The High North has historically played a pivotal role in global security management, not least because it bridged East and West with a unique proximity and geopolitical intimacy. Until modern times, its often impassable terrain, inhospitably harsh climates, and negligible economic importance granted it little intrinsic geopolitical value.

Today however, the High North is a region of rapidly changing natural, economic, political, and legal realities, all of which raise new questions about governance structures and impact the security environment in a region largely marked by military de-escalation after the Cold War. If the end of global confrontation, and the relatively low intrinsic value of the region itself, have together encouraged de-escalation in the 1990s, then indeed neither premise for stability is evidently permanent. Climatic changes have seen the recession of polar ice accelerate dramatically in recent years, highlighting the uncertain economic potential of the region deriving from resource deposits. Such climate changes, as well as economic and technological developments, will likely yield viably exploitable resources - but in quantities and geographic patterns which are simply unclear. Wider political relations have also been changing. Russia's resurgence under the stewardship of Vladimir Putin (itself closely linked to rising energy prices) is certainly a critical factor, but so too is the solidarity among the NATO allies themselves.

The future security of the Arctic will thus likely be driven by two outstanding and variable factors: the region's economic utility and the wider strategic relationship among the major state actors. While recognizing that economic utility will also depend on a variety of other changing factors such as new shipping routes and fishing patterns, this paper will focus on the role of energy deposits. Similarly, while shifting strategic relations among all players will impact developments, it cannot be denied that the primary driver will be those between Russia and the rest.

Both drivers will affect security mainly by impacting outstanding regional governance issues (particularly border disputes and legal claims in the maritime space) and should serve as early indicators of wider trends. At the same time, both will themselves depend on a host of uncertainties including future energy prices, the wealth of deposits and their extraction potential, relative military capabilities, indigenous political developments, and wider strategic disputes

Perceived Regional Economic Utility

The perceived future economic utility of the Arctic region – or the expected profitability of

political control over Arctic space (specifically for our purposes as a product of energy resource extraction) - will depend in the medium term on three main factors: the actual size of reserves, the state of market demand for Arctic hydrocarbons, and the feasibility of extraction as a function of both available technology and climatic conditions.

The most widely cited estimate as to Arctic hydrocarbon reserves are those of the US Geological Survey. Their latest report, released in July 2008, follows on previous such studies and estimates up to 90 billion recoverable barrels of oil and two trillion cubic feet of natural gas in the Arctic region. However, USGS estimates have been often criticized for their over-estimation and are widely disputed. Indeed, many previous estimates by USGS have been subsequently revised down by the agency itself, and the margin for error is admittedly high. As more exploratory activity continues in the region, it will become increasingly evident to what degree oil and gas reserves exist and perhaps more importantly, the nature of their concentration.

Given that the contemporary energy market is marked by increasing volatility, predicting price fluctuations is notoriously difficult. Since the collapse of the oil price in autumn 2008 in the face of the global financial crisis, it may seem that the high stakes which helped drive the increasing pace of Arctic competition in 2007 and 2008 are muted. In the medium term however, the reduced investment activity in the face of falling prices will only delay a renewed supply crunch until the global economy recovers. When that occurs will clearly depend on the duration of the global downturn, and its impact will depend on how hydrocarbon consumption changes during the period of recession (i.e., how do alternative energy technologies develop and to what extent are they embraced by consumers).

Lastly, the feasibility (and thus the cost) of extracting oil and gas in the Arctic will depend most heavily on the state of the available technology as well as climatic developments which may produce a more or less hospitable environment in which to operate. Extraction technology has been grappling with extreme-climate marine drilling for decades, but the pace of new advancements will dictate the feasibility of exploitation in coming years. The 1970s and 1980s excitement over finds in the Beaufort Sea provide an example of over-ambition outstripping technological realities. That being said, significant advancements since that period in horizontal and directional drilling, submersible robotics, docking facilities, and weather forecasting have rendered possible exploitation of such areas in the mean time. While submersible robotics, for example, developed much faster than anticipated – similar future breakthroughs are difficult to predict.

How geopolitical and economic incentives will impact various outstanding territorial and political issues are in the end what is at issue. The literature provides a theoretical framework for state incentives to settle outstanding disputes, based variously on nationalist value, cost benefits of

commercializing the disputed territory, and cost disincentives to militarizing the dispute or war. Given the higher potential commercial value of a territory, and also the lower nationalist value of confrontation, higher incentives to settle disputes should be created. It must also be iterated that the value of pre-existing and functional multinational commercial institutions and multilateral institutions toward creating incentives for bilateral territorial dispute resolution, specifically given their positive impact on capability transparency and trust levels, are also major factors that would alter the future of the region. In the Arctic, recent experience appears to bear out the argument that increasing potential commercial value of disputed territories drives renewed efforts to settle outstanding disputes. However, the internal dynamics of such reinvigorated negotiations are often marked by the familiar pursuit of relative gains – which may incentivize actors to delay settlements from which they would gain relatively less. Further, disputes can be settled bilaterally but also unilaterally, and the increased investment in Arctic military capability suggests that all of the Arctic nations are signaling that they are ultimately preparing to depend on their own ability to protect their northern interests. Therefore, using our two factors, we offer four diverging potential scenarios for the development of the High North security environment to about 2025. Each represents a simplified reality in order to emphasize the impacts of the factor bundles on security through territorial governance.

Scenario 1: "Pressure Container" (High, High)

The first scenario sees both the economic utility of the Arctic and polarization among the powers (and particularly vis-a-vis Russia) as high. The development of such a scenario over the next several years assumes, for starters, that general economic recovery will underpin energy unit price rises at an accelerating pace. Those could be exacerbated by production falls resulting from little to no investment in the next few crucial years (due to the economic crisis) and drawn out to 2020 by factors which limit non-Arctic production (such as Middle East conflict). Finally it assumes that renewable energy development is stalled, perhaps as a result of culls in the sector during the financial crisis.

However as the exploitation of Arctic fossil fuel resources becomes a viable economic activity supported by all states in the region, this scenario assumes that there has been little to no progress in developing an advanced multilateral framework for the settling of territorial disputes – perhaps because of rejectionist Commission On the Limits of the Continental Shelf (CLCS) decisions . Incentives to settle outstanding disputes would rise with the increasing potential economic returns posed by exploitation, and as a result polarization within the international system (specifically among the Arctic powers and particularly vis-a-vis Russia) deepens in this scenario. Between NATO members and Russia, an exacerbated strategic schism may be the product of domestic Russian political developments, developments among and within NATO nations, and the internal dynamics of outstanding disputes or potential sources of friction. The result, generally, would be emergence of de facto Arctic boundaries based in physical presence

backed by military force.

Scenario 2: "Boiling Pot" (Low, High)

Unlike the first scenario, this one sees the economic importance of Arctic seabed resources as relatively low – likely by alternative accessible finds, the development of non-conventional fossil fuels, and significantly reduced global demand resulting form extended depression and viable alternative energies. Thus, except for the possible opening of potential fishing grounds and Arctic shipping lanes, there are few incentives for coastal states to implement any form of global commons governance in the Arctic Ocean region.

At the same time, with its declining oil and gas production capacity, inefficient banking system, and paucity of non-energy related industries on one hand, and a strong desire for international prestige and need for domestic spending to maintain confidence in its authoritarian regime on the other, Russia is likely to see its international standing on the decline. In order to further pursue its strategy of dominance in post-Soviet spaces, the Russian leadership – likely to have evolved in an arranged fashion from the current Medvedev-Putin administration – may use the territorial ambiguities of the Arctic to keep the United States and NATO off balance. Such a strategy would seek to raise the costs of acting against Russian interests in its 'near abroad,' while using existing regional military assets that would otherwise go underutilized.

In this situation – with some military risk perceived in the Arctic but relatively little economic opportunities at stake – the Arctic states might reconsider the priorities that led to the principles of the Declaration of Ilulissat. In order to display unity and generate wider legitimacy, it is likely that Arctic conflicts would be increasingly treated by western Arctic states as a NATO issue rather than a national one. A multilateral ordering process is therefore somewhat likely, and geopolitical disputes with Russia would presumably be decided in alternative geopolitical arenas. In terms of energy security, this scenario has relatively few implications – if the disputes in the High North do not spread to other regions, there is little cause for concern, and the relatively small material stakes involved imply that there is little reason for either side to escalate matters.

Scenario 3: "Common Ground" (Low, Low)

In this scenario, the economic environment to 2025 is marked by generally sustained low prices for hydrocarbons over the entire period. These result from significant production in non-Arctic regions as well as long-term and sustained declines in demand. The former would presumably be driven by new exploitation innovations on the part of small to medium niche firms which draw out the production life of mature fields; conditions in the Middle East which support significant production such as the accuracy of official reserve estimates and also broad political stability; stable central control and open international competition in non-OPEC producing countries; relaxed environmental standards in North America for non-conventional extraction; and/or diversified natural gas transport networks which stimulate competition in the gas market. Sustained demand falls would be driven by a prolonged economic depression and/or significant advancements in alternative energy viability.

Therefore, even as US-Russian rapprochement leads to a wider détente in this scenario and renders polarization “low”, there are only weak incentives to exploit Arctic energy resources. Given meager hydrocarbon extraction opportunities, the main regional driver of multinational cooperation is environmental protection, and the Arctic Council is strengthened with a new explicitly environmental mandate. Incentives to settle maritime territorial disputes are low, discouraging binding international arbitration or submission to the International Court of Justice.

In essence, this scenario contains the lowest level of international competition or tension in the High North, and encourages effective commons management by highlighting common concerns such as environmental issues. In terms of energy security, the importance of the Arctic will remain low.

Scenario 4: “Free-for-All” (High, Low)

In this scenario, more widespread and accurate surveying of Arctic seabed oil and gas supplies, made possible by improved techniques and retreating ice packs, leads to increased expectations for relatively accessible fields - including in international spaces. Sustained high prices encourage the exploitation of such finds, encouraged by the lackluster development of alternative or nuclear energy. The signatories of the Ilulissat Declaration come to an agreement not to enforce claims made for extensions of their respective EEZs in the Arctic.

Russian relations are steadily improved with the West as Moscow embraces cooperation in order to exploit the immense commercial opportunities in the region. Relative Russian inexperience with offshore drilling, combined with a relatively underdeveloped financial sector

badly battered by the financial downturn, encourages Russia to court Western finance and technical expertise in order to initiate large-scale exploration and exploitation. Multinational companies are eager to provide these assets in exchange for reforms to guarantee the fair enforcement of profit-sharing agreements – but also out of an interest to render Russia a stakeholder in High North stability and thus protect the viability of other projects in the area.

As a result, the Arctic Ocean in this scenario experiences the start of an economic bonanza both for shipping and the extractive industries. The Northern Sea Route and the Northwest Passage see strong increases in cargo traffic, leading to significant economic growth and job creation in coastal areas across the region – but profits from the resource bonanza are not universal. Rising prices across the Arctic economy are problematic for indigenous residents, especially in Canada, Russia and Greenland. Environmental degradation and climate change threaten to endanger traditional lifestyles. Further, an influx of laborers and residents from different cultural and economic backgrounds is perceived as a challenge to ethnic identities and encourages opposition to Arctic development. In Russia, indigenous demands are increasingly (and perhaps violently) marginalized in the face of popular support for development to reverse the stagnation, infrastructural decay and population flight that characterized the late 1990s and (to a lesser extent) the slump of 2009.

Increased maritime and overland commercial transport may have further side-effects. The environmental problems both of a primary (degradation in the North because of resource exploitation) and secondary nature (pollution and global warming because of the burning of fossil fuels from the Arctic) become acute. Arctic states that have long established environmental concerns will face pressure to make the issue a foreign policy priority, particularly vis-à-vis those with less stringent regulations (i.e. Russia and to a lesser degree, the US

Therefore, while presenting opportunities for enhancing global energy security (insofar as increasing the availability of fossil fuels in a favorable security environment) and general political cooperation in the High North, this scenario also presents a host of security challenges which accompany sustainable development.

Conclusion

The central message of this article is that under current circumstances, the economic and geostrategic future of the Arctic region is highly uncertain. While the driving forces shaping that future can be identified, it is unclear how they will develop. That uncertainty is underscored by

the following:

 Current estimates of hydrocarbon resources in the Arctic vary between three and 25 percent of the world total. Most are likely within established Russian territory, but the extent of deposits in disputed or international spaces is unclear, and the viability of extraction depends on a host of shifting economic and technological variables.
 Similar variation is true for the predicted effects of global warming on the Arctic, even while economic and strategic considerations will be impacted.
 The Arctic powers appear to be following very different strategic concepts regarding the Arctic: while Canada has made clear decisions to expand its military capabilities in the Arctic, the United States have not made a material commitment yet despite the higher priority assigned to Arctic affairs in a policy document published in the final days of the Bush administration. Norway and Denmark seem to view the Arctic as a challenge for maritime security, and have consequently assigned coast guard-type forces to Arctic duties. Meanwhile, Russia still has substantial high-end naval forces in the High North, but those would soon need replacement while current funding is directed at maintaining the strategic nuclear deterrent.
 And finally, the future of NATO-Russia relations is fundamentally uncertain.

Considering these uncertainties and without assigning probability, the four broad and simple scenarios presented here offer a possibility for future development. It becomes clear however that popular ideas of a ‘great game’ or an ‘energy bonanza’ in the Arctic are not only premature, but potentially irresponsible, as they might imply a predetermined course of events to both decision makers and the general public and encourage a self-fulfilling prophecy. In our opinion, there is at present no greater imperative for Arctic policies than to encourage cooperative approaches both among NATO countries and with Russia, and to undertake constant reappraisals of the situation and assess the trajectory. The above scenarios can be thought of as models that may help with that process of charting the direction of coming developments.

Phillip CORNELL is Director – International Initiatives and Senior Fellow, NATO School, Oberammergau, Germany, and Jochen KLEINSCHMIDT, is a Visiting Lecturer, University of the Federal Armed Forces, Munich, Germany