Comparative Economic System Analysis in the Context of Northern Regional Economies
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Abstract: This article introduces a comparative approach to an analysis of economic systems by the use of the most comprehensive and coherent data available. Thus these data limitations give us a historical insight into a cross section of data about a decade ago. The regional economies of the North (the Arctic and Subarctic) are classified as the following three main systems: Modified people’s market capitalism (Alaska), North Scandinavian welfare market systems and etatism comprising of remnants of the classical Soviet system in the Russian North and the transfer economies of Nunavut and Greenland. Comparing the systems statistically opens up for a debate whether there is a tradeoff between neo-classical efficiency appearing in growth and productivity data on one hand, and on the other hand human development and unemployment data. Or is there in the Northern Scandinavian welfare market systems a synergy between human development and unemployment and so-called economic efficiency?
It has consistently been found to be an extremely difficult task also used in the Greenland case to ‘adapt’ theory and empirical data to each other. Much theorizing takes place in an empirical vacuum and a lot of empiricism in a theoretical vacuum. Where opportunities for mutual transformation of theory and empiricism are small, you end up in a social scientific dilemma.¹

It seems that Arctic research suffers from the same problems as Greenland research did when Goldschmidt described this dilemma back in the seventies. The gap between theory and empiricism creates a barrier to progress in our research; a barrier that often appears insurmountable due to either limited data access or unreliable data based on conjecturing. In relation to the empirical foundation of this article, I also faced problems with accessibility to recent economic data. Comparative system theory has not previously been applied in research on Northern regional economies. Although the terminology economic systems in several publications on Arctic development have been used, neither has presented acknowledged methodologies leading to conclusions of comparisons between economic systems. This occurs despite there being a vast field of international literature on comparative economics both theoretically and empirically.² Before 1989 contributions in this field were mainly focused on comparisons of centrally planned economies, market socialist economies and capitalist economies. Today the focus is set on different types of capitalist economies, traditional economies and Islamic economies.² Regarding economic systems in an Arctic context, the contributions over the last 10 – 15 years contain only descriptive statistics without involving system classifications and analysis of comparative data reflecting potential systemic advantages of one system relative to other systems.³ This article’s main objective is to take the Arctic and Subarctic economic systems analysis this step further by operationalizing generally accepted conceptualizations, theories and

empirical analysis into analysis of the economic systems of the Arctic and comparing them. The study behind this is based on historical data, where it was possible to compile a complete cross section of data from an existing data base and fill out gaps by addressing regional and national statistical bureaus. To update these data today or to introduce time series is not entirely impossible, but this implicates a data collection ‘from scratch’ by addressing regional and national statistical bureaus that is far ahead of the conclusions reached by this article. Further research is in other words imperative, yet difficult because of insufficient access to data. The introduction of ARCTICSTAT was a great leap forward, yet the macroeconomic elements of the database still need a comprehensive annual updating and there are still gaps to fill if resources can be provided (Caron and Duhaime, 2010). One word of caution is in place here; as in all social scientific literature, so-called modernism or most recent data analysis is by no means a blue print of what scrutinizes a social scientific problem best, most precise or most adequate. The interesting aspect must of course always be whether new and better insights and developments theoretically, methodologically and empirically have been reached, and this is also valid in one’s hindsight of historical data not hitherto applied in research.

Classification of the Economic Systems

The traditional economy based on hunting, trapping, reindeer herding and fishing is still present in Alaska, Greenland, Nunavut, Northern Scandinavia and the Russian North. These activities are not included in national income accounting. Differences vary greatly; in some cases they comprise a very small contribution in terms of monetary value to the regional economies. In other cases they are crucial in terms of their share of total output; although they may contribute little in terms of value added, and hence GDP estimates. This is due to the influx of transfer incomes from the ‘center economies’ in the south. For instance some 35 to 40 % of the Greenland GDP can be ascribed to the Danish State expenditures regarding Greenland, the block grant and its multiplier effect. Substitution values should however be included in the national income accounting because it creates import substitution. The traditional economy provides

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country food more nutritious than imported frozen food items from the ‘center economies’ of the south. Including this enhances GDP values, due to less import values.

Like in Greenland, government demand for goods and services create, what Hicks and White call ‘para-public sector’ employment. Hunters and trappers are subsidized through different support programs such as the fur incentive and subsidy program, the fur price program, and the Nunavut Hunter Support Program; there is a multiplier effect from government demand on the sector of non-tradable goods and services. Nonetheless, private companies in the sector for non-tradable goods and services to a large degree are privately owned by non-Inuit either living in Nunavut or living in the south. Some local initiative does exist, especially as co-operatives.

In Greenland the traditional sector of the economy does not count much when compared to the GDP and the GNI (gross national income). Subsistence involves hunting and fishing based on similar traditions as seen in Alaska and Nunavut. Nevertheless monetary relations do exist; e.g. in Greenland some of the harvested food is sold on local street markets in larger towns. The total contribution to the economy in Greenland from both people with hunting as their main occupation and for people hunting for leisure in 2005 is some 300 million Danish kr., while the disposable GNI including State transfers and ministerial expenditures on Greenland (the block grant) was some 14 billion Danish kr., in 2007. Essentially the contribution in monetary value is small, but as in Nunavut substitution values play a role in terms of saved imports of food.

Even so the presence of the traditional economy represents a unique part of the classification procedure, because it is not only a matter of value added from traditional sectors. The socio-cultural impact on ownership and allocation of resources creates as suggested above a blend of the traditional and the modern economy. Traditions still impact ownership and allocative distribution to a certain extent, although it is a mix of the old and the new. And on the other hand, markets and planning and their accompanying ownership structures could, before taking dominance over traditional production relations, serve as an auxiliary device for exchange in the traditional economy.

Karl Polanyi in his well-known book *The Great Transformation* classified the pure model of the old traditional economy as founded on the important family and religion factors of the pre-modern social formations. Extended family ‘groupism’ constitutes the economic system centered on redistributive allocation, reciprocal allocation and household allocation. In our context of redistribution, the tribal leader (in Greenland the great hunter) is determining ‘production’ and exchange. Or in other aboriginal societies, it is the Chief, who decides the distributive practices. In the reciprocal economy, exchange is procedural and based on the principle of gifts between social entities; households emphasize the family production and consumption as the first priority, before arriving into reciprocal and redistributive relations.

Organizational principles in the traditional Northern economy point to team work, non-ownership of the land and the resources, and allocative practices mentioned above. Taking Greenland as a case in point,

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Robert Petersen explains the traditional culture as a team work. The great hunter led a team of individual hunters to the hunting grounds – each hunter did operate independently on these hunting grounds in accordance with the principle of equal access to the common fruits of the team’s labor. After the catch of each hunter, the household, the reciprocities, and the redistributive principle probably took over in the ranking, starting with the household. Residues were for the next distributive channels.

This is not a ‘desk economy’ as the Pareto-system of general equilibrium. From various accounts of traditional life in the Northern regions, it appears that the societies and economies of indigenous peoples still are characterized by a large public domain, notably the existence of a number of commonly pooled resources, e.g. land, waters and wildlife. In addition, many activities were and still are undoubtedly organized out of necessity and undertaken in a co-operative manner; and the results of such co-operative activities, as for example hunting, were and still are typically shared. In fact, it was the strength of the public domain that determined the wellbeing of individuals, as was the availability of personal goods such as strong health, being knowledgeable, or being adequately clothed and housed.

The traditional economy necessitates capabilities for the indigenous people to fully understand the natural environment – the land and the sea, and to live off it in a sustainable way. Berger mentions cultural values and attitudes in relation to this basic interplay with nature: Mutual respect, sharing, resourcefulness, and an understanding which is both conscious and mystical of the intricate interrelationship that link humans, animals and the environment.

The quintessence of this social milieu is that different social coordination mechanisms accompany the development from the traditional economy to a ‘modernized’ economy. Referring to Neuberger (above), the decision-making is either diminishing power (the traditional economy, decentralization of central command, the Scandinavian model) to increasing power (so-called ‘free’ markets; in reality corporate power). In some cases there are even overlaps within the same system, so the classification procedure involves an assessment of which economic, social and political structures dominate each system. Hereafter, I classify the regions as the development from the traditional economy toward different systems ‘imported’ from the centers of the south as follows:

First: Modified people’s market capitalism (Alaska), suggesting a dynamic view of capitalism and not the concept of static equilibrium. Income distribution and welfare is mainly a matter for the market and the civil society. Ideologically speaking, the transformation from the traditional economy to the capitalist market economy indicates an attempt to create institutions aiming at ‘teaching’ the aborigines the idea of private ownership and markets through peoples’ share-holding companies. Due to ‘social engineering’ containing the ideology of ‘American Corporate Capitalism’, due to oil and its derived activities on private hands, and due to the size of some regional corporations, at least the term modified capitalism is in place because we cannot entirely call the Alaskan economy a ‘laissez faire’ capitalist model. The Alaska Native Regional Corporations, also known as the ANCSA Corporations, were set up in 1971 as a result of The Alaska Native Claims Settlement Act (ANCSA) adopted by the U.S. Congress. Besides rights to land and the establishment of the Permanent Trust Fund giving the citizens of Alaska a ‘social dividend’ taking the form...
of a share in current oil incomes and future incomes of the fund, it was decided to establish 13 regional native corporations and several hundred village corporations. It is in the villages, the traditional economy continually have found a place. It is here, one meets reciprocal barter and sharing. In the villages, the dominant way is subsistence, while only few jobs related to the monetary economy are out there. Hunting and fishing are the main activities, if there are no jobs available. In some cases part time employment, seasonal employment or employment related to windfall activities are supplementary to subsistence activities. According to Berger, this was supposed to be implemented via the regional corporations and village corporations’ administration of ANSCA in order to encourage economic development and the natives’ access to the land. It was supposed to give the natives a de facto usufruct right to enable subsistence culture but in reality the corporations’ technocratic structures inhibited this because the main focus was actually set up to be profit maximization.11

Second: Modified welfare market systems implying a mixed reformist economy buttressed by a social liberal and a reformist social democratic ideology. In terms of income distribution and welfare, the idea of the Nordic model or the welfare state characterized by a large government sector, redistributions and government pension schemes and transfer incomes dominates. (Lapland, North East Bothnia, Kainu in Northern Finland, North and West Bothnia in Sweden, Iceland and Troms, Nordland and Finnmark in Northern Norway). In Northern Scandinavia, government transfers and related investment projects play a significant role. Private initiative is only present in profitable sectors, either the booming sector for oil, gas and minerals or the sector of tradable goods and services, which mainly are fisheries. ‘Spill overs’ from these sectors to a large sector of non-tradable goods and service are often seen. This has led some authors to draw parallels to the ‘Dutch Disease’ phenomenon encountered in oil producing countries and in economies suddenly facing unexpected windfall gains. Yet this is not empirically substantiated when looking into economies of Norway, Alaska and Greenland.12 Taking the Northern regions of Scandinavia (Finland, Iceland and Greenland included), we probably face a higher resilience to the exogenous impacts of neo-liberalism and supra-national institutions like the EU, and thus the classification welfare market systems or Nordic welfare state probably is most frequent here. This is due to the fact that low profitability in some of the sectors of tradable goods creates a low propensity to invest from private companies, and hence the state sectors share of GDP is very high. Furthermore, transfer incomes act as stabilizers in relation to business cycles imposed by outside ‘market forces’. The welfare state in the ‘center economies’ of Scandinavia are under attack. When the economic crisis showed its first signs by the end of the sixties, the remarkable results deteriorated into shocks and disturbances of the system. There were two factors explaining this. First the fall of Keynesianism and ‘the victory’ of Neo-liberalism and Monetarism, and second the entrance into the European Union. However, there are still remnants of the Nordic Model in terms of welfare measures, and a high ‘percentage of collectivism’, when compared to other OECD economies.

Third: Modified etatism indicating the mix of the former centrally planned system and the capitalist forms of ownership within the transformation process. Ideologically speaking so-called ‘socialism’ in the

Soviet era was rooted in the ideology of central planning. The neo-liberals fabled about ‘big bang economics’, and consequently the transformation in the nineties implied harsh reforms of austerity, ‘wild privatizations’ and voucher shams. In terms of income redistribution and welfare, a UNICEF report in the early nineties found that this system imposed severe setbacks, for people’s wellbeing. The North was in the golden era of the planned economy, the pioneering fields of the Soviet economy; attracted by the promise of higher wages and other fringe benefits including social benefits and free university entrance, labor was encouraged to move north to the colder regions. This picture has changed drastically as people now move out of the Northern Regions of Russia again. A special case is the destiny of the Chukotka ‘eskimos’. Due to the incentive systems, wages in Chukotka was in the Soviet period substantially higher than seen in other northern regions, and it was even higher than average of the Union. After 1991 with the abolishment of the kolkhoz system, Chukotka underwent a period of austere economic decline and depopulation. Reindeer breeding was drastically reduced. The once-flourishing hunting and fur trade was in decline, while poaching was on the rise. Health care and education were in a poor state: Chukotka hospitals did not have enough X-ray machines, and schools did not have enough textbooks. Because of rampant alcoholism and other diseases, Chukotka natives were on the verge of ruin. After 2001, the picture changed to a mixture of the old and the new as seen in other places in the Russian North. Chukotka prospered due to oligarchic investment ventures and philanthropy. Gold mining was operated on an up-to-date technological beginning, and oil exploration and extraction was incepted on the continental shelf offshore. The old ‘kolokhozes’ became sea mammal hunting brigades in coastal Inuit communities. Newer and bigger metal hunting boats were equipped with potent Japanese boat engines. Reindeer breeding was reestablished.

**Fourth:** The co-operative and self-managed economy, where a majority of the companies are based on suppliers, consumers or employee ownership, and multipurpose cooperatives involving several stakeholders within these groups working co-operatively to serve the common interests of the members of the co-op. Hunters and fishermen have a mutual interest in obtaining good prices on their catch; consumers aim at low retail prices and employees on a decent pay check and good work relations. In other cases, co-ops serve as a bulwark against modern forms of allocation to maintain the traditional economy and culture. The whole ideology of community resembles the co-operative ideology of democratic ownership, profit-sharing, finance founded on limited liability companies, and limited withdrawing rights to invested capital and education. Greenland had for quite a while, both under the Danish States colonial rule and under Home Rule, pursued a strategy of promoting co-operative societies without success. In Nunavik, the picture is totally different with much more elbow room for the co-ops which have shown an ability to grow without government subsidies.

**Fifth:** Transfer etatist economies where state initiative dominates but in another context than in the Russian North. Welfare and income redistribution points to social liberalism, reformism and the northern European models of either corporatism or the welfare state (Nunavut in Arctic Canada and in Greenland).

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13 These social formations were not socialist. State dominance as a specific social formation is among some participants in the plan-market controversy called etatism stemming from the French concept état meaning state. Statism or etatism describes state controlled resource allocation instead of a worker controlled or capital controlled allocation of resources.


Subsistence is still a part of the activities in Nunavut, Nunavik, Nunatsiavut, the New Northwest territories, Yukon and Greenland. However the Canadian Northern economies are a mix of self-government initiative, people’s capitalism as in Alaska and the traditional economy based on subsistence. The Nunavut Tungavik Corporation should in accordance with the provisions of the claim be financed by compensation for surrendering Inuit rights to the land. In essence, Nunavut has a system of ‘double power’ because the corporation possesses both political and economic power serving the interests of its Inuit beneficiaries. Nunavut has been labeled ‘self-government through public government’. Like in Greenland, the economy is depending on transfer incomes from Ottawa and Quebec. The region is a mix of the traditional economy and government, and it resembles Greenland in the sense that local private initiative is limited. In some local communities only few private jobs exist. In terms of exploiting non-living resources mining is based on private initiative from the south, and employment is mainly occupied by workers from the south being flown in to barrack towns in the vicinity of the mine.

Clearing the Decks

Figure 1 represents the centralization vs. decentralization approach and a development from the traditional economy to other archetypes of economic systems. It is an illustration of either implemented developments or potential developments that could follow in a period of transition accompanying the traditional economy. Classification could then include the following criteria:

- Forms of ownership and power
- Allocation mechanisms (traditional, third cooperative sector between other sectors, state and/or market).

One way to address the concept of allocative mechanisms (monetary economy) in Northern regions is how it relates to the issue of state versus market and the proportions of each sector of the GDP. This also tells us something about the degree of decentralization as discussed by Neuberger and Johansen (note 4 above). Private enterprising and privatization of state owned companies are one way of decentralization. State initiative often dominate Northern regions in one way or another depending upon the ideology ‘imported’ from southern ‘center economies’. The role of planning is limited to government planning, economic policies and indicative planning in all regions, and although Arctic Russia until the nineties and Greenland in the sixties and seventies were central command planned economies, central command planning has disappeared or most often did not work; Greenland was an exception in the sixties and seventies and an example of successful central planning from Copenhagen.16 Government initiative is present in the North, substituting private initiative, if economic ventures either are less profitable or operate with losses. Within a long time horizon, this of course had a tendency to become permanent, because business cycles turned favorably or due to windfall gains into the private non-tradables sector. Hence, the state owned companies became either fully or partially owned shareholding companies operated as every other capitalist company and some others were privatized due to ideological reasons. But mostly these companies were established partially to serve people’s needs and for profits.

The privatization process consist of moving from the traditional economy to private ownership (and co-operative ownership) and ‘markets’ or from state ownership and centralism to privatizations and markets. It is the development from the traditional economy which is of special interest to us, because of the high degree of government initiative and collectivism in the Northern economies. Central planning as seen in Greenland and the former USSR only exists as remnants today in a transitory system from the central command model to privatized companies and ‘markets’. That process involves the necessity of continuous transfers from the centers to the Northern regions in question. Thus, Figure 1 comprises the Northern regions of Russia as representing remnants of central planning and in this analytical context, the transfer etatist economies of Nunavut, and Greenland for which data makes a classification possible. At the other end of the plan – market dichotomy, we see laissez faire only partly implemented as the Alaskan modification to private ownership and people’s corporate allocative structures. The ‘in between’ structures are seen in most other Northern regional economies as a morphology of different social coordination mechanisms, their forms and their structures. Hardly any of the Northern economic systems can be described as omitting one or more of the other structures except for the outermost poles of the dichotomy.
Figure 1: Classification of systems of Arctic Economies

Ownership     Resource-Allocation     Arctic Modification

The Traditional Economy

State Ownership
- Collective Ownership

New Traditional Co-operative Self-management

Meso-association Third Sector

Central Planning

Transition Economy
- TNCs
- State Firms
- Private firms

New Mixed Economy
- TNCs

Mixed Economy
- State Initiative TNCs
- Private firms

Private Ownership

Corporate and Dynamic Capitalism

‘Peoples Capitalism’
- Private firms
- TNCs
Operationalizing the Classification

We can now identify the economic systems in Northern Economies and assign them to geographical regions (Table 1). As mentioned all the regions have several – if not all - of the outlined archetypes classified after ownership and allocation. Therefore, the dominant structure determines how we classify the systems. Some of these may represent other background variables related to them, e.g. indexes of welfare could traditionally analyzed be a combination of traditional welfare issues like GDP, GDP per capita or GDP per employed, and Human Development Indicators (HDI). They may be mutually reinforcing, e.g. high growth rates influences the level of value added or output. In a Northern context, it is still not possible to compile all these data consistently. Table 3 below contains potential criteria for classifications and comparisons by which the performance of the systems is measured. Most Northern economies have an above normal degree of government and centralism, while on the other hand economies like Alaska are more oriented toward markets. The remaining etatist economies have a high degree of government. Focusing on the role of centralism (etatism) we use a government employment to total national employment. The last mentioned is a ratio, which gives us the only coherent regional data available (see Table 3 below). Another indicator, the percentage of collectivism could for instance be calculated as government expenditures share of GDP at factor cost (all commodity related taxes and subsidies removed). Yet this is as other centralization indicators not coherently available in a cross section of all regions (Table 3 again).

<table>
<thead>
<tr>
<th>Modified Market Capitalism</th>
<th>Peoples Capitalism (Alaska)</th>
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<tr>
<td>Welfare Market Systems</td>
<td>Scandinavian welfare States (Lapland, North Ostrobothnia, Kainu, North and Västerbotten, Iceland, Troms, Nordland and Finmark)</td>
</tr>
<tr>
<td>Etatism</td>
<td>Russian regions in transition (Arkhangelsk, Chukchi, Evenk, Karelia, Khantsy-Mansi, Komi, Koryak, Magadan, Murmansk, Nenets, Sakha Taimur (Dolgan-Nenets) and Yama-Nenets)</td>
</tr>
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| Traditional economy and Transfer Systems (Nunavut, Yukon, New Northwest territories, Greenland) |

Table 1: Operationalizing Classifications of Northern regions

Omitting other classification data is not just explained by lack of data. Comparative national income data at factor prices are difficult to handle due to differences in tax regimes between the regions. Additionally, the total absorption available to a region should be calculated as gross national product and not ‘gross domestic product’ – the difference between the two is related to net rental incomes, profits and wages receivable from the rest of the world (including transfers from the region’s center economy). Especially the transfer economy is important here, because an extra variable is included as net flows into the regional economy. While the impact of this is negligible in a typical OECD economy, it can have a tremendous impact in a transfer economy. Transfer incomes in to Nunavut amounts to 72 % and the spending potential is almost 3.5 % higher than the GDP that should cover absorption (Table 2).
Table 2: The Transfer Economies of Nunavut and Greenland in 2002

<table>
<thead>
<tr>
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<th>Transfers/GDP</th>
<th>Expenditures/GDP</th>
<th>Revenues/GDP</th>
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<tr>
<td>Transfers and</td>
<td>0.72</td>
<td>3.46</td>
<td>Not available</td>
</tr>
<tr>
<td>Traditional</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Nunavut\textsuperscript{1}</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transfer and</td>
<td>0.38</td>
<td>0.81</td>
<td>0.81</td>
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<tr>
<td>Modern Greenland</td>
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1. Transfer incomes not included in GDP. Essentially this means that expenditures are higher than the GDP and accordingly the ratio is 3.46. Hence, Nunavut can spend more than value added from own production plus the multiplier effect from both own production and transfer incomes. It also signifies that Nunavut’s own production contributes very little to the revenue of the regional administration.

The variable real per capita GDP to the national per Capita GDP ratio uses the denominator as an indirect deflator, and it is our first outcome variable or assumed dependent variable. The next dependent variable is the productivity proxy real GDP per employee to national GDP per employee ratio. We will use this proxy running OLS regressions on the association between the government employment ratio and the productivity proxy and the government employment ratio to other variables (e.g. here unemployment figures). This is not an accurate measure of productivity, a measure that often requires a complex data collection and methodologies known from production function studies.

Annual average growth is the only time series which we are able to run with the results reported in Table 3, and later as regressions analyzing the explanatory power of government employment to the variance in growth rates. As the results of Table 3 suggest, a general tendency is that the economies with either a high degree of government employment or a high percentage of collectivism fare less well than the other regional economies with less state-interventionism. Alaska shows remarkable results in terms of the relative real GDP per capita measure, the productivity proxy and economic growth; this is probably due to oil and gas extraction from Prudhoe Bay. Compared to all states in ‘the lower 48’ Alaska’s output in the oil industry is much higher. Alaska’s economy depends comprehensively on the oil and gas sector which in the latest reported years amounts to 24 % of the state’s GDP while states like Wyoming and Texas only amounts to some 10 to 13 %. Due to an increased exploration activity, the oil and gas sector grew significantly from 8,900 jobs in 2002 to 15,200 in 2014 (which is 4 % of total jobs, see https://blog.abglobal.com/post/en/2015/03/states-feel-impact-of-oil-price-collapse).

Economic growth has rightly been criticized as a narrow definition of human well-being and economists like Amartya Sen and Joseph Stiglitz has enhanced the concept to a composite measurement. Sen’s capability theory has to do with satisfying persons’ needs in life both physically, spiritually and socially. The material value added in an economy is a precondition for realizing ever higher needs - communally, mentally, and aesthetically. Fundamentally this has to do with security – economic security, food security, health security, personal security, community security and political security. The French
Table 3: Role of Centralism, Collectivism and National Income Accounting Variables in Northern Economies (Purchase Power Parity Calculations)

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</thead>
<tbody>
<tr>
<td>Modified Market Capitalism: Alaska</td>
<td>0.27</td>
<td>n.a.</td>
<td>0.20</td>
<td>1.28</td>
<td>1.27</td>
</tr>
<tr>
<td>Modified Welfare Capitalism: Lapland, North East Bothnia, Kainu</td>
<td>0.41</td>
<td>0.25</td>
<td>0.30</td>
<td>0.36</td>
<td>0.38</td>
</tr>
<tr>
<td>North and West Bothnia</td>
<td>0.39</td>
<td>0.32</td>
<td>0.20</td>
<td>0.86</td>
<td>5.2 %</td>
</tr>
<tr>
<td>Troms, Nordland, Finmark Iceland</td>
<td>0.42</td>
<td>0.31</td>
<td>n.a.</td>
<td>0.79</td>
<td>0.57</td>
</tr>
<tr>
<td>Iceland</td>
<td>0.36</td>
<td>n.a.</td>
<td>0.44</td>
<td>n.a.</td>
<td>n.a.</td>
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<tr>
<td>Modified Etatism:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Former Central Command – Russian North</td>
<td>0.42</td>
<td>n.a.</td>
<td>n.a.</td>
<td>0.27</td>
<td>0.25</td>
</tr>
<tr>
<td>Transfer &amp; traditional – Nunavut</td>
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<td>n.a.</td>
<td>0.97</td>
<td>0.40</td>
<td>0.37</td>
</tr>
<tr>
<td>Transfer &amp; Modern – Greenland</td>
<td>0.62</td>
<td>0.39</td>
<td>0.81</td>
<td>0.64</td>
<td>0.62</td>
</tr>
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president Nicholas Sarkozy created a commission in 2008 in order to scrutinize the limitations of national income accounting and the GDP as the most often used indicator of economic performance and social progress. The intention was to assess the feasibility of alternative measurement tools including human well-being as an important factor. One of the conclusions was that Sens dimensions should be used as an alternative to material well-being in order to assess human well-being in general.

The Problem of Purchase Power Parities

In 2009 Solveig Glomsrød and Iulie Aslaksen published the ECONOR report using the center economies purchase power parities (PPP) to create a unified and comparable GDP measure. I have, as Glomsrød and Aslaksen also applied this PPP approach in order to adjust to a comparable measure, because the exchange rates do not eliminate differences in the general price level in different countries. There are no specific PPPs for the Northern Economies. By this, we assume that each Northern economy possesses the exact same characteristics as its ‘center economy’.

There are however immense problems with this measure. First of all, purchasing power parity (PPP) cannot live up to the theoretical ideal, when countries in reality are different in terms of transportation costs, trade barriers, differences in prices of non-tradable inputs, market imperfections (e.g. concentration of capital) and investors speculative ventures. The theory is rooted in neo-classical economics, and hence the theory of perfect competitive international markets. There are no information problems in this perfect world, and there are no concentrations of capital! The assumption of the world markets as purely competitive without the dominance of TNCs is of course preposterous.

Human Development

Calculating a human development index involves the following procedure. An expanded approach to the human welfare concept requires composite indices, and as a matter of fact, we already have one. To be exact, the United Nations publish annually Human Development Indices (HDI) in general and in their further elaboration as inequality indices, gender indices and poverty indices.

The HDI is constructed as a composite of GDP data, life expectancy at birth, adult literacy rates and measures of educational enrollment. Variance of the index is a dichotomy of 0.0 (very bad) and 1.0 (very good). In 2014, most center economies with Northern cold regions saw a variance in the HDI, for instance for ‘center economies’ like Norway (0.944), the U.S. (0.914), Canada (0.902), Denmark (0.900), Iceland (0.895) and the Russian Federation (0.778) (see excerpts from the HDI 2014 report pp 160 - 162). In Figure 2, transfer economies score less on the four HDI indicators than most welfare market regions and their national ‘center economies’, while they perform better than modified capitalism in Alaska and mostly the transfer etatist social formations. The Northern regions figures in 2002 (center economies in parenthesis) were Alaska 0.89 (the U.S. 0.94), Lapland, Nord-Østerbotten and Kainu 0.89 (Finland 0.94), Nord and VästerBotten 0.92 (Sweden 0.95), Iceland 0.94 (a nation and not a region), Troms, Nordland, Finmark 0.92 (Norway 0.96), Nunavut 0.79 (Canada 0.94), and Greenland 0.79 (Denmark 0.93). On the comprehensive measure of human welfare, the Scandinavian North thoroughly has the highest scores (Northern Finland less than etatist transfer systems).

18 (http://hdr.undp.org/sites/default/files/hdr14_technical_notes.pdf)
Causal Descriptive and Theoretical Statistics

Descriptive statistics as presented in Figure 3 and Figure 4 are unlike inferential or theoretical statistics not developed on the basis of probability theory. Instead it mainly describes quantitatively main features of a collection of our data compilation in order to trace a pattern that might emerge from the data. We already saw (table 3) that etatist transfer economies frequently did not fare as well as the other systems in our empirical approach. Figure 3 confirms this pattern. The gap in the figures suggests that, the higher the Government employment share is of total national employment, the less favorable do the real per capita GDP growth turns out. In Figure 3, a trend line would clarify this (Russian Federation data not available.), while Figure 4’s unemployment data clearly illustrates another gap telling us unemployment grew faster in the economy with modified capitalism than generally speaking in the welfare market systems and in regions with remnants of etatism or in the transfer etatist social settings. This confirms the stabilizing forces in the welfare market systems and etatist transfer economy less hit by the impact of international business cycles. In order to be able to run regressions, I have split the data on northern regions into the Russian Federations many regions, regions of Northern Scandinavia and I have added other Canadian regions than Nunavut (regions then total 27). Table 4 contains the Government employment to total regional employment ratio association with real per capita growth and the productivity proxy real GDP per employed. Although this type of analysis applies inferential statistics and uses a split sample, the only statistical discernible result (1 % level) we see is between the government employment ratio data and the productivity proxy. Assuming linearity, as the model does, the estimated regression line suggests that the higher government employment is, the less favorable the productivity proxy turns out. The correlation of 0.55, and the explanatory power expressed by the coefficient of determination 0.30 suggests only a mildly
Figure 3:
Figure 4:

- Government employment/Total Employment
- Annual Average Growth in Unemployment 2002 - 2006

Countries represented: Lapland, North Ostrobothnia, Kainuu, Nord and Wästerbotten, Iceland, All Northern regions in Russia, Nunavut, Greenland.
strong linear relation; and only 30 % of the variance in the productivity proxy seems to be explained by the assumed independent variable. Figure 5 illustrates the regressions of table 4.

Table 4: OLS Regressions and Correlations of Performance Variables and the Government Employment to Total Employment Ratio

<table>
<thead>
<tr>
<th>(N=27)</th>
<th>Regression coefficient</th>
<th>Multiple R</th>
<th>R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP per Employed*</td>
<td>-13.05</td>
<td>0.55</td>
<td>0.30</td>
</tr>
<tr>
<td>Real GDP Annual Average Growth 2002-06</td>
<td>-14.07</td>
<td>-0.21</td>
<td>0.04</td>
</tr>
</tbody>
</table>

* Discernible at the 1 % level of a test.

Figure 5: Government Employment to GDP per Employed

Conclusion

The empirical data on government employment (G) to total regional employment (E) is in a comparative system context designating that ever higher ratios are an indicator of etatism, i.e. the variable is the most accurate we can get on the government sectors share of total economic activities. Etatism would then be most present in social formations with ratios close to 1.0 – however values above 0.6 as seen in Greenland, Nunavut and some Russian regions also point in this direction. Taking the degree of etatism (G/E), it is obvious on all counts that a high degree of etatism does not relate as strong to growth and productivity performance variables than lesser degrees do. Mostly there is a tendency suggesting that there is negative association between the systemic indicator the government employment proxy and the outcome variables real per capita growth (figure 3) and the productivity proxy real GDP per employed (Table 3 and 4) – more government involvement in the
economy also means lower results for these performance variables. On the other hand the unemployment figures did reveal the opposite. The larger the government sector is the lower are the unemployment figures. And looking at the HDI data (Figure 2) the overall picture seems more in favor of the etatist state models and the welfare market models of Northern Scandinavia. Taking Sens and Stiglitz critique of traditional national income accounting and the concept of welfare *ad notam*, this point to the often emphasized strengths of the welfare state and etatism creating a more favorable climate for human development than ‘laissez faire’ markets do. Below the surface of comparative system analysis an ideological contradiction seems to be hidden behind the data. Neo-classical pure competitive market efficiency, economic growth and development are often associated with the material variables on growth and productivity. Nonetheless there is a ‘trade off’ between policy articulations founded on neo-classical thought and thoughts related to Keynesian, etatist and socialist contributors. The last mentioned refer to the debate focusing on human welfare and state interventionism as an efficient tool to promote growth, employment and development. The ‘tradeoff’s practical political implication rises to the surface as the well-known dilemma of economic goal conflicts. Supposedly improving human welfare and human capabilities can only take place at the expense of allocative efficiency and material growth. Our data seem to reflect this goal conflict. Social formations of Northern Scandinavia and Russia often have a high degree of government involvement, which is reflected in the empirical data suggesting these societies generally fare better on unemployment and HDI figures while the same societies represent less allocative efficiency in the Neo-classical sense, and hence they fare less well in terms of growth and productivity. *This is of course not to say that the tradeoff efficiency and free market follies are right.* The incentives behind improvements in living conditions, a secured employment and a well-established work ethics based on a high numeraire for social capital may be explanatory factors for the Scandinavian economies relative success in the global comparative arena. It is possible to unite the two sides of the tradeoff and still maintain efficiency, growth, development and high productivity numbers. Hence there may be a synergy and not a tradeoff! And this is reflected in the data for some of the Northern Scandinavian regions.

It would be easy, if not to sound glib saying that the reason for some economic systems less competitive performance is due to too much government involvement. Danish ‘supply siders’ analyzing Greenland and Russia have in many years been postulating that comparative performance deficiencies are explained by state interventionism and government dominance without looking to alternative explanatory variables! An article by Hjøllund, Paldam and Svendsen is a typical example. Comparing social capital in Russia and Denmark, they concluded that the level of (good) social capital is roughly three times higher in Denmark than in Russia. This result suggests that the slowness of the transition of the old ‘communist’ countries of Eastern and Central Europe could be caused by the lack of social capital. One of the more ‘made-up approaches’ is a so-called dictatorship theory on the oppressive structures of the former etatist system in the USSR and its ramifications for present day Russia. That Russia in the meantime had developed another dictatorial system based on wild privatizations and the rule of oligarchs is not dealt with, although it may be just as valid as an explanatory factor as oppression in the past. That this could be just as harmful, if not more harmful, does not appear in the author’s conjectures.

Although our data at a first glimpse appears to suggest that comparatively speaking less state is ‘good’ while more is ‘bad’, it seems much too obvious. The problem is related to the issue of spurious correlations. It could be that the two variables in our regressions are influenced by another or several other confounding variables, e.g. in the case of Alaska, the oil and gas industry plays a significant role. Depending on the availability of data, this suggests using multiple regressions and partial correlations which however were beyond the scope of this study and the availability of data. However, it does not exclude data compilations such as output from extracting

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industries (oil and gas), demographic data, technological development, relative income levels in the North compared to the center economies (‘incentive schemes’ for working there), the private sectors propensity to invest in the North and the geographical and climatic conditions that in all circumstances do spur similar growth patterns or macro-economic development than normally is the case. Yet, the systemic impact cannot and should not be entirely excluded as a part of the explanatory results; after all, some 30 % of the variance appeared explained by the regressor. Nonetheless, a word of caution is as always in place here, and we should abide to Karl Popper and keep asking whether our interpretations could be falsified? Further research is mandatory.

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1 The POENOR project involved some 24 Arctic social scientific researchers from Alaska, Quebec, Greenland, the Faroe Islands, Iceland, Norway, Denmark and the Kola Peninsula, Russia. We thank the Commission for Scientific Research in Greenland, the Nordic Council of Ministers Arctic Co-operation Program, The Greenland Home Rule Research funding, The Obel Family Foundation, Aalborg University, Denmark’s Technical University and Roskilde University for co-sponsoring the project overall budget of some 1 million US $.

2 The International Association for Comparative Economic Studies (ACES) regularly publishes two journals on this important field representing recent contributions – see http://www.acescon.org/

3 The most recent economic case illustrating this is the flaw of main stream economics when it came to predicting or analyzing the economic crisis from 2008 - ?. Before the year of 2008 there were very few exceptions of economists who foresaw the collapse of the financial markets as a natural consequence of a falling profit rate in the real sector of the U.S. economy. The ‘modern economics literature’ did not include any of that amidst the ‘hurrah saying’ on the virtues of globalization. Most so-called modern economics do not analyze the concept of Economic crisis; as a matter of fact contributions from old ‘fashioned’ socialists like Karl Marx and Russian Nikolai Kondratieff (who later inspired Austrian Conservative Joseph Alois Schumpeter who contributed with weighty work long ignored in Neo-classical thought before the depression set in in 2008). Their important contributions are now revived in the debates on the crisis.

4 Annual data are not consistently reported on the traditional economic sector in Greenland. Since 2008 Statistics Greenland stopped calculating the disposable gross national income, which is the GDP, the block grant from the Danish State and the Danish States ministerial expenses on Greenland. The Danish States expenditures were for the most recent year 2008 reported to some 4 billion D.Kr.. Regarding the subsistence economy in Greenland, no data is available except data compiled in relation to different projects. Rasmus Ole Rasmussen wrote a comprehensive report on the Greenland hunters in 2005 and found that the production value (not to be confused with value added) was some 200 to 300 million D.Kr.. As noted by Birger Poppel: “Although the importance of the subsistence economy in the Arctic is now becoming more widely recognized, sufficient data are not yet available to give a comprehensive picture of the subsistence activities of economic significance to individuals, households and communities in the Arctic. One of the purposes in launching the Survey of Living Conditions in the Arctic (SLiCA) was to help to fill this gap”. Still quantitative statistical national income data are not available as long run time series on Arctic regions and we only have scattered
data to rely on. SLICA is based on quantitative interviewing and not national income figures on the traditional economy’s share of the total economy.

Notes: Table 3 - In cases where ARCTICSTAT did not provide coherent or sufficient data, I obtained data from national and regional statistical bureaus and from available sources. Access to ARCTICSTAT data is found at http://www.arcticstat.org/about.aspx. The most comprehensive compilation of data covers the period of 2000 – 2009 with some 8500 data entities. But the database after this period has slowly dwindled. The updating was down to a meager 180 new entries in 2014. When I compiled the data, 2002 was the most coherently reported year, which probably still is the case. However, there were omissions for a cross-section of data, that required further studies and communication with statistical bureaus, and time series could only be established to a limited degree (growth rates over a period using the compound interest rate method). Morris Bernstein in his path breaking work (Bernstein 1989) set up nine criteria for evaluating economic systems. ArcticStat does not enable us to take the same comprehensive approach. We were nonetheless able to use some of the most important in the evaluation of the systems after classifying them.

Purchase Power Parity is the real exchange rate to the US $ calculated in 2002 (OECD PPP, Paris, January 2005).

Percentage of Collectivism is calculated as government expenditures to the GDP ratio. National income data at factor prices are difficult to handle due to differences in tax regimes. Calculating GDP at factor costs includes commodity related taxes, non-commodity related taxes and subsidies, which are not homogeneous from region to region.

Government Employment/Total Employment compared to National Employment ratio: source besides ARCTICSTAT were Alaska Economic performance report 2002 and Alaska Economic trends 2002 from The Dept. of Labor and Workforce Development. GDP and population figures regarding Nunavut were obtained from Statistics Canada and the Nunavut Statistics. National data were obtained from national statistical bureaus, OECD and CIA.

Regarding real Regional GDP Data to Real National Data (2002) data for Lapland, North East Bothnia, Kainu are from the Statistical yearbook Finland 2002. Self-employed are not included in the calculation.

For all northern Scandinavian regions, it is assumed that Transportation, Postage Services and telecommunications are Government enterprises. National data for Northern Scandinavian is for 1993 – 1995 obtained from OECD economic surveys. Russian employment data are from 2003. GDP data for North and West Bothnia and for Troms, Norland and Finmark is for the year 2000. Coal Production at Svalbard is included; there was no oil and gas production in Northern Norway before 2007.

Data on Greenland GDP does not include the block grant from the Danish State, which is approximately 38% of the GDP in 2002. Thus the gross national disposable income is much higher. The data for Nunavut does not include transfers which is 72% of GDP.