

Is the Arctic an Emerging Market?

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For the last decade, while annual sea-ice has declined and economic activity has increased, many observers have eagerly described the Arctic as the world's next "emerging market." While emotively compelling, this popular claim is founded neither in theory nor quantitative analysis. In this paper, we attempt to more thoroughly answer the question "is the Arctic an emerging market?" After discussing the prominent frameworks and assessing available data we find that by most customary metrics the Arctic is not a traditional emerging market. However, using a new framework put forward by emerging market theorists Khanna and Palepu of Harvard University, which describes an emerging market as a transactional arena characterized by institutional voids which inhibit buyers and sellers from easily coming together, we argue that the Arctic can in many ways be considered an emerging market (Khanna & Palepu, 2010). Ultimately, we propose a new way to think of the 'Arctic economy' in the global context: as a nascent transactional arena largely nestled inside of stable, highly developed economies where buyers and sellers nonetheless have difficulty in conducting transactions, particularly in capital markets.

Introduction

The opening Arctic and its wealth of resources inspire sweeping claims that the region represents a new emerging market. However catchy, these claims are not backed by data nor based in theory regarding what constitutes an emerging market. In one basic sense, the term 'emerging' emotively fits the changing dynamics of the region: as ice retreats, untapped resources emerge from beneath it. Just as the ice recedes and the resources beneath it are uncovered, so too is the Arctic *emerging* into investors' collective consciousness—and therefore intuitively the Arctic *feels* like an emerging market.

Over the past decade, analysts, observers, and journalists have been quick to describe the region as the world's next, or even *last*, emerging market. A quick Google search returns the following headlines:

- "Is the Arctic the Next Emerging Market?" (Karlsson & Smith, 2013)
- "The Arctic as an Emerging Market" (Larsen, 2014)

- *“Climate Change: The Arctic as an Emerging Market”* (Harris, 2012)
- *“The Arctic: the next emerging economy”* (Henriksen, 2014)
- *“The Arctic as an Emerging Market”* (Jones, 2012)
- *“Should we be considering the Arctic as the next emerging economy?”* (Aplin, 2015)
- *“The Arctic is an emerging market...”* (Emmerson, 2012)
- *“The Emerging Arctic Market”* (Klein, 2017)

The problem of defining what is—and what is not—an emerging market (EM) goes well beyond the Arctic. Traditional definitions of EMs, which are discussed below, tend to coalesce around measurements of poverty, national capital market openness, and a country’s growth potential. There are more than a dozen definitions of what constitutes an EM, but no single framework is widely accepted by economists, statisticians, and investors. Worse, many EM classifications are qualitative or based on ‘gut calls’ and do not adhere to or carry out rigorous economic analysis.

Perhaps the most significant challenge in determining whether the ‘emerging market’ label should be applied to the Arctic is that traditionally the smallest jurisdictional unit for EM classification is found at the country level, whereas the Arctic is a collection of sub-regions spread across eight nations. We propose that emerging markets do not necessarily exist exclusively at the national-level in developing nations but can also be found at the subnational level within jurisdictions of developed countries. In doing so, we also note that the Arctic ‘market’ is not a monolith but can instead be considered as three distinct sub-markets: the North American, European, and Russian Arctic.¹

In this study, we first survey the existing ecosystem of EM definitions and classifications and assess whether they describe the economic conditions found in the Arctic. We determine which EM definitions hold up when applied to the Arctic, and which do not. We then argue that the Arctic can in fact be considered an EM by using a novel EM definition that we propose is more germane to the Arctic than traditional frameworks. With this proposed definition in mind, we conclude by discussing mechanisms that can better facilitate the flow of investment capital to the Arctic.

Existing EM Definitions and How they Apply to the Arctic

There are many ways to define emerging markets, and investors, researchers, and financial service providers have found myriad ways to classify, categorize, and package them. Traditionally, EMs have been considered low- or middle-income countries with low average standards of living, where capital markets are underdeveloped, and a process of economic liberalization is taking root or expected (Mody, 2004).

The term ‘emerging market’ was first coined by Antoine Van Agtmael and a team of economists at the International Finance Corporation (IFC), a World Bank organization, in 1981 (IMF, 2017). The group was trying to sell investors on a “Third World mutual fund” but needed a more aspirational and attention-grabbing term and came up with “emerging markets” (“Establishing Emerging Markets”). Since then, economists, financial firms, development organizations, governments, and news agencies have developed their own definitions and classifications of which countries deserve the EM designation.

Below we examine three of the most prominent frameworks and assess whether they would consider the Arctic an EM. Here we define the Arctic as the 25 sub-national jurisdictions found in

the eight Arctic states that are located either partially or entirely above of the 66th parallel north.² In all following work we endeavor to use 2010-2015 as our study period due to the lag in national and regional statistical bureaus reporting of key indicators.

International Monetary Fund (IMF)

The International Monetary Fund's biannual World Economic Outlook (WEO) classifies countries as being advanced economies, emerging markets, or low-income developing countries (LIDCs). The IMF deems an economy an emerging market if it does not meet its definitions of an advanced economy or a LIDC, which makes it one of the more inclusive EM definitions. As of June 2018, the IMF categorized 39 countries as advanced economies and 59 countries as LIDCs, leaving 95 EMs (IMF, 2018). The IMF distinguishes between advanced economies, EMs, and LIDCs based on (1) per capita income levels, (2) export diversification, and (3) degree of integration into the global financial system.

Per Capita Income Levels

In order to compare how the Arctic fits into the IMF's classification system, a few assumptions are necessary. First, statistical bureaus generally do not track gross national income (GNI) at the regional level (which would be gross regional income (GRI)), thus making a comparison between subnational Arctic jurisdictions and countries based on these metrics difficult. In the absence of these data, we use per capita gross domestic product (GDP) and per capita gross regional product (GRP) as proxies for "per capita income levels" as the IMF uses in its national classification system.

The IMF defines LIDCs as having annual per capita income levels below 2,700 USD (in 2016 as measured by the World Bank's Atlas method), as well as structural features consistent with limited development, and linkages to external financial systems that are insufficient to be considered emerging market economies (IMF Fiscal Monitor, 2018: 95). The IMF does not, however, provide a similar statistical income cutoff to distinguish between advanced economies and EMs. In the absence of a clear per capita income threshold separating advanced economies from EMs, we use the average of the five lowest per capita GDPs (in USD-PPP) among the IMF's advanced economies to estimate the income cutoff between advanced economies and EMs.

The average of the five lowest per capita GDPs among the IMF's advanced economies in 2016 was 26,839 USD. As Table 1 shows, the average per capita GDP for all advanced economies was 42,750 USD. Meanwhile the IMF's 96 emerging economies' average per capita GDP was 17,215 USD. The BRICS average per capita GDP was 13,776 USD.³

Between 2010 and 2015 average pan-Arctic GRP per capita was 35,735 USD, with a low of 13,453 USD (Arkhangelsk) and a high of 214,647 USD (Nenets Autonomous Okrug). Of the three sub-regions of the Arctic, the Russian Arctic has the lowest average per capita GRP (29,977 USD), although it is still higher than the lowest advanced economy—Latvia—which has a per capita GDP of 21,006 USD. See Appendix 1 for a full breakdown of average per capita GRP 2010-2015 for all 25 Arctic jurisdictions.

Based on the IMF's per capita income definition, the Arctic is considered an Advanced Economy, not an EM. It is important to note that there are shortcomings in using per capita GRP in the Arctic to measure economic activity and output. These issues are discussed in further details in the section titled "Shortcomings of GRP in the Arctic."

Table 1

Average per capita GRP, 2010-2015 (PPP)	
Region/Country	GRP/GDP per capita (USD)
The Arctic	\$35,735
<i>North American Arctic</i>	\$73,897
<i>European Arctic</i>	\$43,955
<i>Russian Arctic</i>	\$29,977
Reference Markets	
Norway	\$63,515
United States	\$50,885
Advanced Economies (IMF) (avg)	\$42,750
Russian Federation	\$24,796
Emerging Markets (IMF) (avg)	\$17,218
BRICS	\$13,779
China	\$11,457
India	\$5,121

Export Diversification

The IMF does not use per capita income alone to determine a country's classification. The IMF also evaluates markets based on export diversification, a metric devised primarily to prevent oil exporters that have high per capita GDP from entering the advanced economy classification. The IMF does not publish a standard threshold for export diversification, instead using it as a qualitative measure.

In the Arctic, data related to export diversification is scarce. The last major study of export diversification in the region was conducted in 2005. The study found that petroleum and mining accounted for 33.2% of GRP in Alaska, 27.7% in Canada, and 56.9% in Russia (Huskey, Mäenpää & Pelyasov, 2014: 165). Furthermore, qualitative evidence since 2005 suggests that the share of GRP derived from these sources has increased (Forbes, 2005). For instance, 88% of Greenland's exports are from the seafood industry (Government of Greenland, 2018). Meanwhile, the European Arctic as a whole did not have any single export sector account for greater than 7% of GRP (Huskey, Mäenpää & Pelyasov, 2014).

On this measure the pan-, North American, and Russian Arctic all exhibit poor export diversification, which is typically associated with EMs and not advanced economies (IMF, 2014) (Agosin, 2007).

Degree of Integration into the Global Financial System

The IMF describes the "degree of integration into the global financial system" primarily as capital account openness, particularly the degree to which foreign investors can engage in an economy's capital markets (IMF, 2016). If there are little to no restrictions on foreign engagement in a country's capital markets, then it is classified as a developed economy by this metric. Meanwhile, if there are restrictions on foreign participation in a country's stock, debt, or derivatives markets, the country warrants an EM classification according to this dimension of the IMF framework. If

restrictions on foreign involvement in a country's capital markets are severe, the market could be designated a frontier market (IMF, 2017).

In order to quantify the Arctic's degree of integration into the global financial system, we must use a proxy measure. Here, we use the country classifications issued by MSCI, a financial indexing company that produces indices covering hundreds of market segments including emerging markets. MSCI primarily classifies countries as developed, emerging, or frontier based on nine measurements of a country's capital market openness. Of the eight Arctic states, MSCI classifies seven as developed and only one, Russia, as emerging (MSCI, 2017).

IMF Definition in Review

Overall, we find that the pan-Arctic, as well as the three Arctic sub-regions, meet very few of the IMF's emerging market criteria.

Table 2

The Arctic and the IMF's EM Definition			
	Per capita income levels	Export diversification	Integration with global financial markets
Pan-Arctic	X	✓	?
<i>North American Arctic</i>	X	✓	X
<i>European Arctic</i>	X	X	X
<i>Russian Arctic</i>	X	✓	✓

✓ = meets definition X = does not meet definition ? = unknown or unclear

The World Bank

The World Bank's criteria to define EMs differs slightly from the framework used by the IMF. The World Bank defines emerging markets as having (1) lower-than-average per capita GDP, (2) rapid growth, (3) high volatility, (4) immature capital markets, and (5) higher-than-average returns for investors (World Bank).

Lower-than-Average per capita GDP

Like the IMF, the World Bank employs a per capita GDP measurement to classify EMs. However, the World Bank does not elaborate what specific per capita GDP threshold is necessary to be considered an EM beyond "lower-than-average." For the period 2010-2015, the World Bank assessed that global average per capita GDP was 14,350 USD. In both Table 1 and Appendix 1 we note that the pan-Arctic, as well as all 25 Arctic jurisdictions in our study, have a per capita GRP higher than the world average. Once again, on this metric the Arctic does not qualify as an EM.

Rapid Growth

From 2011 to 2015, the Arctic averaged 2.9% annual growth on a per capita GRP basis, driven by a 3.38% average growth rate in the Russian Arctic (see Table 3). Notably, over this period the North American Arctic experienced negative average growth rates while the European Arctic averaged 1% annual growth.

The World Bank does not provide further clarification on what constitutes ‘rapid growth’ in order to be considered an EM. Therefore, we must infer reference growth rates from other markets. Of the BRICS countries, the total Arctic growth rate was higher than that of Russia, South Africa, and Brazil and only trails annual growth rates in China and India over this period. Similarly, the average growth rate for the pan-Arctic area outpaced growth in the United States (1.44%) and the European Union (0.91%). It is worth noting that when we expand the time series to include the period 2002 to 2015, the pan-Arctic has an average annual growth rate in GRP per capita of 5.28%.

Table 3

Arctic per capita GRP growth, 2010-2015						
	2011	2012	2013	2014	2015	Average
Pan-Arctic⁴	6.74%	2.39%	1.87%	1.79%	1.73%	2.90%
<i>North American Arctic</i>	0.12%	-1.80%	-0.67%	0.06%	-2.81%	-1.02%
<i>European Arctic</i>	1.42%	-0.78%	1.36%	1.24%	1.71%	0.99%
<i>Russian Arctic</i>	6.99%	0.26%	1.02%	2.69%	5.95%	3.38%
Reference Markets (World Bank)						
China	9.01%	7.33%	7.23%	6.76%	6.36%	7.34%
India	5.25%	4.13%	5.10%	6.23%	6.76%	5.49%
United States	0.85%	1.46%	0.97%	1.81%	2.11%	1.44%
Russian Federation	5.20%	3.48%	1.57%	-1.04%	-3.04%	1.23%
European Union	1.78%	-0.65%	-0.04%	1.43%	2.01%	0.91%
South Africa	1.94%	0.80%	1.02%	0.26%	-0.08%	0.79%
Brazil	2.99%	0.97%	2.06%	-0.38%	-4.59%	0.21%
World Average	1.97%	1.23%	1.41%	1.65%	1.63%	1.58%

Based primarily on growth rates in the Russian Arctic in comparison to our reference markets, we assess that both the Russian Arctic (3.38%) and the pan-Arctic (2.9%) display rapid growth characteristics consistent with EMs.

High Volatility

The World Bank does not provide a standard definition of volatility, or what it considers to be “high.” In order to test this criterion, we use the volatility of annual GRP growth rates in the Arctic, as measured by standard deviation. Volatility is measured as the standard deviation of growth rates for each of the above definitions of growth rates (Chatterjee & Shukayev, 2006). Due to sample size concerns, we expand the time series to include the period from 2002 to 2015.

Table 4

Average GRP/GDP Growth & Volatility, 2002-2015 ⁵		
	Avg. Annual Growth	Volatility (std deviation)
Pan-Arctic⁶	5.28%	4.15
<i>North American Arctic</i>	2.70%	6.34
<i>European Arctic</i>	1.93%	2.87
<i>Russian Arctic</i>	7.66%	5.61
Reference Markets (World Bank)		
Russian Federation	3.76%	4.65
Brazil	1.87%	2.84
sIndia	5.94%	2.01
China	9.17%	1.96
South Africa	1.79%	1.91
European Union	0.96%	1.91
United States	1.04%	1.66
World	1.63%	1.57

In the 14-year study period the pan-Arctic exhibits a volatility in GRP growth rates (4.15) that is higher than all reference markets other than Russia (4.65). We find that the North American Arctic exhibits the highest volatility in growth rates among Arctic regions (6.34) during this period, likely due to its reliance on commodity exports, which exposes it to global commodity price fluctuations.

Immature Capital Markets

The World Bank definition of “immature capital markets” is similar to the IMF’s definition of capital market integration discussed previously. We can again use MSCI’s Emerging Market classification system to infer that seven of the eight Arctic states have developed capital markets while Russia is an EM by this dimension.

Higher-than-Average Returns for Investors

Quantifying investor returns in the Arctic is difficult due to a lack of publicly available data. As yet, no financial indices of public equities with operations in the Arctic have been published that could serve as proxies for total expected returns. Furthermore, whether the North American Arctic, for example, provides higher-than-average returns compared to the Russian Arctic is similarly difficult to observe in the absence of regional Arctic equities indices. In the private investment space, including private equity investments, returns data are proprietary and generally not made publicly available.

World Bank Definition in Review

Overall the pan-Arctic and its three sub-regions meet some, but not all, of the features of an EM according to the World Bank. The Russian Arctic exhibits the most EM criteria given its high growth rates and immature capital markets.

Table 5

The Arctic and the World Bank's Emerging Market Definition					
	Lower-than-average per-capita GDP	Rapid growth	High volatility	Immature capital markets	Higher-than-average returns for investors
Pan-Arctic	X	✓	✓	?	?
<i>North American Arctic</i>	X	X	✓	X	?
<i>European Arctic</i>	X	X	✓	X	?
<i>Russian Arctic</i>	X	✓	✓	✓	?

✓ = meets definition X = does not meet definition ? = unknown/unclear

Financial Index Providers

A third major classifier of the state of national economies is the financial indexing industry. For many in the financial community these classifications are among the most commonly used definitions of emerging markets. However, the methodology that financial index providers use to judge whether a market is emerging is imperfect when applied to the Arctic.

As of June 2018, leading index provider MSCI identified 24 EM countries for its Emerging Markets Index, which has more than 1.6 trillion USD in assets benchmarked to it (MSCI, 2018). Like the IMF and World Bank, MSCI sets a minimum income threshold in order to be considered a developed economy rather than an EM. As of June 2018, MSCI used a minimum per capita GNI of 12,476 USD in order to qualify as a developed economy (MSCI, 2017). Based on the above data, the pan-Arctic, as well as all 25 sub-jurisdictions, exceed this threshold on a GRP basis and would be considered developed—not emerging—economies. In addition to per capita income, MSCI evaluates markets on nine other dimensions to determine whether they are developed, emerging, or frontier markets. However, these nine other dimensions are all related to the nature of a country's *national* stock market, including size of publicly traded companies, stock market liquidity, openness to foreign ownership, and trade settlement procedures. These requirements of a country's national stock market size and openness are not applicable to the pan-Arctic, but rather apply only at the national level among the eight Arctic states.

As of June 2018, MSCI defined seven of the eight Arctic states as developed markets, with Russia classified as an EM. Other index providers, including FTSE Group, S&P, Dow Jones, and STOXX have each developed their own market classification criteria that, like MSCI, are primarily based on national capital market regulations, integration, and openness. See Table 6 for a full breakdown of how these financial index providers assess the eight Arctic states.

Due to the nature of the methodologies employed, it is difficult to apply the financial indexers' classification systems to the Arctic to help answer the question "is the Arctic an emerging market?" Indexers like MSCI assess where each country's *national capital markets* fall on the frontier-emerging-developed spectrum. In the Arctic, we are assessing sub-national jurisdictions. There is no "Yellowknife Stock Exchange," for example, on which shares of Northwest Territories companies are traded, so we cannot apply the indexers' methodologies to assess the hypothetical Yellowknife Stock Exchange's rules and regulations regarding settlement methods or foreign ownership limits,

and other metrics that the index providers use to measure markets. Nonetheless, it is useful to keep in mind where the Arctic nations as a whole are on the index providers' spectrum.

Table 6

Classification of Arctic States by Indexing Company, April 2018				
	MSCI	FTSE	S&P Dow Jones	STOXX
Canada	Developed	Developed	Developed	Developed
Denmark	Developed	Developed	Developed	Developed
Finland	Developed	Developed	Developed	Developed
Iceland	Developed	Not Classified (FTSE, 2018) ⁷	Not Classified	Not Classified
Norway	Developed	Developed	Developed	Developed
Russian Federation	Emerging	Secondary Emerging	Emerging	Emerging
Sweden	Developed	Developed	Developed	Developed
United States	Developed	Developed	Developed	Developed

Shortcomings of GRP in the Arctic

In the above EM definitions, per capita income and per capita production feature prominently. However, there are well-known shortcomings to using GDP (or GRP) to evaluate economies, particularly in a sparsely populated, resource-rich geography like the Arctic. In particular, shortcomings include issues related to residency, government assistance, and subsistence activities.

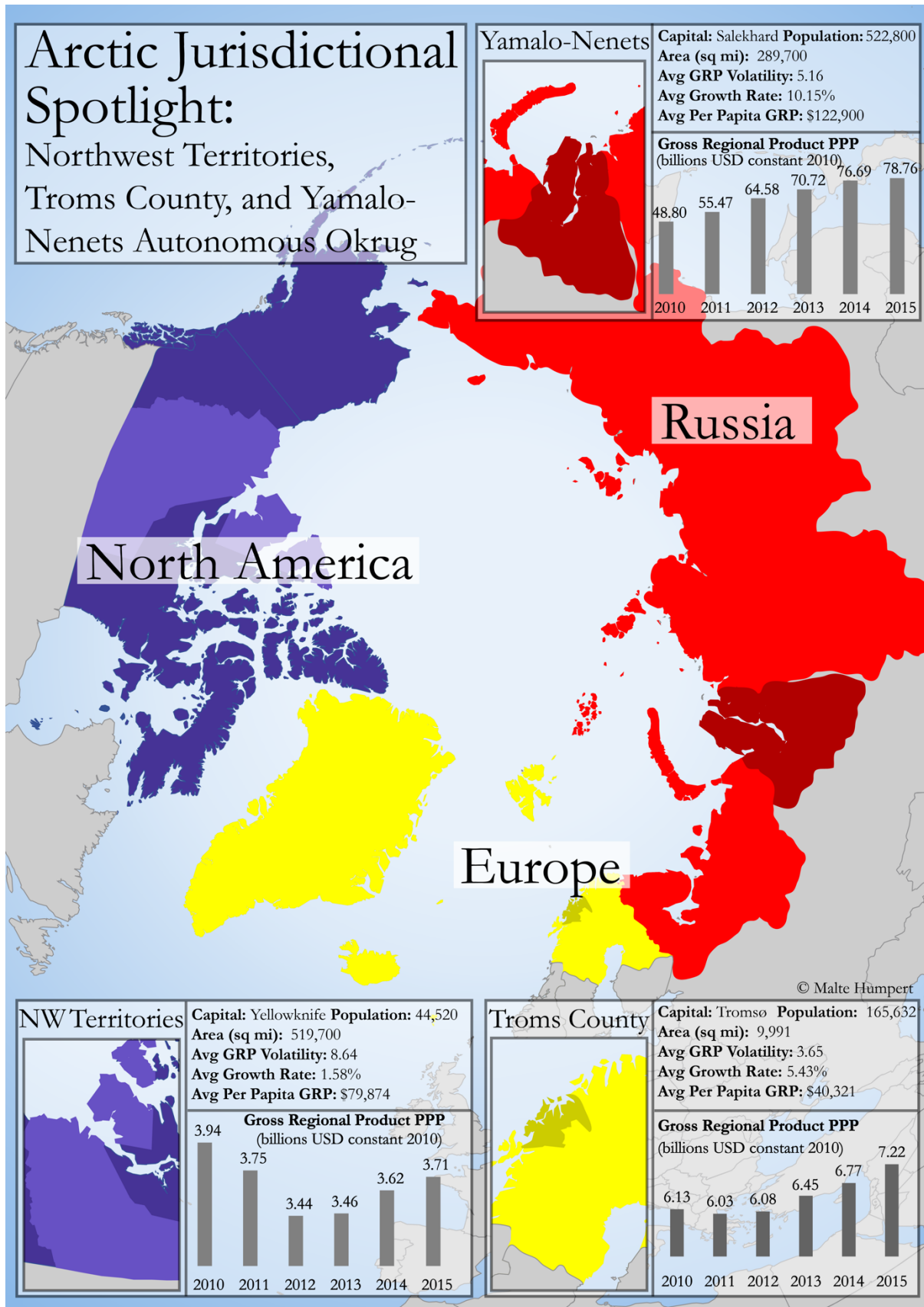
Residency

In the Arctic, particularly in the extractive industries, a significant portion of the workforce can be composed of non-resident seasonal workers. For instance, in the Yamalo-Nenets Autonomous Okrug, which ranks third highest of the 25 Arctic sub-national jurisdictions by GRP per capita, 15% of the workforce is non-resident (Nalimov & Rudenko, 2015). Similarly, physical capital and profits from these activities can be controlled by owners outside of the region. A recent study found that this region, while among Russia's richest by GRP per capita, presents some of the country's lowest social and income equality measures (Nalimov & Rudenko, 2015). Much of the income produced in the Arctic leaves the region through rents, taxes, and wages paid to owners of resources and extraction processes who are located in non-Arctic regions. These residency issues would cause Arctic residents' actual per capita *incomes* to be lower than per capita *production* as stated by GRP (Glomsrød, Goldsmith, Mäenpää & Wei, 2017).

Government Assistance & Transfers

Similar to issues related to residency, government transfers to Arctic jurisdictions in the form of public assistance and subsidies may similarly skew Arctic GRP figures. Rural jurisdictions in the Arctic, particularly in the North American Arctic, often do not generate sufficient tax revenue to pay for all public services needed in the region, requiring central governments to provide assistance. GRP includes government spending, which in jurisdictions in the North American and European Arctic can account for approximately 30% of total GRP, including up to 40% in

northern Norway (Huskey, Mäenpää & Pelyason, 2014). GRP does not include direct transfers such as welfare (Lounsbury, 2010).



Graphic design: Malte Humpert, The Arctic Institute

Subsistence Activities

A portion of the Arctic's population, both Indigenous and non-Indigenous, engage in forms of production that are not included in traditional measures of economic activity, particularly hunting and other subsistence activities. In the United States, for example, these activities are not included in GRP. Although these activities are culturally significant in many parts of the Arctic, and many small communities rely on them for food security, they are not estimated to be a significant contribution to Arctic economies (Larsen, Schweitzer & Petrov, 2015).

Cost of Goods and Services

The costs of goods and services in the Arctic are typically higher than in southern regions of Arctic states (Poppel, Kruse, Duhaime & Abryutina, 2007). This means Arctic residents' purchasing power is in most cases lower than the purchasing power of non-Arctic residents in the same nations (Larsen, Schweitzer, & Petrov, 2014). Consequently, the per-capita GRP figures featured in this study are inflated in comparison to their relative purchasing power. The authors of the Arctic Social Indicators II report addressed this issue in their case study on Alaska by applying the Anchorage Consumer Price Index (Larsen, Schweitzer & Petrov, 2014). Such indices exist for certain Arctic regions and are lacking in others. In our study we concluded that using price adjusting indices where available would distort the data on a pan-Arctic level and introduce new and unknown data reliability issues. To keep data comparable, we use national level PPP conversions provided by the OECD.

An Emerging Market Framework for the Arctic

To this point, we've surveyed the traditional definitions of 'emerging markets' put forth by the IMF, the World Bank, and financial indexing companies and we've examined how the Arctic stacks up against these frameworks. Overall, the results are mixed: neither the pan-Arctic nor the three sub-regions of the Arctic meet all the definitions of an EM. We've also highlighted some of the unique challenges of using per capita GRP as a measure of economic activity in the Arctic. While the exercise of comparing Arctic metrics to global standards and frameworks offers insights into the nature of economic activity in the various regions of the Arctic, no single definition we've examined fully encapsulates the region to a satisfactory degree.

We propose that a definition of EMs more germane to the Arctic comes not from the standard definitions issued by large intergovernmental organizations or financial service providers, but from the literature of international business management and strategy. Specifically, we argue that the EM definition that best fits the Arctic comes from the work of Tarun Khanna and Krishna Palepu of the Harvard Business School, who propose that "emerging markets reflect those transactional arenas where buyers and sellers are not easily or efficiently able to come together" (Khanna and Palepu, 2010: 6).

The concept introduced by Khanna and Palepu offers a number of advantages over traditional EM definitions when applied to the Arctic. First, it avoids defining EMs strictly at the nation-state level, and instead focuses on *transactional arenas*. This distinction allows us to better apply the framework to a collection of sub-national jurisdictions spread across eight nations, as is the case in the Arctic. Second, it is not bounded by the application of metrics such as economic size, growth rate, or length of time since emergence into the global economy. Instead, Khanna and Palepu

emphasize that the most fundamental characteristic of an EM is the degree of difficulty buyers and sellers have in conducting transactions in the product, labor, and capital markets (Khanna & Palepu, 2010).

Finally, this definition captures the realities and difficulties of working and investing in the Arctic, particularly for companies and portfolio managers from outside the area with little or no experience operating in the region. Khanna and Palepu cite two specific symptoms of buyers and sellers having difficulty coming together in EMs: (1) high transaction costs and (2) insufficient market intermediaries (Khanna & Palepu, 2010: 56).

High Transaction Costs

Transaction costs are simply defined as the costs of participating in a market, which in the Arctic can be extraordinarily high due to the region's unique operating challenges.

Transaction costs unique to the Arctic include challenges related to physical access, including a lack of infrastructure in comparison to the natural resources present. Challenges related to physical access are manifested in the need for specialized equipment at higher cost. Among the most notable examples of this phenomena include Shell's failed drilling efforts in the Chukchi and Beaufort seas, which required the company to build a specialized light icebreaker at a cost of 200 million USD (Uljua, 2018). Other examples of transaction costs in the Arctic include salary premiums, communications infrastructure challenges, licensing and environmental issues, indigenous and First Nations relationship management, icebreaker fees along the Northern Sea Route, reputational costs, requirements for equipment resilience in harsh weather, and, in the case of the Russian Arctic, sanctions risk (Andersson & Lundström, 2007: 4). Reducing transaction costs for businesses, investors, and residents of the Arctic will result in improved living and economic conditions as well as greater ease of doing business (Andreassen, 2018: 21) (Len, 2016).

Insufficient Financial Intermediaries

Khanna and Palepu argue that in EMs the dual symptoms of high transaction costs and a lack of financial intermediaries are largely the result of *institutional voids* in the labor, product, and capital markets (Khanna & Palepu, 2010: 6). In the case of Arctic capital markets, we argue that the most glaring *institutional void* is a lack of financial intermediaries.

A financial intermediary is an entity that acts as middleman between two parties to facilitate a transaction. In emerging markets, Khanna and Palepu find that intermediaries that are usually lacking include market research firms, financial analysts, mutual funds, private equity funds, and venture capital firms (Khanna & Palepu, 2010: 57).

In July 2011 David Rubenstein, co-founder of the 200 billion USD money manager Carlyle Group, assessed that the Arctic would need an increase in financial intermediaries in the coming decades to better facilitate the flow of capital through the Arctic (Rubenstein, 2011). Mr. Rubenstein called for Arctic-focused investment funds, including private equity funds and vehicles for institutional investors to gain exposure to the Arctic. Mr. Rubenstein offered a forecast: such firms and funds would proliferate in the Arctic in the next five to ten years to fill this institutional void. Seven years later, Mr. Rubenstein's call for Arctic financial intermediaries has not yet fully materialized.

Despite hinting at the creation of an Arctic infrastructure investment vehicle since 2011, Guggenheim Partners Investment Management, a large manager of institutional wealth, has yet to

invest in the region (Hickman, 2011). PT Capital, a small, Alaska-based boutique private equity firm focused exclusively on the Arctic, was only founded in 2015. There are a handful of regional funds that invest in bonds and equities in the Nordic region, but these vehicles do not focus specifically on the European Arctic. Beyond that, few other financial intermediaries exist in the Arctic.

The lack of financial intermediaries in the region is compounded by difficulties in securing traditional financing for Arctic business activities. The *2018 Business Index North (BIN)*, a publication that tracks business activity in the European Arctic and parts of the Russian Arctic, found:

Companies [in the Arctic] find it difficult to grow organically because of lack of financing. In countries like Germany and Japan companies are supported to a greater extent by banks. Many banks in the [European and Russian Arctic] area, however, are reluctant and have fewer opportunities to support businesses. Investors are therefore crucial to support any business...Therefore, more knowledge is needed to develop an awareness of companies which operate far from the known capital markets (Bullvåg et al, 2018: 95).

It should be noted that in addition to capital and financial markets, firms operating in the Arctic also struggle in the labor market, where growth is stifled by a lack of access to human resources, as well as the product market, as non-commodities face severe challenges in entering global markets (Bullvåg et al, 2018: 6).

Overcoming the Arctic's Institutional Voids

The dual problems of high transaction costs and a lack of financial intermediaries in the Arctic are inherently linked: in frontier and emerging markets worldwide, transaction costs are reduced through the introduction of increasingly sophisticated intermediaries (Kababi, 2014). From a capital markets standpoint, in order to channel funds to attractive investment opportunities and facilitate access to capital for Arctic entrepreneurs and established companies, an increase in the size and innovative capacity of intermediaries is necessary. Intermediaries needed include Arctic-focused private equity, venture capital, commercial banks, mutual funds, and insurance companies. Given the operating and investing challenges unique to the Arctic, creative, unique solutions will be needed. One example of a unique financial mechanism to reduce transaction costs in the Arctic is the Arctic Council's Project Support Instrument (PSI) (Arctic Council). The PSI, which launched in March 2014, provides Arctic projects with additional financing in order to reduce costs of pollution mitigation programs.

Furthermore, the Arctic has certain unique financial institutions including Norway's sovereign wealth fund, the Alaska Permanent Fund, and Alaskan and Canadian Indigenous corporations and land claim organizations. What role these institutions play in Arctic economies, and how they could fill or exacerbate institutional voids, warrants further academic research.

Despite the challenges in developing business and investing activity in the Arctic, we believe there is reason to be optimistic about the future development of such intermediaries in the region. In the process of financial innovation in EMs, a key factor in capital markets is the presence of financial regulatory bodies and central banks, which reduce risk for investors and thereby lower the cost of capital for entrepreneurs and capital-needy companies. In most emerging markets, these government and regulatory institutions are absent or slow to develop, often lagging behind the development of financial intermediaries. Fortunately, in the Arctic, particularly in the North

American and European Arctic, the opposite is true: regulatory infrastructure on the national-level is among the most highly developed in the world, and only the Arctic-focused intermediaries are lagging behind.

A Framework for Placing Arctic Economies in the Global Context

The Arctic is physically emerging due to climate change, technological improvements, and geo-economic shifts. Despite intuitively feeling like the Arctic, with its trove of untapped resources and valuable geopolitical position, should be considered an emerging market, the region itself does not meet many of the traditional, albeit stale, definitions of an EM. Based on the quantitative analysis performed in the beginning of this study, we concluded that the Arctic is not a EM by traditional standards. However, based on the qualitative analysis in the second part of this study, which looks at the Arctic through the lens of institutional voids, we do believe that the Arctic can be considered an EM. This inherent contradiction prompts the recommendation of a new framework for evaluating the Arctic economy, which borrows from both the traditional and the alternative methods of evaluation.

We propose that the Arctic should be thought of as a nascent transactional arena nestled inside of stable, highly developed economies where buyers and sellers nonetheless have difficulty coming together to conduct transactions, particularly in capital markets. In this sense, the Arctic *is* an emerging market, at least until the high transaction costs of investing and conducting business in the region are reduced. The introduction of new, more sophisticated market intermediaries, derivatives, and investment vehicles tailored for the Arctic will be key.

Notes

1. We group the 25 Arctic jurisdictions as follows: *North American Arctic* [Alaska (USA); Yukon, the Northwest Territories, and Nunavut (Canada)]; *European Arctic* [Nordland, Troms, and Finnmark (Norway); Norrbotten and Västerbotten (Sweden); Lapland, Kainuu, and Northern Ostrobothnia (Finland); Iceland; Faroe Islands and Greenland (Denmark)]; *Russian Arctic* [Chukotka, Murmansk, Nenets Autonomous Okrug, Republic of Karelia, Arkhangelsk, Komi Republic, Yamalo-Nenets Autonomous District, Krasnoyarsk Krai, Sakha Republic, and Magadan].
2. Due to government reporting practices, we include five Russian sub-national jurisdictions that are only partly located in the Arctic: Magadan, Komi Republic, Karelia Republic, Krasnoyarsk Krai, and Sakha Republic. Determining gross regional product at more finite jurisdictional level (ie solely including towns / municipalities / counties located within the Arctic) is not possible with government-reported data. Other regions that are excluded due to inadequate data coverage include Nunavik (Canada) and Svalbard (Norway).
3. BRICS: Brazil, Russia, India, China, South Africa.
4. Source: authors.
5. Note: Study period is 2002-2015; longer than the 2010-2015 period referenced in the prior table.

6. Source: authors.
7. Note: As of April 2018, Iceland was under review for possible inclusion in September 2018 as a frontier market due to easing of capital controls following the 2008/2009 banking crisis.
8. Source: See Appendix 2.

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Appendix 1: Arctic per capita Gross Regional Product (GRP) Data⁸

GRP PER CAPITA, adjusted for PPP (constant, 2010)	
Arctic Jurisdiction	Average (2010-2015)
Arkhangelsk	\$13,453
Republic of Karelia	\$13,602
Murmansk	\$19,820
Krasnoyarsk Krai	\$23,580
Komi Republic	\$27,127
Kainuu	\$28,822
Magadan	\$29,208
RUSSIAN ARCTIC	\$29,977
Sakha Republic	\$30,439
Lapland	\$33,408
Greenland	\$33,511
TOTAL	\$35,735
Västerbotten	\$36,567
Nordland	\$38,654
Finmark	\$39,111
Iceland	\$40,231
Troms	\$40,321
Faroe Islands	\$40,685
EUROPEAN ARCTIC	\$43,955
Norrbotten	\$44,371
Nunavut	\$48,931
Chukotka	\$51,538
Yukon	\$55,572
NORTH AMERICAN ARCTIC	\$73,897
Alaska	\$75,413
NWT	\$83,605
Yamalo-Nenets Autonomous District	\$122,900
Northern Ostrobothnia	\$142,109
Nenets Autonomous Okrug	\$214,647

Appendix 2: Arctic GRP (see Appendix 3 for sources and methodology)

Gross Regional Product of Arctic Jurisdictions 2001 – 2015 adjusted for PPP (billions USD constant 2010)															
Jurisdiction	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Nordland	\$7.88	\$8.18	\$8.55	\$8.44	\$8.14	\$8.29	\$8.35	\$8.38	\$8.88	\$9.10	\$8.63	\$8.72	\$9.06	\$9.67	\$10.27
Troms	\$5.32	\$5.73	\$5.80	\$5.75	\$5.45	\$5.41	\$5.32	\$5.34	\$6.18	\$6.13	\$6.03	\$6.08	\$6.45	\$6.77	\$7.22
Finnmark	\$2.20	\$2.34	\$2.32	\$2.30	\$2.34	\$2.30	\$2.33	\$2.34	\$2.67	\$2.78	\$2.77	\$2.77	\$2.82	\$3.01	\$3.28
Västerbotten	\$7.74	\$7.87	\$8.20	\$8.75	\$8.98	\$9.63	\$9.31	\$9.31	\$8.68	\$9.40	\$9.44	\$9.59	\$9.44	\$9.47	\$9.91
Norrbottnen	\$8.36	\$8.51	\$8.63	\$9.14	\$9.65	\$10.44	\$10.23	\$10.89	\$8.89	\$11.47	\$11.57	\$11.12	\$10.93	\$10.71	\$10.52
Lapland	\$5.33	\$5.36	\$5.43	\$5.71	\$5.66	\$6.37	\$6.10	\$6.11	\$5.53	\$5.85	\$5.95	\$6.09	\$6.23	\$6.16	\$6.29
Kainuu	\$2.12	\$2.12	\$2.13	\$2.21	\$2.17	\$2.32	\$2.35	\$2.41	\$2.08	\$2.27	\$2.36	\$2.30	\$2.13	\$2.18	\$2.09
Northern Ostrobothnia	\$10.83	\$12.24	\$12.95	\$13.51	\$13.79	\$13.69	\$14.65	\$14.75	\$12.85	\$13.40	\$13.45	\$13.34	\$13.24	\$12.88	\$12.38
Nunavut	\$0.94	\$1.02	\$0.99	\$1.05	\$1.05	\$1.10	\$1.13	\$1.29	\$1.29	\$1.57	\$1.61	\$1.72	\$1.77	\$1.80	\$1.83
NWT	\$3.19	\$3.20	\$3.77	\$4.23	\$4.04	\$3.93	\$4.00	\$4.14	\$3.38	\$3.94	\$3.75	\$3.44	\$3.46	\$3.62	\$3.71
Yukon	\$1.35	\$1.31	\$1.31	\$1.37	\$1.43	\$1.50	\$1.55	\$1.68	\$1.80	\$1.89	\$1.98	\$2.00	\$2.04	\$2.08	\$2.04
Iceland	\$9.84	\$9.87	\$10.11	\$10.93	\$11.67	\$12.25	\$13.40	\$13.60	\$12.66	\$12.20	\$12.45	\$12.60	\$13.15	\$13.41	\$13.96
Greenland	\$1.03	\$1.08	\$1.07	\$1.15	\$1.16	\$1.30	\$1.36	\$1.48	\$1.61	\$1.71	\$1.90	\$1.84	\$1.90	\$1.95	\$2.04
Faroe Islands	\$1.09	\$1.17	\$1.13	\$1.19	\$1.21	\$1.41	\$1.52	\$1.55	\$1.57	\$1.71	\$1.86	\$1.80	\$2.00	\$2.15	\$2.28
Alaska	\$34.51	\$35.43	\$37.39	\$39.97	\$44.08	\$47.70	\$51.16	\$56.56	\$51.08	\$54.13	\$57.57	\$58.58	\$56.62	\$54.13	\$49.05
Republic of Karelia	\$4.09	\$4.49	\$4.87	\$4.84	\$5.99	\$6.85	\$7.48	\$8.17	\$7.58	\$8.07	\$8.24	\$8.78	\$9.06	\$8.83	\$9.17
Republic of Komi	\$10.77	\$10.05	\$11.50	\$12.22	\$13.58	\$16.80	\$17.33	\$20.61	\$21.50	\$22.28	\$25.01	\$26.04	\$25.27	\$22.88	\$22.72
Arkhangelsk Region	\$6.66	\$7.33	\$8.35	\$9.64	\$9.88	\$11.64	\$13.48	\$14.41	\$13.75	\$13.28	\$15.78	\$16.52	\$17.54	\$16.96	\$17.35
Nenets Autonomous Area	\$1.52	\$1.80	\$2.55	\$3.67	\$3.50	\$4.72	\$7.04	\$6.38	\$9.29	\$9.22	\$9.59	\$8.87	\$8.85	\$8.74	\$9.45
Murmansk Region	\$7.08	\$7.33	\$8.27	\$10.23	\$11.14	\$12.38	\$13.74	\$15.05	\$14.39	\$14.84	\$15.01	\$15.18	\$15.83	\$15.24	\$16.96
Yamalo- Nenetsky	\$22.46	\$30.13	\$33.07	\$36.44	\$35.00	\$43.08	\$44.53	\$49.69	\$46.50	\$48.80	\$55.47	\$64.58	\$70.72	\$76.69	\$78.76
Krasnoyarsk Krai	\$28.62	\$25.45	\$28.63	\$32.93	\$34.70	\$46.44	\$52.52	\$51.61	\$53.39	\$66.41	\$68.53	\$64.60	\$64.71	\$67.73	\$70.28
Republic of Sakha	\$12.03	\$12.39	\$13.49	\$14.22	\$14.54	\$16.31	\$17.63	\$21.27	\$23.52	\$24.33	\$27.85	\$29.27	\$29.30	\$31.41	\$32.57
Magadan Region	\$1.88	\$2.26	\$2.33	\$2.05	\$2.03	\$2.37	\$2.53	\$2.92	\$3.43	\$3.68	\$4.33	\$4.17	\$4.56	\$4.62	\$5.41
Chukotka	\$0.94	\$0.84	\$1.86	\$1.31	\$1.01	\$1.16	\$1.52	\$2.14	\$3.24	\$2.66	\$2.58	\$2.64	\$2.42	\$2.69	\$2.78
Pan-Arctic	\$197.7	\$207.4	\$224.7	\$243.2	\$252.2	\$289.4	\$310.5	\$332.1	\$325.7	\$351.1	\$373.7	\$382.6	\$389.5	\$395.8	\$402.3

Appendix 3: GRP data sources and methodology

Territory	Data Source	Manipulation
Alaska	OECD	Converted from millions of USD to billions
Nordland	OECD	Converted from millions of USD to billions
Troms	OECD	Converted from millions of USD to billions
Finnmark	OECD	Converted from millions of USD to billions
Nunavut	OECD	Converted from millions of USD to billions
NWT	OECD	Converted from millions of USD to billions
Yukon	OECD	Converted from millions of USD to billions
Greenland	World Bank	Reported in current USD. Converted to DKK using current year xrate as reported by WB. Converted to current USD using PPP rate for DK.
Faroe Islands	World Bank	Reported in current USD. Converted to DKK using current year xrate as reported by WB. Converted to current USD using PPP rate for DK.
Chukotka	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Murmansk	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Nenets Autonomous Okrug	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Republic of Karelia	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Arkhangelsk	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Komi Republic	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Yamalo-Nenets Autonomous District	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Krasnoyarsk Krai	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Sakha Republic	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Magadan	ROSSTAT	Reported in current basic prices, billions of rubles. Converted to USD by dividing by Russian OECD PPP for corresponding year.
Iceland	OECD	Converted from millions of USD to billions
Norrbottn	OECD	Converted from millions of USD to billions
Västerbotten	OECD	Converted from millions of USD to billions
Lapland	OECD	Converted from millions of USD to billions
Kainuu	OECD	Converted from millions of USD to billions
Northern Ostrobothnia	OECD	Converted from millions of USD to billions