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Transatlantic Cooperation in the Next U.S. Administration

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Introduction

The next U.S. president will be confronted with a plethora of global challenges: war in Europe, a disordered trading system, growing geopolitical competition and a more assertive China, disruptive new technologies, and the existential threat of climate change. Tackling these challenges requires cooperation with allies and partners, and as one of the world's largest economies, a NATO ally, and a democratic partner, Germany remains indispensable to the United States in advancing our shared values and interests.

In 2020, this Institute published "Enduring Partnership," which emphasized the durability of the German-American partnership despite the stresses it experienced during the Trump presidency and policy disagreements that arose well before under previous administrations. Although transatlantic engagement has been a pillar of the Biden administration's foreign policy, the transatlantic relationship has continued to transform with the world around it.

We recognize that the differences between Vice President Kamala Harris and former President Donald Trump in many areas could not be greater. Those are not a matter of political style, but deep differences with regard to the rule of law, domestic economic policy, social policy, and much more that is beyond the scope of this report but which makes this one of the most consequential elections in memory. There remain nevertheless core U.S. interests that the next president will wish to advance once in the White House. In this report, AGI presents recommendations on pressing issues that the next administration will face, and how the United States can work with its closest partners such as Germany and Europe to achieve its goals. We seek in this report, wherever possible, to identify approaches and options that could be adapted to either election outcome, though we acknowledge where gaps appear unbridgeable and the courses of a Trump or a Harris administration would inevitably diverge. Regardless, our authors find crucial opportunities for the transatlantic partnership and the relationship with Germany.

The areas for cooperation are many:

The transatlantic security alliance must not only raise its ambition, but more effectively coordinate. Jeff Rathke suggests how the United States and Europe can work together to maximize investments to ensure European security.

Russia, not only through its war in Ukraine, has established itself as a threat to European security and Western democracy. Dr. Stephen Szabo highlights where Germany and the United States can promote peace in Ukraine and counter Russia's growing hybrid threats.

Peter Rashish points out that our economies are in a state of transformation, and it is time for states to rethink assumptions and reform institutions. A Trump or Harris administration would take different paths, but each can make choices to pursue solutions with allies.

Our planet is warming and there is an urgent need for climate action. While a Harris administration would lead on international climate initiatives and a Trump administration would dial them back, Alice Hill identifies opportunities for transatlantic partnerships on climate no matter the outcome of the election.

Artificial intelligence will be essential to future national competitiveness and security. Dr. Melissa Griffith shows the importance of developing secure, scalable, and sustainable computing to ensure a reliable AI infrastructure

The United States must maintain its advantage in critical and emerging technologies. Yixiang Xu explores how a transatlantic technology alliance can manage strategic competition with China and expand domestic reindustrialization.

This report primarily offers recommendations to the new American administration, but we also highlight ways that European partners may think about a new administration pulled in many different directions. It will be especially important for Germany to manage the fractiousness in its coalition politics and engage the new administration effectively before the federal elections in 2025.

For seventy-five years, Germany and the United States have been partners, rooted in their values and vision for a democratic and prosperous global order. We hope these recommendations help policymakers to continue to engage across the Atlantic to address the shared and evolving challenges of the twenty-first century.

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About the Authors

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Yixiang Xu is the China Fellow and Program Officer, Geoeconomics at AGI, leading the Institute's work on U.S. and German relations with China. He has written extensively on Sino-EU and Sino-German relations, transatlantic cooperation on China policy, Sino-U.S. great power competition, China's Belt-and-Road Initiative and its implications for Germany and the United States, Chinese engagement in Central and Eastern Europe, foreign investment screening, EU and U.S. strategies for global infrastructure investment, 5G supply chain and infrastructure security, and the future of Artificial Intelligence. His written contributions have been published by institutes including The Chinese Academy of Social Sciences, The United States Institute of Peace, and The Asia Society's Center for U.S.-China Relations. He has spoken on China's role in transatlantic relations at various seminars and international conferences in China, Germany, and the United States. Mr. Xu received his MA in International Political Economy from The Josef Korbel School of International Studies at The University of Denver and his BA in Linguistics and Classics from The University of Pittsburgh. He is an alumnus of the Bucerius Summer School on Global Governance, the Global Bridges European-American Young Leaders Conference, and the Brussels Forum's Young Professionals Summit. Mr. Xu also studied in China, Germany, Israel, Italy, and the UK and speaks Mandarin Chinese, German, and Russian.

European Security

RIPE FOR A BREAKTHROUGH

JEFFREY RATHKE

Key Recommendations

Establish capability targets for European NATO allies that put burden-sharing for key chokepoints on a new path.

Raise the level of ambition on allied defense spending and encourage greater European investment in its defense industrial capacity, including through EU action.

Reaffirm U.S. commitment to European security, including through conventional capabilities such as long-range precision strike and nuclear deterrence, amid broader updates to NATO force model that rebalance responsibilities.

The United States has vital security interests in Europe, regardless of administration. Europe is home to three nuclear weapons states, thirty treaty allies, many of the world's most advanced military forces, and has been the origin of global conflagrations that required massive U.S. intervention twice in the twentieth century. Today, the imperial policy of Russia in Europe and its full-scale war against Ukraine represent ambitions that cannot be appeased without abandoning the post-World War II foundations of the transatlantic community. The United States and Europe are deeply and increasingly intertwined and form the most productive economic space on the planet, including critical positions in the most technologically advanced supply chains, such as for semiconductors, as well as research and development. Its countries have an extraordinary degree of shared democratic political principles and legal/regulatory compatibility, which reinforces their extensive trade and investment integration. Efforts by powers outside the transatlantic space to alter or dominate its political and economic choices therefore undermine a basic U.S. and European interest.

For seventy-five years, the United States has principally pursued its transatlantic security interests through the North Atlantic Treaty Organization. NATO provides a unifying factor of shared purpose, the political organizing mechanism, and the military structures to design, communicate, and implement effective policies to ensure transatlantic and European security. Nearly since the moment of NATO's founding in 1949, however, American leaders have bemoaned the burden the United States continued to bear for defending Europe and ensuring that America's most technologically, economically, and democratically advanced partners did not come under the sway of another power. The Biden administration from

its opening days committed the United States to reviving American alliances and stressed that American interests in Europe were a central pillar of the administration's national security strategy.

The security interests of the United States toward Europe have changed less in the past thirty years than the relative power of Washington to pursue its goals alone. China's military modernization and armaments programs increasingly render the People's Republic able to challenge American leadership in the Asia-Pacific region and to project power well beyond. Russia, through a combination of single-minded rebuilding of its military potential over the past fifteen years and its growing defense cooperation with countries like China, Iran, and North Korea has re-emerged as the most immediate threat to American security interests. This is most clearly apparent in Russia's war against the European security order in Ukraine but also in Russian attempts to use military tools to influence developments in the Middle East, unstable areas of Africa, and the Indo-Pacific.

The United States' problem of declining relative power inevitably heightens the importance of cooperation with capable and like-minded partners in order to achieve shared objectives. This aspect of the array of forces confronting the United States globally is recognized acutely, including by many Republican foreign policy thinkers, in particular the schools of thought described as the "prioritizers" and the "primacists."[1] The insight of Republicans who seek to bridge limited U.S. resources with an ambitious global agenda sits uneasily beside the often caustic assessments they deliver with regard to America's treaty allies and other close military partners around the world. How to reconcile that the United States can accomplish less on its own than it once could with the instinctive disparagement of the United States' most technologically advanced and prosperous allies is seldom addressed in Republicans' foreign policy thinking. In other words, a political-military strategy for resetting American alliances often boils down to exhortation rather than creating new conceptions of shared security interest that will expand the available resources and capabilities and form a new basis for joint efforts that magnify American (and European) power.

While NATO has remained the primary American instrument for engaging Europe to promote common security interests, it is not the only means. The United States over the past two decades has become increasingly open to cooperation with the European Union in the security and defense realm. This has corresponded to the efforts by EU member states to develop new instruments to further their security, enlarging their toolbox with new means of EU-level action, but also to the growing comfort American decision-makers have toward working with the EU.

These circumstances present in some ways an expanded universe of options for the next U.S. administration. In one regard, the United States, on a bipartisan basis, now has the least dogmatic approach to the European Union as a foreign and security policy partner that Washington has had since the end of the Cold War. At the same time, NATO enjoys a high degree of public support in the United States, with 58 percent of the American population expressing a positive opinion in an April 2024 survey by the Pew Research Center.[2] That favorable aggregate view is complicated by divergences among Republican (43 percent) and Democratic (75 percent) supporters. This 32-point gap between the supporters of the two major parties is the largest that Pew has reported in recent decades. That highlights the risks of political polarization for the solidarity of the American public and is attributable in part to the public antipathy expressed consistently by former President Trump toward NATO. Nevertheless, because Republican voters' opinion correlates closely with Republican leadership's rhetoric, if a future Republican administration chose to emphasize the benefit of America's largest alliance for U.S. interests, taking credit for favorable changes in NATO allies' policies, a positive swing in partisan support is conceivable. By the same token, European allies' massive reinvestment in defense since the 2014 Russian invasion of Ukraine—which has only accelerated since Russia's 2022 full-scale war but which includes considerable time lags while systems are acquired and fielded and other resource increases are brought to bear—means that NATO is on the verge of major progress in reconstituting the available military might of the Western alliance if this policy direction is sustained over the coming years. The defense spending of European NATO allies and Canada has increased by 72 percent in inflation-adjusted terms over the past ten years, while that of the United States has increased by only 14 percent, according to NATO data.[3] The rate of increase for non-U.S. NATO members has accelerated since the Russian full-scale war, growing by more than 25 percent in just the past two years. Germany, which for decades was the poster child for security free riding, has made

massive commitments to recapitalizing the Bundeswehr through the purchase of major systems and to expanding national engagements such as the permanent stationing of a combat brigade in Lithuania. While Germany's NATO allies want to see these commitments implemented faster and more sustainably and questions remain about how Berlin will navigate beyond this legislative period its complicated coalition politics and the thorny constraints of the constitutionally enshrined "debt-brake," there is no serious question about the commitment of the German political mainstream to devote at least 2 percent of its GDP to defense, if not more, for the foreseeable future. In other words, staying the course has the potential to yield significant, tangible policy successes for the next administration—sustaining the existing momentum, especially that which has materialized since 2022.

The issue of the burden-sharing balance between Europe and the United States is therefore ripe for significant further progress from the point of view of U.S. policy. This depends, though, on the next administration's vision and goals for the next four years and on sustaining the U.S. commitment to accomplishing them with the most important European allies.

Ukraine is likewise a central element of American interest in Europe, as Steve Szabo outlines in his contribution to this report. Ukraine faces three major challenges: defending its statehood, defining its future role in Europe and Euro-Atlantic institutions, and ensuring its security against an adversarial Russia that is unlikely to reconcile itself quickly to a normal role in Europe, even if Moscow's current attempt at conquest fails in Ukraine. For Germany, the European Union, and Europe more broadly, Ukraine's survival and progress is a center of gravity for the decade to come. Europe therefore has an interest equal to or greater than that of the United States in Ukraine's success, which is reflected in the level of European resources supporting Kyiv, which now surpass those from Washington. While Europe ideally would pursue that objective with the United States in an equal partnership role, the uncertainty surrounding the policies of a second Trump administration or weakening support for Ukraine in Congress require Europe to prepare for the possibility of diminished U.S. support. Increasing and sustaining European commitment to Ukraine, however, is another way to underscore Europe's stake in the outcome, and a robust European policy can also attract, rather than repel, key support from Washington.

The policies of a Harris administration toward European security likely would not differ much from those laid out in the Biden-Harris National Security Strategy and other strategic documents of the administration: an approach that sees NATO and other alliances as strategic assets but that will "count on our Allies to continue assuming greater responsibility by increasing their spending, capabilities, and contributions."[4] With the focus on China as the "pacing challenge," a Harris administration would depend on continued increased European contributions to NATO and transatlantic security.

The approach of a Trump administration to NATO is less clear. The Republican Party platform, which reflects the personal engagement of former President Trump, indicates that "Republicans will strengthen Alliances by ensuring that our Allies must meet their obligations to invest in our Common Defense and by restoring Peace to Europe."[5] The endorsement of stronger alliances in the platform carries implicit tension with former President Trump's earlier campaign trail comment that countries that did not meet NATO's spending expectations could be abandoned to the tender mercies of Russian President Putin: "You don't pay your bills, you get no protection. It's very simple."[6] Beyond the candidate's own statements, several policy infrastructures-in-waiting have been prepared by a variety of Trump-aligned institutions, as cataloged by Leonard Schütte.[7] Their prescriptions vary: some suggest a "dormant NATO" in which the U.S. commitment to European security is dramatically reduced to the nuclear umbrella, while others call for withdrawal of significant numbers of U.S. forces from Europe and restructuring NATO. Donald Trump jealously guards against anyone purporting to speak in his name. So while these proposals would be in the mix in a second Trump administration, the range of potential policies remains quite wide. What seems likely is that, if re-elected, Trump would at a minimum seek "burden-shifting" to America's European allies. He might also welcome the opportunity to harvest the gains that will accrue to European security in the coming years and portray himself as a president who "saved" NATO. European leaders will need to consider how they hedge national and European policies to ensure that they simultaneously expand Europe's ability to provide for its defense while keeping open options for how that is characterized politically. This will require new levels of activism and the strengthening of European defense policy cooperation, in both NATO and the EU. Germany, which among EU and NATO member states has

the greatest stake in the revitalization of Euro-Atlantic institutions, must play a large role in this regard.

Recommendations

Establish capability targets for European NATO allies that put burden-sharing for key capabilities on a new path. The United States faces the possibility of a tradeoff (or perceived tradeoff) between its security commitments in the Indo-Pacific and in Europe in the foreseeable future. For Democratic as well as Republican defense policy strategists, this represents a significant risk in U.S. planning. The next U.S. administration should prioritize near-term actions by European NATO allies that will reduce the risk of overcommitment of scarce U.S. capabilities. This should be formulated as a goal with defined targets for European allies to field sufficient air and missile defense and long-range precision strike missiles within a timeframe that will alleviate American concerns about managing challenges in two theaters and being able to prevail if a conflict occurs.[8] The United States should also encourage an expanded European air-to-air refueling capability, an area in which the EU and NATO have collaborated to bring refueling aircraft online, but only in very modest numbers that would not measure up to the challenges of a high-intensity conflict.[9]

Raise the level of ambition on allied defense spending and encourage greater European investment in its defense industrial capacity, including through EU action. In 2014 after the Russian annexation of Crimea and invasion of southeastern Ukraine, NATO leaders pledged to increase their defense spending, with a target of 2 percent of GDP by 2024. This target has largely been met, with more than two-thirds of the alliance achieving the 2 percent level this year. Any self-satisfaction in NATO would be short-sighted in view of the dramatic deterioration of the security environment in Europe since the pledge was made in 2014. Recognizing these changed circumstances, NATO leaders at their 2023[10] and 2024[11] summit meetings affirmed that "expenditure beyond 2 percent of GDP will be needed in order to remedy existing shortfalls and meet the requirements across all domains arising from a more contested security order." The plans of EU Commission President Ursula von der Leyen to create a position of Commissioner for Defense and Space that could strengthen the focus of EU member states on defense industry, research, and innovation is an opportunity for the next U.S. administration to encourage Europe to expand its indigenous production and bolster industrial capacity through long-term arrangements.

Reaffirm U.S. commitment to European security, including through conventional capabilities such as long-range precision strike and nuclear deterrence, amid broader updates to NATO force model that rebalance responsibilities. The U.S.-German agreement on the "episodic" deployment of U.S. long-range fires in Germany was announced during the Washington NATO Summit and will begin in 2026.[12] At the same time, Germany and three other NATO and EU member states announced their intent to develop a "European Long-Range Strike Approach" (ELSA), which will provide cruise missiles with a range of 1,000 to 2,000 km, filling a key gap in European capabilities. The time frame for deployment is unclear but is expected to be at least five years.[13] This represents an opportunity to structure U.S. commitments in a way that builds bridges to and incentivizes the fielding of European capabilities: the duration of the U.S. deployment of elements of its Multi-Domain Task Force in Germany should be linked to the development and entry into service of the ELSA long-range strike capability. This linkage would be a clearer demonstration that U.S. conventional commitments to Europe will fill gaps for a time, rather than perpetually, and would represent a political success for an administration of either party. Coupled with a renewed commitment to the presence of U.S. nuclear weapons on European soil, these measures would create U.S. leverage to further adapt the NATO force goals and national contributions in ways that deliver a more sustainable model for transatlantic security.

Conclusion

The United States administration that takes office in January 2025 will have to set goals for U.S. relations with Europe and that will include the transatlantic division of labor. This is most obvious for Republican foreign policy objectives but would apply equally to the objectives of a Harris administration. Finding a new balance in the security partnership will require active U.S. engagement and coupling the urgency of the Russian war against the European security order with the recognition among Europeans that they have made far too little progress in developing the capacity to defend themselves. This provides an opportunity to focus U.S. contributions on the areas where America is uniquely positioned to contribute to its European security interests while creating incentives that will spur European action that reduce American risks and strengthen collaboration. The political conditions

for significant progress are at hand, and thoughtful U.S. diplomacy can reap significant and lasting rewards.

NOTES

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11 Washington Summit Declaration, North Atlantic Treaty Organization, July 10, 2024.

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The Russia Factor in the Post-Election German-American Relationship

STEVE F. SZABO

Key Recommendations

Make it clear that European support for Ukraine is essential to the transatlantic alliance and that America is with its allies in its continuing commitment to Ukrainian sovereignty.

Support the German *Energiewende* as a central pillar of its approach and offer to sell more LNG from the United States, something both parties in the Congress will support.

The United States and Germany should acknowledge Russia's hybrid war with the West and devise a long-term strategy to deal with this challenge at home.

Push for Europeans to take on more responsibility for their defense.

The German-American relationship has been central to Western policy on Russia. The Biden and Scholz governments have led the Western reaction to Russia's invasion of Ukraine with Washington taking the lead followed closely by Berlin. The unprecedented large prisoner exchange with Russia is a dramatic recent example of the importance of German-American cooperation on Russia. However, there are many obstacles to a continued close relationship on Russia over the next four years. Germans are focused on the prospect of a return of Donald Trump to the White House and are thinking about ways of dealing with it. As Adam Tooze noted in a column for the *Financial Times*, "If Trump is elected for a second term, no one will receive a less warm welcome in Washington than Olaf Scholz."[2] A *Foreign Affairs* article, "Trump-Proofing Europe," by a group of leading European analysts, is a good example of broader European concerns.[3]

While a Democratic administration is certainly preferable in Berlin, it does not mean that the transatlantic relationship and the German-American relationship will be back to their old patterns. As the authors of the *Foreign Affairs* article point out, "Even if Trump does not win in November, Europe has work to do. It may simply no longer be able to rely on the United States to be a consistent partner, no matter who's in charge." For Europe and Germany, it has become a matter of "America-proofing" rather than "Trump-proofing." At the center of the relationship after the American elections will be Russia policy.[4]

Key Structural Factors

A number of long-term structural factors will shape the German-American relationship with Russia, regardless of who sits in the White House.

A New Strategic Environment: While the Harris team would be much more Europe-friendly than the alternative, some of the trends that have become apparent already from 2021 to 2024 will only intensify. These include an ever-growing American preoccupation with China and the new coalition it heads with Russia, Iran, and North Korea. American policymakers will continue to shift responsibility to Europeans for defense as the broader pluralistic global context continues to reshape American priorities.

Mounting Budgetary Constraints: Given the swelling federal deficit, pressures on defense spending and its allocation will grow to the detriment of Europe. The issues of burden-sharing and free riding will not go away. While Trump may have opposed German and European free riding for the wrong reasons, some of those concerns were not unjustified and will only grow as pressures on the U.S. budget mount and a new world order forces the United States to set new priorities. The war in Ukraine will only increase demands that Germany do more both for Ukraine and for its own defense. In the phrase of Leonard Schütte, "burden-sharing" will be replaced with "burden-shifting."[5]

A Changing Political Context: The American political culture is becoming less European and less Eurocentric. The authors in the *Foreign Affairs* article write that Trump "was the first U.S. president who did not treat Europe as family."[6] However, Barack Obama's and George W. Bush's administrations were more distant from the "Old Continent" than previous ones, too, and this trend goes beyond one person or administration.

The changing ethnic demography and shift of power away from the east coast, which has worried European leaders for decades, will only continue, contributing to an ongoing drift away from Europe. Signs of impending generational changes in views of the world can be seen in the United States and in Europe, presaging a very different world order for the remainder of the twenty-first century. This reflects a changing and much more diverse America, which has implications not only for U.S. views on Israel in the Middle East but also regarding China, Russia, and Europe. A generational divide is already apparent in Congressional voting on Ukraine and within Republican party debates on the U.S. role in the world.[7]

It is highly probable that the next administration will continue to face gridlock in the U.S. Congress. The subordination of strategic interests to partisan concerns, so evident in the standoff over continued funding for Ukraine, will continue in the new Congress. The "America first" thinking that Trump has revived is unlikely to go away, and the growing challenge of immigration and diversity will likely reinforce parochial nationalism.

On the German side, U.S. foreign policy and American leadership have not instilled a great deal of confidence among younger Germans. The levels of violence and the availability of guns in the United States as well as the assault on women's rights have not gone unnoticed. The chaos and unpredictability of U.S. politics is something they cannot avoid. They have also grown up taking the European Union for granted and want Europe to shape its own future.[8]

As Germany became the world's leading trading state, it gave priority to economic interests and commercial elites and allowed its defense DNA to atrophy. This dominance of economic elites with a worldview that emphasizes cooperation and profit over security and risk produced a form of commercial Realpolitik that came at the expense of a more traditional military version. This worldview resulted in mirror imaging in which Germans believed Russian elites shared this worldview and that Russia was a reliable supplier of energy.[9] In addition, there are fewer Russia experts now in contrast to the Cold War, requiring a new generation of specialists.[10]

The deep structural changes brought on by the invasion of Ukraine have weakened the German Russia lobby and have brought security priorities to the forefront. As Stefan Meister points out, "Russia is no longer as important as it was before in terms of energy and economic relations. Alternatives to Russian energy have been normalized."[11] At the same time, as Susan Stewart observes, "Germany does not have a coherent and consistent Russia policy but rather a sort of crisis management that allows Berlin to avoid addressing the relationship with Moscow more comprehensively."[12] It does not want a Russia that is so weak it might collapse, and there is still a long-term goal to keep Russia in a European security architecture. While the Russia lobby is weak, German business is keeping its options open for the future.

Germany's past attempts at a Russia policy in the Merkel era were constrained by the lack of consensus between the coalition parties and the consequent struggles between the Social Democratic (SPD)-led Foreign Office, which operated under the legacy of *Ostpolitik*, and the Christian Democratic Union (CDU)-led Chancellor's Office and Defense Ministry. Chancellor Angela Merkel was more skeptical of Russian intentions, but a strong business wing within the CDU/CSU favored the economic relationship and downplayed Russian internal developments. She also decided not to challenge her SPD coalition partners, resulting in a stalemate.[13] The current government has an SPD chancellor and defense minister and a Russia-skeptic Green foreign minister, Annalena Baerbock, with a resulting stalemate that prevents bold changes in Germany's Russia policy.

Finally, there is a deep-seated fiscal conservatism embodied by the Free Democrats (FDP), which has been a major constraint on German defense spending under the current coalition. Defense Minister Boris Pistorius has made it clear that the struggle over budget deficits and priorities has been a key driver in German defense policies.[14] The constitutional limitation on new borrowing (the "debt brake") combined with demands for spending on infrastructure and social priorities will be a primary restraint on serious defense spending.

Personal and Political Factors: While structural changes are important, personalities and leadership remain central to politics and policy. In the United States, the Secretary of State, Secretary of Defense, National Security Advisor, and others are all likely to be different people come 2025, in a Trump administration but also in a Harris administration. This will mean a new team of foreign policy officials, some of whom will be from a younger generation shaped by a very different transatlantic relationship than Biden, including, potentially, the new president.[15]

On the Trump side, personalities will be even more important. While the first Trump administration did not and could not draw from the traditional Republican national security bench, Trump was constrained by several Atlanticist advisors. An exception was Richard Grenell, his ambassador to Germany, who was unstinting in his willingness to confront German policies. He seems likely to play a more senior role in a second Trump term, which would likely cause a great deal of friction with German officials and a hostile press reaction. His willingness to reach out to right-wing nationalists would be likely part of an embrace of the right in Germany and could create tensions with a progressive coalition government. As Schütte points out, "there are now willing and capable agents to translate the structural trends into a radical policy change."[16] However, how much a second Trump administration would move away from Europe is not clear. An article by his former top national security advisor, Robert O'Brien, which sets out the priorities of the Trump team, is rather modest in its demands on Europe. He argues, "Trump never canceled or postponed a single deployment to NATO. His pressure on NATO governments to spend more on defense made the alliance stronger."[17] While these views were echoed by congressional Republicans during the July 2024 NATO summit, their unwillingness to challenge Trump and his unpredictability provides little confidence to German leaders.

On the German side, the 2024 European Parliament elections and the fall elections in eastern German states have given a major boost to pro-Russian groups like the far-right Alternative for Germany (AfD) and elements on the nationalist left such as the Sahra Wagenknecht Alliance (BSW). The European Parliament elections seriously weakened the governing coalition in Berlin. A Democratic administration would continue to emphasize the struggle between democracies and autocracies while Trump would take a completely different view and see right-wing nationalist parties like the AfD as allies. His close aide Stephen Bannon has spent considerable time building up an alt-right network in Europe. Germany will have its own national election in 2025, which is likely to be characterized by a weak multi-coalition government and a stuttering economic engine. A Trump victory would place a great strain on the German-American relationship and seriously weaken resistance to Russian hybrid war. If a Christian Democratic-led coalition emerges after the 2025 German election, the mood might improve, but substantive differences would continue. In either case of a Harris or Trump administration, Germany will likely pursue a more European approach to security.

Areas for Cooperation

Despite all the turmoil and uncertainty, the German-American relationship will continue to be central to the Western response to Russia over the remainder of the decade. The next American administration should consider some of the following steps to consolidate Russia policy with Berlin.

Ukraine: **American policy should make it clear that European support for Ukraine is essential to the transatlantic alliance and that America is with its allies in its continuing commitment to Ukrainian sovereignty.** While EU membership will not be immediate, support for a European perspective for Ukraine will be important.

It is imperative that the United States continue to support Ukrainian territorial integrity. A Trump administration would likely push for a negotiated settlement of the conflict that accepts a ceasefire and accedes to some Russian territorial gains, at least provisionally. A Harris administration would have to remain open to this as well. America cannot fight to the last Ukrainian. A negotiated settlement will have to be driven by Ukraine, but this seems more likely given the horrific costs of the war. Germany and the EU will then have to have a European version of the Marshall Plan to rebuild and integrate Ukraine and make it a success story along the lines of the West German experience.[18]

Energy Policy: While much has been made of Germany's slow defense reorientation, its economic *Zeitenwende* has been remarkable with very important long-term implications for Germany's views of Russia. The Nord Stream pipelines, which were a major issue for Trump, are dead, and Germany's economic relationship with Russia will not be the same for decades at least. This has important implications for a geoeconomic power that now will have to rebalance its economic and military interests in a very different way. **The new administration should support the German** *Energiewende* **(energy transformation) as a central pillar of its approach and offer to sell more LNG from the United States, something both parties in the Congress will support.**

Countering Hybrid War: Russia has been at war with the West for at least a decade and will continue to be so for an extended period. Germany and the United States must openly acknowledge this and shape a long-term strategy to deal with this challenge at home. Segments of German elites in both the private sector and government have been corrupted by Russian money and influence through an extensive network of influence buying orchestrated by Putin. A new dimension is the increased threats of sabotage and assassinations in Germany by Russian proxies.

This is part of the larger hybrid warfare Russia is waging against Germany, which goes beyond the Schröder network to include the AfD, Die Linke, and the BSW, and elements within the SPD and CDU/CSU as well as large contingents within the Russian community in Germany and the former German Democratic Republic. German business will also be tempted to keep its options open. **The new U.S. team must make countering this hybrid war and corruption a priority in its defense policy and work closely with Germany and NATO on a common strategy**, including enhanced intelligence sharing as well as rolling up Russian espionage networks in Germany. This should also include countermeasures in Russia to raise the cost to Putin of his attacks. In paragraph 21 of the NATO Washington Summit Declaration, it was agreed that, "For our next Summit, we will develop recommendations on NATO's strategic approach to Russia, taking into account the changing security environment."[19] While the alliance has regarded resilience as a national responsibility, there is a clear and pressing need to enhance NATO's role in this area. Finally, the United States and Germany, as geoeconomic powers, should increase the employment of financial tools to transfer frozen Russian assets in the EU to Ukraine.

Burden-Shifting: The discussions that have begun about Europeans taking on more responsibility for defense and security policy must move to immediate and concrete policies. **The next U.S. administration should push for Europeans to take on more responsibility for their defense.** Specifically, the United States should push to have German conventional forces immediately upgraded to cover for the gap left by American forces. Germany should adopt a number of the policies advocated by Defense Minister Boris Pistorius, a Social Democrat, as outlined in his May 2024 speech in Washington, DC.[20] These include a substantial and long-term commitment to increased defense spending and arms production in Germany, the introduction of conscription, and a waiver of the constitutional prohibition of a budget deficit for defense spending. Spending should be directed to equipment and infrastructure and less to personnel costs. An important first step has been the shift in the German defense industrial sector toward acceptance of its role.[21] The U.S. administration should understand that this means less American arms sales as Germans will want to see their money being spent on German and European arms. A Harris administration should make it clear that it is as serious about burden-shifting as the Republicans and drop any objections to a stronger European defense identity and autonomy.

Germany must take the lead within the EU to allow joint procurement standardization and avoid duplication of weapon systems. It should support a European Commissioner for Defense Industry and push the European Defense Agency to play a vigorous role in promoting standardization, joint production, and procurement of weapons systems.

Nuclear Deterrence: The issue of nuclear deterrence will be central given growing concerns about the credibility of the U.S. nuclear deterrent in Europe. As a non-nuclear power, Germany will have to find ways for Europe to share nuclear deterrence and nuclear weapons both with the United States and with the independent nuclear deterrents in France and the UK. The acquisition of nuclear-capable F35 aircraft is an important step as is the announced future deployment of long-range American conventional long-range strike systems in Germany.[22] Raising the level of conventional deterrence, however, is more important than the nuclear issue, as Russia's war against Ukraine has demonstrated.

A Reshaped Partnership

The German-American relationship will be reshaped fundamentally in the next decade. It will have a very different style, one which is more balanced and will be challenged by differences and divergences, even conflicts. A redefined West will remain the foundation for dealing with a more hostile world, but it will need to hearken back to an earlier model in the transatlantic partnership—the two-pillar alliance that U.S. President John F. Kennedy called for more than sixty years ago.[23]

NOTES

1 The author would like to thank Stephen Flanagan, Roger George, Jeff Rathke, Susan Stewart and Stefan Meister for the comments and insights while the author is fully responsible for the final product.

2 Adam Tooze, "Germany's Fractious coalition dithers as the heat rises in Europe," *Financial Times,* June 1, 2024, p.7. As an article detailing Trump's behavior at the 2018 NATO summit points out, "Germany, in particular, was in Trump's crosshairs. It spent less than 2 per cent of GDP on defence, despite being Europe's most powerful nation. And it bought vast amounts of gas from Russia, the country NATO saw as its primary threat. 'So we are protecting you against Russia, but they're paying billions of dollars to Russia?' Trump asked sarcastically. 'We're going to have to do something because we're not going to put up with it. We can't put up with it. And it's inappropriate.' Henry Foy, "The most chaotic Nato meeting ever," *Financial Times*, July 6, 2024, FT Weekend, p.16

3 Arancha Gonzalez Laya, et.al., "Trump-Proofing Europe: How the Continent Can Prepare for America's Abandonment," *Foreign Affairs*, February 2, 2024.

4 Stephen F. Szabo, "America Proofing Europe," *Internationale Politik Quarterly*, February 13, 2024.

5 Leonard Schütte, "Seize the Burden," The American-German Institute, June 10, 2024.

6 Gonzalez Laya, et.al., "Trump-Proofing Europe."

7 Jordan Muchnick and Elaine Kamarck, "The generation gap in opinions toward Israel," Brookings Commentary, November 9, 2023. Dylan Wells, "Biden's resistance to cease-fire could alienate youth voters in 2024," *The Washington Post*, November 22, 2023.

See also Schütte, "Seize the Burden," and the Chicago Council report, "Generational Divides in Attitudes toward the US Role in the World."

8 As in America, generational trends are distancing younger Europeans from the United States. These trends go beyond attitudes on the Middle East. In Europe, the German Marshall Fund's *Transatlantic Trends 2023* survey found that "Generation Z Europeans were not transatlanticist by default and are less likely to see the U.S. global influence as positive. They reflect a growing systemic trend toward an 'à la carte world' in which the old political alignments are being replaced with more flexible arrangements. Having come of age in a post-bipolar world in which western democracies are increasingly more authoritarian, younger Europeans tend to perceive Russian and Chinese influence as more positive than older respondents."

9 See Stephen F. Szabo, *Germany, Russia and the Rise of Geo-economics* (London: Bloomsbury, 2015), p. 84; Rawi Adbelal, "The Profits of Power: Commercial Realpolitik in Europe and Eurasia," working paper, Harvard Business School, September 20, 2010; Thane Gustafson, *The Bridge: Natural Gas in a Redivided Europe* (Cambridge: Harvard University Press, 2020); as Liana Fix points out, "The attempt to separate political from energy relations-based on the Cold War experiences that energy relations with the Soviet Union remained reliable throughout crises proved unrealistic in times of weaponized interdependence." Liana Fix, *Germany's Role in European Russia Policy* (Cham: Palgrave Macmillan, 2021), p.160.

10 See Karl-Heinz Kamp, *Deutschlands nukleare Interessen Nach dem Ukraine-Krieg* (Baden-Baden: Nomos, 2023) pp.100-101.

11 Interview with the author, June 20, 2024.

12 Interview with author, June 25, 2024.

13 Liana Fix, *Germany's Role in European Russia Policy*, p.161-62.

14 "German Defense Minister Boris Pistorius Delivers Address at Johns Hopkins University," American-German Institute, May 9, 2024.

15 Michael Birnbaum and Missy Ryan, "Rising from Biden's shadow, Harris faces crucial test on foreign policy," *The Washington Post*, July 30, 2024.

16 Schütte, "Seize the Burden."

17 "Trump, for his part, has made clear that he would like to see a negotiated settlement to the war that ends the killing and preserves the security of Ukraine. Trump's approach would be to continue to provide lethal aid to Ukraine, financed by European countries, while keeping the door open to diplomacy with Russia—and keeping Moscow off balance with a degree of unpredictability. He would also push NATO to rotate ground and air forces to Poland to augment its capabilities closer to Russia's border and to make unmistakably clear that the alliance will defend all its territory from foreign aggression." Robert O'Brien, "The Return of Peace Through Strength," *Foreign Affairs*, June 18, 2024.

18 This would be a version of Adenauer's magnet theory which saw a rebuilt and successful West Germany acting as a magnet on East Germany.

19 "Washington Summit Declaration," NATO, July 10, 2024.

20 "German Defense Minister Boris Pistorius Delivers Address at Johns Hopkins University," American-German Institute, May 9, 2024.

21 Arjun Neil Alim and Martin Arnold, German business breaks postwar taboo to supply defence industry," *Financial Times*, July 5, 2024, p.9.

22 Mary Ilyushina and Missy Ryan, "Russia vows response if U.S. puts longer-range missiles in Germany," The Washington Post, July 11, 2024.

23 John F. Kennedy, "Address at Independence Hall, Philadelphia," American Presidency Project, July 4, 1962.

A Trade Policy that Protects—or Protectionism?

BY PETER S. RASHISH

Key Recommendations

A President Harris should redouble efforts to conclude the negotiations on a Critical Minerals Agreement and a Global Agreement on Sustainable Steel and Aluminum (GASSA) with the European Union.

A President Harris should deliver a major address on the global economy outlining her long-term strategy for an updated governance that advances U.S. interests.

A Trump administration would need to make clear early in its term of office whether its priority is to pursue a 360-degree policy of economic self-sufficiency or rather to insulate the United States from the impact of China's policies.

The Trump administration will need to choose: work with traditional allies to implement its China strategy or pursue a unilateral approach that is almost certainly doomed to fail.

Introduction: Biden, Trump, and Post-War Lessons

History does not repeat itself, but it often rhymes.[1] But which history? When it comes to trade policy, there are two twentieth-century periods that are useful reference points for examining the records and agenda of the Biden-Harris administration, candidate Kamala Harris, and her opponent, former President Donald Trump.

One historical parallel is the period immediately after World War II. Then, the country emerged from a conflict that was driven mainly by the destructive ideology of Nazism but that also had its roots in the hyperinflation, mass unemployment, and depression of the 1920s and 1930s.

While the League of Nations existed as a multilateral institution, the United States was not a member. President Roosevelt gained authority to negotiate trade agreements under the Reciprocal Trade Agreements Act of 1934, but it was too little, too late to stem a global tide of protectionism and economic nationalism that was worsened by U.S. legislation like the Smoot-Hawley tariffs of 1930.

The United States responded to the post-war collapse of the global economy by working with like-minded countries to build new cooperative arrangements based upon the idea of an open, win-win trading system. While the original aim was to create a wide-ranging International Trade Organization through the Havana Charter,[2] the General Agreement on Tariffs and Trade (GATT) that finally emerged from negotiations in 1947 was more

narrowly focused and started out small, with twenty-three countries. (It has since evolved into the 166-member World Trade Organization launched in 1995.) From the start, the role of Europe in this post-war U.S. vision for the global economy was crucial. The United States also began disbursing Marshall Plan aid for European recovery in 1948, which ultimately led to the creation in 1960 of the twenty-member Organization for Economic Cooperation and Development (OECD) that now counts thirty-eight member countries (including several beyond the primarily transatlantic geography of its founding members).

This historical parallel is relevant because as was the case eighty years ago, U.S. trade policy faces a world experiencing transformation. While thankfully the current period does not have to look back at the devastation caused by World War II, the combination of new geopolitical and geoeconomic challenges, the COVID-19 pandemic, the climate crisis, and technological change requires a rethink of several long-held assumptions and a reform to the institutions and agreements that have governed global trade.

Although it ended tragically, it is also possible to place today's trade policy challenges in the context of another period—the aftermath of World War I. This conflict was characterized by the first U.S. military engagement in Europe that, alongside France and the UK, defeated the Central Powers. President Woodrow Wilson, a Democrat, had justified the U.S. involvement as a means to "make the world safe for democracy"[3] and proposed the creation of a League of Nations to govern world affairs according to a set of mutually agreed principles.

Wilson, however, was not able to convince the U.S. population of the virtues of his idealist vision, one where the country would play a permanent role in world affairs, and in 1920 the U.S. Senate voted not to join the League conceived by the country's own president. Under the Coolidge administration, the Congress severely restricted immigration in 1924, and in 1930 the Congress passed the self-destructive Smoot-Hawley tariffs in a beggar-thy-neighbor attempt to respond to the dislocation caused by the 1929 stock market crash, but which ended up exacerbating the depression that followed in the 1930s.

Why does this admittedly much darker period in U.S. history suggest itself as a framing to understand the U.S. presidential campaign and the outlook for trade policy? One lesson from upheaval is for the United States to remain engaged and to craft long-lasting solutions that help inoculate the international system against the worst kind of crises. Yet another could be to conclude not only that the system has not advanced U.S. economic interests but that it is beyond repair. In such circumstances, it is not impossible to envisage a superpower like the United States—which is much less dependent on global trade than other leading countries[4]—seeking to withdraw from significant involvement in international economic relations.

The backdrop to these quite distinct options for U.S. trade policy is a growing disorder in the global economy over the last ten to fifteen years. There are several reasons for this. First, countries like China, India, Brazil, and Indonesia are asserting their interests more forcefully, introducing a diversity of viewpoints that makes decision-making more difficult. Second, China's subsidization of its industries at scale has created unfair competition for U.S. and European firms that has been inadequately addressed by WTO dispute settlement decisions. Third, new rules are lacking to cover the interaction between trade and the existential threat of climate change or rapidly evolving technologies like artificial intelligence. And fourth, while openness can promote prosperity, there is now a greater awareness that it can also lead to a vulnerability of supply chains to public health crises, natural disasters, and geopolitical shocks.

On the one hand, these changes suggest there is a need for the next U.S. administration to lead a coalition of like-minded economies to rethink the assumptions and rewire the institutions and agreements underlying the global economy—a process that echoes, in less dramatic form, what U.S. leadership faced eighty years ago. On the other hand, because of shifts in where economic power and influence lie, the United States, Germany, and the European Union will need to accommodate countries with sometimes differing interests and objectives as they seek to reform the rules of the international economy. While this challenge does not justify a retreat by the United States from international economic engagement, it does suggest that U.S. trade policy after November's election will be less dominated by the consensus-based institutionalism of the post-World War II era and more characterized by a spirit of experimentalism, of coalitions of the willing operating along parallel tracks depending on the issue at hand.

While both Kamala Harris and Donald Trump can be

expected to diverge from the free trade and globalization paradigm that has characterized most of the last eighty years of transatlantic policymaking, there are more than differences in degree between the two. Vice President Harris would likely use trade policy to *protect* U.S. interests in the global economy, while Donald Trump would impose a policy of *protectionism*. As the distinctions between these two approaches are far more important than their similarities, using these two historical reference points is a helpful tool to understand the two candidates' policy platforms. The first historical reference—the post-World War II era U.S. international economic engagement—can illuminate what a Harris term would look like on trade policy and how its policies would impact Germany and the European Union. On the other hand, the isolationism of the 1920s can serve as a launching pad for framing a second Trump administration's policies (even if those policies are also motivated by a nationalism that includes an element of U.S. engagement).

The Biden Record and the Harris Outlook: Security, Climate, and Jobs

The Biden administration's approach to trade policy has been affected by the major changes in the external environment noted above, taking several steps to respond to this period of transformation in the global economy with an emphasis placed in three areas: security, climate, and jobs. Some of these steps have been unilateral, while many have been focused on cooperation with allies and other like-minded countries.

In the first category, during the Biden administration, the U.S. Congress passed the Inflation Reduction Act (IRA), the CHIPS and Science Act, and an infrastructure law. The IRA, which is focused on climate action, is an emblematic initiative from the current administration. On the one hand, it includes local content provisions for electric vehicles that are likely contrary to WTO rules. On the other hand, these measures may boost domestic manufacturing and jobs in the long run. And while European leaders have argued[5] that the IRA is protectionist, its main thrust is not to close off the U.S. market but rather to avoid asymmetric dependencies on unreliable suppliers like China for EVs and battery components.[6]

A second signature engagement from the Biden administration is the U.S.-EU Trade and Technology Council (TTC).[7] The TTC—which was originally proposed by the European Commission in December 2020—is an example of the current White House's focus on working with select countries on common international economic interests. (The Indo-Pacific Economic Framework (IPEF) and the Americas Partnership for Economic Prosperity (APEP) are two others.) It is based on the idea that while consensus and effectiveness at the multilateral level (the World Trade Organization, the UNFCCC Paris Agreement) may be challenging, a common basis for action can be found among smaller groupings. The TTC's formal agenda has focused primarily on semiconductor supply chain resilience, foreign investment screening, export controls, artificial intelligence governance, and decarbonization.

These initiatives have been valuable channels for reengaging U.S. economic partners after the disruptive policies of the Trump administration. While falling short of the ambition of a modern free trade agreement, the TTC in particular has served as a useful forum for forging cooperation on top-line issues that need attention in the short term, where other agreements or institutions would be unlikely to lead to transatlantic or broader alignment in a timely manner. The TTC has also played an important role in coordinating transatlantic policies after Russia's invasion of Ukraine that were later brought to the broader level of the G7. In retrospect, if the TTC did not exist, it would have had to be invented.

How much would a Harris administration resemble Joe Biden's in trade policy? After a second defeat of Donald Trump as a presidential candidate the new Democratic president may feel empowered to pursue a somewhat more activist trade policy, especially with close allies like Europe. For example, while a focus on deliverables in the U.S.-EU Trade and Technology Council can mask less visible but equally valuable working-level cooperation, under a Harris administration the TTC should be judged by whether it is able to agree common, binding rules on supply chain security and resilience as well as on AI governance and trade, two areas where it has made solid progress.

A President Harris should redouble efforts to conclude the negotiations on a Critical Minerals Agreement (which would open up IRA EV tax credits to purchases of European cars) and a Global Agreement on Sustainable Steel and Aluminum (GASSA) that was put off by the Biden administration until 2025. A successful GASSA

would have the benefit of permanently removing the Trump administration's divisive metals tariffs on the EU and could lay the basis for a "Climate Consortium" with more countries and an expanded green trade, finance, and technology agenda.[8] Given her previous positions—she voted against the 2019 U.S.-Mexico-Canada Agreement (USMCA) out of concerns that its environmental provisions were too weak—she would be well-placed to revitalize these negotiations with European partners.

One area of speculation[9] is whether a second Democratic administration would pursue traditional free trade agreements like the ill-fated Trans-Pacific Partnership (TPP) and Transatlantic Trade and Investment Partnership (TTIP). It is true that trade with the EU—an economy that shares many of the same values as the United States—would not present concerns about geopolitical alignment, unfair competition from low-cost labor, or insufficient environmental standards and climate commitments. But with tariffs already low across the Atlantic, it is worth asking if the president would wish to spend her political capital on a TTIP 2.0, especially if support from Congress (and the European Parliament) is uncertain. With industrial policy and jobs, climate, and security likely to remain high on the agenda, a more targeted and more strategic approach to trade—one that can also appeal to poor and emerging economies that are also strong trading partners with China—is the better way forward.

While the Biden record reflects an appreciation for the transformative challenges facing the global economy, which echo the realities of eighty years ago, there is an important missing piece in the current White House's trade policy compared to the post-World War II period: a strategy for global economic order.[10] While the GATT started out with under twenty-three members and thus could be seen as a plurilateral, "coalition of the willing" approach to economic statecraft, it was one of several institutions that included the World Bank, the International Monetary Fund, and several United Nations specialized organizations whose aim was a universal and multilateral form of governance. While this vision of economic order is weakening, the concept of order itself remains valid. And although the Biden administration has launched several inter-regional initiatives (U.S.-EU TTC, IPEF, APEP) and has strengthened others (G7), it is unclear how the pieces of the puzzle fit together so that the whole is greater than the sum of its parts.

To remedy that gap in Biden administration policymaking, early in her term **President Harris should deliver a major address on the global economy outlining her long-term strategy for an updated governance that advances U.S. interests.** She should lay out both the areas where she believes the WTO is working and where it needs reform (dispute settlement, subsidies rules, role of plurilateral agreements). Crucially, however, she also needs to detail how parallel U.S. efforts in the TTC, IPEF, APEP, an enlarged G7+ or other still-to-be-created agreements and institutions (for example, the Climate Consortium referred to above) can work together to help reestablish global economic order where the WTO cannot.

The Trump Record and Outlook: Trade Wars Squared

During his presidential term after the 2016 election, Donald Trump proclaimed himself "tariff man,"[11] asserted that "trade wars are good, and easy to win,"[12] and while campaigning announced that "we have rejected globalism and embraced patriotism."[13] His approach to international trade and economics was premised on the notion that the post-World War II institutions and agreements that laid the basis for a rules-based global trading system had been detrimental to the interests of the United States—the country that was the driving force in establishing them—and that an "America First" ideology reminiscent of the 1930s should be the country's guiding principle.[14]

Trump not only espoused protectionism in his rhetoric; his administration took several steps to put the idea into practice. Immediately upon taking office, he withdrew the United States from the TPP that had been negotiated by the George W. Bush and Barack Obama administrations (although not yet ratified by Congress) and chose not to revive the struggling TTIP talks. The Trump administration blocked the appointment of judges to the Appellate Body of the WTO's dispute settlement system, depriving it of a quorum. More coercively, he imposed tariffs of 15 percent on U.S. imports of steel and 10 percent on imports of aluminum on national security grounds by using Section 232 of the 1962 Trade Expansion Act, including on allied and partner economies like the European Union and Japan. Once again using Section 232 as a rationale, the Department of Commerce launched an investigation into imports of automobiles. The Trump administration reserved its strongest trade policy actions for China, levying $380 billion in tariffs on the country following a Section 301 investigation under the 1974 Trade Act.

During a second term, candidate Trump has promised to broaden the scope of his protectionist trade policies. He plans to enact a 10 percent across-the-board tariff on all imports and a 60 percent tariff on all imports from China.[15] His campaign is explicitly linking trade and fiscal policy by stating that increased tariff revenues would allow a second Trump administration to cut taxes further without having an effect on the budget. According to a study by the Peterson Institute for International Economics, such tariff surges would have strongly regressive effects, reducing after tax incomes of the bottom half of earners by about 3.5 percent and costing an average household in the middle of the income distribution at least $1,700 per year.[16] It can also be expected that during a second term President Trump would use the mandated 2026 review of the USMCA to try to impose more restrictions on U.S. imports from Mexico and Canada.

In a repeat of his first term, during a second it appears that the U.S. current account (or trade) deficit would once again be a key focus of policy. Trump and his advisors continue to believe that a trade deficit is a sign of economic weakness, even though the United States has run a deficit in the current account since the 1970s—during periods of both stronger and weaker economic growth. While the U.S. current account deficit is best seen as a reflection of the country's lack of savings, the strength of the dollar, and consumer preferences, Trump and his advisors claim it is a result of failed trade policies. In a departure from his first term, a second Trump administration would actively seek to bring down the value of the dollar as a way to discourage imports.[17] In combination with tariffs that would raise the price of manufacturing inputs, dollar devaluation would almost certainly lead to higher inflation and unemployment—although a decline in the dollar's value may be an illusionary goal given the particular policy mix Trump is proposing.[18]

In terms of the transatlantic economic relationship, it can be expected that a second Trump administration would reinforce its protectionist policies with steps to reduce the country's dependence on cooperative engagements, including withdrawing from the U.S.-EU Trade and Technology Council, downgrading the G7, and ending talks to align U.S. and EU approaches where trade and climate intersect—GASSA, a Critical Minerals Agreement, the Clean Energy Incentives Dialogue, and the Transatlantic Initiative on Sustainable Trade. If the EU were to begin imposing tariffs on carbon-intensive U.S. exports as it moves to implement its Carbon Border Adjustment Mechanism (CBAM) by 2026, it is nearly certain that a second Trump administration would respond with retaliatory tariffs on EU exports.

As regards China, a Trump presidency would have the ambition to decouple the U.S. and Chinese economies to the greatest extent possible[19]—a stark difference from the Biden White House's much more calibrated strategy of "derisking" the U.S. economy so that it is less dependent on China for critical technologies. It is unclear how Trump would approach important trading partners in the Indo-Pacific like Japan, Vietnam, Australia, and India. On the one hand, a policy of autarky vis-à-vis China would imply greater trade and investment with other economies in the region. On the other hand, the introduction of across-the-board tariffs of 10 percent and a policy to reduce the U.S. trade deficit would alienate these alternative sources for U.S. economic engagement. **The Trump administration needs to make clear early in its term of office whether its priority is to pursue a 360-degree policy of economic self-sufficiency or rather to insulate the United States from the impact of China's policies.**

There is very little from the U.S. experience after World War I to suggest that policies based on imposing unilateral tariffs and withdrawing from international economic cooperation will succeed as a means to advance U.S. prosperity and the broader national interest. This is all the more the case as the share of imports in the U.S. economy has increased dramatically in the last 100 years, rising from 4 percent in 1922[20] to almost 16 percent in 2022.[21] While the isolationist and protectionist policies of the inter-war period ended tragically, perhaps the actions of policymakers and legislators of the time can at least be partly explained by the low level of U.S. international economic engagement. This could also be true from a geopolitical point of view: as World War I was the first U.S. experience with intervention on an international scale, the notion that the country needed to play a permanent balancing role in the world was not yet ingrained in U.S. thinking.

A more optimistic assessment of candidate Trump's trade policies would assume that many of his proposals should be seen as bargaining chips rather than faits accomplis.[22] From this perspective, raising tariffs creates leverage that allows the United States to extract concessions from both partners and adversaries that advance its interests.

Such an approach could work with small countries that do not possess great leverage of their own. But it would risk driving away larger, like-minded economies like Germany and the European Union, which have spent much of the last decade reinforcing their ability to act autonomously within the global economy. If a second Trump administration needed such partners to work on common interests—for example, China's economic practices—it may find that both their willingness and their need to do so would be lacking. **The Trump administration will need to choose: work with traditional allies to implement its China strategy or pursue a unilateral approach that is almost certainly doomed to fail.**

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Transatlantic Climate Cooperation

MOVING FORWARD OR HITTING THE BRAKES

ALICE C. HILL

Key Recommendations

The U.S. should work to continue and expand cooperation with Europe on nuclear power.

If Trump were re-elected, Germany and the European Union could deepen engagement with subnational partners in the United States.

A Harris administration could provide space and momentum for Germany, the European Union, and the United States to embrace joint initiatives and synchronized policies to meet their goals in international fora and through transatlantic initiatives.

On November 5, 2024, American voters will face a stark choice. The two presidential candidates—Vice President Kamala Harris for the Democratic Party and former President Donald Trump for the Republican Party—have different world views, political philosophies, and approaches to governing. Nowhere are those differences more evident than when it comes to climate change. The election has profound implications for efforts to curb global warming, including how, and indeed whether, the United States partners with Germany and the European Union to slow rising temperatures. A first term for Harris would expand U.S. climate action, pushing the United States to serve as a beacon for international climate leadership, while a second term for Trump would dial back climate ambition.

In the 2015 UN Paris Agreement, the world's countries set the goal of keeping global average temperatures at 2 degrees Celsius below pre-industrial levels, and preferably 1.5 degrees to avoid catastrophic harms like the die-off of coral reefs and the collapse of ecosystems. But according to UN calculations, even if nations meet their promised reduction targets pursuant to the Paris Agreement, temperatures will likely climb by 3.2 degrees Celsius by 2100. In the words of UN Secretary-General António Guterres, the world is "massively off track to limiting warming to 1.5°C."[1]

Given the urgent need for more ambitious climate action, cooperation between the United States and Germany, as well as the European Union, on climate policy is essential. All three have set ambitious targets to reduce greenhouse gas emissions, committing to net zero by 2050. The European Union Parliament adopted the European Green Deal; Germany created its Climate Action Programme 2030 and adopted the Climate Action Act, which supported

renewable energy and put a price on carbon, while the United States, under President Biden's leadership, passed the Bipartisan Infrastructure Law and the Inflation Reduction Act (IRA), which provides nearly $370 billion to climate investments.

Intervening events, including the war in Ukraine and a spike in inflation, however, have dampened enthusiasm for rapid climate action. The war sparked an explosion of concerns about energy security and independence, causing governments to lessen their short-term climate ambitions. Germany turned to coal for power production when Russian gas imports dropped and invested in new liquified natural gas (LNG) terminals, even as it sought to drive more reliance on renewable energy sources. Meanwhile, the United States, already the world's largest oil producer, became the top supplier of LNG to Europe, providing close to 50 percent of the European Union's LNG imports and 80 percent of Germany's LNG imports. The EU elections held in June revealed a tilt toward the right, portending a further slowdown in climate action.

The result of the 2024 U.S. presidential election has the potential to further lower global climate ambition if former President Trump is reelected for a second term. Under President Trump, the United States would likely step away—again—from the Paris Agreement and seek to grow its dominance in fossil fuel markets. If voters elect Kamala Harris as president, she would likely champion greater climate ambition and U.S. leadership to address global warming. Not surprisingly, the outcome of the election affects the possibility of, and avenues for, cooperation between the United States and Germany, as well as the European Union, on climate issues.

If former President Trump wins the election

If former President Trump is re-elected in November, climate policy in the United States will take a "U-turn," undermining the United States' partnership with Germany—both individually and as a member of the European Union—on climate change.[2]

Trump has famously called climate change "a hoax."[3] He has referred to renewable energy as a "scam business." He has questioned whether sea-level rise will occur and has joked that it will result in a "little more beachfront property."[4] Upon his first inauguration, he withdrew the United States from the 2015 Paris Agreement.

In his first term as president, Trump sought to undo his predecessor's policies to reduce greenhouse gas emissions in the power and transportation sectors. He slashed or weakened over one hundred air, water, and atmospheric pollution rules and regulations.[5]

In a second term, Trump is expected to withdraw the United States from the Paris Agreement once again. Trump has exhibited no interest in having America lead on climate issues. Indeed, he would likely seek to increase U.S. production of fossil fuels, or in his words, "drill, baby, drill." During the presidential campaign, he indicated he would scrap Biden's policies on electric vehicles and wind energy and impose new tariffs on EV imports. He has asked leaders of fossil fuel companies to donate $1 billion to his campaign, promising to retaliate against clean energy industries. The firm Wood Mackenzie predicts that a Trump presidency would potentially reduce low-carbon energy investments by $1 trillion, resulting in an additional one billion tons of carbon by 2050 as compared to Biden's policies.[6]

In a second term, Trump would likely prove more effective in dismantling climate policy. When Trump became president, he had no prior experience in government. Four years later, Trump and those who want to work in his administration are better prepared. The 16-page Republican National Platform is short on details, but it does call for termination of the "Socialist Green New Deal," the electric vehicle "mandate," and cuts to "costly and burdensome regulations." It also urges the country to "drill, baby, drill." The conservative U.S. think tank, the Heritage Foundation—with the assistance of at least 140 former Trump administration officials—has created a 900-page blueprint titled "Project 2025" for action by Trump in a second term.[7] Although Trump has tried to distance himself from it, calling some of the recommendations "absolutely ridiculous and abysmal," its environmental recommendations—if implemented—would set back U.S. climate policy significantly.[8]

With regard to climate change, the guide recommends—among other things—using foreign aid to boost coal, oil, and gas production; rescinding all climate policies in foreign aid programs; removing regulation on the fossil fuel industry; promoting policies to increase fossil fuel production; reducing climate research by federal agencies; reviewing military officer promotions to weed out candidates who worked on climate change; barring the military from considering climate science when

engaging in national security plans; and engaging in a "whole-of-government" unwinding of "climate fanaticism."[9] According to Myron Ebell, who assisted Trump with environmental policy in his first term, "Trump will undo everything [Joe] Biden has done, he will move more quickly and go further than he did before ... he will act much more expeditiously to impose his agenda."[10]

A repeal of climate change policy by Trump would increase the amount of U.S. emissions into the atmosphere. Carbon Brief, an international climate research clearinghouse, predicts that a Trump second term would add four billion tons of greenhouse gases to the atmosphere by 2030, the equivalent of 140 of the world's lowest-polluting countries or the combined annual total emissions for the European Union and Japan. It could also cause the United States to miss its 2030 goal to reduce emissions by a wide margin.[11]

When it comes to partnering with Germany and the European Union on climate policy, Trump could dismantle existing cooperation. Trump favors protectionism. In his first term, he introduced tariffs on aluminum and steel. Biden paused those tariffs. Since then, EU steel exports to the United States rose 20 percent in 2022 and continued to rise steadily in 2023. Trump has proposed to increase tariffs on all imported goods by 10 percent, a policy that could undermine European efforts to advance their climate policies. Trump's "America First" rhetoric suggests a turning away from long-standing alliances.

If Trump were re-elected, Germany and the European Union could deepen engagement with subnational partners in the United States. During Trump's first term, some U.S. cities, states, and businesses increased their focus on climate action. A bipartisan coalition of U.S. governors formed the U.S. Climate Alliance in 2017 to uphold the goals of the Paris Agreement. Twenty-four governors, covering over half of the U.S. population, are alliance members. States also sued in court to stop the Trump administration's dismantlement of environmental policies. Mayors joined the Climate Mayors coalition as well as the We Are Still In coalition along with businesses and universities to promote climate policy. We Are Still In participated at COP23 following Trump's decision to pull out of the Paris Agreement, showing these subnational actors are willing and eager to engage with foreign partners on climate issues.

Research has shown that, as of 2020, the states and cities with climate commitments covered half of U.S. emissions and over 65 percent of both the U.S. population and GDP and that subnational commitments could reduce U.S. greenhouse gas emissions by 25 percent in 2030.[12] Although federal action is required to make progress on the necessary scale and time frame, Germany and the EU should continue to welcome U.S. subnational participation, particularly under a future Trump administration. This may be one of the most promising ways to strengthen ties with the United States and mitigate the volatility of U.S. climate policy.

An area where both Republicans and Democrats diverge from Germany is support for nuclear power. During his first term, Trump supported increased federal funding for nuclear energy research and development. He signed the Nuclear Energy Innovation and Modernization Act, which sought to reform the approval process for recent technologies and increase support for the development of advanced nuclear reactors. He supports nuclear energy to protect national security and promote U.S. technological leadership. The Biden administration has premised its support for nuclear energy on the need for more clean energy.

Nuclear offers an area for continued and expanded cooperation between the United States and the European Union—no matter who holds the U.S. presidency. Although Germany no longer supports nuclear energy and shuttered its remaining plants in 2023, the United States and European Union in 2024 jointly called for reduced reliance "on Russia for nuclear materials and fuel cycle services" and continued support for diversification of the nuclear supply chain.[13] Moreover, shared U.S. and EU interest in expansion and innovation of nuclear power could also prompt stronger transatlantic research and development cooperation.[14]

If Vice President Harris wins the election

If current Vice President Kamala Harris wins the presidency, she will likely expand and build upon the Biden administration's remarkable progress on climate. When President Biden took office after Trump's first term, he sought to regain a foothold for the United States as a leader on climate change. On his first day in office, he directed that the country rejoin the Paris Agreement. The Biden administration set new climate goals for the United States to achieve a 50 to 52 percent reduction

from 2005 levels of greenhouse gas pollution, almost doubling President Barack Obama's pledge of a 26 to 28 percent reduction from 2005. Biden committed the United States to achieving net zero emissions by 2050, the global pathway to keeping warming below 1.5 degrees Celsius.

In his term, Biden presided over the creation of the IRA, committing the U.S. government to spend billions of dollars on everything from direct air capture to climate-resilient infrastructure. And his administration led international climate initiatives like the Global Methane Pledge and the First Movers Coalition focused on leveraging purchasing power to de-carbonize heavy-emitting sectors. In 2021, Biden joined German Chancellor Angela Merkel in creating the U.S.-Germany Climate and Energy Partnership aimed at strengthening climate ambition and enhancing cooperation on climate change policies ranging from supporting the development and deployment of new energy technologies to aiding the energy transition in emerging economies.[15]

According to the Rhodium Group, an independent research firm, U.S. emissions have declined under the Biden administration, despite a roaring economy. The rate of decline, however, is not sufficient to meet Biden's pledge to cut emissions in half by 2030 or deep de-carbonization by 2050. By that year, emissions will have fallen only by an estimated 32 to 43 percent below 2005 levels.[16]

If Vice President Harris assumes the presidency, the world can anticipate a doubling-down on climate action by the U.S. government. Harris has called climate change an "existential threat." She brings a long record of taking positions to advance climate action. As a Senator she sponsored the Green New Deal and introduced legislation focused on environmental justice. In her 2020 presidential campaign, she took a more aggressive stance on climate than then-candidate Biden. As California's top lawyer, she sued several fossil fuel companies for environmental law violations, including methane leaks, and investigated Exxon Mobil for lying to the public about climate change. Harris supports international climate agreements—she was the highest-ranking U.S. government official to attend COP 28 in 2023.

A Harris administration could provide space and momentum for Germany, the European Union, and the United States to embrace joint initiatives and synchronized policies to meet their goals. Europe is not America's top foreign policy priority but, with Harris as president, the EU and Germany have an opportunity to seek deeper engagement on climate. Areas of potential collaboration are many. In international fora, the EU, Germany, and the United States could work together to increase global ambition for emissions targets as well as technical and financial support to poorer countries. The EU and the United States could initiate transatlantic joint ventures focused on climate-related technologies, such as direct air capture, carbon capture and storage, and resilient building materials. They could work to harmonize emissions standards globally; develop an approach for pricing carbon globally; identify promising avenues for low-cost adaptation; expand digital, satellite imagery, and AI solutions to track and forecast climate change; and provide incentives for private investments in clean energy and adaptation.

Given the scope and scale of the climate challenge, opportunities for fruitful collaboration proliferate. To take advantage of those opportunities, the EU and Germany will need to capture the imaginations of American policymakers. Europe and Germany can get a head start on building a collaborative framework by developing a strategy for what it would like to achieve with a Harris administration.

Even in a Harris administration, however, climate action will face new headwinds. President Trump's appointment of conservative justices to the U.S. Supreme Court has resulted in dramatic containment of the ability of federal agencies to regulate. The newly constituted conservative majority has introduced doctrines like the "major questions doctrine," which limit the ability of federal agencies to regulate in matters of great economic or political significance if Congress has issued clear legislation. It has also junked long-standing precedent regarding the deference that federal trial courts should apply to federal agency actions. The Supreme Court ruled that federal courts must not defer to agency interpretations of ambiguous statutes, even those involving scientific and technological issues for which courts have no expertise. These and other rulings threaten the ability of agencies like the Environmental Protection Agency to regulate greenhouse gas emissions and take other climate actions.

In the absence of robust Congressional legislation, the United States will struggle to deliver swift federal action, including issuing regulations related to the environment and climate. And without regulation at the federal level,

the United States will likely miss the Biden administration's climate emissions goals.

The stakes

No matter what the outcome of the U.S. election, Germany, the European Union, and the United States face a common challenge: the climate is not waiting. Atmospheric carbon dioxide is on the rise. As of May 2024, carbon dioxide concentrations measured at the mile-high Mauna Loa observatory in Hawaii stood at 427 parts per million, 2.9 parts per million above May 2023. The rise in carbon dioxide concentration between May 2022 and 2024 represents the largest two-year jump since record-keeping began in 1958. The burning of fossil fuels has pushed atmospheric CO2 to the highest level in millions of years.[17] Higher CO2 concentrations trap more heat. 2023 witnessed the highest global average ocean and surface temperatures on record as well as 250 billion dollars in losses from extreme weather patterns, which have brought misery to people around the globe.

When it comes to slowing the warming and curbing the devastation, the loss of the United States in the fight will have repercussions for cooperation with Germany and the European Union on climate, as well. The winner of the November U.S. presidential election will shape global climate politics for at least the next four years. The next American president will determine whether the world's largest historical emitter presses the accelerator—or the brakes—on climate action.

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In an Age of Deployment, American AI Policy Must Prioritize Access to High-Performance Computing

MELISSA K. GRIFFITH

Key Recommendations

Incentivize the development of flexible and diverse high-performance computing ecosystems.

Include deployment metrics alongside technological innovation in geostrategic assessments.

Treat sustainability as a first-order concern.

Leverage longstanding partnerships.

Given the geostrategic, economic, and societal importance of Artificial Intelligence (AI), the United States cannot afford for infrastructure to be our Achilles' heel. Without secure, scalable, and sustainable access to high-performance computing—the chips underpinning AI, the data centers and devices housing them, and the energy grids powering them—the United States risks ceding the initiative and the contours of our collective AI future to others.

The geostrategic significance of computing is not a new realization. Yet, while current industry efforts and prior executive and congressional action have underscored the importance of computational power (frequently referred to as compute) to our AI ambitions, more work must be done.[12] The national conversation to date has primarily centered around efforts aimed at (1) limiting China's access to and influence over the chips and data centers fueling AI innovations (e.g. export controls and foreign direct investment screening) and (2) creating more resilient global (and domestic) semiconductor supply chains. However, the national security concerns facing the United States today are far broader.

Countries that not only lead in research and technical innovation but also develop and deploy AI applications early will have built-in security, economic, and industry advantages. Computing power—one-third of the AI triad alongside data and algorithms—is a necessary condition for both. Access to computational power has fueled innovative technical advances and it will continue to be equally critical to robust adoption of AI applications.

As a result, American national competitiveness in this technological ecosystem will either be enabled, or

hamstrung, by the scale and diversity of computational power available for use. However, addressing these underlying infrastructure concerns has been, to date, a relatively underdeveloped component of our broader national AI strategy. This needs to change.

The incoming American administration must prioritize secure, scalable, and sustainable access to computing resources as an indispensable part of our national AI policy. Leadership in the age of AI deployment will require it. This will entail addressing growing energy demands, expanding geostrategic metrics, and developing flexible AI ecosystems. All of these efforts will necessitate sustained attention at home, but they will also benefit greatly from collaboration with key international partners, including the European Union and its member states.

Why is adoption important?

We are living through a transition from an era defined primarily by technology innovation (from the models to the chips powering them) to one increasingly defined by deployment (leveraging those foundations to fuel the emergence and adoption of an array of applications supporting a diversity of workflows). Beginning in 2022, generative AI captured the public consciousness. 'Hype' surrounding AI surged as an explosion of consumer-facing generative models (running the gamut of text, image, voice, and video generation) increasingly became readily available for public use. Today, building on the back of two years of subsequent technical refinement and innovation, practical uses are beginning to lay the groundwork for future widespread integration into the daily functions of businesses and governments alike.

Early adopters are paving the way for others. The devil is in the details, and many of those details only become apparent through hands-on experience. For example, NIPRGPT, a chatbot launched by the Department of the Air Force in June 2024, faced the unique challenge of not only effectively and efficiently assisting airmen and guardians with correspondence, research, and coding tasks but doing so in a secure online environment. As Chandra Donelson, the Department of the Air Force's acting chief data and artificial intelligence officer, highlighted, learning (and adjusting course) on the job is essential; just as "our warfighters, who are closest to the problems, are learning the technology," we can and must leverage "their insights to inform future policy, acquisition and investment decisions."[3] Real world experience born from efforts like NIPRGPT have brought into stark relief the challenges of accessing high-performance computing in general (demand currently outstrips supply in the United States[4]) but also the initial challenge of accessing the appropriate (a) scale and (b) optimization required for a given application. As users within an organization grow, applications can quickly outstrip existing, allocated infrastructure.

Widespread adoption is also essential to ensuring continuing leadership and national competitiveness. Importantly, early leadership does not always translate to enduring leadership. This concern animates much of current U.S. AI policy as early American leadership—from models to chips—is facing increasing pressure from China.[5] This concern, however, is not unique to AI. In telecommunications, for example, the United States lagged in earlier wireless generations only to seize global 4G leadership and then capitalized on the bevy of use cases that emerged from the app to the platform economy.[6] Yet, American leadership in 4G did not translate to leadership in 5G.[7]

In short, the steady march from (i) critical foundational innovations to (ii) early adopters to (iii) robust adoption will be critical. The latter is where the promise of AI will, or will not, be fully realized: from advances in healthcare and manufacturing to aiding in our efforts to tackle climate change. To echo Jeffrey Ding, an Assistant Professor of Political Science at George Washington University, "without the humble process of [deployment], even the most extraordinary advances will not matter."[89] While ensuring secure, scalable, and sustainable access to high-performance computing alone will not be sufficient to navigate this transition, it is an essential and currently underdeveloped component.

Why are integrated circuits (semiconductors) critical for AI innovation and adoption?

Artificial intelligence is frequently defined as the creation of intelligent systems capable of performing tasks that typically required human intelligence. However, the essence of modern AI can also be captured by describing 'how' AI operates: namely, "machine learning systems [the dominant subfield of AI today] use computing power to execute algorithms that learn from data."[10] Computational power notably underpins both (a) the execution of AI

algorithms and (b) the collection and storage of data necessary for training models. As a result, both raw innovation and subsequent industry use-cases have depended, do depend, and will depend on the type and availability of computational power at our disposal.

In order to understand the importance of secure, scalable, and sustainable access to high-performance computing, it is helpful to first understand the current AI compute landscape from chips to the data centers and edge devices that house them.

The chips underpinning AI

The story of AI compute began with researchers and industry leaders taking advantage of existing hardware before demand eventually incentivized the development of hardware tailored specifically to AI workloads. Initial efforts leveraged Central Processing Units (CPUs), the brains of modern computers. However, while CPUs excel at certain computational tasks, they are not optimized for the parallel computing requirements of AI (they handle multiple operations at once rather than sequentially). Efforts then shifted to bootstrapping Graphics Processing Units (GPUs). Serendipitously, these chips, which first hit the market in 1999, were originally designed for another parallel computing task altogether—rendering graphics. As market incentives grew, specialized accelerators began to emerge to more efficiently handle the parallel computations and large datasets underpinning modern AI. For example, GPUs featuring tensor cores and Tensor Processing Units (TPUs) were purpose-built for deep learning (a subset of Machine Learning, which in turn is a subset of Artificial Intelligence).

While the emergence of an AI chips industry is relatively new, without the specialization of hardware, the current generative AI boom would not have been possible. The recent emergence of seemingly very powerful AI applications—ranging from large language models like ChatGPT[11] to protein folding,[12] digital twins,[13] and climate modeling[14]—is tightly correlated with advances in hardware. The relevant models emerged in the 1980s—almost forty years ago.[15] Publicly accessible large datasets became readily available between 2007 and 2012—between fourteen to eighteen years ago.[16] However, sufficiently efficient hardware to train models in a reasonable amount of time, on a reasonable dataset, using a reasonable amount of energy did not exist until six or so years ago.

Growing diversity of use cases—from smartphones to robotics—continues to drive the specialization of chips. Ongoing research on neuromorphic chips, which promise significant energy efficiency gains and real-time processing, is one such example.[17] Like neural networks, these chips are inspired by the structure and function of the human brain. Rather than modeling artificial neurons in software, however, neuromorphic chips build them directly into the hardware itself.

The data centers and devices housing them

High-performance computing, however, is not solely a story of chips. It is also a story of data centers and edge devices. Here too, computational power is evolving to handle (a) increasing complexity in models, (b) higher performance demands, and (c) a broadening application landscape.

AI chips are usually deployed in clusters, where many GPUs or TPUs are interconnected. These clusters can scale to hundreds or even thousands of interconnected chips, depending on the size of the model and the workload. For example, training a large language model like GPT-3 requires thousands of GPUs or TPUs working together. Clusters of that size are housed in data centers.

AI data centers are specialized high-performance computing facilities designed to support the demanding computational requirements of artificial intelligence workloads. Notably, as the demands placed on these data centers grew, a new series of chips specifically optimized for these environments emerged. They include Data Processing Units (DPUs) and Application-Specific Integrated Circuits (ASICs). The former are flexible, programmable chips designed specifically for managing data center infrastructure tasks like network processing and storage management.[18] In plain English, they move data around. ASICs are also designed to perform a specific task or set of tasks in a data center. Unlike DPUs, however, once they have been manufactured, they cannot be reprogrammed. The end result is a mix of chips all working together within a data center but with their own specialties: CPUs for general-purpose computing, GPUs/TPUs for accelerated computing, and DPUs/ASICs for tasks like efficiently moving data around.

In short, chips are placed onto circuit boards, circuit boards are installed into servers, servers are placed into

racks, and racks are housed in data centers. All of this hardware can be purchased outright (private data centers, sometimes referred to as on-premises or on-prem) or rented through cloud service providers such as Amazon Web Services, Google Cloud, IBM Cloud, and Microsoft Azure (cloud-based data centers or cloud computing).

Data centers are not the only place where AI computational power is housed, however. Increasingly, AI processing—particularly inference (the portion of deep learning that customers directly interact with)—is shifting to edge devices ranging from IoT devices to autonomous systems. Inference is often more computationally efficient than the initial training (it requires less compute). It can also benefit from lower latency (it takes time to connect back and forth to a data center) and operational flexibility (such as requiring an internet or cellular connection to function).

For on-device processing, smartphones will be a critical area to watch. Apple's forthcoming phone and Apple Intelligence are examples of this trend. The iPhone 16 has promised users specialized hardware that will enable increased AI functionality on the device itself: their new A18 system-on-chip includes an improved CPU, GPU, and Neural Engine.[19] The latter is a series of Apple AI accelerators designed specifically for machine learning. Apple Intelligence promises to take full advantage of that hardware boost to deploy an on-device language model, while also continuing to leverage the computational advantages of data centers for a larger language model.[20] In contrast, Meta's Smart RayBan glasses currently require users to have an internet connection to use Meta AI (an intelligent assistant built on Llama 3.1).[21] For these smart glasses, inference occurs entirely in data centers not on the device itself (likely due, in part, to their unique form factor).

In summary, from data centers to user devices, computational power is a cornerstone of AI advancements. It is the foundation upon which models operate and data is stored. As such, access to high-performance computing has the potential to either spur or stall the development and deployment of AI applications in the United States.

A Call for Action

We are living through the beginning of the AI era. As a result, both the future of AI and the infrastructure that enables it are deeply malleable. This provides the United States and partner countries an important but closing window of opportunity to invest.

What does prioritizing secure, scalable, and sustainable access to high-performance computing—the chips underpinning AI, the data centers and devices housing them, and the energy grids powering them—look like in practice? The following are four policy priorities of particular importance for the incoming administration.

Incentivize the development of flexible and diverse high-performance computing ecosystems. Access to computational resources cannot be a one-size-fits-all solution. This extends beyond the examples of specialization and ongoing innovation—from chips to user devices—discussed so far. For many organizations, the need for computing power is occasional and specific rather than constant or prolonged. Ideally, these users would have access to smaller, modular compute clusters for short periods of time rather than having to commit to the high, often unaffordable, operational costs found in data centers. At present, however, these types of small, cost-effective cluster providers are few and far between on both sides of the Atlantic.[22] Alternatively, secure, regulation-compliant environments such as GovCloud bring with them a different set of ongoing operating challenges associated with acquiring sufficient on-premises compute given the existing compliance process. All of these high-performance computing ecosystems require policy attention today, including streamlining the regulatory process for approving and building out new data centers to meet rising demand.

Include deployment metrics alongside technological innovation in geostrategic assessments. While the United States and its partners in Europe and Asia continue to maintain a strong collective position in AI and semiconductor technology, they must also prioritize fostering the adoption of AI applications across industries.[23] Access to secure, scalable, and sustainable high-performance computing is only one part of that deployment story, but it is an essential one. For example, the recent executive order on AI encourages federal agencies to reduce barriers to adoption.[24] However, many federal agencies continue to lack access to the computing resources and deep expertise necessary to do so. Here, the United States can learn from early efforts to facilitate deployment. This includes MITRE's newly minted Federal AI Sandbox, which seeks to provide the infrastructure

needed to empower "federal agencies from the Pentagon to the IRS" to develop and test advanced AI applications.[25] Real-world experience cultivates essential expertise, and while hardware underpins initial deployment and testing, that real-world experience will also inform future hardware decisions. To echo Chandra Donelson, "[t]echnology is learned by doing."[26]

Treat sustainability as a first-order concern. As Nina Kelsey and I have previously emphasized, AI is simultaneously critical to security, prosperity, and environmental sustainability—a class of technologies that we refer to as fulcrum technologies.[27] The United States must prioritize and streamline AI data center development at home and in concert with trusted international partners, given the importance of artificial intelligence to American economic and national security interests. At the same time, however, neither the United States nor partner countries can afford to treat AI's rapidly rising energy demands as tomorrow's problem.[28]

Estimates on the future energy demands of AI vary widely and are contingent upon a possible AI future at a time when, thankfully, the industry is still very much in flux. However, a bevy of emerging estimates are cause for serious concern if trend lines hold. American electricity companies are already keeping coal power plants online past scheduled shutdown dates, and, according to recent estimates by Goldman Sachs, Europe will need to spend $1 trillion or more preparing its grid to meet projected energy demands.[29] Over the next ten years, John Pettigrew, the National Grid Chief Executive Officer at National Grid Plc. expects electricity demand from data centers in the UK alone to jump sixfold and will require significant build out of "larger-scale, energy-intensive computing infrastructure" across the country.[30] These are just the tip of the iceberg. AI's energy demands offer important opportunities for but also require a prioritization of green energy solutions—including but not limited to nuclear, wind, and solar power—for existing and future computational demands.

As countries on both sides of the Atlantic prepare to update and expand energy infrastructure to meet these growing energy demands, the United States must prioritize sustainable access to computing power. Here, coordination with Europe in particular, which has one of the oldest power grids in the world, will be critical. Recently, the U.S.-EU Energy Council and the Partnership for Transatlantic Energy and Climate Cooperation (P-TECC) have focused heavily on energy concerns stemming from Russia's invasion of Ukraine. However, they are also well-placed to tackle not just supply-side shocks to energy ecosystems but also demand-side dynamics such as powering AI innovation and applications going forward.[31] This includes a focus on policy alignment (developing complementary AI energy incentives, priorities, and regulations to avoid a race to the bottom) and long-term infrastructure planning (according to the International Energy Agency, new grid infrastructure often takes five to fifteen years to plan, permit, and complete).[32] Infrastructure is notoriously sticky, leaving the United States and Europe with an important but closing window of opportunity to invest

Looking beyond the sources of energy that AI consumes, we must also collectively tackle energy concerns throughout the full lifecycle of AI from training to deployment. Companies can boost energy efficiency in data centers and edge devices by creating more energy-efficient chips and cooling systems as well as streamlining workflows. Additionally, developers and users can focus on optimizing for energy consumption at the model and application levels, such as (a) removing unnecessary computations, (b) combining AI inference with traditional search queries for frequently requested data, (c) optimizing existing pretrained models rather than developing new foundational models from the ground up, and (d) shifting inference (and even some training) from data centers to edge devices when possible. Many of these efforts are already underway within the industry to varying degrees, but they require further national attention and support.

Sustainable access to high-performance computing will require striking balances and shifting industry incentives on both sides of the Atlantic and beyond. However, the United States should avoid the temptation to view industry incentives as inherently incompatible with sustainability goals. Energy efficiency boosts both performance and cost savings, which has resulted in many of the advancements detailed in the prior paragraph. This alignment provides the United States with a unique opportunity to identify and accelerate innovation where industry incentives and sustainability goals overlap, from supporting R&D and pilot programs to providing tax incentives.

Leverage longstanding partnerships. These technology ecosystems are currently embedded within a broader, and increasingly tense, geopolitical landscape. Yet, AI infrastructure from semiconductors to data centers is far too global and far too complex for an America-only approach. Given the United States' growing focus on domestic capabilities and the EU's digital sovereignty movement, it is important to recognize that sweeping global decoupling is neither feasible nor desirable.[33] Moreover, with China's longstanding ambition of self-reliance, partner buy-in (or alignment) will be even more critical.[34] As I have previously argued, "while there are significant national security concerns associated with relying on near-peer competitors (or geopolitical rivals) for foundational technology, the United States should avoid the misperception that we must solve this problem alone. We have allies—very capable ones at that—occupying positions of strength across the [high-performance computing] stack. We can and should lean on them."[35]

Today, there continue to be natural transatlantic synergies at our disposal. From Infineon (Germany) to ASML (the Netherlands) to ARM (the UK), European firms span the semiconductor supply chain. The European footprint does not stop there. As of 2021, six countries accounted for the majority of global data centers. The United States, with 33 percent of all data centers, led the world, followed by the UK, Germany, China, Canada, and the Netherlands.[36] Together they accounted for another 21.7 percent, though it is important to note that most data centers around the world then and today are not optimized for AI. Additionally, European countries snagged seven of the top ten slots in the 2023 Network Readiness Report (the United States ranked first).[37] With an eye toward market opportunities to support AI deployment, Germany currently has the largest economy (GDP) in Europe and the third-largest economy in the world, behind only the United States and China.[38] The United Kingdom, France, and Italy currently round out the list at sixth, seventh, and eighth respectively. Germany also occupies dominant industry positions including automotive and green technology, two areas where AI applications (including from American companies) are already being, and will increasingly be, leveraged.[39]

There are also existing transatlantic forums at our disposal, from the U.S.-EU Trade and Technology Council (TTC) to the U.S.-EU Energy Council, and the Partnership for Transatlantic Energy and Climate Cooperation (P-TECC). However, just as addressing these underlying infrastructure concerns has been, to date, a relatively underdeveloped component of our broader national AI strategy, the same is true of transatlantic lines of effort. Neither the United States nor Europe can afford for this to remain the case. The transatlantic relationship's continued significance stems not just from its historical pillars but from its capacity to address current and emerging challenges. Foundational technologies like AI, high-performance computing, and semiconductors are some of the most pressing of those challenges.

In sum, from AI innovation to deployment, the United States cannot afford for infrastructure to be our Achilles' heel. AI is simply too important. To avoid this outcome, the incoming administration must prioritize secure, scalable, and sustainable access to high-performance computing as a cornerstone of our broader national (and international) AI strategy. American economic and national security interests will depend on it.

NOTES

1 Examples include the Executive Order on America's Supply Chains (February 24, 2021), the CHIPS and Science Act of 2022, the Executive Order on Addressing United States Investments in Certain National Security Technologies and Products in Countries of Concern (August 9, 2023), the Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence (October 30, 2023), and export controls imposed on advanced computing and semiconductor manufacturing items to the People's Republic of China (PRC) in 2022 and 2023.

2 Computing power, computational power, and compute are often used interchangeably to denote a computer system's ability to process and execute tasks. In plain English, compute is fundamentally all about the math. More specifically, math at scale where the speed and volume of calculations determine how effectively a computer can process information and solve complex problems. All that math—and the software and hardware required to execute a vast number of arithmetic operations quickly and efficiently—is the backbone of the digital age, enabling all modern technology, including AI.

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9 Ding takes this transition as a starting point for asking how great powers use technological change to leapfrog another (i.e. technology-based explanations for economic power transitions). His argument is that for general purpose technologies, of which AI is one, the relevant question is not 'who did it first' but rather 'who diffused it into their productive processes at a faster rate.' Regardless of whether you believe that if the United States does not diffuse fast enough it risks being leapfrogged by China regardless of early technological leadership, adoption across key industries remains a critical component of national competitiveness across the technology ecosystems alongside technological leadership.

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14 "Earth-2," NVIDIA; Jessica Barnett, "NASA, IBM Research to Release New AI Model for Weather, Climate," NASA, May 22, 2024; Carissa Wong, "How AI is improving climate forecasts," *Nature*, March 26, 2024.

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Critical and Emerging Technologies

YIXIANG XU

Key Recommendations

Expand the TTC and add a permanent structure that would organize regular bilateral meetings.

Develop a new or a series of new export control groupings with the EU and European countries with significant innovation or manufacturing capacities to guard against technology leakage.

Work with Congress to resolve potential trade barriers for European companies in the IRA and finalize the U.S.-EU critical minerals agreement.

Include a wider range of CET developments and applications in bilateral U.S.-EU security dialogues, with an emphasis on operationalizing NATO's EDT strategy goals.

Sustain regular bilateral consultations on China between the United States, the EU, and member states in a manner that combines security, economic, and strategic discussions.

The global race for critical and emerging technologies (CET) has been heating up against a background of heightened national security concerns and intensifying geoeconomic competition. In response to China's growing military ambitions and Beijing's desire to remake the international economic and geopolitical order to its advantage, the United States has led a resurgence of strategic investment in key technologies, the necessity of which is echoed by other Western democracies. The next U.S. administration will inherit an expanding array of industrial, trade, and defense policies at home, designed to maintain U.S. leadership in some technologies such as artificial intelligence (AI) and to recover innovation or production capacities in others like semiconductors and electric vehicle (EV) batteries. It will also preside over a network of technology alliances and partnerships colored by shared value propositions but at times divided over policy approaches and priorities. How the next U.S. administration chooses to engage the European Union, Germany, and other partners across the Atlantic will be crucial to the effectiveness of the evolving U.S. strategic technology agenda.

China and the Crucible of National and Economic Security

The single most potent driver of the technology policy revolution in the United States and among U.S. allies is China's rapidly growing technology capabilities. Beijing's military-related technology developments, such as hypersonic missiles,[1] quantum communications satellites[2] and quantum computers,[3] and military AI,[4] to transform the People's Liberation Army (PLA) into a "world class military" by 2049,[5] has enabled the PLA to rival the U.S. military in key areas. These technological advancements seriously challenge the Indo-Pacific maritime security environment, especially in East and Southeast Asia, as well as the U.S.-led regional security order.[6] Central to the CCP's military modernization efforts is China's Military-Civil Fusion Strategy (*jun min rong he fa zhan zhan lue*),[7] which attempts to overcome deficiencies in the PLA's military procurement and research and development (R&D) ecosystem through the elimination of barriers between civilian and defense sectors.[8] From the point of view of the United States and its security allies, this strategy heightens the serious risk of technology leakage through commercial transactions and R&D collaborations with Chinese entities and severely undermines existing dual-use export control regimes.

Aside from Beijing's use of CET to upgrade its military and bolster its techno-authoritarian state, it is also vigorously pursuing a whole-of-nation system (*xin xing ju guo ti zhi*)[9] that seeks to reduce China's technology dependence on the West and expand its technology leadership in the world. Under this system, the Chinese state has employed an industrial policy to dominate supply chains and flood global markets with highly subsidized products both in mature technologies such as legacy semiconductor chips[10] and in industries where Chinese companies enjoy an innovative advantage, including EVs, telecommunications, and clean energy generation. Beijing's pursuit of this asymmetrical technology dependency to its own advantage has created a dangerous supply chain dependency for the United States and the EU, undermined their domestic technology industries, and eroded the rules-based international trading system.

Furthermore, China has used its technology capacity to escalate its geopolitical competition with the West. Beijing has enticed and induced countries in the Global South to adopt Chinese technologies and technology standards as well as practices that often run counter to democratic values.[11] It also exports dual-use components to sustain defense industries in Russia[12] and Iran,[13][14] which use them to produce weapons, including drones that Russia deploys against Ukraine's military and civilians.[15]

Although the industrialized, democratic West has always faced challenges arising from technology innovation and applications to their national security and economic well-being, the width and breadth of Beijing's use of CET to advance its economic, military, and strategic interests brings together distinct concerns of national security and economic security. Existing international institutions like the World Trade Organization are inadequate for dealing with China's market distorting behaviors,[16] and many governments remain vulnerable to China's economic coercion.

Unlike the approaches of its democratic allies in Europe and elsewhere, the U.S. government's recent CET policies target China and the CCP explicitly. Elevating U.S. technology competition with China enjoys broad bipartisan support and strong funding commitments from Congress.[17][18] A second Trump administration may adopt a more confrontational posture toward China and be more inclined to use unilateral measures to prevent Chinese acquisition of CETs as well as to slow down Beijing's domestic innovations. It may also pursue a broader technology decoupling, discarding the Biden administration's efforts to prioritize the most national security-relevant aspects of U.S. technology relationship with China instead of the more benign aspects of bilateral economic engagement (what President Biden's National Security Advisor Jake Sullivan described as "small yard, high fence").[19][20] A Harris administration would be likely to follow the Biden administration's approach, which ramps up targeted competition with China but carefully brands its policy as de-risking.[21] Consequently, we may see a "stable decoupling" of the technologies between the United States and China that maintains a degree of predictable stability for industries and consumers. At the same time, it will be under increasing pressure, especially from congressional Republicans, to push the boundary of decoupling further in the direction of the CET supply chain and standards bifurcation.

The U.S. Policy Approach toward Critical and Emerging Technologies

Under the Biden administration, the U.S. government refined its strategies into an essentially three-pronged approach—to protect U.S. technologies from strategic adversaries, to innovate and maintain U.S. leadership in CETs, and to promote U.S.-led technology alliances and partnerships that advance U.S. national and economic security interests.

Protecting U.S. Technologies

On the "protect" front, competition with China changed U.S. export control for national security purposes from the previous "sliding scale" approach to maintaining as large a lead as possible.[22] In practice, this means actively employing export control to slow China's advancement in CET. Building on Trump administration practice, the U.S. government normalized the use of a "novel" instrument, the Foreign-Produced Direct Product Rule (FDPR),[23] to unilaterally constrict China's access to advanced semiconductor chips and tools to manufacture them. The Biden administration significantly expanded the use of export control rules on semiconductors with the Department of Commerce's Bureau of Industry and Security (BIS) issuing new rules to curtail the sale of chips and certain related technologies to China in October 2022[24] and revising the rules in October 2023[25] to further tighten sales to China.

As the spirit[26] of the U.S. export control policy tilted decisively toward proactive denial of Chinese access to CET, some U.S. lawmakers have proposed even broader, more restrictive measures, such as a "Rapid Export Control Listing" for CET with a "presumption of denial" for license applications.[27] (The BIS has been updating existing rules and recently published new rules that reviews export license applications for semiconductor and quantum technologies to China under a presumption of denial.[28]) This proposed muscular exertion of unilateral and targeted export controls on China stands in contrast with the policy of many U.S. allies, including the EU and some of its member states, who refrain from targeting specific countries and whose legal authorities for control rely on multilateral agreements. While the Biden administration has invested significant diplomatic energy to explain its security policy especially to European allies[29]—an effort of which Vice President Kamala Harris has been a part[30] and might continue if elected—a Republican White House may be more willing to force closer European alignment.

To complement its export controls, the Biden administration developed a new tool to monitor outbound investment. The executive order (EO) 14105[31] issued on August 9, 2023, establishes a screening program for certain types of U.S. outbound investment in semiconductors and microelectronics, quantum information technologies, and AI sectors in "countries of concern," which presently consist only of mainland China, Hong Kong, and Macau.[32]

Maintaining U.S. Leadership

Active employment of industrial policy to boost domestic manufacturing is a leading feature of current U.S. government efforts to propel domestic CET innovation. Aside from committing substantial capital investments in public sector research, the United States pivoted heavily toward encouraging domestic technology manufacturing. The CHIPS and Science Act authorizes $52.7 billion to subsidize investments in semiconductors with the bulk of that funding going toward developing domestic manufacturing capability.[33] This large industrial policy package also includes a 25 percent tax credit for investment in manufacturing semiconductors as well as specialized tools and equipment. Another signature piece of legislation during the Biden administration, the Inflation Reduction Act of 2022 (IRA), provides an estimated $270 billion in tax incentives[34] for investment in decarbonization, including a possible rebate of $136 billion over ten years for the EV batteries sector, and employs domestic content requirements that require foreign multinational enterprises (MNEs) to substantially increase their manufacturing presence in the United States to benefit fully from the incentives.[35]

While it's still unclear if the United States could successfully reconcile its growing industrial subsidies with existing free trade obligations, Washington's embrace of domestic manufacturing in CET sectors marks a turning point in U.S. policy evolution that now sees national security and economic security firmly intertwined and demonstrates the centrality of prevailing U.S. domestic political needs, chiefly middle-class job creation and rebuilding U.S. manufacturing capacities. President Biden took credit for his administration's support for unionized manufacturing jobs and growth,[36] and Vice President

Kamala Harris is embracing the same constituency in her election bid. The next U.S. administration is likely to preserve this focus on domestic industrial policy. However, President Trump's pledge to balance U.S. trade by unorthodox means, which would include a 10 percent tariff on all foreign imports[37] to the United States, could invite trade retaliation from allies including the EU and severely diminish prospects for bilateral and plurilateral cooperation on necessary CET supply chains, technical standards, or export controls.

Promoting Technology Alliances

Another key difference in U.S. CET policy under a second Trump administration would be the U.S. government's willingness and ability to "promote" U.S.-led technology alliances. The Biden administration established channels for regular technology policy consultation with allies and partners. In particular, the U.S.-EU Trade and Technology Council (TTC) has proved to be an important instrument to project shared democratic values and alleviate frictions stemming from differing regulatory philosophies in the United States and the EU. A joint roadmap for trustworthy AI and risk management as well as a 6G common vision and a collaborative research agreement[38] are good examples of the TTC's success.

Especially illustrative of the Biden administration's cooperative approach is the U.S. government's AI policy. The Biden White House moved aspects of its regulatory philosophy closer to that of the EU, emphasizing adherence to human rights principles and combating biases and discrimination in the Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence,[39] as well as committing to restrictions on advanced AI systems[40] and stricter government oversight through requirements such as "red-teaming."[41] The administration also opted to minimize frictions with the EU over the bloc's AI Act, a sweeping regulatory framework with extraterritorial reach, and to prioritize engagement with the EU at the TTC to enhance working-level exchanges[42] and operationalize shared AI development principles and standards.[43] It has also sustained plurilateral efforts to expand AI governance cooperation, notably by offering strong U.S. backing for the G7's endorsement of the Hiroshima AI Process[44] and the subsequent launch of the Hiroshima AI Process Friends Group.[45]

Vice President Kamala Harris has been the face of much of the Biden administration's domestic AI policy activity and its outreach to international partners. She is committed to the principal objectives of U.S. government initiatives to advance the safe and responsible use of artificial intelligence and has worked to spearhead the administration's efforts to shape the regulatory environment domestically, both by making new rules and guidelines within federal agencies as well as soliciting commitments from the private sector[46] to establish industry standards and norms. Her experience on AI discussions with civil rights and labor groups[47] may point to a more extensive employment of AI policy instruments to supplement traditional macroeconomic tools in addressing her campaign's focus on employment, domestic economics, and inequality.

This approach is unlikely to continue under a new Trump administration, as the Republican Party already adopted a platform that aims to repeal Biden's AI EO[48] and empower technology companies to self-regulate. In such a scenario, divergent regulatory philosophies in the United States and the EU, especially over privacy and discrimination,[49] may generate more open clashes without close and careful transatlantic coordination. A prolonged absence of a White House or congressional AI regulatory framework may invite U.S. courts to adjudicate and finalize AI system standards, which could ipso facto constrict the government's policy flexibility to coordinate AI regulatory alignment with allies and partners.

The Case for a Transatlantic CET Alliance

Against the background of the United States' intensifying strategic contest with China and its expanding domestic reindustrialization agenda, a close transatlantic CET alliance is not only beneficial but also necessary.

On the national security front, the United States is extensively engaged in the development of NATO's EDT (emerging and disruptive technologies) strategies. NATO members already endorsed the alliance's AI strategy[50] and Quantum Technologies Strategy[51] and launched the Defense Innovation Accelerator for the North Atlantic (DIANA) to foster transatlantic CET cooperation to solve critical defense and security challenges.[52] Cooperation on the development of specific technologies, such as hypersonic weapons,[53] could also benefit from collaboration within the alliance framework.

NATO, which included strategic threats from China

for the first time in its 2022 Strategic Concept,[54] also provides both political cover and a security mandate for scrutinizing China's CET acquisition and application to members who are otherwise reluctant to directly address issues such as Chinese equipment in their telecommunications infrastructure[55] and quantum technology research collaboration with Chinese scientists.[56] A stronger focus on the alliance's security needs also compels members to come up with necessary resources to mitigate risks that otherwise lack adequate funding. The present low level of public spending in Europe to safeguard and repair undersea cables,[57] in which state-backed Chinese fiber-optics suppliers aim to achieve a dominant global market share,[58] is a manifestation of this urgent need. Additionally, NATO's longer list of focus on EDT,[59] compared with the EU's narrower list of CET priorities,[60] can provide additional impetus for transatlantic innovation cooperation as well as standards and rules discussions, especially in areas where the EU lacks competence. A more targeted transatlantic dialogue on space-related threats that goes beyond the existing U.S.-EU Space Dialogue's focus on outer space,[61] which could include Chinese and Russian developments of anti-satellite systems[62] and rapid commercialization of the low earth orbit, would be highly beneficial.

Closer cooperation with the EU also helps the United States to maximize the effectiveness of its CET export controls to prevent technology leakage to China. Presently, there are significant differences in export control policy thinking, including how to regulate academic research collaboration with China[63] and technologies whose dual-use potentials are not documented by existing multilateral export control regimes like the Wassenaar Agreement. The current U.S. approach to build minilateral export control pacts with countries that possess relevant technology capacities can be effective in cases where narrow innovation or supply chain bottlenecks exist, as in the U.S.-Dutch deal to restrict export of ASML's advanced ultraviolet lithography machines to China.[64] However, in other cases, the lack of an EU-wide, uniform export control regime creates significant loopholes for exploitation.

As the United States expands its industrial policy to stimulate domestic CET innovation and manufacturing, the risk of turning ideological differences into new trade barriers also arises. The TTC has done a good job in coordinating economic resilience postures, but much of this work was focused on defensive measures against risks and harms from nonmarket behaviors that also pose security risks. In other words, they were primarily occupied with deterring China's mercantilist trade practices and Beijing's global technology ambitions. In this process, however, equal attention needs to be devoted to managing persistent differences on how to build up these new policy frameworks and a nagging suspicion that transatlantic partners could still undercut each other. One case in point, the United States and the EU's already arduous negotiation to reach a critical minerals agreement has been further stalled by opposition from congressional Republicans to European EV battery producers' access to IRA tax credits.[65]

Furthermore, while it is mutually beneficial for the United States and the EU to sustain current efforts to reconcile regulatory differences on a range of technology issues including data exchange, large online platforms and competition, AI, and cybersecurity, the partners can be more creative at combining their strengths rather than merely avoiding getting in each other's way. A more integrated transatlantic R&D and innovation system that expands and accelerates technology manufacturing and services for both sides, leading toward a kind of transatlantic techno-industrial base, could be the ultimate goal for the transatlantic partners. Just as Brussels should acknowledge the indispensable contribution of U.S. corporations' technologies and investments to the EU's information and communication technology (ICT) infrastructure,[66] Washington needs to ensure that American technologies are treated by European companies not as a liability, but an advantage.

Finaly, since China permeates the CET policy debates in the United States, active transatlantic fora for China-related policy discussions, such as the U.S.-EU Dialogue on China[67] and a sustained strong China focus on coordinating CET policies between the United States and its European partners are necessary to soliciting European support. Even though the EU has steadily moved its strategic view of China closer to that of the United States, it and some member states, notably Germany, are still reluctant to push back against Beijing's technology and trade policy with the same vigor. Decoupling from China, regardless of policy framing or approach, remains a taboo for many European policymakers and business elites, which the next presidential administration and Congress would do well to appreciate when engaging the EU and its members. At the same time, China continues to take advantage of the EU's open market and seeks to

obtain advanced technologies and create new technology dependency. Thus, ongoing transatlantic discussions with European governments are necessary to exchange security and economic intelligence and formulate a coherent and effective common response.

Recommendations for the Next Administration

The United States should ideally expand the TTC and add a permanent structure that would organize regular bilateral meetings by participating agencies without new initiatives from successive administrations. If such a comprehensive high-level bilateral consultation structure is not feasible due to the new administration's policy preference or a reduction of enthusiasm for broad transatlantic cooperation on trade and technology issues, the White House should still draw from the most productive areas of the TTC's agenda and, when possible, establish separate U.S.-EU dialogues remodeled from select TTC working groups that benefit from already organized agency participation and working-level contacts.

Washington should seek to develop a new or a series of new export control groupings with the EU and European countries with significant innovation or manufacturing capacities to guard against technology leakage.

The next U.S. administration should work with Congress to resolve potential trade barriers for European companies in the IRA and finalize the U.S.-EU critical minerals agreement. They should consider mini-innovation trade agreements with the EU to expand and integrate the transatlantic CET market, perhaps in conjunction with closer export control regime alignment.

A wider range of CET developments and applications should be included in bilateral U.S.-EU security dialogues, with an emphasis on operationalizing NATO's EDT strategy goals, such as establishing joint AI research and development initiatives among allies and creating a transatlantic quantum community, with necessary policy support and public investments.

Regular bilateral consultations on China should be sustained between the United States, the EU, and member states in a manner that combines security, economic, and strategic discussions. New mechanisms should be developed to solicit inputs from the technology and business community regarding the progress and impact of deploying domestic industrial policy and trade remedies.

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