the US, where the death rate on 14 January reached an eye-widening 42,000 deaths in one day, and putting the US

economy back on track, even with the implementation of the new \$1.9 trillion “American Rescue Plan” (Smialek, 2021), are huge and will likely command this administration’s strategic attention for the better part of 2021.

Political polarisation in the US has reached worrying levels and culminated in the storming of the US Capitol by a group of rioters who attempted to halt the congressional confirmation of the election of Joe Biden as the next US president (Baker, 2021). The intensity and frequency of the domestic challenges to the American rule of law and democratic institutions are unprecedented in the last half a century or more – a cause for concern in Europe (Schemm et al., 2021). Several sources warn this social unrest is just the beginning and that more violent protests driven by social and political polarisation may follow (Sargent, 2021). Convincing the American middle class of the virtues of international liberal institutionalism poses significant challenges (Ahmet et al, 2020). Moreover, it will be equally challenging for Biden to accommodate the progressive wing of the Democratic Party’s strong preferences on domestic, foreign and security policy.

The events of 6 January in Washington drew considerable internal and international criticism over the legitimacy of the US to promote a democratic security agenda seeing as its own house was not in order. “America has to be a functioning democracy before it can be an exemplary one” (Goldberg, 2020) and “ambitious foreign-policy goals are completely out of step with the realities of the country’s domestic political and economic dysfunction” (Ashford, 2021), the argument goes. American experts are not wrong in saying that American democracy is tested at home, but democracy is now tested everywhere. If the age of American leadership based on the power of its democratic example is over, then Washington needs to adapt and rethink its leadership in a world of post-US dominance. There is just as much merit in America leading through the example of its democracy’s resilience and ability to self-correct, regardless of how messy it is now. The power of this American example – and the US opportunity to still lead the world towards democratic security and resilience – should not be squandered when virtually every democracy in the international system is facing similarly strong illiberal forces. However, steering US security policy firmly towards democratic security and away from democratic exceptionalism will be essential to President Biden’s success, particularly in relation to Europe.

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Claudia Kemfert

A Real Chance for the Transatlantic Partnership on Climate Policy

The future is back in the US. “We are back” indeed represents the return of the US to the world stage, and this applies not only, but most importantly, to climate. The US re-entry into the Paris climate agreement is a new page in climate policy. It is not only important symbolically. Global emissions must fall quickly, as we are running out of time. The US is the world’s main greenhouse gas emitter. With the change of administrations, the world can breathe a sigh of relief. President Biden’s plans are ambitious and promising and, if realised, could bring about real change. It is high time: America’s reputation as a global climate protector is abysmal. For the second time, the US has helped to negotiate a climate agreement, only to withdraw from it: first from the Kyoto Protocol in 2001, then from the Paris Agreement in 2020. From now on, it can only get better. It must get better.

Above all, outgoing President Donald Trump represents the past: he wanted to save coal, build oil pipelines and cancel the climate treaty. His energy policy, a throwback to ways of 30 years ago, has largely denied the future and ignored science. But his plan did not quite work: Despite the Trump administration’s policies, emissions are down as fossil natural gas has replaced coal. That is not a true energy transition to full renewables, but it is still better than nothing. Biden, on the other hand, now stands for the

future: He wants to strengthen renewables, support the climate treaty and make the energy world fit for the future where digitalisation and decentralisation are important. The stakes are thus high, very high.

For one thing, the race for technologies has already begun. Coal technology, like nuclear technology, is a thing of the past. Just as we no longer use coal-fired heating systems to keep our homes warm, we will no longer need coal-fired power plants to generate electricity in the future. The old energy world does not fit into the new energy world transition. In fact, the old energy systems were based on centralised and inflexible coal and nuclear power plants that cannot offer the newly demanded flexibility of the power system. Moreover, coal-fired power plants produce greenhouse gases, and coal mining causes enormous environmental and health damage, especially in the US. Nuclear energy comes at a considerable cost as well, not only in the construction and dismantling of the plants, but especially in the disposal of the nuclear waste that has to be stored over thousands of years. Even in the US, there is no final repository for the nuclear waste. The new energy world is more decentralised, small-scale, networked and intelligent, and it is based on the intelligent networking of volatile renewable energies, storage and energy saving (Jacobsen, 2020).

The world is at a turning point

While we stare down the face of irreversible climate change, we can see that climate protection is finally coming to the fore. In the midst of the health crisis, we are being forced to act quickly to respond to the next imminent threat: the climate crisis. The response is coming hard and fast: heads of state and governments of the European Union are working to reduce greenhouse gas emissions by 55% below the 1990 level by 2030 (Frangoul,

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Open Access funding provided by ZBW – Leibniz Information Centre for Economics.

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2020). President Biden wants to arrange for the United States to rejoin the Paris Accord on Wednesday, 20 January, the first day of his new administration. The agreement provides that the US will reduce its carbon emissions by 25% below 2005 levels by 2025. At the same time, Chinese President Xi Jinping announced at a virtual climate summit that China would reduce its carbon emissions by 65% below 2005 levels by 2030, with renewable energy sources accounting for 25% of energy consumption by then.

Will this be enough to avert the climate crisis? Unfortunately, the answer is no. Although it is welcome news that action is now being taken and that climate protection has finally been placed at the top of the political agenda where it belongs, neither the level of ambition nor the level of implementation is sufficient to achieve the Paris climate resolutions. Furthermore, the Paris climate resolutions themselves are not ambitious enough to limit global warming to 1.5 and well below two degrees Celsius. This would require an 80% reduction in emissions by 2030 and a complete refusal of fossil fuels.

What our planet needs is a rapid transition to a 100% clean, renewable energy supply and to the storage of energy for everything, including non-energy emissions. This transition includes the electrification of almost everything – vehicles, heating and cooking in buildings, industrial processes – and the full supply of electricity. Because of the efficiency of electricity compared to fossil and nuclear energy, such electrification can reduce primary energy demand by more than 50%, but the demand for electricity will increase significantly. Electricity is the new oil. Clean, renewable energy sources include onshore and offshore wind energy, solar photovoltaics on rooftops and in power plants, concentrated solar energy, solar thermal energy for heat generation, geothermal electricity and heat, existing hydropower, tidal power and wave power. These types of electricity and heat are all provided by wind, hydro and solar energy sources. Storage includes electricity, heat, cooling and environmentally friendly, sustainable hydrogen storage. Plans have been developed for almost every country in the world to move to 100% renewable energy and storage at low cost.

The world's efforts to avert a climate crisis have not come quickly enough. As we are at least 25 years behind, we must act now. A full supply of renewable energies can be implemented quickly. During the 15 years required for the planning and construction of expensive nuclear power plants or power plants with CO₂ capture and storage, we could create a full supply of renewable energies instead (Child et al., 2019).

The US must present a more ambitious climate plan

The new energy world is characterised by more decentralisation, flexibility and intelligence. Above all, it is more democratic as everyone participates in the energy transition by producing energy through solar plants or their own combined heat and power plants, providing battery storage via the electric car by means of a 'blockchain', thereby shaping the energy market in a decentralised manner themselves. California is leading the way: it builds the world's best electric cars, introduces battery storage, and in the future it also wants to offer solar tiles for the roof of the house. This is how energy transition works democratically. The USA has a choice between the new and the old, between the past and the future and between totalitarianism and narrow-mindedness or the future, intelligence, democracy and participation.

The new US envoy for climate, John Kerry, has a special role to play here. He is the right man for this major task. The Democratic US Senator from Massachusetts travelled with former Vice President Al Gore to the UN Earth Summit in Rio in 1992. In 2009, he failed to push through a CO₂ pricing bill in the United States. Nevertheless, he is ambitious and advocates for real climate protection. While the new administration must first address the escalating coronavirus crisis in the US and stabilise the economy, the degree of how 'green' the aid packages will be remains to be seen. Outgoing President Trump has systematically hollowed out the Environmental Protection Agency and the US State Department, responsible for climate policy, from within. This must be reversed as soon as possible.

At the climate conference in Paris, Kerry spent a week working hard in front of and behind the scenes. As Trump led the US out of the Paris Agreement, Kerry founded World War Zero in early 2019, with politicians, military leaders and actors speaking out publicly on climate policy. Kerry also chose the martial rhetoric of tackling the climate problem "like the moon landing or World War II" when he was introduced as climate envoy.

The US must quickly present a new and more ambitious climate plan. To begin with, the US could settle its bills and pay the \$2 billion it still owes to the Green Climate Fund, for example. Development groups and poor countries expect that the US will not only meet its financial obligations, but hopefully also assist with the offsetting of climate damage in poor countries or cancelling debt. This is further enabled by the 5 January election results in Georgia and the resulting Democratic majority in the Senate. The goals of the Biden administration are big. With investments of \$2 trillion, it wants to promote green ener-

gies, renovate six million buildings and massively expand public transportation in cities. The administration seeks to generate US electricity without CO₂ by 2035 and, like the EU, has set a course to be climate-neutral by 2050 (Hainsch et al., 2020).

The more ambitious the US is in climate protection at home, the more credible it is internationally. Together with China's promise of carbon neutrality by 2060 and the plans of the EU, Japan and South Korea to be carbon neutral by 2050, we are approaching a tipping point that puts the 1.5 degree Celsius target from the Paris Agreement within reach.

This is precisely why it is so important to set political decisions and framework conditions in such a way that the goals of a full supply of renewable energies can be achieved. At home, the US should do everything it can to expand renewable energy as quickly as possible. But this also means saying goodbye to the lobbyists of the past and letting the lobbyists of the future take the helm, at least putting them at the decision-making table. In Europe, too, valuable years have been lost during which coal was ramped up rather than cut back, and the sustainable transformation of transport has been delayed.

EU-US cooperation to achieve climate goals

EU members are also making changes. Germany, for example, has decided to phase out nuclear energy by 2022 and will probably phase out coal by 2038 – most likely earlier. A full supply of renewable energies can be achieved by then if the roadmap is set today (Hainsch et al., 2020).

The challenge for many at present is that a business model that sustains the status quo under the guise of 'climate neutrality' is taking shape. Two recent examples from Europe illustrate the absurdity of current policy related to natural gas.

- Europe is in the process of constructing the Nord Stream 2 natural gas pipeline from Russia to Germany (Holz and Kemfert, 2020). This contradicts all mutual objectives and is economically and ecologically nonsensical; however, it was agreed upon as a concession to special interest groups within the framework of 'climate neutrality'.
- Recently, EU policymakers have been raving about blue hydrogen, in which the CO₂ from hydrogen production using natural gas is captured and stored. Such technologies are often promised by companies in the oil and gas industry as "the miracle weapon for achieving climate neutrality", for which they request generous state subsidies.

World leaders need to stop letting fossil fuel and nuclear business models continue under the guise of 'climate neutrality' and other monikers. There are only advantages to a rapid transition to real clean, renewable energy and storage (Ram et al., 2017). Germany should build alliances for a full supply of renewable energies and pursue this path together throughout Europe and with the US.

With the EU Green Deal, Europe is setting the course for real climate protection and the reduction of greenhouse gases. Under the incoming Biden administration, the US is willing to do more for real climate protection, not only nationally but also internationally. The opportunity to enact real change is better than it has been in a long time. Now is finally time to make it a reality.

The new transatlantic partnership can be the cornerstone of this change: real climate protection without false truths and hidden smoke bombs, but a shift to a full supply of renewable energies (Oei et al., 2020). The EU must work together with the USA to ensure that climate protection is a joint priority using the full power of both parties. The result will be enormous economic opportunities for both sides. Instead of sanctions and threats, Europe and the USA jointly need to focus on partnership and cooperation. The policies of the Trump administration were a shock to the system, and perhaps a necessary one to awaken and motivate climate activists and policymakers alike. We have seen how far we can fall and we never want to go back to that place again. We have been reminded of the importance of mutual respect and cooperation and its absolute necessity to achieving common goals.

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Transatlantic Trade Dispute: Solution for Airbus-Boeing Under Biden?

Shortly after the US election, the EU announced it would impose countervailing measures on up to \$4 billion worth of US aircraft and agricultural products following the World Trade Organization (WTO) arbitration ruling on 13 October 2020 in the Airbus-Boeing dispute against the US. This added another chapter to the 17-year tit-for-tat battle at the WTO. The US had already imposed counter-measures on approximately \$7.5 billion of EU exports in late 2019, making this the biggest dispute in the history of the WTO. While hopefully the new US administration signifies a turning point in US-EU trade relations as well as multilateralism and WTO reform, it cannot be expected to turn the clock back four years. Europe, the US and the world have changed tremendously and Trumpism is likely to remain. The chances for a negotiated solution between the US and EU have increased, but it will not be as easy as some in Europe might hope.

The 1992 US-EU Agreement on Trade in Large Civil Aircraft

To better understand the current situation, it is crucial to understand the origins of this dispute, which dates back to the inception of Airbus in 1970 as a European aviation consortium by France, Germany, Spain and the UK. Government support for aircraft manufacturers first emerged as a contentious issue between Europe and the US in 1988 when Airbus was beginning to eat into Boeing's market with its A320 single-aisle jet – the aircraft type which accounts for almost three-quarters of all planes sold. Subsequent proceedings at the WTO's predecessor General Agreement on Tariffs and Trade (GATT) resulted in a bilateral agreement in 1992 between the US and the EU¹ on Trade in Large Civil Aircraft (TLCA), which regulated the permitted levels of support for the American and European producers of wide-body civil aircraft (Wittig, 2010).

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1 European Communities (EC) at the time.

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Addressing European measures, direct government support was fixed to a maximum of 33% of total development costs, and loans had to be provided with an interest rate covering at least the government's loan costs. Production subsidies were prohibited. Addressing US support, indirect state aid was limited to a maximum of 3% of the commercial aircraft industry's annual turnover, or to a maximum of 4% of each company's turnover in civil aviation. A precise definition of indirect aid, however, was never agreed upon.

In the autumn of 2004, trade representatives from the EU and the US engaged in negotiations in an attempt to modify the agreement, but those negotiations failed (Carbaugh and Olienyk, 2007). Thereupon, the US unilaterally withdrew from the TLCA initiating this 17-year saga by filing a suit at the WTO. This occurred at the same time that Airbus launched the A380 and A350 projects and Boeing was about to lose its leading position in the market for airplanes with more than 100 seats. In 2003, Airbus had delivered more aircraft than Boeing for the first time (Figure 1).

The fierce battle for this market is not surprising, as global airline traffic was forecasted to more than double over a 20-year period, leading to a demand for up to 25,000 commercial aircraft representing a market value of around \$2 trillion at the time (Boeing, 2004).² After the US realised that its expectations of stabilising market shares with the TLCA had been off base, its withdrawal from the agreement in 2004 came as no surprise.

The Airbus-Boeing disputes at the WTO

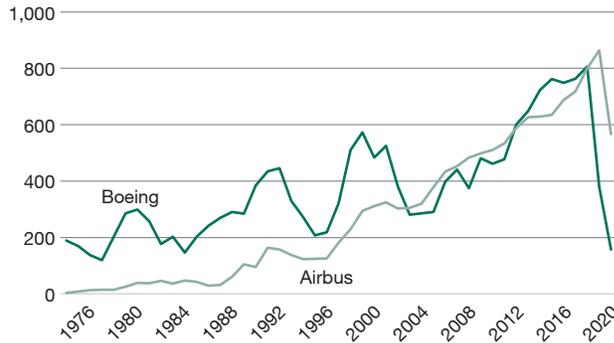
The tit-for-tat began with the US requesting WTO proceedings against the EU on 6 October 2004 (DS 316). On the same day, the EU followed suit and brought a claim against the US (DS 317, later DS 353).

In its filing, the EU claimed that Boeing had received over \$19.1 billion in illegal subsidies from state, local and federal sources. The US in particular contested the so-called launch aid of approximately \$15 billion granted to Airbus by its consortium states. Launch aid³ consists of repay-

2 The market potential 2004-2023 was estimated by Boeing to be 25,000 new commercial airplanes worth around \$2.0 trillion (in 2003 US dollars).

3 Launch aid was the term used by the US, the term member state financing was used in Europe. In this paper, only the term launch aid will be used.

Figure 1
Total aircraft deliveries by manufacturer (1974-2020)



Note: The sharp drop in Boeing deliveries in 2019 is due to the grounding orders of Boeing's 737 Max. In March 2019, airworthiness certificates for the 737 Max had been withdrawn around the globe following two crashes. The 737 accounted for 72% of airplanes delivered by Boeing in 2018.

Sources: Airbus Summary Results, 1989-2018; Airbus annual reports; Boeing Orders and Delivery Database.

able, low-interest rate loans, which were structured according to the provisions of the bilateral TLCA of 1992. However, the TLCA was not applicable anymore due to the US' withdrawal.⁴ Therefore, both parties claimed vio-

4 See, e.g. the WTO AB report of 18 May 2011 for 'European Communities – Measures Affecting Trade in Large Civil Aircraft', WT/DS316/AB/R, p. 617.

lations of the WTO Agreement on Subsidies and Countervailing Measures (SCM) and of the GATT 1994.

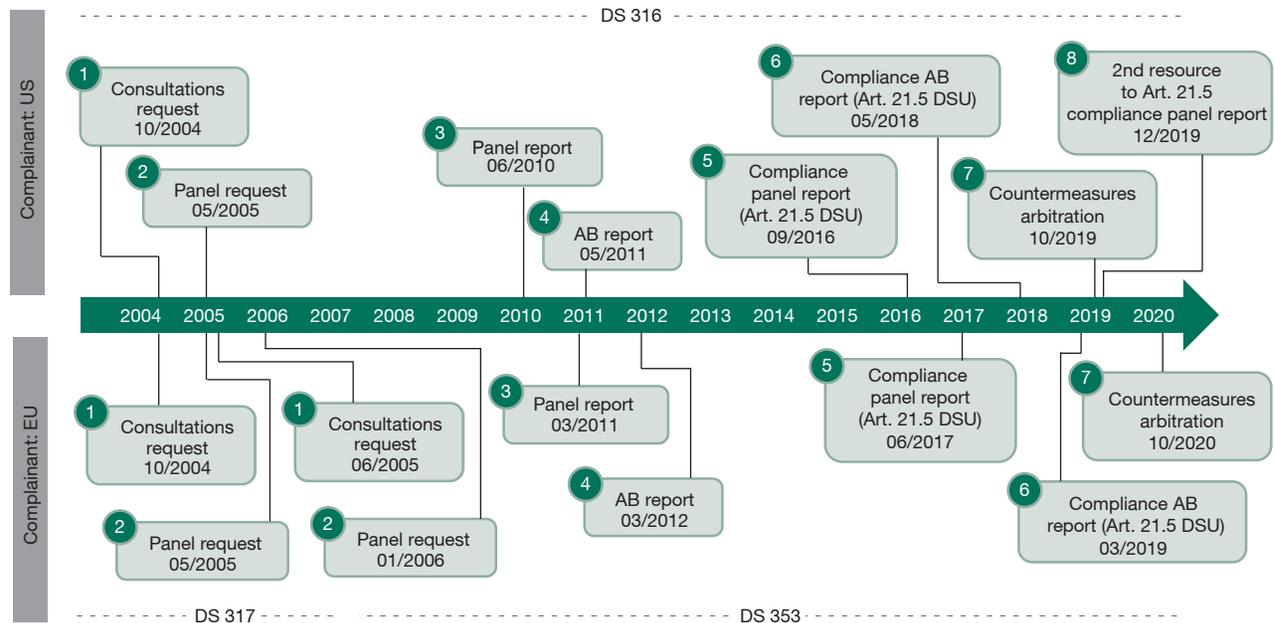
Both disputes were heard in parallel by different WTO Panels (Figure 2). As these became the two largest disputes in WTO-history, the regular timelines for panel and Appellate Body (AB) reports could not be met. The WTO issued the panel report in the Airbus case five years later, in June 2010, and in the Boeing case in March 2011. The decisions on the respective appeals were also nine to ten months apart: The AB report in the Airbus dispute was issued in May 2011, the Boeing report in March 2012.

WTO findings in the Airbus dispute

WTO Panels engage in fact finding and review the factual as well legal aspects of the case, whereas the WTO AB only reviews issues of law and legal interpretations developed by the panel. The AB in the Airbus dispute (DS 316) reversed some of the key findings of the panel, notably that launch aid would constitute a prohibited export subsidy – the AB decided that launch aid falls into the category of actionable subsidies.⁵ This is rather central because export subsidies are per se prohibited and have to be re-

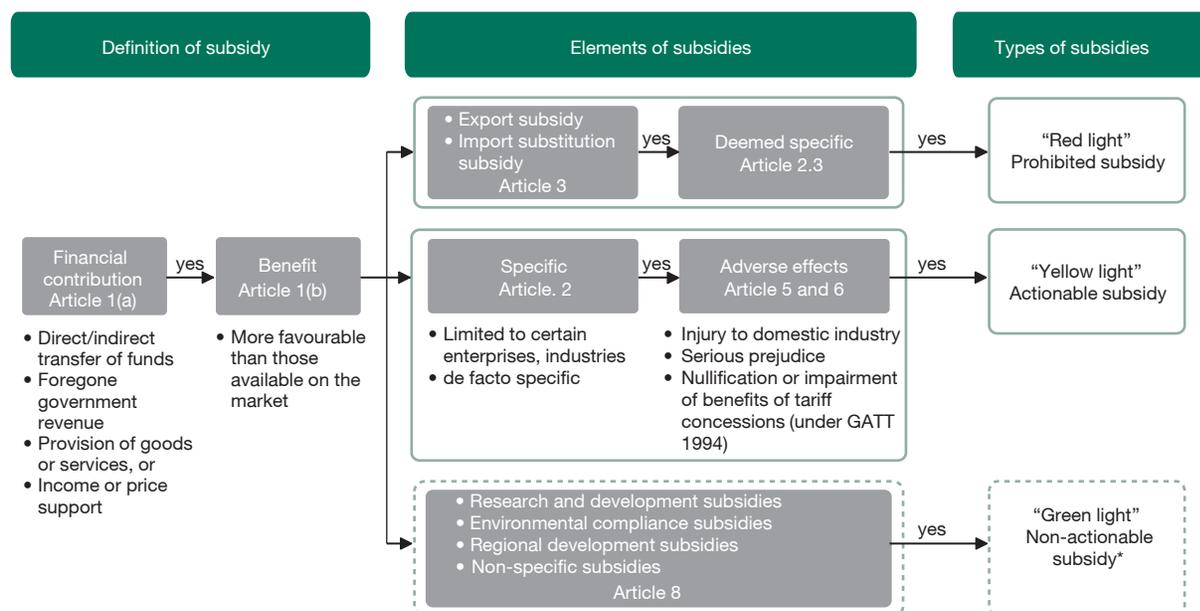
5 WT/DS316/AB/R, p. 609.

Figure 2
Timeline of the parallel WTO proceedings



Source: Author's own illustration; data based on WTO Dispute Settlement portal.

Figure 3
Overview on the WTO Agreement on Subsidies and Countervailing Measures



Note: *The provision on non-actionable subsidies expired in 2000.

Source: WTO SCM Agreement.

moved, whereas specific subsidies are only “actionable” with much softer remedies.

In the WTO SCM Agreement, there are three categories of subsidies: prohibited, actionable and non-actionable subsidies.⁶ As shown in Figure 3, in general, a financial contribution has to be proven as well as a benefit for the subsidy recipient, i.e. more favourable conditions than available on the market. For actionable subsidies, it has to be proven that they are (a) specific (e.g. enterprise or industry-specific, or de facto specific), and (b) cause adverse effects (e.g. an injury to a domestic industry or serious prejudice to a WTO member state).

There were five areas that were mainly contested by the US. Subsidies allegedly granted by the EU and certain member states: launch aid contracts, loans by the European Investment Bank, infrastructure-related measures, corporate restructuring measures (debt forgiveness, equity infusions and grants), and research and development funding (see Table 1).

The AB reversed the panel’s finding that the A380 launch aid qualified as prohibited export subsidies.⁷ However, the AB upheld the finding of the panel that each instance of launch aid is a specific subsidy. Also, almost all infrastructure measures as well as German and French restructuring measures were found to be specific subsidies. The contested research grants were found to be specific subsidies, but not found to cause adverse effects or to constitute serious prejudice to the US.

The AB upheld the panel’s finding, however, that serious prejudice to the US’ interests⁸ was caused by specific subsidies such as the launch aid measures, certain infrastructure measures and equity infusions (Wittig, 2012; Kinestra, 2012).⁹ The remedy for such actionable subsidies is that the member state “shall take appropriate steps to remove the adverse effects or shall withdraw the subsidy”¹⁰ – which the AB requested from the EU.¹¹

It is important to note that neither the initial panel nor the AB quantified the specific subsidies or the adverse ef-

6 Non-actionable subsidies expired in 2000 and have not been renewed since.

7 WT/DS316/AB/R, p. 479, 609-610, para. 1414 (j).

8 Within the meaning of Article 5(c) SCM.

9 WT/DS316/AB/R, p. 594, 605.

10 Article 7.8 SCM.

11 WT/DS316/AB/R, para. 1416.

Table 1
WTO Panel and Appellate Body (AB) findings in the Airbus case

Subsidy	Description	Panel / AB decision
Launch aid (LA) / Member state financing	<ul style="list-style-type: none"> • France, Germany, Spain and the UK granted loans for the development and launch of new aircraft models in accordance with the TLCA • In alignment with the bilateral TLCA of 1992, government support was fixed to a maximum of 33% of the total development costs, and the loans had to be provided with an interest rate at least covering the loan costs of the government, and for a maximum of 17 years 	<ul style="list-style-type: none"> • The AB reversed the panel's finding that A380 LA measures qualified as prohibited export subsidies • However, the AB upheld the panel's finding that each instance of LA is a specific subsidy • The AB upheld, although narrower in scope, that LA caused serious prejudice
European Investment Bank (EIB) loans	<ul style="list-style-type: none"> • Through partial funding of investment projects (up to 50% of the purchase price), EIB funded the renewal of passenger aircraft fleets, which was usually accompanied by capacity expansions • In 2000-06, some 61% of EIB aircraft acquisitions financed were Airbus planes and the remainder from other manufacturers (24% Boeing) 	<ul style="list-style-type: none"> • The panel found that none of these subsidies were specific under Article 2 SCM
Infrastructure grants	<ul style="list-style-type: none"> • The provision of certain infrastructures, e.g. the Mühlenberger Loch industrial site in Hamburg, the extension of the airport runway in Bremen and the Aéroconstellation industrial site in Toulouse • The disbursement of certain infrastructure-related grants by various regional authorities in the EU 	<ul style="list-style-type: none"> • The AB reduced the number of infrastructure measures constituting specific subsidies, but e.g. the Mühlenberger Loch industrial site in Hamburg was still considered a specific subsidy causing serious prejudice
Corporate restructuring measures	<ul style="list-style-type: none"> • In the 1990s, the German and French government supported the restructuring of the respective national consortium companies, such as Deutsche Airbus, MBB, Aérospatiale, Dassault Aviation etc., e.g. in 1989 with a KfW capital contribution into Deutsche Airbus and its 1992 transfer of shares 	<ul style="list-style-type: none"> • The AB reduced the number of corporate restructuring measures constituting specific subsidies: e.g. the French government's transfer of its 45.76% stake in Dassault Aviation to Aérospatiale is no longer considered a specific subsidy
Research funding	<ul style="list-style-type: none"> • The EU pursues framework programmes for research and technology development which serve mostly to subsidise technologies at the pre-competitive stage • Also Airbus Consortium States provided research funding, e.g. through the German aviation research programme (LuFo) 	<ul style="list-style-type: none"> • The framework programmes and member states' grants were found to be specific subsidies, but not to cause adverse effects or to constitute serious prejudice

Source: Author's own illustration; data based on WTO Dispute Settlement portal.

facts for the US.¹² Overall, it can be summarised that the panel report already held several positive findings for the EU, but the AB report improved its position significantly (Chianale, 2013, 328).

WTO findings in the Boeing dispute

The twin case against the US ran in parallel to the case against the EU. The decisions in the US dispute were lagging 9 to 12 months behind the EU case (see Figure 2) because the EU had requested a new proceeding in June 2005 (DS 353) with a broader scope than the original case (DS 317).

The panel report found that Boeing¹³ had received prohibited and actionable subsidies from various sources:

1. the US Government through prohibited "Foreign Sales Corporation" (FSC) export subsidies,

12 For example, the AB did not quantify the benefit from the launch aid granted to Airbus, see WT/DS316/AB/R, p. 608; and Wittig (2012, 25).

13 In this paper, "Boeing" stands for The Boeing Company and the McDonnell Douglas Corporation prior to its merger with Boeing – as applied in the WTO Panel Report.

2. NASA and the US Department of Defence through research and development programmes and general support,
3. the States of Washington, Kansas and Illinois through tax breaks and other programmes.¹⁴

Although the WTO Panel did not uphold all claims by the EU, the panel estimated the total amount of specific subsidies received by Boeing between 1989 and 2006 to have been at least \$5.3 billion (see Table 2).

The panel found that the FSC-related subsidies provided to Boeing constituted prohibited export subsidies.¹⁵ The finding was not appealed by the US, as it had already lost previous disputes on FSC.

Similar to the panel, the AB found that the measures by NASA and the Defence Department had enabled Boeing

14 WTO Panel Report: United States – Measures Affecting Trade in Large Civil Aircraft (DS 353), WT/DS353/R, p. 584.

15 Pursuant to Article 3.1(a) SCM. See WTO dispute DS108, US – Tax Treatment for 'Foreign Sales Corporations' and following Article 21.5 DSU proceedings.

Table 2
US subsidies found by the WTO Panel (DS 353)

Government or granting authority	Measures found to be specific subsidies by the WTO Panel	Subsidy amount
US Government	<ul style="list-style-type: none"> Tax exemptions and tax exclusions provided under Foreign Sales Corporation legislation and Extra-territorial Income Exclusion Act, including the transition and grandfather provisions 	\$2.1 billion
NASA	<ul style="list-style-type: none"> Payments made to Boeing pursuant to procurement contracts entered into under eight aeronautics research and development programmes Access to government facilities, equipment and employees provided to Boeing pursuant to procurement contracts and Space Act Agreements 	\$2.6 billion
US Department of Defence	<ul style="list-style-type: none"> Payments made pursuant to assistance instruments entered into under 23 Research, Development, Test and Evaluation (RDT&E) programmes Access to government facilities provided to Boeing pursuant to assistance instruments entered into under the RDT&E programmes 	Not quantified by WTO (est. \$0.3-\$2.4 billion)
State of Kansas (and municipalities therein)	<ul style="list-style-type: none"> Property and sales tax abatements provided to Boeing pursuant to Industrial Revenue Bonds issued by the State of Kansas and municipalities therein 	\$0.48 billion
State of Illinois (and municipalities therein)	<ul style="list-style-type: none"> Reimbursement of a portion of Boeing's relocation expenses 15-year tax credits and abatement of property taxes Payment to retire the lease of the previous tenant of Boeing's new headquarters building 	\$0.01 billion
State of Washington (and municipalities therein)	<ul style="list-style-type: none"> Business and Occupation (B&O) tax reduction provided for in Washington House Bill 2294 (HB 2294), as well as City of Everett B&O tax reduction Tax credits for preproduction development, software, hardware and property taxes (HB 2294) Workforce development programme and employment resource centre 	\$0.08 billion (future benefits not included)
Total of at least \$5.3 billion		

Source: WTO Panel Report DS 353, WT/DS353/R, p. 584.

to launch its technologically advanced 787 in 2004,¹⁶ and agreed with the panel's statement that the

ability to define and manage the complex interaction of design processes, organization and tools so as to enable the robust development and manufacturing of an aircraft at minimum time and cost [...] is a challenge that Boeing can meet thanks in large part to NASA and USDOD funding.¹⁷

Furthermore, the AB found that these measures caused serious prejudice – in particular, a significant loss in sales for Airbus in several markets,¹⁸ a threat of displacement and impedance,¹⁹ and significant price suppression with respect to the 200-300 seat LCA market.²⁰

The tax benefits provided to Boeing were found to cause serious prejudice, albeit limited by the AB to significant lost sales in the 100-200 seat LCA market.²¹ With respect to the tax benefits, it is important to note that only benefits up until 2006 were included in the panel's estimate

of around \$500 million. The EU estimated the value of the Washington State subsidies alone to be at least \$3.56 billion from 2004 to 2024.²²

In terms of remedies for the FSC subsidies, which were prohibited, the panel refrained from making any new recommendations under Article 4.7 SCM. The recommendation to withdraw the prohibited measures without delay remained operative from prior FSC-cases, which the AB upheld.²³ The AB also upheld the panel's recommendation pursuant to Article 7.8 SCM that the US should take appropriate steps to remove the adverse effects of the other actionable subsidies found or to withdraw the subsidies.²⁴

With a closer look at those twin disputes, it becomes apparent that the AB went further in the Boeing dispute in its findings than the panel. In contrast, the AB reversed substantial findings of the panel in the Airbus dispute (Kaienburg, 2014, 144).

16 WT/DS353/AB/R, para. 1350(d)(i)(A)(1).

17 WT/DS353/AB/R, para. 1350(d)(i)(A)(2).

18 Namely, Australia, Iceland, Kenya and Ethiopia. See WT/DS353/AB/R, para. 1350(d)(i)(A)(4).

19 In this instance in Australia, see WT/DS353/AB/R, para. 1350(d)(i)(A)(5).

20 WT/DS353/AB/R, para. 1350(d)(i)(A)(6).

21 WT/DS353/AB/R, para. 1349.

22 WT/DS353/R, p. 199.

23 WT/DS353/AB/R, para. 1352, and footnote 2716. US – FSC under Article 4.7 of the SCM Agreement continues to be 'operative', referring to the US – FSC (Article 21.5 – EC II) panel report, para. 8.2; and to AB Report, US – FSC (Article 21.5 – EC II).

24 WT/DS353/AB/R, para. 1352.

Enforcement at the WTO

Some authors have argued that the WTO was not the right forum to address this transatlantic trade dispute in the first place (e.g. Kaienburg, 2014, 145). But the WTO actually managed handling two parallel cases of this magnitude fairly well. However, a systemic weakness also became apparent in these disputes – the panel/AB “recommends that the [respondent] takes appropriate steps to remove the adverse effects found to have been caused by its use of subsidies, or to withdraw those subsidies”.²⁵

One of the major drawbacks of the WTO dispute settlement system – at least compared to national legal systems – constitutes the fact that sanctions, if any, are never retroactive. Only if a challenged action remains in place after an adverse panel ruling, the WTO Dispute Settlement Body (DSB) may allow the aggrieved party to withdraw concessions.²⁶ According to Article 22.4 DSU, the suspension of concessions shall be substantially equivalent to the ongoing harm suffered from the violation (Wolfrum et al., 2006; Pauwelyn, 2010). Furthermore, Article 20 SCM implicitly states that the WTO system does not allow for retroactive or even punitive damage compensation in subsidies cases.²⁷

As these proactive countervailing measures may only be imposed after a “reasonable period of time”, which is usually up to 15 months pursuant to Article 21.3 DSU, the defending parties have a strong incentive to delay panel proceedings.²⁸ The violation and the associated benefits can basically remain in place unhampered for the duration of the proceedings. Evidence of this – besides the length of the disputes of one to four years – is the relatively high appeal rate of 66% (WTO, 2020, 195). In addition to political economy reasons to fight hard for the challenged measures, it allows for the further delay of the implementation of remedies such as countervailing duties.

Eight years of compliance battle at the WTO

The same thing happened in the Airbus-Boeing saga, where the fierce legal battle continued for another eight years (see Figure 2). In the Airbus case, the US requested consulta-

tions regarding compliance pursuant to Article 21.5 DSU – just days after the EU had notified the DSB that it had taken appropriate steps to bring its measures into conformity with its WTO obligations, and to comply with the AB’s recommendations.²⁹ The EU raised serious systemic concerns that – despite its compliance report – the US had already made a request for the authorisation of countermeasures,³⁰ along with its request for compliance consultations.

In April 2012, an Art 21.5 DSU compliance panel was established in the Airbus case. Given the complexity of the dispute, the panel report was postponed year by year until it was circulated in September 2016. The panel concluded that the US failed to demonstrate that the A380 and A350 launch aid constituted prohibited export subsidies, but found that the EU had failed to implement recommendations of the DSB. In turn, the EU and US appealed the compliance panel report.

In its May 2018 decision, the AB found that the subsidies in the single-aisle market had expired before 1 December 2011 – the deadline for the EU to comply with the recommendations of the original dispute.³¹ However, the AB upheld that subsidies existed in the post-implementation period with respect to the twin-aisle market, i.e. finding that the EU did not comply with the ruling in that market segment. Subsequently, the US requested that the arbitrator resume its work to authorise countermeasures.³² In turn, the EU requested the establishment of a second compliance panel, which issued its report in December 2019.³³ The EU appealed due to similar findings; the AB panel is currently pending.

The Boeing dispute saw a similar battle over compliance with the initial ruling. The EU requested compliance consultations and the matter was referred to the original panel in October 2012.³⁴ The compliance report of 2017 was subsequently appealed by both sides until the final AB compliance report was released in March 2019. The AB found, *inter alia*, that the US had not withdrawn FSC/ETI subsidies for Boeing in the post-implementation period.³⁵ Furthermore, the AB agreed that Boeing was able to use the benefits of the Washington State business and

25 For example, the United States in DS 353. See WT/DS353/AB/R, para. 1352.

26 The defendant WTO member has a ‘reasonable period of time’ – usually up to 15 months – to bring its policies into conformity with its WTO obligations after it has been found to violate them, see Article 21.3 (c) DSU.

27 Although it is discussed in the literature whether in the case *Australia – Automotive Leather*, DS 126, some sort of retroactivity has been introduced. See, e.g. Matsushita et al. (2006, 185-187) or Wolfrum et al. (2009).

28 The WTO AB seems to enjoy an extensive discretion on this. See Matsushita et al. (2006); for a discussion of “reasonable period of time”, see also Davey (2005).

29 See WTO summary of the dispute (DS 316).

30 Namely the suspension of concessions pursuant to Article 22.2 DSU.

31 WT/DS316/AB/RW, p. 267.

32 The initial request for the authorisation under Article 22 DSU was made in December 2011, but due to the Article 21.5 DSU compliance panel, the EU and US requested in January 2012 to suspend the Article 22 DSU arbitration proceeding until either party requests their resumption. See WTO summary of the dispute (DS 316).

33 See WT/DS316/ARB, p. 15, and WT/DS316/RW2.

34 See WTO summary of the dispute (DS 353).

35 To the extent that Boeing remained entitled to FSC/ETI tax concessions. See WT/DS353/AB/RW, p. 176.

occupation (B&O) tax rate reductions to lower prices in particularly price-sensitive sales campaigns in the single-aisle LCA market,³⁶ causing significant lost sales, and a threat of impedence.³⁷

In May 2020, the US informed the DSB of its compliance and that the State of Washington had enacted legislation in March 2020 to remove the preferential B&O tax rate for aerospace manufacturing, retailing and wholesaling. The EU objected and requested the DSB arbitrators in June 2020 to authorise countermeasures.³⁸

Largest WTO awards in history

With a combined annual value of around \$11.5 billion, the awards in this transatlantic trade war are the biggest in WTO history (see Figure 4). On 2 October 2019, the US received the right to impose countermeasures on up to \$7.49 billion annually worth of European exports.³⁹ Similarly, the WTO Arbitrators gave the EU permission for countermeasures on US exports of up to \$3.99 billion annually on 13 October 2020.⁴⁰

Shortly after the WTO decision, the US imposed countermeasures on \$7.5 billion of imports from the EU, instituting a 10% tariff on large civil aircraft and a 25% tariff on certain other products, specifically targeting the Airbus consortium states France, Germany, Spain and the UK.⁴¹ This was done on product groups with a high pain point, e.g. French wine and cheese, Scotch whiskey, Spanish olives, German wine and industrial products. The duties on aircrafts were increased from 10% to 15% in March 2020.

Due to the COVID-19 pandemic, the award for the EU had been delayed by several months, weakening the EU's negotiation position as the US measures were already in place. In November 2020, the EU announced it would mirror the US duties and impose a 15% tariff on large civil aircraft, and 25% duties on politically sensitive industries for Trump and his Republican allies in Congress, including US agricultural products, such as ketchup, rum, vodka,

36 The AB also found that the panel "was not required to establish that the per aircraft amount of the subsidies available for these sales campaigns exceeds the differentials in the net prices of Airbus' and Boeing's competing aircraft" (WT/DS353/AB/RW, 179).

37 In relation to five particularly price-sensitive campaigns in the single-aisle market.

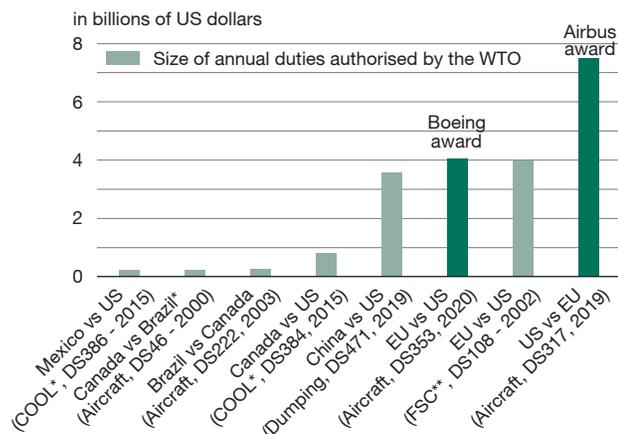
38 See WTO dispute summary (DS 353).

39 The Arbitrators determined the monetary values for impedence and lost sales during the 25-month reference period of December 2011-2013 (which was the same reference period used in the compliance proceedings). See WT/DS353/ARB, p. 121.

40 WT/DS316/ARB, p. 156.

41 USTR Notice of Determination and Action Pursuant to Section 301: Enforcement of U.S. WTO Rights in Large Civil Aircraft Dispute, US Federal Register, Vol. 84, No. 196, notice 54245, 9 October 2019.

Figure 4
Highest WTO arbitration awards



Note: *Certain Country of Origin Labelling Requirements; **Foreign Sales Corporation.

Source: WTO documents WT/DS386/ARB, p. 80; WT/DS46/ARB, p. 27; WT/DS222/ARB, p. 33; WT/DS384/ARB, p. 80; WT/DS471/ARB, p. 67; WT/DS108/ARB, p. 33; WT/DS353/ARB, p. 121; WT/DS316/ARB, p. 156.

nuts, but also tractors, coal and video games (Stearns, 2020).

First steps towards settlement

Throughout the 17-year battle, there had been several attempts made by the EU to find a negotiated solution. For instance, in July 2019 – before the WTO awards were released – the EU submitted a proposal for a new bilateral regime on limiting aircraft subsidies, including a mechanism for transatlantic monitoring and dispute settlement, as well as a proposal on how to better address aviation subsidies in the WTO framework (BDI, 2020). The US never reacted to the proposal, but publicly demanded the repayment of subsidies by Airbus, which the EU refused with reference to WTO law – there is no retroactivity in WTO law.

Of course, the Airbus-Boeing dispute must be examined within the broader context of the transatlantic trading relationship as well, which significantly deteriorated under Trump. For instance, Trump imposed aluminium and steel tariffs due to 'national security' under Section 232 in March 2018.⁴² At the beginning, the US exempted partners such as Canada, Mexico and the EU, but this exemption was not extended. Instead of turning the EU and Canada into allies in his trade fight against China,

42 The US introduced a 25% tariff on steel imports, and a 10% tariff on aluminum in March 2018. See the Executive Order of 8 March 2018, Proclamation 9704 and 9705, US Federal Register, Vol. 83, No. 51, 15 March 2018.

Trump alienated them. The EU and Canada together export seven times as much to the US as China, so the tariffs have a much larger impact on them.⁴³ In turn, the EU started WTO proceedings against the US,⁴⁴ and imposed safeguard measures in alignment with WTO law to offset the negative effects of US tariffs.⁴⁵ Among other measures, President Trump also threatened to impose tariffs on cars, which EU Commission President Juncker prevented during a visit to the White House in July 2018 (European Commission, 2018b).

With respect to the Airbus-Boeing dispute, Trump threatened to “strike back even harder”, potentially raising tariffs to the allowed maximum of 100%, if the EU were to impose tariffs on US products – that was in October 2020 after the WTO released its award of \$4 billion in favour of the EU (Bashuk and Horobin, 2020). That might have been one of the reasons why the EU waited with its decision to actually impose the WTO-permitted countervailing duties until the outcome of the US election was relatively certain – namely on 9 November.

Only after the mirroring of US tariffs by the EU did the US start to engage in somewhat serious negotiations to resolve the Airbus-Boeing dispute. US Trade Representative Robert Lighthizer, EU Trade Commissioner Valdis Dombrovskis and French and German officials were in regular contact in November and December 2020. Dombrovskis even publicly announced that reaching an agreement would still be possible before Trump left office (Stearns and Edwards, 2020). Reasons for the US’ change of attitude – besides the EU’s duties – might have been a personal interest in solving the biggest trade dispute in WTO history before the end of the term, but also Boeing’s current business situation.

Even before the pandemic and its effects on air travel hit, Boeing experienced manufacturing issues and a massive drop in revenues due to the grounding of the 737 Max in March 2019. Plane deliveries fell by 81% from 806 in 2018 to 157 in 2020 (see Figure 1). Also, Boeing experienced massive order cancellations in 2020 with net orders down by 1,026 planes, whereas Airbus proved to be more resilient during the crisis and increased its net orders by 268 (Hemmerdinger, 2021). In addition, Boeing took another financial hit on 7 January 2021 with a \$2.5 billion-

settlement with the US Department of Justice regarding criminal charges that followed the two deadly crashes of the 737 Max. However, this amount was even considered “low” by financial analysts and US Senator Richard Blumenthal called the deal struck during the waning days of the Trump administration a “disgrace” for letting Boeing off the hook too easily (Johnson and Levin, 2021).

The Airbus-Boeing negotiations with the Trump administration came to an end when the US unilaterally extended its tariffs to other product groups on 30 December 2020. The goods affected include aircraft manufacturing parts, e.g. Airbus wings and components, but also certain wines and spirits from France and Germany. Before that, Airbus was still able to deliver planes to its US customers without having to pay the 15% tariff because Airbus produces planes in a plant in Alabama. Boeing does not assemble aircraft in Europe and therefore has no option to avoid the tariffs, which customers such as Ryanair have said they would be unwilling to pay.

Trade priorities of the Biden administration

With the widening of the US measures three weeks before the end of the Trump administration, it falls on Biden to find a solution for the Airbus-Boeing dispute. The tariffs on exports worth \$11.5 billion distort transatlantic trade and hurt consumers as well manufacturers on both sides of the Atlantic. Previous aircraft WTO cases, such as the Canada-Brazil disputes over subsidies for their respective aircraft manufacturers Bombardier and Embraer, should show both sides that a solution needs to be found politically and not in court. The US and the EU have both been found to be violating WTO rules. It is time to end the 17-year trade war, which has taken up substantial resources on both sides.

But the Biden administration will have to deal with a wide range of trade topics. Trump alienated a lot of former US allies with his ‘America First’ approach. Many are looking forward to the US reassuming its leadership role and returning to a more rules-based multilateralist approach. But it will not just be turning back the clock four years – Europe, the US and the world have changed tremendously, and Trumpism is likely to remain. Some of Trump’s rhetoric resonated and public opinion has shifted towards more economic nationalism. Therefore, it is expected that Biden will only partly deviate from the protectionism of the Trump era. There is, for example, a strong lobby for the aluminium and steel tariffs by unions and parts of the Democratic Party. A compromise might be a reduction in tariffs for allies, or to move away from the highly disputed grounds for these tariffs, which were imposed due to ‘national security’ concerns under section 232.

43 In 2017, the EU exported \$12.7 billion to the US, Canada \$7.7 billion, compared to China with \$2.9 billion (Bown, 2018; Long, 2018).

44 The EU requested consultations at the WTO in June 2018, the panel was composed in January 2019. See WTO dispute DS 548, United States – Certain Measures on Steel and Aluminium Products.

45 The EU imposed safeguard duties on approximately €2.4 billion of US exports, strategically targeting ‘iconic’ products such as jeans, Bourbon whisky and motorbikes (see European Commission, 2018).

Similar to the Obama administration, which had to deal with the aftermath of the financial crisis, Biden will have to focus on pressing domestic issues at the beginning of his term, such as fighting the coronavirus pandemic and its consequences and trying to heal the deep divisions within the country. It took Obama two years to address trade issues. Biden, however, is determined to strengthen democratic alliances and to repair relationships with global trading allies. The US has lost significant political capital abroad, e.g. with its withdrawal from TPP and the Paris climate agreement and by blocking the nomination of new WTO AB members.

The AB has not been able to pursue any work since the expiration of the terms of two of the last three remaining judges in December 2020. WTO AB reform was already a contentious issue under the Obama administration, and it remains unclear whether this will be resolved quickly. A first step towards regaining trust would be to find a consensus for a new WTO Director General – a position that has been vacant since last summer due in part to a US blockade. For President Biden, it will be important to regain trust with close allies such as the EU and Japan, and to find a common approach to pressing trade issues, e.g. digital taxes, WTO reform and how to address China and its state-owned enterprises, forced technology transfer and market distortions. Progress is also vital within the Trilateral Initiative of the US, EU and Japan regarding industrial subsidisation.

It will take time for Biden's USTR nominee Katherine Tai to be approved and for her team to be fully operational. Optimists believe the Airbus-Boeing dispute could be settled within the first six to nine months of the new administration – despite the rather substantial gap between the WTO awards of \$7.5 and \$4 billion respectively. Though it has to be noted that an EU-compliance appeal is still pending and that the last A380s will be delivered this year, which is why it has been argued that the US award should be lowered by at least \$2 billion. The EU suggests a temporary suspension of the tariffs during the negotiation period.

The major question will be whether both sides will aim for a bilateral agreement or a broader scope. In an ideal world, aircraft subsidies would be agreed upon with all major players in the field, i.e. Brazil, Canada, China and Russia, to name the most important. For instance, the old plurilateral GATT and later WTO Agreement on Trade in Civil Aircraft could provide a framework that the parties could fill with an agreement on subsidies in the aviation sector. But such a plurilateral solution to level the playing field is ambitious and would certainly take longer than a bilateral approach. The two parties must first come to an agreement on a way out of this transatlantic aircraft battle. Despite its much longer life cycles and high entry barriers, the aviation world has also changed in the past 17

years – a big leap forward will be needed for the next generation of aircrafts and engines, and addressing Comac and China's massive subsidies should be a major concern. The aerospace industries on both sides of the Atlantic are struggling; the COVID-19 pandemic could thereby create a positive momentum for a negotiated solution and a revival of the transatlantic alliance. But despite all optimism and an anticipated change in tone, Europe should not expect the Biden administration to be less tough on the substantive matters of the dispute.

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Michael König and Adalbert Winkler

COVID-19: Lockdowns, Fatality Rates and GDP Growth

Evidence for the First Three Quarters of 2020

The COVID-19 pandemic has triggered an unprecedented economic crisis. This article analyses the impact of mandatory social distancing imposed by lockdown policies and voluntary social distancing triggered by COVID-19 fatality rates on GDP growth in the first three quarters of 2020 for a sample of 42 countries. OLS and IV results indicate an important role for the fatality rate, while panel regressions show that lockdown stringency is the more important driver of growth. When including lagged variables, more restrictive measures lead to lower GDP growth in the same quarter but are associated with a positive, catching-up effect in the following quarter.

The coronavirus pandemic has triggered a massive health crisis across the globe. More than 1.8 million people have died with or from COVID-19 in 2020 and more than 81 million (around 1% of global world population) were infected (WHO, 2021). Despite massive policy support, the global economy recorded a severe recession in the second quarter of 2020 (IMF, 2020). After a period of recovery in the third quarter, the second wave of the pandemic, which started in the autumn of 2020, led to another decline in economic activity.

While the pandemic is a global one, countries have been affected differently by the virus and have responded with different policies (Brauner et al., 2020; Hale et al., 2020). As a result, growth developments have varied across countries as well. This paper, an update and extension of König and Winkler (2020b), answers the question of whether and to what extent growth developments over the first three quarters of 2020 reflect differences in the intensity with which

governments enacted restrictions, i.e. the economic effects of *mandatory* social distancing, and differences in the fatality rate associated with the virus, i.e. the economic effects of *voluntary* social distancing triggered by the fatality rate.

The paper is motivated by the debate on the economic implications of government-imposed restrictions and lockdowns responding to rising infection rates. When confronted with the first wave of the pandemic, governments took different positions in this debate. Some countries imposed social distancing rather hesitantly, such as the UK or the US, and lightly, such as Sweden (Born et al., 2020; Krueger et al., 2020). Thus, they relied on voluntary social distancing as they feared that the costs of mandatory restrictions would be too high even if they reduced health risks. Other countries enacted strict lockdowns, either because they recorded quickly rising infection and fatality rates, as was the case in Italy and Spain, or because governments considered the degree of voluntary social distancing as insufficient to keep the pandemic under control, e.g. in Germany or Denmark (Brauner et al., 2020; Farboodi et al., 2020). Moreover, they aimed at limiting the economic damage of an unrestrained spread of the virus, i.e. the direct costs such as the loss of working time and the rise in medical costs (Gros, 2020) as well as the costs associated with voluntary social distancing triggered by rapidly rising health risks (Eichenbaum et al., 2020).¹

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Open Access funding provided by ZBW – Leibniz Information Centre for Economics.

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¹ Historical evidence supports the view that the negative economic effects of pandemics are large even when governments do not intervene with severe lockdowns as in the current COVID-19 case (Barro et al., 2020; Carillo and Jappelli, 2020; Jordà et al., 2020).

Table 1
Descriptive statistics

	Mean			Median			Standard deviation			Minimum			Maximum			Countries
	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3	Q1	Q2	Q3	
Economic indicator																
Growth rate (%)	-0.57	-11.01	-3.90	-0.23	-10.50	-3.97	2.73	5.60	3.87	-6.80	-23.47	-11.65	4.72	3.20	8.13	42
COVID-19																
Fatality	1.82	15.34	7.48	0.24	5.93	2.27	4.03	18.47	12.42	0.00	0.09	0.00	19.12	73.71	45.52	42
Stringency	20.06	68.12	53.16	18.76	70.00	52.72	8.35	10.27	15.22	6.85	38.51	24.48	58.98	87.23	83.66	42
Controls																
Trade		92.07			79.55			47.14			27.56			211.51		42
Tourism		7.76			5.37			6.03			1.52			26.38		42
GDP per capita (ln)		10.35			10.42			0.50			8.85			11.17		42
Trend growth (%)		2.87			2.48			1.91			-1.25			9.88		42
Instruments																
Speed		66.38			70.00			11.99			22.00			84.00		42
Life expectancy		79.21			81.16			4.27			63.86			84.21		42
Population (ln)		9.99			9.79			1.77			5.82			14.17		42

Notes: All logarithmic values are scaled by $\ln(x+1)$. Growth rate is drawn from quarterly national account data provided by the OECD representing growth rates in percent of real GDP, change over the same quarter, previous year. Trend growth is drawn from OECD representing the mean average GDP growth rate over the period 2014-2019. COVID-19 variables are taken from the Oxford stringency index (Hale et al. 2020) database and calculated as quarter means. Controls are drawn from the World Bank Database representing 2018 values. Trade represents the sum of exports and imports divided by GDP. Tourism is measured by tourism receipts in total exports. Speed refers to the number of days it took from 1 January 2020 for governments to enact mandatory measures representing a stringency index level of 20 and above (i.e. Speed takes the value 76 if the stringency index stood at a level of 20 for the first time on 17 March 2020). Life expectancy is the mean value of total years at birth. Population (ln) is the total population (in thousands) and $\ln(x+1)$, e.g. $\ln(1,427,648+1)=14.17$ for China for 2018.

Source: Authors' own elaboration.

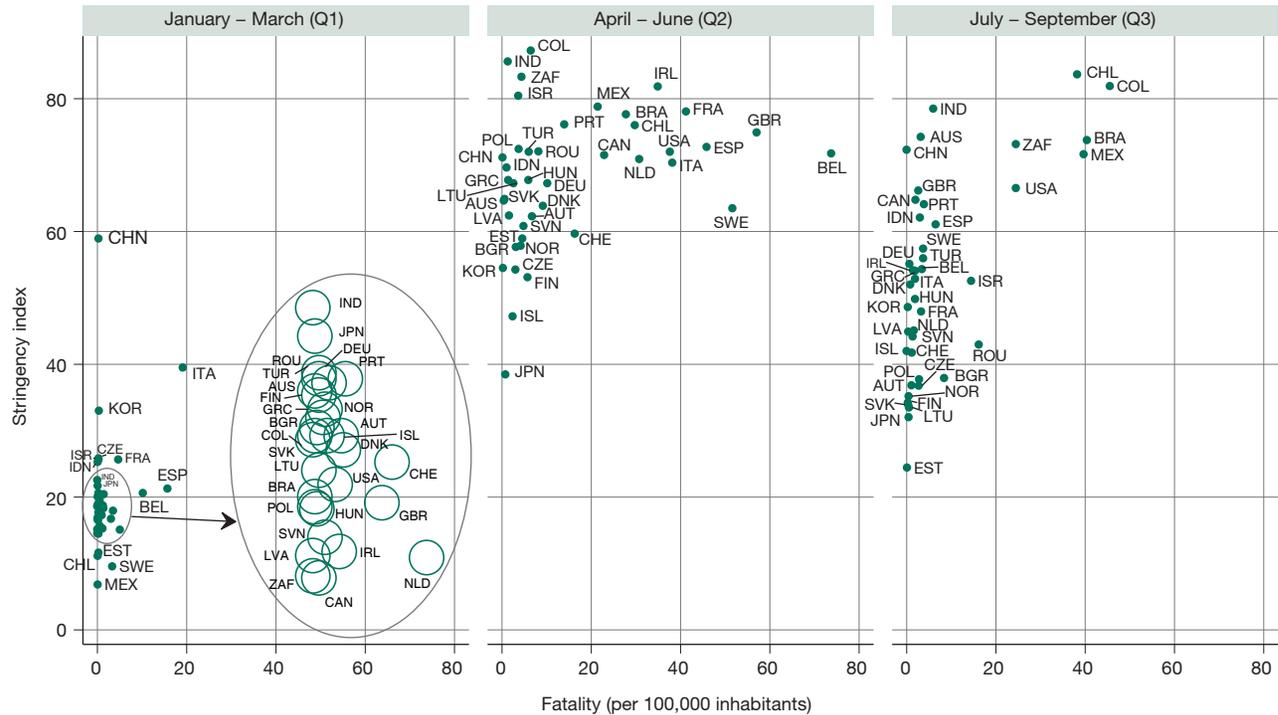
The debate reemerged in the second wave. Again, some countries responded swiftly to the new rise in infections while other countries (e.g. Germany) opted for a staggered approach given that the measures enforced by the government in spring had been criticised as unreasonably harsh in economic terms considering the low fatality rates recorded at that time (Winkler, 2020).

The debate has been controversial and ongoing because even with increasingly available data, endogeneity challenges loom large. For example, the negative economic effects of mandatory measures will likely be relatively larger when enacted at rather low fatality rates, but governments are inclined to impose stricter measures for mandatory social distancing when fatality rates rise. Finally, the degree of voluntary social distancing is likely driven by country characteristics such as social cohesion and life expectancy. Against this background, we make use of three econometric approaches. First, we run a simple Ordinary Least Squares (OLS) analysis for each quarter with data available. Second, we account for endogeneity by instrumenting the stringency of government measures taken and the fatality rate. Third, we run panel

fixed effects regressions controlling for time-invariant country characteristics and time fixed effects.

Our analysis builds on studies showing that risk aversion rises when people are confronted with COVID-19 cases in the region in which they live (Huynh, 2020; Maloney and Taskin, 2020). Thus, they provide direct evidence for the view that health risks, captured by the COVID-19 fatality rate, lead to voluntary social distancing and hence lower levels of economic activity. As a result, the economic impact of government-imposed measures is likely to be smaller than commonly assumed as the counterfactual is not the smooth pre-pandemic environment, but an economy operating under substantial voluntary social distancing. Goolsbee and Syverson (2020), Bartik et al. (2020), Gapen et al. (2020) and the latest World Economic Outlook (IMF, 2020) provide evidence for this view. By contrast, Dreger and Gros (2020) find that the stringency of government measures is the variable to look at when explaining developments in economic activity in EU member states between February and August 2020, while the negative economic effects of a rising fatality rate plays a rather unimportant role. This paper analyses whether the

Figure 1
Average stringency index and fatality in the first, second and third quarter of 2020



Sources: Hale et al. (2020) and authors' calculations.

fatality rate, i.e. the number of reported deaths related to COVID-19 (per 100,000 inhabitants), serving as a proxy for the severity of health risks triggering voluntary social distancing,² has a significantly negative effect on GDP developments in 42 countries for the first three quarters of 2020 while also accounting for lockdown severity, i.e. the degree of mandatory social distancing imposed by the authorities, captured by the Stringency index compiled by Oxford University (Hale et al., 2020).³

Results indicate that changes in the stringency of government measures dominate in-country GDP developments over time while the fatality rate plays an important role in explaining cross-country growth differences for each quarter. Moreover, social distancing abroad has a significantly negative effect on growth as countries with a larger

exposure to tourism record a deeper fall in growth rates. We conclude from this that tighter government measures have a negative impact on economic activity but by keeping fatality rates low they might also support economic activity. Thus from an economic perspective, lockdowns might represent a second-best policy approach as they limit the economic damage associated with high fatality rates. Of course, more evidence is needed to reach firm conclusions as our analysis is based on evidence from three quarters only.

Data and methodology

Our sample consists of 42 countries, including almost all of the OECD countries. Quarterly GDP growth, i.e. the change in real GDP over the same quarter in the previous year, serves as the dependent variable. Descriptive statistics (Table 1) show that countries record an average GDP growth rate of -0.6% in the first quarter before entering a deep recession with an average growth rate of -11% in the second quarter. Finally, the third quarter sees a recovery as the decline in GDP compared to the same quarter in the previous year drops to -3.9%. The striking differences between the three quarters also become visible when plotting stringency indices and fatality rates (Figure 1). In the first quarter, fatality rates are still low and

2 We opt for the fatality rate rather than the rate of infections as the latter is allegedly subject to larger cross-country differences unrelated to health risks triggered by COVID-19, such as different testing and reporting policies, than the former.
3 The countries are Australia, Austria, Belgium, Bulgaria, Brazil, Canada, Switzerland, Chile, China, Columbia, the Czech Republic, Germany, Denmark, Spain, Estonia, Finland, France, the United Kingdom, Greece, Hungary, Indonesia, India, Ireland, Iceland, Israel, Italy, Japan, South Korea, Lithuania, Latvia, Mexico, the Netherlands, Norway, Poland, Portugal, Romania, the Slovak Republic, Slovenia, Sweden, Turkey, the United States and South Africa.

governments of most countries enact rather mild measures to contain the pandemic. By contrast, in the second quarter, when many countries record fatality rates above 20, only two countries (Japan and Iceland) impose measures with a stringency level below 50.⁴ In the third quarter, the standard deviation of government imposed measures rises substantially as governments choose different COVID-19 response strategies, while most countries report rather low fatality rates.

The stringency of measures and the fatality rate affect domestic economic activity by mandatory and voluntary social distancing at home. However, given the high degree of integration, domestic activity is likely to respond to mandatory and voluntary social distancing abroad as well. This is most obvious for the tourism industry when non-residents are unable to reach their destinations either due to travel bans imposed by foreign governments or because they voluntarily cancel their trips when confronted with rising health risks (Gössling et al., 2020; IMF, 2020). Thus, we account for the share of tourism receipts in total exports in 2018 in order to capture a country's vulnerability to mandatory and voluntary social distancing abroad. For similar reasons, we also control for trade openness, measured by the sum of exports and imports divided by GDP in 2018. Finally, we follow Lane and Milesi-Ferretti (2011) and control for GDP per capita as well as the average GDP growth rate between 2014 and 2019.

We start by running robust OLS regressions as well as robust instrumental variable (IV) regressions for each quarter under observation, i.e. we estimate:

$$\Delta y_{i,2020} = \alpha + \beta_1 * \text{COVID}_i + \beta_2 * \text{SP}_i + \beta_3 * \text{Z}_i + \varepsilon_i, \quad (1)$$

where y_i is the quarterly GDP growth rate of country i in either the first, second or third quarter of 2020. COVID_i are our main variables of interest, i.e. the stringency index and fatality rate. SP_i represents vulnerabilities of countries to COVID-19 spillovers from abroad via tourism and trade, and Z_i represents our general controls. In the IV regressions we instrument both COVID-19 variables by:

- The number of days starting from 1 January 2020 it took governments to respond to the pandemic in the form of mandatory restrictions defined as a stringency index level of 20.⁵ For example, in Germany the stringency level reached 20 for the first time on 29 February, representing the 60th day of the year, while in the

UK the threshold was hit for the first time on 17 March, i.e. the variable takes the value 76. Our choice is motivated by the hypothesis that lockdown severity and fatality rates likely reflect the speed with which governments responded to the outbreak of the virus (König and Winkler, 2020a).

- The life expectancy at birth as reported in 2018. COVID-19 mortality rates increase substantially with age, making countries with higher life expectancy more vulnerable to the pandemic. Thus, countries with a higher life expectancy are likely to experience higher fatality rates and more stringent government measures.
- Country size, measured by the natural logarithm of population size. Larger countries are likely to be more heterogeneous in terms of attitude and hence exhibit less social cohesion (Anckar, 1999; Gerring and Veenendaal, 2020). This might make it more challenging to keep the pandemic under control by relying mainly on voluntary social distancing. Thus, larger countries likely need tighter government imposed measures and/or (have to) accept higher fatality rates.

We continue by employing robust fixed effects panel regressions, i.e. we run the equation (1) as a panel regression replacing all time invariant country characteristics by country fixed effects and including time fixed effects. The observation period runs from 2014 Q1 to 2020 Q3, with stringency and fatality set to zero for all quarters until 2020 Q1.⁶ In an extension, we also include lagged COVID-19 variables testing for longer-run effects of lockdowns and fatality.

Results

Results of our OLS regressions (Table 2) indicate that cross-country differences in the stringency index drive cross-country growth differences in the first, but not in the second quarter, while the opposite holds for the fatality rate. In the third quarter, both COVID-19 variables are insignificant. Moreover, tourism exposure and GDP per capita account significantly for cross-country differences in GDP growth in the second and third quarter of 2020. The economic significance of tourism exposure can be illustrated for Greece, the country with the highest tourism exposure in 2018 within our sample. Second quarter GDP growth rate was -15% in Greece, of which about eight percentage points ($26.38 * -0.3$) are explained by the negative impact of mandatory and voluntary social distancing

4 Sebhatu et al. (2020) analyse the homogeneity of the response across countries.

5 The benchmark is close to the mean of the stringency index observed in the first quarter of 2020 for the country sample that our analysis is based upon.

6 The observation period begins in 2014 Q1 in order to exclude the effects of the global financial and euro crises on GDP developments. In total, we capture 27 quarters and time fixed effects until 2020 Q3.

Table 2
OLS regressions

Dependent variable:	(1)	(2)	(3)
Growth rate in %	Q1	Q2	Q3
Stringency	-0.17** [0.07]	-0.12 [0.09]	-0.04 [0.04]
Fatality	-0.10 [0.08]	-0.12** [0.05]	-0.03 [0.06]
Trade	-0.01 [0.01]	-0.02 [0.02]	-0.01 [0.01]
Tourism	-0.05 [0.08]	-0.30*** [0.10]	-0.19** [0.09]
GDP per capita (ln)	-0.30 [0.63]	4.40* [2.20]	2.37* [1.18]
Trend growth	0.72*** [0.16]	1.01 [0.62]	1.09*** [0.37]
Constant	5.70 [6.92]	-45.15* [26.09]	-26.85** [12.98]
Adjusted R ²	0.37	0.41	0.40
Countries	42	42	42
F-Statistic	8.64	6.28	4.41

Notes: OLS estimations. Robust standard errors. * denotes significance at 10%, ** significance at 5% and *** significance at 1%. For further notes see Table 1.

Source: Authors' estimation.

abroad via tourism exposure. By contrast, trade openness does not significantly explain cross-country differences in GDP growth. Finally, in line with expectations, richer countries fared better compared to countries with a lower per capita income in the second and third quarter, while trend growth fails to be significant at the peak of the pandemic's first wave in the second quarter only.

Overall, the OLS results suggest that in the beginning of the pandemic, when fatality rates are still rather low, differences in the stringency of the government's response matter, while in the second quarter, when basically all countries adopt tough measures, cross-country growth differences are driven by cross-country differences in the fatality rate. By contrast, the third quarter bears some resemblance to a 'normal' quarter in pre-pandemic times as both COVID-19 variables are insignificant and trend growth regains the status of a significant driver of cross-country growth differences it recorded in the first quarter.

We continue by instrumenting stringency and fatality with the variables referred to in the previous section (Table 3). Results of the first stage regressions show that a slower government response (Speed) is associated with a significantly higher stringency index (Q2) and fatality rate (Q3). Population size significantly explains the stringency index in the third and the fatality rate in the first and sec-

ond quarter. Finally, life expectancy, while insignificant in explaining the stringency index, is positively associated with the fatality rate in the second quarter, when the first wave peaked. Results for the second stage regression show that the instrumented fatality rate is significant in the second and third quarter, while the instrumented stringency index is significant in the second quarter only. Moreover, tourism exposure is significant in the second and third quarter, while trade openness again fails to be significant. Overall, the IV regressions suggest that the fatality rate has been a more important driver of growth differences than the stringency index.⁷ In particular third quarter results are consistent with the view that not only the stringency of government-imposed measures but also the COVID-19 death toll have had a negative impact on growth as the instrumented fatality rate remains significant in a quarter when government-imposed restrictions were reduced. In addition, tourism exposure, i.e. the vulnerability of countries to mandatory and social distancing abroad, is again identified as an important factor when explaining growth differences across countries in the second and third quarter.

Finally, we run panel fixed effects regressions (Table 4) in order to focus on the time dimension of the pandemic's impact on growth. Results show that changes in the stringency index over time drive GDP growth when accounting for both COVID-19 variables (column 3). Moreover, time fixed effects for the first and third quarter of 2020 are insignificant when accounting for the stringency index (columns 1 and 3). Thus, the divergence in growth in those quarters from the long-term average is significantly explained by changes in the stringency index only. However, the time fixed effect for the second quarter, while substantially smaller than in the specification with the fatality rate only (column 2), is significantly negative. Given that Q2 marks the peak of the first wave of the pandemic, this result indicates that changes in the stringency index over time do not completely account for the severe drop in GDP growth recorded in late spring and early summer 2020. Against this backdrop, we follow Barro et al. (2020) and expand the panel regression analysis by including the lag (i.e. one quarter) of the stringency index and the fatality rate as additional independent variables (columns 4-6).

Results show that the lagged fatality rate is insignificant in all specifications. By contrast, stronger government-imposed measures in time $t=0$ are associated with lower growth in the quarter they are enacted (Stringency β : -0.14***, column 6) but with higher growth (Stringency

7 This conclusion is reinforced by IV regressions (available on request) in which we account for only one of the COVID-19 variables for each quarter.

Table 3
Instrumental variable regressions

Dependent variable: Growth rate in %	(1) Q1	(2) Q2	(3) Q3	(4) Q1	(5) Q2	(6) Q3
	Second stage (Stringency instrumented)			Second stage (Fatality instrumented)		
Stringency	-0.13 [0.08]	-0.59** [0.23]	-0.07 [0.10]	-0.14 [0.09]	0.14 [0.16]	0.03 [0.05]
Fatality	-0.14* [0.08]	0.03 [0.07]	-0.01 [0.09]	-0.31 [0.24]	-0.36** [0.14]	-0.18* [0.09]
Trade	-0.01 [0.01]	-0.03 [0.02]	-0.02 [0.01]	-0.01 [0.01]	-0.02 [0.02]	-0.01 [0.01]
Tourism	-0.03 [0.07]	-0.29* [0.16]	-0.19** [0.08]	-0.03 [0.08]	-0.40*** [0.09]	-0.22*** [0.08]
GDP per capita (ln)	-0.30 [0.56]	-0.84 [2.55]	2.30** [1.04]	-0.03 [0.73]	9.15** [3.90]	1.23 [1.43]
Trend growth	0.64*** [0.19]	1.62*** [0.63]	1.17*** [0.36]	0.59*** [0.21]	0.42 [0.70]	0.77 [0.50]
Constant	4.57 [6.07]	37.31 [37.07]	-24.00** [12.15]	2.47 [8.32]	-106.12** [46.92]	-16.64 [15.71]
Countries	42	42	42	42	42	42
Adjusted R ²	0.35	-0.02	0.38	0.29	0.00	0.26
F-Statistic	6.73	6.76	3.86	2.01	2.82	5.04
Sargan (p-Value)	0.25	0.64	0.09	0.42	0.32	0.43
Wooldridge (p-Value)	0.22	0.05	0.68	0.34	0.04	0.13
	First stage (Dep. var.: Stringency)			First stage (Dep. var.: Fatality)		
Speed	-0.52*** [0.13]	0.32*** [0.08]	0.26 [0.16]	0.12 [0.10]	0.29 [0.22]	0.36** [0.17]
Life Expectancy	0.20 [0.29]	-0.06 [0.61]	0.49 [0.76]	0.31 [0.20]	1.42** [0.69]	0.19 [0.79]
Population (ln)	-0.21 [0.59]	1.95 [1.51]	4.41*** [1.37]	1.10** [0.46]	4.89** [2.32]	-1.15 [1.67]
Countries	42	42	42	42	42	42
Adjusted R ²	0.66	0.48	0.58	0.18	0.40	0.53

Notes: See Table 1.

Source: Authors' estimation.

(lag) β : 0.11*, column 6) in the following quarter ($t=1$). Thus, the immediate negative effects on economic activity triggered by a strong government response to rising health risks are partly reversed in the next period as countries with a higher stringency index in the previous period record higher growth in the current period. Finally, it has to be noted that the time fixed effect for the second quarter of 2020 remains significantly negative. Thus, even the specification with lagged COVID-19 variables does not fully capture the depth of the recession in that quarter.

As a robustness check, we rerun all specifications with the stringency index and the fatality rate in natural log form ($\ln(x+1)$). Results, available from the authors on request, point to a somewhat more pronounced role of the fatality rate. For the OLS and IV regressions, the fatality rate is again found to be the more powerful COVID-19 var-

iable while in the panel without lags, both COVID-19 variables are now found to be significant. By contrast, none of the lagged COVID-19 variables are significant when employing them in a logarithmic form.

Conclusions

The question of whether and to what extent the COVID-19-induced recession is linked to the stringency of government-imposed measures enforcing social distancing and whether and to what extent the recession is also caused by voluntary distancing related to rising health risks has been intensively debated among economists, policymakers and the public at large. Exploiting evidence on GDP growth in 42 countries over the first, second and third quarter of 2020, we find that changes in lockdown stringency are the more important driver of GDP devel-

Table 4
Panel fixed effects regressions

Dependent variable: Growth rate in %	(1)	(2)	(3)	(4)	(5)	(6)
Stringency	-0.13*** [0.03]	-	-0.11*** [0.04]	-0.16*** [0.03]	-	-0.14*** [0.04]
Fatality	-	-0.09** [0.03]	-0.05 [0.04]	-	-0.09** [0.03]	-0.05 [0.04]
Fatality (lag)	-	-	-	-0.00 [0.03]	-0.01 [0.03]	0.00 [0.03]
Stringency (lag)	-	-	-	0.11* [0.06]	0.05 [0.07]	0.11* [0.06]
2020 Q1	-0.03 [0.78]	-2.57*** [0.40]	-0.39 [0.91]	0.53 [0.83]	-2.57*** [0.40]	0.18 [0.96]
2020 Q2	-3.99* [2.03]	-11.81*** [0.94]	-4.76** [2.31]	-4.38* [2.19]	-12.70*** [1.16]	-5.09* [2.53]
2020 Q3	1.10 [1.77]	-5.40*** [0.52]	0.28 [2.05]	-5.16 [3.63]	-8.50** [4.18]	-5.86 [3.69]
Constant	2.16*** [0.20]	2.16*** [0.20]	2.16*** [0.20]	2.16*** [0.20]	2.16*** [0.20]	2.16*** [0.20]
Model	Time fixed effects			Time fixed effects		
Countries	42	42	42	42	42	42
R ² (within)	0.66	0.65	0.67	0.67	0.66	0.67
R ² (overall)	0.50	0.50	0.51	0.51	0.51	0.51
R ² (between)	0.00	0.10	0.00	0.00	0.15	0.02
Rho (inter. cor.)	0.48	0.46	0.47	0.48	0.46	0.48
F-Statistic	60.82	80.41	75.39	68.02	73.82	71.16

Notes: Fixed effects model. Robust standard errors. * denotes significance at 10%, ** significance at 5% and *** significance at 1%. Observation period for Growth rate begins in 2014 Q1. Time fixed effects represent in total 27 quarters until 2020 Q3, Stringency and Fatality is equal to zero until 2020 Q1. For further notes see Table 1.

Source: Authors' estimation.

opments over time. When including lagged variables, two effects can be distinguished: a negative one as more restrictive measures lead to lower GDP growth in the same quarter, and a positive, catching-up effect associated with stringency developments lagged by one period. OLS and IV regressions for each quarter suggest that voluntary social distancing reflecting differences in health risks expressed by the fatality rate also play a substantial role in explaining cross-country differences in GDP growth. Moreover, these regressions show that country vulnerabilities to mandatory and voluntary social distancing conducted abroad, proxied by tourism exposure, matter.

We interpret our results as providing broad support for the policy approach taken by most countries in the coronavirus pandemic when managing perceived and real trade-offs between health and economic risks. On the one hand, results confirm the conventional view that from an economic perspective, all efforts should be undertaken to avoid hard lockdowns as any rise in lockdown intensity has severely negative effects on economic activity. At the same time, our cross-country results also sug-

gest that high fatality rates are associated with strongly negative growth effects. Thus, our results also support those voices arguing that tight lockdowns – despite their negative effect on growth – might still serve as a useful economic policy instrument if they succeed in reducing health risks as economic activity is severely hampered by high fatality rates. Having said this, we want to conclude by noting that our results are based on evidence for three quarters only. Thus, they will need to be reexamined when new data becomes available.

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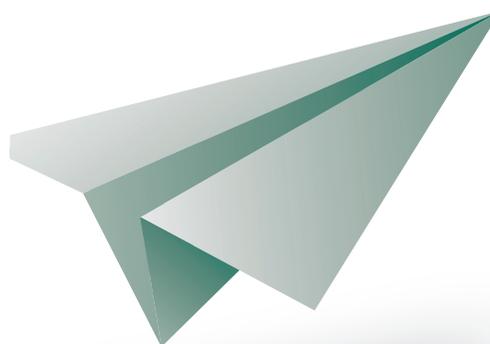
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Markus Demary, Stefan Hasenclever and Michael Hüther

Why the COVID-19 Pandemic Could Increase the Corporate Saving Trend in the Long Run

Given the global trend in corporate saving over the last decades, the COVID-19 crisis raises doubts about the persistence of companies' saving behaviour due to the losses which have occurred in many companies caused by the isolation of households and by lockdowns. Before the pandemic, corporate net lending activities had been increasing for decades due to various factors ranging from the rise in uncertainty after the global financial crisis to the increased reliance on internal funding for research and development expenditures. In Germany, the rise in corporate saving was accompanied by an increase in equity capital and a reduction in the corporate sector's reliance on bank loans. This article argues that the coronavirus crisis is most likely to interrupt the trend in corporate saving in the short run due to the decline in companies' revenues. Nonetheless, similar to the pattern observed in the aftermath of the financial crisis, it seems reasonable to conjecture that the COVID-19 shock will strengthen corporate saving in the long run as companies may attempt to restore their liquidity and equity capital buffers to better prepare for future shocks. This will in turn create downward pressure on real interest rates and complicate the conduct of monetary policy.

The debate about the low interest rate environment embraces an excess of saving over investment, i.e. too many funds in search of investment projects. One strand of the research literature focuses on demographics and ageing, which increases the need for households to accumulate financial assets (Krueger and Ludwig, 2007; von Weizsäcker, 2014). Another strand of the literature focuses on the trend of rising corporate saving, which took place in most countries before the COVID-19 crisis, including the ten largest economies, and which was pervasive across industries (see Demary et al., 2020).

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Open Access funding provided by ZBW – Leibniz Information Centre for Economics.

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While the coronavirus pandemic has led to a rise in household saving in the short term due to isolation and increasing uncertainty about future employment and income, the saving rate of the corporate sector has turned negative. This raises the question of how COVID-19 affects the trend in corporate saving in the long term.¹

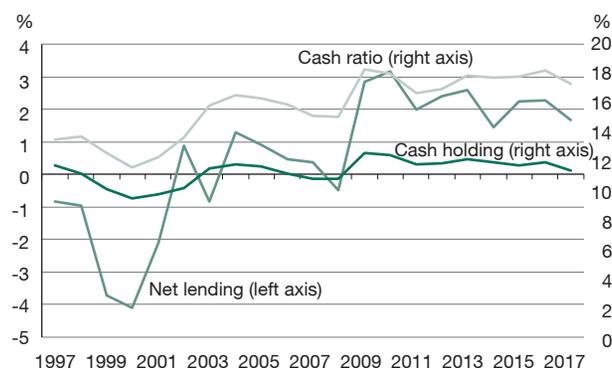
What is corporate saving?

From an individual household's perspective, saving is the part of the after-tax income that is not spent on consumption. If the household's saving is positive, the household will accumulate assets, i.e. its net wealth will increase or its debt will decrease. If the household wants to consume more than its after-tax income, additional funds have to be borrowed or the household's stock of wealth has to be reduced by selling assets, i.e. its net wealth decreases.

From a flow-of-funds perspective, the term *saving* is similarly defined for companies, though the distinction between *gross saving* and net lending becomes relevant. Gross saving is defined as gross profits less dividends, i.e. retained profits from a company's balance sheet perspective. Gross saving can either be used to finance investment expenditures or allocated to improve the company's net financial position by either accumulating assets

¹ We analyse this in Demary et al. (2020) with a focus on Germany.

Figure 1
Net lending, cash holding and cash ratio of German companies



Notes: Net lending in percent of GDP, cash holding in percent of financial assets, cash ratio in percent of short-term financial liabilities.

Sources: Deutsche Bundesbank; Eurostat; own calculations.

or decreasing liabilities. When a company's investment expenditures exceed its gross saving, the company has to attract funding from banks or investors and becomes a *net borrower*. Similarly, when the difference between a company's gross saving and its investment is positive, which is also called *excess saving*, the firm becomes a net lender to the rest of the economy. Altogether, to be a gross saver, the company has to (i) be profitable and (ii) distribute less than 100% of its profits to its shareholders. When a company becomes a *net lender*, its excess saving is allocated either to the purchase of financial assets or to the reduction of liabilities.

Corporate net lending is therefore predominantly allocated in liquid financial assets such as bank accounts or liquid bonds. Thus, the correlation between the business sector's net lending and the business sector's cash holdings is high (see Figure 1). Dao and Maggi (2018) emphasise that this correlation is particularly high for German companies, reflected by a correlation coefficient of 0.84. Aside from cash accumulation, the Deutsche Bundesbank (2019) provides evidence that German corporations also tend to use their excess saving for debt reductions. Accordingly, the amount of cash divided by short-term liabilities (cash ratio) has been rising over time. The cash ratio also highly correlates with the corporate excess saving with a correlation coefficient of 0.92.

In principal, net lending can also be used for equity buybacks. However, evidence provided by Chen et al. (2018) and Dao and Maggi (2018) shows that equity buybacks can only explain a negligible part of the rise in corporate net lending, except in US firms. Research by the Deutsche

Bundesbank (2019) supports this finding for the use of corporate saving in Germany.

What are the drivers of corporate saving?

Traditionally, the business sector has been a net borrower, i.e. companies normally borrow funds to finance their investments in physical assets. The transformation of the corporate sector from being a net borrower to becoming a net lender in the last decades has been raising questions about the causes and implications of this trend.

For analysing the effects of the COVID-19 crisis on corporate saving, this section provides an overview of factors that have driven the trend in the first place. Subsequently, an analysis of the composition of Germany's aggregated corporate sector balance sheet over time follows together with an analysis of the aforementioned drivers that are relevant for the rise in corporate saving in Germany. Since corporate net lending is mostly held in cash and other highly liquid assets as discussed above, a considerable part of the corporate finance literature uses the terms corporate excess saving and liquidity accumulation as synonyms.

Main drivers defined by the literature

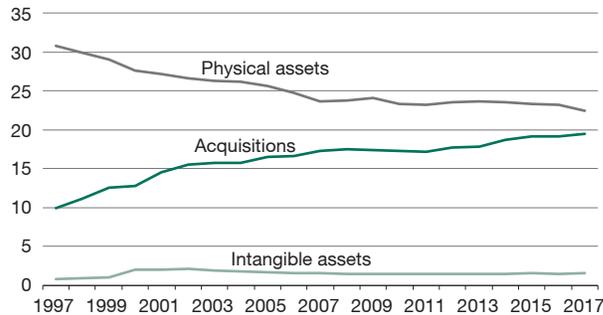
The precautionary motive of saving: Dao and Maggi (2018) and Bates et al. (2009) show that companies facing higher idiosyncratic uncertainty accumulate more liquidity to have a buffer against adverse shocks. In addition, Dao and Maggi (2018) illustrate that aggregate uncertainty, proxied by the economic policy uncertainty index (EPU), drives firms' cash hoarding.

The transaction motive of saving: Dao and Maggi (2018) and Bates et al. (2009) also find evidence that larger firms tend to accumulate less saving than smaller companies, because large firms face economies of scale when transforming nonfinancial assets into cash, which in turn reduces the need for liquidity buffers.

The composition effect: From another point of view, Be-genau and Palazzo (2016), Booth and Zhou (2013) and Graham and Leary (2017) show that the rise in corporate saving reflects changes in the composition of companies in the market. Since the 1980s and 1990s, more high-tech and research and development (R&D)-intensive firms – that have been more willing to hold cash compared to incumbent companies – have entered the US stock market. However, Dao and Maggi (2018) show that the wave of R&D-intensive firms only lasted until the early 2000s and has subsequently reversed. In accordance, Chen et al. (2017) also emphasise the pervasiveness of the rise in corporate saving across industries.

Figure 2
Physical assets, intangible assets and acquisitions
of German companies

in percent of total assets



Source: Deutsche Bundesbank; own calculations.

The rising importance of intangible assets: Falato et al. (2013) argue that the ability of pledging intangibles as collateral for external funding is constrained. Consequently, companies need to accumulate liquidity to have enough internal resources to finance future investments. Supporting this argument, Bates et al. (2009), Pinkowitz (2015) and Dao and Maggi (2018) find evidence that firms with higher R&D spending tend to hold more cash.

Heightened product market competition: Della Seta (2011), Morellec et al. (2014) and Lyandres and Palazzo (2016) emphasise that given financial market restrictions, enhanced competition increases firms' reliance on internal funds to finance investment necessary for the survival of the company.

A rise in foreign income: Chen et al. (2017) underline that this relationship does not reflect lower tax payments of multinationals realised by profit shifting to tax havens. Instead, they argue that this finding expresses the larger profitability of export-orientated firms. Foley et al. (2007) argue, however, that US multinationals' saving activities can partly be explained by efforts to avoid tax costs associated with the repatriation of foreign income.

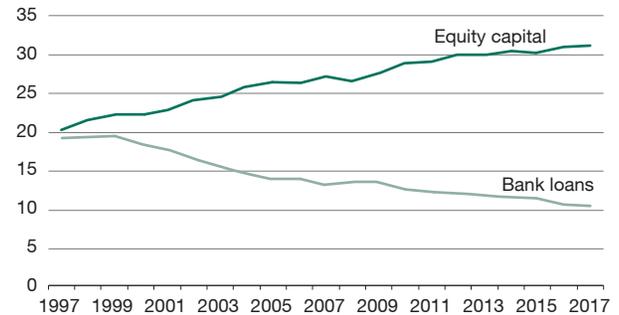
Agency motives: Jensen's (1986) work implies that firms with entrenched managers and no good investment opportunities are reluctant to pay out dividends. The results of Dittmar et al. (2003), Kalcheva and Lins (2007), Pinkowitz et al. (2006) and Dao and Maggi (2018) confirm the importance of agency problems for cash holding.

Composition of the corporate sector balance sheet

Accompanied by the rise in net lending over the last two decades, the composition of investment and funding has

Figure 3
Equity capital and bank loans of German companies

in percent of total assets



Source: Deutsche Bundesbank; own calculations.

changed in the German business sector. Physical assets have gradually declined from 30.7% of total assets in 1997 to 22.5% in 2017 (see Figure 2), which is in line with the findings of studies covering the US (e.g. Falato et al., 2013). The decline in physical assets in percent of total assets could be due to heightened importance of intangible goods, which may be associated with larger cash holdings as discussed before. It seems unlikely, however, that German companies have increased their saving to provide funding for future expenditures on intangibles. First, the share of intangibles on total assets is modest, e.g. 1.5% in 2007. Second, in contrast to the US, it has been declining since the early 2000s for a substantial period.

Nevertheless, German companies may have been holding cash for the realisation of targeted acquisition as they have increased in Germany from 9.9% of total assets in 1997 to 19.4% of total assets in 2017 (see Figure 2). However, results of a study from the Deutsche Bundesbank (2019) provide evidence that acquisitions of foreign firms are not significantly related to the corporate gross saving of German firms. Retained earnings of foreign subsidiaries count as both gross saving and direct investment for the German parent company. On the other hand, targeted acquisitions of domestic companies could have been an important driver for the accumulation of liquidity.

On the liability side of the German corporate sector's balance sheet, Figure 3 shows an increase in the equity capital from 20.4% of total assets in 1997 to 31.2% in 2017 (equity capital ratio). Since the issuance of new capital has remained roughly stable over time, we conclude that the corporate sector's excess saving has been mainly used to improve the equity capital position. In this vein, bank loans have been declining from 19.3% of total as-

sets in 1997 to 10.5% in 2017 despite the low interest rate environment. While the reduction in bank loans probably reflects the deleveraging associated with the rise in corporate saving in Germany, it may also review the substitution of bank loans by inter-company loans.

Relevant factors for the rise in corporate saving

Given the developments on the balance sheets of companies, additional factors have to be taken into account:

First, before the tax reform of 2000, retained profits were taxed at a higher rate than distributed profits, which provided companies with an incentive to distribute profits and thus to operate with lower equity capital ratios. With the reform, tax rates were harmonised to an equal rate, which increased the incentive for companies to retain profits and increase their equity capital ratios. The Deutsche Bundesbank (2019) finds no evidence, however, that the harmonisation of the tax rates affected companies' retained earnings significantly (tax motive).

Second, after the two sharp recessions in 2001 and 2008, companies probably noticed that having a stronger balance sheet made them more resilient to economic shocks. Therefore, they may have been raising their equity capital buffers as well as their liquidity buffers, i.e. they became gross savers as well as net lenders. Additionally, the heightened uncertainty associated with these recessions might have increased firms' willingness to hold cash, i.e. the precautionary motive of saving.

Third, since the 2004 bank regulation known as Basel II, access to credit has been more restrictive for companies with a higher default probability. Because of that, companies have an incentive to increase their equity capital ratios for improving their creditworthiness.

What is the impact of the COVID-19 pandemic on corporate saving?

To get more insights into the long-term effects of the pandemic on corporate saving activities, we first have to analyse the immediate effects of the COVID-19 shock on firms' balance sheets:

- a decline in gross saving since profits have declined or turned into losses, mainly due to companies in the sectors most affected by the pandemic
- a decline in the liquidity buffers of firms since firms have to continue payments to employees, debtors and suppliers, while revenues have declined
- decreasing equity capital buffers when losses have occurred and/or due to the decline in liquidity
- increasing short-term debt to cover costs in times of deteriorating revenues
- declining net lending or rising net borrowing since financial assets have been reduced and financial liabilities have been increased.

In the short term, the COVID-19 shock may have mitigated corporate saving activities due to a decline in revenues and profits. However, many governments have responded quickly and appropriately by using instruments to secure liquidity. These instruments, e.g. short-time working allowance, tax deferrals, loan guarantees and grants, are aimed at bridging the escalation phase of the crisis to enable the companies to continue their businesses during and after the crisis without serious loss of liquidity and equity. Even if there will not be an enormous wave of insolvencies, which would put the banking system under considerable pressure (Demary and Hütner, 2020), sizeable consequences will continue to have an impact on companies' capital adequacy.

With respect to the long-term effects of the pandemic on corporate saving behaviour, we assume that the precautionary saving motive will have a strong effect on corporate saving in the future, since the other saving motives are less connected to the COVID-19 crisis and more related to longer-term developments and framework conditions. In this vein, we expect companies to restore their liquidity and equity capital buffers in the aftermath of the COVID-19 crisis due to the following most probable developments:

- In the medium term, the economy recovers and revenues of companies will normalise during the recovery, which will lead to rising profits. In addition, many firms may have realised that the build-up of liquidity buffers in the past has strengthened their financial position and made them more robust against adverse shocks. That is why firms might have an incentive to build up their liquidity buffers to be prepared for the next recession, perhaps even beyond the pre-COVID-19 crisis level.
- When banks suffer from credit losses during the recession, they will probably become more restrictive in their lending. This will particularly affect companies with low equity capital buffers. Thus, companies will most likely aim to restore their equity capital buffers to secure their access to external funding.
- Companies will have to repay the short-term debt they accrued during the pandemic before they can apply for

new loans to purchase new investment goods, which will lead to low investment accompanying the build-up of liquidity and equity capital buffers.

Given these scenarios, firms will probably have to strengthen their balance sheets in the longer term before they can engage in new investment activities. The periods after the COVID-19 shock will therefore most likely be characterised by a deleveraging process of companies, i.e. a period of low investment and increasing profits, which will translate into rising corporate saving.

Conclusion

Altogether, the coronavirus crisis seems to have dampened the trend of corporate saving in the short run. In the long run, however, the coronavirus shock will most likely strengthen corporate saving activities, since companies have experienced that having higher equity capital and liquidity buffers can be beneficial in crises in which liquidity dries up. This precautionary saving motive might be reinforced as we expect that the perception of risk is likely to continue to rise in general, as it has after the other severe crises since the turn of the millennium, e.g. the New Economy bubble, 11 September, the Iraq war, the global financial crisis and the European sovereign debt crisis. Hence, from a macroeconomic point of view, the decline in equilibrium real interest rates could persist in light of the corporate saving activities, which will likely be reinforced in the long run as a response to the COVID-19 shock.

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Michael Grömling

COVID-19 and the Growth Potential

The lasting economic impact of the coronavirus pandemic will become apparent in the development of the macroeconomic factors of production – labour, capital, human capital as well as the stock of technical knowledge. Changes in behaviour such as a greater acceptance of technology can strengthen potential output permanently. By contrast, negative effects may arise from growing protectionist attitudes or long-lasting uncertainties and ‘scarring effects’. In any case, the coronavirus crisis has induced a technology push. This may be intensified if digitisation gains additional support from investments in infrastructure or if the pandemic heralds a renaissance in the natural sciences – with a corresponding impact on human and physical capital as well as on technical knowledge. For the time being, it is unclear what effects the restructuring and secular structural change will have on potential output. However, dangers are lurking in the acceleration of geopolitical tensions, a misunderstanding of technological sovereignty and increasing government interventions, which, as a whole, could hamper innovation and investment.

The coronavirus pandemic turned into a historical social and economic challenge over the course of 2020. The public health policy measures and the diverse economic impact around the world impeded economic life more than any event in the last seven decades. In 2020, the global economy experienced its sharpest decline during this timeframe. Due to the broad impact of this economic crisis, the macroeconomic effects in Europe will be at least on the same scale as the financial market crisis in 2009.

In addition to this historic economic slump caused by the pandemic, the question also arises as to what lasting effects seem possible. In the following article, some potential implications for advanced economies are discussed (see also Grömling, 2020a), focusing primarily on the effects that the COVID-19 pandemic could have on macroeconomic potential output. Beyond that, the coronavirus crisis will affect public finances (Gros, 2020) and the distribution of income and wealth. In this context, the question arises of how inclusive the structural change that could be triggered by the pandemic may be for the various socio-economic groups in society (Grömling and Klös, 2019; Eichhorst et al., 2020). These issues are not addressed here.

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The production potential can be described in terms of the endowment of an economy with labour, physical capital (including infrastructure and intangible assets), human capital, natural capital and the diverse stock of technical knowledge (see Figure 1). This factor endowment determines the overall economic productivity level, which in turn determines to a large extent the (material) standard of living in a country. The propensity to invest in all these factors is ultimately governed by the institutional and geopolitical framework.

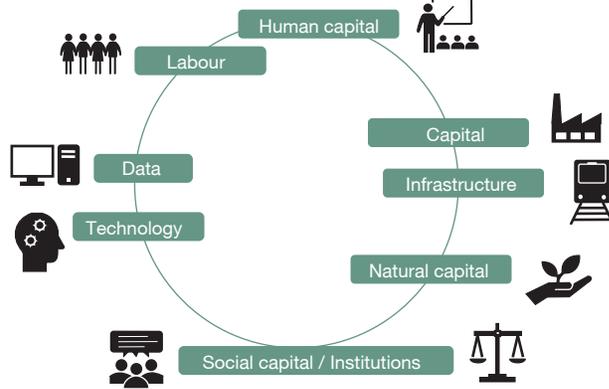
Positive and negative behavioural effects

The coronavirus pandemic hit economies more quickly, more intensively and above all more broadly than previous crises. With the abrupt, in part even complete discontinuation of normal business operations in the second quarter of 2020, new technical and organisational alternatives were quickly adopted – such as working or studying from home. Previous resistance to technological solutions has obviously been overcome and potentially created a greater openness to innovation in business and social life.

Macroeconomically, these changes in behaviour can permanently increase both human capital and the stock of technological knowledge and possibly also stimulate higher economic growth in the future. Last but not least, this can be reinforced if young people are influenced positively in their educational decisions and risk awareness. It is conceivable, for example, that they might have a greater affinity for careers in technical fields and the natural sciences.

By contrast, however, there could also be changes in behaviour that hamper a country’s progress in the long term

Figure 1
Production factors as a reference framework for the coronavirus shock



Sources: Author's illustration.

with regard to production factors. If young people are frustrated by limited options for learning, studying and working due to the pandemic, there may be protracted damages to potential output in terms of reduced labour market integration or lower incentives for building up human capital (Maguire, 2020; Tamesberger and Bacher, 2020). According to the so-called scarring effect, young people whose employment has been delayed or who are unemployed due to the recession will experience long-term consequences such as CV gaps and lower total lifetime earnings (Möller and Umkehrer, 2015; Hutter and Weber, 2020).

Kozłowski et al. (2020) show how a tail risk – here with reference to the coronavirus pandemic – can change long-term behaviour, which will then have a negative impact on economic development. Such tail events lead to the aforementioned scarring effects for investors. Companies will take the pandemic into account when making future investment decisions – even if it can be combatted with a vaccine. If the pandemic leads to lower returns on capital in the short term, future returns on capital will also be estimated against this backdrop. This ‘scarring of beliefs’ would then dampen the propensity to invest over the long term and thus the development of potential output.

Another conceivable possibility for long-term potential damage due to the COVID-19 pandemic is that it will intensify the geopolitical risks and protectionist attitudes that predate the crisis. This can inhibit the cross-border allocation of labour and the international transfer of knowledge – for example by limiting options and reducing incentives for training and work experience abroad. If the pandemic and a less open global economy lead to a general reduction in the migration of skilled labour over the long term, there will be a lower produc-

tion potential due to the expected demographic development – i.e. the shrinking and ageing of populations in advanced economies. Finally, a growing anti-market attitude as a result of the pandemic would also adversely affect economic life and structural change.

Boost for technological progress

The potential positive effects on human capital and the stock of technology have already been discussed in the context of the outlined behavioural changes. The digitisation of the economy should enjoy another long-term boost as a result of the pandemic (Klöß, 2020). To compensate for the restrictions on labour input due to the lockdown, companies and private households have invested in technical equipment. This capital stock and the intangible components in particular, such as organisational capital, will continue to be available in the future (see Grömling, 2020b). To some extent, specific measures of the comprehensive economic stimulus packages passed by many governments also promote technological progress. Experiences from the financial market crisis in 2008 and 2009 indicate that a portion of the crisis-related underemployed research staff at that time used their working hours to improve the existing production and organisation processes (Rammer, 2011). This has increased intangible assets and the level of technical knowledge.

Beyond the short-term necessities, this pandemic-related technology push may be intensified if further and continuous technological improvements are now made in public infrastructure. Last but not least, the crisis has revealed the great potential – for example in schools, the health care system or public administration – for the digitisation of services and production processes. The current crisis can accentuate pre-existing needs for public investment (Hüther and Bardt, 2020) and stimulate a corresponding accumulation of capital.

The dependencies that arose in some areas of the economy – for example, through a lack of foreign or domestic intermediates in both the manufacturing and the service sector (Grömling, 2020c) – have increased the pressure to search for alternatives. Over the long term, this should strengthen companies' resilience. A restructuring of production processes, such as the relocation of value-added components, can raise companies' production costs on the one hand, while creating corresponding incentives for increasing capital formation, e.g. through additional automation, on the other.

Finally, the significance of the natural sciences has been revived, but not only because of the current crisis. The potential for the corresponding development of human, physical and technological capital have already been mentioned before with regard to the major global megatrends – such as the global population growth, the scarcity of resources and cli-

mate change (Grömling, 2019). In all the natural sciences – a specific example being research on antibiotics – the current pandemic can boost an advance in technology and increase investment.

Over the long term, it is conceivable that the coronavirus pandemic will have positive effects on macroeconomic output due to an increase in technical knowledge. However, companies' financing situations for such investments must also be taken into account. For epidemic reasons, the crisis is currently connected with uncertainties that are difficult to assess, e.g. regarding the recovery prospects of the world economy. The global economy and growth prospects are of great significance for economies that are highly integrated into the international division of labour and global trade – for example, German manufacturing firms generate roughly half of their turnover from foreign customers. High levels of uncertainty will dampen the propensity to invest. The financing options for companies are also impaired by the tense economic situation. This applies to both raising equity capital and financing with debt (Demary and Hüther, 2020). Declining turnover and profit are putting a strain on the companies' equity base. Increasing risks of insolvency curb the granting of loans by banks and raise investment costs through higher risk premia. However, most governments' stimulus packages include measures to stabilise corporate financing. After all, technical progress also depends on the establishment of new companies – the coronavirus pandemic has made this very clear. In the area of biotechnology, for example, venture capital becomes more important in order to develop production potential.

Restructuring and structural change

When the coronavirus epidemic began in China, worries about production restrictions quickly arose due to the loss of intermediates from other countries. This concern did abate in Germany over time (Grömling, 2020c). But supplier dependencies became noticeable and may give rise to the restructuring of supply and production processes along very stretched-out international value-added chains. On the one hand, this can lead to a multi-supplier strategy that is used to eliminate dependencies on individual suppliers and to rediversify risks. On the other hand, the existing geopolitical risks may also lead to a regional reorientation. Higher costs resulting from relocations, a higher level of in-house production or a broader-based inventory management can drive the automation and technological progress.

Ultimately, the advantages of the previous specialisations within the framework of the existing value-added chains will be compared with the benefits of restructuring and new risk diversification. It should always be borne in mind that the previous internationalisation in the form of transnational value-added chains has increased the productivity and com-

petitiveness of companies as a whole and also reduced previously existing risks and dependencies. The impact that a restructuring of international production networks will have on the stocks of human capital, capital and technology is not yet clear. It is also unclear what impact a reorganisation of suppliers will have on the international and mutual transfer of knowledge and technology and the respective factors of production in the previously involved and potentially new partner countries. It is conceivable that technological sovereignty could be defined in the context of the European Union and that this could be seen as a reference framework for the national competencies and for access to the resources, competencies and inputs of partners (Edler et al., 2020).

Furthermore, it is also possible that the pandemic will accelerate the secular structural change (Hüther and Bardt, 2020; Hutter and Weber, 2020). Consideration should be given to the effects of digitisation, decarbonisation and demographic change. There are very diverse explanations for secular structural changes, and all social, political and economic influences are reflected in the economic structure (Grömling, 2011; 2020d). Changes in consumption and the underlying shifts in preferences in a society can be mentioned as a central driver for this secular structural change in production. The increasing complexity of modern societies stimulates the demand for knowledge-intensive services. Changes in production processes and the inter-sectoral and intra-sectoral division of labour can cause companies to concentrate on their core business and offer hybrid products at the same time.

The pandemic has raised the question of which trends of the secular structural change will be reinforced and what impact this may have on the factors of production and the macroeconomic potential output. In regard to social costs, it is also crucial to consider whether the current structural changes will lead to adjustment burdens on the labour market, i.e. structural unemployment (Grömling, 2020d). High unemployment ultimately means that two central factors of production – labour and human capital – are not used adequately and thus opportunities for growth are wasted. Employees with specific qualifications are no longer used in certain economic areas due to changes in preferences or technology, raising the question of whether these qualifications are applicable in other economic activities. If this is not the case, then the employee's flexibility in terms of qualification and training opportunities is crucial. If the gap between the qualifications of the laid-off labour force and the requirements of companies widens over the long term and if this "mismatch" cannot be remedied through training, the risk of structural unemployment and the wasting of human resources will increase. The social system can in turn influence the incentives for education and the search for jobs. Furthermore, the flexibility of the wage system determines the extent and persistence of structural unemployment (Walwei, 2020; Eichhorst et al., 2020).

Reorientation of market and state

The coronavirus crisis has not only raised the need for rapidly effective stabilisation policy, but has also strengthened the call for industrial policy. While stabilisation policy is primarily aimed at returning the utilisation of the existing production potential to its normal level in the best case, industrial or structural policy measures aim at a change in the level and structure of the production potential (Grömling, 2020d). Structural and industrial policy interventions are also called for in order to cope with the structural changes addressed in the previous section and possibly necessitated by the COVID-19 pandemic. The aim is to actively shape the sectoral structure of the economy and to ensure the survival of companies in certain industries. Given the speed and severity of the current crisis, it is necessary to consider the consequences that a pronounced wave of insolvencies could have for labour and human capital. Unemployment – and particularly structural unemployment – could be accompanied by a permanent devaluation of human capital or at least by pronounced mismatch problems in the labour market.

If certain sectors (e.g. coal, steel, shipyards, automobiles) are dominant for employment and prosperity in certain regions, then structural policy should prevent these regions from lagging behind or becoming impoverished as a result of a structural shock in a specific sector (Hüther et al., 2019). Sectoral structural policy is also justified by allocative market failure: Basic research – for example, on antibiotics or a coronavirus vaccine – can be regarded as a public good. Accordingly, private research has positive external effects for other companies, and thus public research funding prevents a shortage of supply by the market. Furthermore, the design of the economic structure in terms of supporting ‘future industries’ through research support is brought forward as a justification for industrial policy.

Security policy arguments are also put forward to stabilise an existing economic structure. In strategic areas (e.g. military, health) and critical infrastructures (e.g. communication networks, energy supply), economic dependencies on other countries – and possibly on their state monopolies – should be prevented. In this context, the pandemic has also intensified the demands for national technological sovereignty and thus raised the question of how independent countries should be with regard to so-called critical technologies. This should prevent political dependencies and ensure state sovereignty. Edler et al. (2020) argue that comprehensive technological autocracy is not purposive. Rather, technological sovereignty is about preserving options by building up and preserving one’s own competencies and avoiding one-sided dependencies. This is what opens the door to sovereignty in innovation and independent economic development. At any rate, this not-new topic

of the appropriate degree of technological sovereignty – particularly in an environment characterised by geopolitical uncertainties – will probably be intensively discussed as a result of the COVID-19 pandemic.

The list of arguments against governmental structural and industrial policy is long (Bardt and Lichtblau, 2020; Grömling, 2020d; SVR, 2009). Subsidising certain industries in order to improve their production conditions always discriminates against the domestic sectors not benefiting from the policy. Moreover, it distorts competition internationally, which may provoke reactions (tariffs or import quotas) from other countries and can hurt prosperity overall as a result of rising transaction costs. An efficient sectoral structural policy requires asymmetries in information: The state must have better knowledge of the supply of goods desired by society than private companies. The current discussion on automotive technologies of the future serves as a good example. The long-term impact of industrial or structural policy on the production factors of a country ultimately depends on whether the economic structures promoted by these policies are competitive and sustainable over the long term. In any case, industrial policy intervention always gives rise to the risk of structural conservation, which can in turn slow innovation and structural change.

As a result of this serious economic crisis, the basic understanding of market and state is being tested. The protectionism that has emerged since the global financial market crisis and the trade conflicts of recent years have already restricted the mechanisms of a market-based coordination. The long-term effects on innovation and investment are likely to be negative. In any case, the former domestic market programmes and world trade rounds are credited with the development of production factors and productivity. Accordingly, increased state intervention and protectionism are likely to have the opposite effect in the long term.

Increased government intervention as a result of the pandemic could lead to constraints on competition and a concentration of power. This is the case when state-owned enterprises and state funds gain increasing influence on economic activity in their own countries and also in other economies. This can have long-term effects on factor accumulation and the secular development of economies (Matthes, 2020). The coronavirus crisis intensifies the political and economic rift between the United States and China. Both are pushing ahead with industrial and structural policy projects that ultimately bring about a reorientation of market and state and force other countries to take action – also institutionally, e.g. with regards to market access or corporate investments. At the end of the day, this is likely to have a negative impact on production potentials, productivity growth and the prosperity that goes with it.

Table 1
Positive and negative long-term effects of the coronavirus pandemic

Positive	Negative
Openness to innovation	Scarring effects: education, labour market, investments
Push for digitisation	Protectionism / geopolitical tensions
Human capital promotion	Structural unemployment
Impulses for public infrastructure	Deglobalisation: knowledge transfer / migration
Stability of value-added chains	Growing state influence / market criticism
Technological sovereignty	Market concentration
Risk diversification	
Start-up of new companies	

Sources: Author's illustration.

An increasing concentration of power can also occur in the wake of platform companies. The constraints resulting from the coronavirus pandemic, for example in the area of stationary retail trade, have already strengthened existing alternatives and their business models. These platform companies also enjoyed a higher valuation on capital markets during the crisis. This can create significant financial advantages, especially if the adjustment burdens are drawn out over a longer period of time (Pagano et al., 2020). It could trigger a lasting reallocation of labour, capital, human capital and technological knowledge.

Conclusions

The coronavirus pandemic has caused an unprecedented global economic bust. At the same time, it will likely accelerate structural changes, which in turn are driven by digitisation, the energy revolution, decarbonisation and demographic changes. Table 1 summarises some of the possible positive and negative effects of the COVID-19 pandemic. This article has identified the possible changes in production potential – with a focus on the production factors and production processes. Ultimately, the institutional framework conditions determine whether and how much is invested in the specific production factors. The international design of those institutions is central to the long-term effects of the coronavirus pandemic.

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Gerrit Manthei

The Long-Term Growth Impact of Refugee Migration in Europe: A Case Study

Many questions have been raised about the political and economic consequences of the recent surge in refugee immigration in Europe. Can refugee immigration promote long-term per capita growth? How are the drivers of per capita growth influenced by immigration? What are the policy implications of refugee immigration? Using an adjusted Cobb–Douglas production function, with labour divided into two complementary groups, this article attempts to provide some answers. By applying the model to current immigration data from Germany, this study finds that refugee immigration can lead to long-term per capita growth in the host country and that the growth is higher if refugee immigrants are relatively young and have sufficiently high qualifications. Further, capital inflows are a prerequisite for boosting per capita growth. These findings can inform policymakers of countries that continue to grapple with refugee immigration.

The issue of refugee immigration has dominated European politics for the past five years. The significant increase in immigration rates since 2015 and the mass migration into Southeast Europe, however, have not elicited uniform reactions across the continent. While most East European countries have been very restrictive, Germany and Sweden were initially more open to immigrants. This is because Germany, for example, can be characterised as a relatively tolerant society, and, initially, the majority of its population and the media were in favour of government policies (Haller, 2017). However, the subsequent change in public opinion (GfK Verein, 2018) led to policy revisions. Both Germany and Sweden have since adopted much stricter immigration regulations (*Migrationspaket* in Germany and temporary law of temporary residence status in Sweden). It seems unlikely that these countries will witness any large-scale immigration in the coming years.¹ However, given the alarming consequences of climate

change (Perch-Nielsen et al., 2008) and the large wealth gap between Europe and North and Central Africa (Stark, 2017), one can reasonably assume that immigration rates in the future will be higher than previously estimated.²

Recognising the need for an in-depth analysis of immigration, many scholars have published studies on the social, political, demographic, economic and fiscal effects of refugee immigration in recent years. In Sweden, for example, most studies highlight the negative aspects of general and refugee immigration (Lundborg, 2013; Ruist, 2015), including the ones published before the 2015 surge. Similar findings have also been reported by studies that are not based on any individual country (Dustmann et al., 2017).

In Germany, some studies have focused on the positive economic effects of refugee immigration, especially those published in the first few months of the influx (Fratzcher and Junker, 2015). Later, however, papers on the negative economic effects of refugee immigration (van Suntum and Schultewolter, 2016), especially its effects on fiscal sustainability (Manthei and Raffelhüschen, 2018), became more pronounced. The present study attempts to offer a diverging viewpoint based on the theoretical assumption that population growth in absolute terms generally

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Open Access funding provided by ZBW – Leibniz Information Centre for Economics.

1 Partly because of the social situation, partly because of the COVID-19 pandemic.

2 From a purely legal point of view, those who migrate for economic reasons are not refugees, but they share similarities with refugees in terms of age and qualification structures. Thus, the assumption that both groups have similar implications seems plausible.

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induces economic growth.¹ Accordingly, it examines the economic effects of refugee immigration by focusing specifically on per capita growth. It is important to add here that countries like Germany have a well-developed and comprehensive social system, in which the productive inhabitants support the less productive ones through tax-financed redistribution. Thus, negative per capita growth induced by refugees may place an additional burden on local taxpayers regardless of absolute economic growth.

The two main factors affecting the per capita growth effects of migration are age and qualification structure of the immigrants (Boubtane et al., 2016). *Ceteris paribus*, per capita growth can improve if the qualification structure of the refugees is better than that of the local population. Even a poor qualification structure among refugees can promote per capita growth provided a larger percentage of them are of working age compared to the native population, which then increases the labour force share of the total population (age structure effect). Another significant factor affecting per capita growth is capital mobility, particularly the increase of capital inflows from abroad, for example, via foreign direct investments (FDIs). If the increase in labour supply leads to a relative reduction in wages, economic theory suggests that the price of capital will rise and subsequently result in greater foreign investments (Samuelson, 1948) if factor price elasticity is sufficiently high. *Ceteris paribus*, this could lead to per capita growth. Apart from the above, other factors (e.g. state consumption and integration) can also affect per capita growth.

Interestingly, the growth effects of refugee immigration, whether per capita or absolute, have not been sufficiently researched. While the effects of general migration on growth have been extensively studied, those of refugee migration have not received much scientific attention. In light of future projections about refugee immigration, this topic is highly relevant not only from a scientific point of view but also from a political and social perspective.

Using an adjusted Cobb–Douglas production function with labour divided into two complementary groups, this article presents a two-step quantitative analysis of the long-term per capita growth effects of refugee migration. The research aims to determine whether the effects are mainly positive or negative, to assess the impact of individual drivers of growth and to derive policy implications. This article focuses on Germany because the country has accepted the highest number of refugees in Western Europe since 2015, and it represents a midpoint within Eu-

rope in terms of geography, per capita growth and the welfare state system.

Theoretical model

According to the Cobb–Douglas production function, the output (GDP in this study) is dependent on the production factors: labour and capital. Labour usually refers to the number of workers in an economy or their working hours. Capital is typically defined as all the assets in a national economy (i.e. cash and financial assets as well as buildings, land and machinery). Further, government consumption is considered in this study to better account for integration costs.

Taking the above factors into account, GDP (Y_t) in every year t is given by:

$$Y_t = \beta \cdot c_{S,t} \cdot K_{S,t}^{\alpha_1} \cdot K_{P,t}^{\alpha_2} \cdot L_{WC,t}^{\alpha_3} \cdot L_{BC,t}^{\alpha_4} \quad (1)$$

Here β is the total factor productivity, which serves as a scaling factor to scale the model's output to the actual GDP. $c_{S,t}$ denotes the impact of state consumption on GDP and includes, for example, integration costs. Capital is divided into two categories. The first category, state capital stock ($K_{S,t}$), is mostly subject to the constraints of investment and depreciation (Equation 4) and is only indirectly influenced by immigration. The second category, private capital stock ($K_{P,t}$), inter alia, depends on the size of the labour force in the national economy (Equation 7) and is therefore directly exposed to the effects of migration.

To capture the growth effects of refugee migration in a meaningful way, the labour factor needs to be differentiated according to productivity. Since productivity is more difficult to quantify in data lacking a migration context, the analysis uses qualification levels as they are strongly linked to productivity (Becker, 1962). Accordingly, the labour force is divided into two groups: an above-average productive group (white-collar workers), with excellent qualifications, and a less productive group (blue-collar workers), with lower qualifications. To consider the possible migration-related wage effects, wages are used instead of the number of workers. Thus, $L_{WC,t}$ is the sum of all the wages of white-collar workers, and $L_{BC,t}$ is that of blue-collar workers. Depending on the qualification structure of the immigrants, the ratio of blue- to white-collar workers can change and, following the theory of supply and demand, affect relative labour prices (wages).

The coefficients α_1 , α_2 , α_3 and α_4 are fixed over time and define the impact of each type of capital and wage factor on the output. The sum of all four coefficients is 1. α_1 and

¹ The expected rise in demand alone would lead to growth. Further, each additional employee increases the country's economic output.

α_2 represent the share of GDP that is derived from gross profit. They show the influence of the two capital stocks (state and private) on nominal GDP. α_3 and α_4 denote the share of GDP derived from the labour force. These coefficients together capture the impact of the sum of all wages on GDP.

The following equation accounts for state consumption:

$$c_{S,t} = \left(\frac{C_{S,t}}{C_{S,t-1}} \right) \cdot \frac{C_{S,0}}{Y_0}, \quad (2)$$

where $c_{S,t}$ is the scalar of state consumption, and $(C_{S,0}/Y_0)$ scales the impact of this scalar to GDP. The absolute consumption of the state is defined as

$$C_{S,t} = \bar{C}_S + P_t \cdot \bar{c}_S^{flex} + (1 - \sigma) \cdot E_{Bl,t}, \quad (3)$$

with \bar{C}_S as a fixed level of state consumption. It does not vary with the size of the population P_t , because some expenditures, such as defence, are relatively inelastic to changes in population size. Most other expenditures are calculated with a constant per capita sum \bar{c}_S^{flex} . The rest of the state consumption is driven by integration costs $E_{Bl,t}$. This includes direct integration costs for services such as food, shelter, medical aid and language courses provided to immigrants. It also accounts for spending on unemployment, under-age immigrants, social assistance for the elderly and the costs incurred on deportation/voluntary departures. This paper treats integration costs as state consumption and assumes that the state finances these integration costs by cutting down its consumption or its investments.² However, the inclusion of integration costs under state consumption does not negatively affect the latter, as the category of expenditures is irrelevant to GDP. On the other hand, cuts in investments to pay for integration costs $[(1 - \sigma) \cdot E_{Bl,t}]$ do increase consumption. The factor σ , which takes a value between 0 and 1, denotes how much of the integration costs are covered by cuts in state consumption.

The state capital stock is estimated as follows:

$$K_{S,t} = (K_{S,t-1} - K_{S,t-1} \cdot \bar{q}_A + I_{S,t-1}) \cdot lk_t. \quad (4)$$

Each year, the capital stock depends on that of the previous year ($K_{S,t-1}$) and on the development of the relative price of labour to capital (lk_t ; Equation 6). Further, it de-

creases by the fixed depreciation rate \bar{q}_A and increases with the state's investment ($I_{S,t-1}$), which is calculated by

$$I_{S,t} = K_{S,t} \cdot \bar{q}_I - (1 - \sigma) \cdot E_{Bl,t}. \quad (5)$$

It is assumed that each year, a fixed quota (\bar{q}_I) is invested by the state. \bar{q}_I and \bar{q}_A are ideally fixed with the same value, so that the state capital stock decreases over time if investment cuts are used to finance integration costs $(1 - \sigma)$. In the short term, Y_t increases for all $\sigma < 1$ as short-term consumption offsets long-term investment in the state capital stock because of $\alpha_1 < 1$. Subsequently, a negative relationship develops between immigration and the state capital stock because immigrants benefit from public capital spending without having contributed to it through, for example, tax or social contribution payments (Piras, 2011). With refugees unable to bring in their capital,³ their immigration, or more precisely their integration and the associated costs, will lead to a long-term decrease in state capital and present a hindrance to growth.

The development of the relative price of labour to capital is given by:

$$lk_t = \frac{\left(\frac{LF_{t-1}}{K_{S,t-1} + K_{P,t-1}} \right)^{\alpha_3 + \alpha_4}}{\left(\frac{LF_0}{K_{S,0} + K_{P,0}} \right)^{\alpha_3 + \alpha_4}}. \quad (6)$$

lk_t accounts for relative price changes of capital to labour to meet the principle of supply and demand. For example, an increase in the size of the labour force (LF_t), *ceteris paribus*, leads to a decrease in wages and an increase in the price of capital.

Analogously, the development of the relative price of capital to labour (kl_t) is given by:

$$kl_t = \frac{\left(\frac{K_{S,t-1} + K_{P,t-1}}{LF_{t-1}} \right)^{\alpha_1 + \alpha_2}}{\left(\frac{K_{S,0} + K_{P,0}}{LF_0} \right)^{\alpha_1 + \alpha_2}}. \quad (7)$$

Private capital is strongly affected by the size of the labour force and by the development of the relative price of labour to capital:

$$K_{P,t} = (\bar{K}_{FP} + LF_t \cdot \bar{k}_{LF}) \cdot lk_t. \quad (8)$$

While \bar{K}_{FP} is a fixed share of the private capital stock that

2 Borrowing, another possible alternative to finance these costs, is excluded from the model. For host countries that usually follow a strict policy of balanced budgets like Germany, this modelling seems realistic.

3 On average, refugees pay €7,100 per person to flee to Germany (Federal Office for Migration and Refugees, 2016), which may possibly constitute their entire mobile capital.

is independent of labour force changes, $\overline{k_{LF}}$ is a fixed amount of per capita capital that each member of the labour force holds or attracts. Private capital is computed in this way because domestic firms may borrow money to satisfy higher demand for goods. But with a higher supply of labour, and the consequent increase in the factor price for capital, borrowing money in the host country will become more expensive than borrowing from abroad. This could stimulate capital inflows. In addition, the host country is favourably placed to attract long-term FDI from the rest of the world. As the economic theory of factor price equalisation (Samuelson, 1948) states, an open economy with a relatively high factor price tends to encourage an inflow of the respective factor.

The sum of all white-collar workers' wages is calculated by

$$L_{WC,t} = LF_{WC,t} \cdot w_{WC,t}. \quad (9)$$

$w_{WC,t}$ is the average yearly wage of a white-collar worker, and $LF_{WC,t}$ is the total number of white-collar workers. This yearly wage depends on the yearly wage in the base year ($w_{WC,0}$), the development of the ratio of blue- to white-collar workers and the relative price of labour in the host country:

$$w_{WC,t} = w_{WC,0} \left(\frac{BC_t}{WC_t} \right)^{\alpha_4} \cdot kl_t. \quad (10)$$

The first quotient captures the development of the ratio of blue- to white-collar workers. In each year, the ratio of blue- to white-collar workers is calculated in relation to their ratio in the base year.⁴ Such modelling implies that any change in the ratio has a direct impact on the wages of the workers. For example, if the proportion of blue-collar workers among immigrants is higher than that in the host country, immigration can lead to a relative increase in the wages of white-collar workers. If the ratio of total capital stock to total workforce increases, relative to the base year, the price of labour increases and thus the wages.

The number of blue- and white-collar workers in each period, as well as of P_t , depends on three factors: demographics, migration and integration. The present analysis employs a population projection model to account for demographic changes and a future decrease in Germany's

total labour force, owing to the double ageing process.⁵ However, the latter does not interfere with the analysis of migration-induced effects, because it is factored into all the calculations.

The second factor – migration – is modelled by dividing the number of immigrants in every year based on age and wage (two wage groups). Emigration is modelled by estimating the number of emigrants across population groups and by taking into account the significantly higher emigration of the non-integrators, because statistics clearly show that foreigners constitute a larger share of emigrants (Federal Statistical Office of Germany, 2019a).

Integration is the third factor that affects the number of blue- and white-collar workers. New refugees of working age (or who will attain working age within the projection period) who will not emigrate during the projection period will typically integrate first. This trend is modelled by assuming a logarithmic assimilation process (integration) with an individual duration for each wage group, while accounting for unemployment.

Data and scenarios

Descriptive statistics and data

This case study considers 2014 as the base year, as Germany witnessed a significant increase in refugee immigration in the following year. The main sources of data are the national accounts of Germany (Federal Statistical Office of Germany, 2016a) and the survey of income and expenditure, EVS (Research Data Centre of the Statistical Offices of the Federal States, 2015).

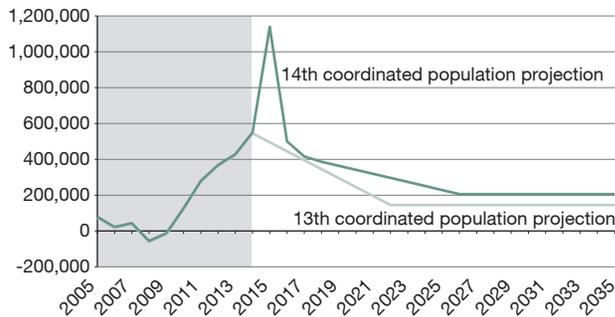
In 2015 and 2016, the average age of immigrants entering Germany was 31 years (Federal Statistical Office of Germany, 2019b), while that of the German population in 2014 was approximately 44 years (Federal Statistical Office of Germany, 2016b). Further, the proportion of immigrants aged 65 or below was 98.5% (Federal Statistical Office of Germany, 2019b), while the proportion of the German population under 65 was only 78% (Federal Statistical Office of Germany, 2016b). Thus, *ceteris paribus*, immigration could have initiated per capita growth by increasing the working age population.

This paper considers workers with an income equal to or higher than 150% of the national average as white-collar workers. The analysis uses income for the 2014 labour force instead of qualification levels as it is directly linked

⁴ The equations of the wage bill of all blue-collar workers and of their yearly wage is designed analogously to Equations 9 and 10.

⁵ Growing life expectancy rates and lower birth rates.

Figure 1
Net immigration trend in Germany and future projections



Note: The grey area on the left side marks the pre-projection period and serves to illustrate the changing immigration in recent years.

Source: Author's own illustration based on Federal Statistical Office of Germany (2015, 2019b, 2019c).

to the necessary wage sums of Equation 1. According to EVS, the initial distribution of workers in Germany in 2014 was as follows: 24.3% white-collar and 75.7% blue-collar. Of the foreigners living in Germany before the 2015 immigration, 21.6% were white-collar, and 78.4% were blue-collar workers. Equations 8 to 11 suggest that a high share of blue-collar workers among foreigners (and refugees) can, if future refugee immigrants have the same income or qualification distributions as the foreigners already living in Germany, lead to a decrease in the wages of blue-collar workers and an increase in that of white-collar workers.

To measure the net growth effects of refugee immigration, two migration trends are developed (Figure 1). First, a hypothetical migration movement without high immigration numbers, plotted with the help of data obtained from the 13th coordinated population projection (Federal Statistical Office of Germany, 2015). The second migration trend is derived from the actual migration figures between 2015 and 2018 (Federal Statistical Office of Germany, 2019b) and is then linearly adjusted to long-run net immigration of 206,000 as in the second immigration scenario of the 14th coordinated population projection (Federal Statistical Office of Germany, 2019c). A *ceteris paribus* comparison of the two migration trends allows for an estimation of the net effects of refugee immigration, because of the 1.1 million net immigrants in 2015 (Federal Statistical Office of Germany, 2016c), about 890,000 were refugees (Federal Ministry of the Interior, 2016).

Table 1
Overview of the main scenarios

	Pessimistic	Base	Optimistic
Integration time (white-collar)	12 years	9 years	6 years
Integration time (blue-collar)	9 years	6 years	3 years
Share of white-collar qualifications	17%	21.6%	24.3%
Share of blue-collar qualifications	83%	78.4%	75.7%

Source: Author's own elaboration.

Main scenarios

Three scenarios are hypothesised as part of the first step of the quantitative analysis.⁶ Subsequently, per capita net-growth effects are estimated with the help of a base scenario, which includes the basic assumption about immigrants' workgroup distribution (21.6% vs 78.4%) derived from the dataset and probable integration times (Table 1).

An average integration time of six years is considered for blue-collar workers, following the work by Manthei and Raffelhüschen (2018). The integration process for white-collar workers is set at nine years, which is 1.5 times longer than for that of blue-collar workers. This is due to the fact that it is extremely important to speak the host country's language in jobs requiring high qualification levels. Further, high-skilled immigrants may first work in jobs below their qualification level to gain financial security. Moreover, the process of acknowledging the qualifications achieved in the home country by German standards, which is required by many jobs, may be time-consuming.

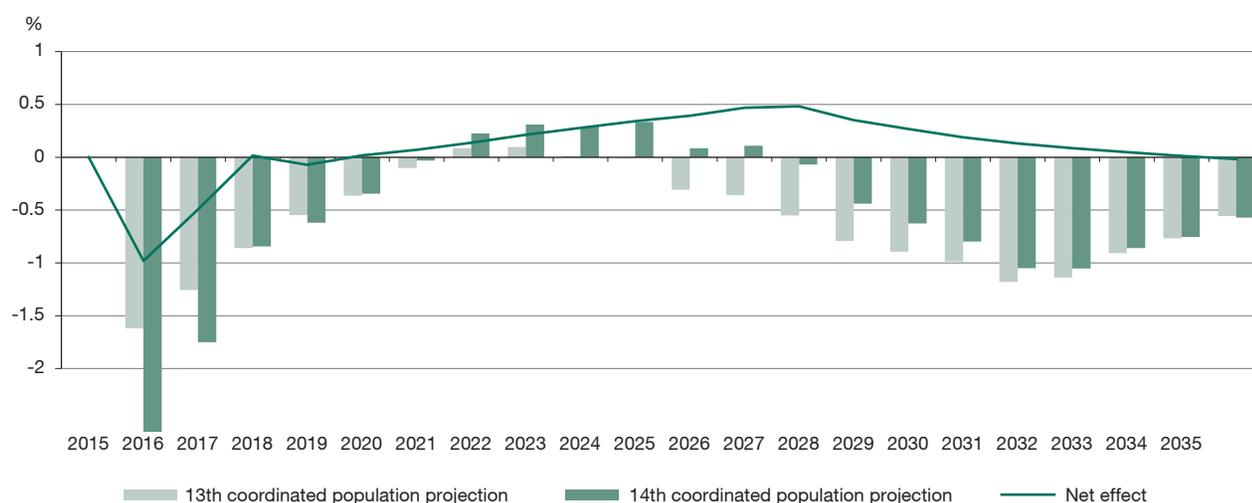
Because the assumptions of integration time and qualification distribution are riddled with uncertainty, two other scenarios are presented – one highly pessimistic and one highly optimistic (Table 1). These scenarios serve as the lower (pessimistic scenario) and upper limit (optimistic scenario) of a result corridor.

In the optimistic scenario, the qualification distribution of immigrants is assumed to be identical to that of the natives in the host country. The share of white-collar workers in the pessimistic scenario is based on the UNESCO International Standard Classification of Education (ISCED11-A) of refugee immigrants in Germany.⁷ According to data

6 The second step is a sensitivity analysis to assess the impact of single variables.

7 Education is segmented into 10 levels in the 2011 version (ISCED11). This paper uses the categorisation attainment (A) for individuals who graduated in their respective segment (ISCED11-A).

Figure 2
Yearly growth effects (per capita) in the base scenario



Note: The zigzag course in 2017/2018 is data-driven as the number of emigrants dropped sharply in 2017 (in the 14th coordinated population projection).

Source: Author's estimations.

from the German Institute of Economic Research (2017), about 17% of the refugees entering Germany in 2016 were highly qualified (ISCED11-A level 6 or higher).

Results

Main scenario results

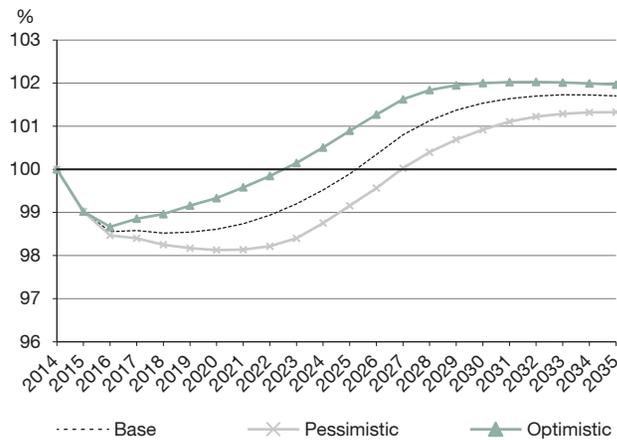
Figure 2 shows the yearly per capita growth effects of both migration trends in the base scenario. As expected, in the first few years, when an assumed integration process delays the newly migrated refugees from entering the labour market directly, per capita growth effects are negative. They are also negative under both migration trends for most years of the projection period and only become slightly positive between 2021 and 2026. While this is mainly due to (e)migration in the early years, the negative growth effects after 2026 are primarily the result of demographic changes following the retirement of the baby boomer generation. As the 14th coordinated population projection includes higher emigration rates, the negative per capita growth effects in the second migration trend (dark green bars) are stronger at first. This is why the net effect of refugee immigration (green line) is also negative in the initial projection years. The break-even point is reached in the year 2021, after which the per capita net growth effects of refugee immigration remain positive until the year 2026. Subsequently, the net effect declines until the per capita growth effects of both migra-

tion trends converge. These results suggest that refugee immigration in Germany could indeed have a positive effect on its per capita growth in some years.

Figure 3 displays the aggregated per capita growth effect across the years of the projection period. The net effect (dashed line) reaches a break-even point in 2026 and stabilises with a long-term positive growth effect of approximately 1.70%. This confirms the results presented in Figure 2, suggesting that refugee immigration could lead to long-term per capita growth even with a below-average qualification structure. However, it is important to note that the assumptions described in the 'main scenarios' above are subject to uncertainty. Therefore, the net per capita growth effects of the pessimistic and optimistic scenarios, in relation to the base scenario, are of interest, too. As expected, the curve of the pessimistic scenario (grey line) is below that of the base scenario. While a longer integration period shifts the break-even point to the right, it is only delayed by around two years and not by three years, as could be inferred by this scenario's assumptions. The long-term net growth of 1.33% is lower than that of the base scenario, which highlights the importance of the qualification structure of the refugee immigrants.

The curve of the optimistic scenario (green line) lies above that of the base scenario. Here, the break-even point is reached about three years earlier than in the base case (in 2023). Additionally, long-term growth is the highest at

Figure 3
Main scenarios: Aggregated net growth effects (per capita)



Source: Author's estimations.

1.96% at the end of the projection period. Thus, the results of the optimistic scenario confirm the implications above.

Sensitivity analysis

The second step of the quantitative analysis assesses the impact of individual variables. To examine the effect of each variable, the above three scenarios are remodelled fixing the concerned variable, for example, when analysing the influence of state capital and foreign capital inflows on per capita growth. Alternatively, the same data is used for refugees and residents, for example, for the respective age or qualification structure. Figures 4.A-H show the results in comparison with those from the first step of the quantitative analysis.

The immigrants' age structure has a strong influence on the per capita growth trend (Figure 4.A). Without such a favourable age structure of refugees, per capita growth will be significantly lower in all three scenarios, by about one percentage point each (thus, half as strong). Weaker but significant effects exist for the qualification structure (Figure 4.B), the wage effects (Figure 4.G), and the relative price development (Figure 4.H). The integration time has no effect on the absolute growth number, but on its growth path (Figure 4.C). State consumption and the state capital stock have negligible effects (Figures 4.D-E).

Without migration-induced capital inflows from abroad (Figure 4.F), long-term per capita growth turns nega-

tive.⁸ This finding underscores the importance of capital inflows, without which a negative correlation can be expected between per capita growth and refugee immigration, even if the qualification structure of refugees is the same as that of the natives (optimistic scenario: -0.62%).

Conclusion

Refugee immigration is currently one of the most crucial topics in European political discourse, and it is likely to remain so in the foreseeable future. The economic consequences associated with refugee immigration can significantly affect the lives of the European population. This study examines the long-term per capita growth effects of refugee immigration with the help of an augmented Cobb–Douglas production model and a two-step quantitative analysis that explored a range of economic scenarios.

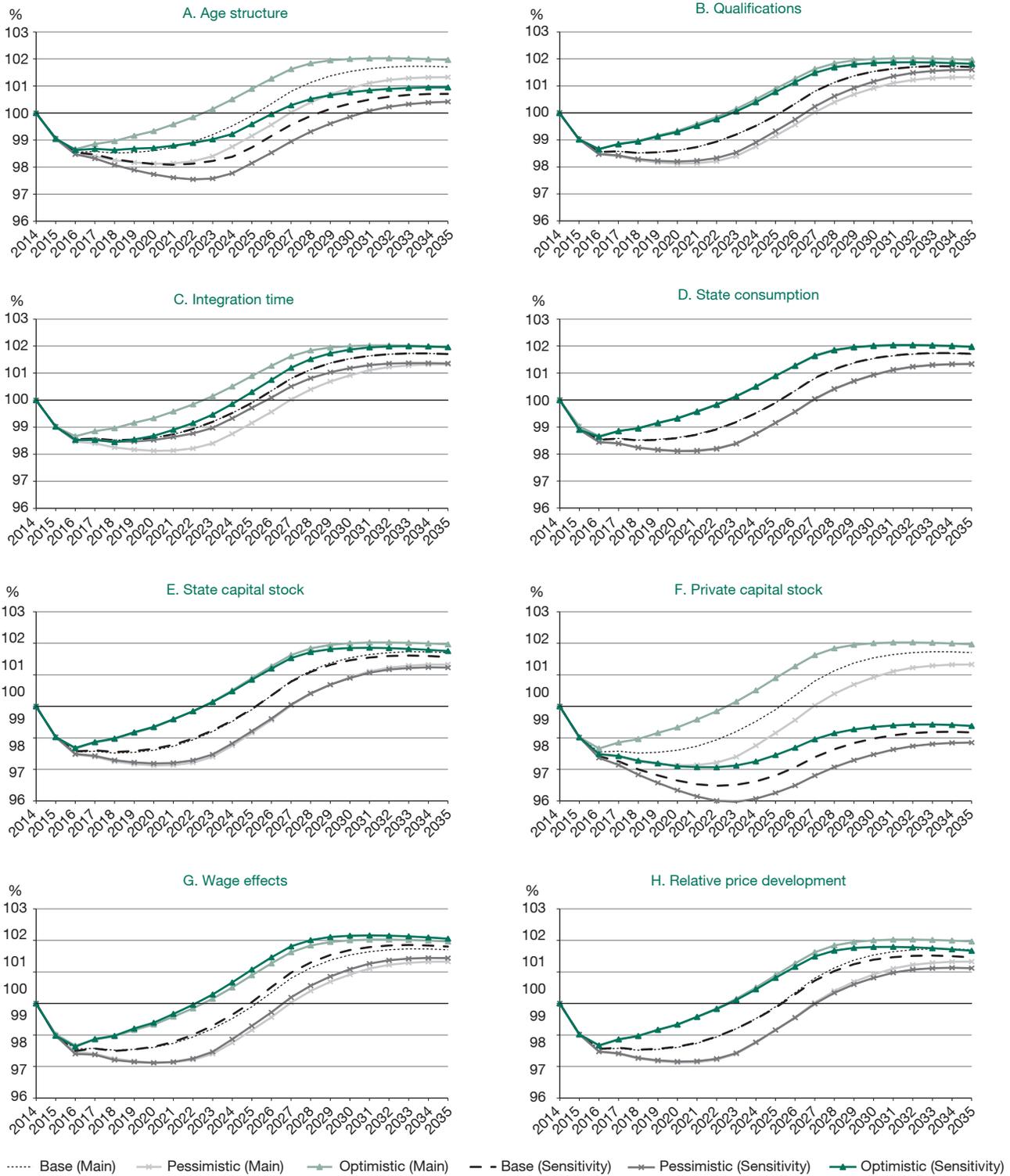
The results indicate that refugee immigration can lead to long-term per capita growth. Key to this development is the age structure of refugees and, to a slightly lesser degree, their qualification structure. The length of time needed by refugees to integrate mainly determines the time required to reach the break-even point. Interestingly, the results show that private capital stock has the greatest impact on per capita growth. Without a migration-related increase in the available private capital stock in the host country, positive per capita growth is unlikely, even under optimistic assumptions. In fact, the per capita economic output could drop significantly.

As the proposed model does not contain assumptions that are specific to Germany, the results of the case study may be generalised to other countries affected by refugee immigration. But the effects of refugee immigration on the capital stock in the host country have not yet been conclusively researched. Thus, it is difficult to definitively assert that refugee immigration leads to long-term per capita economic growth in the host country.

Nonetheless, three political implications arise from these results. First, promoting the quick and successful integration of refugees will increase per capita growth. Second, granting permanent residence permits to young and highly qualified individuals will ensure their positive contributions in the long run. And third, reducing barriers to capital inflows is in everyone's best interest as it is a prerequisite for per capita growth.

⁸ Because of the large population, the overall economic growth, without capital inflow, remains positive in the base scenario (0.83%).

Figure 4
Sensitivity analysis: Aggregated net growth effects (per capita)



Source: Author's estimations.

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Transatlantic Priorities: Data Governance

Many Americans likely approved of Facebook founder Mark Zuckerberg's motto: "Move fast and break things." Zuckerberg was trying to encourage companies and individuals to adopt innovation. However, in the US, disruption spread to the realm of public policy. In 2016, more than 62 million Americans voted for a President who was determined to break the Western alliance, accountable capitalism and democracy. On January 6, 2021, with the siege of the US Capitol, the world saw the direct and indirect effects of a man and a party willing to move fast and break democracy and global political stability. While we may be slow learners, this lesson will likely push America and Europe closer together. We have been reminded that our democracy is fragile, and we need our allies to help protect it.

Throughout all this disruption, our allies have stood by and encouraged a return to normalcy, e.g. competition and collaboration. As Vice President of the European Commission Margrethe Vestager noted, "We see a lot of similarities in our approach when it comes to technology, when it comes to security, when it comes to open democracy."¹ But while we may share many norms and objectives, the US and the EU do not share approaches to data governance. Some have even argued that the US, EU and China are creating separate data realms. I argue that we must collaborate on strategies to govern data and cross-border data flows because data is the most collected, analyzed, shared and traded good or service around the world. Data is ubiquitous.

Although mankind has created and analyzed data since humans first walked the earth, there are several reasons why data is difficult to govern. First, data is different. It is not one thing; it can be a good, a service or both simultaneously. There are many different types of data that are governed by different rules at the national and international levels (e.g. personal, public and proprietary). Economists generally agree that many types of data are public goods, which governments should provide and regulate effectively. Furthermore, when states restrict the free flow of data, they reduce access to information, which, in turn, can diminish domestic and global economic growth, productivity and innovation. Secondly, it is also difficult to govern data because data from one country can be stored in another country, raising questions of jurisdiction. As a result, if policymakers want to ensure that data governance rules are effective, they must be interoperable with those of other nations and built on internationally developed and trusted norms.

Furthermore, data governance is an essential component of good governance in the twenty-first century and will have important effects on economic as well as human rights outcomes, such as freedom of speech, access to information and privacy. As data-driven technologies become more widespread, the governance of data becomes more important. Hence, the failure to effectively govern data could undermine trust in government, democratic values and the Internet as a whole.

However, some nations in the developing world are not home to data-driven firms. In fact, two countries have much of the world's data and data prowess. In 2019, UNCTAD reported that US and Chinese firms collectively hold 75% of all patents related to blockchain technologies, 75% of cloud capacity and 90% of the market capitalization value of the world's 70 largest digital platforms. In contrast, Europe's share of the value of these platforms is 4% and Africa and Latin America's together is only 1%. Developing countries could be at risk of becoming providers of

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¹ https://www.washingtonpost.com/world/europe/vestager-trump-twitter-ban/2021/01/12/4033fad0-544d-11eb-acc5-92d2819a1ccb_story.html.

raw data to global digital platforms while having to pay such platforms for the digital services produced from their data.

Without such firms, policymakers are less able to develop a feedback loop between these firms, regulators and consumers. In addition, without expertise to analyze data about the economy, firms in developing countries will be less well positioned to trade traditional goods such as commodities or crops. But the truth is no one really knows how to effectively govern the different types of data. Data governance is a work in progress. With this in mind, the US and EU should:

Clarify their digital trade objectives. Digital trade/e-commerce agreements should be designed to enable more people to participate and benefit from data-driven growth and set clear rules to govern digital trade to facilitate trust and predictability among market actors. The WTO negotiations have stalled because countries have not found common ground on norms, definitions and strategies. Developing countries have argued that they need support to develop data-driven sectors, and some have even argued for infant-industry protection. Hence, the US and the EU should issue a clear statement delineating their shared vision of how and when personal, public and proprietary data can flow freely among other nations. They should also clarify the rules and exceptions to the rules in trade agreements so that nations do not restrict cross-border data flows more frequently or broadly than necessary, especially in the name of national or cyber security. The US and EU should also provide clarity on what types of practices should be banned because they are trade distorting. For example, many Western countries believe that censorship, filtering or internet shutdowns are trade barriers. Yet these are not mentioned in relative trade agreements. If the US and the EU cannot agree on the data flow among nations, a WTO agreement on data is unlikely to move forward.

Announce their intent to join the Digital Economy Partnership Agreement (DEPA) among New Zealand, Chile and Singapore. DEPA is a model for how trade agreements can facilitate growth in countries with different levels of digital prowess. It encourages shared digital development and includes modules focusing on trust, provisions designed to promote data sharing between the public and private sectors, and provisions designed to encourage regulatory innovation in recognition of rapidly changing data-driven sectors. Yet DEPA too falls short; it does not include language governing data sharing in both directions: from public to private and private to public. Moreover, like most trade agreements, it simply states that “each Party shall adopt or maintain a legal framework that provides for the protection of the personal information.” In short, it establishes a floor, but does little to build interoperability and shared approaches to data governance.

Spread the wealth, as two of the leading beneficiaries of data-driven change. They should fund development organizations such as the World Bank and UNCTAD to train citizens as well as officials in data governance and prepare countries for the panoply of ethical, social, economic and political issues that regulators must address when discussing new data-driven services such as AI.

Use corporate governance rules to bolster data protection. US and EU regulators should ask all publicly traded companies to disclose how they acquire and utilize personal data and divulge to which firms they sell these data. Such mandated transparency would accomplish two things: make the market for data less opaque and incentivize firms to do more to protect personal data.

Build understanding and trust of data governance strategies through dialogue and making sure they hear citizens’ concerns about how data is collected, anonymized and monetized by firms and government entities. They should discuss how various types of data should be governed, what kinds of data should and should not be shared, how data can move from one platform to another, how data can flow to other countries and how various types of data can be combined and utilized by private firms or governments. The two trade giants should also crowdsource new ideas for data governance through a shared data governance portal. In so doing, they will be truly building a partnership on data governance.

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